

NUMERICAL MODELING OF PUMPING RESPONSES IN SHALLOW AQUIFER
SYSTEMS CONTAINING AN ABANDONED BOREHOLE

A THESIS

by

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ABSTRACT

With the number of abandoned wells increasing each year and a previously estimated three million abandoned oil and gas wells in the United States, the impact of these wells on shallow groundwater aquifers is a growing concern. Many works have been conducted to evaluate the potential hazards of these wells when an injection and unplugged/partially plugged well are in close proximity. However, few studies have been conducted on the effect of a pumping well that is pumped near an abandoned well. Using Visual MODFLOW as a platform, a sequence of simulations for various possible scenarios are conducted to evaluate drawdown and fluid leakage rates in a three-layer system that consists of a top and a bottom aquifer separated by an aquitard, a pumping well screened in either the top or bottom aquifer, and an abandoned well. Six different scenarios were created. The first two scenarios evaluated the effects of pumping at a constant rate with the pumping well screened in either the top or bottom aquifer; for the third and fourth scenarios, the pumping rate was gradually increased by 250 m³/day every 250 days until $t=1000$ days, and the fifth and sixth scenarios evaluated the effects of tripling the thickness of the confining layer. The results of the study showed that both distance between the two wells and drawdown was inversely related to the fluid leakage rate flowing through the abandoned well. It also showed that when pumping from the bottom aquifer, the fluid was more likely to leak at a higher rate through the abandoned well compared to the scenarios when the pumping well was set in the upper aquifer. This research provides a better understanding of the effects that abandoned wells have on shallow aquifer systems, which is useful for assessing the potential risk and hazards, more specifically the cross-formational flow from one aquifer into another, associated with abandoned wells in the field.

DEDICATION

To my family and friends

ACKNOWLEDGEMENTS

I would first like to thank God, for allowing me to pursue my dreams and goals in life and for guiding me through this journey.

I would like to thank my advisor, Dr. Hongbin Zhan, for his patience and support in this research and personal life. It is an honor to work and study under his guidance.

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Contributors

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NOMENCLATURE

Layer 1: Top aquifer

Layer 2: Confining layer/Aquitard

Layer 3: Bottom aquifer

Zone 1: Top aquifer in reference to Zone Budget analysis

Zone 2: Confining layer in reference to Zone Budget analysis

Zone 3: Bottom aquifer in reference to Zone Budget analysis

Zone 4: Pumping well in reference to Zone Budget analysis

Zone 5: Abandoned well in reference to Zone Budget analysis

Zone 6: Abandoned well in reference to Zone Budget analysis

Zone 7: Abandoned well in reference to Zone Budget analysis

m : Meters

m/day : Meters per day

m^3/day : Cubic meters per day

D : Distance between the pumping well and abandoned well (m)

h_0 : Initial hydraulic head (m)

h : Hydraulic head (m)

h_0-h : Drawdown (m)

B' : Aquitard/Confining layer thickness (m)

B_1 : Bottom aquifer thickness (m)

Q_p : Pumping rate (m^3/day)

Q_{AW} : Leakage rate (m^3/day)

t : time (days)

$K_{1(x,y)}$: Horizontal conductivity in Layer 1 (m/day)

$K_{1(z)}$: Vertical conductivity in Layer 1 (m/day)

$K_{2(x,y)}$: Horizontal conductivity in Layer 2 (m/day)

$K_{2(z)}$: Vertical conductivity in Layer 2 (m/day)

$K_{3(x,y)}$: Horizontal conductivity in Layer 3 (m/day)

$K_{3(z)}$: Vertical conductivity in Layer 3 (m/day)

r : Abandoned well radius (m)

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1. INTRODUCTION

1.1. Motivation

There are an estimated three million abandoned wells in the United States, with approximately 450,000 of those becoming abandoned between the years 1859 and 1930. A large majority of these wells are either in unknown locations or inaccessible due to insufficient documentation that occurred in the early years of the oil and gas industry (Gass et al., 1977; Avci, 1994; Javandel et al., 1988). In Texas, of the 1.1 million wells drilled since 1866, more than 75% have become abandoned (Gass et al., 1977, Brownlow et al., 2016).

With numerous state regulatory agencies having terminologies and regulations that vary, it is often difficult to define an abandoned well. Townsend-Small et al. (2016) described three categories that are usually applied when defining an abandoned well:

- 1) wells without recent production;
- 2) wells without a responsible operator; or
- 3) wells that have been plugged with cement or a mechanical plug to prevent the migration of fluid.

These boreholes, however, are strictly oil and gas-related and do not include domestic water wells, monitoring wells, and boreholes drilled for geotechnical or geological purposes, which can also act as a conduit for fluid migration (Hibberd, 1992; Lacombe et al., 1995).

Abandoned and improperly plugged boreholes pose numerous environmental concerns and are a common feature at sites where contaminants are found in the subsurface. This is due to the borehole acting as a conduit that allows a cross-formational flow of groundwater and transmission of contaminants between aquifers that would otherwise be separated by a continuous aquitard (Lacombe et al., 1995). Previous studies (Avci, 1992; Avci 1994; Lesage et al., 1991; Lacombe et

al., 1995; Silliman & Higgins, 1990; Wang, 2020) discussed or created models for the transport and or contamination of groundwater through abandoned boreholes and will be discussed in the *Literature Review* section of this thesis.

1.2 Objectives

The objective of this study is to simulate, using numerical models, cross formational flow, and drawdown around abandoned boreholes when a pumping well is introduced to the system and evaluate the significance and impact. A total of six scenarios will be created and run under similar but various conditions and parameters. The model consists of three layers, of which two are transmissive units and one interposed thin confining layer. A pumping well was screened across either the top or bottom aquifer, and a single abandoned well set at a determined distance from the pumping well (d) for each of the seven models ran within each scenario. The first set of scenarios (one and two) will examine the effects of the boreholes with a pumping well pumping at a constant rate in a single aquifer. The second set of scenarios (three and four) will be set up similarly to the previous, but the pumping rate will gradually increase over time. The last set (five and six) will be identical to scenarios one and two, but the thickness of the aquitard will increase.

1.3 Organization

This thesis is organized into six sections. The first section is the Introduction, which includes the motivation, objective, and organization of this thesis. The second section will be a literature review of similar studies that have been conducted. The third section, Model Setup, and Data Collection will introduce how the models were set up and the data collection process. The fourth section, Model Settings by Category, will discuss the major model categories analyzed and include the models' settings and the corresponding figures. The fifth section, Data

Analysis, and Discussion will summarize and analyze the results collected from the numerical models. The last section, Conclusion, will be a summary of the research and contribution.

2.0. LITERATURE REVIEW

2.1. Previous Studies

There have been numerous studies conducted on this emerging environmental issue to better understand how the introduction of an abandoned borehole affects groundwater flow and contaminant transport. Many researchers (i.e., Avci, 1992, Avci, 1994, Nordbotten et al., 2004, and Silliman and Higgins, 1990) developed analytical models to evaluate leakage rates through abandoned borehole wells. Celia et al. (2005) developed a semi-analytical model to model critical leakage pathways in a risk assessment framework. Wang (2020) developed numerical models to evaluate leakage and fluid transport involving high injection and abandoned wells.

2.1.1. Analytical Models.

Many numerical models have been developed over the years to determine the effect that abandoned wells have on cross-formational flow, leakage, and contaminant transport. Gass et al. (1977) initially talked about the impacts of groundwater contamination due to improperly plugged/unplugged boreholes in the United States. As stated, “These wells are not normally sources for groundwater contamination, but certainly can act as vertical conduits in which contaminants can travel if not properly plugged or left unplugged” (Gass et al. (1977)). Silliman and Higgins (1990) developed a steady-state solution that allows quantification of the volumetric flow rate that occurs within an abandoned borehole that fully penetrates two confined aquifers as well as, modifying the solution to apply to the flow between an unconfined aquifer and confined aquifer. By modifying the Thiem equation (Bear, 1979) a solution was derived to account for the conservation of mass between two aquifers and well losses. By estimating the hydraulic conductivity, thickness, radius of influence, and effective radius of both aquifers this solution can serve as a useful tool where the potential for vertical communication through wells could be

estimated without the installation of expensive monitoring wells. Avci (1992) investigated the vertical communication between two aquifers caused by an improperly plugged borehole drilled through an impermeable layer separating two aquifers. In this analysis he was able to derive an expression that could be used to (1) perform a sensitivity analysis for the rate of flow through the borehole with varying values of radii of influence and flow resistance through the borehole; or (2) to predict the flow rate between the aquifers if additional data are collected in the vicinity of the borehole. Avci (1994) evaluated transient flow rates through abandoned wells and improperly plugged boreholes and the resulting hydraulic head distributions when (1) artificial gradients are created by an injection well operating in one of the two aquifers and (2) natural hydraulic head differences are present between two confined aquifers. This investigation was conducted by solving the groundwater flow equations in the confined aquifers coupled by the flow through the borehole/abandoned well to conduct a case study involving contamination leakage through the conduits caused by the operation of deep waste injection wells. The results of this study indicated that hydraulic resistance created by the upper aquifer to the flow occurring through the conduit could not be ignored, otherwise, errors would occur in the prediction of leakage rates. Nordbotten et al. (2004) developed a simple solution to evaluate the leakage in a multi-aquifer and/or a system with multiple passive wells. This simplified solution was compared to the full solution defined by Avci (1992) and produced excellent results.

2.1.2. Semi-Analytical Models and Numerical Models

Based on the work conducted by Nordbotten et al. (2004), Celia et al. (2005) developed a semi-analytical model that investigated five major components of injection and leakage dynamics:

1. Solutions for injection dynamics and CO₂ plume evolution;

2. Solutions for leakage along wells;
3. Solutions for upconing around leaky wells;
4. Determination of secondary plumes of CO₂ that invade intervening layers, fed by leakage along a well and;
5. Post injection plume behavior.

These five solutions combined could provide a model for CO₂ injection in deep saline aquifers and leakage along existing wells into overlying aquifers. To test this model Celia et al. (2005) analyzed a 900 km² area in Edmonton, Alberta, Canada. In the study area, 503 wells were identified allowing 13 different geologic layers to be determined. Seven layers were deemed to be permeable and remaining impermeable. The wells were then assigned a permeability using a bimodal random distribution. The lower mode corresponds to a well with intact cement while the higher corresponded to degraded material. The simulation time was computed for 30 years of injection and redistribution. This simulation had the ability to be run on a computer desktop allowing for the model to be considered “Monte Carlo” meaning many parameters and variables could be tested to evaluate the response of the system. It was determined that as time increased more of the existing wells came in contact with the injection plume, and the amount of mass leaking along with the wells into the upper formation increased as well.

Wang (2020) conducted a study similar to the one presented here. However, Wang (2020) analyzed fluid transport under high-volume fluid injection near abandoned wells. The study examined six distinct categories:

1. Well distance (D) when the conductivity ratio between layers 3 and 2 is equal to 10
($R_{3/2}=10$)
2. Well distance (D) at $R_{3/2}= 1000$

3. Well distance (D) at $R_{3/2} = 100000$
4. Well diameter (r)
5. Injection rate (Q_r) and,
6. Abandoned well penetration

In previous studies, these parameters were unstudied or overlooked. Wang (2020) incorporated these into the research and found the following:

1. The well distance and leakage rates were negatively correlated, meaning the further away the abandoned well the less leakage the abandoned well experienced.
2. The conductivity ratio, injection rate, and well diameter were all positively correlated with the leakage rate
3. If the abandoned well did not penetrate or have openings in the injection layer the potential for leakage was significantly reduced.

This study investigates how abandoned wells effects drawdown and fluid flow in a three-layer system when a pumping well is introduced in a three-layer system but differs from Wang (2020) in many ways. While Wang (2020) investigated the 6 distinct categories listed above, this study investigated the abandoned well at various distances with a pumping well set in either the top or bottom aquifer, a gradually increasing pumping rate, and how an increase in the thickness of the confining layers all affected the drawdown, flow direction, and rate of flow. A pumping well is utilized and is set in either the top or bottom aquifer depending on the scenario and fluid is pumped at a rate of $500 \text{ m}^3/\text{day}$ or gradually increased by $250 \text{ m}^3/\text{day}$ every 250 days until the end of the simulation when $t=1000$ days. In Wang (2020) an injection well was used and only injected into the lower aquifer at a constant rate of $5000 \text{ m}^3/\text{day}$ for $t=10000$ days. The setup of the model also differs while both are a three-layer system with an upper aquifer, confining layer,

and bottom aquifer, the thicknesses of the layers differ. In this study, the upper aquifer has a thickness of 10 m, the confining layer a thickness of 0.2 or 0.6 m, and the bottom aquifer with a thickness of 20 m whereas in Wang (2020) the thickness is 8 m for both the upper and lower aquifer and the confining layer being 4 m thick.

3. MODEL SETUP AND DATA SELECTION

3.1. Conceptual Model and Setup in Visual MODFLOW Classic

In the real world, geological formations are typically complex systems which cause them to be anisotropic and non-homogenous, making it nearly impossible to model specific groundwater flow pathways. When solving groundwater flow equations, analytically or numerically, geologic settings are typically simplified. Waterloo Hydrogeologic's Visual MODFLOW Classic (MODFLOW) can solve heterogeneity models, the degree of complexity is restricted by the nature of the finite difference method. The pumping problem is simplified to observe the general trend when parameters are changed.

There are multiple layers present in most shallow aquifer systems, an unconfined unit, an aquitard, and a confined unit. For this study, the conceptual model contains three layers: The unconfined (upper/top) aquifer (zone 1) with a high to moderate hydraulic conductivity ($K_1=20$ m/d) with no confining beds between the saturation zone and surface, the aquitard (zone 2) has a very low hydraulic conductivity ($K_2=0.001$ m/d) that reduces vertical communication between other formations, and the confined (bottom/lower) aquifer (zone 3) is a high to moderate hydraulic conductive ($K_3= 10$ m/d) layer that allows for water movement. Figures 3-1 and 3-2 show a schematic diagram describing the conceptual models when pumping from both aquifers, respectively.

With the model being simplified in MODFLOW, several assumptions need to be made:

- 1) Darcy's law is applied, meaning that the rock and soil are saturated, flow is laminar and continuous.
- 2) All formations of the model are homogenous and isotropic.
- 3) All formations are parallel to each other and the datum.

- 4) There are no other vertical, or horizontal conduits within the model besides the one abandoned well and one pumping well.
- 5) The pumping well is set in only one layer at a time. The pumping well will remain in the same location in all models (i.e., $x=1000\text{m}$ and $y=1000\text{m}$). The abandoned well will change locations in the x -direction but will have the same y -value as the pumping well ($y=1000\text{ m}$).
- 6) The fluid pumped is water and does not contain any additives, meaning the properties will not change over time or space.

With these assumptions, the models are run for $t=1000$ days under steady-state conditions. The extent of the model is 2000 m long, 2000 m wide, and 30.2 m or 30.6 m high, depending on the scenario run, and aligns with the x -axis, y -axis, and z -axis within the Cartesian coordinate system. This research only considers three layers that have been set parallel to each other in Visual MODFLOW with thicknesses ranging from 10 m, 0.2 m or 0.6 m, and 20 m for layer 1, layer 2, and layer 3, respectively (Figure 3-3). The model is divided by perpendicular rows and columns resulting in grids that are cuboids and have distinct sizes depending on the distance between the abandoned well, pumping well, and observation well.

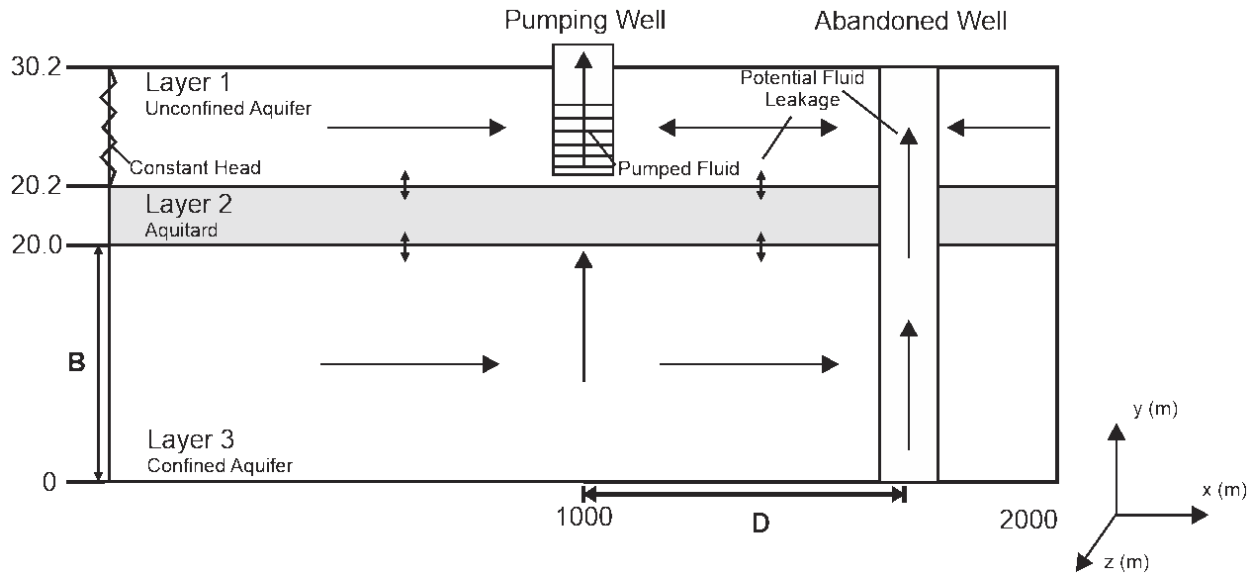


Figure 3-1: Schematic diagram of fluid leakage when pumping well is set in an unconfined aquifer and abandoned well present (not drawn to scale)

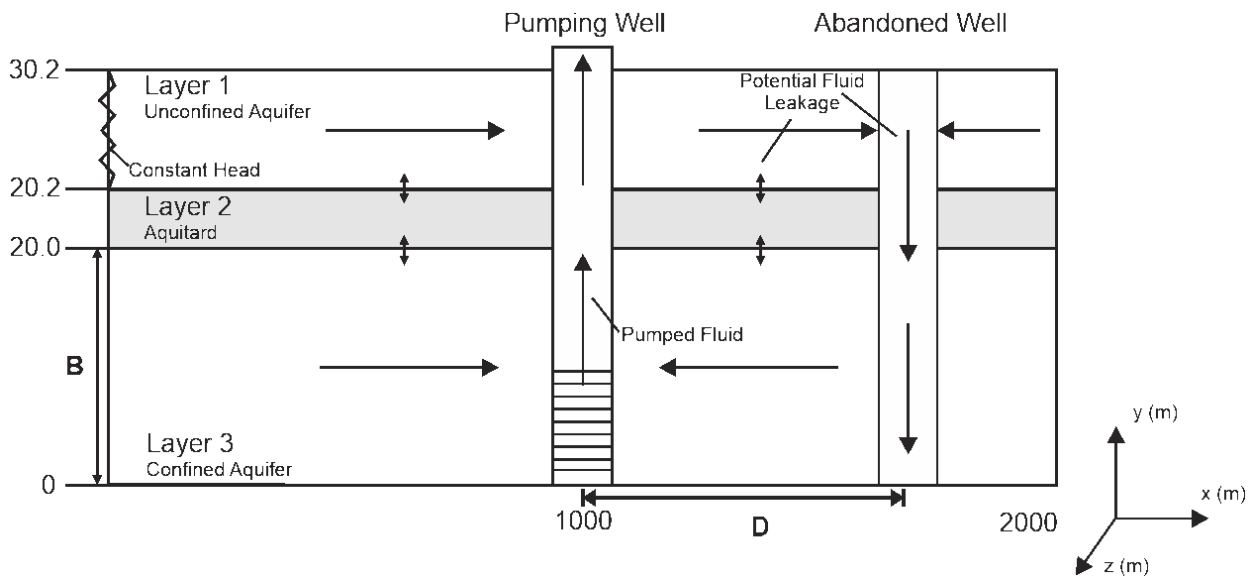


Figure 3-2: Schematic diagram of fluid leakage when pumping well is set in a confined aquifer and abandoned well present (not drawn to scale)

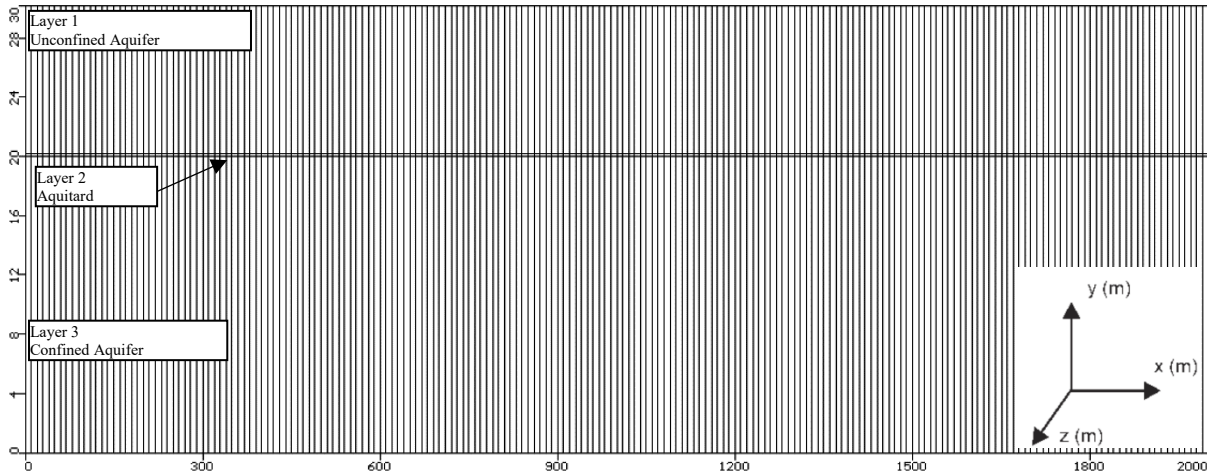


Figure 3-3: Cross-sectional view of the schematic diagram in MODFLOW.

The three-dimensional (3-D) model has three hydraulic conductivity directions denoted as K_x , K_y , and K_z , where each subscript represents an axis in the coordinate system (i.e., x , y , and z). The origin of the Cartesian coordinate system is at the left bottom corner of Figure 3-4, located at the base of the (lower) confined aquifer. In this research, the lateral conductivity (K_x and K_y) is equal but has unique values for each layer. The vertical conductivity (K_z) was calculated to be 20% of lateral conductivity for the upper and lower aquifers (i.e., in the bottom aquifer $K_{x,y} = 20$ m/d while $K_z = 4$ m/d).

The pumping well was set up with the default well settings in MODFLOW. A pumping rate of $Q_p = -500$ m³/day was assigned for four out of the six models, whereas the other two had a pumping rate that gradually increased by intervals of 250 m³/day starting at $Q_p = -250$ m³/day and ending $Q_p = -1000$ m³/day. The pumping well's fixed location is at (1000 m, 1000 m), shown in Figure 3-4, and only penetrates all three layers when pumping from layer 3; otherwise, it only penetrates layer 1, as seen in Figures 3-1 and 3-2.

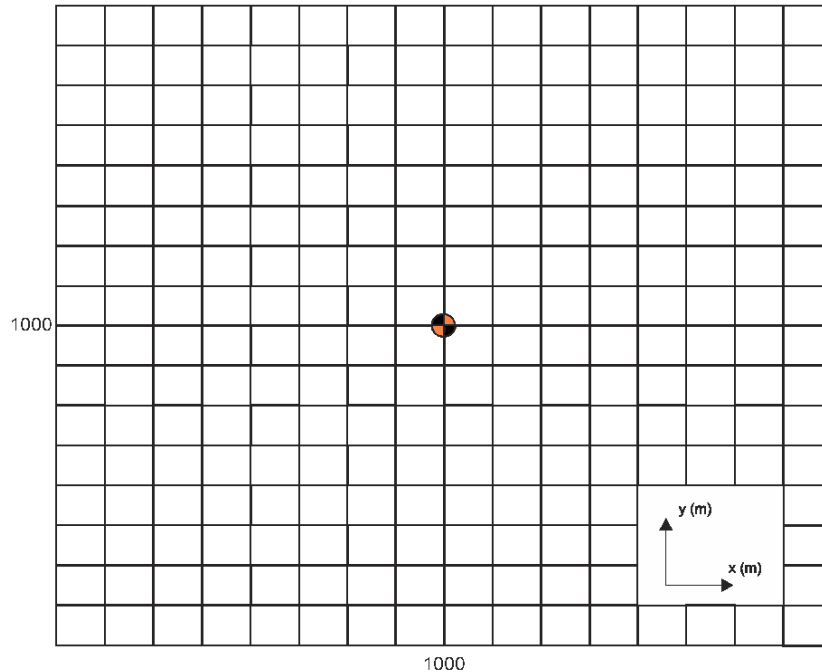


Figure 3-4: Diagram showing the fixed location of the pumping well at (1000,1000).

MODFLOW does not have a function to set up abandoned wells. The abandoned well was represented by creating a highly conductive cuboid. This was achieved by vertically lining up three grid cells in each layer and assigning a high conductivity value (1000 m/d). These grids resemble an open conduit or vertical well. The typical diameter of an oil and gas borehole is 90 cm, telescoping down to a size of 17.78 cm (Shephard, 2009). Due to the extent and limitations of MODFLOW, a well could only be represented using a grid measuring 5m by 5m, creating a parallelogram rather than a cylinder to represent the abandoned well.

Head observation wells, referred to as MW throughout this thesis, were utilized in Visual MODFLOW to observe drawdown (h_0-h) measurements where h_0 is the initial uniform head across the system, 10 m in the top aquifer and 20 m in the bottom aquifer, and h is the hydraulic head at a later time at a designated observation well. A total of eight MWs are aligned in a horizontal line parallel with the pumping well and abandoned well. The wells are set up with the default settings in MODFLOW and screened 7.5 m in layer 1 and layer 3, respectively for each

scenario. Each MW is set at various distances away from the pumping well, ranging from 20 m to 700 m away.

The Zone Budget engine in MODFLOW is used to observe fluid pathways and exchange in distinct locations. With this function, the entire model is divided into subregions, each having a specific zone number. In this research, 7 different zones were identified (Figure 3-5); this allows for the calculation of flow between the adjacent layers in the model.

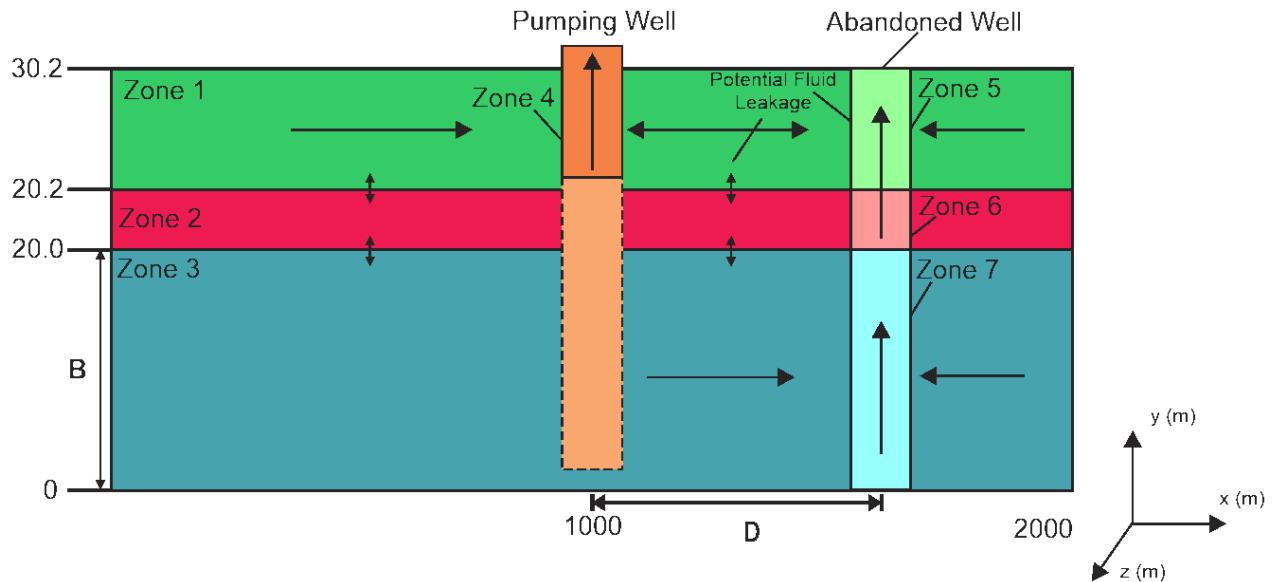


Figure 3-5: Zones assigned in the zone budget diagram notice the different shades of orange the lighter shade depicts when the pumping well is set in layer three of the system. (Not to Scale)

Zones 1, 2, and 3 are located in each corresponding layer, excluding the pumping well and abandoned well grids. Zone 4 is located within the pumping well grid, whereas zones 5, 6, and 7 are located in layers 1, 2, and 3 of the abandoned well grid. The fluid leakage rate (Q_C) is represented by the flow between the zones adjacent to the confining layer (zone 2) depending on the pumping well's location, where flow through zones 5 or 7 is the amount of fluid flow (Q_A) coming through the abandoned well into either the upper or lower water zone depending on the scenario.

3.2. Definition of Model Scenarios

In this research, several parameters are likely to influence the pumping well's drawdown and fluid leakage observed in the abandoned wells. To identify how each parameter affects drawdown and leakage, multiple models were created and run. To better compare the results, each parameter was broken down into different scenarios. To control the variables and avoid confusion throughout the project, a new model was created each time the variable was changed and given a unique name with the initial number corresponding to the scenario and the second number to the model (i.e., Model 1.1, Model 2.3, etc.).

In this research, four key parameters impacting the drawdown and fluid leakage through the abandoned well were selected, and a total of six different scenarios are simulated and summarized in Table 3-1:

- 1) Scenario 1: Well-distance (D) in layer 1 with an aquitard thickness (B') equal to 0.2 m. Well distance is defined as the distance between the pumping well and the abandoned well. This scenario evaluates the effects of D when the location of the abandoned well is located at various distances away from the pumping well.
- 2) Scenario 2: Well distance in layer 3 with a $B'=0.2$ m. Similar to scenario 1, this scenario evaluates the variation of D , but when pumping occurs in the bottom aquifer.
- 3) Scenario 3: Variable pumping rate (Q_p) in layer 1. The pumping rate is the volume at which fluid is pumped from layer 1 per unit of time. The more fluid pumped the higher potential of fluid leakage is to occur, in this scenario, the relationship between fluid leakage through the abandoned well and the pumping rate is examined.

- 4) Scenario 4: Variable pumping rate (Q_p) in layer 3. Similar to scenario 3, this scenario will test the relationship between fluid leakage and pumping rate, but with the pumping well set in the bottom aquifer.
- 5) Scenario 5: Aquitard thickness (B'). The thickness of the aquitard will be increased to a thickness of 0.6 m, triple the original thickness of the previous scenarios. Pumping will occur in Layer 1.
- 6) Scenario 6: Aquitard thickness (B'). Similar to scenario 5 the thickness of the aquitard will be triple the initial thickness (0.6 m); however, pumping will occur in the bottom aquifer.

Table 3-1: Table of tested parameters for each scenario (1-6)

Scenario No.	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Pumping Layer	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2
D (m)	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500
B' (m)	0.2	0.2	0.2	0.2	0.6	0.6
Q_p (m³/day)	500	500	250. 500. 750. 1000	250. 500. 750. 1000	500	500

These six scenarios were selected to investigate the effects they had on drawdown and fluid leakage. Scenarios 1 and 2 were chosen to observe the effects of distance between the abandoned well and the pumping well. Previous studies, such as Wang (2020), showed that as the distance between the injection well and abandoned well increased the fluid leakage rates decreased. This current study wanted to see if those findings would be consistent and to what effect if any, the location of the screened interval made any difference. Scenarios 3 and 4 were investigated to determine the effects the pumping rate had on the system. In multiple studies, the rate at which injection or pumping occurred seemed to be a constant number. In this study, it was worth the

observation as it could give better insight into what role the rate plays in the fluid leakage rate and drawdown with a nearby abandoned well. Lastly, in scenarios 5 and 6, the thickness of the confining layer was investigated. To observe the effects thickness had on fluid leakage rates through the confining layer as well as if increasing the aquitard thickness would lead to a higher or lower leakage rate through the abandoned well. In previous studies, this is not well studied. This study tripled the thickness of the original model and observed the effects that it had on the system.

3.3. Results and analysis methods

The numerical models are run in MODFLOW using the MODFLOW 2000 engine. This version is widely applied and supports all the packages needed for this research needs. After running the models, the outputs were recorded and analyzed in Microsoft Excel.

The numerical model needs several input parameters and with field data being limited in both quality and type, this constricts the possibility of introducing real-world cases. Thus, a range of values for parameters was retrieved from databases and journals to make the models reasonable.

The hydraulic conductivity had multiple values depending on the layer. For the top aquifer, all models had a value of $K_{1(x,y)} = 20$ m/d and $K_{1(z)} = 4.0$ m/d, where the subscript number represents the number of layers, and the subscript letters (such as x , y , and z) represent the principal directions of the hydraulic conductivities hereinafter. Whereas, the conductivity for layer 2, the confining unit, had a value of $K_{2(x,y,z)} = 0.001$ m/d in all three coordinate directions. Lastly, in layer 3, the confined aquifer, the conductivity values of $K_{3(x,y)} = 10$ m/d and $K_{3(z)} = 2.0$ m/d. Hydraulic conductivity values of different sites vary by a wide range, which could be anywhere from less than a meter to hundreds of meters per day (Warren et al., 1996).

4. MODEL SETTINGS BY SCENARIO

4.1. Scenario 1

In this set of models, the impact of (D) is evaluated on the case of a pumping well installed in the first conductive layer. Six different D values are evaluated and compared to a base model that does not contain an abandoned well in the system. The distance between the pumping well starts at 20 m and doubles each iteration until a distance of 160 m is reached after that point two distances of 250 m and 500 m are evaluated. The drawdown is defined as the reduction of hydraulic head observed in the monitoring wells installed in the system at various distances away from the pumping well. The leakage rate computed through the bulk confining layer (the aquitard) is from zone 3 to zone 2, then from zone 2 to zone 1, or vice versa. The leakage rate computed through the abandoned well is defined as the fluid flow rate from zone 3 through the abandoned well (zones 5, 6, and 7), and then from the abandoned well to 1, or vice versa. Upon running a time series and zone budget analysis, both the drawdown (h_0-h) and fluid leakage rate (Q_L) are recorded, respectively.

4.2. Scenario 2

Similar to the previous scenario, this set of models will evaluate the impact of well distance (D) on a pumping well, however, the well will be installed in the third conductive layer. Six different D values will be evaluated and compared to a base model.

4.3. Scenario 3

In this scenario, the pumping rate (Q_p) will be evaluated. In the previous set of scenarios, Q_p was a set constant rate of 500 m³/d. In this case, the pumping rate will start at a rate of 250 m³/d and gradually increase to 1000 m³/d every 250 days in the simulation until $t=1000$ days. There will be 7 different models created as in the previous scenarios where the distance between the pumping well and the abandoned well is changed.

4.4. Scenario 4

Similar to scenario 3, this set of models involves a variable (Q_p) that begins at a rate of 250 m³/d and increases every 250 days in increments of 250 m³/d until $t=1000$ days. In this scenario, however, the pumping well is set in the third conductive zone of the system. Like the previous scenarios, there will be 7 different simulations conducted each involving an abandoned well located at a different (D) away from the pumping well.

4.5. Scenario 5

In this scenario, the thickness of the aquitard (B') will be evaluated. In the previous cases, the aquitard's thickness was 0.2 m. In this scenario, the thickness will be tripled to a thickness of 0.6 m. The rest of the parameters will be set up similar to that of scenario 1, where the pumping rate is set at a constant of 500 m³/d and located in the first conductive zone of the system.

4.6. Scenario 6

Scenario 6 will be similar to that of scenario 5, where (B') will be evaluated. The pumping well has a constant rate of 500 m³/d; however, the well will be set in layer 3. The remaining parameters will be similar to that of scenario 5.

Table 4-1 below, summarizes this into a table showing a list of all the constant and variable parameters used throughout the study.

Table 4-1: List of parameters for each scenario (1-6).

Scenario No.	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Pumping Layer	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2
D (m)	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500	20, 40, 80, 160, 250, 500
h_0 (m)	10	10	10	10	10	10
B' (m)	0.2	0.2	0.2	0.2	0.6	0.6
B_I (m)	20	20	20	20	20	20
Q_p (m³/day)	500	500	250. 500. 750. 1000	250. 500. 750. 1000	500	500
t (days)	1000	1000	1000	1000	1000	1000
$K_{I(x,y)}$ (m/day)	10	10	10	10	10	10
$K_{I(z)}$ (m/day)	2	2	2	2	2	2
$K_{I(x,y)}$ (m/day)	0.001	0.001	0.001	0.001	0.001	0.001
$K_{I(z)}$ (m/day)	0.001	0.001	0.001	0.001	0.001	0.001
$K_{I(x,y)}$ (m/day)	20	20	20	20	20	20
$K_{I(z)}$ (m/day)	4	4	4	4	4	4
K_{AW} (m/day)	1000	1000	1000	1000	1000	1000
r (m)	5	5	5	5	5	5

5. RESULT ANALYSIS AND DISCUSSION

5.1. Results analysis

The drawdown and leakage rate results are collected upon running the MODFLOW 2000 and Zone Budget engines. The results are recorded and tabulated in Appendix A using Microsoft Excel. Drawdown curves and fluid leakage charts are presented in Appendix B and Appendix C, respectively.

5.1.1. Scenario 1: Impact of distance and a constant pumping rate from the first layer

In the first model of scenario 1, Model 1.1, no abandoned wells are present and serve as a background model to base the abandoned wells' effects on the system when present. In layer 1, 2.08 m of drawdown was observed in MW1, which was located 10 m away from the pumping well, and 0.60 m, the least amount of drawdown was seen MW8 located 700 m away from the pumping well. In layer 3, the MW that experienced the most drawdown was MW1 with 0.89 m of drawdown, whereas MW8 experienced 0.62 m. Fluid leakage observed in this model showed the further away from the pumping well fluid traveled from the top aquifer into the bottom aquifer through the aquitard; however, as the abandoned well moved closer to the pumping well, the direction of flow changed and started flowing from zone 3 into zone 1. The fluid leakage rate at $t=1000$ days was approximately $382.9 \text{ m}^3/\text{d}$. Figure 5-1 depicts the cross-sectional view of the model showing the drawdown and direction of flow. The reason the cross-formation flow changes direction at different radial distances from the pumping well can be understood as follows. First, for regions near the pumping well, which is located at the top aquifer in Figure 5-1, an upward cross-formation flow will occur. This is because the well pumping will drop the hydraulic head near the wellhead, thus generating an upward hydraulic gradient near the pumping well, which will drive water flow from the

lower aquifer to through the confining layer to the upper aquifer. This is why the cross-formation flow direction near the pumping well is upward. Second, for regions far away from the pumping well, the influence of the pumping well is reduced, and then the hydraulic conductivity contrast between the top and lower aquifer will come to play a dominant role in affecting the flow direction. As the lower aquifer's hydraulic conductivity is double of its counterpart of the top aquifer, groundwater tends to flow downward from the less permeable upper aquifer into the more permeable lower layer first, then being transmitted horizontally toward the location of the pumping well, and eventually flows upward when approaching the pumping well. This kind of phenomenon will prevail over almost all the cases investigated in this thesis as long as the pumping well is located in the upper aquifer.

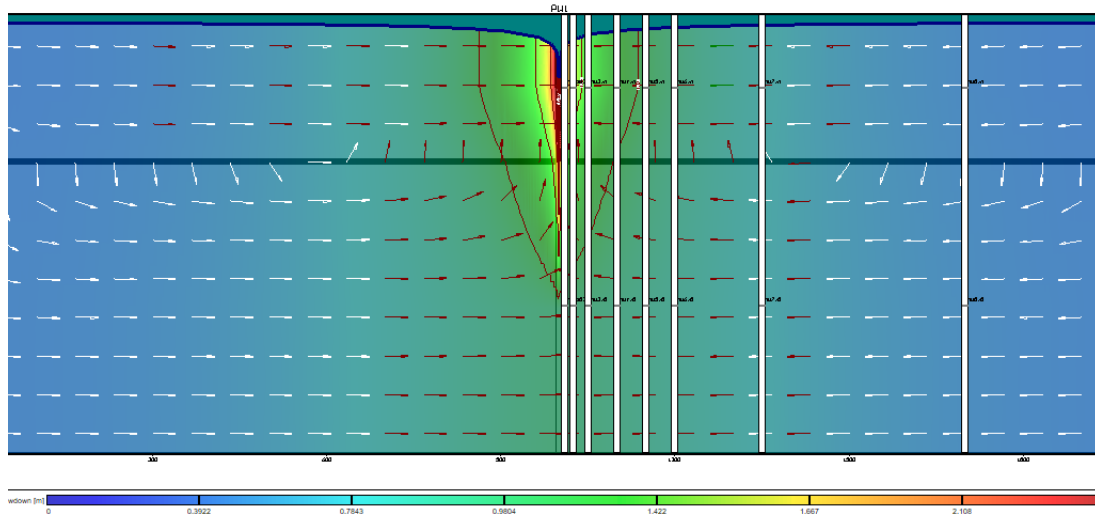


Figure 5-1: Cross-Sectional view of Model 1.1 depicting groundwater flow and drawdown.

Model 1.2 of Scenario 1 introduces the first abandoned well located 20 m away from the pumping well. In layer 1 drawdown observed in the closest observation well, MW1 had a value of 1.71 m whereas, in the furthest observation well, MW8, the reading was 0.61 m.

This was a decrease of 0.38 m for MW1 and an increase of 0.003 m for MW8 when

compared to results from Model 1.1, equating to a drawdown percent decrease of 18.1% and a drawdown increase of 0.49% for MW1 and MW8, respectively. In layer 3 of the model, the drawdown observed in the nearest MW was 1.178 m and 0.62 in the furthest. The drawdown percent difference between the readings with the abandoned well and the base model increased 32.9% and 0.64%, respectively. The total amounts of fluid leaked through the aquitard were 293.7 m³/d. The fluid leakage that occurred due to the abandoned well was 122.01 m³/d. This cross-formational flow of water that was pumped up from layer 3 into layer 1 due to the abandoned well can be observed in the cross-section (Figure 5-2) as the cone of depression is no longer symmetrical near the location of the abandoned well.

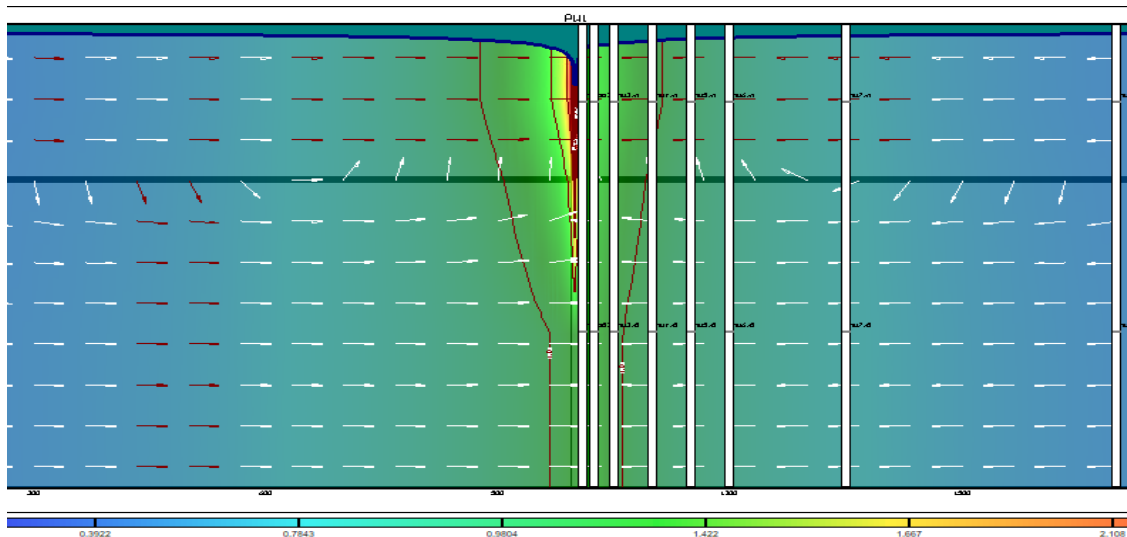


Figure 5-2: Cross-sectional view of Model 1.2 showing drawdown and groundwater flow direction

Model 1.3 of Scenario 1 has an abandoned well located 40 m away from the abandoned well. In layer 1 MW1 experienced the most drawdown with a value of 1.94 m while MW8 experienced 0.61 m. In comparison with the base model, the drawdown percent change in layer 1 decreased by 6.77% for MW1 and increase by 0.33% for MW8. For layer

3 of the model, the monitoring well that experienced the most drawdown was MW2 located 25 m away from the pumping well and 15 m away from the abandoned well. MW2 saw a drawdown of 1.04 m, a difference of 0.16 m from the base model, and MW8 observed a drop of 0.62 m. The drawdown percent increases for the observations made in layer 3 are 18.5% for MW2 and 0.49% for MW8. Similar to what was observed in the previous models, fluid leakage flowed from layer 1 to layer 2. The total amount of fluid leaked through the aquitard was 321.82 m³/d. The amount of fluid that leaked through the abandoned well from layer 3 into layer 1 was 80.12 m³/d. Figure 5-3 represents the fluid flow direction as well as the drawdown observed from the model.

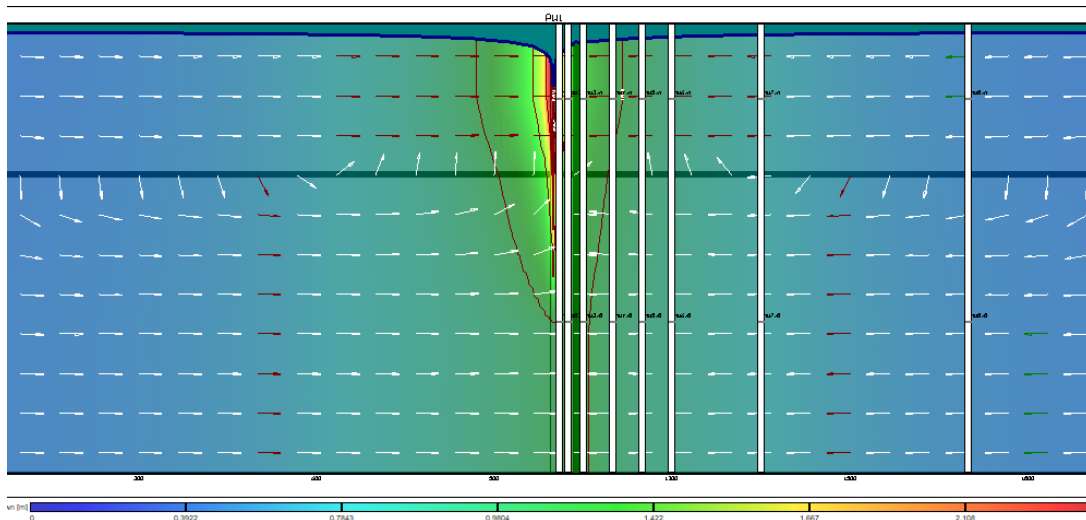


Figure 5-3: Cross-Sectional view of Model 1.3 showing groundwater flow direction and drawdown

Model 1.4 has an abandoned well located 80 m away from the pumping well. The drawdown observed in this model showed that in layer 1 MW1 had a drawdown of 2.04 m and MW8 had a drawdown of 0.61 m. In layer 3, MW3, which is 50 m away from the pumping well, experienced the most drawdown of 0.93 m whereas MW8 had a drawdown of

0.62 m. The drawdown percent differences in layer 1 for MW3 and MW8 decreased by 2.11% and increase by 0.33%, respectively. For layer 3 of the model, the drawdown percent differences increased for MW3 is 7.59% and for MW8 is 0.32%. Fluid leakage rates for the model indicate 350.11 m³/d flowed through the aquitard. The rate at which fluid leaked through the abandoned well from layer 3 into layer 1 was 45.01 m³/d. In this model, it should be noted that a groundwater divide formed around the location of the abandoned well in layer 3, which can be seen in the cross-sectional view (Figure 5-4) and the overview of the layer (Figure 5-5).

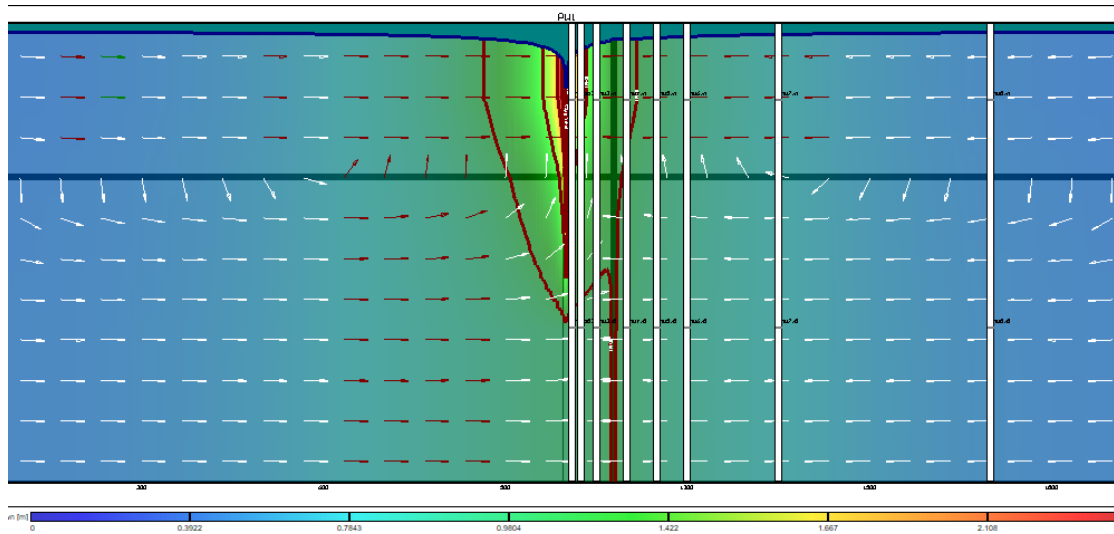


Figure 5-4: Cross-sectional view of Model 1.4.

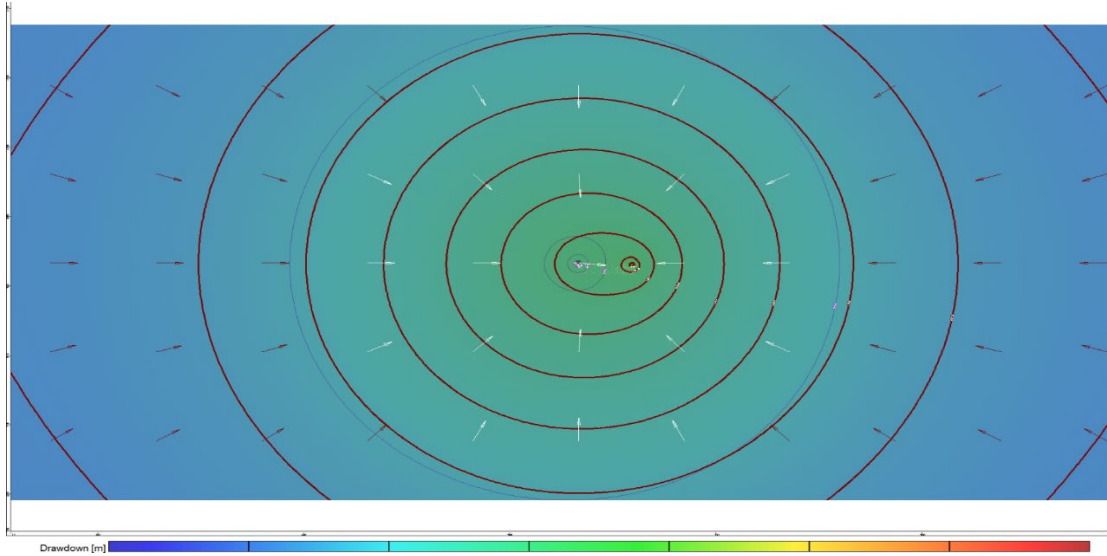


Figure 5-5: Overview of Layer 3 showing the groundwater divide formed over the location of the abandoned well.

Model 1.5 has an abandoned well located 160 m away from the pumping well. Drawdown observed in this model showed that in layer 1, 2.02 m drawdown occurred in MW1 whereas in MW8 a drawdown of 0.601 m was observed. In layer 3 MW1 observed the most drawdown with a measurement of 0.88 m while MW8 experienced the least amount of drawdown with 0.62 m. The drawdown percent differences for layer 1 decreased 2.93% and 0% for MW1 and MW8, respectively. In layer 3, the drawdown percent differences for MW1 and MW8 decreased 0.68% and 0%, respectively. Zone budget analysis indicated that the fluid leakage rate between the impermeable layer from Zone 1 to Zone 3 was 371.24 m³/day. The leakage rate that occurred through the abandoned well was 17.53 m³/day. Figure 5-6 shows the cross-sectional view of the model demonstrating the direction of flow in the model.

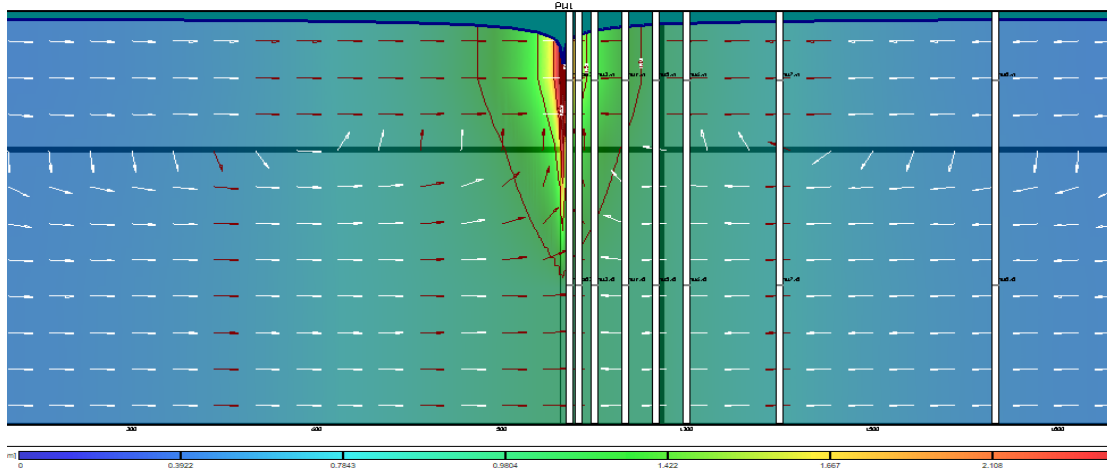


Figure 5-6: Cross-sectional view of Model 1.5 depicting the flow of groundwater.

Model 1.6 contains an abandoned well 250 m away from the pumping well. Drawdown observations made in layer 1 showed that the MW1 experienced 2.07 m of drawdown while MW8 experienced 0.61 m of drawdown. In layer 3, drawdown measurements for MW1 and MW8 were 0.89 m and 0.62 m, respectively. The drawdown percent change in layer 1 showed that there was a decrease of 0.53% in MW1 and 0% in MW8. In layer 3, the drawdown percent changes indicated increases of 0.11% and 0% for MW1 and MW8, respectively. Fluid leakage rates for this model indicated that 379.5m³/day flowed through the confining layer. Fluid leaked through the abandoned well leaked at a rate of 6.51 m³/day from layer 3 into layer 1. Figure 5-7 shows the cross-sectional view of the model along with the flow direction of groundwater.

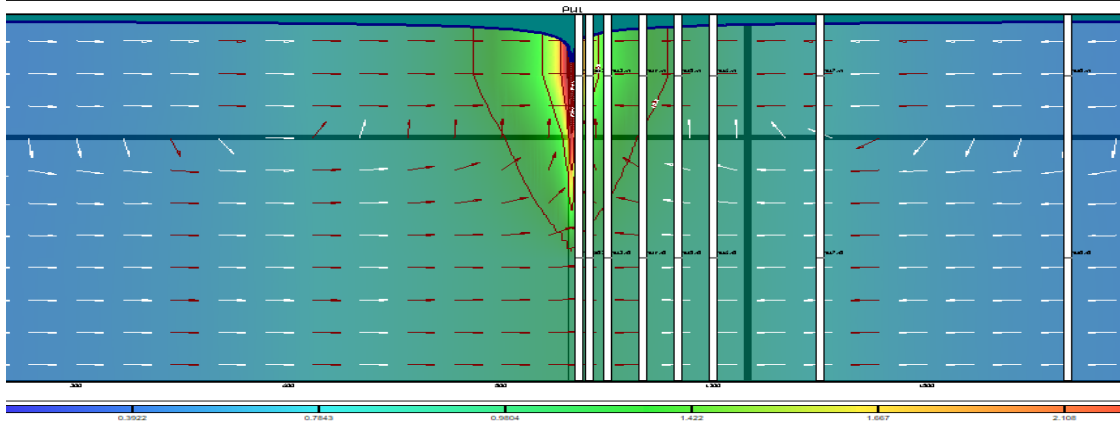


Figure 5-7: Cross-sectional view of Model 1.6.

Model 1.7 contains an abandoned well located 500 m away from the pumping well. Drawdown measurements in layer 1 showed that MW1 experienced 1.96 m of drawdown and MW8 0.60 m, respectively. In layer 3, MW1 saw 0.89 m of drawdown while MW8 had a measurement of 0.62 m. The drawdown percent changes indicated a decrease of 4.80% for MW1 and a decrease of 0.17% for MW8 in layer 1. The monitoring wells in layer 3 indicated a drawdown percent change of 0% for MW1 and 0.16% for MW8. Leakage rates for the model showed a rate of 382.58 m³/day flowed through the confining layer into the top aquifer. Fluid leaked through the abandoned well at a rate of 0.76 m³/day from layer 1 into layer 3. Figure 5-8 shows a cross-sectional view of the model as well as the direction of flow. Note that the flow within the abandoned well flows from layer 1 into layer 3.

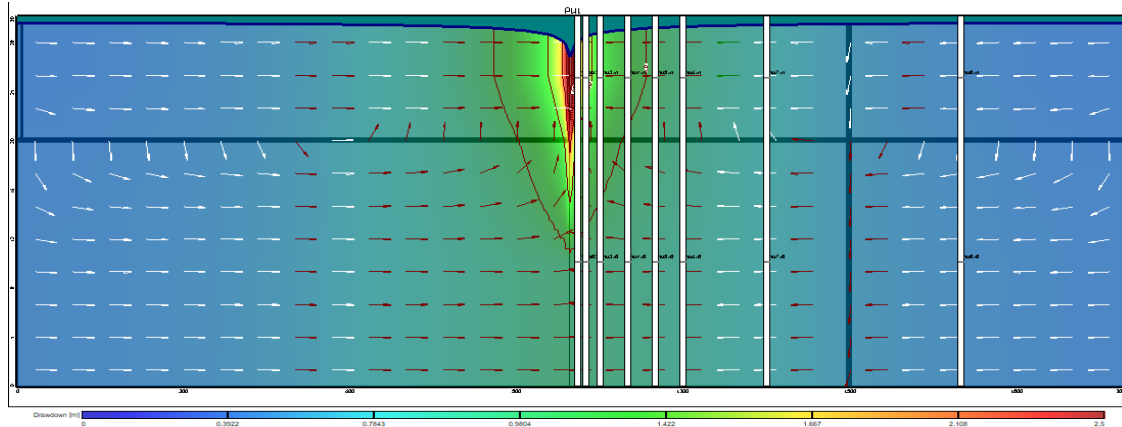


Figure 5-8: Cross-sectional view of Model 1.7

5.1.2. Scenario 2: Impact of distance and a constant pumping rate from the third layer.

Model 2.1 of scenario 2 contains no abandoned wells and serves as a base for the following models that contain abandoned wells at various distances away from the pumping well. The findings from this model showed that in layer 1 the maximum drawdown was observed in MW1 with a value of 0.88 m while the minimum drawdown was observed in MW8 with a value of 0.62 m. Observations made in layer 3 indicated that the maximum drawdown was 1.934 m in MW1 while MW8 had a drawdown of 0.63 m. Water table elevation decreased by 1 m from the initial 30.2 m to a depth of 29.2 m after $t=1000$ days. Zone budget analysis indicated that fluid leaked through the aquitard from zone 1 into zone 3 was $499.3 \text{ m}^3/\text{day}$, which is approximately equal to the pumping rate of $500 \text{ m}^3/\text{day}$. Figure 5-9 shows a cross-sectional view of the model and the direction of flow in the system. Interestingly, one can see from Figure 5-9 that the cross-formation flow is always downward, which is different from what has been observed in Figures 5-1 to 5-8 when the pumping well is located in the upper aquifer. This is easily understandable because for the first hand, the pumping well in the lower aquifer will generate a downward hydraulic gradient that will drive groundwater to flow from the upper aquifer to the lower aquifer, and on the other hand,

the more permeable lower aquifer (as compared to the less permeable upper aquifer) will further enhance the downward flow. Therefore, it is not surprising at all that the downward cross-formation flow occurs over the entire domain simulated in this thesis. This phenomenon will prevail for the cases discussed below as long as the pumping well is installed in the lower aquifer.

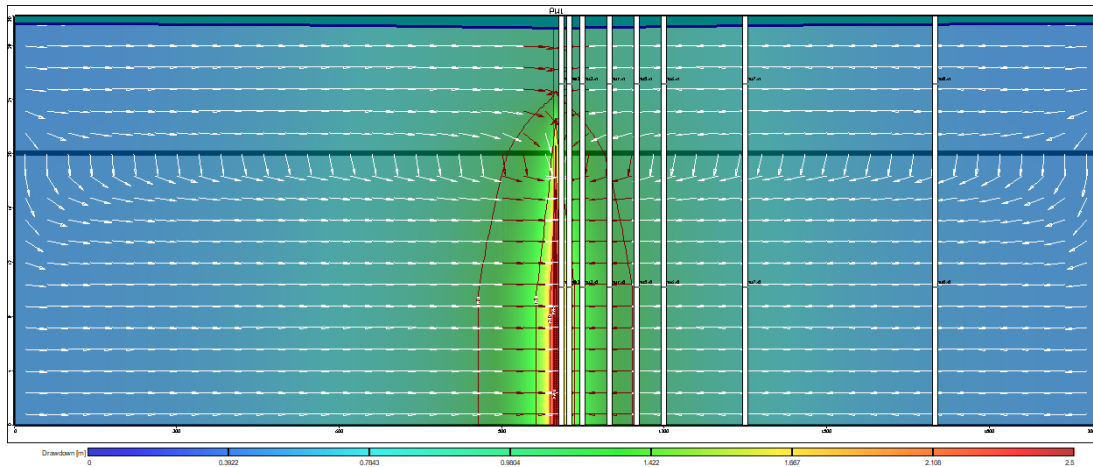


Figure 5-9: Cross-Sectional view of model 2.1 depicting fluid flow direction and WT drawdown.

Model 2.2 contains one abandoned well located 20 m away from the pumping well. A maximum drawdown of 1.78 m occurred in MW1, resulting in a percent increase of 101.25% whereas the minimum drawdown seen in MW8 had a value of 0.62 m, with a percent decrease of 0.324%. In layer 3 of the model, MW1 had a drawdown of 1.65 m and MW8 had a drawdown of 0.63 m. The drawdown percent decreases for MW1 and MW8 when the abandoned well was introduced were 14.89% and 0.47% for MW1 and MW8, respectively. Fluid leakage occurred from zone 1 into zone 3 at a rate of 384.13 m³/day through zone 2. Leakage through the abandoned well occurred at a rate of 112.71 m³/day and flowed from layer 1 into layer 3. A cross-sectional view of the model is presented in

Figure 5-10 depicting drawdown along with flow direction at $t=1000$ days.

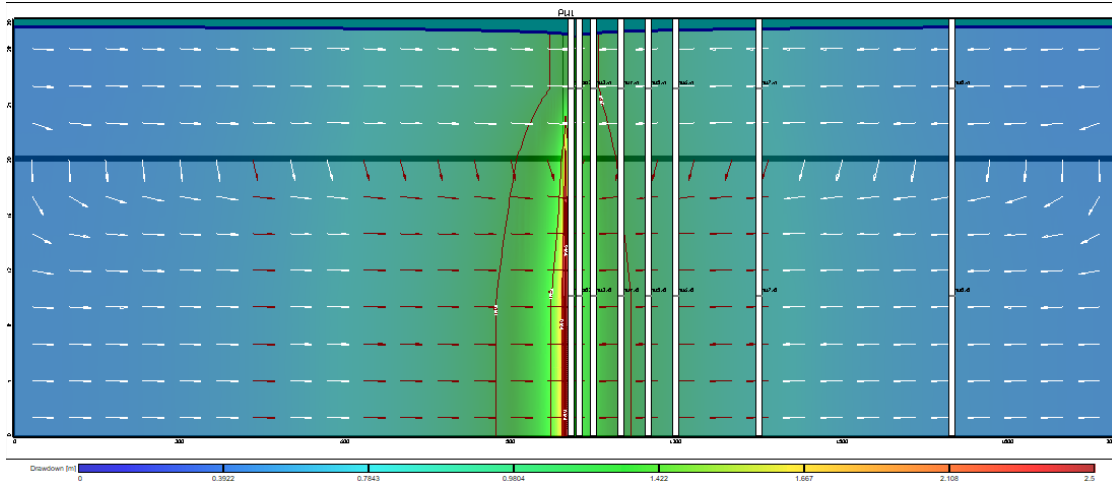


Figure 5-10: Cross-sectional view of model 2.2

Model 2.3 contains an abandoned well located 40 m away from the pumping well. In layer 1, the most drawdown of 1.04 m was reported in MW2 whereas the least drawdown of 0.62 was experienced in MW8. In layer 3, MW1 experienced 1.83 m of drawdown and MW8 saw a drawdown of 0.63 m. MW2 in layer 1 saw an 18.9% increase in drawdown and MW8 saw a 0.16% decrease in drawdown. In layer 3 MW1 saw a 5.73% decrease in drawdown while MW8 had a 0.31% decrease in drawdown. Fluid leakage that occurred in the model indicated that fluid leaked at a rate of 420.79 m³/day through the aquitard (zone 2) while fluid leaking through the abandoned well indicated a rate of 75.81 m³/day. The cross-sectional view of the model is shown in Figure 5-11.

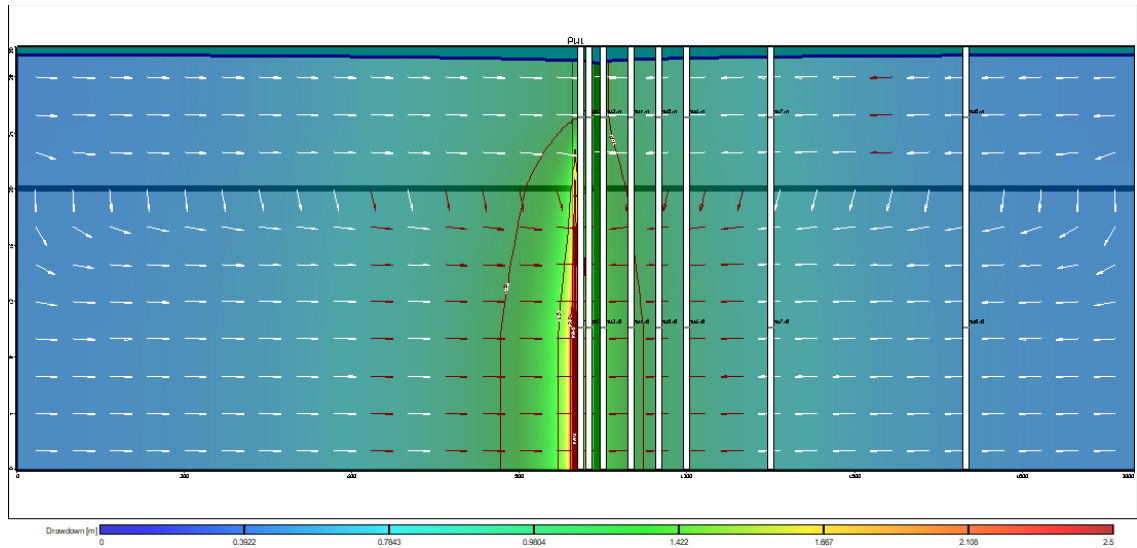


Figure 5-11: Cross-sectional view of model 2.3 depicting flow direction and drawdown at $t=1000$ days.

Model 2.4 introduced an abandoned well at $d=80$ m away from the pumping well. MW3 of layer 1 experienced the most drawdown of 0.94 m, while MW1 saw a minimum drawdown of 0.62 m. In layer 3, MW1 experienced the greatest drawdown with a value of 1.899 m and MW1 had a minimum drawdown of 0.63 m. The drawdown increased by 7.83% at MW3 in layer 1 while the drawdown decreased by 0.16% at MW8 in layer 1. In respect to the drawdown percent changes in layer 3, MW1 experienced a decrease of 1.96% and MW8 experienced a decrease of 0.32%. The fluid leakage rate through the aquitard showed a value of 454.63 m^3/day , while the rate through the abandoned well appeared to be 44.66 m^3/day . The cross-sectional view is shown in Figure 5-12 below.

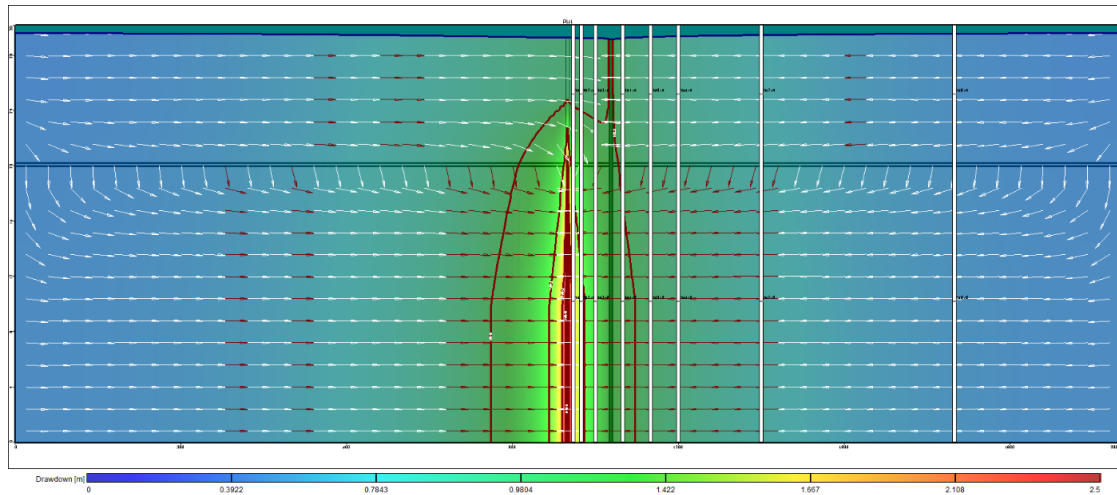


Figure 5-12: Cross-sectional view of model 2.4

In Model 2.5, the abandoned well was located at $d=160$ m away from the pumping well. MW1 experienced the most drawdown in layer 1 with 0.89 m while MW8 saw the least amount of drawdown in layer 1 with 0.62 m. In layer 3, MW1 had a drawdown of 1.89 m and MW8 had a drawdown of 0.63 m. The percent changes for layer 1 were 0.68% and -0.16% for MW1 and MW8, respectively. For layer 3 of the model, the drawdown percent changes for MW1 and MW8 were -2.48% and -0.16%, respectively. The zone budget analysis showed that fluid leakage through the aquitard leaked at a rate of 479.34 m³/day. The rate at which fluid leaked the abandoned well was 19.79 m³/day. A cross-sectional view of the model is shown below in Figure 5-13.

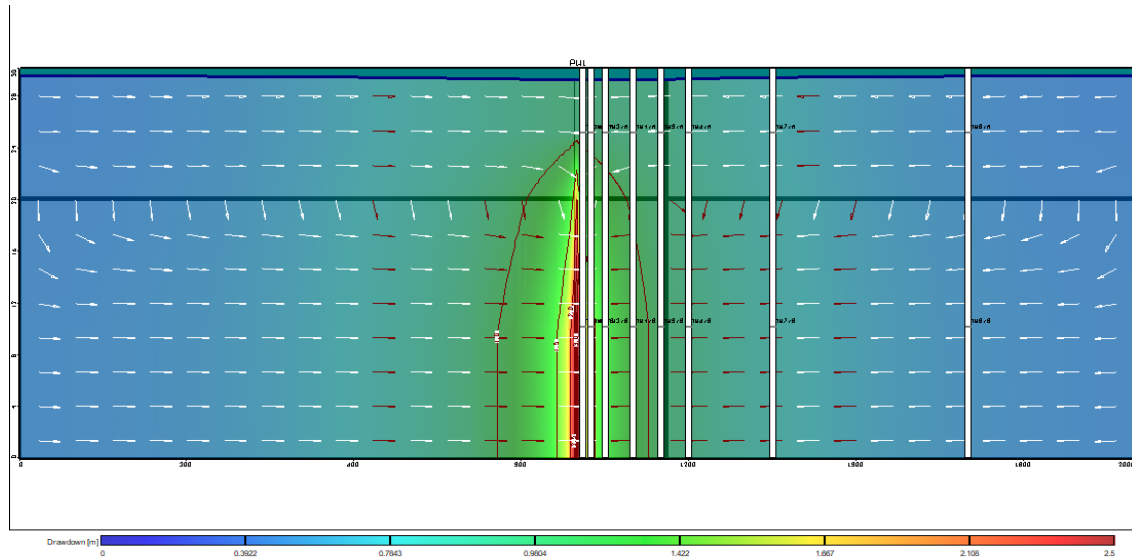


Figure 5-13: Cross-sectional view of model 2.5 depicting flow direction and drawdown.

For Model 2.6, the abandoned well was located at $d=250$ m away from the pumping well. In layer 1 and layer 3, both MW1 and MW8 experienced the most and least amounts of drawdown. In layer 1, MW1 saw a drawdown of 0.88 m while MW8 saw a drawdown of 0.62 m. In layer 3, the drawdown values for MW1 and MW8 were 1.92 m and 0.63 m, respectively. The drawdown percent changes for layer 1 were 0.11% and 0% for MW1 and MW8, respectively. In layer 3, the drawdown percent changes were -0.77% and -0.16% for MW1 and MW8, respectively. The fluid leakage rates determined through the zone budget analysis indicated the rate flowing through the aquitard was $489.64 \text{ m}^3/\text{day}$ while the rate that occurred in the abandoned well was $9.56 \text{ m}^3/\text{day}$. Figure 5-14 shows a cross-sectional view of the model.

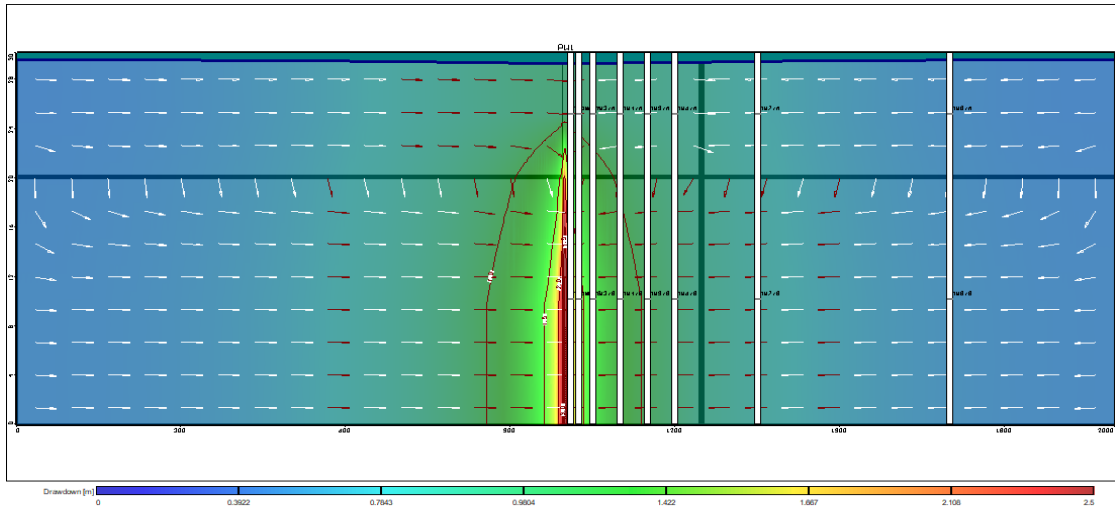


Figure 5-14: Cross-sectional view of model 2.6 showing the flow direction and drawdown.

Model 2.7 the abandoned well is located at $d=500$ m away from the pumping well. Both MW1 and MW8 of layers 1 and 3 appeared to have the most and least amount of drawdown, respectively. MW1 in layer 1 had a drawdown of 0.88 m and 1.84 m in layer 3. The drawdown percent changes for MW1 in layer 1 and layer 3 were 0% and -5.01% , respectively. MW8, which had the least amount of drawdown in the model, experienced 0.62 m of drawdown in layer 1 and 0.63 m of drawdown in layer 3. The drawdown percent changes for MW8 are -0.16% in layer 1 and -0.32% in layer 3. The zone budget analysis revealed that the fluid leakage rates through layer 2 leaked at a rate of $496.53 \text{ m}^3/\text{day}$ from the top aquifer. The rate at which fluid leaked in the abandoned well was $2.71 \text{ m}^3/\text{day}$. Below is a cross-section view of the model depicting the location of the abandoned well, observation wells, and flow direction.

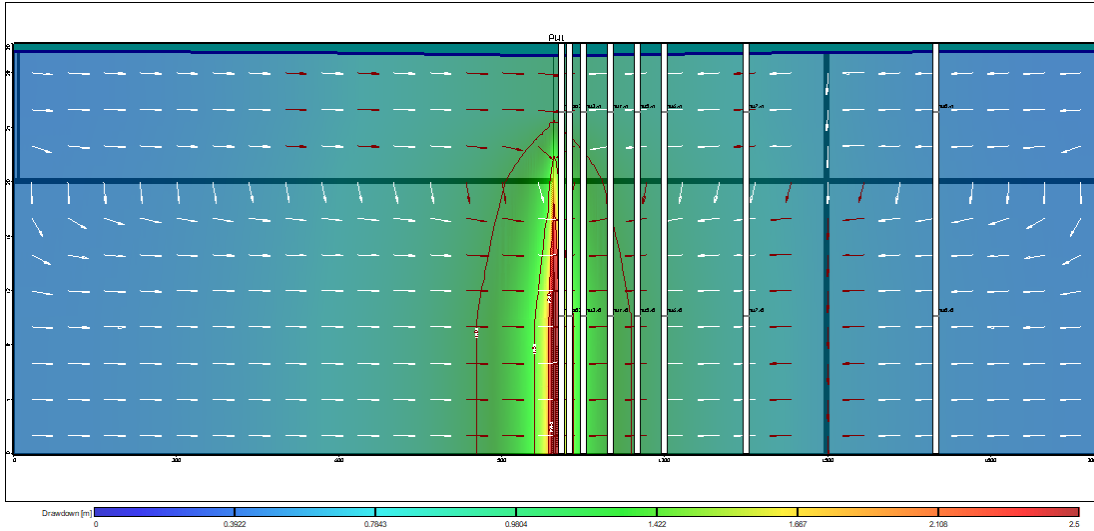


Figure 5-15: Cross-sectional view depicting the direction of groundwater flow.

5.1.3. Scenario 3: Impact of a variable pumping rate in the first layer.

In the first model of scenario 3 (Model 3.1), there are no abandoned wells present, thus it serves as the base model for the corresponding models in the scenario. The greatest drawdowns observed in both layer 1 and layer 3 occurred at the location of MW1, 20 m away from the pumping well, while the least amount of drawdown occurred at MW8 located 700 m away from the pumping well. The greatest drawdown occurred on day 750 with a value of 2.71 m in the top aquifer and 0.86 m in the lower aquifer. This is different from the previous two scenarios where the maximum drawdown occurred on day 1000. Fluid leakage for this base model leaked at a rate of 566.44 m³/day when $t=750$ days whereas when $t=1000$ days the rate reduced to 18.72 m³/day through the confining layer. Figure 5-16 shows the direction of flow of the model.

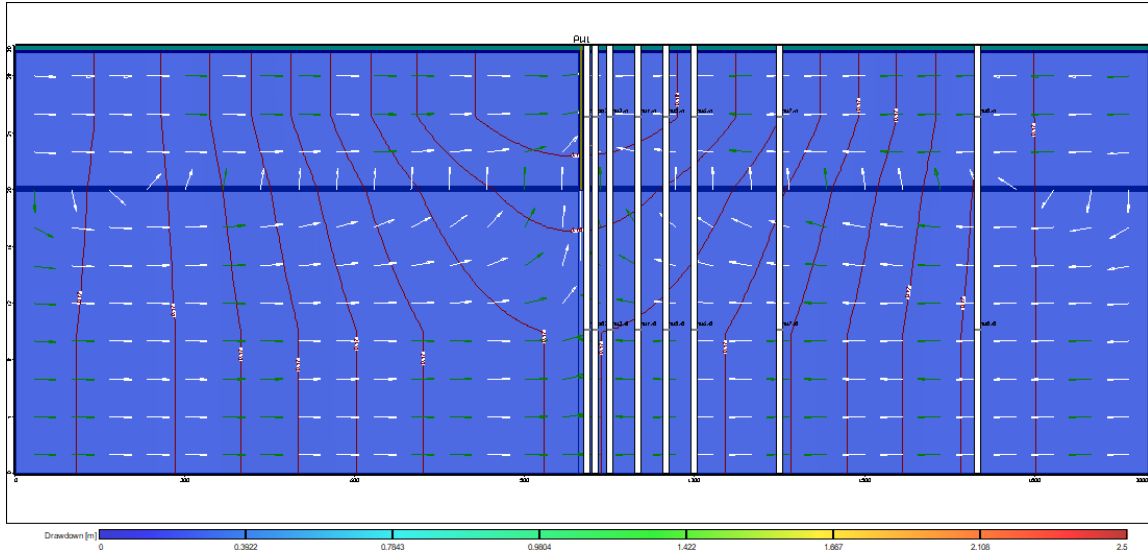


Figure 5-16: Cross-sectional view of model 3.1 depicting drawdown and the direction of flow.

In Model 3.2, an abandoned well was introduced 20 m away from the pumping well. Similar to Model 3.1, the greatest drawdown occurred on $t=750$ days. The observation well that experienced the greatest drawdown was MW1 located $d=10$ m away from the pumping well. The well that experienced the least amount of drawdown was MW8 located 700 m away from the pumping well. This was true for both the top and bottom aquifers. The drawdown values for the observation wells in the top aquifer were 2.11 m for MW1 and 0.44 m for MW8. Drawdown values for the observation wells in layer 3 were 1.30 m for MW1 and 0.46 m for MW8. Fluid leakage rates for this model indicated that when $t=750$ days the rates were substantially higher than when $t=1000$ days. Rates for which fluid leaked through the aquitard for $t=750$ days was 434.2. For $t=1000$ days the rate was significantly smaller, $16.63 \text{ m}^3/\text{day}$. The rates at which the fluid leaked through the abandoned well for $t=750$ days was $183.24 \text{ m}^3/\text{day}$ whereas when $t=1000$ the rate was $0.32 \text{ m}^3/\text{day}$. Figure 5-17 depicts the drawdown and direction of flow in the system when $t=750$ days.

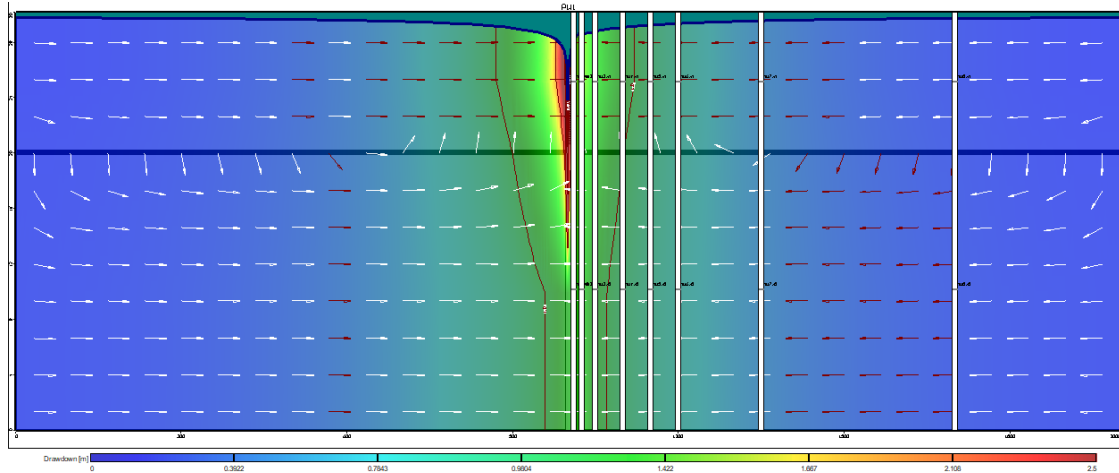


Figure 5-17: Cross-sectional view of model 3.2 when $t=750$ days

In Model 3.3, the abandoned well was located 40 m away from the pumping well. Like the previous model, the most drawdown occurred when $t=750$ days. MW1 and MW8 experienced the greatest and least amount of drawdown, respectively in layer 1. When $t=1000$ the drawdowns for all the observations wells ranged from 0.47 m to 0.48 m in layer 1 and layer 3. In layer 3, MW2 experienced the most drawdown with a value of 1.09 m while MW8 saw a drawdown of 0.46 m. When $t=750$ days, fluid leaked through the aquitard at a rate of $476.51 \text{ m}^3/\text{day}$ while the rate at which fluid leaked through the abandoned well fluid leaked was $119.74 \text{ m}^3/\text{day}$. When $t=1000$ days the rate was approximately $8.50 \text{ m}^3/\text{day}$ through the confining layer while the rate through the abandoned well was $0.32 \text{ m}^3/\text{day}$. Figure 5-18 depicts the direction of flow and drawdown on day 750.

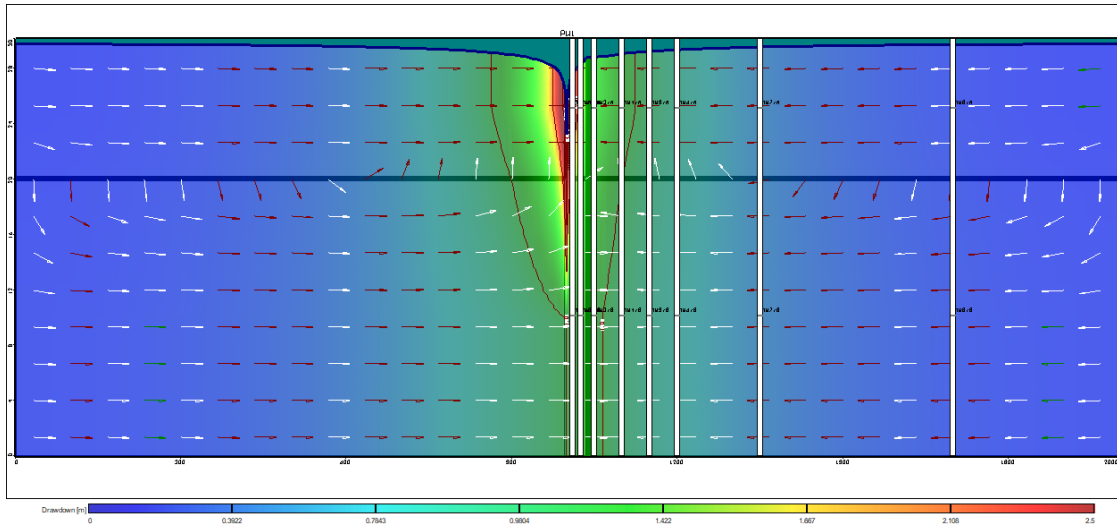


Figure 5-18: Cross-Sectional view of model 3.3 showing drawdown and flow at $t=750$ days

Model 3.4 contains an abandoned well located 80 m away from the pumping well. In layer 1 of the model, MW1 and MW8 had drawdown values of 2.63 m and 0.44 m when $t=750$ days, respectively. In layer 3, the observation well with the largest drawdown was MW3 with a value of 0.93 m while MW8 had the least amount of drawdown with 0.46 m. At $t=1000$ days drawdown for both layers and the eight observation wells ranged from 0.47 m and 0.47 m. The fluid leakage rate for $t=750$ through the aquitard was $518.42 \text{ m}^3/\text{day}$. Fluid leaked into the abandoned well from the bottom aquifer at a rate of $67.04 \text{ m}^3/\text{day}$. When $t=1000$ days, fluid leaked at a rate of $17.73 \text{ m}^3/\text{day}$ through the aquitard, and the abandoned well at a rate of $0.32 \text{ m}^3/\text{day}$. Figure 5-19 shows the direction of flow and drawdown at $t=750$ days.

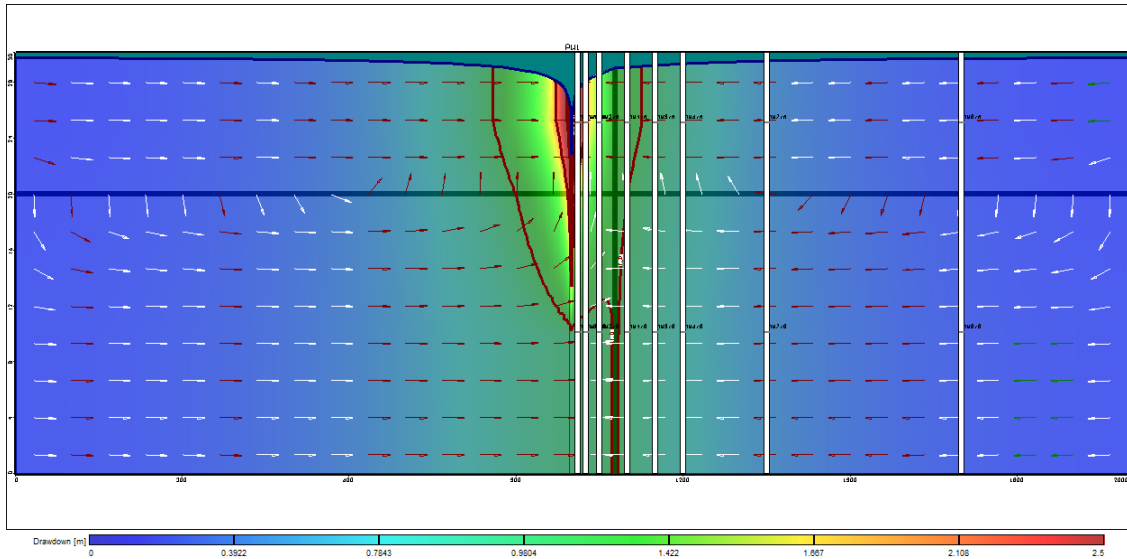


Figure 5-19: Cross-sectional view of model 3.4 depicting flow and drawdown at $t=750$ days.

In Model 3.5, the abandoned well is located at $d=160\text{m}$ and experienced maximum drawdown values when $t=750$ days. In both layer 1 and layer 3, MW1 and MW8 experienced the highest and lowest drawdown values, respectively. MW1 had a drawdown value of 2.61 m while MW8 had a drawdown value of 0.44 m in the top aquifer. In the lower aquifer, MW1 had a drawdown value of 0.87 m and MW8 had a drawdown value of 0.46 m. At $t=1000$ days the drawdown values for the observation wells in both layers ranged from 0.47 m to 0.48 m. Fluid leakage at $t=750$ days flowed through the confining layer at a rate of $549.52 \text{ m}^3/\text{day}$. Fluid flowed at a rate of $25.92 \text{ m}^3/\text{day}$ through the abandoned well from the bottom aquifer into the upper aquifer. When $t=1000$ days fluid flowed at a rate of $18.09 \text{ m}^3/\text{day}$ while the abandoned well experienced a leakage rate of $0.312 \text{ m}^3/\text{day}$ from layer 3 into layer 1. Figure 5-20 depicts the flow direction and drawdown from the model.

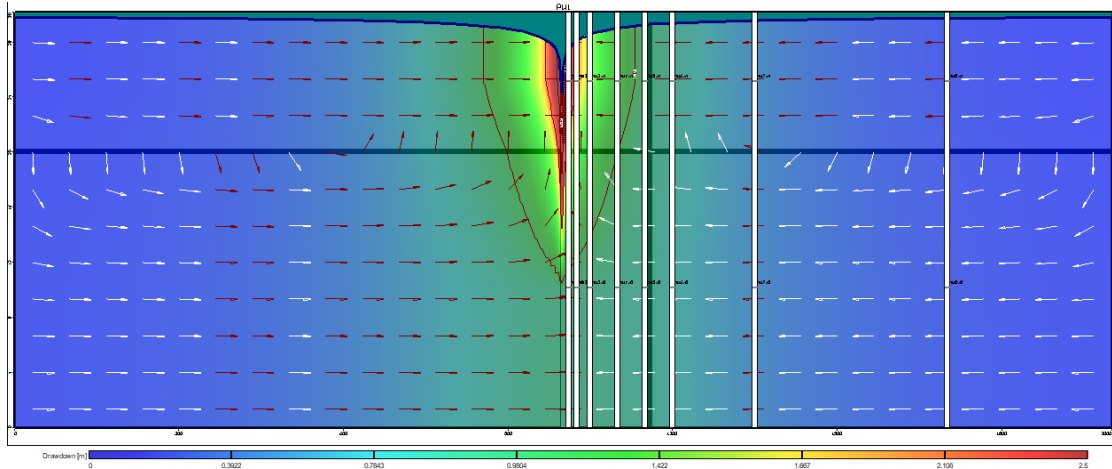


Figure 5-20: Cross-sectional view of model 3.5 showing groundwater flow direction and drawdown when $t=750$ days.

In Model 3.6, the abandoned well is located 250 m away from the pumping well. Similar to Model 3.5 the maximum drawdown occurred in both layer 1 and layer 3 when $t=750$ days at MW1 and MW8. The drawdown values for MW1 were 2.69 m and 0.86 m for layer 1 and layer 3, respectively. The drawdowns at MW8 for layer 1 were 0.44 m and 0.46 m for layer 3. The zone budget analysis showed the leakage rates through the aquitard to be $561.71 \text{ m}^3/\text{day}$. Fluid traveling through the abandoned well from the bottom aquifer to the upper aquifer leaked at a rate of $9.55 \text{ m}^3/\text{day}$. When $t=1000$ days fluid leaked through zone 2 at a rate of $18.31 \text{ m}^3/\text{day}$ while the abandoned well experienced a leakage rate of $0.28 \text{ m}^3/\text{day}$. Figure 5-21 shows the flow direction along with the drawdown seen from the model.

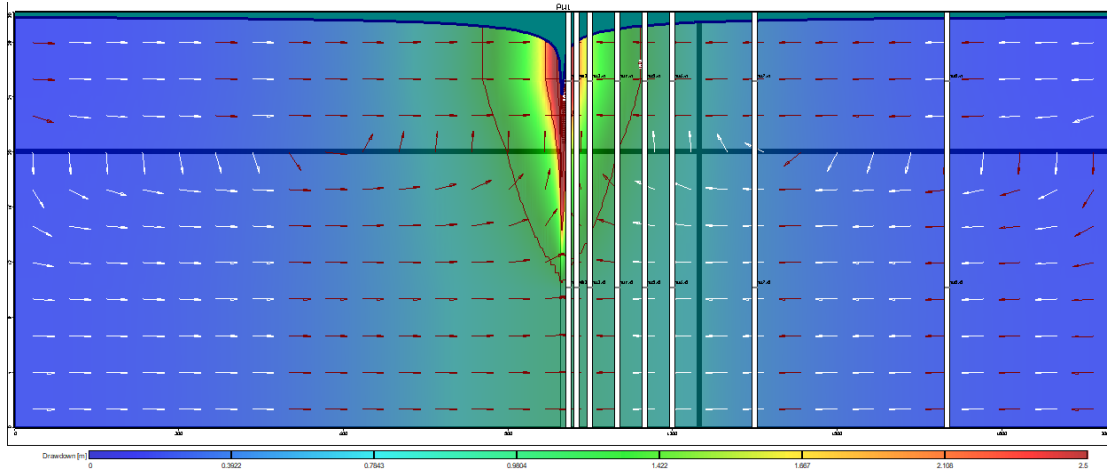


Figure 5-21: Cross-sectional view of model 3.6 depicting fluid flow direction and drawdown

Lastly, in Model 3.7 the abandoned well is located 500 m away from the pumping source. The maximum drawdown unlike previous models occurred when $t=845$ days in layer 1. The maximum drawdown occurred at MW1 and while MW8 experienced the least amount of drawdown, similar to the previous cases with values in layer 1 ranging from 0.55 m to 3.44 m. The maximum drawdown observed in the bottom aquifer at MW1 and minimum at MW8 had values ranging from 0.57 m to 1.10 m. At $t=1000$ days the drawdown values were similar to that seen in the previous models of this scenario and ranged from 0.59 m in MW8 to 0.64 m in MW1. Leakage rates for this model when $t=750$ days showed the rate through the aquitard to be $565.9 \text{ m}^3/\text{day}$. The fluid leaked through the abandoned well leaked at a rate of $1.21 \text{ m}^3/\text{day}$ but leaked from in the opposite direction than previously observed, from the top aquifer into the bottom aquifer. When $t=1000$ days, the leakage rate through the confining layer was $98.28 \text{ m}^3/\text{day}$. The rate through the abandoned well flowed at $0.70 \text{ m}^3/\text{day}$ from the bottom aquifer into the top aquifer. Figure 5-22 and Figure 5-23 depict the fluid flow direction and drawdown observed in Model 3.7 for when $t=750$ days and $t=1000$ days.

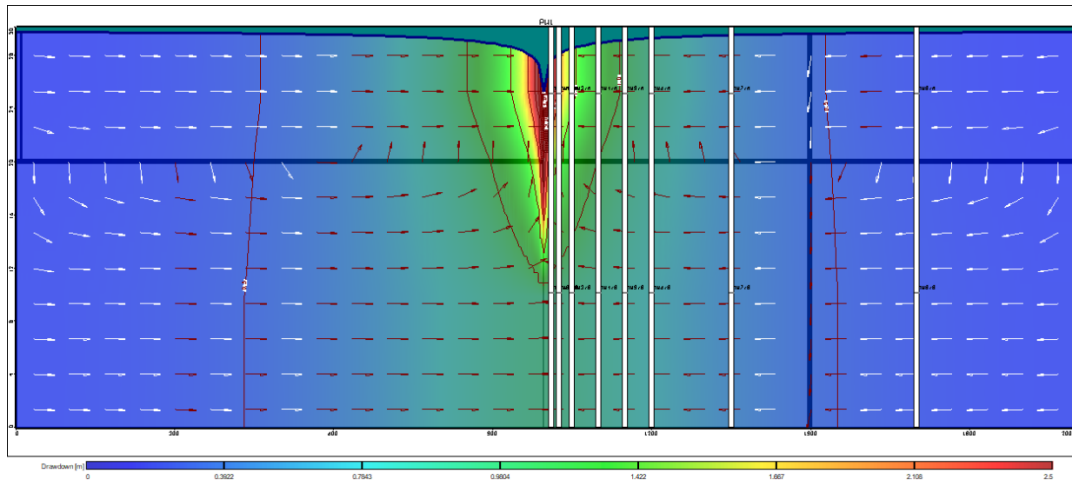


Figure 5-22: Cross-sectional view of model 3.7 when $t=750$ days

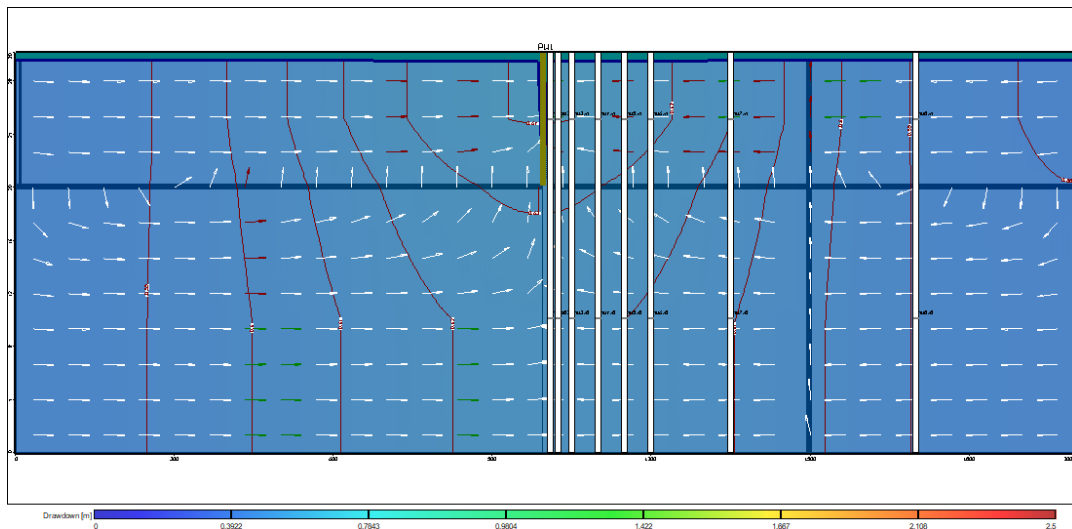


Figure 5-23: Cross-sectional of model 3.7 when $t=1000$ days.

5.1.4. Scenario 4: Impact of a variable pumping rate in the third layer.

Similar to Scenario 3, Scenario 4 investigates the response of the system when the pumping rate gradually increases every 250 days in increments of $250 \text{ m}^3/\text{days}$. This scenario has the same parameters as Scenario 3; however, the difference is the layer in which the pumping system is set. In this set of models, the well is set in the lower aquifer rather than the

upper 1. Model 4.1 serves as a base model to give a general idea of how the system reacts when no conduits are present. Maximum drawdown values for both layers were observed when $t=1000$ days. The observation well that experienced the most drawdown was MW1 while MW8 experienced the least amount of drawdown. In the top aquifer, MW1 had a drawdown of 1.30 m while MW8 had a drawdown of 0.77 m. In the bottom, where the pumping well was set, MW1 had a drawdown of 3.40 m while MW8 experienced a drawdown of 0.79 m. Zone budget analysis indicates that flow direction was from the top aquifer into the bottom aquifer at a rate of $998.32 \text{ m}^3/\text{day}$ when $t=1000$ days. Figure 5-24 shows the direction of flow being entirely downward while also showing the drawdown experienced in the uppermost unit.

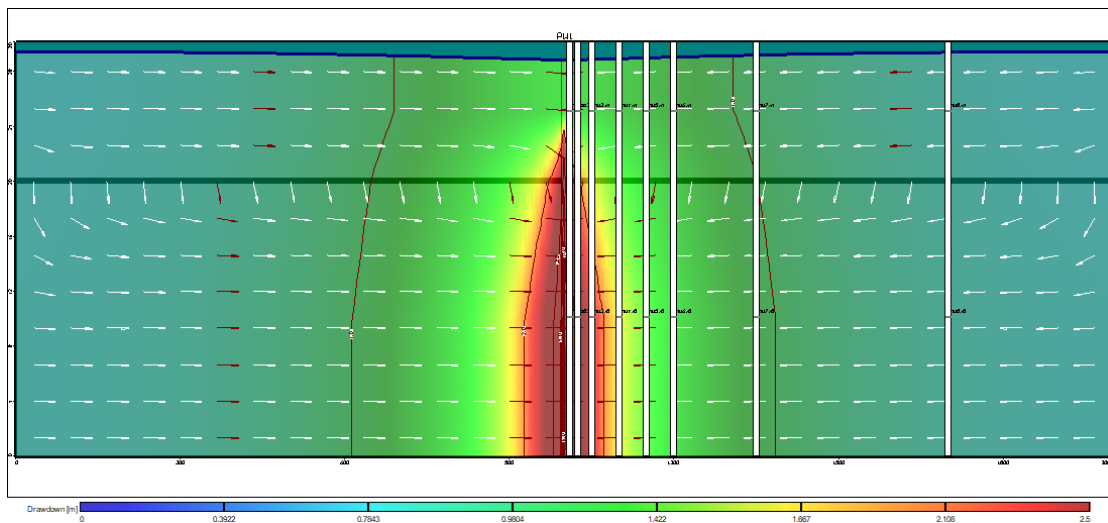


Figure 5-24: Cross-sectional view of model 4.1 depicting groundwater flow and drawdown.

Model 4.2 introduced an abandoned well located 20 m away from the pumping well. Maximum drawdown values for this model were observed when $t=1000$ days. MW1 and MW8 were the locations of the maximum and minimum amounts of drawdown in both layer 1 and layer 3. In layer 1 MW1 saw a drawdown value of 1.91 m and MW8 experienced

a drawdown of 0.76 m. In layer 3 the values for these observation wells were 2.84 m and 0.79 m for MW1 and MW8, respectively. Zone budget analysis for this model indicates that fluid flow direction was downward through layer 2. Leakage through the aquitard was at a rate of 776.18 m³/day while fluid leaking through the abandoned well was at a rate of 217.2 m³/day. Figure 5-25 depicts the fluid flow direction of the model while also showing the drawdown.

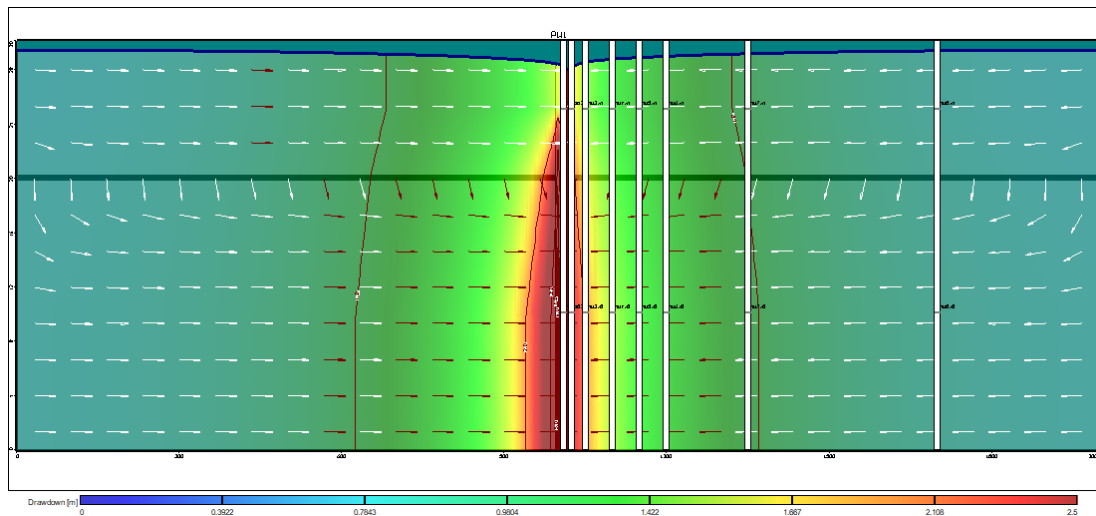


Figure 5-25: Cross-sectional view of model 4.2 showing drawdown and flow direction.

In Model 4.3, the abandoned well was located 40 m away from the pumping well. The maximum drawdown values were observed at $t=1000$ days in both layer 1 and layer 3. The observation well that experienced minimal drawdown was MW8 in both layers with 0.76 m and 0.79 m. However, in the upper aquifer, MW2 experienced the maximum drawdown with a value of 1.63 m while in the lower aquifer MW1 had the maximum drawdown of 3.19 m. Fluid leakage rates for the model showed that fluid leaked at a rate of 846.73 m³/day through the aquitard into the bottom aquifer. The rate at which fluid leaked through the abandoned well was 146.62 m³/day from layer 1 into layer 3. Figure 5-26 shows the direction of groundwater flow through the system as well as the drawdown observed in layer 1.

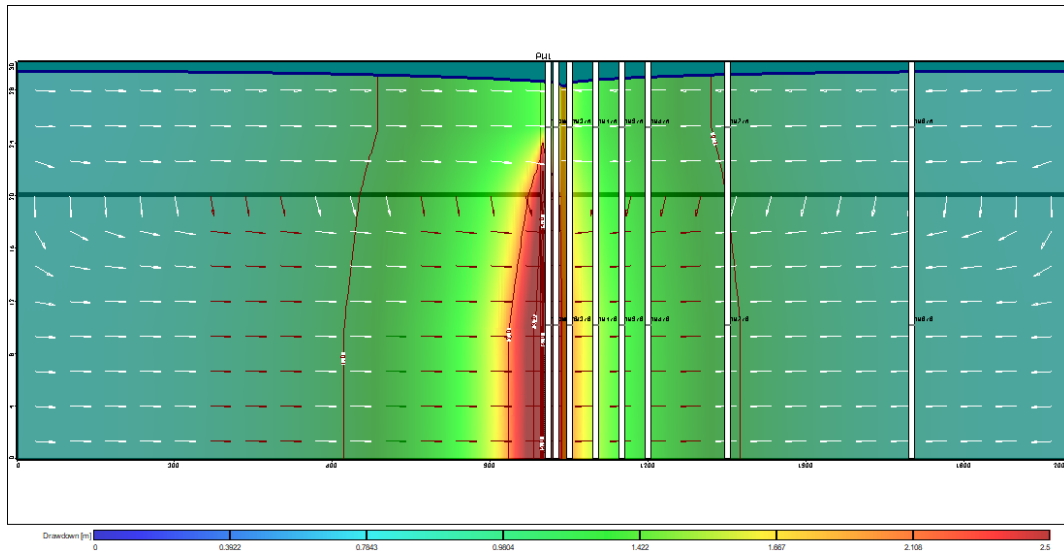


Figure 5-26: Cross-sectional view of model 4.3 depicting drawdown and flow direction.

In Model 4.4 the distance of the abandoned well is 80 m away from the pumping source. MW8 had the least amount of drawdown in both aquifers with 0.76 m and 0.79 m, respectively. In the upper aquifer, the observation well with the greatest drawdown was MW3 located 50 m away from the pumping well. In the lower aquifer, the maximum drawdown was observed at MW1 with 3.33 m. Fluid leakage rates for the model indicate that the rate at which fluid flowed through the aquitard was 911.74 m³/day while the leakage rate through the abandoned well was 86.66 m³/day. Figure 5-27 depicts the fluid flow direction and drawdown with the cone of depression centered over the location of the abandoned well.

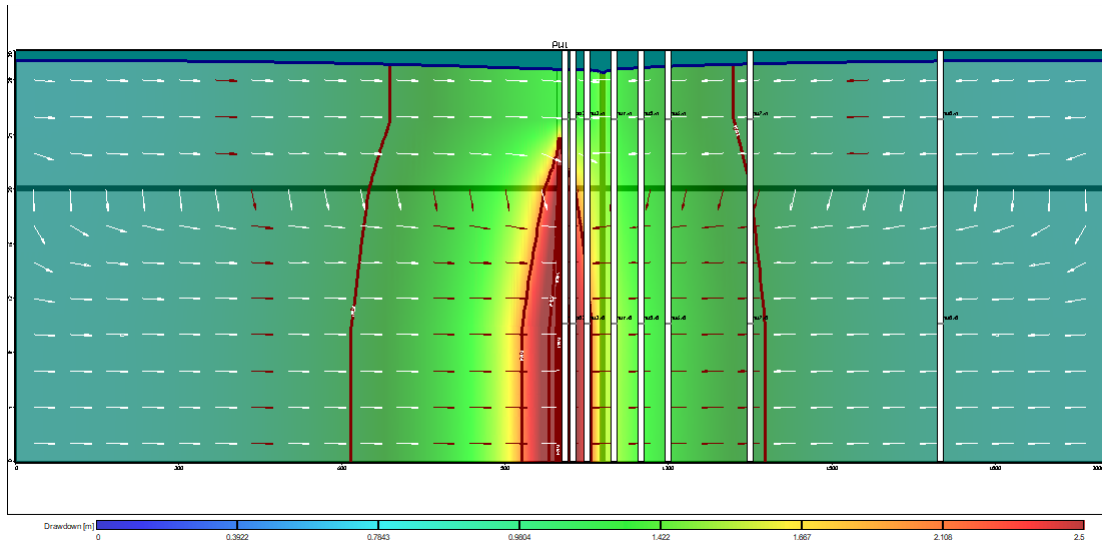


Figure 5-27: Cross-sectional view of model 4.4 showing the fluid flow direction and drawdown.

In Model 4.5, the abandoned well is situated 160 m away from the pumping well. Drawdown values for this model indicated that the greatest drawdown values occurred at $t=1000$ days in layer 1 and layer 3 at MW1 and MW8. The drawdowns observed at MW1 were 1.31 m and 3.30 m in layer 1 and layer 3, respectively, and the drawdowns observed at MW8 were 0.76 m and 0.79 m for layer 1 and layer 3, respectively. Zone budget analysis showed the flow downward at a rate of 959.8 m³/day through layer 2 while fluid flow through the abandoned well was at a rate of 38.54 m³/day. Figure 5-28 shows the direction of fluid flow along with the drawdown observed in the model.

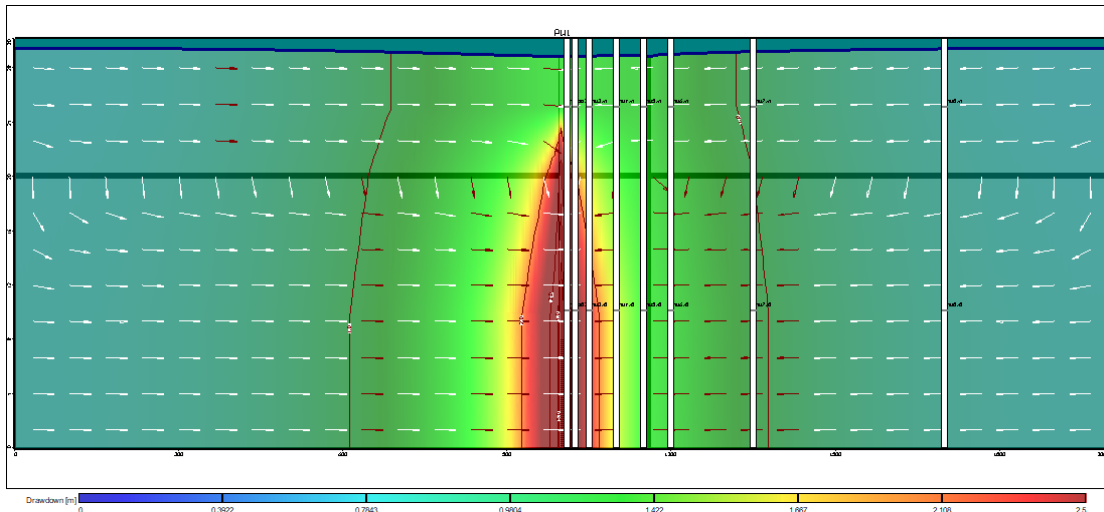


Figure 5-28: Cross-sectional view of model 4.5 depicting flow direction and drawdown.

In Model 4.6, the abandoned well is located 250 m away from the pumping source. Maximum drawdowns occurred at $t=1000$ days. For both layer 1 and layer 3, MW1 and MW8 experienced the maximum and minimum values, respectively. In layer 1 of the model, MW1 saw a drawdown of 1.31 m while MW8 saw a drawdown of 0.764 m. In layer 3 the drawdowns were 3.30 m and 0.79 m for MW1 and MW8, respectively. For fluid leakage rates, the zone budget analysis indicated a rate of 979.66 m³/day from the upper aquifer to the lower aquifer. The leakage rate through the abandoned well was 18.79 m³/day from layer 1 into layer 3. Figure 5-29 shows the cross-sectional view of the model as well as the direction of flow and drawdown.

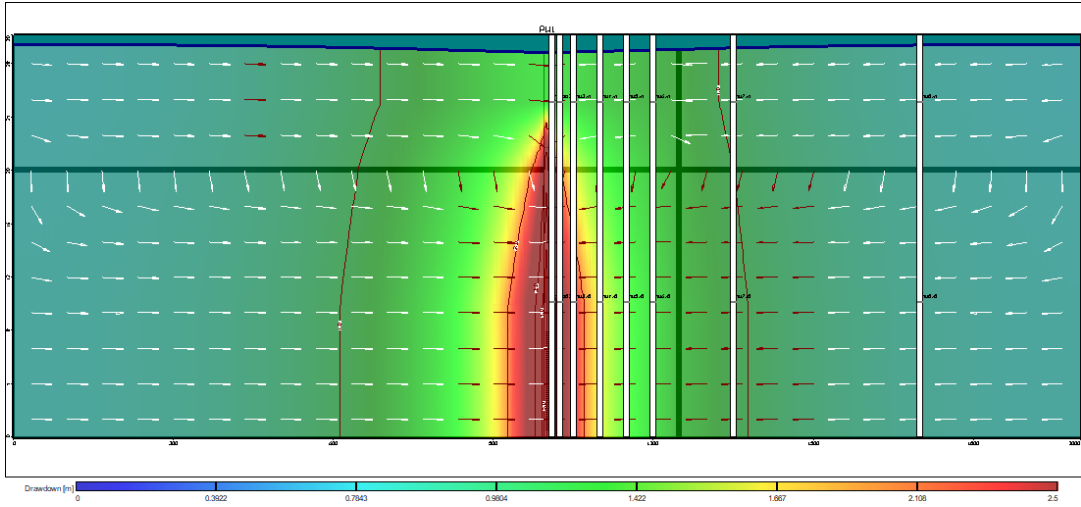


Figure 5-29: Cross-sectional view of model 4.6 depicting drawdown and flow direction.

In the last model of the scenario, Model 4.7, the abandoned well is located 500 m away from the pumping well. Similarly, to the previous models in this scenario the maximum drawdown values occurred at $t=1000$ days at MW1 and MW8 in both layer 1 and layer 3. In layer 1 of the model, MW1 had a drawdown of 1.30 m while MW8 had 0.76 m of drawdown. In layer 3 the drawdown values for MW1 and MW8 were 3.21 m and 0.79 m, respectively. Zond budget analysis indicates a fluid leakage rate through the aquitard at $992.05 \text{ m}^3/\text{day}$ and through the abandoned well at $5.44 \text{ m}^3/\text{day}$. The cross-section of the model (Figure 5-30) depicts the direction of flow and drawdown of layer 1.

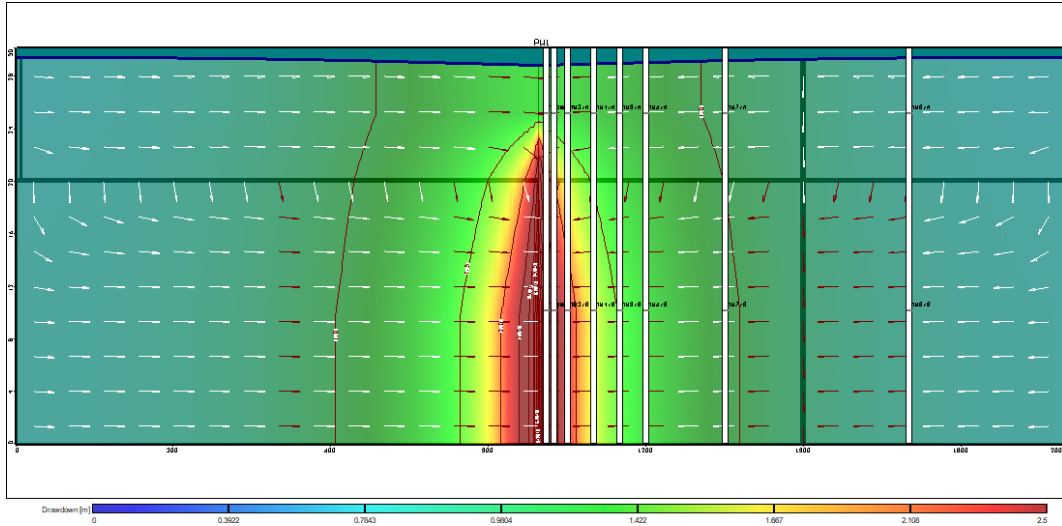


Figure 5-30: Cross-sectional view of model 4.7 showing drawdown and flow direction.

5.1.5. Scenario 5: Impact of increased aquitard thickness and constant pumping in the first layer

This scenario will investigate how an increase in aquitard thickness affects the flow of the system and leakage rates when a pumping well is set in the uppermost aquifer and withdraws at a constant rate of 500 m³/day. The other parameters are similar to those in the previous scenarios discussed. Model 5.1 is the initial model for this scenario and serves as the background model, as there is no abandoned well present in this model. Both aquifers saw maximum drawdown levels when $t=1000$ days in MW1 and minimal for that time in MW8. In layer 1, the drawdown in MW1 reached 2.15 m while the drawdown at MW8 was 0.60 m. In layer 3 the drawdown values for these observation wells were 0.79 m and 0.62 m, respectively. The fluid leakage rate calculated through the zone budget analysis showed that fluid flowed out of zone 1 at a rate of 139.57 m³/day while the fluid flowed into zone 1 at a rate of 140.84 m³/day. Figure 5-31 represents the model and shows the direction of flow and drawdown.

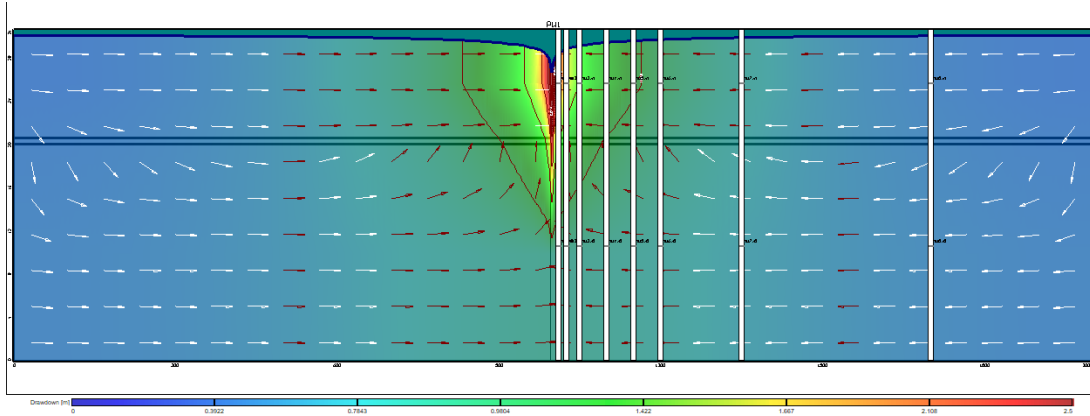


Figure 5-31: Cross-sectional view of model 5.1 showing fluid flow direction and drawdown.

Model 5.2 introduces an abandoned well located 20 m away from the pumping well. As seen in previous models, drawdown levels were at the maximum when $t=1000$ days. The maximum drawdown in both conductive layers was observed at MW1 while the minimum drawdown was observed at MW8. In the top aquifer, MW1 had a drawdown reading of 1.54 m while MW8 had a drawdown reading of 0.61 m. In the bottom layer, the observation wells had drawdown values of 1.26 m at MW1 and 0.64 m at MW8. Zone budget analysis indicated flow rates of 265.56 m³/day through the aquitard. Fluid leaked through the abandoned well from the analysis indicated a leakage rate of 156.33 m³/day from the bottom aquifer into the upper aquifer.

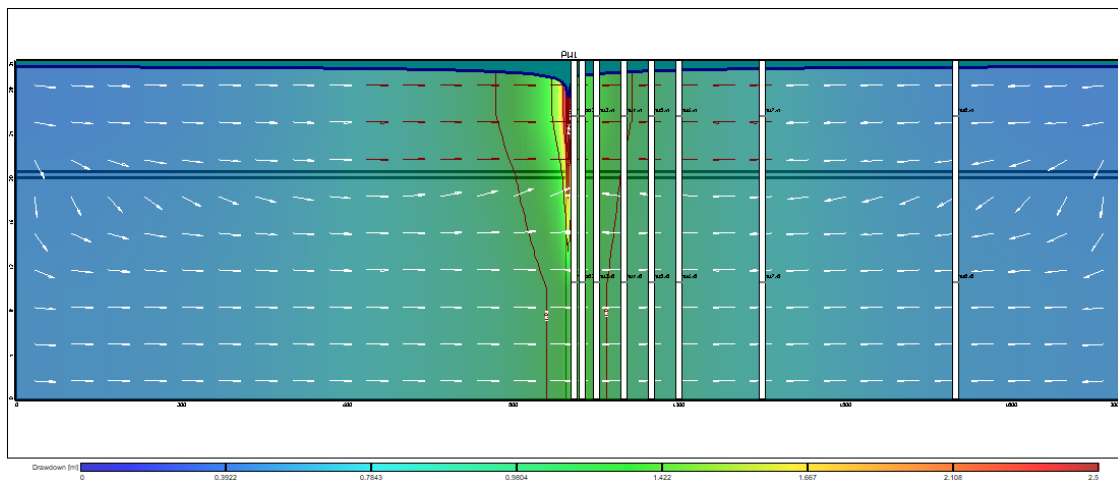


Figure 5-32: Cross-sectional view of model 5.2 depicting flow direction and drawdown.

In Model 5.3, the abandoned well is located 40 m away from the pumping source. Maximum drawdown levels occurred when $t=1000$ days in both layer 1 and layer 3. In layer 1 the maximum drawdown of 1.94 m was observed at MW1, and the minimum drawdown of 0.60 m occurred at MW8. In layer 3, MW2 experienced the most drawdown with a value of 1.02 m while MW8 had a drawdown value of 0.63 m. Fluid leakage through the confining layer at a rate of 238.52 m³/day. The rate at which fluid flowed through the abandoned well from the bottom aquifer into the top aquifer was 95.13 m³/day. In Figure 5-33 the direction of flow and drawdown can be observed.

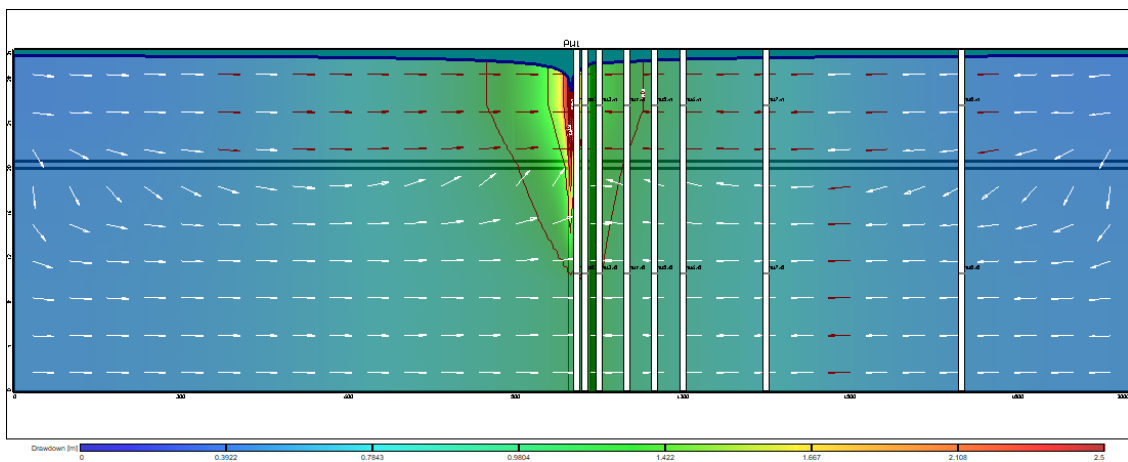


Figure 5-33: Cross-sectional view of model 5.3 showing flow direction and drawdown.

In Model 5.4 the abandoned well is 80 m away from the pumping well. In layer 1 the maximum drawdown was observed in MW1 with a value of 2.06 m while the minimum drawdown value was 0.60 m in MW8. In the bottom aquifer, the maximum drawdown was observed in MW3 with a value of 0.90 m and the minimum drawdown value was observed in MW8 with a value of 0.63 m. Fluid leakage rates according to the zone budget analysis indicated that the rate through the confining layer was 253.53 m³/day. The flow rate through

the abandoned well was $61.08 \text{ m}^3/\text{day}$ from the lower aquifer into the upper aquifer. Figure 5-34 shows the cross-sectional diagram of the model with the flow direction and drawdown observed.

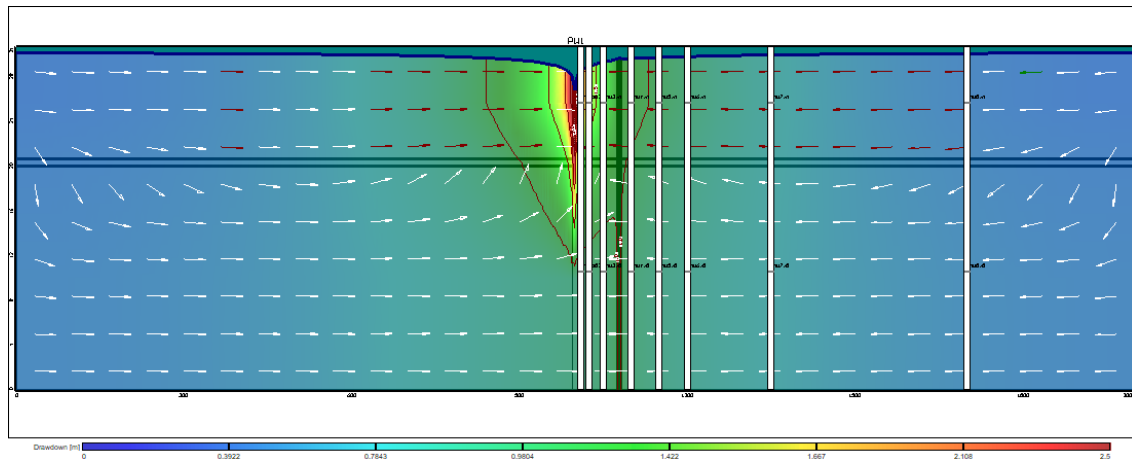


Figure 5-34: Cross-sectional view of model 5.4 showing the flow direction and drawdown observed.

In Model 5.5, the abandoned well is located 160 m away from the pumping well. The maximum drawdown was observed in both layers when $t=1000$ days. In layer 1 the maximum drawdown was observed in MW1 with a value of 2.13 m while the minimum drawdown was observed in MW8 with a value of 0.60 m. In layer 3 the maximum drawdown was seen in MW5, 150 m away from the abandoned well, with a value of 0.86 m while the minimum drawdown occurred at MW8 with a value of 0.62 m. Fluid leakage rates calculated from the zone budget analysis indicated that fluid flowed from through the aquitard at a rate of $119.27 \text{ m}^3/\text{day}$. Leakage through the abandoned well occurred at a rate of $16.44 \text{ m}^3/\text{day}$. Figure 5-35 illustrates the flow direction and drawdown of the model.

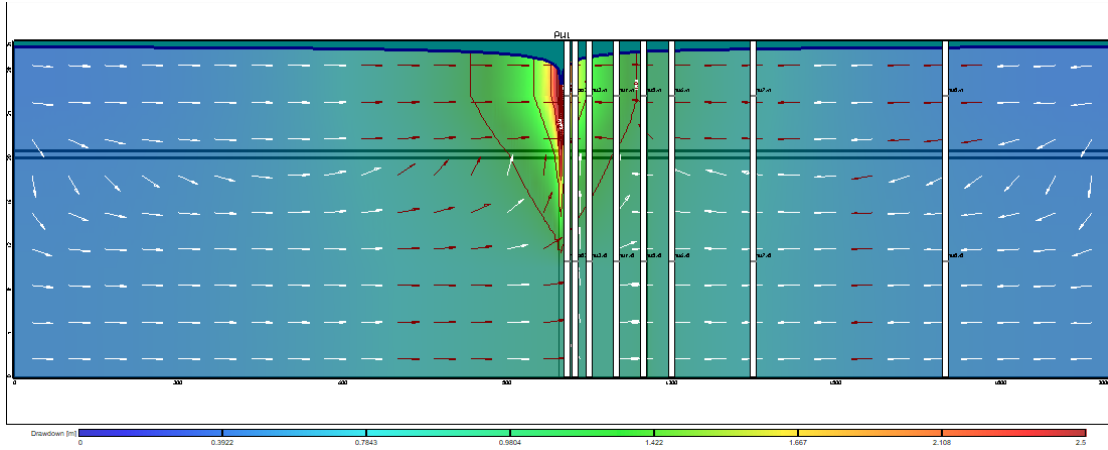


Figure 5-35: Cross-sectional diagram of model 5.5 depicting drawdown and flow direction.

In Model 5.6, the abandoned well is located 250 m away from the pumping well. At $t=1000$ days the maximum drawdown levels were observed in both aquifers. In the upper aquifer, the maximum drawdown occurred at MW1 with a value of 2.14 m while at MW8 the minimum drawdown was 0.60 m. In layer 3 the maximum and minimum drawdown levels were observed in MW1 and MW8, respectively. In MW1 the drawdown observed was 0.79 m and at MW8 the drawdown value observed was 0.62 m. Fluid leakage through the confining layer leaked at a rate of 275.86 m³/day. Leakage through the abandoned well flowed at a rate of 15.45 m³/day from the bottom aquifer into the top aquifer. Figure 5-36 depicts the fluid flow direction and drawdown observed in the model.

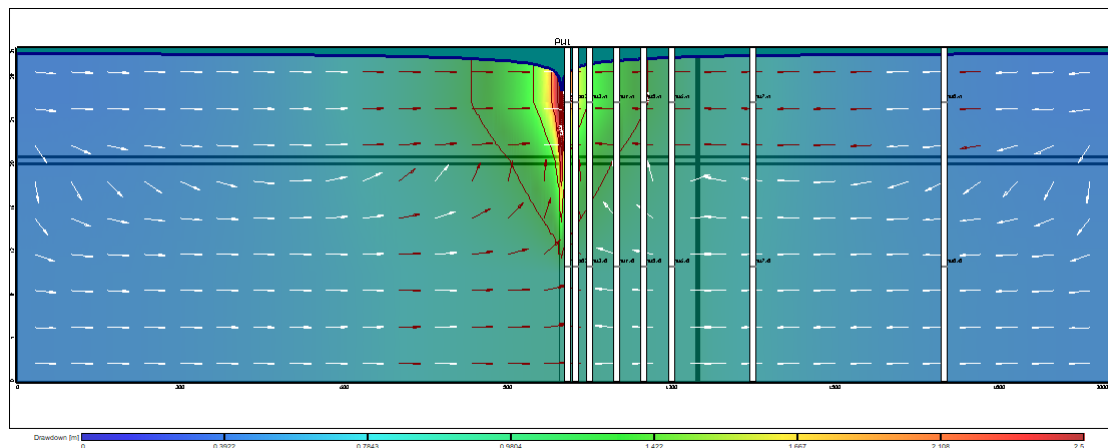


Figure 5-36: Cross-sectional view of model 5.6 illustrating drawdown and flow direction.

In Model 5.7, the location of the abandoned well is 500 m away from the pumping well. Similar to the previous models in this scenario, the maximum drawdown occurred at $t=1000$ days. Maximum and minimum drawdowns for both conductive layers occurred in MW1 and MW8, respectively. For MW1 drawdown in the top layer was 2.15 m while in the bottom layer it was 0.79 m. At MW8 the drawdowns were 0.60 m and 0.62 m respectively for both layers. The zone budget analysis indicated that fluid flowing through the confining layer flowed at a rate of 281.36 m³/day. The leakage rate of the fluid through the abandoned well was 0.60 m³/day. Figure 5-37 depicts the fluid flow and drawdown of the model.

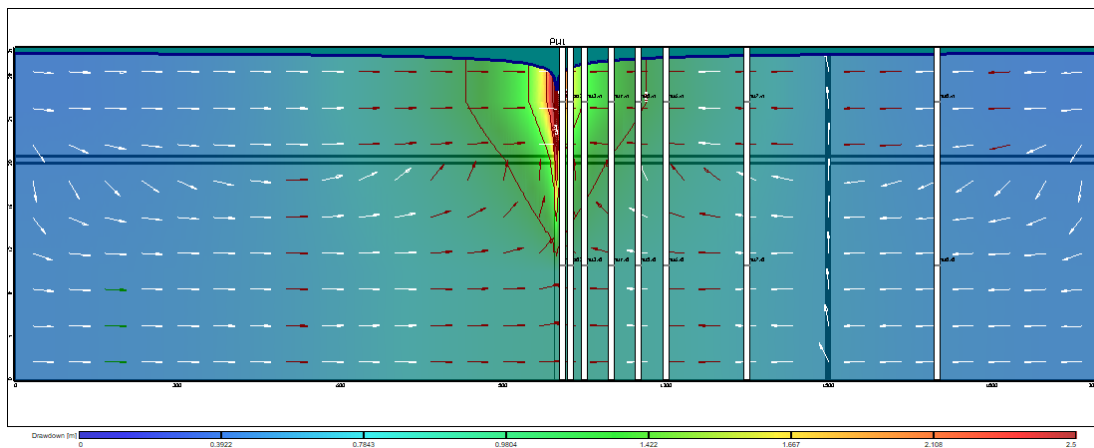


Figure 5-37: Cross-sectional view of model 5.7 depicting fluid flow and drawdown observed.

5.1.6. Scenario 6: Impact of increased aquitard thickness and constant pumping rate in the third layer

This scenario is similar to scenario 5, however, the pumping well is located in the confined layer to observe the impacts of pumping and the presence of an abandoned well. Model 6.1, like all initial models of each scenario, serves as a baseline model for the system. Maximum drawdown levels were observed at $t=1000$ days in MW1 while minimum drawdown

was observed in the MW8. In layer 1 the drawdown at MW1 was 0.78 m while MW8 saw a drawdown of 0.62 m. In layer 3 the drawdowns were 2.03 m at MW1 and 0.68 m at MW8. The fluid leakage rate through the confining layer was 498.49 m³/day with the direction being downward into the bottom aquifer. Figure 5-38 illustrates the model highlighting the flow direction and drawdown in cross-sectional view.

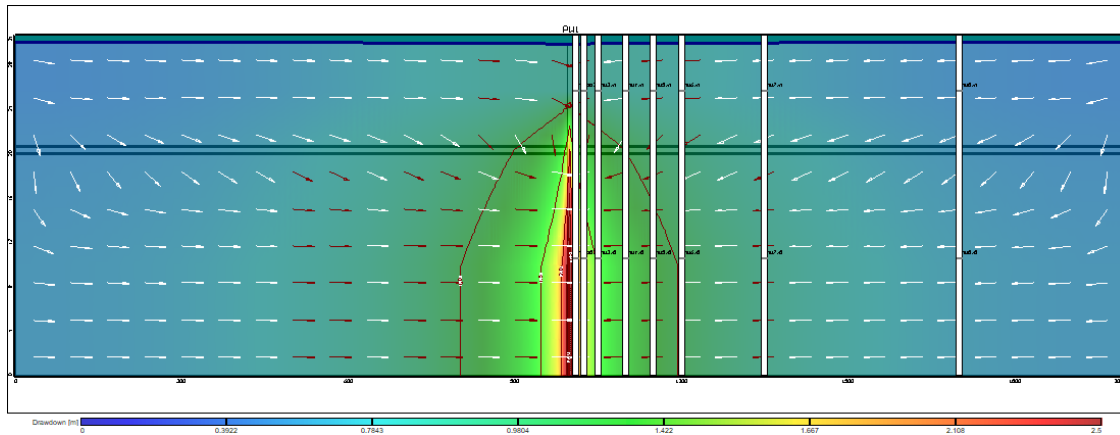


Figure 5-38: Cross-sectional diagram of model 6.1 showing flow direction and drawdown.

Model 6.2 introduces the abandoned well at $d=20$ m. The maximum drawdown values occurred when $t=1000$ days. In both aquifers, drawdown maximum values were observed in MW1 while the minimum drawdown was observed in MW8. In the uppermost aquifer, the drawdown recorded in MW1 was 1.27 m, and the drawdown recorded at MW8 was 0.62 m. The drawdown values observed in the lower aquifer at MW1 and MW8 were 1.47 m and 0.66m, respectively. Fluid leakage determined by the zoned budget analysis showed that fluid migrated from zone 1 into zone 3 through the aquitard. The rate at which the fluid leaked through the confining layer was 383.33 m³/day. The leakage rate observed through the abandoned well was 154.73 m³/day flowing into the lower aquifer. Figure 5-39 depicts a cross-section of the model while highlighting the flow direction and drawdown.

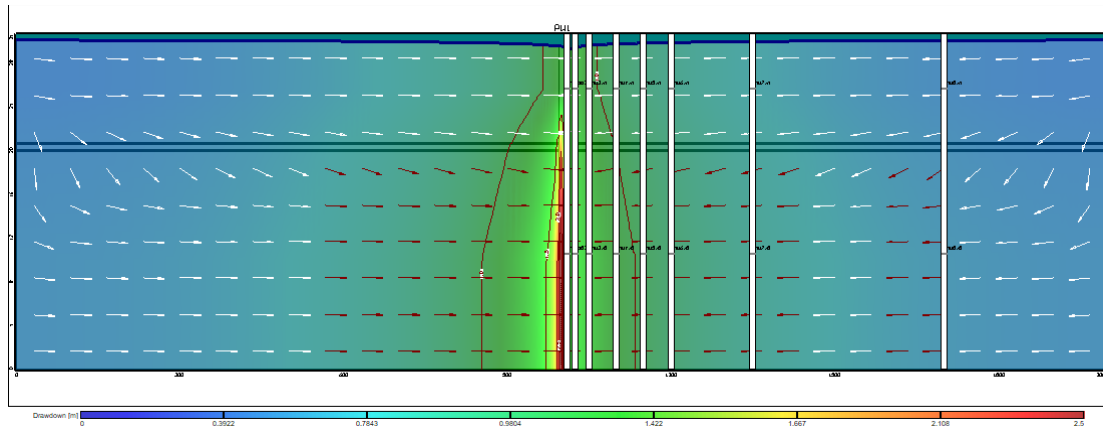


Figure 5-39: Cross-sectional view of model 6.2 showing drawdown and flow direction.

In Model 6.3, the abandoned well is located 40 m away from the pumping well. The maximum drawdown observed in both layers at MW1 occurred when $t=1000$ days. The minimum drawdown observed occurred at MW8. The drawdown values for the upper aquifer were 0.97 m and 0.617 m at MW1 and MW8, respectively. In the lower aquifer, the values for these observation wells were 1.84 m and 0.67 m for MW 1 and MW8, respectively. The Fluid leakage for this model indicates that fluid flowed at a rate of 402.69 m³/day through the confining layer. The rate fluid flowed through the abandoned well was 95.33 m³/day. Figure 5-40 shows the fluid flow and drawdown observed in the model.

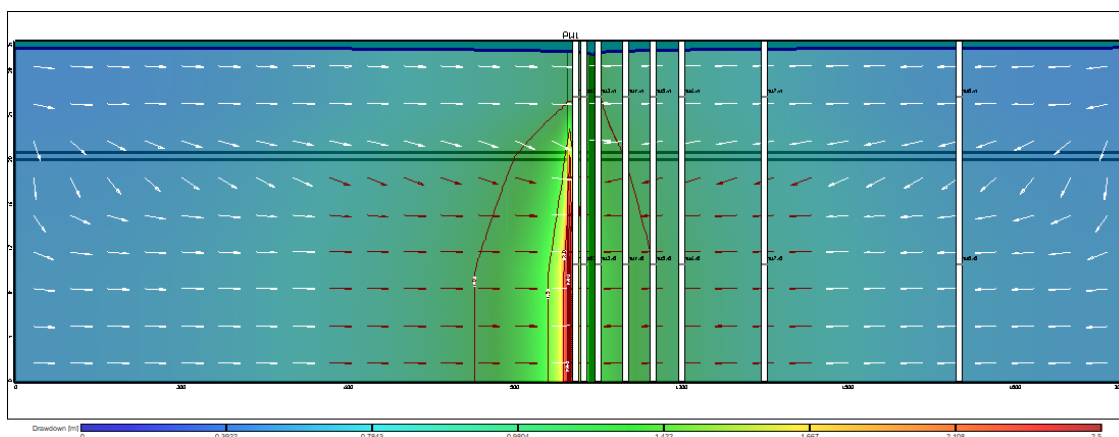


Figure 5-40: Cross-sectional view of model 6.3 showing drawdown and flow direction.

Model 6.4 introduces the abandoned located 80 m away from the pumping well. Like previous models, the maximum drawdown occurred at $t=1000$ days, however, MW3 experienced the greatest drawdown with a value of 0.90 m in the top aquifer while MW1 had a drawdown value of 1.95 m in the bottom aquifer. The minimum drawdown was observed in MW8 with values of 0.62 m and 0.67 m in the top aquifer and the bottom aquifer, respectively. The leakage rate determined by the zone budget analysis showed that the rate flowing through zone 2 to be 434.32 m³/day while through the abandoned well to be 65.05 m³/day. Figure 5-41 shows the drawdown observed in the system as well as the direction of flow.

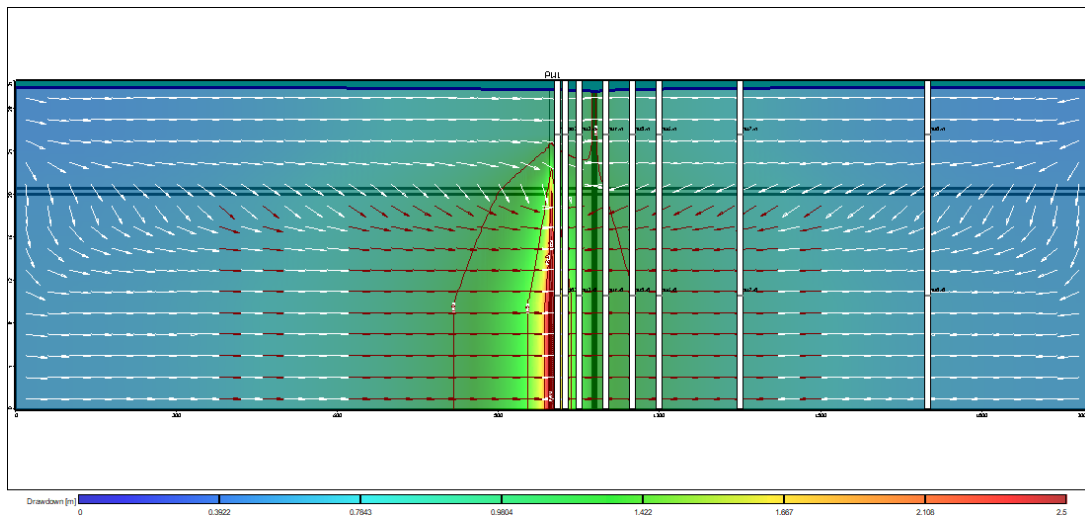


Figure 5-41: Cross-sectional view of model 6.4 depicting drawdown and flow.

In Model 6.5, the abandoned well is located 160 m away from the pumping well. Maximum drawdown levels were observed at MW5 in the upper aquifer and MW1 in the bottom aquifer. Minimal values were observed in MW8 in both aquifers. The values for drawdown in the top aquifer were 0.88 m at MW5 and 0.62 m at MW8. In the lower aquifer, the drawdown values were 2.00 m at MW1 and 0.67 m at MW8. The zone budget analysis indicated that fluid flowed at a rate of 464.03 m³/day through the confining layer. While the

rate that flowed through the abandoned well was shown to be 35.40 m³/day. Figure 5-42 shows the drawdown and flow direction of the model.

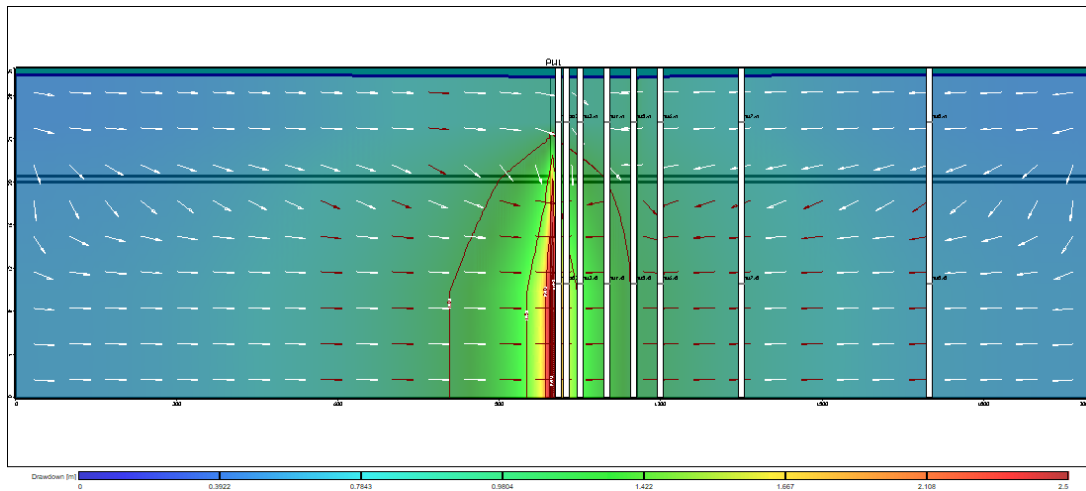


Figure 5-42: Cross-sectional view of model 6.5 depicting the drawdown and flow direction.

In Model 6.6 the abandoned well is located 250 m away from the pumping well. At $t=1000$ days maximum drawdown was observed at MW1 for both aquifers while the minimum drawdown was observed at MW8. In the upper aquifer, 0.79 m of drawdown was observed in MW1 while 0.62 m of drawdown was observed at MW8. In the lower aquifer, 2.02 m of drawdown was observed at MW1, and 0.67 m of drawdown was seen at MW8. According to the zone budget analysis, the flow was downward into the bottom aquifer. The rate at which fluid flowed through the aquitard was 475.14 m³/day while fluid flowing through the abandoned well was at a rate of 23.50 m³/day. Figure 5-43 depicts the flow and drawdown of the model.

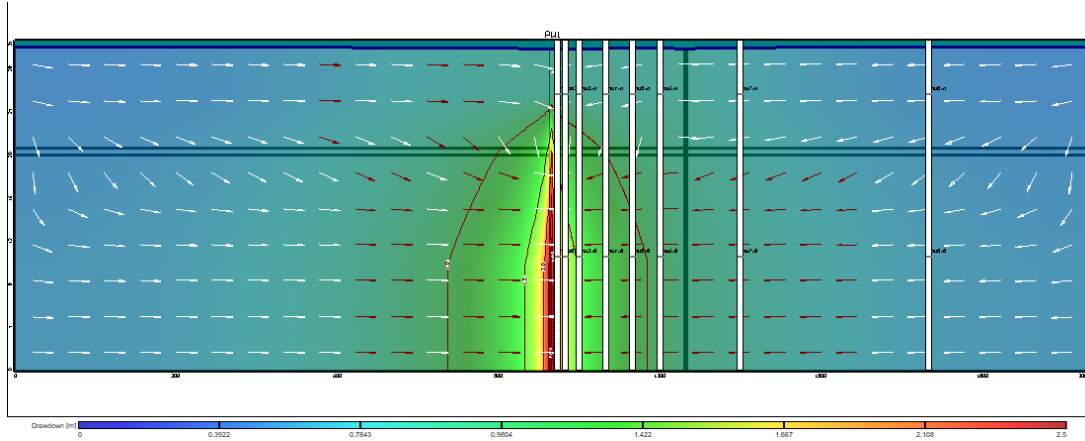


Figure 5-43: Cross-sectional view of model 6.6 showing the drawdown and fluid flow direction.

Lastly, Model 6.7 has an abandoned well located 500 m away from the pumping source. Similar to the previous models in the scenario the maximum drawdown occurred when $t=1000$ days. For both aquifers, MW1 had the greatest drawdown while MW8 had the least amount of drawdown. The drawdown values in the top aquifer were as followed: 0.78 m for MW1 and 0.62 m for MW8. In the bottom aquifer, MW1 had a drawdown of 2.03 m, and MW8 saw a drawdown of 0.67 m. The rate at which fluid leaked through the confining layer was $489.25 \text{ m}^3/\text{day}$ and the leakage rate through the abandoned well was $9.42 \text{ m}^3/\text{day}$. Figure 5-44 shows the flow direction and drawdown seen in the model.

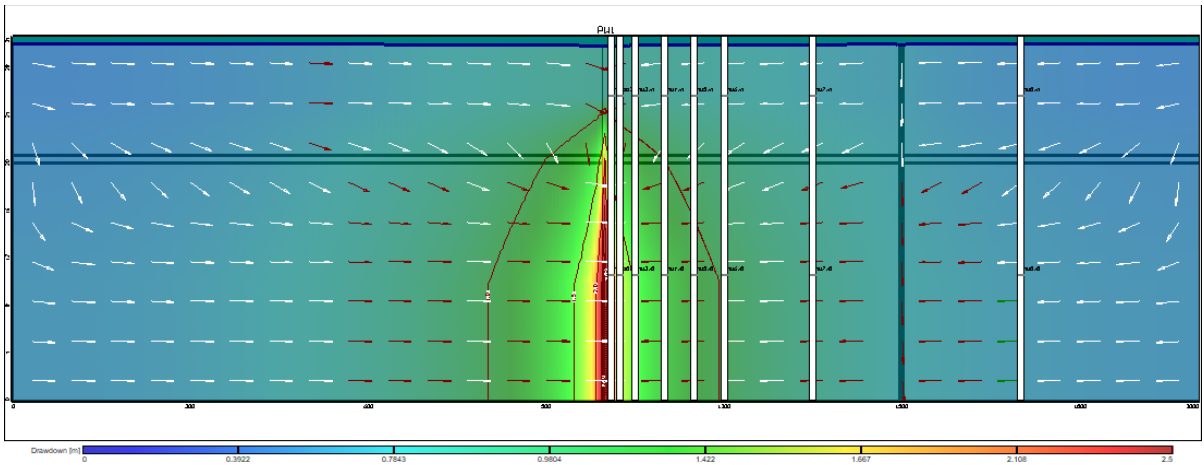


Figure 5-44: Cross-sectional diagram of model 6.7 showing the drawdown and flow direction.

5.2. Discussion

In this section, we will discuss how this study compares with similar studies conducted, the limitations of this study, and what future works can be done to better understand this emerging issue.

5.2.1. Comparison with previous studies

In comparison with previous studies conducted, this research analyzed the effects of pumping wells in conjunction with abandoned wells rather than analyzing injection wells with nearby abandoned wells as seen in the numerical models developed by Wang (2020), and Celia et al. (2005). This study showed to be consistent with the fact that the further away from the abandoned well was located the less leakage through the abandoned well was experienced. This research also assessed more parameters that could impact flow and leakage such as variable pumping rate and confining layer thickness. Analytical solutions produced by Avci (1992), Avci (1994), and Nordbotten et al. (2004), all considered the confining layer to be completely impermeable, while in the real world we know this is not always the case and fluid sometimes leaks through. scenario

5.2.2. Limitations of this study

This study was limited by two factors: the modeling software and available data. The limitations will be further discussed in the following sections.

5.2.2.1. Limitations of abandoned well settings

In the Visual MODFLOW software, there is not a function that can accurately represent an abandoned well. In this study, to create an abandoned well, three highly conductive zones were created in a vertical line. In a real-world scenario, this would not be accurate as there are layers of casing and concrete that would slow or prevent leakage. Due to programming errors, it is impossible to add impermeable areas or lower conductivity.

5.2.2.2. Available data

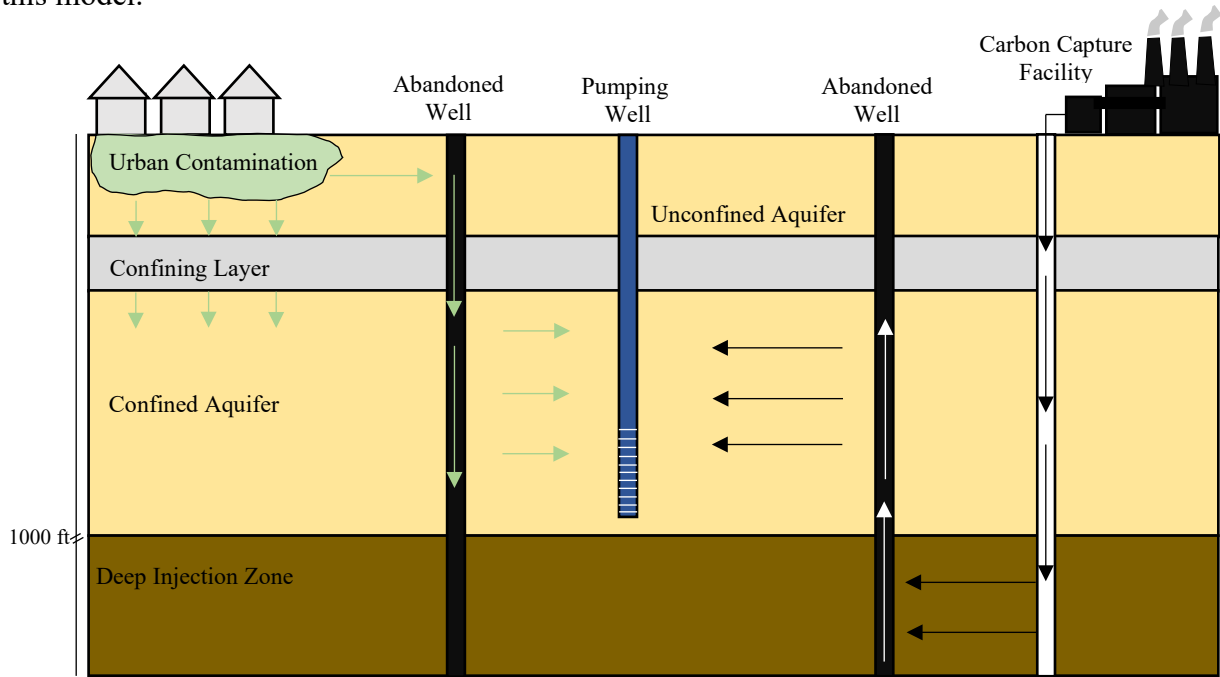
The accuracy of the model is also limited by the low availability of data. These models and previous analytical solutions make assumptions and generalizations. There is limited data on permeability and what the conductivity would be for an abandoned borehole. Similar to Wang (2020), a hypothetical conductivity was set to imitate the well, whereas Avci (1992, 1994) and Nordbotten et al. (2004) used a resistance factor while Celia et al. (2005) used a bi-modal random distribution. Hydraulic conductivities of the formations were generalized to common values that are typically found for water-bearing units but only assume homogeneity through the unit which is not always true. With limited real-world cases and data, these models can help delineate the leakage problem and determine the flow direction.

5.3. Future works

There are several aspects of this work that could be further analyzed and improved for future studies:

- 1) Improve the accuracy of the numerical model. This model does not consider the impermeable casing that is typically found with most wells. Future works could somehow find a way to incorporate this to improve the accuracy of the model.
- 2) Incorporate the transport model. Assuming that one of the aquifers contains a contaminant associated with the oil and gas (O&G) exploration activities (I.e., Benzene, Toluene, Ethylbenzene, Xylene, or extremely high chloride) running the transport model could further identify potential pathways and how the contaminant plume would travel in the non-contaminated aquifer. One could also build on this further and examine what happens when other sources of contamination occur. For example, what happens with urban contamination or when an abandoned well is in an area near a carbon capture and storage facility.
- 3) Different well settings. Nordbotten et al. (2004) examined an area that contained multiple abandoned wells and modified the previous single well equation to fit this scenario. A numerical model could be developed to better understand the issue as numerical solutions have not been developed for this matter. Other types of wells that have not been discussed are horizontal or directional wells which have been broadly employed in oil and gas explorations before. These types of wells also could pose environmental risks if not properly plugged and abandoned (P&A). This case has not been as intensely studied as the vertical well but still poses an environmental risk.

Figure 5-45 depicts areas of other sources of contamination that could be further studied using this model.



6.0. CONCLUSIONS

6.1. Conclusions

This study investigated parameters that could influence drawdown and fluid leakage in an abandoned well when near a pumping well. A simplified three-layer system was developed in Visual MODFLOW and used to obtain simulations under numerous different scenarios. All models considered steady-state flow conditions and are assumed to follow Darcy's Law throughout the simulations. Many variables have been identified and assessed using MODFLOW 2000 and the Zone budget engine. The results were compared and analyzed in Microsoft Excel and are summarized in table 6-1 and table 6-2.

The results are as follows:

- 1) As the distance (D) between the pumping well and the abandoned well increased, the leakage rate (Q_{AW}) in the abandoned well significantly decreased.
- 2) When the pumping rate was gradually increased by 250 m³/day in the upper aquifer, the maximum drawdown and rate of fluid leakage through the abandoned well occurred at $t=750$ days, however when t was at 1000 days the rate significantly decreased.
- 3) Drawdown and the rate at which fluid leaked through the abandoned well were inversely related. As the drawdown observed increased, the rate at which fluid leaked through the abandoned well decreased. This is easily identified in the tables. Table 6-1 shows the results from models showing when drawdown was at maximum and fluid leakage rates were lower for the set of scenarios. Table 6-2 shows models where the fluid leakage rates through the abandoned well were at a maximum and drawdown values were much smaller.

4) When pumping from the bottom aquifer was considered, fluid leaked at a much higher rate in comparison to what was observed when pumping occurred in the top aquifer. This may have been because groundwater already had the natural tendency to flow downward through aquitard due to the difference in permeability in the two layers as well as the downward hydraulic gradient created by the pumping well.

5) Fluid leakage rates through the aquitard and the abandoned well for each model showed to be consistent throughout the scenarios. As the distance between the pumping well and the abandoned well (D) increased, the rate fluid leaked through the aquitard was significantly higher than the rates seen in the abandoned well. This is probably due to the previously mentioned, inverse relationship between the leakage through the abandoned well and D existed. As the D value increased, the leakage through the confining layer appeared to approach the value similar to when there was no abandoned well present.

Table 6-1: Summarized results for when maximum drawdown occurred

Scenario	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Model Number	1.6	2.6	3.7	4.6	5.6	6.6
Pumping Location	Upper Aquifer	Bottom Aquifer	Upper Aquifer	Bottom Aquifer	Upper Aquifer	Bottom Aquifer
time (days)	1000	1000	750*	1000	1000	1000
Aquitard Thickness (m)	0.2	0.2	0.2	0.2	0.6	0.6
Abandoned Well Distance (m)	250	250	250	250	250	250
Monitoring Well/ Distance (m)	MW-1 (10)	MW-1 (10)	MW-1 (10)	MW-1 (10)	MW-1 (10)	MW-1 (10)
Maximum Drawdown (m)	2.07	1.92	2.52	3.38	2.14	2.02
Maximum Drawdown w/o Abandoned Well (m)	2.08	1.93	2.71	3.41	2.15	2.03
Fluid Leakage Rate through Abandoned Well (m ³ /day)	6.5	9.5	1.57	18.79	15.45	23.5
Fluid Leakage Rate through Aquitard (m ³ /day)	379.53	489.89	565.90	980.16	275.86	475.97
Fluid Leakage Rate through Aquitard w/o Abandoned Well (m ³ /day)	382.90	499.33	566.44	998.65	281.18	499.39

* -- Maximum drawdown occurred at t=845 days with a value of 3.44 m at MW-1 but was unable to acquire fluid leakage data

Table 6-2: Summarized results for when maximum fluid leakage occurred

Scenario	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Model Number	1.2	2.2	3.2	4.2	5.2	6.2
Pumping Location	Upper Aquifer	Bottom Aquifer	Upper Aquifer	Bottom Aquifer	Upper Aquifer	Bottom Aquifer
time (days)	1000	1000	750*	1000	1000	1000
Aquitard Thickness (m)	0.2	0.2	0.2	0.2	0.6	0.6
Abandoned Well Distance (m)	250	250	250	250	250	250
Monitoring Well/ Distance (m)	MW-1 (10)	MW-1 (10)	MW-1 (10)	MW-1 (10)	MW-1 (10)	MW-1 (10)
Maximum Drawdown (m)	1.70	1.65	2.11	2.84	1.54	1.47
Maximum Drawdown w/o Abandoned Well (m)	2.08	1.93	2.71	3.41	2.15	2.03
Fluid Leakage Rate through Abandoned Well (m ³ /day)	122.01	122.49	183.24	238.74	118.01	125.81
Fluid Leakage Rate through Aquitard (m ³ /day)	293.27	384.13	434.20	776.18	265.56	383.33
Fluid Leakage Rate through Aquitard w/o Abandoned Well (m ³ /day)	382.90	499.33	566.44	998.65	281.18	499.39

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Appendix A: Data Tables

Appendix A - Data Table

Pumping from zone 1 w/o Abandoned Well

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	3.8147E-06	5.14984E-05	0.000629425	0.002721787	0.013830185	0.082252502	0.230012894	0.50334549
2.54250145	2.28882E-05	0.000225067	0.003147125	0.011127472	0.042274475	0.173324585	0.383710861	0.705121994
4.20668411	6.10352E-05	0.000675201	0.008871078	0.026033402	0.078933716	0.251693726	0.487771988	0.823318481
6.20370388	0.000133514	0.001691818	0.018499374	0.046380997	0.118404388	0.317552567	0.566289902	0.908735275
8.60012722	0.000263214	0.003684998	0.031972885	0.070476532	0.157804489	0.374048233	0.630186081	0.977048874
11.4758358	0.000484467	0.007110596	0.048723221	0.096786499	0.195884705	0.423660278	0.684671402	1.03479004
14.9266863	0.000862122	0.012353897	0.068000794	0.124193192	0.23223114	0.468132019	0.732648849	1.0853672
19.0677071	0.001502991	0.019662857	0.089063644	0.151935577	0.266750336	0.5085392	0.77571106	1.13061333
24.036932	0.002559662	0.029094696	0.111282349	0.179533005	0.299509048	0.545721054	0.815015793	1.17181969
30.0000019	0.004240036	0.040559769	0.134162903	0.206699371	0.330635071	0.580251694	0.851299286	1.209795
32.311367	0.004951477	0.044988632	0.142505646	0.21644783	0.341663361	0.592374802	0.864002228	1.2230854
35.0850067	0.005893707	0.050239563	0.151836395	0.227180481	0.353656769	0.605463028	0.877696991	1.23740387
38.413372	0.007143021	0.056402206	0.162166595	0.238887787	0.366592407	0.619478226	0.892332077	1.25269508
42.4074097	0.008798599	0.063549042	0.173492432	0.251543045	0.380426407	0.634368896	0.907855988	1.26891518
47.2002563	0.010978699	0.071739197	0.185789108	0.265104294	0.395107269	0.650072098	0.924203873	1.28598976
52.9516716	0.013832092	0.081008911	0.199016571	0.27951622	0.410568237	0.666517258	0.941295624	1.30383492
59.8533707	0.017524719	0.091375351	0.213125229	0.294719696	0.426744461	0.683635712	0.959068298	1.32238579
68.1354141	0.022247315	0.102844238	0.228063583	0.310653687	0.443569183	0.701358795	0.97744751	1.34156418
78.0738602	0.028198242	0.115409851	0.243782043	0.327264786	0.460990906	0.719631195	0.99637413	1.36131096
90	0.03559494	0.129085541	0.260267258	0.344543457	0.479003906	0.738456726	1.0158596	1.38164139
93.4670486	0.037763596	0.132951736	0.264879227	0.349367142	0.484025955	0.74370575	1.02129173	1.3873024
97.6275024	0.040390015	0.137443542	0.270174026	0.354888916	0.489761353	0.74968338	1.02747345	1.39375114
102.620049	0.04356575	0.14263916	0.276224136	0.361183167	0.496286392	0.756481171	1.03450203	1.40108299
108.611107	0.047399521	0.148622513	0.283102036	0.368314743	0.503662109	0.764148712	1.04242897	1.40935326
115.800377	0.052024841	0.155487061	0.290884018	0.37635994	0.511962891	0.772768021	1.0513382	1.41864777
124.427498	0.057590485	0.163331985	0.299654007	0.38539505	0.52126503	0.782413483	1.06130028	1.429039
134.780045	0.064281464	0.172281265	0.309511185	0.395521164	0.531665802	0.79318428	1.07242393	1.4406414
147.20311	0.072301865	0.182476044	0.320579529	0.406852722	0.543275833	0.80519104	1.08481789	1.4535675
162.110779	0.081892014	0.194108963	0.333042145	0.419574738	0.556287766	0.818641663	1.09871674	1.46806717
179.999985	0.093353272	0.207399368	0.347089767	0.433872223	0.570875168	0.833684921	1.11423683	1.48425674
186.934082	0.097787857	0.212457657	0.35241127	0.439283371	0.576393127	0.839372635	1.12009811	1.49036598
195.25499	0.103096008	0.218421936	0.358654022	0.44562149	0.582843781	0.846012115	1.12694359	1.49750519
205.240082	0.109451294	0.225452423	0.365982056	0.453054428	0.59041214	0.853811264	1.13499641	1.50591087
217.222198	0.1170578	0.233718872	0.374546051	0.461732864	0.599235535	0.862894058	1.1443634	1.51568222
231.600739	0.126159668	0.243455887	0.38458252	0.471887589	0.609552383	0.873506546	1.15530777	1.5270977
248.85498	0.137039185	0.25494957	0.396375656	0.483804703	0.621650696	0.885946274	1.16814232	1.5404911
269.560089	0.150058746	0.268533707	0.410253525	0.497821808	0.635873795	0.900577545	1.18323135	1.55623245
294.406219	0.165641785	0.284612656	0.426626205	0.514343262	0.652626038	0.917797089	1.20099068	1.57476616
324.221558	0.184301376	0.303701401	0.446008682	0.533889771	0.672433853	0.938148499	1.22198105	1.59667397
359.999969	0.206653595	0.32642746	0.469055176	0.557115555	0.695955276	0.962287903	1.24686813	1.62265968
384.654541	0.222042084	0.342037201	0.4848423	0.573026657	0.712078094	0.978874207	1.26398849	1.64053154
414.240021	0.240491867	0.360694885	0.503709793	0.592035294	0.731332779	0.998653412	1.28439331	1.66184235
449.742584	0.262624741	0.383029938	0.526283264	0.614774704	0.754362106	1.02231216	1.30880547	1.68734169
492.345673	0.289173126	0.409814835	0.5533638	0.642053604	0.781984329	1.05067825	1.33806801	1.71792221
543.46936	0.321025848	0.441890717	0.585754395	0.67468071	0.815031052	1.08465004	1.37313652	1.75457001
604.81781	0.3592453	0.480360031	0.624603271	0.713809967	0.854660034	1.12537766	1.41518593	1.7985363
678.435913	0.405097961	0.526510239	0.671205521	0.760746002	0.902194977	1.17424011	1.46565056	1.85133171
766.77771	0.460115433	0.581888199	0.72713089	0.817081451	0.959260941	1.2329216	1.52627563	1.91479111
872.787842	0.526145935	0.648414612	0.794343948	0.884790421	1.0278511	1.30345917	1.59917641	1.99115562
1000	0.605392456	0.728206635	0.874946594	0.965995789	1.11013412	1.38813591	1.68675423	2.08298302

Appendix A - Data Table

Pumping from zone 1 w/o Abandoned Well

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000204086	0.001720428	0.004640579	0.006666183	0.009790421	0.014577866	0.017549515	0.019182205
2.54250145	0.00053215	0.003992081	0.010482788	0.014808655	0.021089554	0.029644013	0.034246445	0.036495209
4.20668411	0.000951767	0.006807327	0.017435074	0.024169922	0.033388138	0.044845581	0.050474167	0.053066254
6.20370388	0.001502991	0.010290146	0.02555275	0.034698486	0.046552658	0.060304642	0.066667557	0.069494247
8.60012722	0.002206802	0.014574051	0.034849167	0.046308518	0.060491562	0.076095581	0.083017349	0.086021423
11.4758358	0.003135681	0.019786835	0.045291901	0.058912277	0.075126648	0.092252731	0.099618912	0.102760315
14.9266863	0.00437355	0.026037216	0.056838989	0.072444916	0.090438843	0.108848572	0.11658287	0.119838715
19.0677071	0.006025314	0.033420563	0.069421768	0.08681488	0.106344223	0.125827789	0.133863449	0.137214661
24.036932	0.008201599	0.041959763	0.082948685	0.101938248	0.12279892	0.143199921	0.151491165	0.154922485
30.0000019	0.011081696	0.051696777	0.097362518	0.117759705	0.139772415	0.160953522	0.169464111	0.172964096
32.311367	0.012228012	0.055400848	0.102714539	0.123598099	0.14600563	0.167451859	0.176038742	0.179561615
35.0850067	0.013656616	0.059707642	0.108776093	0.130163193	0.152973175	0.174690247	0.183351517	0.186899185
38.413372	0.015447617	0.064722061	0.115638733	0.137544632	0.160766602	0.182758331	0.191495895	0.195066452
42.4074097	0.017669678	0.070497513	0.123332977	0.145765305	0.169406891	0.191675186	0.200489044	0.204084396
47.2002563	0.02040863	0.077095032	0.131891251	0.154850006	0.178907394	0.201448441	0.210338593	0.21395874
52.9516716	0.023817062	0.084606171	0.141368866	0.164850235	0.189313889	0.212127686	0.221096039	0.224739075
59.8533707	0.028017044	0.093070984	0.151769638	0.175756454	0.200613022	0.223690033	0.232730865	0.236398697
68.1354141	0.033185959	0.102558136	0.163124084	0.187589645	0.212820053	0.23614502	0.245256424	0.248947144
78.0738602	0.039495468	0.113121033	0.175441742	0.200351715	0.225927353	0.249479294	0.258655548	0.262367249
90	0.047147751	0.124851227	0.188798904	0.214120865	0.24001503	0.263780594	0.273019791	0.276752472
93.4670486	0.049386978	0.128202438	0.192588806	0.218019485	0.244001389	0.267827988	0.277084351	0.280822754
97.6275024	0.052072525	0.132102966	0.196968079	0.222518921	0.248596191	0.272485733	0.281761169	0.285505295
102.620049	0.055299759	0.136657715	0.202030182	0.227708817	0.253883362	0.277837753	0.287130356	0.290882111
108.611107	0.059179306	0.141950607	0.207862854	0.23367691	0.259958267	0.283983231	0.293298721	0.297056198
115.800377	0.063831329	0.148080826	0.214557648	0.240512848	0.266904831	0.291006088	0.30034256	0.304109573
124.427498	0.069412231	0.155176163	0.222225189	0.248323441	0.27482605	0.299003601	0.308364868	0.312137604
134.780045	0.076101303	0.163375854	0.230989456	0.257228851	0.283845901	0.308099747	0.317483902	0.321264267
147.20311	0.084093094	0.172834396	0.240999222	0.267379761	0.294109344	0.318441391	0.327848434	0.331638336
162.110779	0.09362793	0.183769226	0.252477646	0.279001236	0.305845261	0.330263138	0.339698792	0.343500137
179.999985	0.105037689	0.196435928	0.265625	0.292272568	0.319221497	0.34371376	0.35317421	0.356983185
186.934082	0.109458923	0.201278687	0.270622253	0.297309875	0.324289322	0.348802567	0.358268738	0.362081528
195.25499	0.11473465	0.207027435	0.276561737	0.303300858	0.33032608	0.354875565	0.364355087	0.368171692
205.240082	0.121059418	0.213830948	0.283559799	0.31035614	0.337427139	0.362014771	0.371507645	0.375329971
217.222198	0.128648758	0.2218647	0.291765213	0.31860733	0.345716476	0.370330811	0.379831314	0.383657455
231.600739	0.137722015	0.231388092	0.301473618	0.328369141	0.355524063	0.380174637	0.389688492	0.393518448
248.85498	0.148563385	0.24269104	0.312980652	0.339935303	0.367145538	0.391843796	0.401376724	0.40521431
269.560089	0.161558151	0.256103516	0.32658577	0.353599548	0.380867004	0.40561676	0.415168762	0.419013977
294.406219	0.177124023	0.272033691	0.342691422	0.369762421	0.397083282	0.421880722	0.43144989	0.435304642
324.221558	0.195774078	0.291007996	0.36183548	0.388967514	0.416345596	0.441194534	0.450784683	0.454647064
359.999969	0.218122482	0.313652039	0.384656906	0.41185379	0.43929863	0.464206696	0.47382164	0.477693558
384.654541	0.233512878	0.329219818	0.400335312	0.42757225	0.455059052	0.480010986	0.489643097	0.493524551
414.240021	0.251966476	0.34784317	0.419073105	0.44635582	0.473890305	0.498888016	0.5085392	0.512426376
449.742584	0.274112701	0.370159149	0.441516876	0.468851089	0.496440887	0.521490097	0.531162262	0.535060883
492.345673	0.300678253	0.396944046	0.468467712	0.49587059	0.523532867	0.548654556	0.558359146	0.562269211
543.46936	0.332551956	0.429010391	0.500696182	0.528167725	0.555906296	0.581102371	0.590837479	0.594762802
604.81781	0.370798111	0.467479706	0.539363861	0.566921234	0.594753265	0.620040894	0.629814148	0.633756638
678.435913	0.416683197	0.513622284	0.585746765	0.613407135	0.641349792	0.666748047	0.676567078	0.680530548
766.77771	0.471740723	0.569011688	0.641429901	0.669216156	0.697296143	0.722831726	0.732709885	0.736698151
872.787842	0.537828445	0.635560989	0.708358765	0.736305237	0.764558792	0.790266037	0.800218582	0.804237366
1000	0.617136002	0.715364456	0.788597107	0.816730499	0.845186234	0.871095657	0.881134033	0.885190964

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 20m away

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	3.05176E-05	0.000238419	0.001056671	0.003042221	0.012643814	0.069040299	0.182603836	0.424762726
2.54250145	9.53674E-05	0.000738144	0.004072189	0.011249542	0.037492752	0.142032623	0.291885376	0.573965073
4.20668411	0.000202179	0.001623154	0.010019302	0.024997711	0.068695068	0.202974319	0.36199379	0.655017853
6.20370388	0.000364304	0.003145218	0.019371033	0.043214798	0.101766586	0.253353119	0.413888931	0.71191597
8.60012722	0.000614166	0.005651474	0.031993866	0.064430237	0.134496689	0.29631424	0.45608139	0.757144928
11.4758358	0.000989914	0.009521484	0.047363281	0.087388992	0.166046143	0.334119797	0.492420197	0.795637131
14.9266863	0.001562119	0.015069962	0.064842224	0.111213684	0.196201324	0.36822319	0.524904251	0.829799652
19.0677071	0.002435684	0.022485733	0.083827972	0.135341644	0.224994659	0.399581909	0.554691315	0.86097908
24.036932	0.003761292	0.031805039	0.103824615	0.15942955	0.252542496	0.428829193	0.582496643	0.889989853
30.0000019	0.005741119	0.04294014	0.124450684	0.183282852	0.278980255	0.456422806	0.60880661	0.917383194
32.311367	0.006563187	0.04722023	0.131978989	0.191865921	0.288387299	0.466182709	0.618125916	0.927078247
35.0850067	0.007631302	0.052274704	0.140413284	0.201349258	0.298675537	0.476800919	0.628282547	0.937635422
38.413372	0.009017944	0.058181763	0.149776459	0.211736679	0.309839249	0.488273621	0.639282227	0.949066162
42.4074097	0.010820389	0.065015793	0.160074234	0.223024368	0.321861267	0.500579834	0.651111603	0.96134758
47.2002563	0.013156891	0.072834015	0.171300888	0.235189438	0.334716797	0.513692856	0.663755417	0.974466324
52.9516716	0.016162872	0.081676483	0.183433533	0.248197556	0.348363876	0.527576447	0.677177429	0.988391876
59.8533707	0.020004273	0.091571808	0.196445465	0.262018204	0.362770081	0.542201996	0.69137001	1.00310707
68.1354141	0.024860382	0.102537155	0.210308075	0.276613235	0.37789917	0.557535172	0.706300735	1.0185833
78.0738602	0.030925751	0.114589691	0.225002289	0.291967392	0.393732071	0.573566437	0.721971512	1.03482246
90	0.038412094	0.127752304	0.240524292	0.308073044	0.410266876	0.590295792	0.738386154	1.05182838
93.4670486	0.040603638	0.131475449	0.244873047	0.312576294	0.414884567	0.594966888	0.742975235	1.0565815
97.6275024	0.04324913	0.135808945	0.249881744	0.317750931	0.420185089	0.600324631	0.748247147	1.06204414
102.620049	0.046445847	0.140829086	0.255622864	0.323669434	0.426235199	0.606445313	0.754278183	1.06829071
108.611107	0.050296783	0.146623611	0.262168884	0.330400467	0.433109283	0.613393784	0.761135101	1.07539368
115.800377	0.054937363	0.153287888	0.269605637	0.338029861	0.440885544	0.621259689	0.768915176	1.08345222
124.427498	0.06051445	0.160926819	0.278024673	0.346645355	0.449655533	0.63012886	0.777702332	1.09255028
134.780045	0.067209244	0.16966629	0.287532806	0.356348038	0.459518433	0.640104294	0.787605286	1.10280418
147.20311	0.075227737	0.179656982	0.298265457	0.367271423	0.47060585	0.651319504	0.79876709	1.11436462
162.110779	0.084819794	0.191087723	0.310388565	0.379583359	0.483083725	0.663949966	0.81137085	1.12741852
179.999985	0.096277237	0.204198837	0.324134827	0.393507004	0.497175217	0.678215027	0.825632095	1.14218712
186.934082	0.100709915	0.209199905	0.329357147	0.398790359	0.502521515	0.683624268	0.831047058	1.14779472
195.25499	0.106018066	0.215101242	0.335489273	0.404993057	0.50879097	0.689971924	0.837402344	1.15437508
205.240082	0.112371445	0.22205925	0.342691422	0.412267685	0.516141891	0.697416306	0.844863892	1.16210365
217.222198	0.119972229	0.230264664	0.351144791	0.420801163	0.5247612	0.706142426	0.853616714	1.17116737
231.600739	0.129070282	0.239946365	0.361074448	0.430814743	0.534870148	0.716386795	0.863908768	1.18182755
248.85498	0.139951706	0.251377106	0.372751236	0.442579269	0.546743393	0.728412628	0.875997543	1.19434547
269.560089	0.152973175	0.264902115	0.386516571	0.456438065	0.560722351	0.742576599	0.89024353	1.20910454
294.406219	0.168563843	0.28094101	0.402791977	0.47281456	0.577234268	0.759311676	0.907091141	1.22655296
324.221558	0.187234879	0.300003052	0.42209053	0.492221832	0.596797943	0.779138565	0.927061081	1.24724197
359.999969	0.209594727	0.322704315	0.44502449	0.515277863	0.620033264	0.802686691	0.950784683	1.27182198
384.654541	0.224990845	0.338293076	0.460760117	0.531093597	0.635971069	0.818841934	0.967067719	1.2887001
414.240021	0.243452072	0.356945038	0.479574203	0.550001144	0.655025482	0.838155746	0.986534119	1.30887413
449.742584	0.265598297	0.379283905	0.502098083	0.572635651	0.67783165	0.861276627	1.00984383	1.33303642
492.345673	0.292163849	0.406049728	0.529073715	0.599740982	0.705142975	0.888965607	1.03775978	1.36198044
543.46936	0.324033737	0.438135147	0.561407089	0.632226944	0.737876892	0.92215538	1.07122421	1.39668465
604.81781	0.362279892	0.476631165	0.600191116	0.671195984	0.777143478	0.961971283	1.11137772	1.43834114
678.435913	0.408168793	0.52280426	0.646707535	0.717933655	0.824239731	1.00972939	1.15953636	1.4883194
766.77771	0.463224411	0.578193665	0.702508926	0.774003983	0.880743027	1.06703377	1.21732712	1.54832077
872.787842	0.529306412	0.644680023	0.769491196	0.841306686	0.948570251	1.13583565	1.28672218	1.62040901
1000	0.608602524	0.724458694	0.849870682	0.922079086	1.0299778	1.21842766	1.37002945	1.70700836

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 20m away

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.001117706	0.008466721	0.023019791	0.033565521	0.051408768	0.089191437	0.146362305	0.147663116
2.54250145	0.001934052	0.013978958	0.037172318	0.053638458	0.080884934	0.136651993	0.219167709	0.220945358
4.20668411	0.002649307	0.018501282	0.04826355	0.068891525	0.10219574	0.168317795	0.264614105	0.266658783
6.20370388	0.003416061	0.023044586	0.058746338	0.082765579	0.120582581	0.193754196	0.299104691	0.301328659
8.60012722	0.004325867	0.028039932	0.069448471	0.096382141	0.13779068	0.216220856	0.328178406	0.330539703
11.4758358	0.00545311	0.033721924	0.080680847	0.110164642	0.154529572	0.237089157	0.354167938	0.356636047
14.9266863	0.006887436	0.040254593	0.092582703	0.124305725	0.171144485	0.257053375	0.3782444	0.380800247
19.0677071	0.008729935	0.047735214	0.105190277	0.138879776	0.187810898	0.276489258	0.401060104	0.403688431
24.036932	0.011112213	0.056245804	0.118518829	0.153930664	0.204645157	0.295635223	0.423023224	0.425712585
30.0000019	0.014188767	0.065824509	0.132556915	0.169469833	0.221702576	0.314645767	0.44439888	0.44713974
32.311367	0.015405655	0.069433212	0.137722015	0.175146103	0.227895737	0.321496964	0.452045441	0.454805374
35.0850067	0.016910553	0.073638916	0.14358902	0.181549072	0.234830856	0.329109192	0.460479736	0.463256836
38.413372	0.018770218	0.078516007	0.150217056	0.188726425	0.242553711	0.337522507	0.46972847	0.472522736
42.4074097	0.021064758	0.084121704	0.157634735	0.196702957	0.251079559	0.346744537	0.479789734	0.482603073
47.2002563	0.023899078	0.090532303	0.165893555	0.20552063	0.260442734	0.356796265	0.490674973	0.493509293
52.9516716	0.027383804	0.097801209	0.175010681	0.21518898	0.270647049	0.367675781	0.502370834	0.505222321
59.8533707	0.031661987	0.106012344	0.18504715	0.225757599	0.281734467	0.379413605	0.514896393	0.517766953
68.1354141	0.03689003	0.115219116	0.196012497	0.237234116	0.293703079	0.392004013	0.528236389	0.531124115
78.0738602	0.043254852	0.12550354	0.207963943	0.249660492	0.306591034	0.405473709	0.542411804	0.545314789
90	0.050945282	0.13693428	0.220933914	0.26307106	0.320425034	0.419845581	0.557435989	0.56035614
93.4670486	0.053184509	0.140188217	0.224599838	0.266853333	0.324321747	0.423887253	0.56165123	0.564573288
97.6275024	0.055877686	0.1439991	0.22886467	0.271245956	0.328840256	0.428562164	0.566518784	0.569444656
102.620049	0.059112549	0.148452759	0.233802795	0.276323318	0.334049225	0.433942795	0.572105408	0.57503891
108.611107	0.062994003	0.15363121	0.239496231	0.282161713	0.34003067	0.440105438	0.578489304	0.581428528
115.800377	0.067649841	0.159648895	0.246049881	0.28886795	0.346887589	0.447153091	0.585771561	0.5887146
124.427498	0.073230743	0.166629791	0.253578186	0.296552658	0.354724884	0.455186844	0.594043732	0.5969944
134.780045	0.079908371	0.174695969	0.262189865	0.305322647	0.363649368	0.464313507	0.603416443	0.606372833
147.20311	0.087896347	0.184036255	0.272064209	0.315349579	0.373830795	0.474697113	0.614048004	0.617010117
162.110779	0.097448349	0.194869995	0.283403397	0.326839447	0.385471344	0.486536026	0.626131058	0.6291008
179.999985	0.108852386	0.207437515	0.296438217	0.340011597	0.398788452	0.500047684	0.639881134	0.642858505
186.934082	0.113264084	0.212247849	0.301410675	0.345035553	0.403862	0.505189896	0.645109177	0.648090363
195.25499	0.11854744	0.217950821	0.307285309	0.350963593	0.409845352	0.511249542	0.651262283	0.654245377
205.240082	0.124876022	0.224710464	0.314224243	0.35795784	0.416898727	0.518386841	0.658502579	0.661487579
217.222198	0.132448196	0.232713699	0.322412491	0.366205215	0.425209045	0.526784897	0.667013168	0.670001984
231.600739	0.141523361	0.242219925	0.332107544	0.375961304	0.435033798	0.536706924	0.677051544	0.680046082
248.85498	0.152378082	0.253477097	0.343547821	0.387464523	0.446609497	0.548383713	0.688858032	0.691858292
269.560089	0.165376663	0.266851425	0.357103348	0.401086807	0.46030426	0.562189102	0.702804565	0.70580864
294.406219	0.180953979	0.282772064	0.373203278	0.417253494	0.476551056	0.578556061	0.719322205	0.722332001
324.221558	0.199617386	0.301742554	0.392351151	0.436471939	0.495853424	0.597991943	0.738925934	0.741943359
359.999969	0.221969604	0.324371338	0.415151596	0.459346771	0.518821716	0.621107101	0.762231827	0.765256882
384.654541	0.23736763	0.339929581	0.430822372	0.475067139	0.534605026	0.636989594	0.778238297	0.781270981
414.240021	0.255834579	0.358560562	0.449575424	0.493875504	0.55348587	0.655984879	0.797380447	0.800418854
449.742584	0.277992249	0.380893707	0.472043991	0.516407013	0.576101303	0.678735733	0.820306778	0.823352814
492.345673	0.304573059	0.407657623	0.498966217	0.543403625	0.603197098	0.705989838	0.847766876	0.850822449
543.46936	0.336462021	0.439748764	0.531238556	0.57576561	0.63567543	0.738660812	0.880683899	0.883750916
604.81781	0.374736786	0.478263855	0.569971085	0.614603043	0.6746521	0.777866364	0.920183182	0.92326355
678.435913	0.420658112	0.524457932	0.616418839	0.661178589	0.721395493	0.824882507	0.967552185	0.970649719
766.77771	0.475751877	0.579870224	0.672136307	0.717048645	0.77746582	0.881284714	1.02438164	1.02749825
872.787842	0.541885376	0.646398544	0.73903656	0.784132004	0.84479332	0.949008942	1.09261703	1.09575844
1000	0.621240616	0.726221085	0.81930542	0.864622116	0.925579071	1.03027725	1.17450714	1.17767715

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 40m away

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	1.52588E-05	0.000131607	0.000789642	0.002735138	0.01253891	0.06851387	0.21105957	0.494657516
2.54250145	5.72205E-05	0.00047493	0.003499985	0.010732651	0.037715912	0.140523911	0.342544556	0.683675766
4.20668411	0.000135422	0.001178741	0.009223938	0.024517059	0.069635391	0.200584412	0.426589966	0.78858757
6.20370388	0.000265121	0.002500534	0.018497467	0.043020248	0.103628159	0.250259399	0.487878799	0.861551285
8.60012722	0.000471115	0.004814148	0.031198502	0.064714432	0.13735199	0.29265976	0.536943436	0.91856575
11.4758358	0.000793457	0.008514404	0.046796799	0.088277817	0.169885635	0.33000946	0.578603745	0.966205597
14.9266863	0.001300812	0.013938904	0.064617157	0.112770081	0.200971603	0.363739014	0.615373611	1.00773811
19.0677071	0.002098084	0.021287918	0.084022522	0.137584686	0.230628967	0.394786835	0.648696899	1.04500389
24.036932	0.00333786	0.030607224	0.104484558	0.162345886	0.258960724	0.423776627	0.679475784	1.07913399
30.0000019	0.005222321	0.041807175	0.125591278	0.186840057	0.28609848	0.451148987	0.708311081	1.11087418
32.311367	0.006010056	0.046117783	0.133295059	0.195648193	0.295749664	0.460836411	0.718488693	1.12204742
35.0850067	0.007040024	0.051216126	0.141923904	0.205373764	0.306293488	0.471382141	0.729537964	1.13414192
38.413372	0.008382797	0.057184219	0.151496887	0.216018677	0.317724228	0.482776642	0.741449356	1.14711405
42.4074097	0.010139465	0.064092636	0.16201973	0.227573395	0.330018997	0.495002747	0.754203796	1.16101646
47.2002563	0.012426376	0.072004318	0.173482895	0.240011215	0.343147278	0.508041382	0.767774582	1.17573738
52.9516716	0.015384674	0.080953598	0.185857773	0.253297806	0.357069016	0.521852493	0.782125473	1.19125938
59.8533707	0.019180298	0.090969086	0.199113846	0.267391205	0.371742249	0.536405563	0.797222137	1.2075386
68.1354141	0.023992539	0.102064133	0.213214874	0.282253265	0.387126923	0.551670074	0.813035965	1.22454071
78.0738602	0.03001976	0.114246368	0.22813797	0.29785347	0.40320015	0.567632675	0.829549789	1.24224472
90	0.037473679	0.127540588	0.243875504	0.314191818	0.419958115	0.584300995	0.846776962	1.26066017
93.4670486	0.039655685	0.131299973	0.248283386	0.318758011	0.424636841	0.588956833	0.851583481	1.26578903
97.6275024	0.042295456	0.135673523	0.253355026	0.32400322	0.430002213	0.594299316	0.85710144	1.27168083
102.620049	0.045482636	0.140739441	0.259166718	0.329994202	0.436124802	0.600400925	0.863399506	1.27839279
108.611107	0.049325943	0.14658165	0.265787125	0.336807251	0.443077087	0.60733223	0.870555878	1.28601456
115.800377	0.053958893	0.153297424	0.273302078	0.344520569	0.450935364	0.615179062	0.878650665	1.29462051
124.427498	0.059530258	0.160991669	0.281801224	0.353218079	0.459787369	0.624023438	0.887771606	1.30430794
134.780045	0.066217423	0.169784546	0.291387558	0.363006592	0.469732285	0.63397789	0.898033142	1.31518936
147.20311	0.074232101	0.179826736	0.302194595	0.374011993	0.480899811	0.645170212	0.909566879	1.32740402
162.110779	0.083820343	0.191305161	0.314390182	0.386400223	0.493452072	0.65776825	0.922544479	1.34112358
179.999985	0.095272064	0.204460144	0.328203201	0.400396347	0.507619858	0.672008514	0.937208176	1.35660744
186.934082	0.099702835	0.209476471	0.33344841	0.405708313	0.512992859	0.677412033	0.942768097	1.36247635
195.25499	0.105009079	0.215394974	0.339607239	0.411937714	0.519292831	0.683753967	0.949296951	1.36936378
205.240082	0.11136055	0.222370148	0.346834183	0.419242859	0.526676178	0.691188812	0.956951141	1.37743568
217.222198	0.118959427	0.23059082	0.355314255	0.427804947	0.535327911	0.699907303	0.965925217	1.38689613
231.600739	0.128053665	0.240285873	0.3652668	0.43784523	0.545467377	0.710130692	0.976448059	1.39797401
248.85498	0.138933182	0.251729965	0.376966476	0.449638367	0.557373047	0.722141266	0.988809586	1.41098785
269.560089	0.151950836	0.265262604	0.390750885	0.463523865	0.57138443	0.736286163	1.00336456	1.42630577
294.406219	0.16753006	0.281305313	0.407039642	0.479921341	0.587924957	0.75299263	1.0205555	1.44439125
324.221558	0.186187744	0.300365448	0.426347733	0.499345779	0.607515335	0.772787094	1.04092598	1.46581841
359.999969	0.208547592	0.323076248	0.449306488	0.522438049	0.630802155	0.796323776	1.06514931	1.49129868
384.654541	0.223937988	0.338665009	0.465053558	0.53827095	0.64676857	0.812461853	1.0817585	1.5087738
414.240021	0.242391586	0.357316971	0.483879089	0.557199478	0.665851593	0.831756592	1.10161972	1.52966881
449.742584	0.264537811	0.37966156	0.506420135	0.57985878	0.688699722	0.854862213	1.12540436	1.55469513
492.345673	0.291088104	0.406419754	0.533403397	0.606985092	0.716047287	0.882513046	1.15387344	1.58466339
543.46936	0.322954178	0.438510895	0.565757751	0.639507294	0.748836517	0.915676117	1.18802643	1.62062645
604.81781	0.361177444	0.476985931	0.604539871	0.678489685	0.788139343	0.955423355	1.22896194	1.66374588
678.435913	0.407064438	0.523164749	0.651088715	0.725280762	0.835321426	1.00315094	1.27813911	1.71557808
766.77771	0.462125778	0.578569412	0.706935883	0.781419754	0.891292626	1.06041527	1.33715248	1.77781868
872.787842	0.528202057	0.645057678	0.773954391	0.84879303	0.959871292	1.12915421	1.40803337	1.85263634
1000	0.60749054	0.724840164	0.854379654	0.929647446	1.04141426	1.21166229	1.49315071	1.94257545

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 40m away

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
1.15568244	0.000602722	0.004602432	0.012634277	0.018564224	0.028921127	0.056381226	0.058969498	0.049512863
2.54250145	0.001266479	0.009254456	0.024877548	0.036142349	0.05529213	0.104412079	0.108346939	0.090702057
4.20668411	0.001935959	0.013689041	0.036029816	0.05166626	0.077470779	0.141592026	0.146366119	0.123083115
6.20370388	0.00267601	0.018289566	0.046926498	0.066270828	0.097265244	0.172243118	0.177612305	0.150306702
8.60012722	0.003557205	0.02337265	0.058099747	0.080659866	0.115842819	0.199106216	0.204929352	0.174592972
11.4758358	0.004652023	0.029151917	0.069807053	0.095186234	0.133827209	0.223653793	0.229841232	0.197126389
14.9266863	0.006044388	0.035785675	0.082164764	0.110015869	0.1515522	0.246717453	0.253202438	0.218564987
19.0677071	0.007843018	0.043390274	0.095222473	0.125240326	0.169221878	0.268796921	0.275529861	0.239313126
24.036932	0.01017952	0.052034378	0.108982086	0.140890121	0.186948776	0.290203094	0.297145844	0.259616852
30.0000019	0.01320076	0.061752319	0.123420715	0.156972885	0.204795837	0.311141968	0.318260193	0.279634476
32.311367	0.014404297	0.065422058	0.128738403	0.162851334	0.211271286	0.318656921	0.325834274	0.286840439
35.0850067	0.015890122	0.069692612	0.134767532	0.169466019	0.218500137	0.326955795	0.334196091	0.294822693
38.413372	0.017728806	0.074636459	0.141557693	0.176855087	0.226518631	0.336061478	0.343364716	0.303606033
42.4074097	0.020000458	0.080320358	0.149150848	0.185054779	0.235351563	0.345983505	0.353347778	0.313205719
47.2002563	0.022809982	0.086816788	0.157592773	0.194105148	0.245027542	0.356737137	0.36416626	0.323642731
52.9516716	0.026273727	0.094186783	0.166908264	0.204015732	0.255552292	0.368312836	0.375801086	0.334909439
59.8533707	0.030529022	0.102493286	0.177129745	0.214811325	0.266939163	0.380708694	0.38825798	0.347009659
68.1354141	0.035739899	0.111803055	0.18828392	0.226514816	0.279201508	0.39392662	0.401533127	0.359949112
78.0738602	0.042081833	0.122184753	0.200407028	0.239151001	0.292358398	0.407974243	0.415634155	0.373739243
90	0.049757004	0.133716583	0.213546753	0.252759933	0.306447983	0.422880173	0.430589676	0.388412476
93.4670486	0.051996231	0.137001038	0.217262268	0.256601334	0.310417175	0.427066803	0.434791565	0.392536163
97.6275024	0.054685593	0.140844345	0.221576691	0.261051178	0.315008163	0.43189621	0.439634323	0.397296906
102.620049	0.057916641	0.145328522	0.226568222	0.266191483	0.320297241	0.43744278	0.445196152	0.402770996
108.611107	0.061794281	0.150547028	0.2323246	0.272102356	0.326368332	0.443784714	0.451555252	0.409036636
115.800377	0.066448212	0.156606674	0.238941193	0.27888298	0.333314896	0.451015472	0.458805084	0.416187286
124.427498	0.072023392	0.163618088	0.246524811	0.28663063	0.341234207	0.459226608	0.467035294	0.424318314
134.780045	0.078701019	0.171731949	0.255205154	0.295478821	0.350252151	0.468540192	0.476369858	0.433551788
147.20311	0.086685181	0.181112289	0.265140533	0.305576324	0.360519409	0.479099274	0.486949921	0.444034576
162.110779	0.096231461	0.191972733	0.27652359	0.317115784	0.372220993	0.491081238	0.498952866	0.455944061
179.999985	0.107631683	0.204566956	0.289600372	0.330339432	0.385601044	0.504732132	0.512624741	0.469528198
186.934082	0.112043381	0.209392548	0.294593811	0.335384369	0.390701294	0.50992775	0.517827988	0.47469902
195.25499	0.117326736	0.215108871	0.300487518	0.341335297	0.396711349	0.516040802	0.523950577	0.480787277
205.240082	0.123653412	0.221879959	0.307445526	0.348350525	0.40378952	0.523231506	0.531150818	0.487953186
217.222198	0.131225586	0.229898453	0.315654755	0.356622696	0.412128448	0.53168869	0.539617538	0.496383667
231.600739	0.140293121	0.239402771	0.325349808	0.366378784	0.421955109	0.541639328	0.549581528	0.506309509
248.85498	0.151145935	0.250671387	0.336807251	0.377901077	0.433549881	0.5533638	0.561319351	0.518009186
269.560089	0.164138794	0.264051437	0.350372314	0.391530991	0.447256088	0.567207336	0.575176239	0.531826019
294.406219	0.179702759	0.279964447	0.366466522	0.407691956	0.463497162	0.583591461	0.59157753	0.548185349
324.221558	0.198350906	0.298927307	0.385604858	0.426900864	0.482789993	0.603040695	0.611045837	0.567611694
359.999969	0.220712662	0.321573257	0.408430099	0.449800491	0.505781174	0.626203537	0.63422966	0.590749741
384.654541	0.236101151	0.337127686	0.424095154	0.465513229	0.52155304	0.642086029	0.650127411	0.606616974
414.240021	0.254560471	0.355754852	0.442846298	0.48431778	0.540428162	0.661090851	0.669147491	0.62560463
449.742584	0.276723862	0.378093719	0.465320587	0.506855011	0.563045502	0.683860779	0.6919384	0.648355484
492.345673	0.303283691	0.404840469	0.492221832	0.533830643	0.590114594	0.711105347	0.719207764	0.675579071
543.46936	0.335176468	0.43693924	0.524503708	0.566196442	0.622592926	0.743795395	0.751926422	0.708244324
604.81781	0.373420715	0.475419998	0.563192368	0.604986191	0.661512375	0.782964706	0.791130066	0.747383118
678.435913	0.419347763	0.521623611	0.609653473	0.651569366	0.708255768	0.830011368	0.838220596	0.794397354
766.77771	0.47444725	0.577051163	0.665384293	0.707445145	0.764324188	0.886442184	0.894701004	0.850786209
872.787842	0.54057312	0.643569946	0.73226738	0.774505615	0.831615448	0.954170227	0.962491989	0.918466568
1000	0.619920731	0.723388672	0.812526703	0.854978561	0.912366867	1.03544998	1.04384613	0.999689102

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 80m away

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	7.62939E-06	6.67572E-05	0.000638962	0.002592087	0.012537003	0.080438614	0.229862213	0.500997543
2.54250145	3.43323E-05	0.000293732	0.003129959	0.010448456	0.03745079	0.16809082	0.382379532	0.702133179
4.20668411	8.7738E-05	0.000843048	0.008665085	0.02419281	0.068885803	0.241580963	0.484113693	0.818784714
6.20370388	0.00018692	0.001995087	0.01783371	0.042768478	0.102287292	0.30175209	0.559497833	0.901918411
8.60012722	0.000354767	0.004137039	0.030538559	0.064624786	0.135391235	0.352304459	0.619745255	0.967386246
11.4758358	0.000631332	0.007684708	0.046234131	0.088407517	0.167324066	0.396091461	0.670415878	1.02202034
14.9266863	0.001083374	0.012990952	0.064231873	0.113155365	0.197854996	0.434997559	0.714519501	1.06932449
19.0677071	0.001815796	0.020273209	0.083871841	0.138240814	0.227006912	0.470272064	0.753889084	1.11137772
24.036932	0.002981186	0.029577255	0.104598999	0.163272858	0.254880905	0.502737045	0.789663315	1.14945412
30.0000019	0.004787445	0.040813446	0.125989914	0.188030243	0.281621933	0.533031464	0.822731018	1.18455124
32.311367	0.00554657	0.045145035	0.133798599	0.196931839	0.291135788	0.543697357	0.834321976	1.19683456
35.0850067	0.006542206	0.050273895	0.142543793	0.206758499	0.301534653	0.555244446	0.846824646	1.21007156
38.413372	0.00784874	0.056283951	0.152244568	0.217512131	0.312820435	0.567668915	0.86022377	1.22424126
42.4074097	0.009565353	0.063247681	0.162904739	0.22918129	0.324964523	0.580921173	0.874465942	1.23928452
47.2002563	0.011814117	0.07122612	0.174512863	0.241737366	0.337942123	0.594974518	0.889511108	1.25515747
52.9516716	0.014732361	0.080257416	0.187038422	0.255142212	0.351715088	0.609779358	0.905315399	1.27182198
59.8533707	0.01848793	0.090364456	0.200445175	0.269351959	0.366241455	0.625295639	0.921813965	1.2891922
68.1354141	0.023263931	0.101556778	0.214698792	0.284330368	0.3814888	0.641483307	0.938966751	1.30723
78.0738602	0.029260635	0.113843918	0.229764938	0.300039291	0.39743042	0.658317566	0.956745148	1.32590675
90	0.036689758	0.127241135	0.245641708	0.316482544	0.414072037	0.675804138	0.975156784	1.3452301
93.4670486	0.03886795	0.131029129	0.250085831	0.321075439	0.418712616	0.680667877	0.980272293	1.35059357
97.6275024	0.041500092	0.135435104	0.255199432	0.326349258	0.424045563	0.686264038	0.986148834	1.3567543
102.620049	0.044679642	0.140535355	0.261054993	0.332374573	0.430130005	0.692626953	0.992828369	1.36375809
108.611107	0.048517227	0.14641571	0.267721176	0.339220047	0.437040329	0.699842453	1.00039101	1.37168312
115.800377	0.053144455	0.153171539	0.275287628	0.346973419	0.444862366	0.708003998	1.00893402	1.38063049
124.427498	0.058710098	0.160905838	0.283836365	0.355709076	0.453668594	0.717163086	1.01851845	1.39067459
134.780045	0.065395355	0.169742584	0.29347229	0.365533829	0.463569641	0.72744751	1.02925682	1.4019146
147.20311	0.07340622	0.179826736	0.304328918	0.37657547	0.474695206	0.738981247	1.04127884	1.41449356
162.110779	0.082992554	0.191347122	0.316574097	0.388999939	0.48720932	0.751930237	1.05475807	1.42859077
179.999985	0.094444275	0.204538345	0.330429077	0.403030396	0.501337051	0.766527176	1.06993294	1.44445419
186.934082	0.098875046	0.209568024	0.335689545	0.408353806	0.506698608	0.772066116	1.07567978	1.45045471
195.25499	0.104179382	0.215497971	0.34186554	0.414596558	0.512985229	0.778549194	1.08241463	1.45749855
205.240082	0.110530853	0.222486496	0.349107742	0.421913147	0.52035141	0.786144257	1.09029961	1.4657383
217.222198	0.11812973	0.230718613	0.357601166	0.430484772	0.528982162	0.795036316	1.09952354	1.47537613
231.600739	0.127223969	0.240427017	0.367570877	0.440540314	0.539104462	0.805461884	1.11033249	1.48666573
248.85498	0.138101578	0.251882553	0.379285812	0.452346802	0.550991058	0.817697525	1.12300873	1.49990845
269.560089	0.151117325	0.265426636	0.393087387	0.466245651	0.564985275	0.832092285	1.13791847	1.51548195
294.406219	0.166696548	0.281475067	0.409389496	0.482654572	0.581506729	0.849079132	1.15550613	1.53385353
324.221558	0.185350418	0.300542831	0.428707123	0.502088547	0.601074219	0.869195938	1.17632866	1.55560303
359.999969	0.207698822	0.323249817	0.4516716	0.525184631	0.624328613	0.893095016	1.20106506	1.58144569
384.654541	0.223087311	0.338840485	0.467424393	0.541025162	0.640277863	0.909482956	1.21802902	1.59917259
414.240021	0.241539001	0.357494354	0.486257553	0.559963226	0.659347534	0.929084778	1.23831558	1.62037277
449.742584	0.263671875	0.379831314	0.508796692	0.582624435	0.682165146	0.952533722	1.2625885	1.64574242
492.345673	0.290224075	0.40659523	0.535793304	0.609764099	0.709493637	0.980619431	1.29166412	1.67614174
543.46936	0.322086334	0.438686371	0.568157196	0.642299652	0.742256165	1.01429749	1.32653427	1.71261024
604.81781	0.360319138	0.477172852	0.606962204	0.681308746	0.781536102	1.05467796	1.36835861	1.75636864
678.435913	0.406194687	0.52334404	0.653516769	0.728111267	0.828668594	1.10314369	1.41857338	1.80893135
766.77771	0.461248398	0.57875061	0.709383011	0.784273148	0.885229111	1.16132736	1.47888565	1.87210846
872.787842	0.527311325	0.645227432	0.776409149	0.851659775	0.953094482	1.23115349	1.55129623	1.94800186
1000	0.606586456	0.725002289	0.85684967	0.932535172	1.03455353	1.31500816	1.63831329	2.0392952

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 80m away

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000305176	0.002319336	0.006361008	0.009363174	0.014978409	0.019296646	0.020915985	0.022041321
2.54250145	0.000772476	0.005678177	0.015359879	0.02245903	0.035844803	0.043087006	0.043775559	0.044567108
4.20668411	0.001350403	0.009641647	0.02558136	0.03694725	0.058074951	0.067342758	0.066383362	0.066532135
6.20370388	0.00204277	0.014141083	0.036535263	0.051931381	0.079975128	0.090749741	0.088134766	0.087644577
8.60012722	0.002893448	0.019266129	0.048137665	0.067199707	0.101207733	0.113168716	0.109081268	0.108026505
11.4758358	0.003959656	0.025152206	0.060405731	0.082744598	0.121847153	0.134771347	0.129421234	0.127885818
14.9266863	0.005321503	0.031923294	0.073360443	0.098602295	0.142049789	0.155775707	0.149349213	0.147407532
19.0677071	0.007087708	0.039678574	0.087005615	0.1147995	0.161956787	0.176357269	0.169015884	0.166732788
24.036932	0.009386063	0.04847908	0.101318359	0.131340027	0.181659698	0.196626663	0.188510895	0.185941696
30.0000019	0.012372971	0.058366776	0.116287231	0.148246765	0.201263428	0.216720581	0.207950592	0.205135345
32.311367	0.013563156	0.062097549	0.121789932	0.154409409	0.208339691	0.223960876	0.214969635	0.212072372
35.0850067	0.015033722	0.066438675	0.128017426	0.16132164	0.216194153	0.231983185	0.222764969	0.219783783
38.413372	0.01685524	0.071458817	0.135015488	0.169027328	0.224861145	0.240823746	0.231374741	0.228307724
42.4074097	0.019109726	0.077226639	0.142829895	0.177553177	0.234354019	0.250490189	0.24080658	0.23765564
47.2002563	0.021902084	0.083812714	0.151493073	0.186925888	0.244684219	0.26099205	0.251081467	0.247844696
52.9516716	0.025348663	0.091279984	0.161037445	0.19716835	0.255859375	0.272338867	0.262207031	0.258888245
59.8533707	0.029588699	0.099685669	0.171480179	0.208282471	0.267871857	0.284515381	0.274169922	0.270774841
68.1354141	0.034784317	0.109098434	0.182853699	0.220294952	0.280733109	0.297531128	0.286989212	0.283517838
78.0738602	0.041114807	0.119579315	0.1951828	0.233219147	0.294445038	0.31139183	0.300664902	0.29712677
90	0.048782349	0.131216049	0.208524704	0.247104645	0.309047699	0.326131821	0.315238953	0.311641693
93.4670486	0.051015854	0.134521484	0.212284088	0.25100708	0.313140869	0.330257416	0.319320679	0.31570816
97.6275024	0.053703308	0.138393402	0.216657639	0.25553894	0.31788063	0.335039139	0.324056625	0.320426941
102.620049	0.056930542	0.142910004	0.221710205	0.260761261	0.323328018	0.340530396	0.329496384	0.325847626
108.611107	0.060806274	0.148162842	0.227529526	0.266759872	0.329563141	0.346811295	0.335723877	0.332057953
115.800377	0.065460205	0.154256821	0.234214783	0.273633957	0.336683273	0.353979111	0.342838287	0.339151382
124.427498	0.071037293	0.161312103	0.24187088	0.281478882	0.344779968	0.362131119	0.350934982	0.347229004
134.780045	0.077711105	0.169464111	0.250619888	0.290418625	0.353969574	0.371372223	0.360124588	0.356399536
147.20311	0.085699081	0.178884506	0.260622025	0.300605774	0.364402771	0.381860733	0.370563507	0.366819382
162.110779	0.095243454	0.189777374	0.272066116	0.312227249	0.376256943	0.393772125	0.38243103	0.378671646
179.999985	0.106645584	0.202404022	0.285198212	0.325523376	0.389772415	0.407339096	0.395957947	0.392185211
186.934082	0.111055374	0.207239151	0.290208817	0.330593109	0.394918442	0.412504196	0.401109695	0.397333145
195.25499	0.11633873	0.212966919	0.296123505	0.336568832	0.400978088	0.418584824	0.407176971	0.403396606
205.240082	0.122665405	0.219749451	0.303100586	0.343610764	0.40810585	0.425739288	0.414318085	0.410533905
217.222198	0.130237579	0.227779388	0.311330795	0.35190773	0.416492462	0.43415451	0.422721863	0.418931961
231.600739	0.139303207	0.237291336	0.321041107	0.361686707	0.426364899	0.44405365	0.432609558	0.428815842
248.85498	0.150156021	0.248569489	0.332513809	0.37322998	0.438001633	0.455724716	0.44426918	0.440475464
269.560089	0.16314888	0.261957169	0.346094131	0.386880875	0.451745987	0.46950531	0.458044052	0.454248428
294.406219	0.178710938	0.277877808	0.362197876	0.403057098	0.468017578	0.485818863	0.474351883	0.470556259
324.221558	0.19735527	0.296842575	0.381345749	0.422275543	0.487337112	0.505182266	0.493715286	0.489919662
359.999969	0.21969986	0.319478989	0.404163361	0.445167542	0.510334015	0.528230667	0.516767502	0.512973785
384.654541	0.235092163	0.335039139	0.419834137	0.460886002	0.526119232	0.544052124	0.532588959	0.528799057
414.240021	0.253549576	0.353668213	0.438587189	0.479696274	0.545005798	0.562980652	0.551521301	0.547735214
449.742584	0.275693893	0.375989914	0.461046219	0.502216339	0.567613602	0.585638046	0.574184418	0.570404053
492.345673	0.30226326	0.402746201	0.487957001	0.5291996	0.594697952	0.612779617	0.601335526	0.597558975
543.46936	0.334150314	0.434843063	0.520235062	0.561563492	0.627182007	0.645332336	0.633897781	0.63012886
604.81781	0.372407913	0.473337173	0.55893898	0.600366592	0.666124344	0.684356689	0.672935486	0.669176102
678.435913	0.418317795	0.519523621	0.605377197	0.646924973	0.712854385	0.73118782	0.719783783	0.716033936
766.77771	0.473415375	0.574951172	0.66110611	0.702798843	0.768932343	0.787387848	0.776004791	0.772266388
872.787842	0.539525986	0.641452789	0.727968216	0.769834518	0.836208344	0.854810715	0.843452454	0.839731216
1000	0.618860245	0.721260071	0.80821228	0.850288391	0.916957855	0.935739517	0.924413681	0.920713425

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 160m away

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	3.8147E-06	4.57764E-05	0.000738144	0.003343582	0.013090134	0.077636719	0.2166996	0.46138382
2.54250145	2.28882E-05	0.000213623	0.003328323	0.011667252	0.040599823	0.166051865	0.366724014	0.659086227
4.20668411	6.10352E-05	0.00066185	0.008876801	0.025331497	0.076404572	0.243179321	0.469594955	0.776189804
6.20370388	0.000135422	0.001680374	0.017948151	0.043292999	0.115026474	0.308366776	0.54756546	0.861001968
8.60012722	0.000270844	0.003669739	0.030454636	0.064109802	0.153457642	0.364362717	0.611089706	0.928853989
11.4758358	0.00050354	0.007061005	0.045879364	0.086565018	0.19039917	0.413488388	0.665245056	0.986185074
14.9266863	0.000902176	0.012224197	0.063562393	0.10982132	0.225427628	0.457361221	0.712789536	1.03627014
19.0677071	0.001573563	0.019384384	0.082868576	0.13335228	0.25850296	0.497097015	0.755374908	1.08099556
24.036932	0.002664566	0.028600693	0.10326004	0.156841278	0.289749146	0.533498764	0.794088364	1.12157822
30.0000019	0.004388809	0.03978157	0.124330521	0.180124283	0.319355011	0.567178726	0.829690933	1.15884018
32.311367	0.005117416	0.044099808	0.132022858	0.188505173	0.329835892	0.57900238	0.84217453	1.1718998
35.0850067	0.00607872	0.049217224	0.140645981	0.197769165	0.341230392	0.591749191	0.855592728	1.18593216
38.413372	0.007349014	0.055223465	0.150213242	0.207923889	0.353517532	0.605381012	0.869915009	1.20089912
42.4074097	0.009021759	0.06219101	0.160736084	0.218967438	0.366666794	0.619853973	0.885089874	1.2167511
47.2002563	0.011224747	0.070178986	0.172201157	0.23087883	0.380628586	0.635108948	0.90105629	1.23341942
52.9516716	0.014095306	0.079227448	0.184579849	0.24363327	0.395353317	0.651082993	0.917741776	1.2508316
59.8533707	0.017803192	0.089359283	0.197847366	0.257211685	0.410800934	0.667728424	0.935108185	1.26895142
68.1354141	0.022531509	0.10058403	0.211967468	0.271579742	0.426921844	0.684976578	0.953054428	1.28764915
78.0738602	0.028482437	0.11290741	0.22690773	0.286706924	0.443664551	0.702791214	0.971569061	1.3069458
90	0.035869598	0.126344681	0.242660522	0.302597046	0.461027145	0.721172333	0.990663528	1.32683945
93.4670486	0.038036346	0.130144119	0.247070313	0.307041168	0.465864182	0.726284027	0.995965958	1.33235931
97.6275024	0.040655136	0.134559631	0.252147675	0.312152863	0.471405029	0.732126236	1.0020237	1.33866692
102.620049	0.043823242	0.139673233	0.257961273	0.318000793	0.477710724	0.738765717	1.00890732	1.34583282
108.611107	0.047645569	0.145568848	0.264585495	0.324659348	0.484859467	0.746273041	1.01668358	1.35392952
115.800377	0.052257538	0.152338028	0.272102356	0.332210541	0.492921829	0.754722595	1.02543068	1.36303329
124.427498	0.057807922	0.160087585	0.280601501	0.340740204	0.501976013	0.764190674	1.03522873	1.37323189
134.780045	0.064474106	0.168937683	0.29019928	0.350383759	0.512163162	0.774808884	1.04621124	1.38466072
147.20311	0.072469711	0.179037094	0.301015854	0.361240387	0.523555756	0.786663055	1.05846024	1.39740372
162.110779	0.082036972	0.190570831	0.313220978	0.373487473	0.536333084	0.799915314	1.07213402	1.41161728
179.999985	0.09346962	0.203773499	0.327043533	0.387357712	0.550720215	0.814809799	1.08750153	1.42759705
186.934082	0.097892761	0.208805084	0.332281113	0.392602921	0.5561409	0.82043457	1.09332085	1.43365479
195.25499	0.103191376	0.214736938	0.338436127	0.398777008	0.562515259	0.827026367	1.10012245	1.44072914
205.240082	0.10953331	0.221725464	0.345659256	0.406024933	0.569986343	0.834737778	1.10807419	1.4489975
217.222198	0.11712265	0.229959488	0.354141235	0.414541245	0.57875061	0.84377861	1.11740303	1.45870018
231.600739	0.126205444	0.2396698	0.364097595	0.424535751	0.588996887	0.854345322	1.1282959	1.47002792
248.85498	0.137071609	0.251127243	0.375804901	0.436288834	0.601028442	0.866725922	1.14104462	1.48327446
269.560089	0.150074005	0.264669418	0.38958931	0.450117111	0.615152359	0.881261826	1.15602684	1.49885559
294.406219	0.16563797	0.280719757	0.405881882	0.466474533	0.63183403	0.898418427	1.17370224	1.51723862
324.221558	0.184280396	0.299781799	0.425182343	0.485845566	0.651563644	0.918718338	1.19463921	1.53901863
359.999969	0.206609726	0.322481155	0.448125839	0.508871078	0.674987793	0.942777634	1.21941948	1.56479645
384.654541	0.221990585	0.338069916	0.46387291	0.524681091	0.691078186	0.959320068	1.23648453	1.58254814
414.240021	0.240432739	0.356718063	0.482698441	0.543579102	0.710287094	0.979070663	1.25683975	1.60372734
449.742584	0.262554169	0.379049301	0.505226135	0.566194534	0.733268738	1.00266838	1.28114891	1.62902641
492.345673	0.28909111	0.405805588	0.532209396	0.5932827	0.760797501	1.03095245	1.31030655	1.65937996
543.46936	0.32093811	0.437883377	0.5645504	0.625747681	0.793792725	1.06488991	1.34531593	1.6958313
604.81781	0.35915184	0.476358414	0.603336334	0.664684296	0.833360672	1.10556602	1.38726616	1.73952675
678.435913	0.405010223	0.522516251	0.649864197	0.711393356	0.880830765	1.15437126	1.43761826	1.79199791
766.77771	0.460044861	0.577903748	0.705698013	0.767444611	0.937803268	1.2129612	1.49808502	1.85504341
872.787842	0.526109695	0.644388199	0.772716522	0.834728241	1.00620079	1.2833271	1.57073975	1.93084717
1000	0.605386734	0.72416687	0.85313797	0.915468216	1.08829689	1.36782646	1.65803528	2.02200127

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 160m away

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000204086	0.001504898	0.003774643	0.004865646	0.009004593	0.014039993	0.017101288	0.018814087
2.54250145	0.000518799	0.003715515	0.009433746	0.012619019	0.020080566	0.028923035	0.033649445	0.036014557
4.20668411	0.000955582	0.006717682	0.017127991	0.023445129	0.032957077	0.044469833	0.050168991	0.052862167
6.20370388	0.001543045	0.010587692	0.026737213	0.03694725	0.047332764	0.060665131	0.066970825	0.069839478
8.60012722	0.002315521	0.015378952	0.037973404	0.052476883	0.062870026	0.077442169	0.084133148	0.087099075
11.4758358	0.003322601	0.021139145	0.050539017	0.069416046	0.079267502	0.094690323	0.101636887	0.104654312
14.9266863	0.004636765	0.027921677	0.064189911	0.087301254	0.096300125	0.112319946	0.119440079	0.1224823
19.0677071	0.0063591	0.035776138	0.078746796	0.105821609	0.113834381	0.130279541	0.137523651	0.140579224
24.036932	0.008617401	0.04473114	0.094062805	0.124755859	0.131750107	0.148506165	0.155843735	0.158903122
30.0000019	0.01156044	0.054800034	0.110040665	0.143981934	0.149999619	0.166992188	0.174398422	0.177457809
32.311367	0.012735367	0.058599472	0.115903854	0.150964737	0.156629562	0.173698425	0.181127548	0.184186935
35.0850067	0.014188767	0.063018799	0.122522354	0.158760071	0.164051056	0.181192398	0.188644409	0.191703796
38.413372	0.015991211	0.068124771	0.129940033	0.167398453	0.172288895	0.189502716	0.196975708	0.200037003
42.4074097	0.018228531	0.073989868	0.138196945	0.176898956	0.181379318	0.198661804	0.206159592	0.209218979
47.2002563	0.020998001	0.080677033	0.147315979	0.187263489	0.191326141	0.208675385	0.216192245	0.21925354
52.9516716	0.024419785	0.088249207	0.157316208	0.198493958	0.202138901	0.219549179	0.227088928	0.230150223
59.8533707	0.028636932	0.09677124	0.168222427	0.210597992	0.213838577	0.231311798	0.238872528	0.241931915
68.1354141	0.033807755	0.106296539	0.180046082	0.223564148	0.226415634	0.243946075	0.251525879	0.254585266
78.0738602	0.040115356	0.116888046	0.192798615	0.237379074	0.239864349	0.257448196	0.265047073	0.268108368
90	0.047761917	0.12862587	0.206521988	0.252071381	0.25422287	0.271856308	0.279476166	0.282539368
93.4670486	0.0499897	0.131961823	0.210386276	0.256195068	0.258256912	0.275903702	0.283527374	0.286592484
97.6275024	0.052669525	0.13586235	0.214868546	0.260957718	0.262924194	0.280586243	0.288217545	0.291282654
102.620049	0.055891037	0.140411377	0.220041275	0.266431808	0.268297195	0.285974503	0.293613434	0.29668045
108.611107	0.059757233	0.145698547	0.225988388	0.272697449	0.274456024	0.292154312	0.299798965	0.302867889
115.800377	0.064399719	0.151828766	0.232801437	0.279840469	0.281490326	0.299209595	0.306863785	0.309934616
124.427498	0.069965363	0.158914566	0.240581512	0.28795433	0.289495468	0.307237625	0.314901352	0.317974091
134.780045	0.076629639	0.167106628	0.249475479	0.297185898	0.298627853	0.316398621	0.324071884	0.32714653
147.20311	0.084604263	0.176561356	0.259605408	0.307640076	0.308986664	0.326784134	0.334468842	0.337547302
162.110779	0.094135284	0.187486649	0.271167755	0.319509506	0.320770264	0.338598251	0.34629631	0.349378586
179.999985	0.105520248	0.200141907	0.284408569	0.333030701	0.334220886	0.352085114	0.359798431	0.362884521
186.934082	0.109928131	0.204977036	0.289438248	0.338153839	0.339313507	0.357187271	0.364906311	0.367996216
195.25499	0.115203857	0.21071434	0.295389175	0.344205856	0.345348358	0.363241196	0.370965958	0.37405777
205.240082	0.121522903	0.217502594	0.302398682	0.351320267	0.352443695	0.370353699	0.378087997	0.381181717
217.222198	0.129085541	0.225542068	0.310668945	0.359699249	0.360811234	0.378744125	0.386486053	0.389585495
231.600739	0.138145447	0.235063553	0.320419312	0.369560242	0.370658875	0.388614655	0.396366119	0.399469376
248.85498	0.148984909	0.246349335	0.331928253	0.381177902	0.382268906	0.400255203	0.408018112	0.411125183
269.560089	0.161966324	0.259738922	0.345527649	0.394878387	0.395969391	0.413988113	0.421768188	0.424880981
294.406219	0.17751503	0.275661469	0.361660004	0.411109924	0.412212372	0.430271149	0.438066483	0.441186905
324.221558	0.196149826	0.294626236	0.380819321	0.430360794	0.431489944	0.449594498	0.457410812	0.460540771
359.999969	0.218477249	0.31725502	0.403636932	0.453268051	0.454425812	0.472585678	0.480426788	0.483568192
384.654541	0.233863831	0.332813263	0.419315338	0.46900177	0.470193863	0.488391876	0.496250153	0.499397278
414.240021	0.252313614	0.351438522	0.438070297	0.487821579	0.489044189	0.507286072	0.515165329	0.518321991
449.742584	0.274446487	0.373754501	0.46052742	0.510343552	0.511608124	0.529903412	0.53780365	0.540971756
492.345673	0.300998688	0.400503159	0.487436295	0.53732872	0.538646698	0.557004929	0.564933777	0.568113327
543.46936	0.332870483	0.432584763	0.519695282	0.569675446	0.571060181	0.58949852	0.5974617	0.600656509
604.81781	0.371112823	0.471067429	0.558389664	0.608470917	0.60993576	0.628465652	0.636470795	0.639684677
678.435913	0.417005539	0.517238617	0.604812622	0.655012131	0.656572342	0.675216675	0.683269501	0.686504364
766.77771	0.472082138	0.572645187	0.660518646	0.710861206	0.71254158	0.731319427	0.739431381	0.742694855
872.787842	0.538202286	0.639158249	0.727390289	0.77790451	0.779727936	0.798669815	0.806854248	0.810148239
1000	0.617538452	0.71896553	0.807630539	0.858350754	0.860349655	0.879489899	0.88776207	0.891096115

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 250m away

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	3.8147E-06	5.53131E-05	0.000688553	0.002641678	0.013364792	0.079568863	0.217065811	0.498516083
2.54250145	2.09808E-05	0.000249863	0.003313065	0.010843277	0.041023254	0.168230057	0.366571426	0.696430206
4.20668411	5.72205E-05	0.000745773	0.009138107	0.025476456	0.076931	0.245296478	0.469379425	0.813764572
6.20370388	0.000123978	0.00182724	0.018817902	0.045553207	0.11583519	0.310474396	0.547376633	0.898872375
8.60012722	0.000246048	0.003885269	0.032251358	0.069417954	0.154844284	0.3665905	0.610982895	0.967031479
11.4758358	0.000461578	0.00733757	0.048833847	0.095525742	0.192672729	0.415996552	0.665309906	1.02471924
14.9266863	0.000837326	0.012550354	0.067783356	0.122724533	0.228834152	0.460319519	0.713144302	1.07524109
19.0677071	0.001478195	0.019742966	0.088357925	0.150226593	0.263208389	0.500654221	0.756147385	1.12050819
24.036932	0.002540588	0.028968811	0.109945297	0.177530289	0.295818329	0.537761688	0.795375824	1.16171265
30.0000019	0.004232407	0.040145874	0.132083893	0.204339981	0.326761246	0.572193146	0.831560135	1.19966316
32.311367	0.004947662	0.044458389	0.140144348	0.213951111	0.337717056	0.584289551	0.844245911	1.2129631
35.0850067	0.005897522	0.049568176	0.149147034	0.224521637	0.349630356	0.597343445	0.857908249	1.22728157
38.413372	0.007152557	0.055562973	0.159105301	0.236040115	0.362468719	0.611312866	0.872503281	1.24257088
42.4074097	0.008813858	0.062513351	0.17001915	0.248483658	0.376190186	0.626146317	0.887973785	1.2587719
47.2002563	0.011001587	0.070484161	0.181865692	0.261808395	0.390741348	0.641782761	0.904258728	1.27582169
52.9516716	0.013858795	0.079507828	0.19461441	0.275960922	0.406053543	0.658143997	0.921274185	1.2936306
59.8533707	0.017555237	0.089612961	0.208223343	0.290885925	0.422063828	0.675159454	0.938949585	1.31212425
68.1354141	0.022274017	0.100809097	0.22265625	0.306529999	0.438709259	0.692764282	0.957212448	1.33123016
78.0738602	0.028219223	0.113100052	0.237876892	0.322853088	0.455949783	0.710920334	0.976026535	1.35091019
90	0.03560257	0.126504898	0.253883362	0.339847565	0.473775864	0.729614258	0.995376587	1.37114716
93.4670486	0.037765503	0.1302948	0.258361816	0.344589233	0.478742599	0.734815598	1.00076103	1.37677765
97.6275024	0.040384293	0.134702682	0.263511658	0.35002327	0.484418869	0.740753174	1.00690269	1.3832016
102.620049	0.043550491	0.139806747	0.269405365	0.356218338	0.490875244	0.747497559	1.01387787	1.39049339
108.611107	0.047374725	0.145690918	0.276111603	0.36324501	0.498178482	0.755115509	1.0217514	1.39872742
115.800377	0.051986694	0.152450562	0.283716202	0.371181488	0.506406784	0.763681412	1.03060341	1.40798187
124.427498	0.057537079	0.160188675	0.292304993	0.380105972	0.515632629	0.773273468	1.04051018	1.41833878
134.780045	0.064207077	0.169027328	0.301980972	0.390119553	0.525957108	0.783985138	1.05156898	1.42990112
147.20311	0.072202683	0.179113388	0.312871933	0.401342392	0.537494659	0.795936584	1.0639019	1.44279289
162.110779	0.081773758	0.190631866	0.325147629	0.41394043	0.55040741	0.80929184	1.07767868	1.45719337
179.999985	0.09321022	0.203826904	0.339042664	0.42814064	0.564926147	0.8242836	1.09313583	1.47335243
186.934082	0.097635269	0.208856583	0.344314575	0.433521271	0.570421219	0.82995224	1.09898186	1.47946167
195.25499	0.102935791	0.21478653	0.350502014	0.439826965	0.576854706	0.836585999	1.1058197	1.48661041
205.240082	0.109279633	0.221775055	0.357759476	0.447210312	0.584379196	0.844341278	1.11381149	1.4949646
217.222198	0.11687088	0.230007172	0.366268158	0.455852509	0.593177795	0.853401184	1.12314796	1.5047245
231.600739	0.125955582	0.239711761	0.376251221	0.465976715	0.603473663	0.863998413	1.13406754	1.51613808
248.85498	0.136825562	0.251163483	0.387981415	0.477853775	0.615541458	0.876411438	1.14685631	1.5295105
269.560089	0.149829865	0.264707565	0.401807785	0.491836548	0.629734039	0.891000748	1.16188622	1.54522324
294.406219	0.165397644	0.280757904	0.418136597	0.508327484	0.646461487	0.908191681	1.17959213	1.56373978
324.221558	0.184041977	0.299821854	0.437482834	0.527851105	0.666252136	0.928524017	1.20053673	1.58564377
359.999969	0.206378937	0.322528839	0.460475922	0.551040649	0.689750671	0.9526577	1.22539902	1.61165237
384.654541	0.221759796	0.338115692	0.476249695	0.56694603	0.70586586	0.969213486	1.24245644	1.62949944
414.240021	0.240203857	0.356767654	0.495103836	0.585948944	0.725111008	0.988977432	1.26281929	1.65080833
449.742584	0.262331009	0.379102707	0.517671585	0.608690262	0.748142242	1.01263046	1.2871933	1.67632103
492.345673	0.288873672	0.405860901	0.544696808	0.635921478	0.775722504	1.0409584	1.31638718	1.70688629
543.46936	0.320720673	0.437944412	0.577096939	0.668569565	0.8087883	1.07492638	1.35140228	1.74356079
604.81781	0.358940125	0.476427078	0.615949631	0.707714081	0.848432541	1.1156559	1.39339638	1.78756332
678.435913	0.404802322	0.522592545	0.66255188	0.754663467	0.895978928	1.16451454	1.44378471	1.84039116
766.77771	0.45983696	0.577983856	0.718477249	0.811014175	0.953063965	1.22319412	1.50432777	1.90390396
872.787842	0.525884628	0.644454956	0.785585403	0.878633499	1.0215683	1.29363632	1.57703781	1.98024368
1000	0.605144501	0.724222183	0.866125107	0.959794998	1.10380363	1.37823296	1.66440964	2.07206535

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 250m away

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000198364	0.001392365	0.004026413	0.006280899	0.009500504	0.014320374	0.017311096	0.018968582
2.54250145	0.000482559	0.003297806	0.009199142	0.013975143	0.020442963	0.029092789	0.0337677	0.036066055
4.20668411	0.000867844	0.005821228	0.015611649	0.022979736	0.032468796	0.044090271	0.049846649	0.052505493
6.20370388	0.001386642	0.009147644	0.023435593	0.033308029	0.04548645	0.059446335	0.065971375	0.068874359
8.60012722	0.002092361	0.013450623	0.032739639	0.044902802	0.059398651	0.075220108	0.082323074	0.085403442
11.4758358	0.003038406	0.018854141	0.0435009	0.057687759	0.074151993	0.09147644	0.099023819	0.102239609
14.9266863	0.004306793	0.025436401	0.055620194	0.071546555	0.089673996	0.108215332	0.116117477	0.119432449
19.0677071	0.005994797	0.033237457	0.068950653	0.086353302	0.105873108	0.125413895	0.13359642	0.136993408
24.036932	0.008226395	0.042257309	0.083337784	0.101978302	0.122661591	0.143024445	0.151437759	0.15489769
30.0000019	0.011156082	0.052471161	0.098627091	0.11829567	0.139953613	0.161001205	0.16960144	0.173110962
32.311367	0.012325287	0.056333542	0.10427475	0.124288559	0.146274567	0.167549133	0.176214218	0.179740906
35.0850067	0.013776779	0.06083107	0.110694885	0.131061554	0.153383255	0.174892426	0.183620453	0.187164307
38.413372	0.015577316	0.066036224	0.117927551	0.138648987	0.161310196	0.183055878	0.191850662	0.195409775
42.4074097	0.017810822	0.072013855	0.126018524	0.147090912	0.170089722	0.192071915	0.200929642	0.204507828
47.2002563	0.020580292	0.078828812	0.134994507	0.156412125	0.179742813	0.201957703	0.21088028	0.214475632
52.9516716	0.02400589	0.086540222	0.14487648	0.166625977	0.190280914	0.212718964	0.22170639	0.225318909
59.8533707	0.028224945	0.095201492	0.155679703	0.177742004	0.201705933	0.224363327	0.233409882	0.237037659
68.1354141	0.033401489	0.10487175	0.167417526	0.189775467	0.214029312	0.236890793	0.245996475	0.249641418
78.0738602	0.039712906	0.115606308	0.180105209	0.202732086	0.227256775	0.250310898	0.259471893	0.263132095
90	0.047367096	0.127481461	0.193786621	0.216657639	0.241428375	0.264659882	0.273872375	0.277547836
93.4670486	0.049594879	0.130857468	0.197647095	0.220586777	0.245424271	0.268703461	0.277929306	0.281610489
97.6275024	0.052278519	0.134799957	0.202121735	0.225130081	0.250040054	0.273370743	0.282613754	0.286298752
102.620049	0.055501938	0.139396667	0.207284927	0.230371475	0.255357742	0.278747559	0.288005829	0.291694641
108.611107	0.059371948	0.144731522	0.213224411	0.236391068	0.261461258	0.284910202	0.294187546	0.29788208
115.800377	0.064020157	0.150913239	0.220031738	0.243284225	0.268440247	0.291952133	0.30124855	0.304950714
124.427498	0.069589615	0.158054352	0.227809906	0.251150131	0.27639389	0.299972534	0.309288025	0.312995911
134.780045	0.076259613	0.166294098	0.236684799	0.260110855	0.285446167	0.309091568	0.318429947	0.322145462
147.20311	0.084238052	0.175794601	0.246801376	0.27031517	0.29573822	0.319454193	0.328813553	0.332536697
162.110779	0.093776703	0.186761856	0.258350372	0.281949997	0.307460785	0.331245422	0.340629578	0.344358444
179.999985	0.105167389	0.199462891	0.271595001	0.295276642	0.320877075	0.344730377	0.354137421	0.357875824
186.934082	0.109575272	0.204320908	0.276639938	0.300352097	0.32598114	0.349859238	0.359273911	0.363016129
195.25499	0.114854813	0.210071564	0.282587051	0.306331635	0.33199501	0.355899811	0.365325928	0.36907196
205.240082	0.121175766	0.216878891	0.289598465	0.31337738	0.339076996	0.363012314	0.372447968	0.376197815
217.222198	0.128742218	0.22492981	0.297859192	0.321674347	0.347414017	0.37138176	0.380830765	0.384584427
231.600739	0.137804031	0.234462738	0.307598114	0.331455231	0.357234955	0.381240845	0.390701294	0.394462585
248.85498	0.148649216	0.245756149	0.319095612	0.34299469	0.368818283	0.39286232	0.402339935	0.406106949
269.560089	0.161632538	0.259170532	0.332715988	0.356660843	0.382534027	0.40662384	0.416116714	0.419891357
294.406219	0.177185059	0.275102615	0.348840714	0.372835159	0.398761749	0.422897339	0.432411194	0.436193466
324.221558	0.195819855	0.294080734	0.368003845	0.392051697	0.418035507	0.442224503	0.451761246	0.455551147
359.999969	0.218156815	0.316720963	0.390829086	0.414936066	0.440982819	0.465232849	0.474794388	0.478595734
384.654541	0.233543396	0.332279205	0.406499863	0.430646896	0.456737518	0.48102951	0.490608215	0.494417191
414.240021	0.251991272	0.350912094	0.425254822	0.449445724	0.475585938	0.499925613	0.509525299	0.513343811
449.742584	0.274131775	0.373231888	0.447710037	0.471954346	0.498151779	0.522548676	0.532171249	0.535999298
492.345673	0.300691605	0.39998436	0.47461319	0.498922348	0.525188446	0.5496521	0.559303284	0.563144684
543.46936	0.3325634	0.432067871	0.506877899	0.531263351	0.557609558	0.58215332	0.591838837	0.595695496
604.81781	0.370809555	0.470556259	0.545572281	0.570047379	0.596488953	0.62112999	0.63085556	0.634729385
678.435913	0.416707993	0.51673317	0.591991425	0.616571426	0.643127441	0.667881012	0.677658081	0.681552887
766.77771	0.471782684	0.57213974	0.647693634	0.672403336	0.699102402	0.723995209	0.733831406	0.737752914
872.787842	0.537881851	0.638631821	0.71453476	0.739402771	0.766269684	0.791332245	0.801239014	0.805192947
1000	0.617202759	0.718427658	0.794755936	0.819810867	0.846883774	0.872150421	0.882146835	0.886138916

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 500m away

Drawdown (m) vs. Time (Days)

Zone 1

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	3.8147E-06	4.95911E-05	0.00056839	0.002418518	0.012170792	0.071498871	0.191408157	0.416660309
2.54250145	2.09808E-05	0.00021553	0.002868652	0.010066986	0.038078308	0.155023575	0.333208084	0.605714798
4.20668411	5.72205E-05	0.000646591	0.008180618	0.023921967	0.07239151	0.229505539	0.433488846	0.720663071
6.20370388	0.000125885	0.001619339	0.017244339	0.043169022	0.110061646	0.293317795	0.510334015	0.804485321
8.60012722	0.00025177	0.003536224	0.030090332	0.066270828	0.148164749	0.348615646	0.573253632	0.871725082
11.4758358	0.000471115	0.006845474	0.046224594	0.091753006	0.185323715	0.397476196	0.627094269	0.928663254
14.9266863	0.00084877	0.01194191	0.064943314	0.118492126	0.221000671	0.441400528	0.674545288	0.978534698
19.0677071	0.001491547	0.01908493	0.08552742	0.145711899	0.255031586	0.481433868	0.717226028	1.02321434
24.036932	0.002548218	0.028347015	0.107349396	0.172904968	0.28742981	0.518318176	0.756187439	1.06389046
30.0000019	0.004226685	0.039646149	0.129909515	0.199754715	0.318271637	0.552595139	0.792150497	1.10136414
32.311367	0.004938126	0.044015884	0.138149261	0.209402084	0.329210281	0.564647675	0.804767609	1.11450195
35.0850067	0.005876541	0.04920578	0.147375107	0.220035553	0.341117859	0.577661514	0.818359375	1.12864876
38.413372	0.007120132	0.055299759	0.157606125	0.231647491	0.353971481	0.591602325	0.832889557	1.14376259
42.4074097	0.008764267	0.062376022	0.168836594	0.244215012	0.367729187	0.60641861	0.848300934	1.15978432
47.2002563	0.010929108	0.070491791	0.18104744	0.257696152	0.382341385	0.622053146	0.864536285	1.17665291
52.9516716	0.013759613	0.079685211	0.194192886	0.272033691	0.397733688	0.63842392	0.881507874	1.19428062
59.8533707	0.017419815	0.089971542	0.20822525	0.287168503	0.41384697	0.655469894	0.899154663	1.21260262
68.1354141	0.022098541	0.101356506	0.223096848	0.303041458	0.430616379	0.673126221	0.91740799	1.23155212
78.0738602	0.027994156	0.113834381	0.23875618	0.319602966	0.447994232	0.6913414	0.936220169	1.25107384
90	0.035324097	0.127418518	0.255187988	0.336833954	0.465961456	0.710102081	0.955575943	1.2711544
93.4670486	0.037473679	0.131258011	0.259784698	0.341644287	0.470968246	0.715322495	0.960958481	1.27674103
97.6275024	0.040075302	0.135719299	0.26506424	0.34715271	0.476690292	0.721284866	0.967105865	1.28311729
102.620049	0.04322052	0.140882492	0.271097183	0.353429794	0.483198166	0.728054047	0.974084854	1.29035759
108.611107	0.047019959	0.146827698	0.277954102	0.360544205	0.490556717	0.7356987	0.981962204	1.29853058
115.800377	0.051605225	0.153652191	0.285715103	0.368570328	0.498840332	0.744293213	0.990814209	1.30771255
124.427498	0.057126999	0.161453247	0.294462204	0.377590179	0.508127213	0.753917694	1.00072479	1.31799126
134.780045	0.063764572	0.170354843	0.304298401	0.387699127	0.518512726	0.764659882	1.01178169	1.32946014
147.20311	0.071727753	0.180500031	0.315343857	0.399011612	0.530105591	0.776636124	1.02410507	1.34224129
162.110779	0.081262589	0.192073822	0.327766418	0.41169548	0.543073654	0.79001236	1.03786278	1.35651016
179.999985	0.092660904	0.205307007	0.341781616	0.425964355	0.557628632	0.805006027	1.05328178	1.37250137
186.934082	0.097070694	0.210353851	0.347106934	0.431381226	0.563152313	0.810693741	1.05912971	1.37856674
195.25499	0.102352142	0.216300964	0.353343964	0.437713623	0.569601059	0.817331314	1.0659523	1.38564491
205.240082	0.108678818	0.223306656	0.360649109	0.44512558	0.577142715	0.825088501	1.07392693	1.39391518
217.222198	0.116250992	0.231552124	0.369203568	0.453792572	0.585954666	0.8341465	1.0832386	1.40357399
231.600739	0.125312805	0.241268158	0.379230499	0.463941574	0.596263885	0.844738007	1.09412384	1.41486549
248.85498	0.136159897	0.252729416	0.391000748	0.475839615	0.60833931	0.857141495	1.10686684	1.42808533
269.560089	0.149141312	0.266273499	0.404850006	0.489826202	0.622524261	0.871700287	1.12182999	1.44360542
294.406219	0.164678574	0.282327652	0.421224594	0.506353378	0.639280319	0.888896942	1.13949776	1.46193504
324.221558	0.183298111	0.30137825	0.440565109	0.525852203	0.659030914	0.909158707	1.16031837	1.48354149
359.999969	0.205598831	0.32408905	0.463598251	0.549068451	0.682540894	0.933271408	1.18509674	1.50925446
384.654541	0.220962524	0.339681625	0.479393005	0.564985275	0.698659897	0.949806213	1.20208931	1.52689171
414.240021	0.239393234	0.358314514	0.498224258	0.58395195	0.717859268	0.969497681	1.22232628	1.54790115
449.742584	0.261497498	0.380657196	0.520820618	0.606712341	0.74090004	0.993125916	1.24661064	1.5731163
492.345673	0.28801918	0.40741539	0.547863007	0.633947372	0.768468857	1.02140427	1.27568054	1.60330582
543.46936	0.319850922	0.439504623	0.580278397	0.666595459	0.801517487	1.0553093	1.31053925	1.63951874
604.81781	0.358053207	0.477989197	0.619146347	0.70573616	0.841136932	1.0959568	1.35233879	1.6829567
678.435913	0.403902054	0.524158478	0.665761948	0.752677917	0.888652802	1.14471245	1.40249062	1.73509407
766.77771	0.458925247	0.579553604	0.721696854	0.809005737	0.945676804	1.20324135	1.46271324	1.79773331
872.787842	0.524965286	0.646036148	0.788824081	0.876609802	1.01412582	1.27352142	1.53505898	1.87302971
1000	0.604219437	0.725814819	0.869382858	0.957748413	1.09629059	1.35791779	1.62197876	1.96356773

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 500m away

Drawdown (m) vs. Time (Days)

Zone 3

MW Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000192642	0.001653671	0.004529953	0.006498337	0.009525299	0.01417923	0.017129898	0.018842697
2.54250145	0.000463486	0.003803253	0.010192871	0.014404297	0.020521164	0.028930664	0.033594132	0.036003113
4.20668411	0.000822067	0.006481171	0.016956329	0.023540497	0.032569885	0.043930054	0.049703598	0.052505493
6.20370388	0.00129509	0.009803772	0.024875641	0.033845902	0.045518875	0.059232712	0.065803528	0.068876267
8.60012722	0.001924515	0.013908386	0.033971787	0.045249939	0.059268951	0.074899674	0.082086563	0.085361481
11.4758358	0.00276947	0.018922806	0.044219971	0.057670593	0.073755264	0.090974808	0.098651886	0.102087021
14.9266863	0.003919601	0.024974823	0.055580139	0.071029663	0.088922501	0.107475281	0.115556717	0.119123459
19.0677071	0.00548172	0.032155991	0.067991257	0.085248947	0.10471344	0.124391556	0.132808685	0.136486053
24.036932	0.00758934	0.040529251	0.081377029	0.100250244	0.121078491	0.141712189	0.150411606	0.154180527
30.0000019	0.010406494	0.0501194	0.095661163	0.11595726	0.137960434	0.159402847	0.168340683	0.172187805
32.311367	0.011535645	0.053764343	0.100961685	0.121747971	0.144153595	0.165870667	0.174890518	0.178764343
35.0850067	0.012947083	0.058031082	0.106988907	0.128286362	0.151103973	0.17310524	0.182207108	0.186107635
38.413372	0.014707565	0.062995911	0.113807678	0.135631561	0.158872604	0.181159973	0.190345764	0.194274902
42.4074097	0.016902924	0.068729401	0.121463776	0.143819809	0.167486191	0.190063477	0.199335098	0.203289032
47.2002563	0.019636154	0.075305939	0.129999161	0.152889252	0.176980972	0.199842453	0.209197998	0.213182449
52.9516716	0.023029327	0.082788467	0.139438629	0.162853241	0.187356949	0.210496902	0.219934464	0.22394371
59.8533707	0.027219772	0.091236115	0.149812698	0.173732758	0.198635101	0.222043991	0.231559753	0.23559761
68.1354141	0.032369614	0.10071373	0.161140442	0.18554306	0.210824966	0.234489441	0.244081497	0.248142242
78.0738602	0.038658142	0.111274719	0.17345047	0.198303223	0.223937988	0.247840881	0.25750351	0.261590958
90	0.046289444	0.123001099	0.186790466	0.212055206	0.238014221	0.262136459	0.271867752	0.275976181
93.4670486	0.048511505	0.126340866	0.190572739	0.21595192	0.241998672	0.266181946	0.275930405	0.280044556
97.6275024	0.051187515	0.130243301	0.194946289	0.220445633	0.246587753	0.270835876	0.280603409	0.284725189
102.620049	0.054405212	0.134796143	0.200004578	0.225633621	0.251876831	0.276195526	0.285985947	0.290115356
108.611107	0.058267593	0.140087128	0.205833435	0.231599808	0.257949829	0.282342911	0.292156219	0.296293259
115.800377	0.062904358	0.146221161	0.212526321	0.238435745	0.2648983	0.289369583	0.299207687	0.303354263
124.427498	0.068462372	0.153316498	0.220191956	0.246246338	0.272827148	0.29737854	0.307243347	0.311397552
134.780045	0.075119019	0.161512375	0.228954315	0.255155563	0.281852722	0.306488037	0.316379547	0.320545197
147.20311	0.083084106	0.170969009	0.238962173	0.26530838	0.292121887	0.316841125	0.326757431	0.330932617
162.110779	0.092605591	0.181898117	0.250413895	0.276895523	0.303821564	0.328624725	0.338569641	0.342756271
179.999985	0.103977203	0.194551468	0.263549805	0.29016304	0.3171978	0.34208107	0.352054596	0.35625267
186.934082	0.108373642	0.199403763	0.268590927	0.295255661	0.32233429	0.347251892	0.357236862	0.361438751
195.25499	0.113643646	0.205141068	0.274501801	0.301212311	0.328330994	0.353277206	0.363273621	0.367481232
205.240082	0.119955063	0.211933136	0.281478882	0.308242798	0.33540535	0.360387802	0.370397568	0.374608994
217.222198	0.127510071	0.219968796	0.289707184	0.316524506	0.343734741	0.368755341	0.378778458	0.382997513
231.600739	0.136554718	0.229484558	0.299413681	0.326288223	0.35354805	0.378610611	0.388648987	0.392873764
248.85498	0.147384644	0.240762711	0.310880661	0.337812424	0.365125656	0.390232086	0.400287628	0.404518127
269.560089	0.160352707	0.254144669	0.324447632	0.351438522	0.378805161	0.403959274	0.41403389	0.418273926
294.406219	0.175880432	0.27007103	0.340581894	0.367639542	0.39507103	0.420280457	0.43037796	0.434627533
324.221558	0.194498062	0.289009094	0.359672546	0.386785507	0.414272308	0.439537048	0.44965744	0.453918457
359.999969	0.21680069	0.311645508	0.382520676	0.409708023	0.437269211	0.462600708	0.47274971	0.477024078
384.654541	0.232172012	0.327207565	0.398197174	0.425428391	0.453035355	0.478410721	0.488578796	0.492860794
414.240021	0.250614166	0.345804214	0.416891098	0.444162369	0.471815109	0.497236252	0.507425308	0.511716843
449.742584	0.272731781	0.368133545	0.43938446	0.466720581	0.494436264	0.519920349	0.530134201	0.53443718
492.345673	0.299272537	0.39487648	0.466285706	0.493684769	0.521471024	0.547023773	0.557268143	0.561584473
543.46936	0.331129074	0.426969528	0.498559952	0.526037216	0.553905487	0.579538345	0.589818954	0.594152451
604.81781	0.369361877	0.465454102	0.537256241	0.564821243	0.592786789	0.618518829	0.6288414	0.63319397
678.435913	0.415243149	0.51162529	0.583675385	0.611347198	0.639427185	0.665273666	0.675645828	0.680023193
766.77771	0.470310211	0.567029953	0.639375687	0.667173386	0.695390701	0.721376419	0.731811523	0.736215591
872.787842	0.536401749	0.633523941	0.706224442	0.734174728	0.762559891	0.788713455	0.799221039	0.803659439
1000	0.615715027	0.713317871	0.786447525	0.814582825	0.843170166	0.869525909	0.880125046	0.8846035

Appendix A - Data Table

Pumping from Zone 3 w/o abandoned well

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000232697	0.001747131	0.004673004	0.006702423	0.009830475	0.014612198	0.017559052	0.01915741
2.54250145	0.000555038	0.004013062	0.010507584	0.014831543	0.021102905	0.029611588	0.034145355	0.036327362
4.20668411	0.00097084	0.006828308	0.017457962	0.024188995	0.033378601	0.04473877	0.050256729	0.052757263
6.20370388	0.001512527	0.010313034	0.025575638	0.034704208	0.046503067	0.060094833	0.066308975	0.069023132
8.60012722	0.002222061	0.014604569	0.03486824	0.046293259	0.06038475	0.075771332	0.082508087	0.085382462
11.4758358	0.003158569	0.019823074	0.045301437	0.058872223	0.074962616	0.091819763	0.098968506	0.101966858
14.9266863	0.004398346	0.026079178	0.056829453	0.072359085	0.090187073	0.10827446	0.115766525	0.118869781
19.0677071	0.00605011	0.033464432	0.069385529	0.086677551	0.106010437	0.125139236	0.132923126	0.13611412
24.036932	0.008243561	0.042013168	0.082881928	0.101743698	0.122371674	0.142362595	0.150373459	0.15363121
30.0000019	0.011129379	0.051742554	0.097248077	0.117490768	0.139238358	0.159980774	0.168201447	0.171522141
32.311367	0.012283325	0.055431366	0.102561951	0.123279572	0.145404816	0.166399002	0.174686432	0.178028107
35.0850067	0.013719559	0.059741974	0.108608246	0.12981987	0.152339935	0.173595428	0.181957245	0.185321808
38.413372	0.01550293	0.064743042	0.115440369	0.137161255	0.160081863	0.181591034	0.190013885	0.193397522
42.4074097	0.017721176	0.07050705	0.123104095	0.145341873	0.168668747	0.190446854	0.198945999	0.202352524
47.2002563	0.020471573	0.077102661	0.131643295	0.154399872	0.178127289	0.200162888	0.20872879	0.212156296
52.9516716	0.023881912	0.084596634	0.141078949	0.164344788	0.188465118	0.210754395	0.219387054	0.222835541
59.8533707	0.028093338	0.093046188	0.151437759	0.175193787	0.199699402	0.222244263	0.230951309	0.234422684
68.1354141	0.033266068	0.102514267	0.162754059	0.186981201	0.211847305	0.234628677	0.243402481	0.246892929
78.0738602	0.039577484	0.113063812	0.175039291	0.199703217	0.224906921	0.247905731	0.25674057	0.260250092
90	0.047237396	0.124769211	0.188344955	0.213407516	0.238912582	0.262098312	0.270975113	0.274499893
93.4670486	0.049468994	0.128097534	0.192102432	0.217271805	0.242860794	0.266103745	0.274999619	0.278528214
97.6275024	0.052154541	0.13199234	0.196468353	0.221755981	0.247438431	0.270750046	0.279668808	0.283205032
102.620049	0.05538559	0.136535645	0.201519012	0.226934433	0.252714157	0.276094437	0.285032272	0.288576126
108.611107	0.059261322	0.141817093	0.207338333	0.232887268	0.258771896	0.282218933	0.291175842	0.294725418
115.800377	0.063913345	0.147945404	0.21402359	0.239709854	0.265701294	0.289224625	0.298204422	0.301761627
124.427498	0.069494247	0.155033112	0.221668243	0.247495651	0.273597717	0.297193527	0.306192398	0.309757233
134.780045	0.076177597	0.163219452	0.230417252	0.256383896	0.282596588	0.30626297	0.315284729	0.318855286
147.20311	0.084169388	0.172670364	0.240413666	0.266515732	0.292831421	0.316558838	0.325593948	0.329170227
162.110779	0.09372139	0.183599472	0.251861572	0.27809906	0.304527283	0.328346252	0.337415695	0.341003418
179.999985	0.105131149	0.196258545	0.265001297	0.291362762	0.317893982	0.341787338	0.350879669	0.354475021
186.934082	0.109544754	0.201105118	0.270017624	0.296424866	0.32298851	0.34690094	0.355998993	0.359594345
195.25499	0.114831924	0.206842422	0.275930405	0.302383423	0.328983307	0.352920532	0.3620224	0.365621567
205.240082	0.121162415	0.213638306	0.282905579	0.309406281	0.336051941	0.360027313	0.36914444	0.372749329
217.222198	0.128740311	0.221679688	0.291128159	0.317682266	0.344367981	0.368371964	0.377500534	0.381170733
231.600739	0.137811661	0.231204987	0.3008461	0.327451706	0.354185104	0.378231049	0.387374878	0.390987396
248.85498	0.148668289	0.242486954	0.312311172	0.338970184	0.365743637	0.389812469	0.398960114	0.402576447
269.560089	0.161668777	0.255884171	0.325874329	0.352586746	0.379413605	0.403532028	0.41270256	0.416326523
294.406219	0.17723465	0.271808624	0.341978073	0.368747711	0.395629883	0.419794083	0.428979874	0.432609558
324.221558	0.195882797	0.290788651	0.361133575	0.387964249	0.414905548	0.439126968	0.448337555	0.451974869
359.999969	0.218235016	0.313432693	0.383953094	0.410840988	0.437839508	0.462108612	0.47133255	0.474979401
384.654541	0.233629227	0.328996658	0.399621964	0.426549911	0.453588486	0.477893829	0.487133026	0.490785599
414.240021	0.252088547	0.347629547	0.418371201	0.445346832	0.472434998	0.496793747	0.506053925	0.509714127
449.742584	0.274236679	0.369955063	0.440826416	0.467851639	0.494989395	0.519392014	0.528669357	0.532335281
492.345673	0.300807953	0.396713257	0.467729568	0.494813919	0.522016525	0.546476364	0.555778503	0.559453964
543.46936	0.332683563	0.428798676	0.499988556	0.527143478	0.554420471	0.578952789	0.588281631	0.591970444
604.81781	0.37093544	0.467283249	0.538667679	0.565906525	0.593273163	0.617889404	0.627252579	0.63095665
678.435913	0.416837692	0.513450623	0.585073471	0.612411499	0.639881134	0.664596558	0.673997879	0.677717209
766.77771	0.471916199	0.5688591	0.640766144	0.668226242	0.695829391	0.720672607	0.730127335	0.733867645
872.787842	0.538000107	0.6353302	0.707584381	0.735189438	0.762947083	0.787939072	0.797454834	0.801221848
1000	0.617305756	0.715108871	0.787784576	0.815568924	0.843519211	0.86869812	0.878292084	0.882089615

Appendix A - Data Table

Pumping from Zone 3 w/o abandoned well

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.008382797	0.062843323	0.168584824	0.243597031	0.367191315	0.607707977	0.86032486	1.18318748
2.54E+00	0.009626389	0.067771912	0.177059174	0.253520966	0.378580093	0.620389938	0.873474121	1.19651222
4.21E+00	0.010408402	0.070606232	0.181631088	0.258720398	0.384344101	0.626558304	0.87975502	1.20282555
6.20370388	0.011341095	0.07387352	0.186779022	0.26451683	0.390705109	0.633321762	0.886629105	1.20973206
8.60012722	0.012506485	0.077737808	0.192651749	0.271039963	0.39777565	0.640758514	0.894163132	1.2172966
11.4758358	0.013940811	0.082267761	0.199310303	0.278354645	0.405626297	0.648962021	0.902462006	1.22562218
14.9266863	0.015743256	0.087539673	0.206787109	0.286481857	0.414276123	0.657957077	0.911546707	1.23473358
19.0677071	0.017997742	0.09362793	0.215112686	0.295440674	0.423734665	0.667736053	0.921409607	1.24462128
24.036932	0.020801544	0.100587845	0.224319458	0.305259705	0.43403244	0.678342819	0.932098389	1.25533295
30.0000019	0.024303436	0.10849762	0.234430313	0.315954208	0.445177078	0.68977356	0.943603516	1.26685905
32.311367	0.025671005	0.111495972	0.238214493	0.319942474	0.449321747	0.694013596	0.947868347	1.27113342
35.0850067	0.027339935	0.11498642	0.242565155	0.324516296	0.454063416	0.698863983	0.952747345	1.27602005
38.413372	0.029367447	0.119068146	0.247571945	0.329759598	0.4594841	0.704395294	0.958305359	1.28158569
42.4074097	0.031837463	0.123790741	0.253292084	0.335729599	0.465648651	0.710681915	0.964626312	1.28791618
47.2002563	0.034837723	0.129255295	0.25979805	0.342498779	0.472614288	0.717773438	0.971752167	1.29505157
52.9516716	0.038476944	0.135503769	0.267116547	0.35008049	0.480394363	0.72567749	0.979686737	1.30299568
59.8533707	0.042884827	0.142625809	0.275318146	0.358545303	0.489055634	0.734460831	0.988500595	1.31181908
68.1354141	0.048225403	0.150751114	0.284519196	0.368005753	0.498710632	0.7442379	0.998310089	1.32163811
78.0738602	0.054647446	0.159921646	0.294725418	0.378461838	0.509353638	0.754993439	1.00909615	1.33243179
90	0.062374115	0.170297623	0.306081772	0.390052795	0.521118164	0.766868591	1.02099991	1.34434319
93.4670486	0.064630508	0.173265457	0.309305191	0.39333725	0.524446487	0.77022171	1.02435875	1.34770393
97.6275024	0.067323685	0.17675209	0.313089371	0.397190094	0.528354645	0.7741642	1.02831078	1.35165977
102.620049	0.070556641	0.18085289	0.31750679	0.401683807	0.532903671	0.778749466	1.03290367	1.35625648
108.611107	0.074430466	0.185657501	0.322647095	0.406902313	0.538181305	0.784061432	1.03822517	1.3615799
115.800377	0.079072952	0.191282272	0.328624725	0.412965775	0.544305801	0.790225983	1.04439735	1.36775589
124.427498	0.084627152	0.197849274	0.335554123	0.419981003	0.55138588	0.797344208	1.05152893	1.37488937
134.780045	0.091274262	0.205511093	0.343576431	0.428089142	0.559556961	0.805555344	1.0597496	1.38311386
147.20311	0.099224091	0.214448929	0.352863312	0.437458038	0.568986893	0.81502533	1.06922913	1.39259529
162.110779	0.108722687	0.224887848	0.363641739	0.448318481	0.579910278	0.825984955	1.0802002	1.40356827
179.999985	0.120077133	0.237102509	0.37616539	0.460918427	0.592563629	0.838676453	1.09289932	1.41627121
186.934082	0.124475479	0.241792679	0.380962372	0.465738297	0.597402573	0.843524933	1.09775162	1.42112541
195.25499	0.129739761	0.247364044	0.386646271	0.471448898	0.603134155	0.849269867	1.10350037	1.42687416
205.240082	0.136045456	0.253997803	0.393400192	0.478233337	0.609941483	0.856090546	1.11032486	1.43370056
217.222198	0.143596649	0.261875153	0.401395798	0.486257553	0.617988586	0.864152908	1.11839104	1.44176865
231.600739	0.152643204	0.27123642	0.41087532	0.495767593	0.627519608	0.873699188	1.12794113	1.45131874
248.85498	0.163476944	0.282360077	0.422105789	0.507022858	0.638795853	0.88498497	1.13922882	1.46260834
269.560089	0.176456451	0.295619965	0.435476303	0.520423889	0.652217865	0.898424149	1.15267181	1.47605324
294.406219	0.19201088	0.311416626	0.451370239	0.536342621	0.66815567	0.914373398	1.16862297	1.49200439
324.221558	0.210645676	0.330295563	0.470355988	0.555356979	0.687194824	0.933427811	1.18768501	1.51106834
359.999969	0.232992172	0.352851868	0.49300766	0.578035355	0.70989418	0.95614624	1.21040726	1.5337925
384.654541	0.248386383	0.368368149	0.508581161	0.593622208	0.725494385	0.971754074	1.22601891	1.54940414
414.240021	0.266849518	0.386947632	0.527219772	0.612277985	0.744163513	0.990432739	1.24469948	1.56808472
449.742584	0.28900528	0.409229279	0.549564362	0.634641647	0.766542435	1.0128212	1.26709175	1.5904789
492.345673	0.315584183	0.435937881	0.576341629	0.661439896	0.793357849	1.03964806	1.29392242	1.61730957
543.46936	0.34746933	0.467971802	0.60846138	0.693586349	0.825525284	1.07183266	1.32611084	1.6495018
604.81781	0.385736465	0.506402969	0.646982193	0.732133865	0.864097595	1.11042023	1.36470413	1.688097
678.435913	0.431663513	0.552507401	0.693195343	0.77837944	0.910369873	1.15671158	1.41100121	1.73439407
766.77771	0.486763	0.607843399	0.748666763	0.833892822	0.965919495	1.212286	1.46658134	1.78997803
872.787842	0.552879333	0.674240112	0.815216064	0.900489807	1.032556653	1.27895164	1.53325462	1.85665321
1000	0.632223129	0.753915787	0.895086288	0.980419159	1.11253548	1.35896492	1.61327744	1.93667984

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 20m away

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000156403	0.001171112	0.003389359	0.0058918	0.014501572	0.063140869	0.207969666	0.208940506
2.54250145	0.000383377	0.002780914	0.008525848	0.015365601	0.035186768	0.110637665	0.268354416	0.269908905
4.20668411	0.000684738	0.004903793	0.015739441	0.027929306	0.057613373	0.145683289	0.303527832	0.305379868
6.20370388	0.001089096	0.007728577	0.025089264	0.042684555	0.079879761	0.17423439	0.330659866	0.332714081
8.60012722	0.00163269	0.011482239	0.036363602	0.058837891	0.101511002	0.199272156	0.354143143	0.356348038
11.4758358	0.002368927	0.016382217	0.04923439	0.07585907	0.122516632	0.222261429	0.375677109	0.378002167
14.9266863	0.0033741	0.022592545	0.063388825	0.093439102	0.143037796	0.243995667	0.396091461	0.398513794
19.0677071	0.004758835	0.030210495	0.078561783	0.111404419	0.163208008	0.264928818	0.415847778	0.41835022
24.036932	0.006662369	0.03924942	0.09454155	0.129650116	0.183139801	0.285346985	0.435218811	0.43778801
30.0000019	0.009256363	0.049663544	0.111171722	0.148118973	0.20290947	0.305431366	0.454378128	0.457006454
32.311367	0.010305405	0.053625107	0.117271423	0.154825211	0.210041046	0.312654495	0.461286545	0.463933945
35.0850067	0.01162529	0.058258057	0.124147415	0.162317276	0.217954636	0.320652008	0.468952179	0.471618652
38.413372	0.013290405	0.06363678	0.131839752	0.170623779	0.226673126	0.329446793	0.477403641	0.480091095
42.4074097	0.015386581	0.069826126	0.140378952	0.179765701	0.236217499	0.339054108	0.486663818	0.489370346
47.2002563	0.018022537	0.07689476	0.14978981	0.189762115	0.24659729	0.349489212	0.496753693	0.499481201
52.9516716	0.021326065	0.084890366	0.160083771	0.200613022	0.2578125	0.360752106	0.507675171	0.510425568
59.8533707	0.025445938	0.093862534	0.171268463	0.212324142	0.269865036	0.372844696	0.519445419	0.522212982
68.1354141	0.030546188	0.10385704	0.183353424	0.224899292	0.282754898	0.385770798	0.532068253	0.534856796
78.0738602	0.036815643	0.114917755	0.19635582	0.238349915	0.29649353	0.399543762	0.545568466	0.548374176
90	0.044456482	0.127111435	0.210313797	0.252710342	0.311113358	0.414203644	0.559989929	0.562812805
93.4670486	0.046684265	0.130571365	0.214241028	0.256746292	0.315219879	0.418317795	0.564043045	0.566869736
97.6275024	0.049369812	0.13461113	0.218790054	0.261411667	0.319959641	0.423072815	0.568731308	0.571563721
102.620049	0.052600861	0.139308929	0.22403717	0.266780853	0.32541275	0.428539276	0.574131012	0.576967239
108.611107	0.056484222	0.144756317	0.23005867	0.27293396	0.331651688	0.43479538	0.580318451	0.583162308
115.800377	0.061149597	0.151054382	0.236951828	0.27996254	0.338769913	0.441936493	0.587394714	0.590244293
124.427498	0.066743851	0.158317566	0.244815826	0.287965775	0.346866608	0.450059891	0.595457077	0.598314285
134.780045	0.073448181	0.166677475	0.253772736	0.29706192	0.356058121	0.459283829	0.604631424	0.607494354
147.20311	0.081468582	0.176298141	0.263969421	0.307395935	0.366487503	0.469751358	0.615064621	0.617933273
162.110779	0.091053009	0.187379837	0.275592804	0.319149017	0.378335953	0.481647491	0.626943588	0.629821777
179.999985	0.102499008	0.200180054	0.288892746	0.33257103	0.391853333	0.495225906	0.640529633	0.643413544
186.934089	0.106925964	0.20507431	0.293958664	0.337680817	0.396997452	0.500392914	0.645704269	0.648591995
195.25499	0.112226486	0.210863113	0.299930573	0.343698502	0.403053284	0.506475449	0.651798248	0.654687881
205.240082	0.118574142	0.217708588	0.306964874	0.350784302	0.410181046	0.513637543	0.658981323	0.661874771
217.222198	0.126169205	0.225801468	0.315252304	0.35912323	0.41856575	0.522064209	0.667438507	0.67033577
231.600739	0.135259628	0.235374451	0.325019836	0.368946075	0.428438187	0.531986237	0.677404404	0.680305481
248.85498	0.146137238	0.246709824	0.336544037	0.380527496	0.440074921	0.543684006	0.689163208	0.6920681
269.560089	0.159154892	0.260149002	0.350168228	0.394208908	0.45381546	0.557498932	0.703056335	0.705968857
294.406219	0.174743652	0.27611351	0.366312027	0.410415649	0.470087051	0.573858261	0.719522476	0.722438812
324.221558	0.193412781	0.295116425	0.385490417	0.42965889	0.489404678	0.5932827	0.739080429	0.742004395
359.999969	0.215782166	0.317777634	0.408327103	0.452566147	0.512397766	0.616405487	0.762369156	0.765298843
384.654541	0.231185913	0.333353043	0.42401123	0.468294144	0.528182983	0.63228035	0.778362274	0.781297684
414.240021	0.249658585	0.351993561	0.442771912	0.487110138	0.547065735	0.651269913	0.797494888	0.80043602
449.742584	0.271816254	0.374326706	0.465238571	0.509635925	0.569671631	0.674007416	0.82040596	0.823354721
492.345673	0.29839325	0.401086807	0.49215126	0.536621094	0.596750259	0.70124054	0.8478508	0.850809097
543.46936	0.330284119	0.433179855	0.524421692	0.568977356	0.629220963	0.73390007	0.880764008	0.883731842
604.81781	0.368545532	0.471672058	0.563119888	0.607776642	0.66815567	0.773059845	0.92023468	0.923213959
678.435913	0.414457321	0.517854691	0.609550476	0.654331207	0.714870453	0.820047379	0.967596054	0.970588684
766.77771	0.469545364	0.573253632	0.665246964	0.710174561	0.770910263	0.87641716	1.02441406	1.02742577
872.787842	0.53565979	0.639749527	0.73210144	0.777206421	0.838178635	0.94408226	1.09262276	1.09565735
1000	0.614965439	0.719509125	0.81228447	0.857601166	0.918859482	1.02524376	1.17444038	1.17750168

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 20m away

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.005649567	0.042062759	0.111955643	0.160770416	0.23925972	0.379825592	0.477399826	0.762731552
2.54E+00	0.006772995	0.047517777	0.123373032	0.175670624	0.259159088	0.408319473	0.517379761	0.802837372
4.21E+00	0.007558823	0.051170349	0.13085556	0.185268402	0.271593094	0.425279617	0.540353775	0.825832367
6.20370388	0.008451462	0.055070877	0.138353348	0.194534302	0.283021927	0.439886093	0.559072495	0.84457016
8.60012722	0.009542465	0.05950737	0.146341324	0.204090118	0.294361115	0.453710556	0.576070786	0.861589432
11.4758358	0.01089859	0.064617157	0.154970169	0.214130402	0.305931091	0.467340469	0.592306137	0.877843857
14.9266863	0.012598038	0.070497513	0.164312363	0.224750519	0.31788826	0.481060028	0.608240128	0.893796921
19.0677071	0.014736176	0.077234268	0.174407959	0.236009598	0.33032608	0.495031357	0.624134064	0.909708023
24.036932	0.017433167	0.084882736	0.185274124	0.247926712	0.343292236	0.509349823	0.640136719	0.925729752
30.0000019	0.02081871	0.093490601	0.196926117	0.260528564	0.35682869	0.524078369	0.656352997	0.941961288
32.311367	0.022151947	0.09674263	0.201248169	0.26517868	0.361801147	0.529462814	0.662250519	0.947862625
35.0850067	0.023780823	0.100538254	0.206201553	0.270483017	0.367444992	0.53553772	0.668859482	0.954479218
38.413372	0.025772095	0.104932785	0.21182251	0.276470184	0.373786926	0.542329788	0.676214218	0.961841583
42.4074097	0.02820015	0.110004425	0.218183517	0.283208847	0.380889893	0.54989624	0.684356689	0.969989777
47.2002563	0.031167984	0.11582756	0.225337982	0.290748596	0.388799667	0.558275223	0.693317413	0.97895813
52.9516716	0.034784317	0.122459412	0.233320236	0.299114227	0.397537231	0.567483902	0.703115463	0.988761902
59.8533707	0.039178848	0.129997253	0.242208481	0.308385849	0.407173157	0.57758522	0.713792801	0.999446869
68.1354141	0.04450798	0.138502121	0.252033234	0.31857872	0.417722702	0.5885849	0.725357056	1.01101875
78.0738602	0.050943375	0.148078918	0.262874603	0.329772949	0.429254532	0.600549698	0.737863541	1.02353096
90	0.058689117	0.158830643	0.274812698	0.342041016	0.441839218	0.613540649	0.751365662	1.03704071
93.4670486	0.060939789	0.161893845	0.27819252	0.345508575	0.445390701	0.617204666	0.755167007	1.04084206
97.6275024	0.063642502	0.165500641	0.282144547	0.349559784	0.44953537	0.621469498	0.759584427	1.04526329
102.620049	0.066886902	0.169723511	0.286748886	0.35426712	0.454345703	0.626411438	0.764692307	1.05037308
108.611107	0.070775986	0.174655914	0.292081833	0.359712601	0.459899902	0.632108688	0.770570755	1.05625343
115.800377	0.075435638	0.180419922	0.298267365	0.366016388	0.46631813	0.63867569	0.777326584	1.06301117
124.427498	0.081014633	0.18712616	0.305404663	0.373273849	0.473693848	0.646207809	0.785058975	1.07074547
134.780045	0.087686539	0.19493103	0.313640594	0.381631851	0.482172012	0.654846191	0.793901443	1.07959175
147.20311	0.095664978	0.20401001	0.323141098	0.39125061	0.491910934	0.664747238	0.804012299	1.08970451
162.110779	0.105197906	0.214576721	0.33411026	0.402336121	0.5031147	0.676111221	0.81558609	1.10128021
179.999985	0.1165905	0.226922989	0.346828461	0.415164948	0.516056061	0.689210892	0.828891754	1.11458778
186.934082	0.120996475	0.231655121	0.351688385	0.420063019	0.520994186	0.694206238	0.833963394	1.11965942
195.25499	0.126274109	0.237276077	0.357446671	0.425863266	0.526836395	0.700111389	0.839952469	1.1256485
205.240082	0.13259697	0.243951797	0.364265442	0.432723999	0.533744812	0.70708847	0.84702301	1.13272095
217.622198	0.140167236	0.251878738	0.372339249	0.44084549	0.541915894	0.715332031	0.855367661	1.1410656
231.600739	0.14922905	0.261285782	0.381893158	0.450447083	0.551570892	0.725069046	0.865215302	1.15091324
248.85498	0.160083771	0.272478104	0.393234253	0.461835861	0.563014984	0.736598969	0.87686348	1.16256332
269.560089	0.173080444	0.285778046	0.406673431	0.475326538	0.576562881	0.750242233	0.890640259	1.1763401
294.406219	0.188652039	0.301635742	0.422670364	0.491374969	0.592674255	0.766454697	0.906995773	1.19269753
324.221558	0.20731163	0.320545197	0.44171524	0.510473251	0.611839294	0.785734177	0.926439285	1.21214104
359.999969	0.2296772	0.343135834	0.464443207	0.533256531	0.634695053	0.808719635	0.949611664	1.23531532
384.654541	0.245082855	0.35868454	0.480075836	0.5489254	0.650413513	0.824522018	0.965536118	1.25123978
414.240021	0.263559341	0.377290726	0.498775482	0.567667007	0.669210434	0.843420029	0.984582901	1.27028656
449.742584	0.28572464	0.39960289	0.521192551	0.590133667	0.691741943	0.866069794	1.00740433	1.29310989
492.345673	0.31231308	0.42634201	0.548049927	0.617048264	0.718732834	0.893201828	1.03474426	1.32044983
543.46936	0.344221115	0.458423615	0.580270767	0.649333954	0.751110077	0.92574501	1.06753349	1.35323906
604.81781	0.382501602	0.496908188	0.618917465	0.688058853	0.789945602	0.964780807	1.10686111	1.39256859
678.435913	0.428440094	0.543079376	0.66528511	0.734521866	0.836538315	1.01161385	1.15404892	1.4397583
766.77771	0.483556747	0.598466873	0.720903397	0.790252686	0.892427444	1.06779289	1.21065903	1.4963665
872.787842	0.549711227	0.664957047	0.78767395	0.857160568	0.959524155	1.13523865	1.27861786	1.56432724
1000	0.629060745	0.744697571	0.867746353	0.937395096	1.03998756	1.21612358	1.36013031	1.64583969

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 40m away

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000171661	0.001291275	0.003782272	0.006837845	0.01861763	0.112751007	0.113536835	0.062299728
2.54250145	0.000419617	0.003042221	0.00944519	0.01735878	0.041296005	0.157793045	0.160524368	0.104562759
4.20668411	0.000747681	0.005336761	0.017156601	0.030485153	0.063444138	0.186763763	0.190551758	0.135242462
6.20370388	0.001182556	0.008359909	0.026807785	0.045190811	0.084342957	0.210165024	0.214673996	0.160531998
8.60012722	0.001764297	0.012321472	0.03811264	0.060827255	0.104259491	0.231035233	0.236089706	0.183078766
11.4758358	0.00254631	0.017408371	0.050765991	0.077056885	0.123537064	0.250597	0.256088257	0.20409584
14.9266863	0.003610611	0.023761749	0.064510346	0.09372139	0.142444611	0.269470215	0.275316238	0.224229813
19.0677071	0.005065918	0.031452179	0.079153061	0.110742569	0.161159515	0.287979126	0.294122696	0.243844986
24.036932	0.007047653	0.040481567	0.094547272	0.128074646	0.179800034	0.30632782	0.312721252	0.263160706
30.0000019	0.009727478	0.050813675	0.110574722	0.145692825	0.198442459	0.324638367	0.331241608	0.282318115
32.311367	0.010808945	0.054733276	0.116456985	0.152103424	0.205188751	0.331260681	0.337934494	0.289228439
35.0850067	0.01216507	0.059310913	0.123094559	0.15927887	0.212697983	0.338632584	0.345380783	0.296905518
38.413372	0.013870239	0.064617157	0.130531311	0.167255402	0.221004486	0.346788406	0.353610992	0.305372238
42.4074097	0.016008377	0.070716858	0.138801575	0.176057816	0.230131149	0.35574913	0.36264801	0.314653397
47.2002563	0.018688202	0.077676773	0.147932053	0.185709	0.240093231	0.365541458	0.372514725	0.324764252
52.9516716	0.022033691	0.085548401	0.157941818	0.196220398	0.250898361	0.376173019	0.383220673	0.335710526
59.8533707	0.026193619	0.09438324	0.16884613	0.20759964	0.262556076	0.38766098	0.394779205	0.347503662
68.1354141	0.031328201	0.104232788	0.180660248	0.219856262	0.27507019	0.400007248	0.407194138	0.360139847
78.0738602	0.037624359	0.115146637	0.193403244	0.233009338	0.288461685	0.413249969	0.420499802	0.373653412
90	0.045286179	0.127195358	0.207120895	0.247097015	0.3027668	0.42742157	0.43473053	0.38807106
93.4670486	0.047519684	0.130615234	0.210987091	0.251062393	0.306789398	0.431407928	0.438734055	0.392124176
97.6275024	0.050209045	0.13461113	0.215467453	0.255649567	0.311437607	0.436019897	0.44336319	0.396806717
102.620049	0.053443909	0.139261246	0.220638275	0.26093483	0.316791534	0.441335678	0.448698044	0.402198792
108.611107	0.057331085	0.144657135	0.226581573	0.266998291	0.322929382	0.447435379	0.454816818	0.408376694
115.800377	0.061998367	0.150901794	0.233390808	0.273935318	0.329942703	0.45441246	0.461816788	0.415437698
124.427498	0.067594528	0.158107758	0.241172791	0.281847	0.337930679	0.462371826	0.469797134	0.423477173
134.780045	0.074298859	0.166410446	0.250047684	0.290849686	0.347017288	0.47143364	0.478883743	0.432619095
147.20311	0.082315445	0.175977707	0.260168076	0.30109787	0.357345581	0.481750488	0.48922348	0.443012238
162.110779	0.091897965	0.187007904	0.271720886	0.312772751	0.369104385	0.493513107	0.501008987	0.454841614
179.999985	0.103338242	0.199760437	0.284952164	0.326118469	0.382535934	0.506965637	0.514484406	0.468349457
186.934082	0.10776329	0.204637527	0.289995193	0.331203461	0.387649536	0.512090683	0.519617081	0.473491669
195.25499	0.113063812	0.210409164	0.295944214	0.33719635	0.39367485	0.518131256	0.525667191	0.479551315
205.240082	0.119407654	0.217237473	0.302955627	0.34425354	0.400770187	0.525247574	0.532793045	0.486686707
217.222198	0.126998901	0.225313187	0.311216354	0.352563858	0.409122467	0.533630371	0.541187286	0.495084763
231.600739	0.136087418	0.234869003	0.320959091	0.362360001	0.418962479	0.543512344	0.551080704	0.504980087
248.85498	0.146961212	0.246189117	0.332464218	0.373918533	0.43057251	0.555179596	0.562761307	0.516656876
269.560089	0.159978867	0.259614944	0.346071243	0.387580872	0.444290161	0.568965912	0.576560974	0.530447006
294.406219	0.175559998	0.275566101	0.362195969	0.403764725	0.460535049	0.585302353	0.592912674	0.54678154
324.221558	0.194227219	0.294559479	0.381362915	0.422994614	0.479837418	0.604721069	0.612350464	0.566192627
359.999969	0.216594696	0.317218781	0.404193878	0.445894241	0.502817154	0.627843857	0.635492325	0.589298248
384.654541	0.231998444	0.332790375	0.419872284	0.461616516	0.518594742	0.643720627	0.651382446	0.605163574
414.240021	0.250465393	0.351425171	0.438625336	0.480421066	0.53745842	0.662704468	0.670379639	0.624130249
449.742584	0.272624969	0.373756409	0.461088181	0.502944946	0.560062408	0.68545723	0.693151474	0.646858215
492.345673	0.299203873	0.400520325	0.488002777	0.529930115	0.587137222	0.712713242	0.720428467	0.674085617
543.46936	0.331094742	0.432613373	0.520271301	0.562280655	0.619598389	0.745388031	0.753128052	0.70672226
604.81781	0.36935997	0.47110939	0.558973312	0.601081848	0.658529282	0.784580231	0.792350769	0.74587059
678.435913	0.415273666	0.517292023	0.6054039	0.647628784	0.705234528	0.831600189	0.839408875	0.79283905
766.77771	0.470380783	0.572715759	0.661113739	0.703481674	0.761274338	0.888015747	0.895868301	0.849189758
872.787842	0.536481857	0.639204025	0.727966309	0.770505905	0.828529358	0.955730438	0.963638306	0.916828156
1000	0.615795135	0.718982697	0.808177948	0.85092926	0.909229279	1.03698349	1.04495811	0.997993469

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 40m away

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.006242752	0.046318054	0.122566223	0.17509079	0.257169724	0.370910645	0.614341736	1.00441551
2.54E+00	0.007392883	0.051683426	0.133472443	0.189155579	0.275785446	0.399412155	0.643190384	1.02933311
4.21E+00	0.008182526	0.05521965	0.140533447	0.198123932	0.287349701	0.416517258	0.660358429	1.04411316
6.20370388	0.009098053	0.059074402	0.147735596	0.206928253	0.298152924	0.431304932	0.675210953	1.05729675
8.60012722	0.010217667	0.063470841	0.155439377	0.216056824	0.308948517	0.445293427	0.689268112	1.07004166
11.4758358	0.011606216	0.0685215	0.163766861	0.225673676	0.320013046	0.459060669	0.703102112	1.08277893
14.9266863	0.013345718	0.074346542	0.172819138	0.235904694	0.33152771	0.472929001	0.717037201	1.0957756
19.0677071	0.015527725	0.080999374	0.182609558	0.246774673	0.343547821	0.487031937	0.731203079	1.10911751
24.036932	0.018270493	0.088542938	0.19316864	0.258321762	0.3561306	0.50147438	0.745704651	1.12289047
30.0000019	0.021699905	0.09702301	0.204507828	0.270563126	0.369304657	0.516311646	0.760599136	1.13713646
32.311367	0.023050308	0.100231171	0.208724976	0.275091171	0.374158859	0.521738052	0.766044617	1.14235878
35.0850067	0.024698257	0.103967667	0.213554382	0.280254364	0.379663467	0.527851105	0.77217865	1.14825821
38.413372	0.026706696	0.108301163	0.219051361	0.286100388	0.38586998	0.534692764	0.779043198	1.15487671
42.4074097	0.029157639	0.113300323	0.225273132	0.292686462	0.39282608	0.542304993	0.786678314	1.16225815
47.2002563	0.032142639	0.119035721	0.232275009	0.300060272	0.400579453	0.550725937	0.795124054	1.1704464
52.9516716	0.035776138	0.125583649	0.240114212	0.308275223	0.409175873	0.559993744	0.804416656	1.17948151
59.8533707	0.040189743	0.133026123	0.248846054	0.317380905	0.418657303	0.570140839	0.814588547	1.18939781
68.1354141	0.045528412	0.141429901	0.258516312	0.327411652	0.429056168	0.581188202	0.825660706	1.20022011
78.0738602	0.05197525	0.150907516	0.269212723	0.338453293	0.440450668	0.593204498	0.83769989	1.21202087
90	0.059724808	0.161560059	0.281005859	0.350570679	0.452896118	0.606235504	0.850755692	1.2248497
93.4670486	0.061979294	0.16460228	0.284357071	0.354009628	0.456422806	0.609918594	0.854442596	1.22847748
97.6275024	0.064683914	0.168176651	0.288267136	0.35801506	0.460525513	0.61419487	0.858726501	1.23269463
102.620049	0.067928314	0.172367096	0.292823792	0.362674713	0.465291977	0.619150162	0.863687515	1.23758316
108.611107	0.071815491	0.177268982	0.298114777	0.368076324	0.470806122	0.624868393	0.869413376	1.24323082
115.800377	0.076475143	0.182991028	0.304243088	0.374320984	0.477170944	0.631444931	0.875999451	1.24973297
124.427498	0.082050324	0.189661026	0.311330795	0.381526947	0.484498978	0.638998032	0.883560181	1.25720787
134.780045	0.088722229	0.197425842	0.319513321	0.389831543	0.492927551	0.64765358	0.892223358	1.26578331
147.20311	0.096698761	0.20647049	0.328968048	0.399402618	0.502622604	0.657577515	0.902154922	1.27562523
162.110779	0.106227875	0.217000961	0.339887619	0.41043663	0.513776779	0.668960571	0.913545609	1.28692436
179.999985	0.117612839	0.229301453	0.352546692	0.423202515	0.526660919	0.682064056	0.926656723	1.29994774
186.934082	0.122016907	0.234025955	0.357397079	0.428091049	0.531587601	0.687070847	0.931665421	1.30492592
195.25499	0.12729454	0.239635468	0.363138199	0.43387413	0.537414551	0.692983627	0.937580109	1.31080437
205.240082	0.133611679	0.246297836	0.369937897	0.44071579	0.544303894	0.699966431	0.944566727	1.31775284
217.222198	0.141180038	0.254207611	0.377988815	0.448810577	0.55245018	0.708213806	0.95281601	1.32596016
231.600739	0.150239944	0.26360321	0.387527466	0.458395004	0.562088013	0.717960358	0.962564468	1.33566475
248.85498	0.161090851	0.274776459	0.398841858	0.46975708	0.573503494	0.729492188	0.974100113	1.34715271
269.560089	0.174089432	0.288076401	0.412275314	0.48323822	0.587041855	0.743152618	0.987762451	1.36076355
294.406219	0.189651489	0.303909302	0.42824173	0.499252319	0.603116989	0.759361267	1.00397491	1.37691689
324.221558	0.208309174	0.322813034	0.447273254	0.518335342	0.622264862	0.778657913	1.02327347	1.39615059
359.999969	0.230674744	0.345403671	0.469991684	0.541107178	0.645107269	0.801662445	1.04627991	1.41908646
384.654541	0.246078491	0.360935211	0.48560524	0.556751251	0.660797119	0.817462921	1.06208229	1.43483925
414.240021	0.264545441	0.379533768	0.504291534	0.575475693	0.679574966	0.836366653	1.08098793	1.45368958
449.742584	0.286716461	0.401845932	0.526699066	0.597929001	0.70208931	0.85902977	1.10365105	1.47628784
492.345673	0.313304901	0.428583145	0.553548813	0.624830246	0.729063034	0.886182785	1.13080406	1.50336075
543.46936	0.345212936	0.460659027	0.58575058	0.657093048	0.76140976	0.918739319	1.1633625	1.53582573
604.81781	0.383497238	0.499134064	0.624376297	0.695789337	0.800209045	0.957788467	1.20241547	1.57476616
678.435913	0.42943573	0.545295715	0.670717239	0.74221611	0.846759796	1.00464058	1.24926949	1.62148476
766.77771	0.484575272	0.600708008	0.726337433	0.797937393	0.90262413	1.06086349	1.3054924	1.67754364
872.787842	0.550708771	0.667156219	0.793050766	0.864776611	0.969644547	1.12832832	1.37296295	1.74481773
1000	0.630065918	0.746898651	0.87310791	0.944984436	1.05006599	1.20928383	1.45392227	1.82553482

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 80m away

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000185013	0.001375198	0.004484177	0.010194778	0.045257568	0.042146683	0.02636528	0.023580551
2.54250145	0.000448227	0.0032444	0.011314392	0.023900986	0.073755264	0.073188782	0.052391052	0.047193527
4.20668411	0.000793457	0.005706787	0.020141602	0.03862381	0.095039368	0.097270966	0.075744629	0.069488525
6.20370388	0.001251221	0.00894928	0.030513763	0.053602219	0.113542557	0.118144989	0.097061157	0.090467453
8.60012722	0.00186348	0.013166428	0.042081833	0.068742752	0.130882263	0.137454987	0.117113113	0.110498428
11.4758358	0.00268364	0.018499374	0.054620743	0.084104538	0.147745132	0.155965805	0.136423111	0.129920959
14.9266863	0.003795624	0.02504921	0.067996979	0.099754334	0.164470673	0.174087524	0.155319214	0.148990631
19.0677071	0.005308151	0.032855988	0.082122803	0.115737915	0.181245804	0.192050934	0.174007416	0.167871475
24.036932	0.007360458	0.041917801	0.096925736	0.132076263	0.198169708	0.209991455	0.192611694	0.186672211
30.0000019	0.010120392	0.05219841	0.112350464	0.148773193	0.215303421	0.227994919	0.211215973	0.205463409
32.311367	0.011230469	0.056087494	0.118013382	0.15486145	0.221530914	0.234519958	0.217948914	0.212263107
35.0850067	0.012620926	0.060619354	0.124412537	0.161697388	0.228498459	0.241792679	0.225444794	0.219829559
38.413372	0.014362335	0.065862656	0.131593704	0.169315338	0.236246109	0.249855042	0.233737946	0.228197098
42.4074097	0.01653862	0.071884155	0.139591217	0.177751541	0.244800568	0.258724213	0.242841721	0.237380981
47.2002563	0.019260407	0.078746796	0.148443222	0.1870327	0.254190445	0.268428802	0.252784729	0.247406006
52.9516716	0.022647858	0.086507797	0.158168793	0.19717598	0.264432907	0.278980255	0.263576508	0.2582798
59.8533707	0.026844025	0.095218658	0.168792725	0.208194733	0.275537491	0.290376663	0.27520752	0.269990921
68.1354141	0.032014847	0.1049366	0.180332184	0.220106125	0.287527084	0.302654266	0.28771019	0.282571793
78.0738602	0.038337708	0.115715027	0.192817688	0.232934952	0.300426483	0.315818787	0.301084518	0.296020508
90	0.046018601	0.127632141	0.206295013	0.24672699	0.314279556	0.329921722	0.315385818	0.310390472
93.4670486	0.048257828	0.131015778	0.210096359	0.250612259	0.318183899	0.33389473	0.319414139	0.314435959
97.6275024	0.050952911	0.134969711	0.214508057	0.255113602	0.322704315	0.338487625	0.324062347	0.319105148
102.620049	0.054193497	0.139577866	0.219602585	0.260307312	0.327919006	0.343780518	0.329418182	0.324483871
108.611107	0.058082581	0.144926071	0.225467682	0.266275406	0.333909988	0.349853516	0.335554123	0.3306427
115.800377	0.062753677	0.151119232	0.232196808	0.273111343	0.340772629	0.356800079	0.342569351	0.337680817
124.427498	0.068353653	0.158273697	0.239894867	0.280920029	0.348608017	0.364725113	0.350563049	0.34569931
134.780045	0.075056076	0.166526794	0.248687744	0.289825439	0.357542038	0.373746872	0.359651566	0.354812622
147.20311	0.083072662	0.176042557	0.258728027	0.299974442	0.36772728	0.384016037	0.36998558	0.365171432
162.110779	0.092653275	0.187026978	0.270208359	0.311561584	0.37935257	0.395727158	0.381755829	0.376964569
179.999985	0.104091644	0.199735641	0.283374786	0.324829102	0.392665863	0.409124374	0.395210266	0.390436172
186.934082	0.108514786	0.204597473	0.288394928	0.32988739	0.397741318	0.414234161	0.400339127	0.395572662
195.25499	0.1138134	0.210355759	0.294321106	0.335851669	0.403728485	0.420251846	0.406375885	0.40161705
205.240082	0.120157242	0.217168808	0.301309586	0.342882156	0.410783768	0.427341461	0.413486481	0.408733368
217.222198	0.127746582	0.225227356	0.309547424	0.351165771	0.419094086	0.435682297	0.421844482	0.417102814
231.600739	0.136831284	0.234769821	0.319271088	0.360935211	0.428897858	0.445526123	0.431707382	0.426971436
248.85498	0.147703171	0.246076584	0.330753326	0.372468948	0.440471649	0.457136154	0.443334579	0.438606262
269.560089	0.16071701	0.259489059	0.344341278	0.386108398	0.45416069	0.47086525	0.457078934	0.452356339
294.406219	0.176300049	0.275432587	0.360454559	0.402276993	0.470388412	0.487136841	0.473363876	0.468645096
324.221558	0.194965363	0.294418335	0.379608154	0.421491623	0.489671707	0.506467819	0.492706299	0.487995148
359.999969	0.217330933	0.317070007	0.402429581	0.444377899	0.512643814	0.529491425	0.515737534	0.511030197
384.654541	0.232732773	0.332637787	0.418102264	0.460096359	0.528419495	0.545297623	0.531547546	0.526844025
414.240021	0.25120163	0.35127449	0.436855316	0.478899002	0.547292709	0.564212799	0.550466537	0.545763016
449.742584	0.273363113	0.373603821	0.459314346	0.501419067	0.569896698	0.586864471	0.573120117	0.568418503
492.345673	0.299940109	0.400365829	0.486227036	0.528400421	0.596977234	0.613990784	0.600252151	0.595554352
543.46936	0.331823349	0.432453156	0.518491745	0.560747147	0.629444122	0.646522522	0.632785797	0.628091812
604.81781	0.370079041	0.470941544	0.557184219	0.59954071	0.668384552	0.685537338	0.671802521	0.66711235
678.435913	0.415981293	0.517114639	0.603603363	0.64607811	0.715097427	0.732339859	0.718608856	0.713924408
766.77771	0.471057892	0.572511673	0.659296036	0.701915741	0.771144867	0.78849411	0.774768829	0.770088196
872.787842	0.537149429	0.638986588	0.726127625	0.768918991	0.838403702	0.855886459	0.842166901	0.837493896
1000	0.616493225	0.718795776	0.806367874	0.849370956	0.919168472	0.936819077	0.92310524	0.918437958

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 80m away

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.006673813	0.049192429	0.1283741	0.180316925	0.24568367	0.493886948	0.780977249	1.11386108
2.54E+00	0.007850647	0.054553986	0.139133453	0.19420433	0.264886856	0.513708115	0.799129486	1.13134766
4.21E+00	0.008653641	0.058069229	0.146068573	0.203020096	0.276895523	0.52570343	0.809804916	1.14147949
6.20370388	0.009588242	0.061925888	0.153160095	0.211687088	0.288045883	0.536924362	0.820077896	1.15136337
8.60012722	0.010736466	0.066333771	0.160749435	0.220676422	0.299152374	0.548139572	0.830535889	1.16151237
11.4758358	0.012159348	0.071399689	0.168954849	0.230163574	0.310516357	0.55963707	0.841394424	1.1721096
14.9266863	0.013935089	0.077203751	0.177843094	0.240234375	0.322288513	0.571544647	0.852743149	1.18323326
19.0677071	0.016160965	0.083820343	0.18746376	0.250953674	0.334558487	0.583955765	0.864660263	1.19495201
24.036932	0.018945694	0.091306686	0.197845459	0.262353897	0.34737587	0.596912384	0.877176285	1.20729446
30.0000019	0.022424698	0.099712372	0.209011078	0.274457932	0.360773087	0.610445023	0.890314102	1.22027779
32.311367	0.023792267	0.1028862	0.213157654	0.278932571	0.365697861	0.61541748	0.895151138	1.22506332
35.0850067	0.025457382	0.106584549	0.217914581	0.284038544	0.371282578	0.621055603	0.90064621	1.23049927
38.413372	0.027484894	0.110870361	0.223329544	0.289825439	0.377574921	0.627401352	0.906841278	1.23663712
42.4074097	0.02995491	0.115818024	0.229467392	0.296348572	0.384624481	0.634513855	0.913795471	1.24353027
47.2002563	0.032960892	0.121494293	0.236381531	0.303659439	0.392473221	0.64242363	0.921546936	1.2512207
52.9516716	0.036613464	0.127977371	0.244127274	0.311807632	0.401165009	0.65117836	0.930143356	1.25975418
59.8533707	0.041044235	0.135345459	0.252761841	0.320840836	0.410736084	0.6608181	0.939628601	1.26917839
68.1354141	0.046398163	0.143672943	0.262336731	0.330806732	0.421230316	0.67137146	0.950025558	1.27951622
78.0738602	0.052854538	0.153068542	0.27293396	0.341779709	0.432706833	0.682909012	0.961416245	1.29084969
90	0.060611725	0.163642883	0.284637451	0.353832245	0.445234299	0.695491791	0.973859787	1.30324173
93.4670486	0.062868118	0.166662216	0.287960052	0.357250214	0.44878006	0.699048996	0.97738266	1.30674934
97.6275024	0.065572739	0.170213699	0.291847229	0.361240387	0.452911377	0.703199387	0.981491089	1.31084251
102.620049	0.068819046	0.174379349	0.296373367	0.365879059	0.457702637	0.708005905	0.986253738	1.315588
108.611107	0.07270813	0.179252625	0.301633835	0.371259689	0.463247299	0.713569641	0.991767883	1.32108307
115.800377	0.077367783	0.18494606	0.307731628	0.377483368	0.469642639	0.719985962	0.998132706	1.32742882
124.427498	0.082942963	0.191583633	0.314783096	0.384666443	0.47700119	0.727363586	1.00545883	1.33473587
134.780045	0.089614868	0.199317932	0.322933197	0.392946243	0.485460281	0.735845566	1.01388931	1.34314537
147.20311	0.097587585	0.208328247	0.332351685	0.402492523	0.495183945	0.745588303	1.02358055	1.35281563
162.110779	0.107116699	0.218835831	0.343244553	0.413509369	0.506372452	0.756797791	1.03473663	1.36395073
179.999985	0.118497849	0.231107712	0.355873108	0.426254272	0.519281387	0.769720078	1.04760742	1.37680435
186.934082	0.122900009	0.23582077	0.360708237	0.431129456	0.524215698	0.774656296	1.05252457	1.38171387
195.25499	0.128175735	0.241420746	0.366439819	0.436904907	0.530054092	0.780500412	1.0583477	1.38752937
205.240082	0.134492874	0.248071671	0.37322998	0.443740845	0.536956787	0.787408829	1.06523514	1.39440727
217.222198	0.142059326	0.255973816	0.381271362	0.45182991	0.545116425	0.795578003	1.07338142	1.40254593
231.600739	0.151119232	0.265359879	0.390798569	0.461406708	0.554765701	0.805231094	1.08300972	1.41216469
248.85498	0.161968231	0.27652359	0.402099609	0.472757339	0.566192627	0.816663742	1.09441757	1.423563
269.560089	0.17496109	0.289808273	0.415519714	0.486227036	0.579740524	0.830215454	1.10794067	1.43707657
294.406219	0.190526962	0.305641174	0.431480408	0.502239227	0.595832825	0.846311569	1.12400627	1.45312881
324.221558	0.209180832	0.324533463	0.450500488	0.521308899	0.614990234	0.865468979	1.14313126	1.47224236
359.999969	0.231542587	0.347114563	0.473203659	0.544067383	0.637840271	0.888320923	1.16594696	1.4950428
384.654541	0.246946335	0.362644196	0.488811493	0.559709549	0.653543472	0.904024124	1.18162537	1.51071358
414.240021	0.265417099	0.381244659	0.50749588	0.57843399	0.672336578	0.922815323	1.20038986	1.52946472
449.742584	0.287586212	0.403551102	0.529895782	0.600875854	0.694858551	0.945339203	1.22287941	1.55194473
492.345673	0.314174652	0.430280685	0.55673027	0.627763748	0.721839905	0.972316742	1.2498188	1.57886887
543.46936	0.346071243	0.462341309	0.588914871	0.660009384	0.754196167	1.0046711	1.28212547	1.61115646
604.81781	0.384347916	0.500802994	0.627519608	0.6986866	0.79300499	1.04347801	1.32087517	1.64988518
678.435913	0.430274963	0.546949387	0.673837662	0.745088577	0.839565277	1.09003448	1.36736679	1.6963501
766.77771	0.485380173	0.602313995	0.729408264	0.800762177	0.895429611	1.145895	1.42314529	1.75209999
872.787842	0.55150795	0.668750763	0.79609108	0.867570877	0.962467194	1.21292496	1.49007797	1.81899643
1000	0.630893707	0.74851799	0.876159668	0.947792053	1.04296875	1.29342651	1.57046127	1.89933205

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 160m away

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000192642	0.001449585	0.01158905	0.049766541	0.013261795	0.014595032	0.017225266	0.018789291
2.54250145	0.000465393	0.003505707	0.02338028	0.068056107	0.028678894	0.030441284	0.034040451	0.036001205
4.20668411	0.000823975	0.006292343	0.034385681	0.08131218	0.044342041	0.046892166	0.0508461	0.052865982
6.20370388	0.001296997	0.009946823	0.045225143	0.093664169	0.059989929	0.063686371	0.067842484	0.069839478
8.60012722	0.001930237	0.014572144	0.056362152	0.106048584	0.075719833	0.080709457	0.085063934	0.087036133
11.4758358	0.0027771	0.020235062	0.06803894	0.118778229	0.091625214	0.097929001	0.10251236	0.104486465
14.9266863	0.003927231	0.026981354	0.080368042	0.131984711	0.107782364	0.115348816	0.120174408	0.122175217
19.0677071	0.005489349	0.034849167	0.093395233	0.145723343	0.124227524	0.132972717	0.138050079	0.140100479
24.036932	0.007598877	0.04384613	0.107120514	0.160011292	0.140977859	0.150800705	0.156124115	0.158233643
30.0000019	0.010419846	0.053966522	0.121524811	0.174840927	0.158029556	0.168830872	0.174396515	0.176574707
32.311367	0.011554718	0.057786942	0.126831055	0.180290222	0.16424942	0.175374985	0.181013107	0.183214188
35.0850067	0.012969971	0.062232971	0.132846832	0.186439514	0.17121315	0.182695389	0.188423157	0.19065094
38.413372	0.014738083	0.067367554	0.139619827	0.193336487	0.178964615	0.190816879	0.196641922	0.198900223
42.4074097	0.016942978	0.073263168	0.147197723	0.201026917	0.187534332	0.199771881	0.205698013	0.207988739
47.2002563	0.019691467	0.07998085	0.15561676	0.209547043	0.19694519	0.209571838	0.215600967	0.217926025
52.9516716	0.023099899	0.087583542	0.164909363	0.218925476	0.207216263	0.220228195	0.226358414	0.228719711
59.8533707	0.027313232	0.096128464	0.175102234	0.229188919	0.218353271	0.231750488	0.237991333	0.240392685
68.1354141	0.032491684	0.105674744	0.186227798	0.240373611	0.230386734	0.244148254	0.250484467	0.252920151
78.0738602	0.038816452	0.116285324	0.198322296	0.252513885	0.243328094	0.257434845	0.263864517	0.266334534
90	0.046489716	0.128038406	0.211439133	0.265668869	0.257219315	0.271633148	0.278150558	0.280656815
93.4670486	0.048727036	0.131378174	0.215143204	0.269380569	0.261123657	0.275627136	0.282173157	0.28468895
97.6275024	0.051416397	0.135282516	0.219446182	0.273691177	0.265649796	0.280248642	0.286823273	0.28935051
102.620049	0.05465126	0.139837265	0.22442627	0.278680801	0.270874023	0.285575867	0.292181015	0.294717789
108.611107	0.058532715	0.145126343	0.230169296	0.284433365	0.276872635	0.291687012	0.298326492	0.300876617
115.800377	0.063192368	0.151260376	0.236772537	0.29104805	0.283746719	0.298675537	0.30534935	0.307912827
124.427498	0.068777084	0.158351898	0.244344711	0.298635483	0.291593552	0.306631088	0.313329697	0.315906525
134.780045	0.075466156	0.166542053	0.253011703	0.307317734	0.300542831	0.315702438	0.322435379	0.325023651
147.20311	0.083463669	0.17599678	0.262931824	0.31725502	0.310731888	0.326000214	0.332769394	0.335371017
162.110779	0.0930233	0.186922073	0.274295807	0.328638077	0.322345734	0.337724686	0.344528198	0.347145081
179.999985	0.104438782	0.199575424	0.287355423	0.341726303	0.335647583	0.351131439	0.357967377	0.360599518
186.934082	0.108854294	0.204418182	0.292341232	0.346721649	0.340719223	0.356243134	0.363092422	0.365726471
195.25499	0.114141464	0.210155487	0.298229218	0.352619171	0.346702576	0.362276077	0.369142532	0.37178421
205.240082	0.120473862	0.216947556	0.305181503	0.35959053	0.353759766	0.369375229	0.376253128	0.378898621
217.222198	0.128051758	0.224985123	0.31338501	0.36781311	0.362068176	0.377729416	0.384620667	0.387271881
231.600739	0.137123108	0.234506607	0.323070526	0.377521515	0.371845245	0.387544632	0.394451141	0.397111893
248.85498	0.147981644	0.245790482	0.33452034	0.388999939	0.383398056	0.399141312	0.406064987	0.408733368
269.560089	0.160980225	0.259183884	0.348075867	0.402591705	0.397066116	0.412862778	0.419805527	0.42247963
294.406219	0.176546097	0.275108337	0.364164352	0.418722153	0.413265228	0.429113388	0.436075211	0.438756943
324.221558	0.195196152	0.294078827	0.383296967	0.437908173	0.432514191	0.448413849	0.455396652	0.458087921
359.999969	0.217544556	0.31671524	0.406103134	0.460777283	0.455444336	0.471401215	0.478404999	0.481105804
384.654541	0.232936859	0.332275391	0.421768188	0.476486206	0.471187592	0.487182617	0.49420166	0.496910095
414.240021	0.251396179	0.350902557	0.440515518	0.495286942	0.490028381	0.506065369	0.513101578	0.515815735
449.742584	0.273542404	0.373224258	0.462972641	0.517808914	0.512588501	0.528675079	0.535732269	0.538455963
492.345673	0.300109863	0.399978638	0.489879608	0.544792175	0.539615631	0.55575943	0.562841415	0.565576553
543.46936	0.331983566	0.432062149	0.522144318	0.577150345	0.572029114	0.588241577	0.595352173	0.598096848
604.81781	0.370233536	0.470546722	0.560840607	0.615955353	0.610891342	0.627182007	0.634326935	0.637088776
678.435913	0.416130066	0.516719818	0.607269287	0.662519455	0.657527924	0.673919678	0.681108475	0.683885574
766.77771	0.471218109	0.572130203	0.662984848	0.718397141	0.71349144	0.729997635	0.737234116	0.740032196
872.787842	0.53732872	0.638628006	0.729846954	0.785453796	0.780649185	0.797298431	0.80459404	0.807418823
1000	0.616664886	0.718431473	0.810092926	0.865936279	0.86125946	0.878080368	0.885450363	0.888303757

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 160m away

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.00696373	0.050470352	0.122095108	0.148958206	0.324859619	0.574838638	0.823476791	1.12272453
2.54E+00	0.008152008	0.055782318	0.132900238	0.163452148	0.338140488	0.588541031	0.837373734	1.13666916
4.21E+00	0.008955002	0.059270859	0.139902115	0.172967911	0.346008301	0.596084595	0.844783783	1.14398956
6.20370388	0.009902954	0.063127518	0.147045135	0.182247162	0.354091644	0.603981018	0.852588654	1.15172386
8.60012722	0.011068344	0.067544937	0.154695511	0.191879272	0.362718582	0.612491608	0.861030579	1.16010666
11.4758358	0.012516022	0.072608948	0.162977219	0.202047348	0.371990204	0.621681213	0.870166779	1.16919518
14.9266863	0.014322281	0.078401566	0.17196846	0.212848663	0.381958008	0.631587982	0.880029678	1.17901611
19.0677071	0.016580582	0.084985733	0.181703568	0.224319458	0.392646479	0.642232895	0.890640259	1.18958855
24.036932	0.019399643	0.092420578	0.192211151	0.236478806	0.404073715	0.653621674	0.902000427	1.2009201
30.0000019	0.022909164	0.100753784	0.203500748	0.249322891	0.41623497	0.665754318	0.914110184	1.21300316
32.311367	0.02428627	0.103906631	0.207710266	0.254083633	0.420761108	0.670267105	0.918613434	1.21749496
35.0850067	0.02596283	0.107572556	0.212518692	0.259483337	0.425901413	0.675395966	0.923734665	1.22260857
38.413372	0.028001785	0.111820221	0.217992783	0.26558876	0.43173027	0.681217194	0.929548264	1.22841072
42.4074097	0.030479431	0.116722107	0.224191666	0.272449493	0.438302994	0.687778473	0.936103821	1.23495674
47.2002563	0.033494949	0.122346878	0.231170654	0.28011322	0.445667267	0.695133209	0.943450928	1.24229431
52.9516716	0.037151337	0.128772736	0.238985062	0.288625717	0.453876495	0.703332901	0.951641083	1.25047684
59.8533707	0.041582108	0.136074066	0.247684479	0.298021317	0.462966919	0.712415695	0.960718155	1.25954437
68.1354141	0.046934128	0.144342422	0.257335663	0.308361053	0.473007202	0.722444534	0.970743179	1.26955986
78.0738602	0.053380966	0.153675079	0.268003464	0.319690704	0.484045029	0.733474731	0.981765747	1.2805748
90	0.061124802	0.164190292	0.27977527	0.33208847	0.496173859	0.745592117	0.993877411	1.29267883
93.4670486	0.06337738	0.167192459	0.283119202	0.335597992	0.499612808	0.74902916	0.997312546	1.29611206
97.6275024	0.066078186	0.170722961	0.287021637	0.33968544	0.50361824	0.753032684	1.00131607	1.30011177
102.620049	0.069316864	0.174865723	0.291570663	0.344432831	0.508277893	0.75769043	1.00597191	1.3047657
108.611107	0.073196411	0.179714203	0.296850204	0.349924088	0.51367569	0.763086319	1.01136589	1.31015968
115.800377	0.077846527	0.185382843	0.302970886	0.356269836	0.519920349	0.769329071	1.01760674	1.31639671
124.427498	0.083406448	0.191997528	0.310054779	0.363586426	0.527141571	0.776544571	1.02482033	1.3236084
134.780045	0.090065002	0.199701309	0.318222046	0.371986389	0.535429001	0.784830093	1.03310585	1.33189011
147.20311	0.098022461	0.208684921	0.327661514	0.381654739	0.544998169	0.794393539	1.04266548	1.34144783
162.110779	0.107534409	0.219165802	0.338577271	0.392789841	0.556035995	0.805427551	1.05369759	1.35247803
179.999985	0.118894577	0.23141098	0.351224899	0.405639648	0.56879425	0.818181992	1.06645012	1.36522675
186.934082	0.123291016	0.236114502	0.356069565	0.410554886	0.573677063	0.823064804	1.07133293	1.37010956
195.25499	0.128557205	0.241701126	0.36179924	0.416360855	0.579442978	0.828830719	1.07710075	1.37587738
205.240082	0.134864807	0.248342514	0.368597031	0.423240662	0.586284637	0.835668564	1.0839386	1.38271523
217.222198	0.142417908	0.256229401	0.376644135	0.431371689	0.594373703	0.843757629	1.09202576	1.39080048
231.600739	0.151468277	0.265609741	0.386184692	0.440998077	0.603963852	0.853343964	1.10161018	1.400383
248.85498	0.162305832	0.276760101	0.39748764	0.452384949	0.615310669	0.864686966	1.11295128	1.41172409
269.560089	0.175285339	0.290029526	0.410909653	0.465892792	0.628772736	0.878147125	1.12641144	1.42518425
294.406219	0.190835953	0.305849075	0.426876068	0.481941223	0.644779205	0.89414978	1.14241219	1.44118309
324.221558	0.209476471	0.324731827	0.445898056	0.501049042	0.663841248	0.9132061	1.16146851	1.4602375
359.999969	0.231822968	0.347297668	0.468605042	0.523843765	0.686584473	0.935945511	1.18420601	1.4829731
384.654541	0.247217178	0.362821579	0.484212875	0.539506912	0.702215195	0.951572418	1.19983101	1.4985981
414.240021	0.265680313	0.381416321	0.502901077	0.558258057	0.720928192	0.970281601	1.21854019	1.51730537
449.742584	0.287834167	0.403707504	0.525297165	0.580722809	0.743350983	0.992698669	1.24095535	1.53971863
492.345673	0.314413071	0.430433273	0.552139282	0.607645035	0.77022171	1.01956177	1.26781654	1.56657982
543.46936	0.346302032	0.462486267	0.584327698	0.639928818	0.802442551	1.05177689	1.30002975	1.59879112
604.81781	0.384571075	0.50094223	0.622940063	0.67865181	0.841096878	1.09041977	1.33866882	1.63742828
678.435913	0.430492401	0.547080994	0.669267654	0.725112915	0.887468338	1.13677979	1.38502502	1.68378258
766.77771	0.485610962	0.602458954	0.724866867	0.780870438	0.943120956	1.19241714	1.44065857	1.73941231
872.787842	0.551755905	0.66891098	0.79158783	0.847782135	1.00990868	1.25918579	1.50742149	1.80617142
1000	0.631134033	0.748662949	0.87166214	0.928089142	1.0900631	1.33931923	1.58754539	1.8862896

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 250m away

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000196457	0.001867294	0.007583618	0.006853104	0.009597778	0.014316559	0.01726532	0.018886566
2.54250145	0.00047493	0.004707336	0.016273499	0.015625	0.02081871	0.029104233	0.033658981	0.03587532
4.20668411	0.000841141	0.008327484	0.025304794	0.025836945	0.033252716	0.044139862	0.049661636	0.052188873
6.20370388	0.0013237	0.012643814	0.034877777	0.037208557	0.046691895	0.059530258	0.065694809	0.068410873
8.60012722	0.001968384	0.017688751	0.045188904	0.049562454	0.060970306	0.0753479	0.081970215	0.084810257
11.4758358	0.002840042	0.023548126	0.056322098	0.062778473	0.075963974	0.091611862	0.098581314	0.101507187
14.9266863	0.004020691	0.030321121	0.068300247	0.076774597	0.091579437	0.108312607	0.115564346	0.118555069
19.0677071	0.005622864	0.03809166	0.081102371	0.09147644	0.107748032	0.125425339	0.132917404	0.13596344
24.036932	0.007780075	0.046916962	0.09469223	0.106815338	0.124404907	0.142910004	0.150611877	0.153707504
30.0000019	0.010652542	0.056823731	0.109016418	0.122730255	0.141489029	0.160728455	0.168617249	0.171758652
32.311367	0.011802673	0.060562134	0.114297867	0.128562927	0.147726059	0.167217255	0.175170898	0.178329468
35.0850067	0.013237	0.064910889	0.120292664	0.13514328	0.15473175	0.17448616	0.182508469	0.185686111
38.413372	0.015024185	0.06993866	0.127052307	0.142511368	0.162540436	0.182569504	0.190664291	0.193861008
42.4074097	0.017248154	0.075714111	0.134614944	0.15070343	0.171182632	0.191493988	0.199663162	0.202880859
47.2002563	0.020013809	0.082304001	0.143026352	0.159748077	0.180683136	0.201280594	0.209526062	0.21276474
52.9516716	0.0234375	0.089773178	0.152311325	0.169668198	0.191053391	0.211933136	0.220256805	0.223518372
59.8533707	0.027662277	0.098182678	0.162502289	0.18047905	0.20230484	0.223461151	0.231861115	0.235147476
68.1354141	0.032848358	0.107593536	0.173624039	0.192199707	0.214448929	0.235872269	0.244348526	0.247657776
78.0738602	0.039175034	0.118070602	0.185714722	0.204854965	0.227500916	0.24917984	0.257726669	0.261060715
90	0.046848297	0.1296978	0.198829651	0.218490601	0.241504669	0.263420105	0.272035599	0.275392532
93.4670486	0.04908371	0.133003235	0.202531815	0.222333908	0.245445251	0.267425537	0.276060104	0.27942276
97.6275024	0.051771164	0.136873245	0.2068367	0.226789474	0.250009537	0.272058487	0.280714035	0.28408432
102.620049	0.05500412	0.141386032	0.211816788	0.231933594	0.255271912	0.277397156	0.286075592	0.289451599
108.611107	0.058883667	0.146635056	0.217557907	0.237850189	0.261312485	0.283517838	0.292221069	0.295604706
115.800377	0.063541412	0.152723312	0.224161148	0.244636536	0.268226624	0.290517807	0.299245834	0.302639008
124.427498	0.069122315	0.159770966	0.231729507	0.252389908	0.27611351	0.298492432	0.307247162	0.310649872
134.780045	0.075803757	0.167915344	0.2403965	0.261241913	0.28509903	0.307567596	0.316350937	0.319763184
147.20311	0.083797455	0.177326202	0.250312805	0.271341324	0.295330048	0.317886353	0.326696396	0.330120087
162.110779	0.093349457	0.188211441	0.261676788	0.282878876	0.306995392	0.329641342	0.338479996	0.341913223
179.999985	0.104757309	0.200828552	0.274738312	0.296098709	0.320335388	0.343065262	0.351930618	0.35537529
186.934089	0.109170914	0.205659866	0.279724121	0.301141739	0.325418472	0.348178864	0.357055664	0.360502243
195.25499	0.114456177	0.21138382	0.285612106	0.307088852	0.331413269	0.354206085	0.363092422	0.366544724
205.240082	0.120782852	0.218162537	0.292560577	0.314100266	0.338474274	0.361303329	0.370201111	0.373659134
217.222198	0.128358841	0.226186752	0.300762177	0.322366714	0.346790314	0.369657516	0.378570557	0.382032394
231.600739	0.137426376	0.235696793	0.310447693	0.332117081	0.356592178	0.379501343	0.388427734	0.391895294
248.85498	0.14827919	0.246969223	0.321895599	0.343631744	0.368162155	0.391113281	0.400056839	0.403530121
269.560089	0.161273956	0.260353088	0.335451126	0.357250214	0.381835938	0.40483284	0.413791656	0.417272568
294.406219	0.176837921	0.276269913	0.351535797	0.373397827	0.398040771	0.421085358	0.430063248	0.433549881
324.221558	0.195484161	0.295232773	0.370664597	0.392591476	0.417293549	0.440389633	0.449388504	0.452884674
359.999969	0.217830658	0.317867279	0.393465042	0.415458679	0.440223694	0.463378906	0.472400665	0.475906372
384.654541	0.233222961	0.333421707	0.409126282	0.431159973	0.455966949	0.479160309	0.488197327	0.491708755
414.240021	0.251678467	0.352050781	0.427873611	0.449953079	0.474807739	0.498046875	0.507101059	0.510620117
449.742584	0.273824692	0.374372482	0.450325012	0.472455978	0.497365952	0.520656586	0.52973175	0.533260345
492.345673	0.300388336	0.401128769	0.477231979	0.499423981	0.524398804	0.547750473	0.556852341	0.560390472
543.46936	0.332265854	0.43321228	0.509489059	0.531749725	0.556798935	0.580223083	0.589353561	0.592905045
604.81781	0.370512009	0.471704483	0.548187256	0.570529938	0.595672607	0.619186401	0.628355026	0.631919861
678.435913	0.416414261	0.517879486	0.594604492	0.617044449	0.642290115	0.665904999	0.675115585	0.678697586
766.77771	0.471496582	0.573284149	0.650299072	0.672857285	0.698234558	0.721975327	0.731237411	0.734840393
872.787842	0.537591934	0.63977623	0.717142105	0.739841461	0.76537323	0.789264679	0.798589706	0.802219391
1000	0.616916656	0.719568253	0.797355652	0.820226669	0.845947266	0.870023727	0.879421234	0.883081436

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 250m away

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.007112503	0.049694061	0.144557953	0.227903366	0.354429245	0.59356308	0.836421967	1.16623306
2.54E+00	0.008304596	0.055006027	0.153793335	0.238195419	0.365966797	0.6062603	0.84954834	1.17951584
4.21E+00	0.009109497	0.058490753	0.159439087	0.244083405	0.372190475	0.6127491	0.85610199	1.18607712
6.20370388	0.010061264	0.062328339	0.16547966	0.250463486	0.378940582	0.619762421	0.863176346	1.1931572
8.60012722	0.011238098	0.066720963	0.172182083	0.257547379	0.38640976	0.627490997	0.870960236	1.20094681
11.4758358	0.012699127	0.071767807	0.179636002	0.265398026	0.394645691	0.635974884	0.879499435	1.20948982
14.9266863	0.01452446	0.077547073	0.187900543	0.274053574	0.403676987	0.645246506	0.888820648	1.21881485
19.0677071	0.016805649	0.084129334	0.197006226	0.283536911	0.41352272	0.655319214	0.898942947	1.22894096
24.036932	0.019649506	0.091575623	0.206972122	0.293857574	0.424186707	0.66619873	0.90986824	1.23986816
30.0000019	0.023181915	0.09992981	0.21780014	0.305019379	0.435667038	0.677883148	0.92159462	1.25160027
32.311367	0.02456665	0.103086472	0.221837997	0.309173584	0.439935684	0.682220459	0.925947189	1.25595474
35.0850067	0.026252747	0.106761932	0.226484299	0.313943863	0.444826126	0.687189102	0.930931091	1.26093864
38.413372	0.028299332	0.111024857	0.231794357	0.319385529	0.450395584	0.692840576	0.936601639	1.2666111
42.4074097	0.030788422	0.115942001	0.237825394	0.325553894	0.456699371	0.699228287	0.943008423	1.27301979
47.2002563	0.033809662	0.121587753	0.24464035	0.332509995	0.463792801	0.706411362	0.950210571	1.28022575
52.9516716	0.037473679	0.128032684	0.252292633	0.340305328	0.471727371	0.714435577	0.958255768	1.28827286
59.8533707	0.041908264	0.135360718	0.26084137	0.348993301	0.480556488	0.72335434	0.967195511	1.29721451
68.1354141	0.047266007	0.143657684	0.270345688	0.358633041	0.490329742	0.733215332	0.977075577	1.30709839
78.0738602	0.05371666	0.153013229	0.280874252	0.369293213	0.501121521	0.744091034	0.987972226	1.31799698
90	0.061458588	0.163551331	0.29252243	0.381059647	0.513011932	0.756061554	0.999599946	1.32999039
93.4670486	0.063709259	0.166559219	0.295829773	0.384401321	0.516386032	0.759458542	1.00336266	1.3333931
97.6275024	0.066410065	0.170097351	0.299697876	0.388305664	0.520326614	0.76342392	1.00733376	1.3373642
102.620049	0.069648743	0.174249649	0.304208755	0.392854691	0.524915695	0.768037796	1.01195335	1.3419857
108.611107	0.073526382	0.179109573	0.30945015	0.398136139	0.530239105	0.773389816	1.0173111	1.34734535
115.800377	0.078174591	0.18478775	0.31552887	0.404258728	0.536403656	0.779582977	1.02351379	1.35354805
124.427498	0.08373642	0.191410065	0.322557449	0.411329269	0.543519974	0.786727905	1.03066254	1.3606987
134.780045	0.090387344	0.19912529	0.330688477	0.419506073	0.551742554	0.79498291	1.03892517	1.36896324
147.20311	0.098342896	0.208116531	0.340080261	0.428937912	0.561218262	0.804487228	1.04843712	1.3784771
162.110779	0.107847214	0.218606949	0.350954056	0.439853668	0.57217598	0.815473557	1.05943108	1.38947296
179.999985	0.119205475	0.230861664	0.363559723	0.452495575	0.584857941	0.828180313	1.07214546	1.40218735
186.934082	0.123598099	0.235567093	0.36838913	0.45734024	0.589715958	0.833049774	1.07701683	1.40706062
195.25499	0.128864288	0.241159439	0.374111176	0.463075638	0.595466614	0.838809967	1.08278084	1.41282463
205.240082	0.135168076	0.247802734	0.380889893	0.469869614	0.602275848	0.845628738	1.08960342	1.41964722
217.222198	0.142721176	0.255695343	0.38891983	0.477912903	0.610336304	0.853702545	1.09767723	1.42772293
231.600739	0.151767731	0.265075684	0.398433685	0.487442017	0.619878769	0.863256454	1.10723495	1.43728065
248.85498	0.162599564	0.276227951	0.409721375	0.498744965	0.631198883	0.874586105	1.11856842	1.44861603
269.560089	0.175579071	0.28950119	0.423118591	0.512153625	0.644622803	0.888021469	1.13200569	1.4620533
294.406219	0.191127777	0.305322647	0.439058304	0.528106689	0.660591125	0.903999329	1.14798927	1.47803688
324.221558	0.209766388	0.324205399	0.458053589	0.547115326	0.679615021	0.923034668	1.16702652	1.49707413
359.999969	0.232110977	0.346775055	0.480733871	0.569807053	0.702320099	0.94575119	1.18974686	1.51979637
384.654541	0.247505188	0.362295151	0.49631691	0.58539772	0.717920303	0.961357117	1.20535469	1.53540421
414.240021	0.265964508	0.380895615	0.51499176	0.604082108	0.736614227	0.980060577	1.22406006	1.55411148
449.742584	0.288118362	0.403186798	0.53735733	0.626457214	0.758998871	1.00245285	1.24645424	1.57650757
492.345673	0.314691544	0.429918289	0.564178467	0.653287888	0.785844803	1.02930832	1.27331352	1.60336685
543.46936	0.346586227	0.461971283	0.596326828	0.685445786	0.818016052	1.06149101	1.30549812	1.63555145
604.81781	0.384851456	0.500434875	0.634906769	0.724040985	0.856628418	1.10011673	1.34412766	1.67418098
678.435913	0.430776596	0.546573639	0.681177139	0.770324707	0.902929306	1.14643097	1.39044571	1.72050095
766.77771	0.485889435	0.601942062	0.736701965	0.825866699	0.958494186	1.20201302	1.44603157	1.77608871
872.787842	0.552017212	0.668390274	0.803340912	0.892526627	1.02518082	1.26872063	1.51274681	1.84280396
1000	0.631383896	0.748125076	0.883304596	0.972513199	1.10520172	1.34876442	1.59279633	1.92285538

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 500m away

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0	0	0	0	0	0	0	0	0
1.15568244	0.000196457	0.001676559	0.004533768	0.006502151	0.009531021	0.0141716	0.017095566	0.01877594
2.54250145	0.000486374	0.003898621	0.010200501	0.014410019	0.020519257	0.028879166	0.033473969	0.035816193
4.20668411	0.000883102	0.006702423	0.016969681	0.023544312	0.032546997	0.043806076	0.049468994	0.052179337
6.20370388	0.001422882	0.010198593	0.024902344	0.033845902	0.045459747	0.059017181	0.065441132	0.068399429
8.60012722	0.002149582	0.014503479	0.034015656	0.045240402	0.059164047	0.074581146	0.08158493	0.084730148
11.4758358	0.003112793	0.019735336	0.044286728	0.057645798	0.073591232	0.090539932	0.098005295	0.101295471
14.9266863	0.004388809	0.026000977	0.055669785	0.070980072	0.088684082	0.106910706	0.11475563	0.118164063
19.0677071	0.006072998	0.033374786	0.068099976	0.085172653	0.104400635	0.123699188	0.131855011	0.135362625
24.036932	0.008291245	0.041908264	0.081497192	0.100139618	0.120681763	0.140886307	0.149301529	0.152891159
30.0000019	0.011196137	0.051610947	0.095777512	0.115800858	0.137475967	0.158445358	0.167081833	0.17073822
32.311367	0.012355804	0.055288315	0.101062775	0.121559143	0.143615723	0.16484642	0.173555374	0.177236557
35.0850067	0.013793945	0.059583664	0.107082367	0.128076553	0.150531769	0.172027588	0.180812836	0.184516907
38.413372	0.015577316	0.064565659	0.113889694	0.13539505	0.158256531	0.180025101	0.188886642	0.192615509
42.4074097	0.017789841	0.070306778	0.121526718	0.14355278	0.166826248	0.188867569	0.197807312	0.201559067
47.2002563	0.020534515	0.076875687	0.130037308	0.152584076	0.176265717	0.198577881	0.207593918	0.211370468
52.9516716	0.023929596	0.084335327	0.139448166	0.162508011	0.186590195	0.209165573	0.218257904	0.22205925
59.8533707	0.028116226	0.092744827	0.149780273	0.173336029	0.197805405	0.220640182	0.2298069	0.233631134
68.1354141	0.033254623	0.102165222	0.161067963	0.185098648	0.209936142	0.233009338	0.24224472	0.246089935
78.0738602	0.039524078	0.112659454	0.173332214	0.197807312	0.222988129	0.2462883	0.255588531	0.259456635
90	0.047132492	0.12430954	0.186618805	0.211503983	0.237001419	0.260513306	0.269874573	0.273761749
93.4670486	0.049350739	0.127622604	0.190372467	0.215366364	0.240947723	0.26451683	0.273895264	0.277786255
97.6275024	0.052017212	0.131498337	0.194728851	0.219842911	0.245517731	0.269147873	0.27854538	0.282442093
102.620049	0.055225372	0.13602066	0.199769974	0.225011826	0.250787735	0.274484634	0.283901215	0.287805557
108.611107	0.059076309	0.141279221	0.20557785	0.230957031	0.256837845	0.280605316	0.290044785	0.293956757
115.800377	0.06370163	0.147378922	0.212249756	0.237770081	0.263763428	0.287607193	0.297067642	0.300989151
124.427498	0.069246292	0.154436111	0.219892502	0.245557785	0.271663666	0.29558754	0.305072784	0.309000015
134.780045	0.075889587	0.16258812	0.228628159	0.254442215	0.280664444	0.304666519	0.314176559	0.318113327
147.20311	0.083839417	0.172006607	0.238616943	0.264572144	0.290908813	0.314990997	0.32452774	0.328474045
162.110779	0.093345642	0.182897568	0.250047684	0.276140213	0.302587509	0.326751709	0.336313248	0.340269089
179.999985	0.104705811	0.195518494	0.263166428	0.289390564	0.315944672	0.340187073	0.349775314	0.353740692
186.934082	0.109100342	0.200351715	0.268173218	0.29444313	0.321035385	0.345304489	0.354902267	0.35887146
195.25499	0.114366531	0.206075668	0.274082184	0.30039978	0.327033997	0.351333618	0.360940933	0.364915848
205.240082	0.120674133	0.212852478	0.281051636	0.307422638	0.334098816	0.358434677	0.368053436	0.372032166
217.222198	0.128223419	0.220874786	0.289270401	0.315696716	0.342418671	0.366790771	0.376422882	0.380405426
231.600739	0.137264252	0.230379105	0.298973083	0.325454712	0.352226257	0.376636505	0.386283875	0.390274048
248.85498	0.148088455	0.241645813	0.310436249	0.336975098	0.363798141	0.388250351	0.397912979	0.401908875
269.560089	0.161054611	0.255022049	0.32400322	0.350601196	0.377477646	0.401977539	0.411657333	0.415660858
294.406219	0.176584244	0.270929337	0.34009552	0.366752625	0.393686295	0.418233871	0.427932739	0.431945801
324.221558	0.195198059	0.289880753	0.359228134	0.385946274	0.412940979	0.437541962	0.447263718	0.451284409
359.999969	0.217512131	0.312501907	0.38202858	0.408811569	0.435871124	0.460531235	0.470277786	0.474309921
384.654541	0.232883453	0.328048706	0.397687912	0.424512863	0.451616287	0.476318359	0.486082077	0.490121841
414.240021	0.251319885	0.346666336	0.416427612	0.443300247	0.470451355	0.495197296	0.50497818	0.509025574
449.742584	0.273443222	0.3689785	0.438873291	0.465799332	0.493005753	0.517807007	0.527612686	0.531669617
492.345673	0.299987793	0.395721436	0.465770721	0.492757797	0.520030975	0.544895172	0.554725647	0.558795929
543.46936	0.331846237	0.427797318	0.498018265	0.525079727	0.552427292	0.577365875	0.587228775	0.591310501
604.81781	0.370080948	0.46628952	0.536714554	0.563858032	0.591299057	0.616327286	0.626226425	0.630325317
678.435913	0.415966034	0.512451172	0.583120346	0.610368729	0.637918472	0.663051605	0.672994614	0.677112579
766.77771	0.471033096	0.56785202	0.638809204	0.66617775	0.6938591	0.719120026	0.729118347	0.733259201
872.787842	0.537120819	0.634334564	0.705635071	0.733150482	0.760988235	0.786405563	0.796466827	0.800636292
1000	0.616439819	0.714130402	0.78584671	0.813539505	0.841569901	0.867170334	0.877311707	0.881513596

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 500m away

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.16E+00	0.006959915	0.059516907	0.163459778	0.236101151	0.354715347	0.581129074	0.80556488	1.08535767
2.54E+00	0.008136749	0.064336777	0.171783447	0.245862961	0.365938187	0.593650818	0.818572998	1.09855843
4.21E+00	0.008932114	0.067178726	0.176319122	0.251028061	0.371681213	0.599824905	0.824876785	1.10490227
6.20370388	0.009872437	0.070446014	0.181425095	0.25677681	0.377996445	0.606546402	0.831716537	1.11177826
8.60012722	0.011032105	0.074289322	0.187253952	0.263263702	0.385042191	0.613981247	0.839263916	1.11935997
11.4758358	0.01247406	0.078794479	0.193862915	0.270530701	0.392854691	0.622167587	0.847555161	1.12768364
14.9266863	0.014276505	0.084047318	0.201292038	0.278610229	0.401462555	0.631126404	0.856613159	1.13677216
19.0677071	0.016527176	0.090110779	0.20958519	0.287540436	0.410903931	0.64090538	0.866485596	1.1466732
24.036932	0.0193367	0.097063065	0.218761444	0.297330856	0.421175003	0.651491165	0.877157211	1.15737152
30.0000019	0.022834778	0.104959488	0.228837967	0.307991028	0.432289124	0.66289711	0.888645172	1.16888237
32.311367	0.024206162	0.107954025	0.232614517	0.311973572	0.436429977	0.667140961	0.892915726	1.17316246
35.0850067	0.025875092	0.111459732	0.236972809	0.316555023	0.441184998	0.672006607	0.89781189	1.17806625
38.413372	0.027906418	0.115541458	0.241977692	0.321798325	0.446609497	0.677547455	0.903385162	1.18364906
42.4074097	0.030374527	0.12027359	0.247688293	0.327760696	0.452762604	0.683822632	0.909692764	1.1899662
47.2002563	0.033374786	0.125730515	0.254173279	0.334505081	0.459705353	0.690889359	0.916793823	1.1970787
52.9516716	0.037015915	0.131988525	0.261489868	0.342084885	0.467485428	0.698797226	0.924736023	1.20503044
59.8533707	0.041427612	0.139133453	0.269701004	0.350559235	0.476158142	0.707595825	0.933567047	1.213871
68.1354141	0.046754837	0.147249222	0.278879166	0.359998703	0.485795975	0.717359543	0.943365097	1.22367859
78.0738602	0.053173065	0.156440735	0.289096832	0.37046814	0.496452332	0.728136063	0.954174042	1.23449707
90	0.060882568	0.166824341	0.300447464	0.382055283	0.508216858	0.740011215	0.966081619	1.24641418
93.4670486	0.063123703	0.16979599	0.303686142	0.38535881	0.511569977	0.743394852	0.969472885	1.24980927
97.6275024	0.065811157	0.173290253	0.307468414	0.389209747	0.515474319	0.747331619	0.973419189	1.25375748
102.620049	0.069036484	0.177394867	0.311885834	0.393703461	0.520025253	0.7519207	0.9780159	1.258358
108.611107	0.072900772	0.182201385	0.317026138	0.398925781	0.525308609	0.757242203	0.983348846	1.26369476
115.800377	0.077529907	0.187826157	0.323001862	0.404985428	0.531433105	0.763406754	0.989526749	1.26987457
124.427498	0.083072662	0.194393158	0.329929352	0.412000656	0.538515091	0.770532608	0.99666214	1.27701569
134.780045	0.089702606	0.20205307	0.337945938	0.42010498	0.546684265	0.778743744	1.00488663	1.28524208
147.20311	0.097631455	0.210988998	0.347236633	0.429483414	0.556129456	0.788230896	1.01438522	1.2947464
162.110779	0.10710907	0.221420288	0.358005524	0.44033432	0.567043304	0.799186707	1.02535439	1.30571747
179.999985	0.118432999	0.233631134	0.370531082	0.45293808	0.579706192	0.811889648	1.03806686	1.31843567
186.934082	0.122816086	0.238319397	0.375328064	0.457761765	0.584552765	0.816749573	1.04293251	1.32330132
195.25499	0.128067017	0.243886948	0.381008148	0.463470459	0.59028244	0.822492599	1.04867935	1.32905197
205.240082	0.13435936	0.250509262	0.387752533	0.470245361	0.597078323	0.829305649	1.05549812	1.33587074
217.222198	0.141893387	0.258375168	0.395736694	0.47826004	0.605117798	0.837360382	1.06355667	1.34393311
231.600739	0.150918961	0.267728806	0.40521431	0.487770081	0.614652634	0.846914291	1.0731163	1.35349274
248.85498	0.161727905	0.278852463	0.41645813	0.499044418	0.625951767	0.858228683	1.08443642	1.36481476
269.560089	0.174682617	0.292104721	0.429822922	0.512439728	0.639371872	0.871665955	1.0978775	1.37825966
294.406219	0.19020462	0.307899475	0.445728302	0.528373718	0.655330658	0.887641907	1.11386108	1.39424515
324.221558	0.208816528	0.326753616	0.46468544	0.547359467	0.674339294	0.906669617	1.13289261	1.41327858
359.999969	0.231132507	0.349292755	0.487321854	0.570026398	0.697031021	0.92937851	1.15560722	1.4359951
384.654541	0.246507645	0.364795685	0.502885818	0.585607529	0.712627411	0.944986343	1.17121887	1.45160866
414.240021	0.264951706	0.383369446	0.521526337	0.604265213	0.731302261	0.963672638	1.18990898	1.47030067
449.742584	0.287084579	0.405639648	0.543863297	0.626625061	0.753679276	0.986063004	1.21230507	1.49269867
492.345673	0.313644409	0.432342529	0.570640564	0.653425217	0.780498505	1.01289749	1.23914528	1.51954079
543.46936	0.34552002	0.464372635	0.602754593	0.685565948	0.812662125	1.04507637	1.27132988	1.55172729
604.81781	0.383773804	0.502815247	0.641300201	0.724142075	0.851264954	1.08370018	1.30995941	1.59035873
678.435913	0.429683685	0.548919678	0.687517166	0.770393372	0.897546768	1.13000298	1.35626984	1.63667107
766.77771	0.484781265	0.604253769	0.742984772	0.825904846	0.953092575	1.18557549	1.41184998	1.69225502
872.787842	0.550905228	0.670658112	0.809547424	0.892515182	1.01974487	1.2522583	1.47854233	1.75894928
1000	0.630264282	0.750356674	0.889438629	0.972467422	1.09974861	1.33229828	1.55859375	1.83900452

Appendix A - Data Table

Pumping from Zone 1 w/o abandoned well
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	1.90735E-06	1.90735E-06	3.8147E-06	7.24792E-05	0.00320816	0.025396347	0.106708527
0.423750222	1.90735E-06	3.8147E-06	5.72205E-06	2.47955E-05	0.000459671	0.011489868	0.06029892	0.181808472
0.701114058	5.72205E-06	7.62939E-06	2.09808E-05	0.000114441	0.001579285	0.024196625	0.094573975	0.234182358
1.03395057	5.72205E-06	1.33514E-05	5.72205E-05	0.000371933	0.003883362	0.039779663	0.125770569	0.274606705
1.4333545	7.62939E-06	2.47955E-05	0.000154495	0.000980377	0.007711411	0.056932449	0.154001236	0.308242798
1.91263914	9.53674E-06	4.19617E-05	0.000387192	0.002170563	0.013210297	0.074802399	0.179828644	0.337594986
2.48778081	1.52588E-05	7.05719E-05	0.000873566	0.004180908	0.020347595	0.092906952	0.203783035	0.364027023
3.17795086	1.90735E-05	0.000120163	0.001773834	0.007219315	0.028970718	0.110980988	0.226249695	0.388334274
4.00615501	2.86102E-05	0.000207901	0.003274918	0.011419296	0.038869858	0.128875732	0.24751091	0.411020279
5	4.19617E-05	0.000368118	0.005554199	0.016834259	0.049816132	0.146505356	0.267766953	0.432415009
14.4380732	0.000564575	0.006422043	0.03119278	0.056787491	0.107572556	0.221115112	0.34854126	0.516246796
25.7637615	0.001861572	0.016263962	0.056344986	0.089509964	0.148054123	0.268047333	0.397857666	0.566976547
39.3545876	0.004304886	0.028261185	0.078893662	0.116117477	0.178384781	0.301311493	0.432281494	0.602235794
55.6635818	0.008182526	0.041194916	0.098798752	0.138288498	0.202514648	0.326969147	0.458627701	0.629167557
75.234375	0.013650894	0.054418564	0.116609573	0.157444	0.222806931	0.348186493	0.480314255	0.65130043
98.7193298	0.020805359	0.067728043	0.132917404	0.17457962	0.240642548	0.366624832	0.499107361	0.670463562
126.901276	0.029714584	0.081245422	0.148441315	0.190639496	0.257158279	0.383573532	0.5163517	0.688043594
160.719604	0.040525436	0.095293045	0.163799286	0.206350327	0.273189545	0.399942398	0.53298378	0.704996109
201.301605	0.053466797	0.110387802	0.179727554	0.222513199	0.289583206	0.416622162	0.549917221	0.722244263
250	0.068891525	0.127130508	0.197013855	0.23997879	0.307239532	0.434549332	0.568090439	0.740749359
259.630676	0.072271347	0.13419342	0.219223022	0.279031754	0.383285522	0.60723114	0.865329742	1.21776009
271.1875	0.076955795	0.146547318	0.249572754	0.321992874	0.444459915	0.693243027	0.966104507	1.32873154
285.055695	0.083490372	0.162956238	0.279857635	0.359048843	0.489019394	0.745283127	1.02187157	1.38757133
301.69751	0.092372894	0.181840897	0.308008194	0.390731812	0.524131775	0.783605576	1.06203461	1.42964363
321.667694	0.10398674	0.202260971	0.334392548	0.419080734	0.554317474	0.815626144	1.09532547	1.4644413
345.631927	0.118635178	0.22397995	0.359964371	0.445840836	0.582214355	0.844802856	1.1255455	1.49600029
374.389008	0.136642456	0.247289658	0.385807037	0.4724617	0.609630585	0.873254776	1.15495872	1.5267067
408.897522	0.158397675	0.272800446	0.41301918	0.500230789	0.638023376	0.902597427	1.18526077	1.55833244
450.307739	0.184488297	0.301429749	0.442825317	0.530471802	0.668811798	0.934322357	1.21800232	1.59250832
500	0.215686798	0.334306717	0.4765625	0.564569473	0.703424454	0.969917297	1.25471878	1.63083839
509.630676	0.222063065	0.344284058	0.501382828	0.606176376	0.782600403	1.15044785	1.57152939	2.1540966
521.1875	0.230329514	0.360107422	0.535331726	0.653194427	0.849084854	1.24517632	1.68514442	2.28357315
535.055664	0.241146088	0.38076973	0.570304871	0.695432663	0.899740219	1.30513382	1.75080109	2.35515404
551.69751	0.255155563	0.404888153	0.604196548	0.733251572	0.941627502	1.35146141	1.80039215	2.40882683
571.667725	0.272928238	0.431676865	0.637414932	0.768745422	0.979454041	1.39213753	1.84358597	2.45548248
595.631958	0.294984818	0.461072922	0.671081543	0.80386734	1.01615906	1.43107796	1.88479424	2.49996567
624.389038	0.321895599	0.493572235	0.7064991	0.840320587	1.05384445	1.47078705	1.92674828	2.54524803
658.897522	0.354358673	0.530097961	0.745111465	0.879753113	1.09436989	1.51333427	1.97167397	2.59374809
700.307739	0.393312454	0.571893692	0.788476944	0.923833847	1.13951302	1.56062889	2.02160263	2.64764786
750	0.43996048	0.620546341	0.838436127	0.974493027	1.19130325	1.614851	2.07885361	2.70942307
759.630676	0.448005676	0.619205475	0.793447495	0.878858566	0.980964661	1.09403419	1.1462059	1.16978073
771.1875	0.45582962	0.605667114	0.725017548	0.770433426	0.813899994	0.848407745	0.85902977	0.862363815
785.055664	0.462528229	0.583694458	0.659727097	0.683635712	0.703783035	0.717634201	0.721420288	0.722545624
801.69751	0.467403412	0.558856964	0.606002808	0.619092941	0.629428864	0.636133194	0.637901306	0.638422012
821.667725	0.470256805	0.535261154	0.564193726	0.571638107	0.577325821	0.580921173	0.581859589	0.582136154
845.631958	0.471376419	0.515087128	0.532648087	0.536970139	0.540216446	0.542245865	0.5427742	0.54293251
874.389038	0.471315384	0.499118805	0.509571075	0.512079239	0.513948441	0.515111923	0.515415192	0.515506744
908.897522	0.470619202	0.48733139	0.493370056	0.494792938	0.495849609	0.496507645	0.496681213	0.496732712
950.307739	0.469758987	0.479204178	0.482540131	0.483325958	0.4839077	0.484275818	0.484375	0.484405518
1000	0.469024658	0.474006653	0.475740433	0.476146698	0.476451874	0.476644516	0.476699829	0.476716995

Appendix A - Data Table

Pumping from Zone 1 w/o abandoned well
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.93E-01	1.90735E-06	7.62939E-05	0.000284195	0.000444412	0.000711441	0.00123024	0.00169754	0.002061844
4.24E-01	2.67029E-05	0.00028038	0.000778198	0.001142502	0.001750946	0.002880096	0.00378418	0.004384995
7.01E-01	5.91278E-05	0.000499725	0.001356125	0.001974106	0.002990723	0.004779816	0.006065369	0.006828308
1.03395057	9.72748E-05	0.000761032	0.002052307	0.002973557	0.004465103	0.006942749	0.008563995	0.00945282
1.4333545	0.000141144	0.001077652	0.002887726	0.004169464	0.00620079	0.009374619	0.011291504	0.012283325
1.91263914	0.000196457	0.001462936	0.003902435	0.005607605	0.008234024	0.01210022	0.014282227	0.015363693
2.48778081	0.000265121	0.001932144	0.005123138	0.007314682	0.0105896	0.015134811	0.017557144	0.018714905
3.17795086	0.000347137	0.002504349	0.006587982	0.00933075	0.013288498	0.018493652	0.021137238	0.02236557
4.00615501	0.000452042	0.003202438	0.008337021	0.01169014	0.016359329	0.022201538	0.02504921	0.026340485
5	0.000581741	0.004058838	0.010414124	0.014427185	0.01981926	0.026273727	0.029306412	0.030656815
14.4380732	0.002222061	0.012439728	0.026651382	0.033895493	0.042325974	0.051040649	0.054719925	0.056266785
25.7637615	0.004724503	0.021959305	0.04211998	0.051395416	0.061569214	0.071495056	0.075508118	0.077156067
39.3545876	0.008256912	0.032186508	0.056732178	0.067323685	0.078569412	0.08921051	0.093420029	0.095127106
55.6635818	0.012979507	0.042861939	0.070589066	0.082057953	0.093994141	0.105083466	0.109413147	0.111156464
75.234375	0.019002914	0.053886414	0.083934784	0.096010208	0.108415604	0.119812012	0.124223709	0.125993729
98.7193298	0.026472092	0.065336227	0.097032547	0.109521866	0.122241974	0.133840561	0.138309479	0.140094757
126.901276	0.035503388	0.07736969	0.110250473	0.123031616	0.135976791	0.147724152	0.152233124	0.154031754
160.719604	0.046337128	0.090351105	0.124036789	0.137016296	0.150114059	0.161962509	0.166500092	0.168308258
201.301605	0.059246063	0.104705811	0.138929367	0.152042389	0.165243149	0.17716217	0.181720734	0.18353653
250	0.074625015	0.120998383	0.155555725	0.168756485	0.182029724	0.193994522	0.198568344	0.200389862
259.630676	0.079076767	0.13237381	0.176794052	0.195251465	0.214933395	0.234016418	0.241846085	0.245128632
271.1875	0.085020065	0.146003723	0.198272705	0.219936371	0.242767334	0.264421463	0.273071289	0.27662468
285.055695	0.092775345	0.161331177	0.219343185	0.242933273	0.267446518	0.290307999	0.299308777	0.302972794
301.69751	0.102651596	0.178050995	0.240148544	0.264947891	0.290454865	0.313997269	0.323190689	0.326915741
321.667694	0.114946365	0.196134567	0.261127472	0.286724091	0.312866211	0.336839676	0.346158981	0.349925995
345.631927	0.129987717	0.215787888	0.282827377	0.308963776	0.335535049	0.359804153	0.36920929	0.373004913
374.389008	0.148180008	0.237472534	0.305959702	0.332473755	0.359348297	0.383829117	0.39330101	0.397119522
408.897522	0.169975281	0.261781693	0.331285477	0.358070374	0.385166168	0.409809113	0.419332504	0.42317009
450.307739	0.196048737	0.289615631	0.359846115	0.386833191	0.414102554	0.438882828	0.448453903	0.452310562
500	0.227226257	0.32198143	0.39274025	0.419885635	0.44729805	0.472196579	0.481811523	0.485685349
509.630676	0.234682083	0.336381912	0.417108536	0.44962883	0.483663559	0.516046524	0.529176712	0.534679413
521.1875	0.244216919	0.353672028	0.442466736	0.478338242	0.515726089	0.550920486	0.564985275	0.570808411
535.055664	0.256263733	0.373397827	0.468158722	0.506084442	0.545293808	0.581838608	0.596313477	0.602275848
551.69751	0.271289825	0.39544487	0.494531631	0.533773422	0.574094772	0.611434937	0.626152039	0.632196426
571.667725	0.28978157	0.419931412	0.522130966	0.562261581	0.603315353	0.641180038	0.656061172	0.662164688
595.631958	0.312269211	0.447267532	0.55172348	0.592479706	0.634052277	0.672302246	0.687307358	0.69345665
624.389038	0.339393616	0.478120804	0.584217072	0.625432968	0.667394638	0.705938339	0.721046448	0.727237701
658.897522	0.371934891	0.513444901	0.620773315	0.662345886	0.704624176	0.743429184	0.75863266	0.764863968
700.307739	0.410907745	0.554418564	0.662679672	0.704544067	0.747093201	0.786132813	0.801429749	0.807701111
750	0.457565308	0.602581024	0.711629868	0.753763199	0.796579361	0.835868835	0.851268768	0.857587814
759.630676	0.462352753	0.587347031	0.666627884	0.692554474	0.715314865	0.731901169	0.736701965	0.738172531
771.1875	0.466362	0.568902969	0.624204636	0.640161514	0.65306282	0.661628723	0.663925171	0.664606094
785.055664	0.469327927	0.549512863	0.587242126	0.597257614	0.605016708	0.609981537	0.611284256	0.61166954
801.69751	0.471078873	0.530910492	0.556238174	0.562616348	0.56744957	0.570487976	0.571281433	0.571516037
821.667725	0.471738815	0.514343262	0.531047821	0.53512001	0.538169861	0.540073395	0.540571213	0.540719986
845.631958	0.471580505	0.500471115	0.511220932	0.513790131	0.515703201	0.516895294	0.517208099	0.517301559
874.389038	0.470926285	0.489543915	0.496240616	0.497825623	0.499006271	0.499746323	0.499944687	0.500005722
908.897522	0.470096588	0.481420517	0.485406876	0.486345291	0.487041473	0.487478256	0.487596512	0.487634659
950.307739	0.469337463	0.475803375	0.478059769	0.478590012	0.478982925	0.479232788	0.479299545	0.479322433
1000	0.468738556	0.472177505	0.473363876	0.473642349	0.473848343	0.473976135	0.474010468	0.474023819

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 20m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	5.72205E-06	1.52588E-05	2.47955E-05	9.91821E-05	0.002981186	0.023172379	0.096788406
0.423750222	3.8147E-06	1.71661E-05	5.34058E-05	9.34601E-05	0.000520706	0.010307312	0.05194664	0.160644531
0.701114058	7.62939E-06	4.3869E-05	0.000123978	0.000255585	0.001626968	0.021144867	0.078260422	0.202363968
1.03395057	1.33514E-05	8.01086E-05	0.000242233	0.00060463	0.003780365	0.034061432	0.101051331	0.23290062
1.4333545	1.90735E-05	0.000133514	0.000444412	0.001296997	0.007236481	0.047952652	0.120975494	0.257316589
1.91263914	3.05176E-05	0.000207901	0.000801086	0.00252533	0.012083054	0.062162399	0.13876915	0.278003693
2.48778081	4.57764E-05	0.000310898	0.001415253	0.004486084	0.018260956	0.076351166	0.154987335	0.296228409
3.17795086	6.29425E-05	0.000452042	0.002426147	0.00733757	0.025619507	0.090353012	0.170026779	0.312736511
4.00615501	8.96454E-05	0.000654221	0.003990173	0.011180878	0.033975601	0.104103088	0.184165955	0.327991486
5	0.000125885	0.000951767	0.006250381	0.016044617	0.043134689	0.117572784	0.197599411	0.342302322
14.4380732	0.000896454	0.007574081	0.029788971	0.050994873	0.091192246	0.174959183	0.252515793	0.399461746
25.7637615	0.002475739	0.017412186	0.052541733	0.079624176	0.12525177	0.211925507	0.28755188	0.435504913
39.3545876	0.005191803	0.02904892	0.072999954	0.103170395	0.151287079	0.238977432	0.313289642	0.461830139
55.6635818	0.009292603	0.041467667	0.091243744	0.123128891	0.172506332	0.260595322	0.334018707	0.482971191
75.234375	0.014923096	0.054159164	0.107767105	0.140659332	0.190740585	0.279006958	0.351831436	0.501106262
98.7193298	0.022172928	0.066993713	0.12313652	0.156652451	0.207159042	0.295524597	0.367944717	0.517501831
126.901276	0.031135559	0.080114365	0.137939453	0.171855927	0.222635269	0.311073303	0.383232117	0.533044815
160.719604	0.04196167	0.093864441	0.152797699	0.186977386	0.237945557	0.32645607	0.398456573	0.548517227
201.301605	0.054899216	0.108745575	0.168395996	0.20275116	0.253856659	0.342449188	0.414369583	0.564687729
250	0.070314407	0.125383377	0.185493469	0.21997261	0.271186829	0.35987854	0.431779861	0.58237648
259.630676	0.073915482	0.133255005	0.207128525	0.255647659	0.336265564	0.496723175	0.646276474	0.950647354
271.1875	0.078899384	0.145946503	0.235286713	0.293823242	0.387926102	0.563606262	0.715183258	1.02693748
285.055695	0.08574295	0.162158966	0.263137817	0.326868057	0.426141739	0.605327606	0.755504608	1.06926537
301.69751	0.094896317	0.180549622	0.28922081	0.35559845	0.4570961	0.637420654	0.786582947	1.10161018
321.667694	0.106712341	0.200389862	0.314004898	0.381830215	0.484462738	0.665336609	0.813871384	1.12993431
345.631927	0.121492386	0.221576691	0.33839035	0.407085419	0.510396957	0.691644669	0.839822769	1.15683937
374.389008	0.139564514	0.244440079	0.363363266	0.43262291	0.536401749	0.717985153	0.865989685	1.18395615
408.897522	0.161355972	0.269622803	0.38996315	0.459619522	0.563762665	0.745693207	0.893671036	1.21263695
450.307739	0.187465668	0.298025131	0.419334412	0.489290237	0.59375	0.776069641	0.924133301	1.24419975
500	0.218679428	0.330732346	0.452733994	0.522941589	0.627708435	0.81047821	0.958724976	1.28004646
509.630676	0.225280762	0.341562271	0.477100372	0.561271667	0.695678711	0.952363968	1.18174934	1.67290115
521.1875	0.233852386	0.357778549	0.508859634	0.603319168	0.751905441	1.02536774	1.25758934	1.75910187
535.055664	0.244989395	0.378286362	0.54129982	0.64125061	0.795505524	1.07323265	1.30429459	1.80933571
551.69751	0.25928688	0.401920319	0.572967529	0.675800323	0.832618713	1.11198616	1.34221268	1.84976006
571.667725	0.277280807	0.428110123	0.604419708	0.708890915	0.867109299	1.14744759	1.37723541	1.88700294
595.631958	0.299482346	0.45693779	0.636739731	0.742242813	0.901386261	1.1825161	1.41215897	1.92411613
624.389038	0.326477051	0.488965988	0.671157837	0.777387619	0.937244415	1.21915245	1.44887161	1.96312141
658.897522	0.358989716	0.525131226	0.709018707	0.815813065	0.976297379	1.25905037	1.48903084	2.00579643
700.307739	0.397975922	0.566682816	0.751832962	0.859113693	1.02021599	1.30392647	1.5343399	2.0539608
750	0.444652557	0.61514473	0.801315308	0.909059525	1.07081604	1.35564613	1.58665657	2.10960579
759.630676	0.452037811	0.611068726	0.757268906	0.822912216	0.894439697	0.953889847	0.940807343	0.959934235
771.1875	0.458955765	0.59620285	0.695440292	0.729663849	0.758371353	0.770215988	0.75279808	0.755569458
785.055664	0.464691162	0.574655533	0.637857437	0.655738831	0.66843605	0.670740128	0.659137726	0.660087585
801.69751	0.468723297	0.551292419	0.590684891	0.600479126	0.606775284	0.606901169	0.599411011	0.599855423
821.667725	0.47095108	0.529497147	0.553850174	0.559444427	0.562828064	0.562482834	0.557672501	0.557907104
845.631958	0.471675873	0.511014938	0.525907516	0.52917099	0.531070709	0.530708313	0.527662277	0.527797699
874.389038	0.471401215	0.496442795	0.505365372	0.507268906	0.50835228	0.508079529	0.50620842	0.506286621
908.897522	0.470630646	0.485689163	0.490867615	0.491956711	0.49256897	0.492395401	0.491292953	0.49133873
950.307739	0.469760895	0.478277206	0.481151581	0.481752396	0.482091904	0.481994629	0.481378555	0.481405258
1000	0.469026566	0.473531723	0.475042343	0.475358963	0.475538254	0.47549057	0.475170135	0.475185394

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 20m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.93E-01	0.000120163	0.001096725	0.003240585	0.004867554	0.007720947	0.014104843	0.024213791	0.02450943
4.24E-01	0.000297546	0.00243187	0.006845474	0.010111467	0.015766144	0.028196335	0.047586441	0.048069
7.01E-01	0.000463486	0.003591537	0.00989151	0.014505386	0.022420883	0.039611816	0.066091538	0.066699982
1.03395057	0.000600815	0.004579544	0.012475967	0.018222809	0.028020859	0.049037933	0.081026077	0.081731796
1.4333545	0.000738144	0.005485535	0.014818192	0.02157402	0.033023834	0.057243347	0.093709946	0.094493866
1.91263914	0.000867844	0.006351471	0.017051697	0.024755478	0.037706375	0.064697266	0.1049366	0.105791092
2.48778081	0.001005173	0.007230759	0.019287109	0.027908325	0.042259216	0.071702957	0.115209579	0.116123199
3.17795086	0.001146317	0.008155823	0.021608353	0.031139374	0.046812058	0.078460693	0.124847412	0.125816345
4.00615501	0.001304626	0.009168625	0.024087906	0.034524918	0.051456451	0.085102081	0.134059906	0.13507843
5	0.001489639	0.010299683	0.026769638	0.038110733	0.05623436	0.091703415	0.142976761	0.144041061
14.4380732	0.003437042	0.019357681	0.044172287	0.059337616	0.081897736	0.123556137	0.182500839	0.183719635
25.7637615	0.006158829	0.028942108	0.059640884	0.077054977	0.102010727	0.14683342	0.209644318	0.210941315
39.3545876	0.009870529	0.038991928	0.073896408	0.092727661	0.119113922	0.16576767	0.230798721	0.232143402
55.6635818	0.014717102	0.049390793	0.087322235	0.107089996	0.134397507	0.1822052	0.248630524	0.250003815
75.234375	0.020830154	0.060127258	0.100244522	0.120653152	0.148574829	0.197153091	0.264507294	0.265897751
98.7193298	0.028335571	0.071300507	0.112985611	0.133838654	0.162187576	0.211292267	0.279285431	0.280691147
126.901276	0.03739357	0.083116531	0.125911713	0.147075653	0.175720215	0.225194931	0.293634415	0.295049667
160.719604	0.048221588	0.095916748	0.139476776	0.160856247	0.189704895	0.239440918	0.308195114	0.309617996
201.301605	0.061122894	0.110147476	0.154226303	0.175748825	0.204742432	0.25466156	0.323640823	0.32506752
250	0.076498032	0.126377106	0.170793533	0.192417145	0.221509933	0.271562576	0.340705872	0.34213829
259.630676	0.08197403	0.143909454	0.207883835	0.24193573	0.290088654	0.376451492	0.497652054	0.500228882
271.1875	0.088274002	0.15838623	0.231147766	0.269334793	0.322589874	0.416666031	0.547758102	0.550539017
285.055695	0.096256256	0.173690796	0.252122879	0.292453766	0.348028183	0.445228577	0.580154419	0.583021164
301.69751	0.106294632	0.190151215	0.272481918	0.314105988	0.370996475	0.469896317	0.606887817	0.609802246
321.667694	0.118700027	0.207914352	0.292976379	0.335445404	0.39317131	0.493141174	0.631425858	0.634370804
345.631927	0.133810043	0.227277756	0.314275742	0.357318878	0.415613174	0.516311646	0.655483246	0.65845108
374.389008	0.152021408	0.248699188	0.337070465	0.380521774	0.439222336	0.540449142	0.680265427	0.683250427
408.897522	0.173841476	0.27283287	0.362178802	0.405923843	0.464925766	0.566558838	0.70687294	0.709873199
450.307739	0.199932098	0.300533295	0.390569687	0.43453598	0.493774414	0.595733643	0.73645401	0.739467621
500	0.231121063	0.332798004	0.423341751	0.467483521	0.526918411	0.629167557	0.770252228	0.77327919
509.630676	0.239610672	0.353466034	0.46383667	0.520624161	0.599506378	0.738862991	0.933099747	0.937383652
521.1875	0.249509811	0.371646881	0.491048813	0.552143097	0.636384964	0.783912659	0.988618851	0.993141174
535.055664	0.261798859	0.391376495	0.516664505	0.580028534	0.666755676	0.8176651	1.02652168	1.0311451
551.69751	0.277008057	0.413162231	0.542547226	0.607305527	0.695476532	0.848279953	1.05943871	1.06412315
571.667725	0.295621872	0.437303543	0.569612503	0.63530159	0.724422455	0.87846756	1.09113503	1.09586334
595.631958	0.318183899	0.464315414	0.598747253	0.66509819	0.754898071	0.909843445	1.12360954	1.12837219
624.389038	0.345348358	0.494905472	0.630897522	0.697746277	0.788064957	0.943717957	1.15835571	1.16314697
658.897522	0.377920151	0.530023575	0.667190552	0.734428406	0.825170517	0.981426239	1.19680786	1.20162964
700.307739	0.416917801	0.570878983	0.708957672	0.776521683	0.867639542	1.02444649	1.24051666	1.24536705
750	0.463600159	0.618917465	0.757749557	0.825611115	0.917085648	1.07444	1.29120255	1.29608536
759.630676	0.46528244	0.58470726	0.664028168	0.693758011	0.72652626	0.771831512	0.828159332	0.829303741
771.1875	0.468212128	0.563602448	0.616203308	0.633226395	0.650299072	0.671962738	0.698095322	0.698629379
785.055664	0.470445633	0.544248581	0.579685211	0.590215683	0.600337982	0.612796783	0.627710342	0.628011703
801.69751	0.471702576	0.52649498	0.550247192	0.55695343	0.563266754	0.570936203	0.580091476	0.580274582
821.667725	0.472040176	0.510957718	0.526649475	0.530946732	0.534946442	0.539773941	0.545528412	0.545642853
845.631958	0.471693039	0.498062134	0.508188248	0.510911942	0.513431549	0.516458511	0.520061493	0.52013588
874.389038	0.470962524	0.487934113	0.494255066	0.495937347	0.497488022	0.499349594	0.501558304	0.50160408
908.897522	0.470111847	0.48044014	0.484220505	0.485221863	0.48614502	0.487247467	0.488552094	0.488582611
950.307739	0.469339371	0.475248337	0.477392197	0.477960587	0.4784832	0.479106903	0.479841232	0.479860306
1000	0.468748093	0.471908569	0.473054886	0.473360062	0.473640442	0.473974228	0.474363327	0.474372864

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 40m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	1.90735E-06	5.72205E-06	7.62939E-06	7.43866E-05	0.003030777	0.024660111	0.106470108
0.423750222	1.90735E-06	5.72205E-06	1.71661E-05	4.19617E-05	0.000453949	0.010353088	0.057767868	0.181034088
0.701114058	5.72205E-06	1.71661E-05	5.14984E-05	0.000152588	0.001512527	0.021097183	0.089233398	0.232328415
1.03395057	7.62939E-06	3.62396E-05	0.000120163	0.000440598	0.003639221	0.033853531	0.116880417	0.271129608
1.4333545	1.14441E-05	6.48499E-05	0.000265121	0.001068115	0.007104874	0.047550201	0.141088486	0.302658081
1.91263914	1.90735E-05	0.000112534	0.000555038	0.00223732	0.012010574	0.061553955	0.16261673	0.329523087
2.48778081	2.86102E-05	0.000181198	0.001102448	0.004159927	0.01830101	0.075531006	0.182106018	0.353164673
3.17795086	4.00543E-05	0.000282288	0.002046585	0.007001877	0.025829315	0.089324951	0.200029373	0.374462128
4.00615501	5.91278E-05	0.00043869	0.003555298	0.010873795	0.034402847	0.102870941	0.216730118	0.393987656
5	8.7738E-05	0.000682831	0.005781174	0.01581192	0.043823242	0.116147995	0.232456207	0.412124634
14.4380732	0.000774384	0.007081985	0.029663086	0.051654816	0.093326569	0.172830582	0.294818878	0.481746674
25.7637615	0.002262115	0.016880035	0.052900314	0.08105278	0.128339767	0.209424973	0.333580017	0.524023056
39.3545876	0.004894257	0.028591156	0.073802948	0.105186462	0.155012131	0.236261368	0.361463547	0.55393219
55.6635818	0.008924484	0.041133881	0.092409134	0.125576019	0.17666626	0.257741928	0.383560181	0.577358246
75.234375	0.014503479	0.053956986	0.109212875	0.143421173	0.195203781	0.276062012	0.402297974	0.597036362
98.7193298	0.021720886	0.066913605	0.124792099	0.159641266	0.211833954	0.292512894	0.419059753	0.61451149
126.901276	0.030662537	0.080129623	0.139745712	0.175003052	0.227457047	0.308013916	0.43482399	0.63085556
160.719604	0.041477203	0.093955994	0.154716492	0.19024086	0.242876053	0.323366165	0.450408936	0.646928787
201.301605	0.054410934	0.108890533	0.170391083	0.206096649	0.258865356	0.339342117	0.466615677	0.663589478
250	0.069820404	0.125553131	0.187526703	0.223360062	0.276239395	0.356750488	0.484268188	0.681699753
259.630676	0.073335648	0.133060455	0.208940506	0.259300232	0.342662811	0.491933823	0.737327576	1.12957573
271.1875	0.07821846	0.145587921	0.237462997	0.298316956	0.395740509	0.558115005	0.816839218	1.2242794
285.055695	0.084962845	0.161819458	0.265817642	0.332132339	0.434925079	0.599517822	0.861444473	1.27399635
301.69751	0.09403038	0.180322647	0.292354584	0.361442566	0.466516495	0.631441116	0.894918442	1.31047058
321.667694	0.105779648	0.200309753	0.317493439	0.388097763	0.494316101	0.659246445	0.9237957	1.34155083
345.631927	0.120515823	0.221633911	0.342147827	0.41365242	0.520551682	0.68547821	0.950918198	1.37050247
374.389008	0.138565063	0.244613647	0.367321014	0.439413071	0.54678154	0.711769104	0.978042603	1.39929008
408.897522	0.16034317	0.269886017	0.394062042	0.466567993	0.574302673	0.739427567	1.00654411	1.42943382
450.307739	0.186441422	0.298345566	0.423530579	0.496349335	0.604412079	0.769763947	1.03778648	1.46239471
500	0.217639923	0.331083298	0.456987381	0.530075073	0.638460159	0.804121017	1.07315826	1.49965858
509.630676	0.224151611	0.341529846	0.481086731	0.568624496	0.707782745	0.944162369	1.3398819	1.98676491
521.1875	0.232616425	0.357555389	0.513198853	0.611545563	0.76556015	1.01648521	1.428545	2.09628105
535.055664	0.243644714	0.378065109	0.546169281	0.650320053	0.810270309	1.06406021	1.48073959	2.15643501
551.69751	0.257846832	0.401807785	0.578329086	0.685523987	0.848133087	1.10264778	1.52192497	2.20281029
571.667725	0.275766373	0.428150177	0.610179901	0.719099045	0.883152008	1.13800049	1.55930519	2.24439049
595.631958	0.297916412	0.45712471	0.642808914	0.752817154	0.917818069	1.1729908	1.59615898	2.28508759
624.389038	0.324871063	0.489271164	0.67745018	0.788221359	0.953958511	1.20953751	1.6345787	2.32732582
658.897522	0.35736084	0.525529861	0.715482712	0.826850891	0.993247986	1.24936676	1.67642021	2.37320328
700.307739	0.396333694	0.567144394	0.758424759	0.870313644	1.03736305	1.29416847	1.7234726	2.42472649
750	0.442993164	0.615644455	0.808000565	0.920389175	1.08813858	1.3458004	1.77770805	2.48408699
759.630676	0.450637817	0.612766266	0.764881134	0.833709717	0.907777786	0.950246811	0.998937607	1.05475426
771.1875	0.457864761	0.598489761	0.701974869	0.737783432	0.767019272	0.768384933	0.778560638	0.797107697
785.055664	0.463912964	0.576938629	0.642782211	0.661359787	0.673948288	0.669685364	0.67341423	0.683017731
801.69751	0.468214035	0.5532341	0.594167709	0.604253769	0.610311508	0.606254578	0.608032227	0.61366272
821.667725	0.470645905	0.530990601	0.556222916	0.56193924	0.565109253	0.562101364	0.56306076	0.566505432
845.631958	0.471502304	0.512069702	0.527462006	0.530776978	0.532520294	0.530477524	0.531023026	0.533145905
874.389038	0.471300125	0.497131348	0.50633812	0.508260727	0.509239197	0.507936478	0.50825119	0.509538651
908.897522	0.470563889	0.486104965	0.491441727	0.492540359	0.493087769	0.492307663	0.492490768	0.493247986
950.307739	0.469713211	0.478504181	0.481464386	0.48207283	0.482376099	0.481941223	0.482046127	0.482469559
1000	0.468986511	0.473640442	0.475198746	0.475521088	0.475683212	0.475460052	0.475517273	0.47574234

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 40m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.93E-01	3.24249E-05	0.000284195	0.000841141	0.001272202	0.0020504	0.004182816	0.004613876	0.00419426
4.24E-01	9.91821E-05	0.000835419	0.00239563	0.003582001	0.005718231	0.011632919	0.01244545	0.010713577
7.01E-01	0.00019455	0.001541138	0.004323959	0.006420136	0.010173798	0.020505905	0.021640778	0.018234253
1.03395057	0.000303268	0.002309799	0.006393433	0.009449005	0.014879227	0.029651642	0.031059265	0.025938034
1.4333545	0.00041008	0.003103256	0.008523941	0.012548447	0.019639969	0.038629532	0.040281296	0.033531189
1.91263914	0.00053215	0.003932953	0.010715485	0.015712738	0.024421692	0.047340393	0.049207687	0.040952683
2.48778081	0.000658035	0.004804611	0.012992859	0.018972397	0.029247284	0.055801392	0.057863236	0.04822731
3.17795086	0.000795364	0.005741119	0.015405655	0.022371292	0.034158707	0.064073563	0.066316605	0.0554142
4.00615501	0.00094986	0.006771088	0.017995834	0.025959015	0.039199829	0.072223663	0.07462883	0.062566757
5	0.00112915	0.007925034	0.020811081	0.029773712	0.044408798	0.080301285	0.082859039	0.069732666
14.4380732	0.003026962	0.017145157	0.038942337	0.052137375	0.071975708	0.117765427	0.120851517	0.104110718
25.7637615	0.005702972	0.026889801	0.054944992	0.070619583	0.093259811	0.14412117	0.147481918	0.128908157
39.3545876	0.009368896	0.037082672	0.069589615	0.08681488	0.111124039	0.16491127	0.168430328	0.148807526
55.6635818	0.01417923	0.047605515	0.083303452	0.101551056	0.126924515	0.182548523	0.186166763	0.165884018
75.234375	0.020265579	0.058458328	0.096450806	0.115392685	0.14147377	0.198310852	0.20199585	0.181282043
98.7193298	0.027759552	0.069730759	0.109363556	0.12878418	0.155349731	0.213008881	0.216739655	0.195732117
126.901276	0.036806107	0.081619263	0.122411728	0.14216423	0.169063568	0.227291107	0.231054306	0.209846497
160.719604	0.047628403	0.094472885	0.136066437	0.156047821	0.183179855	0.241802216	0.245588303	0.224241257
201.301605	0.060527802	0.108745575	0.150875092	0.171010971	0.198303223	0.257196426	0.261001587	0.239561081
250	0.075895309	0.124992371	0.167470932	0.187711716	0.215112686	0.274194717	0.278013229	0.256509781
259.630676	0.080978394	0.140205383	0.198860168	0.229265213	0.272396088	0.368690491	0.375257492	0.340373993
271.1875	0.087213516	0.154788971	0.222671509	0.257530212	0.306417465	0.414274216	0.421510696	0.382410049
285.055695	0.095140457	0.17026329	0.244167328	0.281383514	0.332962036	0.445739746	0.453262329	0.412405014
301.69751	0.105134964	0.186876297	0.264900208	0.303529739	0.356630325	0.472074509	0.479753494	0.437957764
321.667694	0.117509842	0.204778671	0.285676956	0.325218201	0.379274368	0.496366501	0.504148483	0.461776733
345.631927	0.132598877	0.224248886	0.307174683	0.347335815	0.402030945	0.520223618	0.528076172	0.48532486
374.389008	0.150800705	0.245763779	0.330125809	0.370718002	0.425867081	0.544834137	0.552742004	0.509729385
408.897522	0.172615051	0.269966125	0.355337143	0.396238327	0.451713562	0.571250916	0.579198837	0.535999298
450.307739	0.198698044	0.297700882	0.383787155	0.424919128	0.480642319	0.60062027	0.608608246	0.56526947
500	0.229866028	0.32998085	0.416585922	0.457897186	0.513824463	0.63416481	0.642189026	0.598741531
509.630676	0.237955093	0.348245621	0.451152802	0.502744675	0.574615479	0.732601166	0.743597031	0.686872482
521.1875	0.247772217	0.366502762	0.478881836	0.535104752	0.61300087	0.783109665	0.79486084	0.733787537
535.055664	0.260002136	0.386400223	0.505039215	0.563753128	0.644529343	0.819900513	0.831985474	0.769073486
551.69751	0.275157928	0.408342361	0.531318665	0.591554642	0.673986435	0.852272034	0.864551544	0.800642014
571.667725	0.293735504	0.432634354	0.558689117	0.619932175	0.703437805	0.883579254	0.895992279	0.831460953
595.631958	0.316268921	0.459760666	0.588041306	0.649990082	0.734249115	0.915693283	0.928209305	0.86325264
624.389038	0.34340477	0.490434647	0.620340347	0.682811737	0.767631531	0.950052261	0.962654114	0.897390366
658.897522	0.375967026	0.525625229	0.656747818	0.719623566	0.804891586	0.988101959	1.00078392	0.935285568
700.307739	0.414957047	0.566520691	0.698577881	0.761785507	0.847436905	1.03133392	1.04409409	0.978404999
750	0.461624146	0.614580154	0.747402191	0.810907364	0.896915436	1.08145905	1.09430695	1.0284481
759.630676	0.464523315	0.587654114	0.671606064	0.704111099	0.74196434	0.812784195	0.816699982	0.791017532
771.1875	0.467666626	0.566217422	0.621963501	0.640665054	0.660629272	0.695529938	0.697404861	0.684867859
785.055664	0.470067978	0.546329498	0.583742142	0.595247269	0.607021332	0.627063751	0.628129959	0.620948792
801.69751	0.471456528	0.528074265	0.553066254	0.56035614	0.567661285	0.579950333	0.580598831	0.576196671
821.667725	0.471885681	0.512113571	0.528594971	0.533250809	0.537862778	0.545572281	0.545980453	0.543226242
845.631958	0.471599579	0.498853683	0.509469986	0.512413025	0.51530838	0.520130157	0.52038765	0.518667221
874.389038	0.470901489	0.488443375	0.495059967	0.496873856	0.498655319	0.501609802	0.50177002	0.50071907
908.897522	0.470062256	0.480741501	0.484699249	0.485778809	0.48683548	0.488582611	0.488679886	0.48806572
950.307739	0.469297409	0.475414276	0.477661133	0.478273392	0.478874207	0.479858398	0.479917526	0.479576111
1000	0.468709946	0.471984863	0.4731884	0.473516464	0.473838806	0.474365234	0.474397659	0.474220276

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 80m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	1.90735E-06	1.90735E-06	3.8147E-06	8.7738E-05	0.003110886	0.025337219	0.105545044
0.423750222	1.90735E-06	3.8147E-06	5.72205E-06	2.47955E-05	0.000484467	0.011257172	0.060333252	0.180562973
0.701114058	5.72205E-06	7.62939E-06	2.28882E-05	0.000114441	0.001558304	0.023828507	0.094697952	0.233076096
1.03395057	7.62939E-06	1.52588E-05	6.29425E-05	0.000370026	0.003686905	0.039209366	0.125911713	0.273580551
1.4333545	9.53674E-06	3.05176E-05	0.000167847	0.000959396	0.007135391	0.055997849	0.154069901	0.307216644
1.91263914	1.33514E-05	5.53131E-05	0.00041008	0.002092361	0.011995316	0.073286057	0.17972374	0.336496353
2.48778081	1.90735E-05	9.53674E-05	0.000902176	0.003984451	0.01820755	0.090545654	0.203359604	0.362756729
3.17795086	2.47955E-05	0.000164032	0.001791	0.006811142	0.025625229	0.107513428	0.225345612	0.386770248
4.00615501	3.8147E-05	0.00028038	0.003252029	0.01068306	0.034059525	0.124065399	0.245952606	0.409025192
5	5.91278E-05	0.000476837	0.005439758	0.015636444	0.043315888	0.140136719	0.265375137	0.429836273
14.4380732	0.000673294	0.006668091	0.029478073	0.051813126	0.091924667	0.206171036	0.340566635	0.509202957
25.7637615	0.002082825	0.016414642	0.052984238	0.081514359	0.126354218	0.247386932	0.385822296	0.556509018
39.3545876	0.004642487	0.028173447	0.074150085	0.105886459	0.152643204	0.2768116	0.417385101	0.589263916
55.6635818	0.008613586	0.040809631	0.092975617	0.126455307	0.174037933	0.299880981	0.441759109	0.614444733
75.234375	0.014152527	0.053735733	0.109954834	0.144433975	0.192398071	0.319248199	0.461986542	0.635251999
98.7193298	0.021343231	0.066783905	0.125665665	0.160749435	0.208902359	0.336418152	0.479789734	0.653526306
126.901276	0.030269623	0.080080032	0.140720367	0.176185608	0.224443436	0.352436066	0.496284485	0.670415878
160.719604	0.041080475	0.093963623	0.155754089	0.191469193	0.239797592	0.36815834	0.512403488	0.686891556
201.301605	0.054010391	0.10893631	0.171474457	0.207357407	0.255744934	0.384412766	0.529003143	0.703838348
250	0.069417954	0.12562561	0.188644409	0.224645615	0.27309227	0.402040482	0.546953201	0.722143173
259.630676	0.07286644	0.13284874	0.209854126	0.260606766	0.338581085	0.564126968	0.838504791	1.19334793
271.1875	0.077663422	0.14522171	0.238544464	0.299928665	0.390829086	0.641523361	0.933605194	1.29961967
285.055695	0.084321976	0.16144371	0.267183304	0.334054947	0.429483414	0.687858582	0.98522377	1.35481834
301.69751	0.093317032	0.180027008	0.293989182	0.363609314	0.460737228	0.722438812	1.0225296	1.39431
321.667694	0.105012894	0.200120926	0.319347382	0.390443802	0.488313675	0.751918793	1.05382919	1.42727089
345.631927	0.119710922	0.22154808	0.344167709	0.416131973	0.514392853	0.779325485	1.08265114	1.45752716
374.389008	0.137731552	0.24461174	0.369457245	0.441980362	0.540504456	0.806501389	1.11105537	1.48728752
408.897522	0.159496307	0.269947052	0.396284103	0.469200134	0.567941666	0.834899902	1.14061356	1.51821709
450.307739	0.185588837	0.298454285	0.425813675	0.499034882	0.597993851	0.86590004	1.17280579	1.55188179
500	0.21679306	0.331233978	0.459329605	0.532812119	0.632009506	0.900918961	1.209095	1.58981133
509.630676	0.223234177	0.341377258	0.483184814	0.571334839	0.700315475	1.07000542	1.51922226	2.10559654
521.1875	0.231609344	0.357229233	0.515451431	0.614572525	0.757234573	1.15517998	1.62632751	2.22939491
535.055664	0.242549896	0.377721786	0.548723221	0.65369606	0.80140686	1.20869255	1.68720627	2.29662704
551.69751	0.256673813	0.401540756	0.581180573	0.689186096	0.838926315	1.25065994	1.73339272	2.34709358
571.667725	0.274532318	0.427993774	0.613279343	0.722982407	0.87371254	1.28829193	1.77415466	2.39141846
595.631958	0.296642303	0.457080841	0.646100998	0.756860733	0.90820694	1.32501602	1.81358719	2.43417931
624.389038	0.323575974	0.489330292	0.680896759	0.792396545	0.944227219	1.36304855	1.85420609	2.47816277
658.897522	0.356054306	0.525663376	0.71903801	0.83111763	0.983406067	1.40422058	1.89804268	2.5255928
700.307739	0.395013809	0.567329407	0.762060165	0.874652863	1.0274353	1.45039177	1.94712639	2.57869148
750	0.441665649	0.615861893	0.811697006	0.924787521	1.07812691	1.50348091	2.00351524	2.63968277
759.630676	0.449522018	0.613946915	0.769416809	0.838300705	0.901065826	1.01807976	1.09195328	1.12389374
771.1875	0.457012177	0.600215912	0.706033707	0.741371155	0.762802124	0.800159454	0.822851181	0.830955505
785.055664	0.463323593	0.578720093	0.645906448	0.663887024	0.671272278	0.68696785	0.69776535	0.70165062
801.69751	0.467849731	0.554775238	0.596406937	0.605970383	0.608596802	0.616477966	0.622501373	0.624679565
821.667725	0.470449448	0.532184601	0.557758331	0.563077927	0.564016342	0.568374634	0.571950912	0.573242188
845.631958	0.471412659	0.512924194	0.528478622	0.531515121	0.531831741	0.534343719	0.536504745	0.537284851
874.389038	0.4712677	0.497701645	0.506978989	0.508724213	0.508817673	0.51027298	0.511568069	0.512037277
908.897522	0.470558167	0.486461639	0.491832733	0.492822647	0.492847443	0.493684769	0.494441986	0.494716644
950.307739	0.469713211	0.478715897	0.481695175	0.482240677	0.482250214	0.482717514	0.483142853	0.483297348
1000	0.468988419	0.473758698	0.475328445	0.475616455	0.475625992	0.475875854	0.476102829	0.476184845

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 80m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.93E-01	1.14441E-05	9.72748E-05	0.000276566	0.000404358	0.000587463	0.001119614	0.001638412	0.00202179
4.24E-01	3.24249E-05	0.000276566	0.000770569	0.001125336	0.001703262	0.002832413	0.003767014	0.004375458
7.01E-01	7.24792E-05	0.000556946	0.001541138	0.002264023	0.003543854	0.005275726	0.006429672	0.007141113
1.03395057	0.000125885	0.00094986	0.002620697	0.003871918	0.006195068	0.008504868	0.009677887	0.010396957
1.4333545	0.000192642	0.001459122	0.004022598	0.005950928	0.009626389	0.01248169	0.013500214	0.014154434
1.91263914	0.00028038	0.002084732	0.005727768	0.008472443	0.01374054	0.017108917	0.017837524	0.018373489
2.48778081	0.000383377	0.002826691	0.007724762	0.011392593	0.018424988	0.022268295	0.02261734	0.023000717
3.17795086	0.000505447	0.003684998	0.010007858	0.014684677	0.023586273	0.027877808	0.027786255	0.027997971
4.00615501	0.000648499	0.004678726	0.012582779	0.018335342	0.029157639	0.033864975	0.033302307	0.03332901
5	0.00082016	0.005823135	0.01546669	0.022335053	0.035081863	0.040182114	0.039136887	0.038974762
14.4380732	0.00267601	0.01521492	0.034460068	0.046258926	0.066699982	0.073207855	0.070207596	0.069301605
25.7637615	0.005310059	0.025138855	0.051137924	0.065856934	0.090557098	0.097806931	0.093730927	0.092418671
39.3545876	0.008943558	0.035497665	0.066287994	0.082838059	0.110099792	0.117790222	0.113073349	0.11151886
55.6635818	0.01373291	0.046173096	0.080379486	0.098129273	0.127027512	0.134996414	0.129871368	0.128166199
75.234375	0.019802094	0.057144165	0.093795776	0.112358093	0.142343521	0.150497437	0.145101547	0.143295288
98.7193298	0.027284622	0.068506241	0.106901169	0.126024246	0.156751633	0.165031433	0.159456253	0.157583237
126.901276	0.036325455	0.080469132	0.120092392	0.139600754	0.170837402	0.179203033	0.173501968	0.171583176
160.719604	0.047151566	0.093379974	0.13384819	0.153619766	0.185203552	0.193635941	0.187854767	0.185905457
201.301605	0.060049057	0.107688904	0.148719788	0.168670654	0.200487137	0.208967209	0.203134537	0.201166153
250	0.07541275	0.123954773	0.165353775	0.18542099	0.217393875	0.225908279	0.220043182	0.218065262
259.630676	0.080190659	0.137304306	0.192159653	0.220714569	0.267570496	0.281635284	0.274320602	0.272073746
271.1875	0.086343765	0.151878357	0.216321945	0.249778748	0.304422379	0.320196152	0.311107635	0.308187485
285.055695	0.094226837	0.167526245	0.238431931	0.274633408	0.333284378	0.34982872	0.3397789	0.336500168
301.69751	0.104188919	0.184309006	0.259632111	0.297489166	0.358440399	0.375417709	0.364824295	0.361345291
321.667694	0.116539001	0.202346802	0.280740738	0.319662094	0.382053375	0.399307251	0.388381958	0.384780884
345.631927	0.131607056	0.221923828	0.302473068	0.34210968	0.40545845	0.422903061	0.41176796	0.408088684
374.389008	0.149793625	0.243515015	0.32557869	0.36571312	0.429719925	0.447307587	0.436035156	0.432308197
408.897522	0.171600342	0.267774582	0.350904465	0.391387939	0.455860138	0.473562241	0.462203979	0.458446503
450.307739	0.197683334	0.295553207	0.379430771	0.42016983	0.484981537	0.502782822	0.491374969	0.487602234
500	0.22886467	0.327877045	0.412294388	0.453227997	0.51830101	0.536195755	0.524763107	0.520982742
509.630676	0.236625671	0.344203949	0.442111969	0.491575241	0.57157135	0.595396042	0.582860947	0.579011917
521.1875	0.246362686	0.362438202	0.470157623	0.524684906	0.612726212	0.638465881	0.624223709	0.619739532
535.055664	0.258544922	0.382514954	0.496946335	0.554367065	0.646635056	0.673271179	0.658086777	0.653255463
551.69751	0.273664474	0.404624939	0.523710251	0.582902908	0.677639008	0.704799652	0.689083099	0.68406105
571.667725	0.29221344	0.42906189	0.551431656	0.611789703	0.708105087	0.735622406	0.719585419	0.714450836
595.631958	0.314729691	0.456308365	0.581035614	0.642202377	0.739601135	0.76738739	0.751152039	0.745950699
624.389038	0.34186554	0.487081528	0.613525391	0.675279617	0.773462296	0.801465988	0.785112381	0.779872894
658.897522	0.374418259	0.522331238	0.650045395	0.712244034	0.811019897	0.839221954	0.822803497	0.817546844
700.307739	0.413396835	0.563266754	0.691951752	0.754508972	0.853769302	0.882165909	0.865718842	0.860462189
750	0.460058212	0.611349106	0.740819931	0.803689957	0.903373718	0.931972504	0.915531158	0.91028595
759.630676	0.463943481	0.590332031	0.679504395	0.716722488	0.771497726	0.782112122	0.768932343	0.763935089
771.1875	0.467309952	0.568899155	0.628713608	0.650718689	0.681278229	0.68655014	0.678915024	0.676046371
785.055664	0.469844818	0.548442841	0.588485718	0.602039337	0.620264053	0.623279572	0.618696213	0.616983414
801.69751	0.471330643	0.529651642	0.556310654	0.564878464	0.576202393	0.578039169	0.575183868	0.574117661
821.667725	0.471832275	0.513242722	0.530767441	0.536224365	0.543367386	0.544517517	0.54271698	0.542045593
845.631958	0.471582413	0.499631882	0.510896683	0.51433754	0.518815994	0.519536972	0.518411636	0.51799202
874.389038	0.470899582	0.488948822	0.495962143	0.4980793	0.500823975	0.501270294	0.500583649	0.500329971
908.897522	0.470067978	0.481058121	0.485248566	0.486505508	0.488132477	0.48840332	0.488004684	0.487857819
950.307739	0.469303131	0.475599289	0.477977753	0.478691101	0.479610443	0.47977066	0.479551315	0.479473114
1000	0.46871376	0.472089767	0.473365784	0.473747253	0.474237442	0.474328995	0.474218369	0.474180222

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 160m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	1.90735E-06	3.8147E-06	5.72205E-05	5.91278E-05	0.0027771	0.022455216	0.091184616
0.423750222	1.90735E-06	1.90735E-06	1.52588E-05	0.000171661	0.000392914	0.010286331	0.054960251	0.161815643
0.701114058	5.72205E-06	7.62939E-06	4.57764E-05	0.000387192	0.001401901	0.02217865	0.087825775	0.212926865
1.03395057	5.72205E-06	1.33514E-05	0.000106812	0.000782013	0.003547668	0.037073135	0.118186951	0.252824783
1.4333545	5.72205E-06	2.09808E-05	0.000238419	0.001512527	0.00718689	0.053688049	0.14589119	0.286149979
1.91263914	9.53674E-06	3.62396E-05	0.000509262	0.002765656	0.012491226	0.071155548	0.171380997	0.315294266
2.48778081	1.33514E-05	6.48499E-05	0.001026154	0.004737854	0.019441605	0.088960648	0.195095062	0.341567993
3.17795086	1.71661E-05	0.000110626	0.001930237	0.007585526	0.027885437	0.106805801	0.21739006	0.365751266
4.00615501	2.67029E-05	0.000198364	0.003389359	0.011398315	0.037603378	0.124540329	0.238546371	0.388349533
5	4.19617E-05	0.000360489	0.005556107	0.016204834	0.048353195	0.142040253	0.258714676	0.409669876
14.4380732	0.000587463	0.00633049	0.029193878	0.050401688	0.104385376	0.215898514	0.339002609	0.493059158
25.7637615	0.0019207	0.015958786	0.052322388	0.078336716	0.143203735	0.262037277	0.387788773	0.543329239
39.3545876	0.004404068	0.027675629	0.07318306	0.101325989	0.172132492	0.294542313	0.421648026	0.578069687
55.6635818	0.008306503	0.040315628	0.091775894	0.120851517	0.195173264	0.319578171	0.447498322	0.604524612
75.234375	0.013790131	0.053268433	0.108581543	0.138067245	0.214599609	0.340238571	0.468717575	0.626205444
98.7193298	0.020936966	0.066347122	0.124166489	0.15382576	0.231817245	0.358280182	0.48717308	0.645036697
126.901276	0.02983284	0.07967186	0.139131546	0.168874741	0.247854233	0.374898911	0.504123688	0.662313461
160.719604	0.040616989	0.093574524	0.154102325	0.18388176	0.263542175	0.391025543	0.520536423	0.679031372
201.301605	0.053527832	0.108560562	0.169780731	0.199586868	0.279727936	0.407564163	0.537336349	0.696130753
250	0.068918228	0.125253677	0.186918259	0.216751099	0.297239304	0.425384521	0.555421829	0.714530945
259.630676	0.072309494	0.132257462	0.20800209	0.25213623	0.37100029	0.593242645	0.842796326	1.16570663
271.1875	0.077022553	0.144443512	0.236312866	0.289611816	0.430181503	0.67795372	0.942409515	1.27536964
285.055695	0.083593369	0.160577774	0.26458931	0.322031021	0.473012924	0.729074478	0.997461319	1.33340454
301.69751	0.092504501	0.179143906	0.291114807	0.350288391	0.506742477	0.766588211	1.03695488	1.37473869
321.667694	0.104131699	0.199256897	0.316267014	0.376176834	0.535860062	0.797929764	1.06965065	1.40886688
345.631927	0.118774414	0.220716476	0.340938568	0.401182175	0.562965393	0.826576233	1.09938812	1.43985939
374.389008	0.136753082	0.243808746	0.366121292	0.426542282	0.589794159	0.854593277	1.12836838	1.47003555
408.897522	0.158481598	0.269165039	0.392868042	0.45341301	0.617769241	0.883640289	1.15839386	1.50128174
450.307739	0.184534073	0.297670364	0.422323227	0.482975006	0.648212433	0.91506958	1.19081688	1.53502655
500	0.215707779	0.330444336	0.455793381	0.516576767	0.682603836	0.950525284	1.22738838	1.57307243
509.630676	0.222089767	0.340364456	0.479534149	0.554590225	0.759410858	1.12583542	1.53300095	2.06573868
521.1875	0.230379105	0.356021881	0.511421204	0.595960617	0.82378006	1.21903992	1.64506531	2.1930542
535.055664	0.241222382	0.376413345	0.54432106	0.633314133	0.872592926	1.27792931	1.70977402	2.26334763
551.69751	0.255256653	0.400209427	0.576490402	0.667432785	0.912958145	1.32330322	1.75848389	2.31586647
571.667725	0.273038864	0.426677704	0.608373642	0.700206757	0.949594498	1.36318016	1.80090523	2.36149216
595.631958	0.295084	0.455791473	0.641033173	0.733329773	0.985385895	1.401474	1.84145927	2.40506363
624.389038	0.321968079	0.48806572	0.675708771	0.768310547	1.02239799	1.44068336	1.88287926	2.44954681
658.897522	0.354400635	0.52441597	0.713756561	0.806613922	1.062397	1.4828167	1.92732811	2.49728584
700.307739	0.393320084	0.566085815	0.756706238	0.849822998	1.10715103	1.52979851	1.97686768	2.55051041
750	0.43993187	0.614610672	0.806276321	0.899688721	1.15855789	1.58367538	2.03367233	2.6115818
759.630676	0.447940826	0.613380432	0.764312744	0.814582825	0.95526886	1.07856369	1.1341362	1.15982628
771.1875	0.45567131	0.600254059	0.702079773	0.72335434	0.794460297	0.837013245	0.850225449	0.854873657
785.055664	0.462242126	0.579050064	0.643064499	0.651193619	0.68970871	0.709024429	0.714565277	0.716564178
801.69751	0.467006683	0.5551548	0.594417572	0.597299576	0.619607925	0.629880905	0.632801056	0.633899689
821.667725	0.469797134	0.532484055	0.556375504	0.557268143	0.570676804	0.576566696	0.578245163	0.578893661
845.631958	0.470907211	0.513109207	0.527542114	0.527734756	0.535886765	0.539369583	0.540365219	0.540754318
874.389038	0.470867157	0.497785568	0.50636673	0.506349564	0.51124382	0.513305664	0.513898849	0.514133453
908.897522	0.470233917	0.486461639	0.491424561	0.491369247	0.494226456	0.495424271	0.495773315	0.495914459
950.307739	0.469444275	0.478660583	0.481424332	0.481388092	0.48298645	0.483659744	0.483860016	0.483943939
1000	0.468765259	0.473676682	0.475147247	0.475135803	0.475982666	0.47634697	0.476457596	0.47650528

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 160m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.93E-01	1.14441E-05	8.96454E-05	0.000228882	0.000278473	0.000667572	0.001213074	0.001684189	0.0020504
4.24E-01	3.05176E-05	0.000225067	0.000555038	0.000671387	0.001550674	0.002742767	0.003665924	0.004281998
7.01E-01	5.53131E-05	0.000400543	0.00097847	0.0011194	0.002653122	0.004549026	0.005870819	0.006666183
1.03395057	8.7738E-05	0.000619888	0.001516342	0.001871109	0.003980637	0.006607056	0.0082798	0.009216309
1.4333545	0.000127792	0.000902176	0.002222061	0.002794266	0.005599976	0.008960724	0.010946274	0.011995316
1.91263914	0.000179291	0.001264572	0.00315094	0.004053116	0.007547379	0.011627197	0.013889313	0.015035629
2.48778081	0.000246048	0.001735687	0.00437355	0.005758286	0.009887695	0.014640808	0.017145157	0.018375397
3.17795086	0.000329971	0.002338409	0.005966187	0.008018494	0.012687683	0.018066406	0.020784378	0.022081375
4.00615501	0.000440598	0.003107071	0.007980347	0.010900497	0.015966415	0.021900177	0.024801254	0.026153565
5	0.000583649	0.004072189	0.010471344	0.014455795	0.019763947	0.026180267	0.029232025	0.030626297
14.4380732	0.002344131	0.013263702	0.029863358	0.040388107	0.044876099	0.05254364	0.055957794	0.057416916
25.7637615	0.004928589	0.023303986	0.047569275	0.062612534	0.065958023	0.074090958	0.077632904	0.079097748
39.3545876	0.008522034	0.03383255	0.063655853	0.081764221	0.084156036	0.092485428	0.096082687	0.097541809
55.6635818	0.013277054	0.04466629	0.078479767	0.098682404	0.100357056	0.108785629	0.112411499	0.113864899
75.234375	0.019321442	0.055768967	0.092449188	0.114103317	0.115259171	0.12374115	0.127382278	0.128831863
98.7193298	0.026777268	0.067232132	0.105953217	0.128616333	0.129402161	0.137918472	0.141571045	0.143018723
126.901276	0.035802841	0.079275131	0.119434357	0.142803192	0.143333435	0.151874542	0.155534744	0.156980515
160.719604	0.046607971	0.092233658	0.133378983	0.157222748	0.157583237	0.166145325	0.169813156	0.171260834
201.301605	0.059492111	0.106573105	0.14838028	0.172540665	0.172798157	0.181379318	0.185054779	0.186502457
250	0.074846268	0.122859955	0.165090561	0.189455032	0.189657211	0.198259354	0.201944351	0.203393936
259.630676	0.079370499	0.134649277	0.18794632	0.219200134	0.223812103	0.238994598	0.24581337	0.248703003
271.1875	0.085407257	0.148920059	0.212076187	0.24939537	0.253810883	0.270698547	0.278100967	0.281152725
285.055695	0.093231201	0.164672852	0.235095978	0.276584625	0.280075073	0.29750061	0.305070877	0.308153152
301.69751	0.103145599	0.181621552	0.257156372	0.301397324	0.304092407	0.321746826	0.329389572	0.332479477
321.667694	0.115459442	0.199806213	0.278917313	0.324996948	0.327116013	0.344900131	0.352586746	0.355680466
345.631927	0.130498886	0.219501495	0.301120758	0.348449707	0.350177765	0.368049622	0.375770569	0.378871918
374.389008	0.148656845	0.241174698	0.324552536	0.372739792	0.374214172	0.392160416	0.399909973	0.403017044
408.897522	0.170440674	0.265489578	0.350093842	0.398874283	0.400201797	0.418218613	0.425998688	0.429117203
450.307739	0.196483612	0.293283463	0.378736496	0.427921295	0.429172516	0.44726181	0.455076218	0.458206177
500	0.227640152	0.325618744	0.411680222	0.461158752	0.462402344	0.480575562	0.488424301	0.491569519
509.630676	0.235151291	0.34038353	0.4375	0.493810654	0.4998703	0.525047302	0.536304474	0.541063309
521.1875	0.244766235	0.358280182	0.465410233	0.527858734	0.533994675	0.561128616	0.573087692	0.578065872
535.055664	0.256877899	0.378440857	0.49307251	0.559818268	0.565172195	0.59299469	0.605184555	0.610221863
551.69751	0.271945953	0.400712967	0.52069664	0.59031868	0.594966888	0.623125076	0.635433197	0.640497208
571.667725	0.290449142	0.425294876	0.549077988	0.620649338	0.624794006	0.653167725	0.665559769	0.670648575
595.631958	0.312929153	0.452655792	0.579156876	0.652080536	0.655900955	0.684446335	0.696908951	0.702022552
624.389038	0.340028763	0.483510971	0.611978531	0.68585968	0.689495087	0.718200684	0.730731964	0.735872269
658.897522	0.372549057	0.51881218	0.648715973	0.72328949	0.726852417	0.755722046	0.768325806	0.773496628
700.307739	0.411493301	0.559770584	0.690753937	0.765842438	0.769422531	0.798469543	0.811153412	0.816360474
750	0.458120346	0.607858658	0.739690781	0.81518364	0.8188591	0.848112106	0.860887527	0.866134644
759.630676	0.462753296	0.591608047	0.690633774	0.745828629	0.734571457	0.742511749	0.744989395	0.745414734
771.1875	0.466474533	0.571218491	0.64030838	0.677038193	0.665887833	0.668392181	0.66906929	0.669023514
785.055664	0.469184875	0.550455093	0.597307205	0.62122345	0.612941742	0.613897324	0.614143372	0.614055634
801.69751	0.470790863	0.531133652	0.562446594	0.577974319	0.572277069	0.572704315	0.572814941	0.572748184
821.667725	0.471382141	0.51423645	0.534837723	0.544862747	0.541078568	0.541296005	0.541355133	0.541313171
845.631958	0.471206665	0.500255585	0.513515472	0.519889832	0.517461777	0.517589569	0.517627716	0.517604828
874.389038	0.470581055	0.489305496	0.497579575	0.501525879	0.50002861	0.500112534	0.500141144	0.5001297
908.897522	0.46979332	0.481218338	0.486169815	0.488517761	0.487638474	0.487699509	0.487724304	0.487722397
950.307739	0.469064713	0.475635529	0.478460312	0.479791641	0.479310989	0.479358673	0.479379654	0.479383469
1000	0.468511581	0.47205925	0.473583221	0.47429657	0.474058151	0.474096298	0.474113464	0.474121094

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 250m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	1.90735E-06	3.8147E-06	3.8147E-06	7.24792E-05	0.003211975	0.023183823	0.108778
0.423750222	1.90735E-06	1.90735E-06	9.53674E-06	2.47955E-05	0.000444412	0.011154175	0.055360794	0.179916382
0.701114058	5.72205E-06	7.62939E-06	2.86102E-05	0.000110626	0.00151825	0.023258209	0.087835312	0.230520248
1.03395057	5.72205E-06	1.33514E-05	7.82013E-05	0.000358582	0.003723145	0.038198471	0.118001938	0.270141602
1.4333545	5.72205E-06	2.28882E-05	0.000190735	0.000944138	0.00740242	0.05478859	0.145633698	0.303344727
1.91263914	9.53674E-06	4.3869E-05	0.00044632	0.002094269	0.012716293	0.072216034	0.171098709	0.332439423
2.48778081	1.33514E-05	7.82013E-05	0.000957489	0.004047394	0.019651413	0.089979172	0.194812775	0.358699799
3.17795086	1.71661E-05	0.000135422	0.001886368	0.007011414	0.028074265	0.107789993	0.217111588	0.382886887
4.00615501	2.47955E-05	0.000236511	0.003416061	0.011129379	0.037788391	0.125478745	0.238248825	0.405483246
5	3.8147E-05	0.000415802	0.005720139	0.016458511	0.048568726	0.142948151	0.258407593	0.426807404
14.4380732	0.000556946	0.006469727	0.031036377	0.056051254	0.105899811	0.217220306	0.338972092	0.510498047
25.7637615	0.001857758	0.016122818	0.055559158	0.088434219	0.146158218	0.264026642	0.388214111	0.561201096
39.3545876	0.004310608	0.027828217	0.077394486	0.114685059	0.176300049	0.297201157	0.422590256	0.596445084
55.6635818	0.00819397	0.040441513	0.096630096	0.136518478	0.200258255	0.322795868	0.448898315	0.623361588
75.234375	0.013664246	0.053361893	0.113847733	0.155338287	0.220344543	0.343881607	0.470472336	0.645404816
98.7193298	0.020807266	0.066411972	0.129703522	0.17222023	0.238031387	0.362234116	0.489192963	0.664520264
126.901276	0.029701233	0.079711914	0.144842148	0.188035965	0.25438118	0.37906456	0.506322861	0.681999207
160.719604	0.040485382	0.09359932	0.159929276	0.203577042	0.270292282	0.395345688	0.52286911	0.69887352
201.301605	0.05340004	0.108572006	0.175680161	0.21963501	0.286617279	0.411977768	0.539751053	0.716087341
250	0.068794251	0.125261307	0.192873001	0.237039566	0.304227829	0.429866791	0.55789566	0.734582901
259.630676	0.07216835	0.132358551	0.215045929	0.275621414	0.379053116	0.59926033	0.845705032	1.20774269
271.1875	0.076850891	0.144609451	0.244922638	0.318172455	0.439718246	0.684635162	0.945766449	1.31825256
285.055695	0.083389282	0.160755157	0.274486542	0.35483551	0.484016418	0.736503601	1.00137329	1.3770504
301.69751	0.09227562	0.179304123	0.301883698	0.386123657	0.518903732	0.77469635	1.04140282	1.41908073
321.667694	0.103889465	0.199384689	0.327589035	0.414096832	0.548862457	0.80657196	1.074543	1.45380211
345.631927	0.118526459	0.220815659	0.352624893	0.440551758	0.576568604	0.83562088	1.10462379	1.48529053
374.389008	0.136501312	0.243888855	0.378053665	0.466928482	0.603824615	0.863954544	1.1339016	1.51592255
408.897522	0.158233643	0.269229889	0.404968262	0.494514465	0.632089615	0.893186569	1.16406441	1.54747581
450.307739	0.184297562	0.297733307	0.434560776	0.524616241	0.662771225	0.924814224	1.19667625	1.58159065
500	0.21547699	0.330505371	0.468126297	0.558605194	0.697307587	0.960351944	1.23330688	1.61991692
509.630676	0.221843719	0.340526581	0.492952347	0.599781036	0.77532959	1.13775635	1.54037476	2.14272308
521.1875	0.230102539	0.356258392	0.526456833	0.646396637	0.841291428	1.23179817	1.6530838	2.2719841
535.055664	0.240915298	0.376674652	0.560720444	0.688247681	0.891677856	1.29155731	1.7184906	2.3436985
551.69751	0.254928589	0.400457382	0.593835831	0.72564888	0.933311462	1.33771324	1.7678566	2.39744186
571.667725	0.272695541	0.426904678	0.626356125	0.760759354	0.970909119	1.37823296	1.81084442	2.44415855
595.631958	0.294734955	0.456001282	0.659448624	0.7955513	1.00739861	1.4170208	1.85184479	2.48869705
624.389038	0.321620941	0.488258362	0.69442749	0.831748962	1.04491997	1.45661163	1.89361763	2.5340786
658.897522	0.354061127	0.524597168	0.732704163	0.870977402	1.08530235	1.49903488	1.93834496	2.58269119
700.307739	0.392988205	0.566265106	0.775844574	0.914928436	1.13035965	1.54626083	1.98812103	2.63682938
750	0.439611435	0.614793777	0.825592041	0.965438843	1.18202209	1.60034752	2.04513741	2.69889832
759.630676	0.447673798	0.613256454	0.780462265	0.871099472	0.975318909	1.08956528	1.14266205	1.16646194
771.1875	0.455501556	0.599912643	0.713314056	0.763893127	0.809871674	0.846012115	0.857444763	0.861032486
785.055664	0.462173462	0.578653336	0.650184631	0.678285599	0.700563431	0.715761185	0.720104218	0.721443176
801.69751	0.467020035	0.554805756	0.598773956	0.614938736	0.626869202	0.634586334	0.636758804	0.637451172
821.667725	0.469861984	0.532222748	0.559017181	0.568588257	0.575391769	0.579708099	0.58093071	0.581335068
845.631958	0.470996857	0.512935638	0.529127121	0.534852982	0.538845062	0.541360855	0.54208374	0.542329788
874.389038	0.470964432	0.497678757	0.507297516	0.510698318	0.513046265	0.51452446	0.514957428	0.515110016
908.897522	0.47032547	0.486412048	0.491968155	0.493938446	0.495294571	0.496152878	0.496406555	0.496500015
950.307739	0.469524384	0.478647232	0.481733322	0.482831955	0.483589172	0.484075546	0.484222412	0.484279633
1000	0.468833923	0.473688126	0.475324631	0.475908279	0.476314545	0.476579666	0.476663589	0.476697922

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 250m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.00E+00	0	0	0	0	0	0	0	0
1.93E-01	1.14441E-05	8.7738E-05	0.000282288	0.000459671	0.000734329	0.001253128	0.001708984	0.002071381
4.24E-01	3.05176E-05	0.000221252	0.000677109	0.001091003	0.001718521	0.002847672	0.003740311	0.004341125
7.01E-01	5.72205E-05	0.000392914	0.001169205	0.001865387	0.002912521	0.004701614	0.005981445	0.006752014
1.03395057	8.7738E-05	0.000602722	0.001768112	0.002801895	0.004333496	0.006814957	0.00843811	0.009338379
1.4333545	0.000125885	0.0008564	0.002492905	0.003923416	0.006010056	0.009195328	0.011127472	0.012136459
1.91263914	0.000173569	0.001173019	0.003376007	0.005273819	0.007976532	0.011867523	0.014076233	0.01517868
2.48778081	0.000232697	0.001565933	0.004451752	0.006885529	0.010257721	0.014846802	0.017309189	0.01849556
3.17795086	0.000307083	0.002056122	0.005765915	0.008800507	0.012882233	0.018152237	0.020849228	0.022108078
4.00615501	0.000400543	0.002679825	0.007375717	0.011066437	0.015880585	0.021808624	0.024721146	0.02604866
5	0.000522614	0.003475189	0.009336472	0.013725281	0.019281387	0.025838852	0.028949738	0.030338287
14.4380732	0.002195358	0.012142181	0.026044846	0.033452988	0.041952133	0.050733566	0.054494858	0.056072235
25.7637615	0.004739761	0.022129059	0.042364121	0.051437378	0.061511993	0.071414948	0.075487137	0.077150345
39.3545876	0.008319855	0.032791138	0.057788849	0.067825317	0.078807831	0.089338303	0.093580246	0.095285416
55.6635818	0.013072968	0.043802261	0.072305679	0.082929611	0.094472885	0.105386734	0.109729767	0.111459732
75.234375	0.01912117	0.05506897	0.086130142	0.097127914	0.109033585	0.120195389	0.124605179	0.12635231
98.7193298	0.026584625	0.066669464	0.099571228	0.110816956	0.122968674	0.134298325	0.138751984	0.140510559
126.901276	0.035615921	0.07881546	0.113023758	0.124437332	0.13675499	0.148202896	0.152690887	0.154457092
160.719604	0.046426773	0.091850281	0.126958847	0.138486862	0.150920868	0.162452698	0.166963577	0.168737411
201.301605	0.059316635	0.106239319	0.141946793	0.153556824	0.166072845	0.177663803	0.182193756	0.18397522
250	0.074674606	0.122558594	0.158658981	0.170324326	0.182899475	0.194536209	0.199081421	0.200866699
259.630676	0.079107285	0.133613586	0.179271698	0.196393967	0.215465546	0.234283447	0.242149353	0.245424271
271.1875	0.085075378	0.147535324	0.201265335	0.221349716	0.243459702	0.264801025	0.273490906	0.27702713
285.055695	0.092866898	0.163311005	0.223167419	0.244817734	0.268442154	0.290903091	0.299921036	0.303552628
301.69751	0.102775574	0.180418015	0.244716644	0.267244339	0.2917099	0.314771652	0.323959351	0.327640533
321.667694	0.115095139	0.198776245	0.266244888	0.289304733	0.314289093	0.337720871	0.347013474	0.350725174
345.631927	0.13013649	0.218631744	0.288368225	0.311777115	0.337106705	0.360790253	0.370159149	0.373893738
374.389008	0.148303986	0.240430832	0.311771393	0.335420609	0.360994339	0.384860992	0.394287109	0.398040771
408.897522	0.170095444	0.264825821	0.33728981	0.361116409	0.386871338	0.410881042	0.42035675	0.424125671
450.307739	0.196155548	0.292690277	0.365942001	0.389907837	0.415809631	0.439939499	0.449459076	0.453245163
500	0.22731781	0.325059891	0.398874283	0.422962189	0.448989868	0.473232269	0.482793808	0.486598969
509.630676	0.234737396	0.339101791	0.422569275	0.452253342	0.48500061	0.516798019	0.529937744	0.535394669
521.1875	0.244283676	0.356641769	0.448364258	0.481178284	0.517169952	0.551727295	0.56580162	0.571569443
535.055664	0.25636673	0.376815796	0.474882126	0.509399414	0.547056198	0.582883835	0.597349167	0.603240967
551.69751	0.271429062	0.399238586	0.501968384	0.537471771	0.576086044	0.612627029	0.627307892	0.633268356
571.667725	0.289936066	0.424007416	0.530134201	0.566263199	0.605495453	0.642499924	0.657329559	0.663337708
595.631958	0.312419891	0.451532364	0.560129166	0.596689224	0.636354446	0.673696518	0.688638687	0.694688797
624.389038	0.33953476	0.482503891	0.592903137	0.629787445	0.669784546	0.707399368	0.722438812	0.728525162
658.897522	0.372066498	0.517896652	0.62962532	0.666772842	0.707046509	0.744901657	0.760030746	0.766153336
700.307739	0.411022186	0.558919907	0.671657562	0.709041595	0.749565125	0.78764534	0.802867889	0.809030533
750	0.457662582	0.607051849	0.720594406	0.758207321	0.798976898	0.837293625	0.852613449	0.858819962
759.630676	0.462568283	0.592981339	0.677814484	0.698503494	0.718912125	0.734325409	0.73884964	0.740119934
771.1875	0.466510773	0.573753357	0.634046555	0.64540863	0.656259537	0.663778305	0.665784836	0.666290283
785.055664	0.469324112	0.552995682	0.594621658	0.601114273	0.607320786	0.611499786	0.612579346	0.612840652
801.69751	0.470964432	0.533214569	0.561372757	0.565235138	0.568971634	0.571470261	0.57211113	0.572265625
821.667725	0.471551895	0.515777588	0.534446716	0.536804199	0.539113998	0.540660858	0.541061401	0.541158676
845.631958	0.471359253	0.501321793	0.513389587	0.514837265	0.516271591	0.517238617	0.517494202	0.517559052
874.389038	0.470708847	0.490003586	0.497543335	0.498426437	0.499307632	0.499908447	0.500070572	0.500114441
908.897522	0.469898224	0.481660843	0.486185074	0.486709595	0.48723793	0.487604141	0.487707138	0.487737656
950.307739	0.469150543	0.475904465	0.478488922	0.478794098	0.479103088	0.479320526	0.479385376	0.479408264
1000	0.468582153	0.472221375	0.473613739	0.4737854	0.473960876	0.474086761	0.474126816	0.474142075

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 500m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.90735E-06	1.90735E-06	1.90735E-06	3.8147E-06	5.91278E-05	0.00254631	0.018035889	0.079557419
0.423750222	1.90735E-06	3.8147E-06	5.72205E-06	2.09808E-05	0.000371933	0.009241104	0.04551506	0.141870499
0.701114058	5.72205E-06	7.62939E-06	2.09808E-05	9.72748E-05	0.001298904	0.019927979	0.074958801	0.189435959
1.03395057	5.72205E-06	1.33514E-05	5.34058E-05	0.00031662	0.003259659	0.033578873	0.103307724	0.227733612
1.4333545	5.72205E-06	2.28882E-05	0.000139236	0.000843048	0.006605148	0.049108505	0.129821777	0.260213852
1.91263914	9.53674E-06	4.00543E-05	0.00034523	0.00189209	0.011528015	0.065704346	0.154560089	0.28884697
2.48778081	1.33514E-05	6.86646E-05	0.000780106	0.003698349	0.018053055	0.082824707	0.177774429	0.314777374
3.17795086	1.71661E-05	0.000116348	0.001596451	0.006473541	0.026077271	0.100137711	0.199712753	0.338710785
4.00615501	2.47955E-05	0.000200272	0.002975464	0.010370255	0.035415649	0.117441177	0.220581055	0.361103058
5	4.00543E-05	0.000352859	0.005098343	0.015455246	0.045858383	0.134607315	0.240533829	0.382257462
14.4380732	0.00056076	0.006233215	0.029813767	0.054143906	0.102205276	0.208133698	0.320556641	0.465372086
25.7637615	0.001853943	0.015884399	0.054422379	0.086259842	0.142114639	0.254653931	0.369556427	0.515748978
39.3545876	0.00428772	0.027727127	0.076684952	0.112581253	0.172203064	0.287748337	0.403835297	0.55080986
55.6635818	0.008134842	0.04054451	0.096445084	0.134626389	0.196243286	0.313362122	0.430131912	0.577632904
75.234375	0.013561249	0.053668976	0.114154816	0.153690338	0.216457367	0.334506989	0.451726913	0.599628448
98.7193298	0.020656586	0.066888809	0.130399704	0.170772552	0.234247208	0.352905273	0.470458984	0.618690491
126.901276	0.029504776	0.080314636	0.145839691	0.186754227	0.250696182	0.369787216	0.487611771	0.636135101
160.719604	0.040245056	0.094284058	0.161142349	0.202419281	0.266683578	0.386110306	0.504175186	0.652971268
201.301605	0.053117752	0.109306335	0.177042007	0.21856308	0.283065796	0.402776718	0.521068573	0.67014122
250	0.068468094	0.126020432	0.19434166	0.236038208	0.300725937	0.420698166	0.539224625	0.688591003
259.630676	0.071836472	0.132976532	0.215705872	0.273332596	0.372709274	0.581659317	0.807998657	1.11066818
271.1875	0.076507568	0.145151138	0.245296478	0.315172195	0.432292938	0.665605545	0.906478882	1.21908569
285.055695	0.083021164	0.161382675	0.275127411	0.351701736	0.476291656	0.717132568	0.961687088	1.27711678
301.69751	0.09186554	0.180116653	0.303037643	0.383140564	0.511182785	0.755247116	1.0015564	1.3186779
321.667694	0.103424072	0.200416565	0.329288483	0.411363602	0.541252136	0.787134171	1.03461266	1.35304451
345.631927	0.118001938	0.222036362	0.354785919	0.438056946	0.569080353	0.816215515	1.06463814	1.38422585
374.389008	0.135919571	0.245248795	0.380569458	0.464626312	0.596443176	0.844577789	1.09385681	1.4145546
408.897522	0.157590866	0.270687103	0.407743454	0.492359161	0.624794006	0.873828888	1.12395668	1.44579315
450.307739	0.183599472	0.299249649	0.437507629	0.52255249	0.655521393	0.905443192	1.15646553	1.47953033
500	0.214729309	0.33205986	0.471191406	0.556604385	0.690084457	0.940950394	1.19296837	1.51741791
509.630676	0.221090317	0.341930389	0.495164871	0.59643364	0.765089035	1.10907173	1.47824478	1.97771454
521.1875	0.229337692	0.357564926	0.528320313	0.642259598	0.829826355	1.20134163	1.5886879	2.10304832
535.055664	0.240125656	0.378046036	0.56281662	0.683925629	0.879840851	1.26061058	1.65338516	2.17303276
551.69751	0.25409317	0.402006149	0.59643364	0.721450806	0.921424866	1.30657196	1.70233345	2.22553635
571.667725	0.271802902	0.428661346	0.629489899	0.756778717	0.959077835	1.34699249	1.74500465	2.27119637
595.631958	0.293779373	0.457942963	0.663051605	0.791797638	0.995658875	1.38572311	1.78573418	2.31474876
624.389038	0.320598602	0.490343094	0.698400497	0.828180313	1.03325844	1.42524719	1.82722473	2.35911179
658.897522	0.352970123	0.526786804	0.736959457	0.867555618	1.07370186	1.46759987	1.87164879	2.40662384
700.307739	0.391836166	0.568519592	0.780290604	0.911598206	1.11877823	1.51470566	1.92104912	2.45948792
750	0.438404083	0.617084503	0.830156326	0.962144852	1.17040825	1.56860733	1.97758293	2.52003479
759.630676	0.447748184	0.629838943	0.856594086	1.00427437	1.24816132	1.74446678	2.28303719	3.03041267
771.1875	0.459558487	0.648881912	0.893255234	1.05413055	1.31845665	1.84678268	2.40919685	3.1791954
785.055664	0.474599838	0.673576355	0.932495117	1.1011734	1.37506104	1.91521263	2.48589897	3.2648201
801.69751	0.493663788	0.702768326	0.971988678	1.14509392	1.42391396	1.97021294	2.54593658	3.33093834
821.667725	0.517498016	0.735818863	1.01205254	1.18785286	1.46969223	2.02024651	2.60002899	3.38998604
845.631958	0.54684639	0.772827148	1.05389977	1.23152542	1.51556015	2.06968307	2.65320969	3.44724464
874.389038	0.569774628	0.743997574	0.892871857	0.956880569	1.02715111	1.09840775	1.12977219	1.14392281
908.897522	0.582950592	0.69260025	0.75828743	0.779132843	0.797254562	0.810504913	0.81452179	0.815803528
950.307739	0.588235855	0.649091721	0.67770195	0.68536377	0.691404343	0.695404053	0.696537018	0.696895599
1000	0.589199066	0.62015152	0.63284111	0.63599205	0.638401031	0.639968872	0.640419006	0.640569687

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 500m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
1.93E-01	1.14441E-05	0.000108719	0.000322342	0.000476837	0.000734329	0.001226425	0.001661301	0.002017975
4.24E-01	3.05176E-05	0.000272751	0.000774384	0.001132965	0.001720428	0.00279808	0.003660202	0.004268646
7.01E-01	5.53131E-05	0.000478745	0.001335144	0.001937866	0.002918243	0.00463295	0.005884171	0.00667572
1.03395057	8.58307E-05	0.0007267	0.002010345	0.002906799	0.00434494	0.006732941	0.008333206	0.009267807
1.4333545	0.000123978	0.001029968	0.002824783	0.004070282	0.006031036	0.009109497	0.011022568	0.012077332
1.91263914	0.000169754	0.001396179	0.003807068	0.005464554	0.008008957	0.011779785	0.013980866	0.015134811
2.48778081	0.000226974	0.001844406	0.004991531	0.007123947	0.010303497	0.014764786	0.017225266	0.018470764
3.17795086	0.000295639	0.002388	0.006414413	0.009084702	0.012943268	0.018079758	0.020778656	0.022106171
4.00615501	0.000385284	0.003053665	0.008115768	0.011386871	0.015953064	0.021743774	0.024663925	0.026063919
5	0.000497818	0.003871918	0.010139465	0.014062882	0.019355774	0.025774002	0.028900147	0.030366898
14.4380732	0.002023697	0.011968613	0.026073456	0.03323555	0.04160881	0.050380707	0.054224014	0.05591774
25.7637615	0.004430771	0.021270752	0.041349411	0.050563812	0.060716629	0.070755005	0.074968338	0.076780319
39.3545876	0.007909775	0.031368256	0.055850983	0.066400528	0.077651978	0.088438034	0.092866898	0.094747543
55.6635818	0.012598038	0.04199028	0.069673538	0.081113815	0.093074799	0.104333878	0.108898163	0.11082077
75.234375	0.018608093	0.052991867	0.082971573	0.095018387	0.107452393	0.119022369	0.123674393	0.12562561
98.7193298	0.026046753	0.064422607	0.096040726	0.108503342	0.121257782	0.133039474	0.137752533	0.139722824
126.901276	0.035057068	0.076454163	0.109230042	0.121984482	0.134965897	0.146894455	0.151651382	0.153636932
160.719604	0.045848846	0.089414597	0.122989655	0.135946274	0.149082184	0.161117554	0.165906906	0.167901993
201.301605	0.058717728	0.103754044	0.137866974	0.150959015	0.164205551	0.176317215	0.181131363	0.183135986
250	0.074047089	0.120031357	0.154506683	0.167697906	0.181024551	0.193195343	0.198028564	0.200040817
259.630676	0.078369141	0.131113052	0.175388336	0.19377327	0.213447571	0.23274231	0.240940094	0.244539261
271.1875	0.084190369	0.144470215	0.196594238	0.218187332	0.241041183	0.262985229	0.272079468	0.275985718
285.055695	0.091852188	0.15961647	0.217498779	0.241035461	0.265602112	0.288803101	0.298278809	0.302312851
301.69751	0.101669312	0.176237106	0.2382164	0.2629776	0.288557053	0.312465668	0.322156906	0.32626152
321.667694	0.113927841	0.194280624	0.259147644	0.28470993	0.310937881	0.335292816	0.345117569	0.34926796
345.631927	0.128932953	0.213920593	0.280832291	0.306941986	0.33360672	0.35826683	0.368186951	0.372369766
374.389008	0.147069931	0.235580444	0.303934097	0.33042717	0.357402802	0.382284164	0.392272949	0.396482468
408.897522	0.16882515	0.259893417	0.329267502	0.356035233	0.383237839	0.408290863	0.418338776	0.422569275
450.307739	0.194854736	0.287694931	0.357789993	0.38476181	0.4121418	0.437332153	0.447429657	0.451683044
500	0.225984573	0.320037842	0.390659332	0.417793274	0.445320129	0.47063446	0.480781555	0.485055923
509.630676	0.233297348	0.334123611	0.414642334	0.447078705	0.481155396	0.513952255	0.52771759	0.533744812
521.1875	0.242694855	0.35111618	0.439685822	0.475471497	0.51292038	0.548599243	0.563371658	0.569761276
535.055664	0.254644394	0.370666504	0.465230942	0.503089905	0.542398453	0.579483032	0.594705582	0.601251602
551.69751	0.269609451	0.392602921	0.491493225	0.530679703	0.571115494	0.609020233	0.624502182	0.631141663
571.667725	0.288051605	0.417030334	0.519025803	0.559106827	0.600286484	0.63873291	0.654390335	0.661096573
595.631958	0.310493469	0.444332123	0.548576355	0.589288712	0.630994797	0.669834137	0.685625076	0.692382813
624.389038	0.337564468	0.475166321	0.581056595	0.622232437	0.664339066	0.703487396	0.719390869	0.726192474
658.897522	0.370054245	0.510475159	0.617593765	0.659133911	0.701564789	0.740980148	0.756984711	0.763830185
700.307739	0.408973694	0.551439285	0.659503937	0.701343536	0.744052887	0.783714294	0.799818039	0.80670929
750	0.455572128	0.599531174	0.708362579	0.750465393	0.793437958	0.833345413	0.849554062	0.856494904
759.630676	0.465871811	0.616632462	0.735513687	0.783073425	0.83288002	0.880788803	0.901012421	0.909999847
771.1875	0.47883606	0.637275696	0.764480591	0.815587997	0.869045258	0.920188904	0.941604614	0.951061249
785.055664	0.495059967	0.661251068	0.794775009	0.848134995	0.90366745	0.956451416	0.978429794	0.988103867
801.69751	0.515153885	0.688549042	0.826726913	0.881568909	0.938402176	0.9921875	1.01451302	1.02432823
821.667725	0.539768219	0.719427109	0.861022949	0.91689682	0.974624634	1.02910995	1.05168915	1.06161499
845.631958	0.569629669	0.75447464	0.898622513	0.955257416	1.01365662	1.06868935	1.09148216	1.10150719
874.389038	0.582942963	0.7056427	0.775579453	0.797107697	0.815443039	0.828557968	0.832468033	0.833709717
908.897522	0.588775635	0.662181854	0.695518494	0.704465866	0.711494446	0.716121674	0.717424393	0.717832565
950.307739	0.590074539	0.63064003	0.646657944	0.650691986	0.653778076	0.655776978	0.65634346	0.656528473
1000	0.589447021	0.610361099	0.618022919	0.619909286	0.621347427	0.62228775	0.622564316	0.622659683

Appendix A - Data Table

Pumping from Zone 3 w/o abandoned well
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
0.192613736	1.33514E-05	0.000114441	0.000331879	0.000492096	0.000761032	0.001281738	0.001750946	0.002113342
0.423750222	3.43323E-05	0.000286102	0.000799179	0.001169205	0.001783371	0.002916336	0.003820419	0.004415512
0.701114058	6.48499E-05	0.00050354	0.001375198	0.001998901	0.003019333	0.004810333	0.006093979	0.006849289
1.03395057	0.000101089	0.000766754	0.002071381	0.002998352	0.004491806	0.006965637	0.008579254	0.009458542
1.4333545	0.000144958	0.001085281	0.002910614	0.004196167	0.006227493	0.009393692	0.011299133	0.012279511
1.91263914	0.000200272	0.001472473	0.003925323	0.005632401	0.00825882	0.012113571	0.014276505	0.015335083
2.48778081	0.000267029	0.001943588	0.005144119	0.00733757	0.010608673	0.015138626	0.017538071	0.018669128
3.17795086	0.000349045	0.002515793	0.006608963	0.009349823	0.013303757	0.018489838	0.021102905	0.02230072
4.00615501	0.000452042	0.00321579	0.008358002	0.011707306	0.016368866	0.022182465	0.024997711	0.026266098
5	0.000581741	0.004072189	0.010433197	0.014442444	0.019823074	0.026241303	0.029241562	0.030567169
14.4380732	0.002235413	0.012456894	0.026655197	0.033884049	0.042284012	0.050937653	0.054569244	0.056083679
25.7637615	0.004735947	0.021970749	0.042104721	0.051353455	0.061479569	0.071323395	0.075283051	0.07689476
39.3545876	0.008275986	0.032190323	0.056690216	0.067245483	0.078424454	0.088954926	0.093091965	0.09475708
55.6635818	0.013000488	0.042856216	0.070545197	0.081972122	0.093839645	0.104825974	0.109090805	0.110794067
75.234375	0.019029617	0.053884506	0.083864212	0.095886231	0.10820961	0.119485855	0.123825073	0.125551224
98.7193298	0.026491165	0.065320969	0.096940994	0.109375	0.122011185	0.133489609	0.137880325	0.139621735
126.901276	0.035528183	0.077350617	0.110136032	0.122859955	0.135715485	0.147335052	0.151765823	0.153518677
160.719604	0.046356201	0.090314865	0.123901367	0.136817932	0.149822235	0.16153717	0.165996552	0.167758942
201.301605	0.059265137	0.104663849	0.138786316	0.151834488	0.164943695	0.17673111	0.181209564	0.182979584
250	0.074634552	0.120954514	0.155420303	0.168556213	0.181734085	0.193569183	0.198064804	0.199838638
259.630676	0.079114914	0.132369995	0.176670074	0.195022583	0.214521408	0.233283997	0.240880966	0.244010925
271.1875	0.085073471	0.146001816	0.198087692	0.219589233	0.242153168	0.263364792	0.271718979	0.275087357
285.055695	0.092842102	0.161312103	0.219062805	0.242448807	0.266633987	0.288980484	0.297651291	0.301116943
301.69751	0.102733612	0.178014755	0.239784241	0.264347076	0.289485931	0.312475204	0.321325302	0.32484436
321.667694	0.115049362	0.196062088	0.26067543	0.286008835	0.311756134	0.335142136	0.344097137	0.347650528
345.631927	0.130104065	0.215682983	0.282306671	0.308164597	0.334321976	0.357980728	0.367013931	0.370592117
374.389008	0.148288727	0.237333298	0.30538559	0.331617355	0.358074188	0.381952286	0.391054153	0.394655228
408.897522	0.170097351	0.261638641	0.330694199	0.357187271	0.38385582	0.407878876	0.417024612	0.420640945
450.307739	0.196178436	0.289445877	0.359207153	0.385894775	0.412725449	0.436872482	0.446058273	0.449689865
500	0.227361679	0.321783066	0.392053604	0.418889999	0.445854187	0.47010994	0.479333878	0.482978821
509.630676	0.234838486	0.336227417	0.416416168	0.448545456	0.48195076	0.513303757	0.525722504	0.530765533
521.1875	0.244390488	0.353509903	0.44162178	0.476989746	0.513566971	0.547475815	0.560689926	0.565988541
535.055664	0.256464005	0.373224258	0.467176437	0.504512787	0.542806625	0.577943802	0.591510773	0.596920013
551.69751	0.271522522	0.395219803	0.493368149	0.531961441	0.571292877	0.607145309	0.620914459	0.626386642
571.667725	0.290042877	0.419633865	0.520799637	0.560237885	0.600250244	0.636564255	0.650463104	0.655979156
595.631958	0.312551498	0.446903229	0.5502491	0.590278625	0.63076973	0.667421341	0.681425095	0.686975479
624.389038	0.339679718	0.477710724	0.58266449	0.623134613	0.66399765	0.700927734	0.715019226	0.720600128
658.897522	0.37223053	0.512990952	0.61913681	0.659948349	0.701107025	0.738265991	0.752435684	0.758047104
700.307739	0.411211014	0.553936005	0.660991669	0.702079773	0.743490219	0.780853271	0.795097351	0.800735474
750	0.457870483	0.602027893	0.709821701	0.751157761	0.792806625	0.830381393	0.844703674	0.850376129
759.630676	0.46833992	0.619497299	0.737323761	0.784049988	0.832294464	0.877178192	0.89481163	0.901937485
771.1875	0.48147583	0.640441895	0.766393661	0.816490173	0.868068695	0.915687561	0.934186935	0.94159317
785.055664	0.497842789	0.664583206	0.796611786	0.848796844	0.90222168	0.951183319	0.970077515	0.977607727
801.69751	0.518053055	0.691926956	0.828399658	0.881946564	0.936515808	0.986289978	1.00542068	1.01302719
821.667725	0.542758942	0.722774506	0.862518311	0.917011261	0.97236824	1.02269936	1.041996	1.04965973
845.631958	0.5727005	0.757761002	0.899940491	0.955131531	1.0110817	1.06185722	1.08130074	1.08901596
874.389038	0.608768463	0.797805786	0.941843033	0.997581482	1.05400658	1.10515594	1.12472534	1.13249016
908.897522	0.65205574	0.844139099	0.989635468	1.04582405	1.10266113	1.1541481	1.17383957	1.18165016
950.307739	0.703926086	0.898332596	1.04504204	1.10163879	1.15886879	1.2107029	1.23052406	1.23838806
1000	0.766054153	0.962295532	1.11009407	1.16709137	1.22472572	1.27693176	1.2968998	1.30482101

Appendix A - Data Table

Pumping from Zone 3 w/o abandoned well
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance	700m	350m	200m	150m	100m	50m	25m	10m
Time	MW8	MW7	MW6	MW5	MW4	MW3	MW2	MW1
0	0	0	0	0	0	0	0	0
1.93E-01	0.002758026	0.025045395	0.072803497	0.108102798	0.167562485	0.285629272	0.411083221	0.572174072
4.24E-01	0.004014969	0.031122208	0.084135056	0.121763229	0.183731079	0.304204941	0.430620193	0.592098236
7.01E-01	0.004365921	0.032258987	0.085845947	0.123672485	0.185823441	0.306442261	0.432901382	0.594394684
1.03395057	0.004478455	0.032646179	0.086463928	0.124383926	0.186628342	0.307323456	0.43380928	0.595310211
1.4333545	0.004571915	0.032991409	0.08704567	0.125061035	0.187395096	0.308160782	0.434667587	0.59617424
1.91263914	0.004686356	0.033397675	0.087730408	0.12584877	0.188276291	0.309106827	0.435626984	0.597137451
2.48778081	0.004810333	0.033876419	0.088527679	0.126768112	0.189313889	0.310235977	0.436782837	0.598302841
3.17795086	0.004962921	0.034450531	0.089473724	0.127853394	0.190525055	0.311536789	0.438110352	0.599637985
4.00615501	0.005146027	0.035131455	0.090583801	0.12912178	0.1919384	0.313058853	0.439664841	0.601202011
5	0.005376816	0.035951614	0.091897965	0.130607605	0.193571091	0.314796448	0.441429138	0.602975845
14.4380732	0.007808685	0.04319191	0.102367401	0.142066956	0.205839157	0.32759285	0.454364777	0.615951538
25.7637615	0.010997772	0.051055908	0.112861633	0.153299332	0.217655182	0.33978653	0.466657639	0.62827301
39.3545876	0.015075684	0.05947113	0.123386383	0.164381027	0.229164124	0.351568222	0.478509903	0.640146255
55.6635818	0.020177841	0.068378449	0.133955002	0.175367355	0.240467072	0.363067627	0.490058899	0.65171051
75.234375	0.026435852	0.077854157	0.144720078	0.186447144	0.251783371	0.374530792	0.501562119	0.663225174
98.7193298	0.033996582	0.088006973	0.155855179	0.197820663	0.263332367	0.386192322	0.513252258	0.674922943
126.901276	0.043045044	0.099025726	0.167596817	0.209733963	0.275375366	0.398313522	0.52539444	0.687070847
160.719604	0.053842545	0.111255646	0.180339813	0.222597122	0.288328171	0.411323547	0.538419724	0.700099945
201.301605	0.066707611	0.125089645	0.194517136	0.236856461	0.302648544	0.425678253	0.552783966	0.714468002
250	0.082029343	0.141046524	0.210699081	0.253091812	0.318922043	0.441978455	0.56909899	0.730775833
259.630676	0.091617584	0.18346405	0.31039238	0.39185524	0.520915985	0.76534462	1.01911736	1.34235573
271.1875	0.098423004	0.19575119	0.326154709	0.408685684	0.538633347	0.78367424	1.03761864	1.36091042
285.055695	0.106842041	0.209159851	0.342180252	0.425430298	0.555944443	0.801347733	1.0553875	1.37870598
301.69751	0.117198944	0.223920822	0.358966827	0.442741394	0.573659897	0.819320679	1.0734272	1.39676666
321.667694	0.129796982	0.240219116	0.376804352	0.460960388	0.592164993	0.838005066	1.09215736	1.41551018
345.631927	0.144987106	0.258375168	0.396120071	0.48056221	0.611978531	0.857950211	1.11213684	1.43549919
374.389008	0.163200378	0.278879166	0.417491913	0.502141953	0.633718491	0.879789352	1.13400269	1.45737267
408.897522	0.1849823	0.302339554	0.441572189	0.52637291	0.658061981	0.904205322	1.15843773	1.48181343
450.307739	0.211023331	0.329551697	0.46922493	0.554132462	0.685903549	0.932098389	1.18634605	1.50972557
500	0.242174149	0.361494064	0.501470566	0.586456299	0.718286514	0.964517593	1.2187748	1.54215813
509.630676	0.254764557	0.40694809	0.604240417	0.728313446	0.923391342	1.291008	1.67193222	2.15686989
521.1875	0.265174866	0.422906876	0.623731613	0.74889183	0.944879532	1.31312752	1.69422722	2.17921829
535.055664	0.277914047	0.440704346	0.644212723	0.770118713	0.966691971	1.33531761	1.71651649	2.20153809
551.69751	0.293457031	0.460739136	0.66633606	0.792785645	0.989774704	1.35866165	1.7399292	2.22496986
571.667725	0.312278748	0.483369827	0.690574646	0.817428589	1.01472473	1.38380241	1.76511765	2.25017357
595.631958	0.334924698	0.509140015	0.717601776	0.844768524	1.04230309	1.41153717	1.79289627	2.27796364
624.389038	0.362098694	0.538747787	0.748151779	0.875551224	1.07326126	1.44260406	1.82399178	2.30906868
658.897522	0.394643784	0.573125839	0.783241272	0.9108181	1.10866356	1.4780941	1.8595047	2.34458923
700.307739	0.433603287	0.613420486	0.824062347	0.951774597	1.14972496	1.51922226	1.90065002	2.38573837
750	0.480249405	0.661056519	0.872116089	0.999938965	1.19797707	1.56753349	1.94898033	2.43407249
759.630676	0.495840073	0.709573746	0.978000641	1.1449337	1.40624237	1.89720535	2.40532494	3.05197334
771.1875	0.509849548	0.729187012	1.00122643	1.1692791	1.43152618	1.92313766	2.43143845	3.07814407
785.055664	0.526899338	0.751399994	1.02621269	1.19503975	1.45789909	1.9499054	2.45830917	3.10504341
801.69751	0.547609329	0.776756287	1.05377007	1.22317696	1.48648643	1.97878265	2.48726463	3.13402176
821.667725	0.572639465	0.805772781	1.0845089	1.25435638	1.51799965	2.01050758	2.51904297	3.16581726
845.631958	0.602750778	0.839195251	1.11929131	1.28948212	1.5533886	2.04606438	2.55464363	3.20143127
874.389038	0.638889313	0.877979279	1.15913773	1.32959747	1.59371185	2.08651924	2.59513474	3.24193382
908.897522	0.682197571	0.923332214	1.20531654	1.37598801	1.64026642	2.13317871	2.64182091	3.28862762
950.307739	0.734071732	0.976795197	1.25945473	1.43030357	1.69472313	2.18772888	2.69639778	3.34321213
1000	0.79621315	1.04020691	1.32344627	1.49445724	1.7590065	2.2521019	2.76079559	3.40761757

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 20m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.192613736	9.53674E-06	7.24792E-05	0.000205994	0.000305176	0.00056076	0.005941391	0.057027817	0.057044983
0.423750222	2.09808E-05	0.000181198	0.00050354	0.000751495	0.00161171	0.014984131	0.084243774	0.084539414
0.701114058	4.19617E-05	0.000326157	0.000886917	0.001361847	0.003347397	0.0246315	0.100450516	0.100921631
1.03395057	6.67572E-05	0.000501633	0.001367569	0.002206802	0.005880356	0.033922195	0.112260818	0.112848282
1.4333545	9.72748E-05	0.000720978	0.001989365	0.003395081	0.009218216	0.042676926	0.121934891	0.122613907
1.91263914	0.000137329	0.000989914	0.00280571	0.005031586	0.013284683	0.050970078	0.130432129	0.131187439
2.48778081	0.000183105	0.001321793	0.003890991	0.007198334	0.017976761	0.058919907	0.138235092	0.139059067
3.17795086	0.000242233	0.00173378	0.005331039	0.009944916	0.023193359	0.066638947	0.145618439	0.146505356
4.00615501	0.00031662	0.002252579	0.007204056	0.013296127	0.02885437	0.07421875	0.152763367	0.153705597
5	0.000411987	0.002912521	0.009580612	0.017246246	0.034900665	0.081733704	0.159788132	0.16078186
14.4380732	0.001750946	0.010890961	0.029403687	0.043367386	0.067152023	0.116987228	0.192691803	0.1938591
25.7637615	0.00394249	0.020746231	0.047813416	0.065011978	0.091398239	0.142118454	0.216363907	0.21762085
39.3545876	0.007223129	0.031621933	0.064540863	0.083511353	0.111166	0.162162781	0.235448837	0.236759186
55.6635818	0.011770248	0.042987824	0.079872131	0.099887848	0.128234863	0.17931366	0.251951218	0.253292084
75.234375	0.01770401	0.054618835	0.094211578	0.114879608	0.143642426	0.194742203	0.266929626	0.268293381
98.7193298	0.025131226	0.066534042	0.107984543	0.129079819	0.158103943	0.209207535	0.281087875	0.282466888
126.901276	0.034175873	0.078927994	0.121648788	0.143028259	0.172229767	0.223337173	0.295015335	0.296405792
160.719604	0.045026779	0.09214592	0.135723114	0.157291412	0.18661499	0.237733841	0.309293747	0.310691833
201.301605	0.057966232	0.106666565	0.150806427	0.172504425	0.201911926	0.253055573	0.324556351	0.325960159
250	0.073373795	0.123071671	0.167572021	0.18935585	0.218830109	0.27000618	0.341501236	0.342908859
259.630676	0.077545166	0.133329391	0.190006256	0.221485138	0.269107819	0.365032196	0.514619827	0.517061234
271.1875	0.083175659	0.146852493	0.214544296	0.251840591	0.306264877	0.408149719	0.556749344	0.559419632
285.055695	0.090652466	0.16267395	0.238168716	0.278375626	0.335292816	0.438264847	0.585641861	0.588405609
301.69751	0.100330353	0.180074692	0.26074028	0.302480698	0.360517502	0.463802338	0.610435486	0.613248825
321.667694	0.112522125	0.198795319	0.28288269	0.325511932	0.384160995	0.487585068	0.633769989	0.636617661
345.631927	0.127529144	0.21896553	0.305351257	0.348543167	0.4075737	0.511098862	0.657028198	0.659898758
374.389008	0.145717621	0.241014481	0.328962326	0.372533798	0.43183136	0.535457611	0.681276321	0.684164047
408.897522	0.16755867	0.265602112	0.354623795	0.398462296	0.457962036	0.561706543	0.707525253	0.710430145
450.307739	0.19367981	0.293592453	0.383356094	0.427394867	0.487064362	0.590953827	0.736867905	0.739786148
500	0.224901199	0.326047897	0.416337967	0.460533142	0.520359039	0.624423981	0.770519257	0.773450851
509.630676	0.232078552	0.339334488	0.441774368	0.495666504	0.573740005	0.72328186	0.950025558	0.95403862
521.1875	0.241308212	0.356473923	0.470026016	0.529851913	0.614948273	0.770824432	0.996795654	1.00106239
535.055664	0.253095627	0.376667023	0.498199463	0.56105423	0.648799896	0.805953979	1.0308342	1.03520775
551.69751	0.267942429	0.399347305	0.52624321	0.590732574	0.67971611	0.83732605	1.06160164	1.06603622
571.667725	0.286334991	0.424417496	0.554922104	0.620388031	0.710084915	0.867973328	1.09195709	1.09643364
595.631958	0.308790207	0.452217102	0.585203171	0.651311874	0.74148941	0.899621964	1.12353325	1.12804222
624.389038	0.335924149	0.483419418	0.618150711	0.684720993	0.775268555	0.933662415	1.15767288	1.16221046
658.897522	0.368507385	0.518974304	0.654970169	0.721895218	0.812759399	0.971452713	1.19571114	1.20027542
700.307739	0.407531738	0.560112	0.697057724	0.764280319	0.855442047	1.01449203	1.23914146	1.24373245
750	0.45423317	0.608312607	0.746004105	0.813495636	0.904958725	1.06443405	1.28961372	1.29423332
759.630676	0.464410782	0.624629974	0.774457932	0.851650238	0.961486816	1.16735458	1.47640991	1.48217964
771.1875	0.477231979	0.645391464	0.806467056	0.889751434	1.00690079	1.21958542	1.52815056	1.53420639
785.055664	0.49331665	0.669961929	0.839258194	0.925733566	1.04574394	1.25995255	1.56760979	1.5737896
801.69751	0.513319016	0.697952271	0.872879028	0.961122513	1.08252907	1.29739189	1.60464859	1.6109066
821.667725	0.537899017	0.72943306	0.908227921	0.99756813	1.11982727	1.33516121	1.64236259	1.64867783
845.631958	0.567790985	0.76493454	0.946464539	1.03656387	1.1594429	1.3752327	1.68263626	1.68900108
874.389038	0.603862762	0.805368423	0.98890686	1.07958412	1.20298195	1.41926765	1.72709656	1.73350716
908.897522	0.647182465	0.851982117	1.03705978	1.12822151	1.2521019	1.46895981	1.77742767	1.78388214
950.307739	0.69909668	0.906352997	1.0926857	1.18428802	1.30865669	1.52619171	1.83551216	1.84201431
1000	0.761274338	0.970415115	1.15785789	1.24990273	1.37480164	1.59314346	1.90355492	1.91011047

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 20m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.93E-01	0.00173378	0.015630722	0.044988632	0.066297531	0.101203918	0.164186478	0.203674316	0.346061707
4.24E-01	0.002592087	0.020027161	0.05374527	0.07730484	0.115152359	0.182619095	0.227203369	0.369915009
7.01E-01	0.002887726	0.021282196	0.056255341	0.080579758	0.119615555	0.189409256	0.237342834	0.380060196
1.03E+00	0.003030777	0.021959305	0.057771683	0.082647324	0.122564316	0.194051743	0.244382858	0.387102127
1.4333545	0.003141403	0.022550583	0.059116364	0.084476471	0.125144958	0.19799614	0.250211716	0.392932892
1.91263914	0.003261566	0.023160934	0.060466766	0.08629036	0.127639771	0.201663971	0.255456924	0.398181915
2.48778081	0.003395081	0.023824692	0.061897278	0.088178635	0.130172729	0.205236435	0.260406494	0.4031353
3.17795086	0.003549576	0.024564743	0.06344986	0.090192795	0.132799149	0.208808899	0.265218735	0.407953262
4.00615501	0.003730774	0.025409699	0.065172195	0.092382431	0.135580063	0.212465286	0.270009995	0.412750244
5	0.003948212	0.026388168	0.06709671	0.094778061	0.138544083	0.216251373	0.274848938	0.417593002
14.4380732	0.006242752	0.034521103	0.080543518	0.11035347	0.156421661	0.237216949	0.299705505	0.442480087
25.7637615	0.009309769	0.043165207	0.093084335	0.124233246	0.171661377	0.254211426	0.318885803	0.461681366
39.3545876	0.013303757	0.052253723	0.105064392	0.137115479	0.185424805	0.26909256	0.335151672	0.477962494
55.6635818	0.018354416	0.061752319	0.116725922	0.149410248	0.198328018	0.282756805	0.349754333	0.492578506
75.234375	0.024595261	0.07169342	0.12828064	0.161418915	0.210771561	0.295740128	0.363409042	0.506238937
98.7193298	0.032165527	0.082206726	0.139984131	0.173452377	0.223114014	0.308475494	0.376625061	0.519462585
126.901276	0.041244507	0.093513489	0.152153015	0.185857773	0.235744476	0.321388245	0.389888763	0.532730103
160.719604	0.052070618	0.10593605	0.165182114	0.199052811	0.249099731	0.334947586	0.403705597	0.546550751
201.301605	0.064964294	0.119916916	0.179571152	0.213558197	0.263715744	0.349712372	0.418657303	0.561504364
250	0.08032608	0.135974884	0.195901871	0.22996521	0.280202866	0.366308212	0.435396194	0.578245163
259.630676	0.088451386	0.169313431	0.272136688	0.334646225	0.429426193	0.594347	0.723613739	1.00921059
271.1875	0.095121384	0.182621002	0.291065216	0.355882645	0.453294754	0.621980667	0.756082535	1.04171753
285.055695	0.103437424	0.196838379	0.309066772	0.375171661	0.473907471	0.644332886	0.78062439	1.06628036
301.69751	0.113729477	0.212278366	0.327219009	0.394161224	0.493724823	0.665216446	0.802845001	1.08851433
321.667694	0.126302719	0.229143143	0.346067429	0.413591385	0.513721466	0.685945511	0.824489594	1.11017036
345.631927	0.14150238	0.247745514	0.36611557	0.434055328	0.534593582	0.707351685	0.846574783	1.13226318
374.389008	0.159751892	0.268575668	0.387996674	0.4562397	0.557079315	0.730243683	0.869991302	1.15568352
408.897522	0.181583405	0.29227829	0.412454605	0.480922699	0.581993103	0.755479813	0.895648956	1.18134689
450.307739	0.207668304	0.319660187	0.440378189	0.509016037	0.610269547	0.7840271	0.924562454	1.2102623
500	0.238857269	0.351736069	0.472852707	0.541622162	0.643030167	0.817029953	0.957902998	1.24360466
509.630676	0.250019073	0.38832283	0.55273056	0.650238037	0.796682358	1.05059052	1.25338173	1.68182945
521.1875	0.260295868	0.405302048	0.575433731	0.675312042	0.824483871	1.08232307	1.29018784	1.71867371
535.055664	0.27293396	0.423936844	0.59796524	0.699188232	0.849760056	1.10946655	1.31970215	1.74821091
551.69751	0.288410187	0.444665909	0.621524811	0.723640442	0.875112534	1.13600922	1.34775734	1.77628136
571.667725	0.307203293	0.46787262	0.646827698	0.749578476	0.901689529	1.16344452	1.37629509	1.80483055
595.631958	0.329870224	0.494092941	0.674619675	0.777841568	0.930435181	1.19285965	1.40657997	1.83512306
624.389038	0.357089996	0.524066925	0.705776215	0.809364319	0.962341309	1.22531891	1.43977928	1.86832809
658.897522	0.389684677	0.558713913	0.741323471	0.8452034	0.998502731	1.26197052	1.47710037	1.90565491
700.307739	0.428697586	0.599235535	0.782550812	0.886676788	1.04026604	1.3041954	1.51997375	1.9485321
750	0.475391388	0.647043228	0.830928802	0.935274124	1.08913422	1.35352898	1.56997871	1.99853706
759.630676	0.489583969	0.686929703	0.914625168	1.04808044	1.24761963	1.59332085	1.873909	2.44521523
771.1875	0.503471375	0.707605362	0.941164017	1.07707405	1.27946472	1.62931824	1.91529465	2.48663902
785.055664	0.520418167	0.73065567	0.968257904	1.10559273	1.30948639	1.6613884	1.94999313	2.52135849
801.69751	0.541078568	0.756731033	0.99732399	1.13562584	1.34051895	1.69378281	1.98414803	2.55553055
821.667725	0.566091537	0.786348343	1.02920914	1.16822433	1.3738575	1.72816086	2.01988983	2.59128571
845.631958	0.596229553	0.820259094	1.06486702	1.20443726	1.4106636	1.76583481	2.05872536	2.63012886
874.389038	0.632417679	0.85943985	1.10542488	1.24544907	1.45218468	1.80813217	2.10208893	2.67350197
908.897522	0.675779343	0.905126572	1.1522274	1.29264641	1.4998436	1.85653877	2.15154457	2.72296143
950.307739	0.727712631	0.958860397	1.20690536	1.34768677	1.55533409	1.9127903	2.20889091	2.78031349
1000	0.7899189	1.02251053	1.27141762	1.41255951	1.62067795	1.97896194	2.27626419	2.84769058

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 40m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.192613736	9.53674E-06	8.01086E-05	0.000228882	0.000343323	0.000837326	0.025011063	0.02394104	0.00717926
0.423750222	2.47955E-05	0.000204086	0.00056076	0.000860214	0.002515793	0.041261673	0.041009903	0.016466141
0.701114058	4.76837E-05	0.000362396	0.000986099	0.001590729	0.005083084	0.052511215	0.05283165	0.025484085
1.03395057	7.43866E-05	0.000556946	0.001523972	0.002624512	0.008426666	0.061296463	0.062017441	0.033733368
1.4333545	0.000106812	0.000795364	0.002225876	0.004058838	0.0123806	0.068792343	0.069835663	0.041326523
1.91263914	0.000150681	0.001089096	0.00315094	0.005964279	0.016796112	0.075576782	0.07689476	0.048467636
2.48778081	0.000202179	0.001449585	0.00437355	0.008378983	0.02157402	0.081960678	0.083522797	0.05532074
3.17795086	0.000265121	0.001897812	0.005958557	0.011314392	0.026649475	0.088134766	0.089918137	0.062015533
4.00615501	0.00034523	0.00246048	0.007974625	0.014762878	0.031995773	0.094226837	0.09621048	0.06864357
5	0.000448227	0.003173828	0.010465622	0.018709183	0.037597656	0.100322723	0.102493286	0.075281143
14.4380732	0.001867294	0.011407852	0.029977799	0.043670654	0.067235947	0.130327225	0.133144379	0.107515335
25.7637615	0.004142761	0.021306992	0.047786713	0.064239502	0.089796066	0.152601242	0.155752182	0.131086349
39.3545876	0.007501602	0.032091141	0.063949585	0.081933975	0.108478546	0.170921326	0.174266815	0.150230408
55.6635818	0.012111664	0.043304443	0.078828812	0.097732544	0.124826431	0.186952591	0.190422058	0.166810989
75.234375	0.018089294	0.054777145	0.092826843	0.112314224	0.139741898	0.201620102	0.205171585	0.18185997
98.7193298	0.025539398	0.066555023	0.106349945	0.126224518	0.153865814	0.21556282	0.219171524	0.196069717
126.901276	0.03459549	0.078838348	0.119838715	0.139972687	0.167758942	0.229335785	0.232984543	0.210025787
160.719604	0.045448303	0.091976166	0.13379097	0.154102325	0.181987762	0.243492126	0.247167587	0.224304199
201.301605	0.058385849	0.106441498	0.148794174	0.169223785	0.197183609	0.258657455	0.262353897	0.239543915
250	0.073785782	0.122810364	0.165512085	0.186023712	0.214040756	0.275518417	0.279230118	0.256450653
259.630676	0.078029633	0.133415222	0.188482285	0.218763351	0.265619278	0.388414383	0.394338608	0.344797134
271.1875	0.083745956	0.147092819	0.212694168	0.248241425	0.300807953	0.4263134	0.433052063	0.384597778
285.055695	0.091308594	0.162887573	0.235748291	0.273828506	0.328351974	0.453775406	0.460849762	0.413267136
301.69751	0.10105896	0.180158615	0.257806778	0.297229767	0.352640152	0.477811813	0.485071182	0.438026428
321.667694	0.113300323	0.19871521	0.279550552	0.319766998	0.375673294	0.500650406	0.508029938	0.461330414
345.631927	0.128335953	0.218736649	0.301733017	0.342458725	0.398683548	0.523546219	0.531007767	0.48453331
374.389008	0.146535873	0.240667343	0.325145721	0.366220474	0.422670364	0.547496796	0.555017471	0.508682251
408.897522	0.16837883	0.265167236	0.350669861	0.391994476	0.44862175	0.573482513	0.581050873	0.534790039
450.307739	0.194498062	0.293100357	0.379318237	0.420827866	0.477607727	0.602571487	0.610179901	0.563941956
500	0.225715637	0.325519562	0.412248611	0.453910828	0.510831833	0.635959625	0.643604279	0.597352982
509.630676	0.232963562	0.339147568	0.438245773	0.489713669	0.565662384	0.753549576	0.763437271	0.689758301
521.1875	0.242277145	0.356449127	0.46620369	0.523069382	0.604946136	0.795820236	0.806589127	0.733974457
535.055664	0.254144669	0.376617432	0.493818283	0.553331375	0.637304306	0.828245163	0.839384079	0.767635345
551.69751	0.269062042	0.399171829	0.521354675	0.582302094	0.667268753	0.858091354	0.869445801	0.798219681
571.667725	0.287504196	0.424095154	0.549648285	0.611473083	0.697027206	0.887794495	0.899290085	0.828384399
595.631958	0.309989929	0.451753616	0.579645157	0.642057419	0.728021622	0.918827057	0.930429459	0.859712601
624.389038	0.337135315	0.482837677	0.612394333	0.675233841	0.761522293	0.952470779	0.964159012	0.893535614
658.897522	0.369724274	0.518304825	0.649074554	0.712247849	0.798820496	0.990009308	1.00177193	0.931167603
700.307739	0.408742905	0.559379578	0.691072464	0.754529953	0.841381073	1.03291702	1.04475021	0.974107742
750	0.455440521	0.607543945	0.73997879	0.803699493	0.890836716	1.08282471	1.09473038	1.02399445
759.630676	0.465686798	0.624198914	0.769018173	0.842599869	0.949012756	1.20561028	1.2198143	1.12079239
771.1875	0.478590012	0.645132065	0.800783157	0.879932404	0.992557526	1.25251007	1.26767159	1.1696949
785.055664	0.494756699	0.66970253	0.833053589	0.915006638	1.02991486	1.29013062	1.30571747	1.208601
801.69751	0.514827728	0.697582245	0.86618042	0.949695587	1.06574059	1.32602119	1.34186172	1.24524689
821.667725	0.539459229	0.728919983	0.901147842	0.985652924	1.10241699	1.36284637	1.37886429	1.28253174
845.631958	0.569383621	0.764286041	0.939105988	1.02430916	1.14161682	1.40231514	1.4184761	1.32228279
874.389038	0.605466843	0.804603577	0.981348038	1.06709671	1.18487167	1.44597816	1.46226692	1.36610603
908.897522	0.648786545	0.851131439	1.02936363	1.11557198	1.23379517	1.4954567	1.5118618	1.41563988
950.307739	0.700695038	0.905445099	1.08490372	1.17153931	1.29022789	1.55260849	1.56913567	1.47277451
1000	0.762866974	0.96946907	1.15002251	1.23708916	1.356287	1.61957359	1.63623238	1.53965569

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 40m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.93E-01	0.001958847	0.017599106	0.050317764	0.073705673	0.110801697	0.160009384	0.280967712	0.478330612
4.24E-01	0.002901077	0.022294998	0.059427261	0.084980011	0.124774933	0.178182602	0.30002594	0.496833801
7.01E-01	0.003206253	0.023508072	0.061748505	0.087965012	0.128824234	0.184921265	0.306777954	0.502380371
1.03E+00	0.003343582	0.024129868	0.06310463	0.08980751	0.131467819	0.189580917	0.311441422	0.506132126
1.4333545	0.003452301	0.024681091	0.064331055	0.091470718	0.13381958	0.193569183	0.31543541	0.509397507
1.91263914	0.003568649	0.025259018	0.06558609	0.093145371	0.136119843	0.197277069	0.319152832	0.512496948
2.48778081	0.003705978	0.02589798	0.066932678	0.094907761	0.138469696	0.200889587	0.322778702	0.515577316
3.17795086	0.003858566	0.026620865	0.068410873	0.096801758	0.140924454	0.204509735	0.326412201	0.518714905
4.00615501	0.004045486	0.027452469	0.070058823	0.098871231	0.143535614	0.208208084	0.330127716	0.521970749
5	0.004268646	0.028419495	0.071907044	0.101148605	0.146337509	0.212043762	0.33398056	0.525392532
14.4380732	0.0066185	0.036474228	0.084920883	0.116107941	0.163480759	0.233243942	0.355283737	0.545057297
25.7637615	0.009731293	0.044998169	0.097085953	0.129522324	0.178218842	0.250371933	0.372484207	0.561315536
39.3545876	0.013767242	0.053964615	0.108779907	0.14207077	0.191652298	0.265367508	0.387535095	0.57575798
55.6635818	0.018848419	0.063337326	0.120203018	0.15410614	0.204307556	0.27910614	0.401313782	0.589120865
75.234375	0.025102615	0.073165894	0.131574631	0.165920258	0.216569901	0.29214859	0.414384842	0.601894379
98.7193298	0.032682419	0.083585739	0.1431427	0.177810669	0.228784561	0.304927826	0.427186966	0.614480972
126.901276	0.041763306	0.094820023	0.155210495	0.190113068	0.241321564	0.317876816	0.440153122	0.627288818
160.719604	0.052587509	0.107189178	0.168167114	0.203233719	0.254608154	0.331457138	0.453744888	0.640768051
201.301605	0.065477371	0.121135712	0.182510376	0.217691422	0.269182205	0.346240997	0.468536377	0.655481339
250	0.080833435	0.137161255	0.198797226	0.234056473	0.285629272	0.362844467	0.485145569	0.672027588
259.630676	0.089290619	0.17244339	0.279554367	0.344722748	0.44219017	0.586532593	0.830789566	1.20846748
271.1875	0.096017838	0.185623169	0.297977448	0.365264893	0.465223312	0.614385605	0.858762741	1.2344799
285.055695	0.104381561	0.199710846	0.31562233	0.384117126	0.485370636	0.636894226	0.881341934	1.2561245
301.69751	0.114707947	0.215019226	0.333501816	0.402795792	0.504878998	0.65789032	0.902389526	1.27659225
321.667694	0.12730217	0.231748581	0.352117538	0.421974182	0.524635315	0.678682327	0.923217773	1.29701996
345.631927	0.14250946	0.250244141	0.372001648	0.44226265	0.545343399	0.700145721	0.94470787	1.31821632
374.389008	0.16076088	0.270994186	0.393762589	0.464321136	0.567712784	0.723087311	0.967668533	1.34095192
408.897522	0.182588577	0.294631958	0.418130875	0.488908768	0.592535019	0.748355865	0.992952347	1.36605835
450.307739	0.20867157	0.321975708	0.445997238	0.516937256	0.62074852	0.776937485	1.0215435	1.39449692
500	0.23985672	0.354017258	0.47841835	0.549488068	0.653450012	0.809961319	1.05457497	1.42739487
509.630676	0.251338959	0.392477036	0.562644958	0.663845062	0.814098358	1.03891754	1.40547943	1.96852875
521.1875	0.261671066	0.409324646	0.584831238	0.688205719	0.841032028	1.07086563	1.43754959	1.99855423
535.055664	0.274349213	0.427814484	0.606981277	0.711614609	0.865804672	1.09815407	1.46491241	2.0249157
551.69751	0.289857864	0.448408127	0.630254745	0.735738754	0.890827179	1.12481689	1.49163055	2.05098915
571.667725	0.308677673	0.471504211	0.655347824	0.761440277	0.917173386	1.15234947	1.51920128	2.07809067
595.631958	0.331354141	0.497615814	0.682962418	0.789512634	0.945734024	1.18183136	1.54870987	2.10723305
624.389038	0.358570099	0.527494431	0.713975906	0.820877075	0.977487564	1.21434212	1.58124352	2.13945961
658.897522	0.391166687	0.562080383	0.749422073	0.856603622	1.01353264	1.25103951	1.61795616	2.17590141
700.307739	0.430166245	0.60253334	0.790550232	0.897966385	1.0551796	1.29329872	1.66022873	2.21791458
750	0.476858139	0.650297165	0.838861465	0.946485519	1.10396385	1.34268761	1.70962334	2.26704788
759.630676	0.491371155	0.691995621	0.926706314	1.06474495	1.2690258	1.57757568	2.06645584	2.8133831
771.1875	0.505306244	0.712539673	0.952722549	1.09301186	1.29997635	1.6137886	2.10279655	2.84757233
785.055664	0.522296906	0.735458374	0.979446411	1.12106514	1.32948875	1.64603233	2.13511848	2.87879944
801.69751	0.542985916	0.761384964	1.00819588	1.15073204	1.36014557	1.67854118	2.16768074	2.91062546
821.667725	0.568021774	0.790882111	1.03985023	1.18306732	1.39321899	1.71302414	2.20220757	2.9445858
845.631958	0.598171234	0.824680328	1.07531548	1.21906471	1.42980766	1.7507782	2.23999405	2.98189735
874.389038	0.634349823	0.86374855	1.11570168	1.25988388	1.47113037	1.79313278	2.28237152	3.02384758
908.897522	0.677709579	0.909360886	1.16237068	1.30692482	1.51861763	1.84158897	2.33084679	3.07190895
950.307739	0.729633331	0.963027954	1.21693039	1.36182404	1.57394981	1.89789963	2.38717079	3.12781143
1000	0.791828156	1.02661896	1.28133011	1.42655563	1.63912582	1.96412086	2.45340538	3.19358635

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 80m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.192613736	1.14441E-05	8.58307E-05	0.000244141	0.000442505	0.006134033	0.00444603	0.001991272	0.002086639
0.423750222	2.67029E-05	0.000219345	0.000606537	0.001270294	0.012966156	0.010547638	0.004943848	0.004634857
0.701114058	4.95911E-05	0.000387192	0.001092911	0.002561569	0.019071579	0.016687393	0.008672714	0.007699966
1.03395057	7.82013E-05	0.000593185	0.001752853	0.004335403	0.024461746	0.022478104	0.012941361	0.011289597
1.4333545	0.000114441	0.000844955	0.002649307	0.006563187	0.029388428	0.027973175	0.017564774	0.015342712
1.91263914	0.000160217	0.001157761	0.003839493	0.009197235	0.034072876	0.033298492	0.022439957	0.019786835
2.48778081	0.00021553	0.001543045	0.005374908	0.01219368	0.038661957	0.038557053	0.027519226	0.024559021
3.17795086	0.000282288	0.00202179	0.007286072	0.015529633	0.043264389	0.043834686	0.032787323	0.029623032
4.00615501	0.000368118	0.002626419	0.009597778	0.019191742	0.047958374	0.049192429	0.038251877	0.034963608
5	0.000476837	0.003398895	0.012327194	0.023181915	0.05280304	0.054681778	0.043920517	0.040569305
14.4380732	0.00195694	0.011964798	0.031709671	0.046867371	0.078748703	0.083112717	0.073558807	0.070371628
25.7637615	0.004304886	0.021957398	0.048944473	0.066263199	0.0990448	0.104780197	0.096067429	0.093095779
39.3545876	0.007738113	0.032684326	0.064548492	0.083087921	0.116268158	0.122821808	0.114677429	0.111881256
55.6635818	0.01240921	0.043771744	0.078979492	0.098262787	0.131633759	0.138717651	0.130975723	0.128311157
75.234375	0.018428803	0.055107117	0.092639923	0.11240387	0.145868301	0.153310776	0.145856857	0.143287659
98.7193298	0.025899887	0.066755295	0.10591507	0.126003265	0.159519196	0.16721344	0.15996933	0.157476425
126.901276	0.034967423	0.078941345	0.119224548	0.139532089	0.173080444	0.180942535	0.173835754	0.171388626
160.719604	0.045825958	0.092006683	0.133056641	0.153512955	0.187086105	0.195064545	0.188055038	0.185642242
201.301605	0.058759689	0.106420517	0.147981644	0.168540955	0.202135086	0.210193634	0.203248978	0.200862885
250	0.074159622	0.122758865	0.164649963	0.185279846	0.218902588	0.227018356	0.220111847	0.217739105
259.630676	0.078460693	0.133724213	0.189041138	0.221244812	0.283838272	0.294536591	0.277868271	0.272598267
271.1875	0.084249497	0.147619247	0.213188171	0.250066757	0.316324234	0.329624176	0.313545227	0.308124542
285.055695	0.09188652	0.163427353	0.235702515	0.274627686	0.341817856	0.356422424	0.341106415	0.335870743
301.69751	0.101703644	0.180591583	0.257246017	0.29725647	0.364818573	0.380182266	0.365385056	0.360309601
321.667694	0.113992691	0.199007034	0.278594971	0.319261551	0.387020111	0.402866364	0.388425827	0.383470535
345.631927	0.129056931	0.218894958	0.300487518	0.341585159	0.409467697	0.425642014	0.411445618	0.406576157
374.389008	0.147270203	0.24071312	0.323698044	0.365093231	0.433071136	0.449476242	0.4354496	0.430641174
408.897522	0.169113159	0.265129089	0.349082947	0.390695572	0.458770752	0.475347519	0.461435318	0.456666946
450.307739	0.195240021	0.293016434	0.377651215	0.419431686	0.487609863	0.504322052	0.49048233	0.485742569
500	0.226448059	0.325395584	0.410524368	0.452444077	0.520742416	0.537563324	0.523771286	0.519050598
509.630676	0.233751297	0.339378357	0.437961578	0.49155426	0.589315414	0.608839035	0.58515358	0.577522278
521.1875	0.243131638	0.356897354	0.465888977	0.524295807	0.625907898	0.648162842	0.625080109	0.617292404
535.055664	0.255073547	0.377090454	0.492982864	0.553541183	0.656196594	0.679855347	0.657564163	0.649969101
551.69751	0.270055771	0.399549484	0.520011902	0.58174324	0.684867859	0.709358215	0.687610626	0.680183411
571.667725	0.288543701	0.424329758	0.547904968	0.610368729	0.713773727	0.738811493	0.717435837	0.710136414
595.631958	0.311058044	0.451858521	0.577615738	0.640584946	0.744207382	0.769638062	0.748519897	0.74131012
624.389038	0.338220596	0.48283577	0.610162735	0.673509598	0.777332306	0.803060532	0.782123566	0.774980545
658.897522	0.370815277	0.518226624	0.646713257	0.710361481	0.814397812	0.840366364	0.819551468	0.812454224
700.307739	0.409835815	0.559251785	0.688627243	0.752540588	0.856815338	0.882995605	0.862262726	0.855197906
750	0.456546783	0.607387543	0.737482071	0.801647186	0.906202316	0.932582855	0.911907196	0.90486908
759.630676	0.466842651	0.624389648	0.767990112	0.843957901	0.978622437	1.00787163	0.977140427	0.967178345
771.1875	0.479810715	0.645545959	0.799770355	0.880741119	1.01951218	1.05167389	1.0215683	1.01144218
785.055664	0.496049881	0.670150757	0.831544876	0.914810181	1.05477142	1.08846664	1.05919266	1.04926872
801.69751	0.516183853	0.697944641	0.864168167	0.948722839	1.08927345	1.12390518	1.09521103	1.0854702
821.667725	0.54086113	0.729152679	0.898740768	0.984134674	1.12509346	1.16036606	1.13206673	1.12246323
845.631958	0.570808411	0.764385223	0.936407089	1.02241707	1.16372681	1.19949913	1.17148399	1.16197968
874.389038	0.606906891	0.804601669	0.978450775	1.06495094	1.20661354	1.24277115	1.21495438	1.20552635
908.897522	0.650234222	0.851051331	1.02633476	1.11326408	1.25531578	1.29182816	1.26415062	1.25477982
950.307739	0.702144623	0.905317307	1.08179665	1.16913605	1.31163788	1.34848595	1.3209095	1.31158257
1000	0.764312744	0.969305038	1.14685822	1.23462105	1.3776474	1.41485214	1.38735771	1.37807083

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 80m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.93E-01	0.002119064	0.018892288	0.053146362	0.076318741	0.104883194	0.227113724	0.370790482	0.537252426
4.24E-01	0.00312233	0.023813248	0.062496185	0.087741852	0.118736267	0.243333817	0.387996674	0.554893494
7.01E-01	0.003437042	0.025016785	0.064758301	0.090671539	0.122987747	0.247537613	0.391614914	0.558282852
1.03E+00	0.003570557	0.025608063	0.066049576	0.092460632	0.125793457	0.250263214	0.393848419	0.560317993
1.4333545	0.003679276	0.026134491	0.067224503	0.094076157	0.128263474	0.252681732	0.395872116	0.562181473
1.91263914	0.003795624	0.026697159	0.068445206	0.095718384	0.130666733	0.255058289	0.397909164	0.564079285
2.48778081	0.003931046	0.027328491	0.069766998	0.097450256	0.133111954	0.257490158	0.40004158	0.566085815
3.17795086	0.004089355	0.028047562	0.071224213	0.099317551	0.135660172	0.260040283	0.402313232	0.568243027
4.00615501	0.004278183	0.028881073	0.072853088	0.101358414	0.138362885	0.262756348	0.404771805	0.57059288
5	0.004505157	0.029851914	0.074682236	0.103607178	0.141265869	0.265686035	0.407453537	0.573171616
14.4380732	0.006908417	0.037906647	0.087490082	0.118349075	0.158838272	0.283452988	0.424259186	0.589586258
25.7637615	0.010074616	0.046377182	0.099452972	0.131584167	0.173862457	0.298631668	0.438867569	0.603971481
39.3545876	0.014148712	0.055263519	0.11097908	0.144004822	0.187509537	0.312417984	0.452280045	0.617231369
55.6635818	0.019262314	0.064548492	0.122262955	0.155935287	0.20031929	0.32532692	0.464931488	0.62978363
75.234375	0.025537491	0.074295044	0.133523941	0.167673111	0.212696075	0.337781906	0.477199554	0.641979218
98.7193298	0.033126831	0.084636688	0.144994736	0.179494858	0.224985123	0.350118637	0.489404678	0.65413475
126.901276	0.042207718	0.095811844	0.156999588	0.191755295	0.237588882	0.362771988	0.50195694	0.666648865
160.719604	0.053031921	0.108140945	0.169912338	0.204845428	0.250921249	0.37613678	0.51525116	0.679916382
201.301605	0.065921783	0.122051239	0.184217453	0.219274521	0.265518188	0.390752792	0.529819489	0.694465637
250	0.081277847	0.138065338	0.200492859	0.23563385	0.281993866	0.407241821	0.546272278	0.710905075
259.630676	0.089992523	0.174739838	0.283843994	0.348558426	0.433517456	0.683216095	0.963676453	1.29389572
271.1875	0.09677124	0.187879562	0.302032471	0.368869781	0.457023621	0.70693779	0.986297607	1.31607246
285.055695	0.105178833	0.201887131	0.319467545	0.387542725	0.47744751	0.727521896	1.00632477	1.33587646
301.69751	0.115539551	0.217094421	0.337171555	0.406084061	0.497144699	0.747341156	1.02579308	1.35520744
321.667694	0.128158569	0.233736038	0.355657578	0.425168991	0.517047882	0.767335892	1.04554367	1.37486458
345.631927	0.143377304	0.252149582	0.375436783	0.445384979	0.537858963	0.788215637	1.06624603	1.39549637
374.389008	0.161634445	0.272829056	0.397115707	0.467382431	0.560297012	0.810699463	1.08859825	1.417799
408.897522	0.183454514	0.296411514	0.421422958	0.491924286	0.585174561	0.835609436	1.11340332	1.44256401
450.307739	0.20954895	0.323732376	0.449258804	0.519935608	0.613441467	0.863897324	1.14160919	1.47073746
500	0.240720749	0.355737686	0.481637955	0.552452087	0.646165848	0.896631241	1.17426872	1.50337029
509.630676	0.25245285	0.395544052	0.568351746	0.668928146	0.80169487	1.17655563	1.5953846	2.08998299
521.1875	0.26282692	0.412345886	0.590295792	0.693048477	0.829105377	1.20418358	1.62187576	2.11601448
535.055664	0.275554657	0.430761337	0.612239838	0.716279984	0.854171753	1.22941589	1.64652061	2.14042854
551.69751	0.29110527	0.451271057	0.635351181	0.740280151	0.879411697	1.25478554	1.67150879	2.16526604
571.667725	0.309936523	0.474250793	0.660284042	0.765859604	0.905891418	1.2813549	1.69780159	2.19145012
595.631958	0.332630157	0.50028801	0.687795639	0.793859482	0.934577942	1.310112	1.72634697	2.21991348
624.389038	0.359851837	0.530096054	0.718719482	0.825159073	0.966417313	1.34199715	1.75806046	2.25156021
658.897522	0.392448425	0.564626694	0.754102707	0.860837936	1.00253868	1.37815285	1.79406548	2.28750992
700.307739	0.43144989	0.605049133	0.795185089	0.902168274	1.0442524	1.41988373	1.83566093	2.32905197
750	0.478153229	0.652791977	0.843458176	0.950654984	1.09309387	1.46873474	1.88437843	2.37771988
759.630676	0.492893219	0.695760727	0.933639526	1.07084846	1.25292969	1.75288773	2.30941391	2.96813583
771.1875	0.506874084	0.716257095	0.959409714	1.09886932	1.28436852	1.78455734	2.33990097	2.99814415
785.055664	0.523916245	0.739110947	0.985929489	1.12674522	1.31419373	1.81455231	2.36926651	3.02725983
801.69751	0.54463768	0.764944077	1.01450348	1.1562767	1.34507561	1.84556198	2.39985275	3.05768204
821.667725	0.569694519	0.794338226	1.04599953	1.18848801	1.37830925	1.87889481	2.43286324	3.09056664
845.631958	0.599840164	0.82803154	1.08132744	1.22437668	1.41501427	1.91565895	2.46936035	3.12696266
874.389038	0.636032104	0.867042542	1.12162971	1.26513672	1.45645905	1.95715904	2.51063156	3.16814423
908.897522	0.679391861	0.912590027	1.16821671	1.31211281	1.50404167	2.00477409	2.55803108	3.21546173
950.307739	0.731313705	0.966213226	1.22271347	1.36696053	1.55946541	2.060215	2.61325836	3.27060509
1000	0.793502808	1.02975464	1.28702927	1.43161583	1.62469673	2.12544823	2.6782608	3.33552361

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 160m

Multiple pumping rates

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.192613736	1.14441E-05	8.96454E-05	0.000724792	0.0122509	0.000802994	0.001216888	0.001684189	0.002048492
0.423750222	2.86102E-05	0.00022316	0.002073288	0.019258499	0.00210762	0.0027771	0.003679276	0.004289627
0.701114058	5.34058E-05	0.000398636	0.003807068	0.023525238	0.003889084	0.00462532	0.005886078	0.006662369
1.03395057	8.2016E-05	0.000612259	0.005737305	0.026733398	0.006093979	0.006790161	0.008317947	0.009214401
1.4333545	0.000120163	0.00087738	0.007781982	0.029537201	0.008659363	0.009305954	0.01102066	0.011995316
1.91263914	0.000165939	0.001213074	0.00992012	0.032207489	0.011550903	0.012199402	0.014032364	0.015050888
2.48778081	0.00022316	0.00164032	0.012168884	0.034894943	0.014749527	0.015481949	0.01738739	0.01842308
3.17795086	0.000293732	0.002187729	0.014562607	0.037691116	0.018257141	0.019161224	0.021112442	0.022146225
4.00615501	0.00038147	0.002887726	0.01714325	0.040660858	0.022079468	0.023241043	0.025226593	0.026247025
5	0.000494003	0.003782272	0.019952774	0.043861389	0.026227951	0.027713776	0.029737473	0.030740738
14.4380732	0.002019882	0.012804031	0.038068771	0.063520432	0.050691605	0.054141998	0.056501389	0.057502747
25.7637615	0.004426956	0.022842407	0.054058075	0.080291748	0.070590973	0.075376511	0.078016281	0.079071045
39.3545876	0.007913589	0.033418655	0.068693161	0.095312119	0.08773613	0.093437195	0.096290588	0.097402573
55.6635818	0.012619019	0.044309616	0.08241272	0.109218597	0.103134155	0.109460831	0.112462997	0.113622665
75.234375	0.01865387	0.055452347	0.095546722	0.122428894	0.117406845	0.124195099	0.127326965	0.128528595
98.7193298	0.026124954	0.066944122	0.108444214	0.135360718	0.131101608	0.138212204	0.141427994	0.142662048
126.901276	0.035179138	0.079008102	0.121486664	0.148418427	0.144683838	0.152006149	0.155281067	0.156539917
160.719604	0.046016693	0.091981888	0.135129929	0.162071228	0.158700943	0.16617775	0.169500351	0.170776367
201.301605	0.058929443	0.106330872	0.149930954	0.176879883	0.17375946	0.181350708	0.184703827	0.185991287
250	0.074306488	0.122627258	0.166526794	0.193492889	0.190542221	0.19821167	0.20158577	0.202882767
259.630676	0.078643799	0.134130478	0.197080612	0.248279572	0.229841232	0.240003586	0.245534897	0.247837067
271.1875	0.084482193	0.148294449	0.220727921	0.273855209	0.259618759	0.271593094	0.277557373	0.279928207
285.055695	0.092172623	0.164052963	0.242139816	0.295976639	0.28468895	0.297933578	0.30418396	0.306619644
301.69751	0.102027893	0.181032181	0.262811661	0.316984177	0.307641983	0.321737289	0.328199387	0.330698013
321.667694	0.114332199	0.199241638	0.283531189	0.337865829	0.329854965	0.344535828	0.351156235	0.353708267
345.631927	0.129392624	0.218946457	0.304979324	0.35940361	0.352312088	0.367408752	0.374147415	0.376743317
374.389008	0.147584915	0.240625381	0.327878952	0.382368088	0.375928879	0.39132309	0.398147583	0.400777817
408.897522	0.169404984	0.264938354	0.353055954	0.407606125	0.401618958	0.417238235	0.424131393	0.42678833
450.307739	0.195491791	0.292743683	0.381477356	0.436098099	0.430419922	0.446201324	0.453149796	0.455827713
500	0.226675034	0.32507515	0.414268494	0.46897316	0.463512421	0.479427338	0.486423492	0.489120483
509.630676	0.234010696	0.339595795	0.447984695	0.527360916	0.506151199	0.524681091	0.533908844	0.537651062
521.1875	0.243440628	0.357391357	0.475452423	0.556844711	0.539968491	0.560403824	0.570104599	0.57393074
535.055664	0.255434036	0.377544403	0.501443863	0.583618164	0.569818497	0.591608047	0.601621628	0.605518341
551.69751	0.270450592	0.399820328	0.527589798	0.610160828	0.598400116	0.621112823	0.63136673	0.635339737
571.667725	0.288955688	0.424396515	0.55484581	0.637641907	0.627288818	0.650657654	0.661094666	0.665130615
595.631958	0.311462402	0.451742172	0.584102631	0.667058945	0.6577034	0.68155098	0.692131042	0.696220398
624.389038	0.338602066	0.482574463	0.616333008	0.699426651	0.690792084	0.715009689	0.7257061	0.729839325
658.897522	0.371160507	0.517852783	0.652664185	0.735906601	0.72779274	0.752305984	0.763101578	0.767276764
700.307739	0.410144806	0.558794022	0.694431305	0.777845383	0.770111084	0.794876099	0.805761337	0.80997467
750	0.456811905	0.606878281	0.743211746	0.826835632	0.819393158	0.84438324	0.855354309	0.859601974
759.630676	0.467142105	0.624412537	0.780134201	0.889003754	0.865468979	0.893238068	0.906557083	0.911909103
771.1875	0.480154037	0.645849228	0.811504364	0.92250824	0.903488159	0.933290482	0.947135925	0.952589035
785.055664	0.49643898	0.670425415	0.842168808	0.954048157	0.938261032	0.969535828	0.983730316	0.989269257
801.69751	0.516607285	0.698043823	0.873901367	0.98626709	0.972660065	1.00496292	1.01943398	1.02506065
821.667725	0.54129982	0.729043961	0.907821655	1.02050591	1.00842285	1.04147911	1.05617332	1.06188011
845.631958	0.571243286	0.764095306	0.945026398	1.05796814	1.04699898	1.08063507	1.09551239	1.10128975
874.389038	0.607318878	0.804162979	0.986743927	1.09993935	1.08979607	1.12390709	1.13894272	1.14478302
908.897522	0.650611877	0.850496292	1.03440666	1.14788055	1.13835907	1.17288399	1.18806839	1.19396973
950.307739	0.702489853	0.904689789	1.08973694	1.2035408	1.19451714	1.22942162	1.24474716	1.25070381
1000	0.76461792	0.968616486	1.15471649	1.26891136	1.26031113	1.29560661	1.31109428	1.31712341

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 160m
 Multiple pumping rates
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.93E-01	0.002229691	0.019493103	0.050167084	0.061143875	0.147069931	0.269910812	0.393350601	0.542606354
4.24E-01	0.003276825	0.024517059	0.0592556	0.071424484	0.16116333	0.286880493	0.411464691	0.561218262
7.01E-01	0.00359726	0.02570343	0.061565399	0.074630737	0.163738251	0.289356232	0.413917542	0.563652039
1.03E+00	0.003726959	0.026266098	0.062904358	0.076696396	0.165138245	0.290586472	0.415094376	0.564798355
1.4333545	0.003831863	0.026771545	0.064117432	0.078521729	0.166448593	0.291763306	0.416227341	0.565906525
1.91263914	0.003946304	0.027318955	0.065357208	0.080314636	0.167806625	0.293022156	0.417449951	0.567110062
2.48778081	0.004079819	0.027938843	0.066690445	0.082181931	0.169298172	0.294433594	0.418832779	0.568471909
3.17795086	0.004238129	0.028652191	0.068157196	0.084178925	0.170965195	0.296033859	0.420402527	0.570020676
4.00615501	0.004428864	0.029485703	0.069791794	0.086355209	0.172822952	0.297838211	0.422180176	0.571781158
5	0.00466156	0.03045845	0.071628571	0.088748932	0.174913406	0.299882889	0.424201965	0.573781967
14.4380732	0.007099152	0.03850174	0.084552765	0.10452652	0.189329147	0.314178467	0.438417435	0.587924957
25.7637615	0.01030159	0.046936035	0.096668243	0.118654251	0.202552795	0.327346802	0.451545715	0.601011276
39.3545876	0.01440239	0.055747986	0.108308792	0.131778717	0.215026855	0.339792252	0.463968277	0.613409042
55.6635818	0.019525528	0.06496048	0.119707108	0.144289017	0.227054596	0.351800919	0.475961685	0.625385284
75.234375	0.025800705	0.074632645	0.131044388	0.156457901	0.238861084	0.36359787	0.487752914	0.637166977
98.7193298	0.033374786	0.084917069	0.142587662	0.168622971	0.25075531	0.375486374	0.499635696	0.64904213
126.901276	0.042446137	0.096048355	0.154644012	0.18113327	0.263074875	0.387794495	0.511940002	0.661338806
160.719604	0.053253174	0.108337402	0.16758728	0.19439888	0.276203156	0.400918961	0.525060654	0.674455643
201.301605	0.066120148	0.122215271	0.181911469	0.208944321	0.290649414	0.415365219	0.539505005	0.688898087
250	0.081453323	0.138206482	0.198198318	0.225381851	0.307016373	0.43173027	0.555870056	0.705263138
259.630676	0.090332031	0.175451279	0.278503418	0.32387352	0.491113663	0.740722656	0.989143372	1.28808594
271.1875	0.097146988	0.188554764	0.296852112	0.345319748	0.511083603	0.760576248	1.00892258	1.30779266
285.055695	0.105581284	0.202495575	0.314430237	0.364871979	0.529745102	0.779184341	1.02749443	1.32632637
301.69751	0.115953445	0.217622757	0.332258224	0.384101868	0.548358917	0.797773361	1.04606438	1.34487534
321.667694	0.128566742	0.23418045	0.350837708	0.403711319	0.567518234	0.816919327	1.0651989	1.3639946
345.631927	0.143774033	0.252523422	0.370693207	0.42432785	0.58780098	0.837190628	1.08546448	1.38425064
374.389008	0.162004471	0.273143768	0.392425537	0.446620941	0.609844208	0.859226227	1.10749435	1.40627289
408.897522	0.183805466	0.296682358	0.416772842	0.471380234	0.634414673	0.883789063	1.13205338	1.43083
450.307739	0.209857941	0.323953629	0.444623947	0.499534607	0.662425995	0.911792755	1.16005325	1.45882416
500	0.241008759	0.35593605	0.477025986	0.532167435	0.694940567	0.944299698	1.1925602	1.49132919
509.630676	0.252901077	0.39629364	0.560680389	0.634281158	0.882398605	1.25658607	1.62910271	2.07740784
521.1875	0.263311386	0.413051605	0.582771301	0.659532547	0.906129837	1.28020096	1.65264702	2.10088158
535.055664	0.276060104	0.431396484	0.604852676	0.683654785	0.929330826	1.30335045	1.67576027	2.12395668
551.69751	0.29161644	0.451816559	0.628080368	0.708353043	0.953386307	1.32737923	1.69976997	2.1479435
571.667725	0.310447693	0.474720001	0.653120041	0.734491348	0.979036331	1.35301399	1.72539139	2.17354965
595.631958	0.333120346	0.500675201	0.680702209	0.762910843	1.00708008	1.38104248	1.75341225	2.20155716
624.389038	0.36031723	0.530416489	0.711685181	0.794538498	1.03840637	1.41235542	1.78471947	2.23285866
658.897522	0.392877579	0.564889908	0.747102737	0.830461502	1.07408524	1.44801903	1.82037735	2.26851082
700.307739	0.431846619	0.605262756	0.788208008	0.871976852	1.11538887	1.48930931	1.86166191	2.30978775
750	0.478507996	0.652965546	0.83650589	0.920629501	1.16384888	1.53774834	1.91009331	2.35821533
759.630676	0.493406296	0.696453094	0.923595428	1.02653885	1.35473251	1.85337067	2.34994507	2.94759178
771.1875	0.507410049	0.716890335	0.949491501	1.05567932	1.38232231	1.88084602	2.37734985	2.97492599
785.055664	0.52447319	0.739671707	0.976150513	1.08446693	1.41015625	1.90863228	2.40509987	3.00263214
801.69751	0.545204163	0.765422821	1.00485611	1.11473846	1.43973541	1.93818474	2.43463326	3.03214073
821.667725	0.570253372	0.794725418	1.03644943	1.14753151	1.4719944	1.97042274	2.466856	3.06434822
845.631958	0.600389481	0.82834816	1.0718708	1.18389893	1.50792122	2.00633049	2.50275421	3.10023499
874.389038	0.636550903	0.867284775	1.11222649	1.22502136	1.54867363	2.04706192	2.54347801	3.14094734
908.897522	0.679870605	0.912763596	1.15885353	1.27228928	1.59561539	2.09397888	2.59038734	3.18784714
950.307739	0.731767654	0.966344833	1.21339607	1.32740021	1.65041924	2.14875412	2.64515305	3.2426033
1000	0.793914795	1.02983665	1.27774239	1.39228249	1.7149868	2.21329117	2.70968056	3.30712509

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 250m

Multiple pumping rates

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.192613736	1.14441E-05	8.96454E-05	0.000442505	0.000463486	0.000734329	0.001253128	0.001708984	0.002069473
0.423750222	2.86102E-05	0.000236511	0.001235962	0.001111984	0.001718521	0.002847672	0.003738403	0.004335403
0.701114058	5.34058E-05	0.000444412	0.002300262	0.001937866	0.002916336	0.004699707	0.005975723	0.00674057
1.03395057	8.39233E-05	0.000734329	0.00356102	0.002973557	0.004346848	0.006811142	0.008426666	0.009317398
1.4333545	0.00012207	0.001123428	0.00497818	0.00425911	0.006048203	0.00919342	0.011110306	0.012105942
1.91263914	0.000169754	0.001630783	0.006551743	0.005830765	0.008058548	0.011867523	0.014053345	0.015140533
2.48778081	0.000226974	0.002264023	0.008295059	0.007717133	0.010412216	0.014852524	0.017280579	0.018442154
3.17795086	0.000299454	0.003036499	0.010242462	0.009944916	0.013137817	0.018173218	0.020814896	0.022045136
4.00615501	0.000389099	0.003961563	0.012432098	0.012537003	0.016263962	0.021852493	0.024684906	0.025972366
5	0.00050354	0.005060196	0.01490593	0.015520096	0.019805908	0.025915146	0.028911591	0.030248642
14.4380732	0.002065659	0.01440239	0.032180786	0.035915375	0.042871475	0.050901413	0.054430008	0.055898666
25.7637615	0.004520416	0.024347305	0.047899246	0.053804398	0.062438965	0.071557999	0.075363159	0.076896668
39.3545876	0.008047104	0.034729004	0.062444687	0.069852829	0.079593658	0.089403153	0.093383789	0.094961166
55.6635818	0.012781143	0.045423508	0.076129913	0.084590912	0.095087051	0.105363846	0.109466553	0.111076355
75.234375	0.018829346	0.056406021	0.089256287	0.098466873	0.109487534	0.120090485	0.124282837	0.125919342
98.7193298	0.026306152	0.067773819	0.102148056	0.1118927	0.123287201	0.134122849	0.138378143	0.140035629
126.901276	0.035354614	0.079742432	0.115186691	0.125305176	0.136960983	0.147960663	0.152263641	0.153936386
160.719604	0.046186447	0.09264946	0.128831863	0.139209747	0.151046753	0.162164688	0.166501999	0.168186188
201.301605	0.059091568	0.106956482	0.143632889	0.154186249	0.166151047	0.177352905	0.181715012	0.183408737
250	0.074462891	0.123222351	0.1602211	0.170890808	0.182939529	0.194200516	0.198583603	0.200284958
259.630676	0.078826904	0.135923386	0.185890198	0.198720932	0.216014862	0.233793259	0.241226196	0.244262695
271.1875	0.084709168	0.150373459	0.208459854	0.224123001	0.244129181	0.264122009	0.272245407	0.275482178
285.055695	0.092441559	0.16601181	0.229616165	0.247318268	0.268924713	0.289993286	0.298406601	0.301717758
301.69751	0.102329254	0.182790756	0.250219345	0.269298553	0.29192543	0.313646317	0.3222332	0.325593948
321.667694	0.114648819	0.200820923	0.270921707	0.290948868	0.314260483	0.336420059	0.34513092	0.348526001
345.631927	0.129713058	0.220384598	0.292366028	0.313055038	0.336847305	0.359319687	0.368122101	0.371547699
374.389008	0.147903442	0.241958618	0.315261841	0.336421967	0.360553741	0.383253098	0.392124176	0.395572662
408.897522	0.169713974	0.266201019	0.340436935	0.361930847	0.386314392	0.409189224	0.418115616	0.421585083
450.307739	0.195796967	0.293958664	0.368854523	0.39058876	0.415159225	0.438173294	0.447145462	0.450632095
500	0.226974487	0.326267242	0.40164566	0.423559189	0.448280334	0.471414566	0.480430603	0.483934402
509.630676	0.234336853	0.341981888	0.430450439	0.45457077	0.484647751	0.514461517	0.52661705	0.53150177
521.1875	0.243806839	0.360080719	0.456832886	0.483861923	0.516756058	0.548894882	0.561786652	0.566884995
535.055664	0.255844116	0.380121231	0.482564926	0.511716843	0.546300888	0.579597473	0.59280777	0.597993851
551.69751	0.270893097	0.402198792	0.508646011	0.539255142	0.57493782	0.608955383	0.622365952	0.627607346
571.667725	0.289413452	0.426593781	0.535884857	0.56751442	0.603956223	0.638479233	0.652036667	0.657323837
595.631958	0.311925888	0.453796387	0.565134048	0.597499847	0.634492874	0.669391632	0.683065414	0.688392639
624.389038	0.339063644	0.484523773	0.597360611	0.630268097	0.667675018	0.70287323	0.716644287	0.722005844
658.897522	0.371616364	0.519733429	0.633687973	0.667007446	0.704746246	0.740196228	0.754055023	0.759449005
700.307739	0.410593033	0.560632706	0.675449371	0.709093094	0.747110367	0.782785416	0.796724319	0.802152634
750	0.457250595	0.608682632	0.724212646	0.758131027	0.796401978	0.832296371	0.846321106	0.851781845
759.630676	0.467603683	0.627418518	0.756206512	0.792387009	0.836166382	0.878967285	0.896251678	0.903152466
771.1875	0.480657578	0.649181366	0.78647995	0.825675964	0.87241745	0.917695999	0.935777664	0.942914963
785.055664	0.496984482	0.673652649	0.816886902	0.858325958	0.906881332	0.953432083	0.971876144	0.979114532
801.69751	0.517183304	0.701076508	0.848556519	0.89156723	0.941331863	0.988702774	1.00738144	1.0146904
821.667725	0.541891098	0.731895447	0.882461548	0.926599503	0.977230072	1.02519989	1.04406357	1.05143356
845.631958	0.571840286	0.766805649	0.919664383	0.964639664	1.01592827	1.06437302	1.0833931	1.0908165
874.389038	0.607912064	0.806768417	0.96137619	1.00700188	1.05881882	1.10766792	1.12682724	1.13430405
908.897522	0.651201248	0.853034973	1.0090332	1.05518723	1.10745621	1.15667725	1.17597008	1.18350029
950.307739	0.703063965	0.907171249	1.06434059	1.11094856	1.16363716	1.2132225	1.23265839	1.24024391
1000	0.765190125	0.97108078	1.12931442	1.17634392	1.22945023	1.27941704	1.29900169	1.30664825

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 250m

Multiple pumping rates

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.93E-01	0.002285004	0.01914978	0.061683655	0.100973129	0.161777496	0.27904129	0.399551392	0.564086914
4.24E-01	0.003353119	0.024110794	0.071340561	0.113435745	0.177024841	0.296895981	0.418462753	0.583433151
7.01E-01	0.003677368	0.025299072	0.073230743	0.115421295	0.17914772	0.299137115	0.420742035	0.58572197
1.03E+00	0.003805161	0.025871277	0.074178696	0.116319656	0.18006134	0.300081253	0.421691895	0.586673737
1.4333545	0.003908157	0.026384354	0.075048447	0.117170334	0.180938721	0.300992966	0.422615051	0.587594986
1.91263914	0.004022598	0.026935577	0.07598114	0.118110657	0.181926727	0.302024841	0.423658371	0.588640213
2.48778081	0.004156113	0.02755928	0.07701683	0.119182587	0.183059692	0.303211212	0.424856186	0.589839935
3.17795086	0.004314423	0.028272629	0.07818985	0.120410919	0.184364319	0.304576874	0.426237106	0.591222763
4.00615501	0.004505157	0.029100418	0.079530716	0.121829987	0.185871124	0.306148529	0.427825928	0.592813492
5	0.004737854	0.030069351	0.081073761	0.123466492	0.187610626	0.30796051	0.429653168	0.594642639
14.4380732	0.007200241	0.038089752	0.092761993	0.135749817	0.200475693	0.321203232	0.442977905	0.607975006
25.7637615	0.010425568	0.04652977	0.104160309	0.147583008	0.212726593	0.333717346	0.45554924	0.620550156
39.3545876	0.014547348	0.055364609	0.115364075	0.159101486	0.22454834	0.345733643	0.467605591	0.632610321
55.6635818	0.019683838	0.064601898	0.126470566	0.170438766	0.236110687	0.357439041	0.479343414	0.644350052
75.234375	0.025966644	0.074306488	0.137628555	0.18176651	0.247606277	0.369041443	0.490968704	0.655979156
98.7193298	0.03354454	0.084615707	0.149045944	0.193307877	0.259271622	0.380786896	0.502733231	0.667747498
126.901276	0.042613983	0.095758438	0.161001205	0.205348969	0.271400452	0.392972946	0.514932632	0.679950714
160.719604	0.053415299	0.108058929	0.173883438	0.218292236	0.284406662	0.406023026	0.527992249	0.693012238
201.301605	0.06627655	0.121952057	0.188173294	0.232625961	0.298786163	0.420431137	0.54240799	0.707429886
250	0.081611633	0.13794899	0.204427719	0.248908997	0.315095901	0.436759949	0.558742523	0.72376442
259.630676	0.090578079	0.174791336	0.293771744	0.380853653	0.511369705	0.753475189	0.997159958	1.3271637
271.1875	0.097412109	0.187879562	0.310811996	0.398513794	0.529664993	0.772211075	1.01600266	1.34602356
285.055695	0.105867386	0.201835632	0.327722549	0.415843964	0.547401428	0.790206909	1.03405571	1.36408234
301.69751	0.116258621	0.216991425	0.345151901	0.433567047	0.565410614	0.8083992	1.05228806	1.3823185
321.667694	0.12887764	0.233575821	0.363487244	0.452112198	0.584165573	0.827289581	1.07120895	1.40124321
345.631927	0.144083023	0.251945496	0.383172989	0.471950531	0.604152679	0.84737587	1.09131813	1.42135811
374.389008	0.162315369	0.272586823	0.404787064	0.49366951	0.625982285	0.869277954	1.11323738	1.44327927
408.897522	0.184110641	0.296146393	0.42905426	0.518014908	0.650407791	0.893754959	1.13772774	1.46777344
450.307739	0.210161209	0.323425293	0.456829071	0.545843124	0.678293228	0.921682358	1.16566467	1.49571228
500	0.241308212	0.355421066	0.489181519	0.578235626	0.710729599	0.954147339	1.19813919	1.52818871
509.630676	0.25328064	0.395357132	0.581701279	0.713335037	0.910152435	1.27401543	1.63970757	2.13473892
521.1875	0.263717651	0.412107468	0.602462769	0.734731674	0.932199478	1.29651451	1.66231918	2.15736771
535.055664	0.276491165	0.430465698	0.623847961	0.756551743	0.954442978	1.31903076	1.68489456	2.17994881
551.69751	0.292058945	0.450910568	0.646656036	0.779668808	0.977865219	1.34264755	1.70855522	2.20361519
571.667725	0.310899734	0.473842621	0.671419144	0.804656982	1.00307465	1.36800003	1.73394203	2.22900581
595.631958	0.333574295	0.499822617	0.698802948	0.832204819	1.03078842	1.39582443	1.76179123	2.25686073
624.389038	0.360771179	0.529590607	0.729639053	0.863161087	1.06186867	1.4269886	1.79297447	2.28804779
658.897522	0.393323898	0.564083099	0.764940262	0.898553848	1.0973587	1.46254349	1.82854652	2.32362366
700.307739	0.432289124	0.604471207	0.805938721	0.939619064	1.1384964	1.50373268	1.86974907	2.36482811
750	0.478939056	0.652175903	0.854122162	0.987855911	1.18679428	1.55207443	1.91810226	2.41318512
759.630676	0.493915558	0.695238113	0.949888229	1.1261692	1.389431	1.87516022	2.36289024	3.02295494
771.1875	0.507946014	0.715667725	0.97441864	1.15135765	1.41529274	1.90149307	2.38934135	3.04942322
785.055664	0.525030136	0.738458633	1.00033951	1.17773819	1.44212151	1.92861176	2.41652298	3.07661247
801.69751	0.545772552	0.764232635	1.02859116	1.20632362	1.4710331	1.95773506	2.44569397	3.10579109
821.667725	0.570829391	0.793563843	1.05986977	1.23784637	1.50279808	1.98965836	2.47765541	3.13775826
845.631958	0.600969315	0.827217102	1.09505463	1.27321434	1.53835297	2.02533913	2.51336479	3.17347336
874.389038	0.63712883	0.866174698	1.13521576	1.31351471	1.5788002	2.06588554	2.553936	3.21404839
908.897522	0.680446625	0.911678314	1.18167496	1.36008263	1.62548637	2.11265373	2.60072517	3.26084137
950.307739	0.7323246	0.965259552	1.23603439	1.41453171	1.68003464	2.16727257	2.65536308	3.31548309
1000	0.794477463	1.02877235	1.30021477	1.47878838	1.74438095	2.23168373	2.71979141	3.37991524

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 500m

Multiple pumping rates

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
0.192613736	1.14441E-05	0.000108719	0.000320435	0.00047493	0.000734329	0.001226425	0.001661301	0.00201416
0.423750222	2.86102E-05	0.000270844	0.000774384	0.001132965	0.001720428	0.00279808	0.003658295	0.004262924
0.701114058	5.34058E-05	0.000476837	0.001333237	0.001937866	0.002918243	0.004631042	0.005880356	0.006666183
1.03395057	8.2016E-05	0.000728607	0.002008438	0.002904892	0.004343033	0.006729126	0.008323669	0.009248734
1.4333545	0.000120163	0.00103569	0.002822876	0.004068375	0.006029129	0.009101868	0.011007309	0.012048721
1.91263914	0.000167847	0.001413345	0.003807068	0.005462646	0.00800705	0.011770248	0.01395607	0.015096664
2.48778081	0.000228882	0.001876831	0.004991531	0.00712204	0.01030159	0.014749527	0.017190933	0.018419266
3.17795086	0.000305176	0.002447128	0.006414413	0.009084702	0.012939453	0.01805687	0.02073288	0.022039414
4.00615501	0.000402451	0.003149033	0.008117676	0.011384964	0.015945435	0.02171135	0.024604797	0.025981903
5	0.000530243	0.004009247	0.01014328	0.014060974	0.019342423	0.025730133	0.028823853	0.030265808
14.4380732	0.002222061	0.012414932	0.026124954	0.033246994	0.041576386	0.050275803	0.054065704	0.055725098
25.7637615	0.004753113	0.021913528	0.041431427	0.050571442	0.060647965	0.070581436	0.074728012	0.076498032
39.3545876	0.008300781	0.032104492	0.055942535	0.066389084	0.077537537	0.088195801	0.092546463	0.094381332
55.6635818	0.013011932	0.042732239	0.069742203	0.081066132	0.092908859	0.10402298	0.108503342	0.110378265
75.234375	0.019014359	0.053703308	0.083028793	0.094955444	0.107263565	0.118682861	0.123249054	0.125148773
98.7193298	0.026433945	0.065084457	0.096082687	0.108428955	0.121059418	0.132688522	0.137313843	0.139232635
126.901276	0.035423279	0.077062607	0.10925293	0.121892929	0.134746552	0.146522522	0.151189804	0.153121948
160.719604	0.046197891	0.089977264	0.122991562	0.13583374	0.14884758	0.160728455	0.165426254	0.167369843
201.301605	0.059049606	0.104288101	0.137863159	0.150842667	0.163963318	0.175920486	0.180641174	0.182594299
250	0.074373245	0.120544434	0.154491425	0.167566299	0.180761337	0.192773819	0.19751358	0.199472427
259.630676	0.07882309	0.131902695	0.175354004	0.193559647	0.213005066	0.231946945	0.239900589	0.243335724
271.1875	0.084796906	0.145519257	0.196538925	0.217874527	0.240402222	0.261867523	0.270648956	0.274360657
285.055695	0.092567444	0.160799026	0.217391968	0.240613937	0.264783859	0.287433624	0.296567917	0.300390244
301.69751	0.102436066	0.177444458	0.238044739	0.262449265	0.287591934	0.310907364	0.320232391	0.324117661
321.667694	0.114706039	0.19543457	0.258893967	0.284078598	0.309843063	0.333581924	0.34303093	0.346956253
345.631927	0.129699707	0.215003967	0.280511856	0.306232452	0.332420349	0.356445313	0.365980148	0.369932175
374.389008	0.147817612	0.236591339	0.303554535	0.329652786	0.356142044	0.380374908	0.389974594	0.393951416
408.897522	0.169559479	0.26084137	0.328838348	0.355207443	0.381917953	0.406312943	0.415966034	0.419961929
450.307739	0.195575714	0.288599014	0.357330322	0.383899689	0.410779953	0.435306549	0.445005417	0.449020386
500	0.226696014	0.320896149	0.390155792	0.416883469	0.443904877	0.468547821	0.478290558	0.482322693
509.630676	0.234140396	0.335273743	0.414123535	0.446052551	0.479436874	0.511175156	0.524219513	0.529773712
521.1875	0.243700027	0.352529526	0.439086914	0.474239349	0.510820389	0.545198441	0.559120178	0.564966202
535.055664	0.25576973	0.372203827	0.464508057	0.501630783	0.53994751	0.575593948	0.58989063	0.595869064
551.69751	0.270797729	0.394147873	0.490631104	0.529014587	0.568382263	0.604766846	0.619291306	0.625335693
571.667725	0.289262772	0.41850853	0.518024445	0.557260513	0.597322464	0.63419342	0.648866653	0.654960632
595.631958	0.311702728	0.445713043	0.547445297	0.587284088	0.627840042	0.665065765	0.679851532	0.685985565
624.389038	0.338760376	0.476449966	0.579814911	0.620100021	0.661031723	0.698535919	0.713415146	0.719583511
658.897522	0.371240616	0.511665344	0.616247177	0.656881332	0.698112488	0.735855103	0.750818253	0.75702095
700.307739	0.410146713	0.552558899	0.65807724	0.698997498	0.74048996	0.778450012	0.793495178	0.799730301
750	0.456741333	0.600601196	0.706878662	0.74805069	0.7897892	0.82796669	0.843097687	0.849369049
759.630676	0.46717453	0.618009567	0.733987808	0.780460358	0.828714371	0.874206543	0.892763138	0.900617599
771.1875	0.480314255	0.638923645	0.762804031	0.81262207	0.864227295	0.91252327	0.93201828	0.940193176
785.055664	0.496675491	0.66301918	0.792877197	0.844783783	0.898256302	0.947940826	0.96786499	0.976182938
801.69751	0.51685524	0.690303802	0.824581146	0.877855301	0.932489395	0.983013153	1.00319672	1.0116024
821.667725	0.541507721	0.721088409	0.858638763	0.912866592	0.968299866	1.01940727	1.03977966	1.0482502
845.631958	0.571382523	0.756000519	0.896011353	0.950942993	1.00697517	1.05853462	1.07905769	1.08758545
874.389038	0.607376099	0.795972824	0.937871933	0.993354797	1.04987144	1.10181427	1.12247658	1.13105774
908.897522	0.650585175	0.842247009	0.985635757	1.04158211	1.09852028	1.15081978	1.1716156	1.18025208
950.307739	0.702377319	0.896383286	1.04101181	1.09737015	1.15471077	1.20736313	1.22829819	1.23699188
1000	0.764434814	0.960289001	1.10601997	1.16278267	1.22052956	1.27356339	1.29465103	1.30341148

Appendix A - Data Table

Pumping from Zone 3 w/ abandoned well 500m

Multiple pumping rates

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.93E-01	0.002231598	0.023700714	0.070493698	0.104598999	0.161552429	0.272520065	0.383829117	0.523345947
4.24E-01	0.003276825	0.029420853	0.081548691	0.117984772	0.177453995	0.290863037	0.403182983	0.543128967
7.01E-01	0.00359726	0.030511856	0.083236694	0.119880676	0.179540634	0.29309845	0.405467987	0.545431137
1.03E+00	0.003725052	0.030914307	0.083854675	0.120586395	0.180332184	0.293962479	0.406354904	0.546325684
1.4333545	0.003828049	0.031272888	0.084434509	0.121259689	0.181095123	0.294799805	0.407215118	0.547193527
1.91263914	0.003940582	0.031686783	0.085107803	0.122037888	0.181976318	0.295763016	0.408205032	0.548191071
2.48778081	0.004072189	0.032173157	0.085903168	0.122955322	0.183008194	0.296882629	0.409351349	0.549346924
3.17795086	0.004228592	0.032751083	0.086841583	0.124031067	0.184211731	0.298181534	0.410678864	0.550683975
4.00615501	0.004417419	0.033437729	0.087949753	0.125291824	0.185613632	0.299686432	0.412214279	0.55222702
5	0.004648209	0.034259796	0.089250565	0.126766205	0.187238693	0.301422119	0.413980484	0.554004669
14.4380732	0.007078171	0.041465759	0.099655151	0.138166428	0.199466705	0.314212799	0.426929474	0.567001343
25.7637615	0.010269165	0.049310684	0.110103607	0.149354935	0.21124649	0.326379776	0.43920517	0.579309464
39.3545876	0.014354706	0.057714462	0.120592117	0.160400391	0.222723007	0.338134766	0.451036453	0.591163635
55.6635818	0.019456863	0.066640854	0.131164551	0.171394348	0.234037399	0.349655151	0.462614059	0.6027565
75.234375	0.025707245	0.076120377	0.14192009	0.182466507	0.245349884	0.361118317	0.474117279	0.614273071
98.7193298	0.033250809	0.086277008	0.153049469	0.193834305	0.256896973	0.372777939	0.485809326	0.625974655
126.901276	0.042284012	0.097299576	0.164783478	0.205741882	0.26893425	0.384901047	0.497953415	0.638126373
160.719604	0.053052902	0.109518051	0.177511215	0.21859169	0.281877518	0.397903442	0.510972977	0.651151657
201.301605	0.065879822	0.123348236	0.191698074	0.232866287	0.296218872	0.412288666	0.525369644	0.665552139
250	0.081178665	0.139295578	0.207874298	0.249099731	0.312496185	0.428594589	0.541685104	0.681871414
259.630676	0.090034485	0.180002213	0.304887772	0.383991241	0.508136749	0.738580704	0.964267731	1.24448586
271.1875	0.096824646	0.192245483	0.320562363	0.400735855	0.525779724	0.756851196	0.982727051	1.2630043
285.055695	0.105234146	0.205633163	0.336547852	0.417442322	0.54306221	0.774513245	1.0004921	1.28080177
301.69751	0.115577698	0.22039032	0.353311539	0.434734344	0.560760498	0.792474747	1.01852608	1.29885674
321.667694	0.128154755	0.236694336	0.371145248	0.452955246	0.579278946	0.811182022	1.03728485	1.31763268
345.631927	0.143312454	0.25487709	0.390493393	0.472595215	0.599136353	0.831180573	1.05732346	1.33768272
374.389008	0.161499023	0.275379181	0.411851883	0.494163513	0.620866776	0.8530159	1.07918549	1.35955429
408.897522	0.18324852	0.29883194	0.43592453	0.518390656	0.645212173	0.877437592	1.10363007	1.3840065
450.307739	0.209253311	0.326036453	0.463569641	0.5461483	0.673055649	0.905338287	1.13154793	1.41193008
500	0.24036026	0.357965469	0.49581337	0.578474045	0.705446243	0.937772751	1.16399765	1.44438362
509.630676	0.252218246	0.401700974	0.595890045	0.71644783	0.904186249	1.25087357	1.58969879	2.01011848
521.1875	0.262601852	0.417596817	0.615274429	0.73692131	0.925579071	1.27291298	1.61193085	2.03241158
535.055664	0.275323868	0.435380936	0.635726929	0.758123398	0.947378159	1.29510498	1.63423157	2.05474663
551.69751	0.290842056	0.455415726	0.657844543	0.780790329	0.970474243	1.31847954	1.65768242	2.07822037
571.667725	0.309633255	0.478057861	0.682096481	0.805456161	0.995456696	1.34366608	1.68292427	2.10347939
595.631958	0.332258224	0.503828049	0.709100723	0.832773209	1.02301025	1.37137413	1.71067619	2.13124466
624.389038	0.359401703	0.533435822	0.739646912	0.863554001	1.05397415	1.40245438	1.74179077	2.16236877
658.897522	0.391910553	0.567804337	0.774721146	0.898809433	1.08937073	1.4379425	1.7773056	2.19789314
700.307739	0.43082428	0.608091354	0.815544128	0.93977356	1.13044357	1.47909355	1.81847763	2.2390728
750	0.477426529	0.655708313	0.863584518	0.987926483	1.17868996	1.52740288	1.86680794	2.28741074
759.630676	0.492288589	0.702497482	0.966760635	1.12902451	1.3805809	1.84367561	2.29568863	2.85632706
771.1875	0.50626564	0.722070694	0.989904404	1.15328979	1.40579414	1.86955643	2.32176971	2.88247108
785.055664	0.523296356	0.744268417	1.01486015	1.17902565	1.4321537	1.89633179	2.34865952	2.90939713
801.69751	0.543989182	0.769615173	1.04239082	1.20713806	1.46072388	1.92519951	2.37760925	2.93837166
821.667725	0.568992615	0.79863739	1.07312775	1.23832321	1.49225235	1.95695114	2.40942192	2.9702034
845.631958	0.599079132	0.832057953	1.1078949	1.27343369	1.52762985	1.99250221	2.44502258	3.00581932
874.389038	0.635185242	0.870836258	1.14772797	1.31353951	1.56794739	2.03295898	2.4855175	3.04632759
908.897522	0.678451538	0.916191101	1.19391632	1.3599472	1.61452866	2.07965469	2.53224945	3.09306908
950.307739	0.730278015	0.969642639	1.24804497	1.41425896	1.66898727	2.13421631	2.58683968	3.14767075
1000	0.792377472	1.033041	1.31202316	1.47840118	1.73326492	2.19858742	2.6512394	3.21208

Appendix A - Data Table

Pumping from Zone 1 w/o abandoned well
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	3.8147E-06	1.71661E-05	0.00053215	0.002565384	0.013349533	0.078941345	0.218847275	0.464258194
2.54250145	1.52588E-05	9.72748E-05	0.002859116	0.010770798	0.0415802	0.16951561	0.371999741	0.665630341
4.20668411	3.8147E-05	0.00037384	0.008384705	0.025695801	0.078800201	0.249547958	0.478569031	0.786842346
6.20370388	8.39233E-05	0.001117706	0.017959595	0.04650116	0.119680405	0.31823349	0.560686111	0.876150131
8.60012722	0.000160217	0.002752304	0.031677246	0.071615219	0.161262512	0.378305435	0.628772736	0.948869705
11.4758358	0.000291824	0.00576973	0.049093247	0.09954834	0.202203751	0.432079315	0.687969208	1.01151848
14.9266863	0.000520706	0.010637283	0.06952095	0.129161835	0.241977692	0.481143951	0.741025925	1.06736565
19.0677071	0.000926971	0.017690659	0.092256546	0.159671783	0.280433655	0.526565552	0.789558411	1.1182766
24.036932	0.001644135	0.027099609	0.116664886	0.190536499	0.317546844	0.569046021	0.834527969	1.16532707
30.0000019	0.002868652	0.038850784	0.142208099	0.221384048	0.353334427	0.609081268	0.876707077	1.20940399
32.311367	0.003398895	0.043434143	0.151582718	0.232524872	0.366102219	0.623254776	0.89157486	1.22492409
35.0850067	0.004117966	0.048923492	0.162136078	0.244869232	0.380075455	0.638641357	0.907711029	1.24175644
38.413372	0.005094528	0.055431366	0.173900604	0.258420944	0.395240784	0.65520668	0.925043106	1.25984764
42.4074097	0.006425858	0.063060761	0.186885834	0.273162842	0.411550522	0.672912598	0.943544388	1.27913475
47.2002563	0.008234024	0.071895599	0.201078415	0.289056778	0.428962708	0.691692352	0.963132858	1.29955292
52.9516716	0.010663986	0.081993103	0.216432571	0.306034088	0.447381973	0.71144104	0.98371315	1.32100487
59.8533707	0.013908386	0.093397141	0.232898712	0.324022293	0.466726303	0.732055664	1.00514793	1.34333992
68.1354141	0.018156052	0.106111526	0.250400543	0.342943192	0.486923218	0.753507614	1.02743721	1.36655426
78.0738602	0.023647308	0.120132446	0.268865585	0.362699509	0.507852554	0.77560997	1.05037117	1.39044189
90	0.03061676	0.135446548	0.288225174	0.383230209	0.529459	0.798347473	1.073946	1.41498756
93.4670486	0.032674789	0.139780045	0.293636322	0.388952255	0.53546524	0.804653168	1.08049774	1.42181206
97.6275024	0.035177231	0.144815445	0.299842834	0.395494461	0.542314529	0.811819077	1.08791542	1.42954445
102.620049	0.038223267	0.150642395	0.306926727	0.402938843	0.550096512	0.819974899	1.09636879	1.43834877
108.611107	0.041927338	0.157346725	0.314964294	0.411365509	0.558897018	0.829219818	1.1059494	1.44830322
115.800377	0.046424866	0.165035248	0.324047089	0.420852661	0.56877327	0.839519501	1.11658287	1.45938873
124.427498	0.051876068	0.173788071	0.334209442	0.431428909	0.579750061	0.850992203	1.12847137	1.47174644
134.780045	0.058458328	0.183719635	0.345556259	0.443195343	0.591934204	0.863693237	1.14160728	1.48541832
147.20311	0.066400528	0.19496727	0.358192444	0.45624733	0.605409622	0.877700806	1.15608597	1.500494
162.110779	0.075948715	0.207681656	0.372232437	0.470697403	0.620285034	0.8931427	1.17204475	1.5171051
179.999985	0.087408066	0.222082138	0.387882233	0.486743927	0.636762619	0.9102211	1.18969154	1.53548622
186.934082	0.091842651	0.227550507	0.393787384	0.492788315	0.642959595	0.916635513	1.19632912	1.54239273
195.25499	0.097156525	0.233955383	0.400661469	0.499816895	0.650163651	0.924093246	1.2040329	1.55041504
205.240082	0.103527069	0.241456985	0.408658981	0.507982254	0.658521652	0.93274498	1.21296501	1.55971146
217.222198	0.111152649	0.250228882	0.41794014	0.517442703	0.668193817	0.942743301	1.2232914	1.57046127
231.600739	0.12027359	0.260482788	0.428718567	0.52841568	0.679405212	0.954341888	1.23526764	1.58292961
248.85498	0.131189346	0.272485733	0.44124794	0.541149139	0.692398071	0.967760086	1.2491188	1.59734726
269.560089	0.144245148	0.286560059	0.455846786	0.555959702	0.707489014	0.983325958	1.26519012	1.61409378
294.406219	0.159854889	0.303104401	0.472906113	0.573242188	0.725074768	1.00145149	1.28390503	1.63358879
324.221558	0.178539276	0.322650909	0.492959976	0.593538284	0.745718002	1.0227356	1.30588722	1.65647888
359.999969	0.200904846	0.345739365	0.516582489	0.617433548	0.770023346	1.04779243	1.3317318	1.68340683
384.654541	0.216295242	0.36154747	0.532711029	0.633739471	0.786592484	1.06487274	1.34937096	1.70178795
414.240021	0.234735489	0.380369186	0.551872253	0.653093338	0.806247711	1.08510971	1.37027168	1.72356796
449.742584	0.256843567	0.402872086	0.574771881	0.676233292	0.82976532	1.10935783	1.39530182	1.74965668
492.345673	0.283351898	0.429790497	0.602111816	0.703836441	0.857793808	1.13823891	1.42515373	1.78077698
543.46936	0.315151215	0.461986542	0.634801865	0.736848831	0.891324997	1.17280388	1.46086693	1.81802368
604.81781	0.353290558	0.500547409	0.673944473	0.77637291	0.931468964	1.21418381	1.50362968	1.86264229
678.435913	0.399049759	0.546787262	0.720874786	0.823762894	0.979614258	1.26383209	1.5549469	1.91620064
766.77771	0.453960419	0.602264404	0.777189255	0.880634308	1.03739738	1.32343483	1.61657524	1.98056412
872.787842	0.519845963	0.668815613	0.844743729	0.948862076	1.10672569	1.39497185	1.69058418	2.05791664
1000	0.598909378	0.748720169	0.925876617	1.0308075	1.19000435	1.48091698	1.77955246	2.15101051

Appendix A - Data Table

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.000398636	0.001396179	0.002752304	0.003568649	0.004741669	0.006435394	0.007461548	0.008033752
2.54E+00	0.000988007	0.003297806	0.006368637	0.008153915	0.01058197	0.013715744	0.015365601	0.016189575
4.21E+00	0.001718521	0.005661011	0.010786057	0.013633728	0.017301559	0.021640778	0.02371788	0.024681091
6.20E+00	0.002603531	0.008493423	0.015911102	0.019836426	0.02463913	0.029939652	0.032325745	0.033391953
8.60012722	0.003725052	0.011981964	0.021947861	0.026956558	0.032821655	0.038963318	0.041604996	0.042749405
11.4758358	0.005104065	0.016117096	0.028785706	0.034835815	0.041656494	0.04850769	0.051357269	0.052568436
14.9266863	0.00680542	0.020978928	0.036445618	0.043485642	0.051166534	0.058620453	0.061637878	0.062908173
19.0677071	0.008886337	0.026765823	0.045125961	0.053117752	0.061609268	0.069633484	0.072813034	0.074131012
24.036932	0.011514664	0.03348732	0.054700851	0.06357193	0.072786331	0.081295013	0.084609985	0.08597374
30.0000019	0.014839172	0.041324616	0.065351486	0.075046539	0.08493042	0.093894959	0.097337723	0.098739624
32.311367	0.016139984	0.044300079	0.069322586	0.079303742	0.089414597	0.098527908	0.102012634	0.103429794
35.0850067	0.017686844	0.047761917	0.073877335	0.084163666	0.094518662	0.103792191	0.107322693	0.108753204
38.413372	0.019638062	0.051895142	0.079195023	0.089809418	0.100423813	0.109872818	0.113451004	0.114896774
42.4074097	0.021949768	0.056634903	0.085189819	0.096141815	0.107019424	0.116636276	0.120260239	0.121721268
47.2002563	0.024803162	0.062181473	0.092065811	0.103372574	0.114530563	0.12433815	0.128015518	0.129491806
52.9516716	0.028249741	0.06858635	0.099859238	0.111534119	0.12298584	0.132995605	0.136732101	0.138223648
59.8533707	0.032617569	0.075998306	0.108629227	0.120651245	0.13236618	0.1425457	0.146326065	0.147834778
68.1354141	0.037691116	0.084339142	0.118373871	0.130756378	0.142753601	0.153125763	0.156961441	0.158485413
78.0738602	0.04398346	0.093896866	0.129274368	0.141996384	0.154254913	0.164794922	0.168678284	0.170217514
90	0.051555634	0.104707718	0.141374588	0.154418945	0.16692543	0.177629471	0.181560516	0.183113098
93.4670486	0.053783417	0.107791901	0.144794464	0.15791893	0.170484543	0.181221008	0.185159683	0.186717987
97.6275024	0.056430817	0.1114254	0.14881134	0.162029266	0.174665451	0.185445786	0.189395905	0.19095993
102.620049	0.05962944	0.115718842	0.153528214	0.166852951	0.179573059	0.190408707	0.194375992	0.195943832
108.611107	0.063463211	0.120742798	0.159004211	0.172439575	0.185243607	0.19613266	0.200115204	0.201690674
115.800377	0.068044663	0.126586914	0.165334702	0.178890228	0.19178772	0.202741623	0.206739426	0.20831871
124.427498	0.073606491	0.133472443	0.172708511	0.186386108	0.199373245	0.210382462	0.214399338	0.215986252
134.780045	0.080135346	0.141342163	0.181072235	0.19486618	0.207941055	0.21900177	0.223031998	0.224628448
147.20311	0.088113785	0.150671005	0.190906525	0.204826355	0.217998505	0.229124069	0.23317337	0.234777451
162.110779	0.097595215	0.161460876	0.202177048	0.216217041	0.229482651	0.240667343	0.24473381	0.246343613
179.999985	0.109027863	0.174133301	0.21531868	0.229478836	0.242837906	0.254089355	0.258176804	0.259794235
186.934082	0.113361359	0.178934097	0.220300674	0.234506607	0.247905731	0.259189606	0.263288498	0.264904022
195.25499	0.118618011	0.184650421	0.22618866	0.240436554	0.25387001	0.265174866	0.26927948	0.270898819
205.240082	0.124938965	0.191459656	0.233182907	0.247478485	0.260946274	0.272277832	0.276388168	0.278013229
217.222198	0.132488251	0.199510574	0.241422653	0.255767822	0.269275665	0.280633926	0.284755707	0.286382675
231.600739	0.141517639	0.209003448	0.251091003	0.265478134	0.279016495	0.290390015	0.29451561	0.2961483
248.85498	0.152393341	0.220359802	0.262636185	0.277074814	0.290657043	0.302061081	0.306196213	0.307834625
269.560089	0.165378571	0.233804703	0.276269913	0.29076004	0.304384232	0.315820694	0.31996727	0.321609497
294.406219	0.180902481	0.249774933	0.292432785	0.306978226	0.320652008	0.332130432	0.336290359	0.337936401
324.221558	0.199546814	0.268836975	0.311683655	0.326284409	0.340009689	0.351531982	0.355709076	0.357357025
359.999969	0.221891403	0.291532516	0.334547043	0.349199295	0.36297226	0.374534607	0.378725052	0.380378723
384.654541	0.23727417	0.307126999	0.350244522	0.364933014	0.378734589	0.390325546	0.394525528	0.396183014
414.240021	0.255729675	0.325742722	0.368946075	0.383659363	0.397483826	0.409090042	0.413295746	0.414958954
449.742584	0.277835846	0.348072052	0.391399384	0.406154633	0.420022964	0.431667328	0.435888829	0.437555313
492.345673	0.304363251	0.374803543	0.418251038	0.433046341	0.44695282	0.458629608	0.462863922	0.464536667
543.46936	0.336221695	0.406867981	0.450443268	0.465286255	0.47923851	0.490953445	0.495203018	0.496883392
604.81781	0.374425888	0.445285797	0.48900795	0.503902435	0.517904282	0.529664993	0.533931732	0.535619736
678.435913	0.420265198	0.491392136	0.535295486	0.550256729	0.564323425	0.576143265	0.580432892	0.582132339
766.77771	0.47527504	0.54671669	0.590835571	0.605876923	0.62002182	0.631914139	0.636232376	0.63794136
872.787842	0.541288376	0.6130867	0.657455444	0.672590256	0.686828613	0.698801041	0.703151703	0.704875946
1000	0.620512009	0.692773819	0.737470627	0.752723694	0.767082214	0.779167175	0.783559799	0.785297394

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 20m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	5.34058E-05	0.00019455	0.000795364	0.002548218	0.011434555	0.064376831	0.1745224	0.3430233
2.54250145	0.000165939	0.000606537	0.003320694	0.009893417	0.034543991	0.133060455	0.277805328	0.47223282
4.20668411	0.000337601	0.001325607	0.008581162	0.022575378	0.063962936	0.190538406	0.343238831	0.543010712
6.20370388	0.000579834	0.002574921	0.017122269	0.039690018	0.095415115	0.238088608	0.391210556	0.59252739
8.60012722	0.000911713	0.004692078	0.028900147	0.059877396	0.126764297	0.278707504	0.430021286	0.631839752
11.4758358	0.001365662	0.008062363	0.043481827	0.0819664	0.157196045	0.314561844	0.463378906	0.66532135
14.9266863	0.001993179	0.013032913	0.06029892	0.10512352	0.186502457	0.347055435	0.49322319	0.695140839
19.0677071	0.002882004	0.01984787	0.078807831	0.128818512	0.214712143	0.377109528	0.520681381	0.722522736
24.036932	0.004159927	0.028614044	0.098550797	0.152721405	0.241939545	0.405351639	0.546468735	0.748218536
30.0000019	0.006008148	0.039304733	0.119167328	0.176645279	0.268320084	0.432216644	0.571044922	0.772714615
32.311367	0.006772995	0.043445587	0.126728058	0.185287476	0.277738571	0.441753387	0.579790115	0.78143692
35.0850067	0.007759094	0.048374176	0.13524437	0.194881439	0.288087845	0.45217514	0.589357376	0.790981293
38.413372	0.009038925	0.05418396	0.144752502	0.205450058	0.299371719	0.463485718	0.599767685	0.801370621
42.4074097	0.010700226	0.060964584	0.155273438	0.216991425	0.311582565	0.47567749	0.611022949	0.812610626
47.2002563	0.012861252	0.068792343	0.166810989	0.229499817	0.324708939	0.488744736	0.623132706	0.824718475
52.9516716	0.015657425	0.077732086	0.179367065	0.242963791	0.33873558	0.502672195	0.63608551	0.837680817
59.8533707	0.019260407	0.087827683	0.192918777	0.257349014	0.353622437	0.517435074	0.649888992	0.851511002
68.1354141	0.023853302	0.099111557	0.207448959	0.272638321	0.369354248	0.533023834	0.664541245	0.866210938
78.0738602	0.029651642	0.111616135	0.222942352	0.288812637	0.385921478	0.549438477	0.680059433	0.88180542
90	0.036884308	0.125368118	0.239397049	0.305868149	0.403318405	0.566690445	0.69647789	0.898330688
93.4670486	0.03900528	0.129264832	0.244016647	0.310649872	0.408197403	0.571531296	0.701086044	0.90296936
97.6275024	0.041576386	0.133808136	0.249340057	0.316143036	0.413780212	0.577072144	0.706392288	0.908317566
102.620049	0.044692993	0.139083862	0.255449295	0.322433472	0.420173645	0.5834198	0.712474823	0.914449692
108.611107	0.048461914	0.145177841	0.262424469	0.32959938	0.427448273	0.590650558	0.719427109	0.921468735
115.800377	0.053020477	0.152196884	0.27035141	0.337722778	0.435686111	0.598846436	0.727334976	0.929454803
124.427498	0.058519363	0.160243988	0.279331207	0.346910477	0.44499588	0.608112335	0.7362957	0.938510895
134.780045	0.065145493	0.169448853	0.289463043	0.357246399	0.455453873	0.61853981	0.746429443	0.948764801
147.20311	0.073112488	0.179950714	0.300867081	0.368850708	0.467185974	0.63025856	0.75786972	0.960355759
162.110779	0.082668304	0.191932678	0.313707352	0.381885529	0.480350494	0.643426895	0.770778656	0.9734478
179.999985	0.094112396	0.205621719	0.328205109	0.396579742	0.495185852	0.658298492	0.785434723	0.988328934
186.934082	0.098543167	0.210830688	0.333692551	0.402132034	0.500785828	0.663917542	0.790975571	0.993959427
195.25499	0.103851318	0.216962814	0.340120316	0.408632278	0.5073452	0.670501709	0.797487259	1.00057793
205.240082	0.110210419	0.2241745	0.347648621	0.416242599	0.51502037	0.678211212	0.805122375	1.00833893
217.222198	0.117822647	0.232652664	0.356451035	0.425130844	0.523979187	0.687217712	0.814056396	1.01742935
231.600739	0.126932144	0.242614746	0.366737366	0.435508728	0.534440994	0.697746277	0.824529648	1.02808952
248.85498	0.137832642	0.254323959	0.378770828	0.447637558	0.546663284	0.710062027	0.836807251	1.0405941
269.560089	0.150871277	0.268129349	0.392906189	0.46187973	0.561021805	0.724542618	0.85127449	1.05533981
294.406219	0.166465759	0.284427643	0.409534454	0.478626251	0.577896118	0.741565704	0.868299484	1.07269478
324.221558	0.185138702	0.30370903	0.429113388	0.498319626	0.597732544	0.761598587	0.888368607	1.09316444
359.999969	0.207490921	0.326591492	0.452302933	0.521640778	0.621225357	0.785333633	0.912172318	1.11745071
384.654541	0.222873688	0.34226799	0.468153	0.537572861	0.637268066	0.801548004	0.928443909	1.13405609
414.240021	0.241321564	0.361003876	0.487104416	0.556629181	0.656467438	0.820955276	0.947938919	1.15395546
449.742584	0.263444901	0.383405685	0.509735107	0.579374313	0.679372787	0.844114304	0.971204758	1.17770958
492.345673	0.289968491	0.410217285	0.536800385	0.606578827	0.70677948	0.871831894	0.99905014	1.20614243
543.46936	0.32178688	0.442325592	0.569190979	0.639131546	0.73956871	0.904998779	1.03238106	1.24018097
604.81781	0.359918594	0.480783463	0.607995987	0.678133011	0.778848648	0.944717407	1.07229424	1.28094864
678.435913	0.405725479	0.526924133	0.654523849	0.724889755	0.825948715	0.99237442	1.12020874	1.32990837
766.77771	0.460695267	0.582286835	0.710342407	0.780979156	0.882452011	1.0495491	1.17769051	1.38865471
872.787842	0.526636124	0.648696899	0.777309418	0.848279953	0.95025444	1.11815834	1.24666023	1.45915985
1000	0.605796814	0.728414536	0.857709885	0.929084778	1.03165627	1.20053482	1.32948685	1.54387093

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 20m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.005840302	0.020862579	0.041870117	0.055086136	0.075960159	0.117694855	0.173141479	0.196451187
2.54E+00	0.009847641	0.03311348	0.064775467	0.084415436	0.115091324	0.175527573	0.255060196	0.288415909
4.21E+00	0.012487412	0.040988922	0.079334259	0.102897644	0.139362335	0.210382462	0.303277969	0.342197418
6.20E+00	0.01458168	0.047269821	0.090818405	0.117298126	0.15789032	0.236186981	0.338155746	0.380844116
8.60012722	0.016653061	0.053215027	0.101289749	0.130147934	0.173973083	0.257795334	0.366601944	0.412134171
11.4758358	0.018795013	0.059181213	0.11138916	0.142284393	0.188779831	0.277074814	0.391387939	0.439207077
14.9266863	0.021158218	0.065467835	0.121536255	0.154214859	0.202985764	0.295030594	0.413946152	0.463676453
19.0677071	0.023868561	0.072277069	0.131978989	0.166238785	0.216985703	0.312246323	0.435098648	0.486465454
24.036932	0.027051926	0.079748154	0.142866135	0.178541183	0.231021881	0.329082489	0.455356598	0.508144379
30.0000019	0.030818939	0.087966919	0.154283524	0.191221237	0.245231628	0.345756531	0.475038528	0.529075623
32.311367	0.03229332	0.091075897	0.158519745	0.195901871	0.250442505	0.351810455	0.482114792	0.536577225
35.0850067	0.034053803	0.094673157	0.163331985	0.201177597	0.256275177	0.358528137	0.489915848	0.544826508
38.413372	0.036159515	0.098831177	0.168787003	0.207120895	0.262798309	0.365972519	0.49848175	0.553859711
42.4074097	0.038696289	0.103620529	0.174930573	0.213769913	0.270044327	0.374170303	0.507835388	0.563694
47.2002563	0.041753769	0.109132767	0.181854248	0.22121048	0.278093338	0.383180618	0.518016815	0.574359894
52.9516716	0.045438767	0.115440369	0.189596176	0.229467392	0.286958694	0.393013	0.529027939	0.585859299
59.8533707	0.049879074	0.122636795	0.19824028	0.238628387	0.296724319	0.4037323	0.540908813	0.59822464
68.1354141	0.05521965	0.130817413	0.20785141	0.248743057	0.30742836	0.415370941	0.55368042	0.611467361
78.0738602	0.061647415	0.140102386	0.218524933	0.259901047	0.319150925	0.427988052	0.567388535	0.625627518
90	0.069358826	0.150617599	0.230361938	0.272195816	0.331981659	0.441665649	0.5820961	0.640762329
93.4670486	0.071603775	0.153627396	0.233720779	0.275676727	0.335603714	0.445518494	0.586233139	0.645017624
97.6275024	0.074295044	0.157173157	0.237667084	0.279764175	0.339855194	0.450019836	0.591035843	0.649946213
102.620049	0.077516556	0.161331177	0.242258072	0.284502029	0.344766617	0.455209732	0.596561432	0.655609131
108.611107	0.081388474	0.166225433	0.247617722	0.290023804	0.350475311	0.461210251	0.602918625	0.662115097
115.800377	0.086023331	0.171947479	0.253835678	0.296411514	0.357061386	0.468107224	0.61019516	0.669549942
124.427498	0.091571808	0.178627014	0.261014938	0.303762436	0.364616394	0.47599411	0.618484497	0.678005219
134.780045	0.098217011	0.186429977	0.2693367	0.312265396	0.373329163	0.485040665	0.627939224	0.6876297
147.20311	0.106164932	0.19553566	0.278963089	0.322072983	0.383348465	0.49539566	0.638698578	0.698558807
162.110779	0.115665436	0.206148148	0.290073395	0.333356857	0.39484024	0.507221222	0.650932312	0.710962296
179.999985	0.127059937	0.218612671	0.303020477	0.346473694	0.408155441	0.520851135	0.664945602	0.725135803
186.934082	0.131439209	0.223356247	0.307933807	0.351448059	0.413204193	0.526016235	0.670253754	0.730499268
195.25499	0.136699677	0.22901535	0.313777924	0.357357025	0.41919136	0.53212738	0.676513672	0.736822128
205.240082	0.143026352	0.235750198	0.320699692	0.364345551	0.426259995	0.539327621	0.683877945	0.744253159
217.222198	0.150585175	0.243719101	0.328857422	0.372573853	0.434576035	0.547792435	0.692518234	0.752969742
231.600739	0.159637451	0.253194809	0.338537216	0.382328033	0.444421768	0.557785034	0.702692032	0.763217926
248.85498	0.170478821	0.264444351	0.349990845	0.393857956	0.456045151	0.569562912	0.714656683	0.775260925
269.560089	0.183486938	0.277873993	0.363632202	0.407581329	0.469865799	0.583534241	0.728815079	0.789497375
294.406219	0.199054718	0.29382515	0.37978363	0.423810959	0.486194611	0.600027084	0.745508194	0.806272507
324.221558	0.217693329	0.312786102	0.398933411	0.443040848	0.505525589	0.619531631	0.765224457	0.826076508
359.999969	0.240034103	0.33543396	0.421768188	0.465953827	0.52854538	0.642736435	0.788656235	0.849603653
384.654541	0.255393982	0.350963593	0.437414169	0.481655121	0.544317245	0.658624649	0.804689407	0.865695953
414.240021	0.273889542	0.369659424	0.4562397	0.500537872	0.563272476	0.677707672	0.823925018	0.884996414
449.742584	0.296037674	0.391998291	0.478719711	0.523082733	0.585905075	0.700487137	0.846887589	0.908033371
492.345673	0.322605133	0.418766022	0.505641937	0.550077438	0.612998962	0.7277565	0.874372482	0.935609818
543.46936	0.354473114	0.450838089	0.537885666	0.582406998	0.64544487	0.760406494	0.907278061	0.968622208
604.81781	0.392641068	0.489250183	0.576496124	0.621114731	0.68429184	0.799503326	0.946680069	1.0081501
678.435913	0.438577652	0.535446167	0.622928619	0.667665482	0.7310009	0.84649086	0.994010925	1.05562592
766.77771	0.493648529	0.590835571	0.678604126	0.723482132	0.7870121	0.902837753	1.05077934	1.1125679
872.787842	0.559711456	0.657266617	0.745370865	0.790416718	0.854179382	0.970417023	1.11886978	1.18087196
1000	0.639041901	0.737064362	0.825580597	0.870830536	0.934873581	1.0515976	1.20065117	1.26290512

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 40m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	1.90735E-05	7.62939E-05	0.000591278	0.002403259	0.011745453	0.064937592	0.199825287	0.455429077
2.54250145	7.24792E-05	0.000293732	0.002901077	0.009841919	0.036085129	0.135704041	0.329835892	0.643140793
4.20668411	0.000164032	0.000772476	0.008102417	0.023075104	0.067560196	0.195684433	0.414470673	0.749458313
6.20370388	0.00030899	0.00176239	0.01685524	0.041225433	0.1015625	0.245677948	0.476665497	0.824079514
8.60012722	0.000520706	0.003627777	0.029163361	0.062858582	0.13568306	0.28855896	0.526666641	0.882768631
11.4758358	0.000829697	0.006797791	0.044586182	0.086687088	0.16893959	0.32649231	0.56927681	0.932092667
14.9266863	0.001285553	0.011665344	0.062509537	0.11177063	0.201028824	0.360898972	0.607021332	0.97533226
19.0677071	0.001972198	0.018501282	0.082324982	0.137487411	0.231924057	0.392717361	0.641370773	1.01434708
24.036932	0.003019333	0.02743721	0.10351181	0.163438797	0.261707306	0.422586441	0.673246384	1.05028534
30.0000019	0.004613876	0.038450241	0.125648499	0.189380646	0.290485382	0.450954437	0.703260422	1.08389854
32.311367	0.005283356	0.042728424	0.133768082	0.198747635	0.300756454	0.461019516	0.713874817	1.09575081
35.0850067	0.006162643	0.047834396	0.142910004	0.20913887	0.312019348	0.472003937	0.72543335	1.10863113
38.413372	0.007320404	0.053865433	0.153108597	0.220561981	0.32427597	0.483909607	0.737924576	1.12250519
42.4074097	0.008852005	0.060920715	0.164381027	0.233020782	0.33751297	0.496730804	0.751342773	1.13736343
47.2002563	0.010871887	0.069076538	0.176725388	0.246494293	0.351705551	0.510446548	0.765665054	1.15316963
52.9516716	0.013525009	0.078392029	0.190128326	0.260953903	0.366817474	0.525032043	0.780855179	1.16988182
59.8533707	0.016983032	0.088911057	0.204557419	0.276355743	0.382801056	0.540464401	0.79691124	1.18747902
68.1354141	0.021440506	0.100660324	0.219976425	0.29265976	0.399620056	0.556713104	0.813779831	1.2059021
78.0738602	0.027114868	0.11365509	0.236352921	0.309829712	0.41724205	0.57377243	0.83146286	1.22513771
90	0.034240723	0.127910614	0.253664017	0.32784462	0.435653687	0.59164238	0.849960327	1.24518013
93.4670486	0.036334992	0.131948471	0.258516312	0.332881927	0.440795898	0.596639633	0.855129242	1.25077629
97.6275024	0.03887558	0.136648178	0.264101028	0.338666916	0.44669342	0.602375031	0.861059189	1.25717926
102.620049	0.04196167	0.142097473	0.270496368	0.345277786	0.453424454	0.608932495	0.867837906	1.26449394
108.611107	0.045701981	0.148387909	0.277784348	0.352788925	0.461063385	0.616386414	0.875541687	1.27279663
115.800377	0.050230026	0.15561676	0.286045074	0.361282349	0.469690323	0.624820709	0.884254456	1.28216362
124.427498	0.055704117	0.163887024	0.295366287	0.37084198	0.479387283	0.634326935	0.894069672	1.29269218
134.780045	0.062307358	0.173322678	0.305850983	0.381565094	0.490255356	0.645008087	0.905090332	1.30448723
147.20311	0.07025528	0.18406105	0.317611694	0.393564224	0.502403259	0.656986237	0.917444229	1.31767464
162.110779	0.079797745	0.196269989	0.33080101	0.406986237	0.515979767	0.670415878	0.931289673	1.33241844
179.999985	0.091230393	0.210170746	0.34561348	0.422025681	0.531181335	0.685510635	0.946842194	1.34893799
186.934082	0.095657349	0.215457916	0.351221085	0.427713394	0.536930084	0.691225052	0.952732086	1.35518837
195.25499	0.100961685	0.221672058	0.357776642	0.434358597	0.543643951	0.697910309	0.959619522	1.3624897
205.240082	0.107318878	0.228971481	0.365436554	0.442113876	0.551477432	0.705720901	0.967664719	1.37100792
217.222198	0.114927292	0.237535477	0.374370575	0.451152802	0.560604095	0.714839935	0.977054596	1.38093948
231.600739	0.124032974	0.247585297	0.384799957	0.461690903	0.571245193	0.725488663	0.988021851	1.39252281
248.85498	0.13492775	0.259386063	0.396978378	0.473987579	0.583658218	0.737928391	1.0008297	1.40603828
269.560089	0.147960663	0.273265839	0.411231995	0.488368988	0.598171234	0.752500534	1.01583099	1.42185211
294.406219	0.163553238	0.289625168	0.427961349	0.505231857	0.615188599	0.769613266	1.03344727	1.44040489
324.221558	0.182214737	0.308969498	0.447669983	0.525091171	0.635229111	0.789793015	1.05421829	1.46226501
359.999969	0.204559326	0.33190918	0.470973969	0.548559189	0.658906937	0.813659668	1.07878494	1.48810959
384.654541	0.219936371	0.347621918	0.486909866	0.564601898	0.67509079	0.829977036	1.09558678	1.50578308
414.240021	0.238372803	0.366382599	0.505918503	0.58373642	0.694395065	0.849456787	1.11564064	1.52687263
449.742584	0.260478973	0.388805389	0.528614044	0.60657692	0.717437744	0.872711182	1.13958549	1.55205727
492.345673	0.286993027	0.415639877	0.555753708	0.633888245	0.74499321	0.900529861	1.16823196	1.58218765
543.46936	0.318799973	0.447776794	0.588241577	0.666578293	0.777973175	0.933834076	1.20253372	1.6182766
604.81781	0.356962204	0.486293793	0.627168655	0.70574379	0.817489624	0.973743439	1.24364662	1.66155434
678.435913	0.402755737	0.532482147	0.673837662	0.752702713	0.864868164	1.02159882	1.29296112	1.71348381
766.77771	0.457715988	0.587900162	0.729829788	0.809041977	0.92171669	1.07902336	1.35215378	1.77585602
872.787842	0.523666382	0.65438652	0.7970047	0.876636505	0.989925385	1.14792824	1.42321205	1.85079002
1000	0.602806091	0.734167099	0.877616882	0.957756042	1.0717907	1.23064232	1.50856018	1.94089317

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 40m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.00217247	0.007862091	0.016046524	0.021398544	0.03037262	0.054153442	0.055139542	0.044984818
2.54E+00	0.004594803	0.015789032	0.031497955	0.041606903	0.058317184	0.101856232	0.103443146	0.08464241
4.21E+00	0.006731033	0.022504807	0.044303894	0.058120728	0.080625534	0.138389587	0.140371323	0.115356445
6.20E+00	0.008674622	0.028526306	0.055541992	0.072370529	0.099386215	0.167842865	0.170118332	0.140459061
8.60012722	0.01061058	0.034381867	0.06611824	0.085502625	0.116191864	0.193130493	0.195640564	0.162315369
11.4758358	0.01266861	0.040403366	0.076545715	0.098161697	0.131946564	0.215888977	0.218593597	0.182252884
14.9266863	0.014961243	0.04681778	0.087123871	0.110717773	0.147165298	0.23705101	0.239925385	0.201032639
19.0677071	0.017599106	0.053796768	0.098054886	0.123414993	0.162191391	0.25720787	0.260229111	0.219141006
24.036932	0.020702362	0.061473846	0.10946846	0.136411667	0.177240372	0.276741028	0.279893875	0.236888885
30.0000019	0.024408341	0.069957733	0.121461868	0.149829865	0.192474365	0.295915604	0.299182892	0.254497528
32.311367	0.025835037	0.073143005	0.125883102	0.154743195	0.198013306	0.302808762	0.306116104	0.260854721
35.0850067	0.027572632	0.076856613	0.130926132	0.160306931	0.204235077	0.310451508	0.313800812	0.267934799
38.413372	0.029651642	0.081144333	0.136632919	0.166561127	0.211174011	0.31886673	0.322259903	0.275766373
42.4074097	0.032159805	0.086086273	0.143064499	0.173557281	0.218877792	0.328090668	0.331529617	0.284389496
47.2002563	0.035182953	0.091760635	0.150285721	0.181354523	0.227392197	0.338142395	0.341629028	0.293834686
52.9516716	0.038831711	0.098239899	0.158336639	0.189983368	0.236736298	0.349029541	0.352563858	0.304115295
59.8533707	0.043237686	0.105642319	0.167331696	0.199558258	0.247026443	0.360837936	0.364416122	0.315324783
68.1354141	0.048547745	0.114030838	0.177289963	0.210079193	0.258239746	0.373529434	0.377153397	0.32743454
78.0738602	0.054946899	0.123535156	0.188316345	0.221645355	0.270469666	0.387172699	0.39084053	0.340524673
90	0.062633514	0.134269714	0.200496674	0.234336853	0.283786774	0.401819229	0.405529022	0.354650497
93.4670486	0.064872742	0.137336731	0.203956604	0.237932205	0.287549973	0.405942917	0.409664154	0.358634949
97.6275024	0.067554474	0.140947342	0.207996368	0.24212265	0.29192543	0.410713196	0.414445877	0.363250732
102.620049	0.070774078	0.145191193	0.212713242	0.24700737	0.297012329	0.416229248	0.419975281	0.368598938
108.611107	0.074634552	0.150161743	0.218191147	0.252660751	0.302883148	0.422559738	0.426322937	0.374750137
115.800377	0.079263687	0.155971527	0.224536896	0.25919342	0.309644699	0.429807663	0.433586121	0.381809235
124.427498	0.08480835	0.162752151	0.231872559	0.266723633	0.317411423	0.438077927	0.44187355	0.389886856
134.780045	0.09144783	0.170654297	0.240341187	0.275388718	0.326318741	0.447498322	0.451311111	0.399108887
147.20311	0.099391937	0.179859161	0.250108719	0.285352707	0.336524963	0.458217621	0.46204567	0.409629822
162.110779	0.108894348	0.190582275	0.261377335	0.296813965	0.348218918	0.470411301	0.474258423	0.421634674
179.999985	0.120254517	0.20308876	0.274400711	0.310020447	0.361650467	0.484319687	0.488185883	0.43536377
186.934082	0.12465477	0.207889557	0.279382706	0.315067291	0.36677742	0.489616394	0.493488312	0.440595627
195.25499	0.129920959	0.213586807	0.285276413	0.321029663	0.372825623	0.495845795	0.499725342	0.44675827
205.240082	0.136232376	0.220348358	0.29224205	0.328069687	0.379957199	0.503171921	0.507059097	0.454011917
217.222198	0.143791199	0.228366852	0.300474167	0.336378098	0.388360977	0.511779785	0.515672684	0.462543488
231.600739	0.152845383	0.237882614	0.310207367	0.346191406	0.398275375	0.521902084	0.525806427	0.4725914
248.85498	0.16368103	0.249168396	0.321708679	0.35777092	0.409955978	0.53379631	0.537708282	0.484407425
269.560089	0.176664352	0.262578964	0.335330963	0.37147522	0.42375946	0.547813416	0.551738739	0.498352051
294.406219	0.192214966	0.278528214	0.351486206	0.387710571	0.440097809	0.564367294	0.568302155	0.514829636
324.221558	0.210853577	0.297531128	0.370687485	0.406990051	0.459480286	0.583971024	0.587917328	0.534358978
359.999969	0.233194351	0.320201874	0.393550873	0.429931641	0.482524872	0.60723877	0.611198425	0.557556152
384.654541	0.248571396	0.335773468	0.409240723	0.445672989	0.49833107	0.623182297	0.627151489	0.573455811
414.240021	0.267026901	0.354419708	0.428012848	0.464500427	0.517230988	0.642238617	0.646217346	0.592460632
449.742584	0.28915596	0.376747131	0.450475693	0.4870224	0.539834976	0.665016174	0.66900444	0.615184784
492.345673	0.31571579	0.403505325	0.47738266	0.513998032	0.566900253	0.692281723	0.69628334	0.64238739
543.46936	0.347579956	0.435590744	0.509635925	0.546329498	0.599338531	0.724946976	0.728963852	0.674982071
604.81781	0.385816574	0.474065781	0.548303604	0.585086823	0.638219833	0.764095306	0.768129349	0.714048386
678.435913	0.431699753	0.520225525	0.594688416	0.631578445	0.684856415	0.811048508	0.815103531	0.760904312
766.77771	0.486772537	0.575613022	0.650341034	0.687356949	0.740810394	0.867380142	0.871461868	0.817117691
872.787842	0.552854538	0.64207077	0.717117131	0.754285812	0.807947159	0.934968948	0.939081192	0.884567261
1000	0.632152557	0.721818924	0.797246933	0.834598541	0.888511658	1.01607895	1.02022743	0.965509415

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 80m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	5.72205E-06	3.05176E-05	0.000516891	0.002355576	0.011676788	0.077110291	0.218236923	0.463932037
2.54250145	3.24249E-05	0.000154495	0.002716064	0.009771347	0.035652161	0.163614273	0.369600296	0.664152145
4.20668411	8.39233E-05	0.000509262	0.00784111	0.023067474	0.066509247	0.237649918	0.47306633	0.783184052
6.20370388	0.000175476	0.00135231	0.016597748	0.041379929	0.099767685	0.299173355	0.550994873	0.869344711
8.60012722	0.000322342	0.003072739	0.029008865	0.063259125	0.133102417	0.351465225	0.614112854	0.938114166
11.4758358	0.000553131	0.006113052	0.044633865	0.087398529	0.165576935	0.397192001	0.66778183	0.996166229
14.9266863	0.000917435	0.010887146	0.062847138	0.112836838	0.19691658	0.438188553	0.715003967	1.04700089
19.0677071	0.001495361	0.017684937	0.083021164	0.138933182	0.227104187	0.475652695	0.757551193	1.09263992
24.036932	0.002418518	0.026641846	0.104614258	0.165275574	0.256227493	0.510408401	0.796571732	1.13437462
30.0000019	0.003881454	0.0377388	0.127187729	0.191608429	0.284395218	0.543056488	0.832881927	1.17309952
32.311367	0.004501343	0.042057037	0.135469437	0.201118469	0.294454575	0.55459404	0.845659256	1.18670845
35.0850067	0.00532341	0.047216415	0.144794464	0.211662292	0.305484772	0.567119598	0.859485626	1.20142174
38.413372	0.006418228	0.053321838	0.155195236	0.223255157	0.317502975	0.580619812	0.874330521	1.21720695
42.4074097	0.007879257	0.060468674	0.166690826	0.235895157	0.330490112	0.595081329	0.890174866	1.23403549
47.2002563	0.00982666	0.068738937	0.17927742	0.24956131	0.344423294	0.610460281	0.906965256	1.25184631
52.9516716	0.012401581	0.07818985	0.192932129	0.264217377	0.359268188	0.626716614	0.924638748	1.27056694
59.8533707	0.015781403	0.08886528	0.207626343	0.279823303	0.374992371	0.643800735	0.943138123	1.29013634
68.1354141	0.020162582	0.100786209	0.223314285	0.296333313	0.391553879	0.661668777	0.962406158	1.31049156
78.0738602	0.025766373	0.113965988	0.239959717	0.313703537	0.408927917	0.680286407	0.982400894	1.33158684
90	0.032827377	0.128410339	0.25753212	0.331911087	0.427099228	0.69962883	1.00307083	1.35336113
93.8137512	0.035114288	0.132898331	0.262928009	0.337490082	0.432664871	0.705551147	1.00940514	1.36002922
98.3902512	0.037895203	0.1381073	0.269115448	0.34387207	0.439027786	0.712305069	1.01660728	1.36760902
103.882057	0.041275024	0.144124985	0.276168823	0.351129532	0.44626236	0.719963074	1.0247612	1.37618446
110.472221	0.045379639	0.151046753	0.284170151	0.359340668	0.4544487	0.728607178	1.03394318	1.38584328
118.380417	0.050350189	0.158969879	0.293197632	0.368585587	0.463661194	0.738311768	1.04422951	1.39664268
127.870255	0.056364059	0.16800499	0.303340912	0.378946304	0.473991394	0.749162674	1.05571747	1.40871239
139.258057	0.063619614	0.178276062	0.314704895	0.390525818	0.485542297	0.761266708	1.06849289	1.42211151
152.923431	0.072347641	0.189929962	0.327409744	0.40344429	0.498439789	0.774747849	1.08268356	1.4369812
169.321869	0.0828228	0.20315361	0.341627121	0.417867661	0.51285553	0.789772034	1.09846115	1.45350075
189	0.095365524	0.218194962	0.357582092	0.434024811	0.529022217	0.806583405	1.11606598	1.4719162
195.587387	0.099559784	0.223146439	0.362812042	0.439319611	0.534322739	0.812088013	1.12182045	1.47793198
203.492249	0.104589462	0.228981018	0.36894989	0.44552803	0.540540695	0.818546295	1.12856865	1.48498535
212.978088	0.110612869	0.23584938	0.37613678	0.452791214	0.547819138	0.826095581	1.13645744	1.49323845
224.361099	0.117826462	0.243925095	0.384548187	0.461288452	0.556337357	0.834920883	1.14565849	1.50284386
238.020706	0.126462936	0.253423691	0.394390106	0.471221924	0.566301346	0.845235825	1.15641785	1.51409149
254.412247	0.136796951	0.264598846	0.405914307	0.482847214	0.577970505	0.857307434	1.16898918	1.52721786
274.082092	0.149162292	0.277759552	0.419427872	0.496469498	0.591651917	0.871446609	1.18369865	1.54257393
297.685913	0.163961411	0.293291092	0.435310364	0.51247406	0.60773468	0.888055801	1.20096207	1.56059265
326.010498	0.18167305	0.311664581	0.454036713	0.531333923	0.626693726	0.907621384	1.22128487	1.58180428
360	0.202886581	0.333465576	0.476200104	0.55365181	0.649145126	0.930780411	1.24532509	1.60688972
384.654572	0.218254089	0.349182129	0.49215126	0.56970787	0.665296555	0.947443008	1.26262093	1.62494087
414.240051	0.236679077	0.367944717	0.511171341	0.588851929	0.684560776	0.967306137	1.28323364	1.64645576
449.742615	0.258771896	0.39037323	0.533885956	0.611711502	0.707569122	0.991027832	1.30784988	1.67214775
492.345703	0.285272598	0.417205811	0.561042786	0.639039993	0.73507309	1.01939011	1.33727837	1.70287323
543.469421	0.317062378	0.449344635	0.593551636	0.671751022	0.768001556	1.05334282	1.37251663	1.73967171
604.817871	0.355209351	0.487865448	0.63250351	0.710945129	0.80745697	1.09403229	1.41475487	1.78379822
678.436035	0.400987625	0.534061432	0.679210663	0.757944107	0.854772568	1.14284515	1.46544647	1.83678436
766.777832	0.455926895	0.589483261	0.735240936	0.814321518	0.911531448	1.20141029	1.52628136	1.90040016
872.787964	0.521852493	0.655973434	0.802455902	0.881958008	0.979625702	1.27170372	1.59934998	1.9768734
1000.00012	0.600971222	0.735769272	0.883134842	0.963150024	1.06137848	1.35613823	1.68717575	2.06887245

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 80m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.000795364	0.002895355	0.006002426	0.008150101	0.012462616	0.013595581	0.012907028	0.012815476
2.54E+00	0.002126694	0.007478714	0.015287399	0.020658493	0.03153801	0.033166885	0.030193329	0.029233933
4.21E+00	0.003728867	0.012752533	0.025724411	0.034521103	0.052242279	0.05402565	0.048368454	0.046369553
6.20E+00	0.005470276	0.018327713	0.036460877	0.048519135	0.072570801	0.074382782	0.066167831	0.063175201
8.60012722	0.007322311	0.02413559	0.047286987	0.062339783	0.092050552	0.093839645	0.08332634	0.079442978
11.4758358	0.009366989	0.030302048	0.058288574	0.076061249	0.110786438	0.112539291	0.099985123	0.095317841
14.9266863	0.011640549	0.036941528	0.069589615	0.089832306	0.129018784	0.130746841	0.116392136	0.111028671
19.0677071	0.014280319	0.044191361	0.081283569	0.103761673	0.14691925	0.148620605	0.132665634	0.126688004
24.036932	0.017385483	0.052158356	0.093465805	0.117965698	0.16466713	0.166345596	0.148967743	0.142446518
30.0000019	0.021099091	0.060947418	0.106218338	0.132543564	0.182407379	0.184066772	0.165428162	0.15842247
32.311367	0.022537231	0.064250946	0.110919952	0.137876511	0.188831329	0.190488815	0.171415329	0.164243698
35.0850067	0.024265289	0.068059921	0.116226196	0.143852234	0.195959091	0.197593689	0.178050995	0.170703888
38.413372	0.026344299	0.072500229	0.122276306	0.150608063	0.203918457	0.205566406	0.185558319	0.178028107
42.4074097	0.028850555	0.077589035	0.129045486	0.158103943	0.212654114	0.214296341	0.193796158	0.186079025
47.2002563	0.03187561	0.0834198	0.136619568	0.16642189	0.222232819	0.223871231	0.202869415	0.194961548
52.9516716	0.035524368	0.090074539	0.145053864	0.175601959	0.23267746	0.234313965	0.212814331	0.204715729
59.8533707	0.039928436	0.097639084	0.154403687	0.185693741	0.244020462	0.24565506	0.22366333	0.215377808
68.1354141	0.045236588	0.106206894	0.164735794	0.196748734	0.256290436	0.257925034	0.235454559	0.226987839
78.0738602	0.051633835	0.115882874	0.176120758	0.208827972	0.269533157	0.271169662	0.248243332	0.239603043
90	0.059318543	0.126787186	0.188648224	0.222007751	0.283805847	0.28544426	0.26209259	0.253288269
93.8137512	0.06178093	0.130212784	0.192552567	0.226106644	0.288225174	0.289867401	0.266391754	0.257541656
98.3902512	0.064731598	0.13422966	0.197093964	0.230857849	0.293329239	0.294969559	0.27135849	0.262454987
103.882057	0.068271637	0.138931274	0.202363968	0.236352921	0.299203873	0.3008461	0.277086258	0.268129349
110.472221	0.072517395	0.144428253	0.208463669	0.242692947	0.305944443	0.307588577	0.28367424	0.274658203
118.380417	0.077590942	0.150829315	0.215499878	0.249980927	0.313652039	0.315299988	0.291223526	0.282144547
127.870255	0.083698273	0.158290863	0.22360611	0.258342743	0.322439194	0.324090958	0.299850464	0.290710449
139.258057	0.090995789	0.166959763	0.2329216	0.267915726	0.33244133	0.334096909	0.309692383	0.300491333
152.923431	0.099720001	0.177036285	0.243635178	0.27888298	0.343826294	0.345491409	0.320930481	0.311668396
169.321869	0.110153198	0.188755035	0.255960464	0.291448593	0.356790543	0.358463287	0.333753586	0.324436188
189	0.122625351	0.202413559	0.270181656	0.305892944	0.371606827	0.373291016	0.348443985	0.339075089
195.587387	0.126796722	0.206947327	0.274887085	0.310668945	0.376495361	0.378183365	0.35329628	0.343912125
203.492249	0.131793976	0.212331772	0.28045845	0.316314697	0.382265091	0.383956909	0.359024048	0.349622726
212.978088	0.137779236	0.218727112	0.287050247	0.322986603	0.389066696	0.390764236	0.365783691	0.356365204
224.361099	0.144948959	0.226320267	0.294849396	0.330867767	0.39708519	0.398788452	0.373760223	0.36432457
238.020706	0.153539658	0.235338211	0.304077148	0.340181351	0.406539917	0.408248901	0.383172989	0.373718262
254.412247	0.163825989	0.246049881	0.315000534	0.35118866	0.417690277	0.419410706	0.394287109	0.384813309
274.082092	0.176149368	0.258777618	0.32793808	0.364213943	0.430854797	0.43258667	0.407417297	0.397928238
297.685913	0.190912247	0.273925781	0.343288422	0.379648209	0.446428299	0.44817543	0.422962189	0.41345787
326.010498	0.208600998	0.291969299	0.361526489	0.3979702	0.464885712	0.466648102	0.441394806	0.431877136
360	0.229816437	0.313508987	0.383260727	0.419788361	0.486839294	0.488622665	0.46333313	0.453802109
384.654572	0.245183945	0.32907486	0.398944855	0.435525894	0.502664566	0.504457474	0.47914505	0.4696064
414.240051	0.263626099	0.34771347	0.417711258	0.454349518	0.52158165	0.523389816	0.498054504	0.488508224
449.742615	0.285751343	0.370040894	0.44017601	0.476877213	0.544208527	0.546039581	0.520679474	0.511125565
492.345703	0.312294006	0.396789551	0.467073441	0.503845215	0.571289063	0.573141098	0.547756195	0.538192749
543.469421	0.344142914	0.428857803	0.49930954	0.536157608	0.603729248	0.605607986	0.580196381	0.570623398
604.817871	0.382364273	0.467321396	0.537960052	0.574899673	0.642616272	0.644527435	0.619083405	0.609500885
678.436035	0.428239822	0.513471603	0.584331512	0.621376038	0.689266205	0.691215515	0.665735245	0.656139374
766.777832	0.483289719	0.56883812	0.639957428	0.677127838	0.745220184	0.747211456	0.721689224	0.712080002
872.787964	0.549337387	0.635259628	0.706684113	0.744003296	0.812337875	0.814382553	0.788806915	0.779182434
1000.00012	0.628620148	0.714988708	0.786785126	0.8242836	0.892913818	0.895021439	0.869384766	0.859737396

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 160m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	1.90735E-06	1.52588E-05	0.00056076	0.002815247	0.013256073	0.078529358	0.218122482	0.465433121
2.54250145	1.52588E-05	9.91821E-05	0.002828598	0.010099411	0.041332245	0.168912888	0.370876312	0.666385651
4.20668411	4.19617E-05	0.00038147	0.008026123	0.022386551	0.078203201	0.248800278	0.477275848	0.787424088
6.20370388	9.53674E-05	0.001131058	0.016843796	0.038803101	0.118362427	0.317266464	0.559244156	0.876628876
8.60012722	0.000188828	0.002750397	0.029298782	0.058105469	0.158771515	0.376939774	0.627094269	0.94919014
11.4758358	0.000350952	0.005701065	0.044952393	0.079240799	0.198059082	0.430049896	0.685865402	1.01152229
14.9266863	0.000627518	0.010412216	0.063180924	0.101425171	0.235748291	0.478151321	0.738246918	1.06682968
19.0677071	0.00110054	0.017190933	0.083360672	0.124176025	0.271757126	0.522314072	0.785848618	1.11696053
24.036932	0.001903534	0.02617836	0.104953766	0.147184372	0.306158066	0.56329155	0.82970047	1.16307068
30.0000019	0.003234863	0.037363052	0.127532959	0.170314789	0.339071274	0.601625443	0.870504379	1.20592117
32.311367	0.003805161	0.041719437	0.135814667	0.178672791	0.350782394	0.615146637	0.884872437	1.22100449
35.0850067	0.004570007	0.046932221	0.14513588	0.187955856	0.363548279	0.629760742	0.900371552	1.23727417
38.413372	0.005601883	0.053106308	0.155536652	0.198207855	0.377370834	0.645471573	0.916999817	1.25471687
42.4074097	0.00699234	0.060338974	0.167034149	0.209445953	0.392230988	0.662231445	0.934705734	1.27328491
47.2002563	0.008863449	0.068712235	0.179624557	0.221632004	0.408067703	0.679941177	0.953386307	1.29286957
52.9516716	0.011362076	0.078285217	0.193279266	0.234752655	0.424821854	0.698553085	0.972978592	1.31339836
59.8533707	0.014663696	0.089103699	0.207979202	0.248842239	0.442434311	0.717967987	0.993383408	1.3347702
68.1354141	0.018968582	0.101182938	0.223676682	0.263830185	0.460836411	0.738117218	1.01451874	1.35689545
78.0738602	0.024501801	0.114532471	0.240327835	0.279716492	0.479972839	0.758924484	1.03630638	1.37969208
90	0.031499863	0.129154205	0.257911682	0.296512604	0.49981308	0.780353546	1.05870819	1.40311813
93.4670486	0.033561707	0.133295059	0.262838364	0.301225662	0.505327225	0.786298752	1.0649395	1.40962982
97.6275024	0.036067963	0.138111115	0.268505096	0.30664444	0.511644363	0.793096542	1.07203865	1.41705132
102.620049	0.039115906	0.143690109	0.274991989	0.312854767	0.518836975	0.800813675	1.08009148	1.42547035
108.611107	0.042816162	0.150123596	0.282377243	0.319923401	0.526996613	0.809549332	1.08918381	1.43496513
115.800377	0.047306061	0.157505035	0.290744781	0.327968597	0.536155701	0.819318771	1.09936333	1.4455986
124.427498	0.052742004	0.165943146	0.30018425	0.33706665	0.546417236	0.83023262	1.11071968	1.4574585
134.780045	0.059309006	0.175550461	0.310781479	0.347299576	0.557851791	0.842351913	1.12332535	1.47062111
147.20311	0.067224503	0.186460495	0.322662354	0.358827591	0.570573807	0.85578537	1.13728333	1.48519135
162.110779	0.076738358	0.198843002	0.33596611	0.37178421	0.58471489	0.870666504	1.15273094	1.50131226
179.999985	0.088144302	0.212900162	0.350881577	0.386363983	0.600467682	0.887187958	1.16986275	1.5191803
186.934082	0.092561722	0.218244553	0.356533051	0.391908646	0.60643959	0.893453598	1.17635155	1.52593422
195.25499	0.097856522	0.224521637	0.363136292	0.398391724	0.613376617	0.900709152	1.18387032	1.53377724
205.240082	0.104202271	0.231884003	0.370836258	0.405963898	0.621421814	0.909103394	1.19256973	1.5428524
217.222198	0.11179924	0.240510941	0.379812241	0.414808273	0.630784988	0.918859482	1.20266914	1.55338287
231.600739	0.120893478	0.250621796	0.39027977	0.425153732	0.641664505	0.930175781	1.21438217	1.56559753
248.85498	0.131772995	0.262483597	0.402500153	0.437259674	0.654335022	0.943334579	1.22799683	1.57979202
269.560089	0.144788742	0.276412964	0.416788101	0.451438904	0.669116974	0.958665848	1.24384689	1.59631157
294.406219	0.160364151	0.292819977	0.433553696	0.468112946	0.686418533	0.976581573	1.26236725	1.61561584
324.221558	0.179004669	0.312200546	0.453292847	0.48777771	0.706747055	0.997615814	1.28410721	1.63827515
359.999969	0.201324463	0.335174561	0.476633072	0.511066437	0.730745316	1.02242279	1.30974007	1.66499138
384.654541	0.216684341	0.350896835	0.492580414	0.526975632	0.747138977	1.03936958	1.32724571	1.68324089
414.240021	0.235103607	0.36967659	0.511613846	0.545999527	0.766683578	1.05955505	1.34810448	1.70498848
449.742584	0.257188797	0.392110825	0.534328461	0.568693161	0.789991379	1.0836277	1.37298012	1.73092842
492.345673	0.283676147	0.41894722	0.561475754	0.595827103	0.817838669	1.11238861	1.40270996	1.7619381
543.46936	0.31545639	0.451097488	0.59400177	0.628358841	0.851230621	1.14689064	1.43836021	1.79912186
604.81781	0.353586197	0.489620209	0.632957458	0.667312622	0.891195297	1.1881752	1.48104095	1.84366989
678.435913	0.399339676	0.5358181	0.679656982	0.714008331	0.939098358	1.23765564	1.53220749	1.89709473
766.77771	0.454250336	0.591228485	0.735668182	0.770027161	0.99656868	1.29704857	1.59365082	1.96129227
872.787842	0.520147324	0.657714844	0.802873611	0.837234497	1.06553841	1.36835289	1.66745567	2.03846169
1000	0.599197388	0.737468719	0.883499146	0.917856216	1.14831352	1.45397949	1.75613976	2.13126755

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 160m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.00037384	0.001302719	0.002510071	0.002983093	0.004518509	0.006305695	0.007360458	0.0079422
2.54E+00	0.000997543	0.003437042	0.006795883	0.009126663	0.010995865	0.014024735	0.015645981	0.016448975
4.21E+00	0.001939774	0.006544113	0.013082504	0.01883316	0.019477844	0.023132324	0.024997711	0.025856018
6.20E+00	0.003124237	0.010499954	0.021080017	0.031536102	0.029561997	0.033342362	0.035253525	0.036081314
8.60012722	0.004600525	0.015268326	0.030481339	0.046449661	0.040897369	0.044452667	0.046291351	0.047042847
11.4758358	0.006401062	0.020874023	0.041080475	0.062929153	0.053314209	0.056453705	0.058153153	0.058801651
14.9266863	0.008523941	0.027259827	0.052614212	0.080425263	0.066532135	0.069149017	0.070674896	0.071207047
19.0677071	0.011045456	0.034461975	0.064968109	0.098613739	0.080444336	0.082489014	0.083831787	0.084245682
24.036932	0.014055252	0.042505264	0.078044891	0.117277145	0.094947815	0.096405029	0.097558975	0.097856522
30.0000019	0.01776886	0.051540375	0.091905594	0.136365891	0.110128403	0.111028671	0.112003326	0.112194061
32.311367	0.019187927	0.054912567	0.096984863	0.143293381	0.115657806	0.116350174	0.117261887	0.117414474
35.0850067	0.020893097	0.058826447	0.102748871	0.151041031	0.121900558	0.122367859	0.123209	0.123321533
38.413372	0.02296257	0.06337738	0.109285355	0.159677505	0.128955841	0.129190445	0.129959106	0.130025864
42.4074097	0.025440216	0.068624497	0.116645813	0.169237137	0.136882782	0.136888504	0.137580872	0.137599945
47.2002563	0.028482437	0.074630737	0.124822617	0.179679871	0.145599365	0.145343781	0.145952225	0.145927429
52.9516716	0.032104492	0.08143425	0.133852005	0.191019058	0.155170441	0.154642105	0.155170441	0.155099869
59.8533707	0.036527634	0.089233398	0.143903732	0.203361511	0.16579628	0.165021896	0.165472031	0.165353775
68.1354141	0.041835785	0.098007202	0.154899597	0.216617584	0.177337646	0.176307678	0.176681519	0.176515579
78.0738602	0.048238754	0.107898712	0.166944504	0.230834961	0.189905167	0.18862915	0.188926697	0.188720703
90	0.055932999	0.119018555	0.180112839	0.24605751	0.203575134	0.202068329	0.202297211	0.202049255
93.4670486	0.058170319	0.122205734	0.183858871	0.250352859	0.20746994	0.205907822	0.206115723	0.205856323
97.6275024	0.06085968	0.125938416	0.188205719	0.255308151	0.211967468	0.210338593	0.21052742	0.210254669
102.620049	0.064081192	0.130311966	0.193243027	0.261009216	0.217168808	0.215467453	0.215633392	0.215349197
108.611107	0.067913055	0.135379791	0.1990242	0.267513275	0.223104477	0.221311569	0.221452713	0.221157074
115.800377	0.072559357	0.141353607	0.205751419	0.274986267	0.230020523	0.228151321	0.228269577	0.227960587
124.427498	0.078115463	0.148302078	0.213485718	0.283493042	0.237953186	0.236005783	0.236099243	0.235774994
134.780045	0.084724426	0.156332016	0.222312927	0.293109894	0.246969223	0.244930267	0.244997025	0.244659424
147.20311	0.092699051	0.165714264	0.232479095	0.304044724	0.25733757	0.25522321	0.255268097	0.254917145
162.110779	0.102210999	0.176591873	0.244115829	0.316425323	0.269165039	0.266975403	0.267000198	0.266635895
179.999985	0.113557816	0.189208984	0.257444382	0.330453873	0.282669067	0.280406952	0.280414581	0.280040741
186.934082	0.117948532	0.194061279	0.262552261	0.3358078	0.287849426	0.285564423	0.28556633	0.285188675
195.25499	0.123224258	0.19981575	0.268571854	0.342086792	0.29393959	0.291631699	0.291625977	0.291244507
205.240082	0.129533768	0.206630707	0.275667191	0.349449158	0.301109314	0.298778534	0.298768997	0.298381805
217.222198	0.137081146	0.214689255	0.284013748	0.358072281	0.309534073	0.307180405	0.307163239	0.306774139
231.600739	0.146123886	0.224256516	0.293872833	0.368202209	0.319478989	0.317106247	0.317085266	0.31669426
248.85498	0.156959534	0.23559761	0.305500031	0.380094528	0.331195831	0.328807831	0.328783035	0.328390121
269.560089	0.169923782	0.249034882	0.31921196	0.394062042	0.344989777	0.342588425	0.342563629	0.342168808
294.406219	0.185470581	0.265018463	0.335453033	0.41053772	0.361318588	0.358911514	0.358886719	0.358491898
324.221558	0.204086304	0.284036636	0.354717255	0.430017471	0.380674362	0.378265381	0.378242493	0.377847672
359.999969	0.22640419	0.306724548	0.377637863	0.453134537	0.403694153	0.401296616	0.401279449	0.400886536
384.654541	0.241762161	0.322271347	0.393314362	0.468929291	0.419418335	0.417022705	0.417009354	0.416618347
414.240021	0.260213852	0.340942383	0.412126541	0.487850189	0.438304901	0.43592453	0.435918808	0.435529709
449.742584	0.282318115	0.36325264	0.434583664	0.510425568	0.460830688	0.458465576	0.458465576	0.458080292
492.345673	0.308849335	0.389987946	0.461471558	0.537433624	0.487796783	0.485448837	0.485460281	0.485078812
543.46936	0.340682983	0.42206192	0.493724823	0.569822311	0.520154953	0.517837524	0.517860413	0.517482758
604.81781	0.378890991	0.460512161	0.532367706	0.608613968	0.558908463	0.556621552	0.556659698	0.556287766
678.435913	0.424722672	0.5066185	0.578697205	0.655115128	0.605361938	0.603113174	0.60316658	0.602802277
766.77771	0.479755402	0.561964035	0.634302139	0.710910797	0.661119461	0.658918381	0.658992767	0.658638
872.787842	0.545785904	0.628364563	0.701007843	0.777849197	0.728006363	0.725858688	0.725959778	0.725616455
1000	0.624975204	0.707998276	0.781015396	0.858139038	0.808231354	0.806152344	0.806285858	0.805953979

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 250m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	1.90735E-06	2.09808E-05	0.000576019	0.002532959	0.013214111	0.078733444	0.218793869	0.464241028
2.54250145	1.14441E-05	0.000123978	0.002998352	0.010700226	0.041330338	0.169244766	0.371879578	0.665542603
4.20668411	3.24249E-05	0.000442505	0.008642197	0.0256176	0.078495026	0.249219894	0.478382111	0.786689758
6.20370388	7.43866E-05	0.001239777	0.018302918	0.046453476	0.119394302	0.317903519	0.560470581	0.875967026
8.60012722	0.000150681	0.002908707	0.031984329	0.071590424	0.161001205	0.377988815	0.628576279	0.948705673
11.4758358	0.000282288	0.005903244	0.04914856	0.099479675	0.201955795	0.431785583	0.687789917	1.01136398
14.9266863	0.000520706	0.010637283	0.069049835	0.128938675	0.241701126	0.480855942	0.740844727	1.06720924
19.0677071	0.000946045	0.017412186	0.090942383	0.159122467	0.280042648	0.526239395	0.789348602	1.11809731
24.036932	0.001695633	0.026363373	0.114196777	0.189476013	0.316921234	0.568626404	0.834302902	1.16516304
30.0000019	0.002965927	0.037475586	0.138299942	0.21959877	0.352342606	0.608491898	0.876348495	1.20912743
32.311367	0.003513336	0.041801453	0.147123337	0.230464935	0.364959717	0.622583389	0.891189575	1.22463417
35.0850067	0.004253387	0.046974182	0.157018661	0.242460251	0.378744125	0.637868881	0.907249451	1.24141312
38.413372	0.005256653	0.053096771	0.168012619	0.255588531	0.393657684	0.65430069	0.924491882	1.2594223
42.4074097	0.006616592	0.060268402	0.180112839	0.269824982	0.409671783	0.671834946	0.942861557	1.27860451
47.2002563	0.008453369	0.068567276	0.193305969	0.285137177	0.426727295	0.690395355	0.962278366	1.2988739
52.9516716	0.010915756	0.078052521	0.207551956	0.301435471	0.444705963	0.709871292	0.982635498	1.32012558
59.8533707	0.014183044	0.088769913	0.222816467	0.318675995	0.463563919	0.730182648	1.00383377	1.34224892
68.1354141	0.018451691	0.100738525	0.239042282	0.336774826	0.483194351	0.751220703	1.02577019	1.36514091
78.0738602	0.023950577	0.113965988	0.25617981	0.35565567	0.503494263	0.772886276	1.04833984	1.38869095
90	0.030914307	0.128469467	0.274251938	0.375364304	0.524532318	0.795183182	1.07151794	1.41285896
93.4670486	0.032966614	0.132575989	0.279302597	0.380847931	0.530374527	0.801382065	1.07797623	1.41959381
97.6275024	0.035463333	0.137353897	0.285106659	0.387125015	0.53704071	0.808441162	1.0853138	1.42724991
102.620049	0.038499832	0.142894745	0.29173851	0.394256592	0.544588089	0.816431046	1.09362221	1.43591309
108.611107	0.042190552	0.149280548	0.29927063	0.402326584	0.553096771	0.825405121	1.10295486	1.4456501
115.800377	0.046669006	0.156614304	0.307786942	0.411403656	0.562648773	0.835472107	1.11340714	1.45654869
124.427498	0.052093506	0.164995193	0.317382813	0.421602249	0.573373795	0.846729279	1.12507057	1.46870422
134.780045	0.058650971	0.174547195	0.328130722	0.432924271	0.585191727	0.859146118	1.13795853	1.48214149
147.20311	0.066555023	0.185400009	0.340154648	0.445531845	0.598323822	0.872888565	1.15220451	1.49699211
162.110779	0.076057434	0.197721481	0.353595734	0.459547043	0.612861633	0.888065338	1.16792488	1.51338005
179.999985	0.08745575	0.211742401	0.368715286	0.475263596	0.629119873	0.904956818	1.1853981	1.53158188
186.934082	0.091869354	0.217071533	0.374416351	0.481151581	0.635181427	0.911273956	1.19194603	1.53839874
195.25499	0.097162247	0.223327637	0.381067276	0.488012314	0.642238617	0.918598175	1.19953346	1.54631233
205.240082	0.103504181	0.230667114	0.388814926	0.495986938	0.650438309	0.927116394	1.20834541	1.55549431
217.222198	0.111099243	0.239274979	0.397853851	0.505264282	0.65996933	0.937015533	1.21857452	1.56614876
231.600739	0.120189667	0.24936676	0.408384323	0.516044617	0.671024323	0.948478699	1.23041916	1.57848549
248.85498	0.131067276	0.261203766	0.420660019	0.528579712	0.683849335	0.961755753	1.24414253	1.59278679
269.560089	0.14408493	0.275131226	0.435081482	0.543312073	0.698925018	0.977306366	1.2602005	1.6095047
294.406219	0.159660339	0.291538239	0.451946259	0.560468674	0.716424942	0.995365143	1.27884102	1.62892723
324.221558	0.178302765	0.310918808	0.471782684	0.580604553	0.736938477	1.0165329	1.30069542	1.65169334
359.999969	0.200626373	0.333890915	0.49521637	0.604356766	0.761119843	1.04149437	1.3264904	1.67856598
384.654541	0.215990067	0.349620819	0.511236191	0.620582581	0.77762413	1.05850029	1.3440361	1.69684601
414.240021	0.23441124	0.368392944	0.530321121	0.639900208	0.797273636	1.07877731	1.36499596	1.71869659
449.742584	0.256496429	0.390825272	0.553106308	0.662948608	0.820699692	1.10290337	1.38990211	1.74466324
492.345673	0.282991409	0.417671204	0.580352783	0.690504074	0.848711014	1.13180733	1.4197731	1.77580643
543.46936	0.314767838	0.449800491	0.612934113	0.72344017	0.882171631	1.16627312	1.4553833	1.81295776
604.81781	0.352905273	0.488330841	0.652006149	0.762939453	0.922330856	1.20771599	1.49821472	1.8576355
678.435913	0.398668289	0.534528732	0.698839188	0.810281754	0.970449448	1.25735092	1.54952621	1.91119766
766.77771	0.453590393	0.589954376	0.755031586	0.867092133	1.02819443	1.31692314	1.61113548	1.97554779
872.787842	0.519504547	0.656455994	0.822446823	0.935247421	1.09748459	1.38843918	1.6851387	2.05289841
1000	0.598583221	0.736240387	0.903345108	1.0170536	1.18066978	1.4743309	1.77406311	2.14592743

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 250m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.000310898	0.001060486	0.002248764	0.003231049	0.004499435	0.006263733	0.007318497	0.007900238
2.54E+00	0.000799179	0.002632141	0.005390167	0.007520676	0.010149002	0.013433456	0.015140533	0.015983582
4.21E+00	0.001480103	0.004777908	0.00945282	0.012741089	0.016645432	0.02114296	0.023281097	0.024274826
6.20E+00	0.00243187	0.007698059	0.014673233	0.019018173	0.024053574	0.02951622	0.031963348	0.033058167
8.60012722	0.003627777	0.011505127	0.021188736	0.026435852	0.032423019	0.038644791	0.041315079	0.042476654
11.4758358	0.005125046	0.016305924	0.029066086	0.035024643	0.041790009	0.048599243	0.051427841	0.052631378
14.9266863	0.007049561	0.022201538	0.038295746	0.044771195	0.052152634	0.059417725	0.062360764	0.063585281
19.0677071	0.009471893	0.029218674	0.048805237	0.055625916	0.063489914	0.071102142	0.074123383	0.075357437
24.036932	0.012426376	0.037319183	0.06048584	0.06751442	0.075746536	0.083623886	0.086696625	0.087928772
30.0000019	0.016059876	0.04652977	0.073253632	0.080379486	0.08889389	0.096971512	0.100076675	0.101301193
32.311367	0.017469406	0.050014496	0.078027725	0.085180283	0.093788147	0.101934433	0.105047226	0.106266022
35.0850067	0.019180298	0.054086685	0.083509445	0.090675354	0.099372864	0.107580185	0.110702515	0.111915588
38.413372	0.021261215	0.05881691	0.089757919	0.096918106	0.105699539	0.113969803	0.117099762	0.118307114
42.4074097	0.023773193	0.064271927	0.096845627	0.103992462	0.112855911	0.121183395	0.124319077	0.125518799
47.2002563	0.026796341	0.070520401	0.104818344	0.111938477	0.120880127	0.129266739	0.132404327	0.13359642
52.9516716	0.030469894	0.077646256	0.113710403	0.120780945	0.129787445	0.138225555	0.141366959	0.142553329
59.8533707	0.034900665	0.085729599	0.123609543	0.130630493	0.139703751	0.148191452	0.151334763	0.152509689
68.1354141	0.040235519	0.094831467	0.13451767	0.141479492	0.15060997	0.159143448	0.162288666	0.163455963
78.0738602	0.046665192	0.105056763	0.146505356	0.153396606	0.162578583	0.171154022	0.174303055	0.175462723
90	0.054389954	0.116516113	0.15965271	0.166479111	0.175712585	0.184329987	0.187480927	0.188632965
93.4670486	0.056638718	0.119785309	0.163383484	0.170190811	0.179439545	0.18806839	0.191217422	0.192367554
97.6275024	0.059329987	0.123615265	0.167722702	0.174509048	0.183771133	0.192411423	0.195562363	0.196710587
102.620049	0.062580109	0.12812233	0.172792435	0.1795578	0.188833237	0.197486877	0.200637817	0.201782227
108.611107	0.06644249	0.133340836	0.178596497	0.185331345	0.194620132	0.203287125	0.206439972	0.207584381
115.800377	0.07109642	0.139442444	0.185331345	0.192041397	0.201347351	0.210029602	0.213184357	0.214326859
124.427498	0.076641083	0.146497726	0.193035126	0.199714661	0.209041595	0.217744827	0.220903397	0.222043991
134.780045	0.083322525	0.154729843	0.201946259	0.208604813	0.217950821	0.226669312	0.229827881	0.230966568
147.20311	0.091285706	0.164232254	0.212108612	0.218742371	0.22810936	0.236848831	0.240009308	0.241146088
162.110779	0.100805283	0.175243378	0.223758698	0.230371475	0.239761353	0.248521805	0.251688004	0.252824783
179.999985	0.112178802	0.188030243	0.237165451	0.243768692	0.253189087	0.261976242	0.265146255	0.266281128
186.934082	0.116584778	0.192932129	0.242279053	0.248874664	0.258302689	0.267095566	0.270269394	0.271404266
195.25499	0.121852875	0.198717117	0.248281479	0.254867554	0.264303207	0.273105621	0.276283264	0.277420044
205.240082	0.12815094	0.205553055	0.255342484	0.261919022	0.271364212	0.280179977	0.283363342	0.284502029
217.222198	0.135732651	0.213703156	0.263755798	0.270339966	0.27980423	0.288631439	0.291814804	0.292953491
231.600739	0.144786835	0.223316193	0.273616791	0.280200958	0.289680481	0.298524857	0.301712036	0.302850723
248.85498	0.15562439	0.234689713	0.285228729	0.291814804	0.301311493	0.310173035	0.313367844	0.314508438
269.560089	0.168600082	0.248189926	0.298974991	0.30557251	0.315095901	0.323980331	0.32718277	0.328325272
294.406219	0.184146881	0.264215469	0.315225601	0.321836472	0.331384659	0.340291977	0.343502045	0.344646454
324.221558	0.202772141	0.28327179	0.334493637	0.341121674	0.350700378	0.359634399	0.362852097	0.36400032
359.999969	0.225101471	0.305992126	0.357419968	0.364076614	0.373687744	0.382652283	0.385881424	0.387033463
384.654541	0.240472794	0.321578979	0.373121262	0.379795074	0.389429092	0.398412704	0.401651382	0.402807236
414.240021	0.258907318	0.340223312	0.391881943	0.398574829	0.40823555	0.417245865	0.42049408	0.421655655
449.742584	0.281019211	0.362545013	0.414321899	0.421037674	0.430727005	0.439767838	0.443027496	0.444194794
492.345673	0.307567596	0.389316559	0.441242218	0.447999954	0.45772934	0.46680069	0.4700737	0.471242905
543.46936	0.339382172	0.421339035	0.473386765	0.480171204	0.489940643	0.49905777	0.502347946	0.503530502
604.81781	0.37761116	0.459825516	0.512060165	0.51890564	0.528730392	0.537891388	0.54119873	0.542385101
678.435913	0.423463821	0.505952835	0.558376312	0.565279007	0.575166702	0.584384918	0.587715149	0.588911057
766.77771	0.478498459	0.561304092	0.613954544	0.620929718	0.6308918	0.64017868	0.643535614	0.644742966
872.787842	0.54454422	0.627719879	0.680633545	0.687692642	0.69774437	0.707113266	0.710502625	0.711723328
1000	0.623764038	0.707380295	0.760608673	0.76776886	0.777927399	0.787399292	0.790828705	0.792068481

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 500m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	1.90735E-06	1.71661E-05	0.000524521	0.002527237	0.013214111	0.078733444	0.218795776	0.464241028
2.54250145	1.33514E-05	9.91821E-05	0.00283432	0.010669708	0.041326523	0.169246674	0.371881485	0.665546417
4.20668411	3.62396E-05	0.000377655	0.008338928	0.02554512	0.078479767	0.249217987	0.478385925	0.78669548
6.20370388	8.2016E-05	0.001134872	0.017896652	0.046319962	0.11933136	0.31788063	0.560461044	0.875965118
8.60012722	0.000162125	0.002790451	0.031599045	0.071414948	0.160900116	0.377944946	0.628553391	0.948690414
11.4758358	0.000305176	0.005846024	0.049003601	0.099332809	0.20182991	0.43170929	0.687738419	1.01132393
14.9266863	0.000555038	0.010770798	0.06942749	0.128938675	0.241601944	0.480766296	0.740772247	1.06714439
19.0677071	0.000995636	0.017904282	0.092157364	0.15943718	0.280046463	0.526165009	0.789272308	1.11802101
24.036932	0.00176239	0.027406693	0.116565704	0.190288544	0.317144394	0.568632126	0.834259033	1.1651001
30.0000019	0.003044128	0.039258957	0.142120361	0.221138	0.352935791	0.608667374	0.876413345	1.20914268
32.311367	0.00359726	0.043880463	0.151512146	0.232303619	0.36570549	0.622806549	0.891284943	1.22467232
35.0850067	0.004341125	0.049411774	0.162080765	0.244655609	0.379676819	0.638187408	0.907411575	1.24150276
38.413372	0.005350113	0.055963516	0.173856735	0.258211136	0.394832611	0.654754639	0.924749374	1.25958824
42.4074097	0.006713867	0.063634872	0.186857224	0.272958755	0.411148071	0.672466278	0.943248749	1.27888107
47.2002563	0.008554459	0.072507858	0.201065063	0.288856506	0.428560257	0.691251755	0.962839127	1.29929924
52.9516716	0.011018753	0.08263588	0.216438293	0.305843353	0.446989059	0.711009979	0.983419418	1.32074738
59.8533707	0.014284134	0.094049454	0.232925415	0.323858261	0.466384888	0.731681824	1.00491524	1.34314537
68.1354141	0.018550873	0.106758118	0.250453949	0.342811584	0.486616135	0.753141403	1.02719307	1.36633873
78.0738602	0.024044037	0.120750427	0.268938065	0.362594604	0.507574081	0.775276184	1.05016136	1.39025497
90	0.031003952	0.136001587	0.288276672	0.383085251	0.529132843	0.797990799	1.07372475	1.41479683
93.4670486	0.033054352	0.14031601	0.293708801	0.388849258	0.535169601	0.804290771	1.08027077	1.42161751
97.6275024	0.035549164	0.145326614	0.299926758	0.395410538	0.542037964	0.811494827	1.08773804	1.42939186
102.620049	0.038585663	0.151123047	0.307014465	0.402862549	0.549829483	0.819671631	1.09620667	1.43820572
108.611107	0.042272568	0.157791138	0.31504631	0.411281586	0.558612823	0.828870773	1.10573387	1.44812393
115.800377	0.046749115	0.165424347	0.324100494	0.42073822	0.56845665	0.839176178	1.11639977	1.45922279
124.427498	0.052171707	0.174123764	0.334253311	0.431304932	0.579431534	0.850639343	1.12825966	1.47157478
134.780045	0.058731079	0.184005737	0.345598221	0.443078995	0.591646194	0.863370895	1.14141655	1.48526573
147.20311	0.066635132	0.1951828	0.358205795	0.456102371	0.605091095	0.877382278	1.1559124	1.50035667
162.110779	0.076143265	0.207838058	0.372264862	0.470603943	0.620052338	0.892881393	1.17191887	1.51701927
179.999985	0.087547302	0.222167969	0.387916565	0.486671448	0.63656044	0.909986496	1.18959045	1.53541374
186.934082	0.091966629	0.227607727	0.393827438	0.492733002	0.642776489	0.916431427	1.19625664	1.54235268
195.25499	0.097263336	0.233987808	0.400705338	0.499771118	0.649991989	0.923906326	1.20398712	1.55040741
205.240082	0.1036129	0.241456985	0.408678055	0.507896423	0.658288956	0.932512283	1.21288872	1.55967522
217.222198	0.111217499	0.250200272	0.417970657	0.517391205	0.668022156	0.942558289	1.22324371	1.57045174
231.600739	0.120319366	0.260425568	0.428722382	0.528320313	0.679195404	0.95413208	1.23520088	1.58290291
248.85498	0.131210327	0.272403717	0.441274643	0.541099548	0.692232132	0.967563629	1.24905968	1.59733009
269.560089	0.14424324	0.286449432	0.455846786	0.555879593	0.707302094	0.983133316	1.26514053	1.61408043
294.406219	0.159835815	0.302961349	0.472890854	0.573154449	0.724899292	1.00128365	1.28387833	1.63359642
324.221558	0.1784935	0.322446823	0.492918015	0.593437195	0.745527267	1.02254105	1.30582428	1.65645599
359.999969	0.200832367	0.345500946	0.516485214	0.617263794	0.769748688	1.04751205	1.33161163	1.68332672
384.654541	0.216209412	0.361284256	0.532590866	0.633544922	0.786302567	1.06458092	1.34923363	1.70168304
414.240021	0.234642029	0.380115509	0.551784515	0.652944565	0.806013107	1.08488464	1.3701973	1.72353172
449.742584	0.25674057	0.402597427	0.574645996	0.676029205	0.829462051	1.10905266	1.39516258	1.7495594
492.345673	0.283248901	0.429515839	0.602043152	0.703716278	0.857578278	1.1380291	1.4250946	1.7807579
543.46936	0.31504631	0.461730957	0.634767532	0.736761093	0.891141891	1.17262077	1.46082878	1.81802559
604.81781	0.353197098	0.500328064	0.673955917	0.776334763	0.931335449	1.21404839	1.50363541	1.86268806
678.435913	0.398975372	0.546604156	0.720930099	0.823766708	0.97951889	1.26372719	1.55498886	1.9162941
766.77771	0.453905106	0.602104187	0.777252197	0.880632401	1.03725815	1.32324409	1.61655426	1.98060799
872.787842	0.519824982	0.66869545	0.844837189	0.948883057	1.1065979	1.39479828	1.690588	2.05799103
1000	0.598930359	0.748605728	0.925949097	1.03080368	1.18985176	1.48075485	1.77958298	2.15108871

Appendix A - Data Table

Pumping from Zone 1 w/ abandoned well 500m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.00030899	0.001277924	0.002670288	0.003488541	0.004667282	0.006376266	0.007413864	0.007987976
2.54E+00	0.000808716	0.003108978	0.006326675	0.008148193	0.010612488	0.013792038	0.015460968	0.016283035
4.21E+00	0.001426697	0.005321503	0.010639191	0.013525009	0.017223358	0.021589279	0.023677826	0.024644852
6.20E+00	0.002191544	0.008008957	0.015714645	0.019697189	0.02454567	0.029888153	0.032289505	0.033361435
8.60012722	0.003152847	0.011262894	0.021589279	0.026660919	0.032571793	0.03874588	0.041400909	0.042554855
11.4758358	0.004364014	0.015190125	0.028326035	0.034461975	0.041343689	0.048238754	0.051105499	0.052330017
14.9266863	0.005907059	0.019901276	0.035953522	0.043102264	0.05087471	0.058408737	0.061458588	0.062742233
19.0677071	0.007883072	0.025514603	0.044527054	0.052635193	0.061220169	0.069318771	0.072530747	0.073865891
24.036932	0.010421753	0.032136917	0.054073334	0.063076019	0.072397232	0.080999374	0.084354401	0.085735321
30.0000019	0.013641357	0.039855957	0.064640045	0.074474335	0.084466934	0.093515396	0.096992493	0.098413467
32.311367	0.014942169	0.042829514	0.068616867	0.078737259	0.088960648	0.098163605	0.10168457	0.103118896
35.0850067	0.016521454	0.046329498	0.07321167	0.083639145	0.094106674	0.103471756	0.107038498	0.108488083
38.413372	0.018461227	0.050445557	0.07849884	0.089248657	0.099969864	0.1095047	0.113119125	0.114582062
42.4074097	0.020843506	0.055267334	0.08455658	0.09564209	0.106628418	0.116336823	0.119998932	0.121477127
47.2002563	0.023763657	0.060880661	0.091453552	0.102882385	0.114135742	0.124019623	0.127729416	0.129224777
52.9516716	0.027338028	0.067377091	0.09926033	0.111036301	0.122558594	0.13261795	0.136375427	0.13788414
59.8533707	0.031698227	0.074848175	0.108047485	0.120166779	0.1319561	0.142189026	0.145994186	0.147518158
68.1354141	0.036996841	0.083389282	0.117887497	0.130342484	0.142393112	0.152793884	0.156644821	0.158182144
78.0738602	0.04341507	0.093105316	0.128858566	0.141635895	0.153932571	0.164495468	0.168390274	0.169940948
90	0.051145554	0.10408783	0.141016006	0.154087067	0.166614532	0.177330017	0.181268692	0.182834625
93.4670486	0.053405762	0.107252121	0.144519806	0.157680511	0.170272827	0.181028366	0.18497467	0.186542511
97.6275024	0.056110382	0.110954285	0.148571014	0.161821365	0.174482346	0.185281754	0.189243317	0.190814972
102.620049	0.05935669	0.115304947	0.153308868	0.166656494	0.179393768	0.190242767	0.194215775	0.195791245
108.611107	0.063247681	0.120389938	0.158802032	0.172250748	0.18506813	0.195970535	0.199960709	0.201543808
115.800377	0.067918778	0.126346588	0.165197372	0.178760529	0.191661835	0.20262146	0.206626892	0.208213806
124.427498	0.073509216	0.133281708	0.172584534	0.186260223	0.199251175	0.210269928	0.214292526	0.215885162
134.780045	0.080211639	0.141384125	0.181179047	0.194986343	0.20807457	0.219150543	0.223184586	0.224777222
147.20311	0.088191986	0.150699615	0.190895081	0.204795837	0.21796608	0.22910881	0.233171463	0.234779358
162.110779	0.09777832	0.16166687	0.202367783	0.216407776	0.229679108	0.240879059	0.244949341	0.246553421
179.999985	0.109191895	0.174348831	0.215475082	0.229627609	0.242986679	0.254245758	0.258331299	0.259943008
186.934082	0.113616943	0.179222107	0.220504761	0.234697342	0.248090744	0.259368896	0.263462067	0.265073776
195.25499	0.118909836	0.184989929	0.226434708	0.240673065	0.254098892	0.265399933	0.269500732	0.271114349
205.240082	0.12525177	0.191820145	0.233423233	0.247701645	0.261159897	0.272485733	0.276594162	0.278211594
217.222198	0.132833481	0.199914932	0.241699219	0.256029129	0.269527435	0.280881882	0.28499794	0.286619186
231.600739	0.141916275	0.209499359	0.2514534	0.265825272	0.279361725	0.290744781	0.294872284	0.296495438
248.85498	0.152776718	0.220859528	0.262996674	0.277421951	0.291002274	0.302415848	0.30655098	0.308177948
269.560089	0.165788651	0.234333038	0.276634216	0.291103363	0.30472374	0.316169739	0.320318222	0.321950912
294.406219	0.181360245	0.250333786	0.292798996	0.307317734	0.320980072	0.332460403	0.336620331	0.338256836
324.221558	0.200004578	0.269369125	0.311994553	0.326560974	0.340269089	0.351783752	0.355957031	0.357599258
359.999969	0.22234726	0.292057037	0.334835052	0.349449158	0.363199234	0.374752045	0.378938675	0.380588531
384.654541	0.237735748	0.307653427	0.350534439	0.365182877	0.378961563	0.390537262	0.394731522	0.396383286
414.240021	0.256183624	0.32629776	0.369279861	0.383960724	0.397771835	0.409376144	0.413579941	0.415237427
449.742584	0.278310776	0.348615646	0.391700745	0.406417847	0.42026329	0.431898117	0.436115265	0.437778473
492.345673	0.304859161	0.375394821	0.418626785	0.433395386	0.447284698	0.45895195	0.463180542	0.464845657
543.46936	0.336708069	0.407459259	0.450824738	0.465641022	0.479576111	0.491285324	0.495529175	0.49720192
604.81781	0.374927521	0.445915222	0.489439011	0.504310608	0.518302917	0.530059814	0.534322739	0.536003113
678.435913	0.420789719	0.492042542	0.535745621	0.550683975	0.564739227	0.576555252	0.580841064	0.582530975
766.77771	0.475814819	0.547376633	0.59129715	0.606313705	0.620445251	0.632328033	0.636640549	0.638341904
872.787842	0.54186058	0.613780975	0.65795517	0.673065186	0.687290192	0.699256897	0.703601837	0.705316544
1000	0.621112823	0.693468094	0.737953186	0.753175735	0.767511368	0.779579163	0.783964157	0.78569603

Appendix A - Data Table

Pumping from Zone3 w/o abandoned well
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000396729	0.001401901	0.002771378	0.003593445	0.004776001	0.006479263	0.007493973	0.008045197
2.54250145	0.000986099	0.003330231	0.006439209	0.008241653	0.010688782	0.013843536	0.015478134	0.016273499
4.20668411	0.001724243	0.005693436	0.010829926	0.013681412	0.017341614	0.0216465	0.023677826	0.02460289
6.20370388	0.002630234	0.008552551	0.015983582	0.019908905	0.02469635	0.029943466	0.032258987	0.033269882
8.60012722	0.003746033	0.01199913	0.021953583	0.026943207	0.032762528	0.038801193	0.041345596	0.04242897
11.4758358	0.005123138	0.016130447	0.028778076	0.034797669	0.04155159	0.048271179	0.051015854	0.052160263
14.9266863	0.006828308	0.021043778	0.036497116	0.043502808	0.051115036	0.058444977	0.061372757	0.062574387
19.0677071	0.00894928	0.026834488	0.045137405	0.053068161	0.061454773	0.069311142	0.072383881	0.073625565
24.036932	0.011590958	0.033584595	0.054725647	0.063520432	0.072612763	0.080944061	0.084144592	0.085428238
30.0000019	0.014883041	0.041362763	0.065279007	0.074876785	0.084609985	0.093351364	0.096664429	0.097990036
32.311367	0.016176224	0.044330597	0.069236755	0.079114914	0.089067459	0.097951889	0.101301193	0.10263443
35.0850067	0.017755508	0.047822952	0.073806763	0.083982468	0.094167709	0.103199005	0.10657692	0.107917786
38.413372	0.019678116	0.051914215	0.079057694	0.089548111	0.099975586	0.109169006	0.112600327	0.113958359
42.4074097	0.022027969	0.056686401	0.085065842	0.095888138	0.106575012	0.115942001	0.119421005	0.120790482
47.2002563	0.024892807	0.062217712	0.09189415	0.103055954	0.114004135	0.123527527	0.12704277	0.128433228
52.9516716	0.02838707	0.068601608	0.099615097	0.111124039	0.122341156	0.132049561	0.135620117	0.137018204
59.8533707	0.032644272	0.075927734	0.108299255	0.12015152	0.131633759	0.141513824	0.145132065	0.146541595
68.1354141	0.037815094	0.084291458	0.118015289	0.130205154	0.141941071	0.151960373	0.155611038	0.157045364
78.0738602	0.044078827	0.093801498	0.128839493	0.141353607	0.153331757	0.16350174	0.167194366	0.168640137
90	0.051660538	0.104585648	0.140882492	0.153707504	0.165922165	0.176252365	0.179988861	0.181447983
93.4670486	0.053871155	0.107671738	0.144309998	0.15722084	0.169504166	0.17988205	0.183628082	0.185091019
97.6275024	0.056528091	0.111303329	0.148321152	0.161325455	0.173683167	0.184120178	0.187889099	0.189350128
102.620049	0.059720993	0.11557579	0.153003693	0.166110992	0.178544998	0.189031601	0.192810059	0.194278717
108.611107	0.063554764	0.120584488	0.15845871	0.171676636	0.184192657	0.194728851	0.19852066	0.199995041
115.800377	0.068155289	0.126440048	0.164785385	0.178115845	0.190719604	0.201309204	0.205120087	0.206598282
124.427498	0.073677063	0.133275986	0.172109604	0.185560226	0.198255539	0.208904266	0.212730408	0.214212418
134.780045	0.080299377	0.141239166	0.18056488	0.194133759	0.206914902	0.217615128	0.221452713	0.222942352
147.20311	0.088228226	0.150510788	0.19033432	0.204027176	0.216905594	0.227682114	0.231544495	0.233036041
162.110779	0.0977211	0.161300659	0.201597214	0.215402603	0.228363037	0.239170074	0.24303627	0.244543076
179.999985	0.109075546	0.173887253	0.214641571	0.228561401	0.241617203	0.252500534	0.256393433	0.257900238
186.934082	0.113473892	0.178712845	0.21962738	0.233589172	0.246677399	0.25758934	0.261489868	0.262996674
195.25499	0.118741989	0.184440613	0.225530624	0.239536285	0.252664566	0.263607025	0.26751709	0.269025803
205.240082	0.125055313	0.191234589	0.232507706	0.246559143	0.259719849	0.270677567	0.274589539	0.276103973
217.222198	0.132614136	0.199287415	0.240743637	0.254842758	0.268039703	0.279026031	0.282951355	0.284463882
231.600739	0.141670227	0.208835602	0.250480652	0.264629364	0.277866364	0.288881302	0.292812347	0.294330597
248.85498	0.152515411	0.220157623	0.261989594	0.276185989	0.289461136	0.30050087	0.304439545	0.305961609
269.560089	0.16550827	0.233589172	0.275600433	0.28984642	0.303163528	0.314239502	0.318187714	0.319713593
294.406219	0.181064606	0.249568939	0.291753769	0.306045532	0.319404602	0.330507278	0.334466934	0.335996628
324.221558	0.199703217	0.268568039	0.310909271	0.325241089	0.338624954	0.349721909	0.35367775	0.355222702
359.999969	0.222038269	0.291231155	0.333730698	0.348115921	0.361555099	0.372720718	0.376699448	0.378240585
384.654541	0.237415314	0.306816101	0.349411011	0.363824844	0.377288818	0.388473511	0.392461777	0.394004822
414.240021	0.25586319	0.325458527	0.368160248	0.382608414	0.396104813	0.407320023	0.411315918	0.41286087
449.742584	0.277990341	0.347768784	0.390562057	0.405038834	0.418552399	0.429769516	0.433773041	0.435321808
492.345673	0.304531097	0.374511719	0.417432785	0.43195343	0.445518494	0.456790924	0.460805893	0.462362289
543.46936	0.336387634	0.406557083	0.449605942	0.464174271	0.477783203	0.489089966	0.493125916	0.494686127
604.81781	0.374591827	0.445007324	0.488203049	0.502822876	0.5164814	0.527833939	0.531881332	0.533449173
678.435913	0.420454025	0.491102219	0.534475327	0.549158096	0.56287384	0.574268341	0.57834053	0.579917908
766.77771	0.475484848	0.546421051	0.589998245	0.604751587	0.618535995	0.629993439	0.634088516	0.635673523
872.787842	0.541519165	0.612802505	0.656614304	0.671455383	0.685323715	0.69685173	0.700971603	0.702569962
1000	0.620761871	0.692481995	0.736581802	0.751527786	0.765499115	0.777114868	0.781263351	0.782875061

Appendix A - Data Table

Pumping from Zone3 w/o abandoned well
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.043010712	0.152078629	0.301095963	0.392353058	0.531341553	0.782068253	1.0320549	1.33150864
2.54E+00	0.051568985	0.16850853	0.322834015	0.41595459	0.556713104	0.808931351	1.05945206	1.35910988
4.21E+00	0.053529739	0.171596527	0.326568604	0.419887543	0.560815811	0.813150406	1.06370544	1.36337471
6.20E+00	0.054826737	0.173782349	0.32926178	0.422733307	0.563783646	0.816200256	1.06677628	1.36645317
8.60012722	0.05629158	0.176246643	0.332288742	0.425924301	0.567108154	0.819612503	1.07021141	1.36989594
11.4758358	0.058048248	0.179151535	0.335802078	0.429607391	0.570926666	0.82352066	1.07414436	1.37383461
14.9266863	0.060173035	0.182563782	0.339870453	0.433860779	0.575332642	0.828042984	1.07870293	1.37839508
19.0677071	0.06272316	0.186569214	0.344577789	0.438753128	0.580364227	0.833156586	1.0838356	1.38353729
24.036932	0.065816879	0.191270828	0.35002327	0.444391251	0.586151123	0.839040756	1.08974457	1.38945389
30.0000019	0.069564819	0.196752548	0.356248856	0.450803757	0.592702866	0.845674515	1.09639931	1.39611816
32.311367	0.071022034	0.198856354	0.358646393	0.453277588	0.595239639	0.848258972	1.09899902	1.39871788
35.0850067	0.072782517	0.201358795	0.361446381	0.456148148	0.59815979	0.851200104	1.10194397	1.40166855
38.413372	0.074884415	0.204292297	0.364723206	0.459512711	0.60159111	0.854679108	1.10543633	1.40516281
42.4074097	0.077413559	0.207754135	0.36857605	0.46346283	0.605617523	0.858758926	1.1095314	1.4092598
47.2002563	0.080461502	0.211837769	0.373054504	0.468034744	0.610254288	0.863426208	1.11420441	1.41393852
52.9516716	0.084123612	0.216621399	0.378290176	0.47338295	0.615692139	0.868927002	1.11972427	1.4194603
59.8533707	0.088523865	0.222219467	0.384342194	0.479543686	0.621932983	0.875219345	1.12602806	1.42576981
68.1354141	0.093751907	0.228694916	0.391279221	0.486591339	0.629060745	0.882394791	1.13321686	1.43296432
78.0738602	0.100053787	0.236291885	0.399353027	0.494777679	0.637331009	0.890716553	1.14155197	1.44130325
90	0.107727051	0.245225906	0.408733368	0.504262924	0.646888733	0.900312424	1.15115738	1.45091629
93.4670486	0.109941483	0.247789383	0.411417007	0.506971359	0.649614334	0.903043747	1.1538887	1.45364761
97.6275024	0.112545013	0.250797272	0.414581299	0.510177612	0.652856827	0.906318665	1.15717316	1.45693207
102.620049	0.115760803	0.25444603	0.418382645	0.51401329	0.656715393	0.910188675	1.16104698	1.4608078
108.611107	0.119565964	0.258735657	0.422843933	0.518516541	0.661249161	0.914741516	1.16560555	1.46536827
115.800377	0.124134064	0.263824463	0.42811203	0.523822784	0.666585922	0.920089722	1.17095566	1.4707222
124.427498	0.129583359	0.269824982	0.43431282	0.530073166	0.672872543	0.926404953	1.17727852	1.47704506
134.780045	0.136154175	0.276948929	0.441627502	0.537431717	0.680263519	0.933815002	1.18469238	1.48446083
147.20311	0.14399147	0.285348892	0.450223923	0.546072006	0.688936234	0.942501068	1.19338417	1.49315643
162.110779	0.153388977	0.295289993	0.460357666	0.556251526	0.699148178	0.952737808	1.20362473	1.5033989
179.999985	0.164651871	0.307086945	0.472343445	0.568284988	0.711215973	0.964826584	1.21572113	1.51549721
186.934082	0.169010162	0.311645508	0.476980209	0.572940826	0.715890884	0.969518661	1.22041893	1.52019501
195.25499	0.174243927	0.317075729	0.482477188	0.578453064	0.721412659	0.975046158	1.22594833	1.52572441
205.240082	0.180505753	0.323541641	0.489015579	0.585008621	0.727981567	0.981622696	1.23252487	1.53230286
217.222198	0.188018799	0.331272125	0.496822357	0.592834473	0.735822678	0.989471436	1.24037552	1.54015541
231.600739	0.197029114	0.340494156	0.506120682	0.602149963	0.745149612	0.998806	1.2497139	1.54949379
248.85498	0.207828522	0.351495743	0.517194748	0.613243103	0.756254196	1.00991821	1.26082802	1.56060791
269.560089	0.22077179	0.364645004	0.530418396	0.626483917	0.769510269	1.02318382	1.27409744	1.57387924
294.406219	0.236288071	0.380334854	0.546173096	0.642251968	0.785289764	1.03896713	1.28988075	1.58966446
324.221558	0.254880905	0.399089813	0.56498909	0.661085129	0.804134369	1.05782318	1.30873871	1.60852432
359.999969	0.277193069	0.42155838	0.587516785	0.683628082	0.826690674	1.08038712	1.33130646	1.63109207
384.654541	0.292568207	0.437013626	0.60300827	0.699127197	0.842197418	1.09589767	1.34681892	1.64660645
414.240021	0.31101799	0.455547333	0.621572495	0.717700958	0.860774994	1.11447906	1.36540222	1.66518974
449.742584	0.333137512	0.477739334	0.643795013	0.739931107	0.883010864	1.13672066	1.38764381	1.68743134
492.345673	0.35969162	0.504377365	0.670469284	0.766613007	0.909700394	1.16341019	1.41433525	1.71412468
543.46936	0.391548157	0.536338806	0.702476501	0.798635483	0.941736221	1.19545937	1.44638634	1.74617577
604.81781	0.429777145	0.574638367	0.74080658	0.836971283	0.980072021	1.23379135	1.48471832	1.78450966
678.435913	0.475645065	0.620634079	0.786863327	0.883047104	1.02616692	1.2799015	1.5308342	1.83062553
766.77771	0.530696869	0.675807953	0.842092514	0.93829155	1.08142281	1.33516693	1.58610153	1.88589287
872.787842	0.596761703	0.742015839	0.90836525	1.00458145	1.14772797	1.40148163	1.65241814	1.95221138
1000	0.676040649	0.82147789	0.987913132	1.08415222	1.22731781	1.48108673	1.73202896	2.0318222

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 20m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000213623	0.000757217	0.001880646	0.003957748	0.013692856	0.076618195	0.256868362	0.308307648
2.54250145	0.000553131	0.001890183	0.005540848	0.012147903	0.035577774	0.134054184	0.332855225	0.383630753
4.20668411	0.000993729	0.003429413	0.011463165	0.024066925	0.059646606	0.174354553	0.373180389	0.422540665
6.20370388	0.001554489	0.005552292	0.019773483	0.038555145	0.083223343	0.205453873	0.401975632	0.450263977
8.60012722	0.002262115	0.00851059	0.030220032	0.054553986	0.10562706	0.231508255	0.425546646	0.472991943
11.4758358	0.003162384	0.012561798	0.042409897	0.071390152	0.126926422	0.25460434	0.446315765	0.49306488
14.9266863	0.00431633	0.017915726	0.055959702	0.088693619	0.147361755	0.275873184	0.465463638	0.511617661
19.0677071	0.005813599	0.02470398	0.070573807	0.106285095	0.1671772	0.295991898	0.483650208	0.529285431
24.036932	0.00778389	0.032979965	0.086029053	0.124088287	0.186578751	0.315391541	0.501298904	0.546474457
30.0000019	0.010385513	0.042722702	0.102180481	0.142091751	0.205741882	0.334373474	0.518690109	0.563455582
32.311367	0.011428833	0.046455383	0.108114243	0.148628235	0.21264267	0.341192245	0.524957657	0.569580078
35.0850067	0.01273346	0.050855637	0.114816666	0.15593338	0.220298767	0.348735809	0.531915665	0.57639122
38.413372	0.014364243	0.056003571	0.122333527	0.164043427	0.228740692	0.357042313	0.539604187	0.58392334
42.4074097	0.01640892	0.061979294	0.130706787	0.172990799	0.237997055	0.366136551	0.548059464	0.592218399
47.2002563	0.018976212	0.068853378	0.139968872	0.182800293	0.248088837	0.376045227	0.557317734	0.601312637
52.9516716	0.022190094	0.076692581	0.150144577	0.193490982	0.25903511	0.386793137	0.567407608	0.61123848
59.8533707	0.026201248	0.08556366	0.16126442	0.205089569	0.270864487	0.39840889	0.578372955	0.622041702
68.1354141	0.031183243	0.095525742	0.173351288	0.217615128	0.283588409	0.410919189	0.590255737	0.633768082
78.0738602	0.037332535	0.106643677	0.186443329	0.231103897	0.297252655	0.424373627	0.603111267	0.646476746
90	0.044858933	0.118989944	0.200590134	0.245603561	0.311904907	0.438827515	0.617017746	0.66024971
93.4670486	0.047060013	0.122499466	0.204580307	0.249687195	0.316028595	0.442895889	0.620933533	0.66412735
97.6275024	0.049711227	0.126605988	0.209207535	0.254415512	0.320800781	0.447608948	0.625484467	0.668640137
102.620049	0.052909851	0.13139534	0.214561462	0.259878159	0.326309204	0.453056335	0.63076973	0.673885345
108.611107	0.056760788	0.136960983	0.220722198	0.266153336	0.332632065	0.459316254	0.636850357	0.679922104
115.800377	0.061397553	0.143409729	0.227788925	0.273340225	0.339870453	0.466485977	0.643835068	0.686862946
124.427498	0.066970825	0.150857925	0.235868454	0.281539917	0.348123355	0.474676132	0.651842117	0.694826126
134.780045	0.073659897	0.159444809	0.245084763	0.290880203	0.357517242	0.484010696	0.661001205	0.703943253
147.20311	0.081680298	0.169330597	0.255586624	0.30150032	0.368196487	0.494638443	0.671470642	0.714374542
162.110779	0.091279984	0.180711746	0.267553329	0.313585281	0.380340576	0.506748199	0.683446884	0.726318359
179.999985	0.102758408	0.193834305	0.281223297	0.327367783	0.394184113	0.520572662	0.697172165	0.740020752
186.934082	0.107200623	0.198848724	0.286430359	0.332612991	0.399452209	0.525836945	0.70240593	0.745246887
195.25499	0.112520218	0.204774857	0.292556763	0.338783264	0.405647278	0.532032013	0.708576202	0.751411438
205.240082	0.11889267	0.211772919	0.299768448	0.346040726	0.412935257	0.539327621	0.71585083	0.758682251
217.222198	0.12651825	0.220031738	0.308244705	0.354568481	0.421495438	0.547901154	0.724416733	0.767248154
231.600739	0.135643005	0.229780197	0.318212509	0.364587784	0.431554794	0.557983398	0.734508514	0.777341843
248.85498	0.146560669	0.241296768	0.329944611	0.376375198	0.443386078	0.569852829	0.746404648	0.789247513
269.560089	0.1596241	0.254915237	0.343774796	0.390258789	0.457321167	0.583843231	0.760450363	0.80330658
294.406219	0.175256729	0.271047592	0.360107422	0.406654358	0.473775864	0.600372314	0.777067184	0.819948196
324.221558	0.193964005	0.29019928	0.379453659	0.42606163	0.493249893	0.619945526	0.796768188	0.839683533
359.999969	0.216365814	0.312984467	0.402425766	0.449102402	0.516372681	0.643196106	0.820192337	0.86315155
384.654541	0.231784821	0.328619003	0.418174744	0.464895248	0.532218933	0.659137726	0.836259842	0.87925148
414.240021	0.250270844	0.347312927	0.436988831	0.483760834	0.551151276	0.678182602	0.855463028	0.898498535
449.742584	0.272434235	0.369680405	0.459489822	0.506319046	0.573789597	0.700962067	0.878440857	0.921525955
492.345673	0.299013138	0.396461487	0.48641777	0.533315659	0.600877762	0.728219986	0.90594101	0.94908905
543.46936	0.330892563	0.428552628	0.518672943	0.56565094	0.633323669	0.760873795	0.938892365	0.982118607
604.81781	0.369134903	0.467020035	0.5573349	0.604408264	0.672216415	0.800020218	0.978401184	1.02172089
678.435913	0.415008545	0.513153076	0.603694916	0.650884628	0.718858719	0.846967697	1.02578545	1.06921768
766.77771	0.470052719	0.568494797	0.659303665	0.706630707	0.77479744	0.903278351	1.08263206	1.12620354
872.787842	0.536096573	0.634895325	0.726034164	0.773529053	0.841936111	0.970863342	1.15085602	1.19459343
1000	0.615348816	0.714576721	0.806093216	0.853786469	0.922481537	1.05195427	1.23272896	1.27667046

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 20m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.023281097	0.081724167	0.160215378	0.207227707	0.276622772	0.390321732	0.470659256	0.551877975
2.54E+00	0.029607773	0.096485138	0.183603287	0.235185623	0.311019897	0.436014175	0.53020668	0.617147446
4.21E+00	0.032022476	0.102380753	0.193569183	0.247444153	0.32657814	0.457481384	0.559137344	0.649185181
6.20E+00	0.033838272	0.106975555	0.201320648	0.256881714	0.338336945	0.473264694	0.579977036	0.672132492
8.60012722	0.035669327	0.111442566	0.208568573	0.265512466	0.34879303	0.486820221	0.597408295	0.691177368
11.4758358	0.037683487	0.116146088	0.215847015	0.273984909	0.358793259	0.49936676	0.613136292	0.708230972
14.9266863	0.04000473	0.121276855	0.223413467	0.28260994	0.368743896	0.511497498	0.627985001	0.724208832
19.0677071	0.042724609	0.126953125	0.23141098	0.291563034	0.378868103	0.523540497	0.642408371	0.739625931
24.036932	0.045953751	0.133300781	0.239965439	0.300985336	0.389343262	0.53572464	0.656719208	0.754817963
30.0000019	0.049812317	0.140415192	0.249170303	0.310985565	0.40029335	0.548215866	0.67111969	0.770015717
32.311367	0.051305771	0.143102646	0.252601624	0.314693451	0.404333115	0.552787781	0.676353455	0.775524139
35.0850067	0.053098679	0.146242142	0.256546021	0.318933487	0.408922195	0.557945251	0.682216644	0.781681061
38.413372	0.055250168	0.149892807	0.261058807	0.323760986	0.414123535	0.563745499	0.688755035	0.788526535
42.4074097	0.057844162	0.154138565	0.266208649	0.329236984	0.419986725	0.570232391	0.696018219	0.796112061
47.2002563	0.060956955	0.159051895	0.272073746	0.335441589	0.426589966	0.577476501	0.704055786	0.804479599
52.9516716	0.064697266	0.164714813	0.278715134	0.3424263	0.433979034	0.585519791	0.712909698	0.813671112
59.8533707	0.069190979	0.171226501	0.286218643	0.350276947	0.442237854	0.594436646	0.722640991	0.82374382
68.1354141	0.074583054	0.178703308	0.294687271	0.359088898	0.45145607	0.604305267	0.733318329	0.834754944
78.0738602	0.081054688	0.187267303	0.304218292	0.368955612	0.461715698	0.615205765	0.745006561	0.846773148
90	0.088792801	0.197072983	0.314964294	0.380023956	0.473163605	0.627260208	0.757816315	0.859897614
93.4670486	0.091049194	0.199882507	0.318016052	0.38315773	0.476394653	0.630657196	0.761426926	0.863595963
97.6275024	0.093746185	0.203207016	0.321619034	0.386856079	0.480203629	0.634651184	0.765649796	0.8679142
102.620049	0.096982956	0.207143784	0.325878143	0.391227722	0.484706879	0.639354706	0.770593643	0.872959137
108.611107	0.100858688	0.211767197	0.330825806	0.396291733	0.489906311	0.644775391	0.776288986	0.878768921
115.800377	0.105501175	0.21721077	0.336624146	0.402210236	0.495969772	0.651071548	0.782876968	0.885477066
124.427498	0.111059189	0.223602295	0.343383789	0.409097672	0.503007889	0.65835762	0.790468216	0.893196106
134.780045	0.117706299	0.231107712	0.351268768	0.41711235	0.511180878	0.666784286	0.799211502	0.902070999
147.20311	0.125663757	0.239912033	0.36044693	0.426422119	0.520647049	0.676511765	0.809267044	0.912261963
162.110779	0.135177612	0.250257492	0.3711586	0.437263489	0.531644821	0.687768936	0.820848465	0.923980713
179.999985	0.146554947	0.262405396	0.383655548	0.449888229	0.544425964	0.700807571	0.834211349	0.937477112
186.934082	0.150957108	0.267076492	0.388450623	0.45472908	0.549320221	0.705795288	0.839315414	0.94262886
195.25499	0.156223297	0.272642136	0.394153595	0.460479736	0.555131912	0.711708069	0.845352173	0.948719025
205.240082	0.16254425	0.279266357	0.400918961	0.467300415	0.562017441	0.718702316	0.852487564	0.955911636
217.222198	0.170122147	0.287153244	0.408950806	0.475383759	0.570171356	0.726976395	0.860912323	0.964401245
231.600739	0.179189682	0.296537399	0.418485641	0.48497963	0.579839706	0.736768723	0.870864868	0.974420547
248.85498	0.190052032	0.307699203	0.429801941	0.496355057	0.591293335	0.74835968	0.882629395	0.986255646
269.560089	0.20306015	0.320999146	0.443254471	0.509868622	0.604888916	0.762098312	0.896551132	1.00025368
294.406219	0.218647003	0.336860657	0.459266663	0.525943756	0.621049881	0.778411865	0.913059235	1.0168438
324.221558	0.237319946	0.355787277	0.478342056	0.545087814	0.640281677	0.797805786	0.932664871	1.03653908
359.999969	0.259708405	0.378406525	0.501111984	0.567926407	0.663217545	0.820920944	0.956010818	1.0599823
384.654541	0.275127411	0.393960953	0.516759872	0.583620071	0.678976059	0.836795807	0.972038269	1.07607269
414.240021	0.293617249	0.412591934	0.535493851	0.602405548	0.697832108	0.85578537	0.991205215	1.09531212
449.742584	0.315793991	0.434915543	0.557935715	0.62490654	0.720417023	0.87852478	1.0141468	1.11833954
492.345673	0.34239769	0.461669922	0.584819794	0.651855469	0.747461319	0.905754089	1.04161453	1.14590645
543.46936	0.374311447	0.493757248	0.617053986	0.684167862	0.779888153	0.938394547	1.07453728	1.17894936
604.81781	0.412607193	0.532239914	0.655712128	0.722917557	0.81877327	0.977535248	1.11401558	1.2185688
678.435913	0.4585495	0.578399658	0.702077866	0.769393921	0.865413666	1.02448463	1.16136932	1.26609039
766.77771	0.513671875	0.633789063	0.757713318	0.82516098	0.921373367	1.08081245	1.21818161	1.32310677
872.787842	0.579818726	0.700246811	0.82447052	0.892080307	0.988527298	1.1484127	1.28636551	1.39153481
1000	0.659191132	0.780012131	0.904586792	0.972387314	1.06911469	1.22953796	1.36819649	1.47365952

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 40m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000278473	0.000976563	0.002378464	0.00494194	0.017499924	0.123830795	0.124847412	0.063018799
2.54250145	0.000701904	0.002384186	0.006593704	0.013858795	0.039810181	0.173658371	0.175275803	0.105642319
4.20668411	0.001243591	0.004228592	0.012825012	0.025493622	0.061161041	0.20268631	0.204687119	0.134925842
6.20370388	0.001918793	0.006671906	0.020957947	0.038639069	0.080659866	0.224472046	0.22675705	0.157884598
8.60012722	0.002763748	0.009923935	0.030677795	0.052555084	0.098712921	0.243013382	0.245521545	0.177642822
11.4758358	0.003822327	0.014181137	0.041658402	0.066896439	0.115818024	0.259889603	0.262586594	0.195663452
14.9266863	0.0051651	0.0195961	0.05365181	0.081542969	0.132362366	0.275886536	0.278749466	0.212720871
19.0677071	0.006877899	0.026260376	0.066488266	0.096473694	0.148633957	0.291460037	0.294466019	0.22926712
24.036932	0.009086609	0.034212112	0.080068588	0.111711502	0.164836884	0.306900024	0.310031891	0.245601654
30.0000019	0.01194191	0.043449402	0.094327927	0.127296448	0.181127548	0.322406769	0.325649261	0.261930466
32.311367	0.013080597	0.046972275	0.099578857	0.132982254	0.187036514	0.328027725	0.331310272	0.267845154
35.0850067	0.01448822	0.051113129	0.1055336	0.139375687	0.19364357	0.334320068	0.337644577	0.274446487
38.413372	0.016231537	0.05594635	0.112241745	0.1465168	0.200986862	0.341321945	0.344688416	0.281774521
42.4074097	0.018398285	0.061546326	0.119754791	0.154457092	0.209125519	0.349098206	0.352506638	0.289884567
47.2002563	0.021087647	0.067991257	0.1281147	0.163232803	0.218076706	0.357664108	0.361118317	0.298801422
52.9516716	0.024421692	0.075349808	0.137365341	0.172876358	0.227882385	0.367071152	0.370573044	0.308567047
59.8533707	0.02854538	0.083694458	0.147548676	0.18343544	0.238588333	0.37736702	0.380910873	0.319215775
68.1354141	0.033622742	0.093099594	0.158712387	0.194944382	0.250228882	0.388601303	0.392189026	0.330799103
78.0738602	0.039844513	0.103645325	0.170907974	0.207460403	0.262857437	0.400838852	0.404470444	0.343374252
90	0.047420502	0.115421295	0.184209824	0.221050262	0.2765522	0.414167404	0.41783905	0.357017517
93.4670486	0.049631119	0.118776321	0.187971115	0.224887848	0.280414581	0.417928696	0.421611786	0.360868454
97.6275024	0.052293778	0.122707367	0.19234848	0.229349136	0.284902573	0.422307968	0.42600441	0.365343094
102.620049	0.055498123	0.12730217	0.197423935	0.234516144	0.29009819	0.427389145	0.431100845	0.370527267
108.611107	0.059352875	0.132658005	0.203289032	0.240474701	0.29609108	0.433259964	0.436986923	0.376508713
115.800377	0.063987732	0.138879776	0.210046768	0.247335434	0.30298996	0.440038681	0.443778992	0.383392334
124.427498	0.069553375	0.146093369	0.217809677	0.255203247	0.310899734	0.447820663	0.451576233	0.391284943
134.780045	0.076229096	0.154438019	0.226707458	0.264205933	0.319940567	0.456741333	0.460514069	0.400320053
147.20311	0.084226608	0.164083481	0.236896515	0.274497986	0.330274582	0.466968536	0.470756531	0.410654068
162.110779	0.093799591	0.175233841	0.248567581	0.286272049	0.342094421	0.478696823	0.482501984	0.42247963
179.999985	0.105241776	0.188140869	0.261960983	0.299764633	0.355634689	0.492172241	0.495996475	0.436040878
186.934082	0.109670639	0.193078995	0.267068863	0.304904938	0.360790253	0.497304916	0.50113678	0.441207886
195.25499	0.114974976	0.198923111	0.27309227	0.310966492	0.36687088	0.50336647	0.507205963	0.447299957
205.240082	0.121330261	0.20583725	0.280199051	0.318117142	0.374052048	0.510543823	0.514389038	0.454496384
217.222198	0.12893486	0.214012146	0.288572311	0.326534271	0.382499695	0.518989563	0.5228405	0.462965012
231.600739	0.138038635	0.223678589	0.298439026	0.336446762	0.392444611	0.528944016	0.532804489	0.472940445
248.85498	0.148931503	0.235115051	0.310073853	0.34813118	0.404167175	0.540693283	0.544561386	0.484701157
269.560089	0.161972046	0.248661041	0.323812485	0.36192131	0.418003082	0.554574966	0.558452606	0.498586655
294.406219	0.17757988	0.264732361	0.340070724	0.378234863	0.434366226	0.571012497	0.574899673	0.515014648
324.221558	0.196266174	0.283830643	0.359350204	0.397569656	0.453763962	0.590511322	0.594408035	0.534492493
359.999969	0.218647003	0.30657196	0.382266998	0.4205513	0.476818085	0.613700867	0.617609024	0.557645798
384.654541	0.234052658	0.322183609	0.397985458	0.436307907	0.492620468	0.629610062	0.633523941	0.573522568
414.240021	0.252529144	0.340858459	0.416776657	0.45514679	0.511522293	0.64863205	0.652555466	0.592506409
449.742584	0.274682999	0.363208771	0.439250946	0.477672577	0.534116745	0.671384811	0.675321579	0.615213394
492.345673	0.301252365	0.389980316	0.466161728	0.504650116	0.561182022	0.698640823	0.702583313	0.642396927
543.46936	0.333124161	0.42206192	0.498405457	0.536966324	0.593601227	0.731290817	0.735248566	0.674970627
604.81781	0.371351242	0.460515976	0.537038803	0.575683594	0.632436752	0.770410538	0.774383545	0.713991165
678.435913	0.417211533	0.506631851	0.583368301	0.622119904	0.679019928	0.817337036	0.821331024	0.760799408
766.77771	0.472236633	0.56196022	0.638954163	0.677829742	0.734909058	0.873641968	0.877656937	0.816955566
872.787842	0.538288116	0.628379822	0.705692291	0.744724274	0.802026749	0.941268921	0.945308685	0.884401321
1000	0.617538452	0.708065033	0.785751343	0.824966431	0.882528305	1.02238083	1.02645493	0.965301514

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 40m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.030210495	0.105588913	0.205657959	0.264446259	0.347707748	0.443191528	0.682788849	1.06256866
2.54E+00	0.037096024	0.120105743	0.226839066	0.288806915	0.376331329	0.480514526	0.720623016	1.09711647
4.21E+00	0.039253235	0.124767303	0.2342453	0.297739029	0.387531281	0.497161865	0.737300873	1.11126709
6.20E+00	0.040847778	0.128435135	0.240125656	0.304777145	0.396223068	0.509750366	0.749910355	1.12206459
8.60012722	0.042535782	0.132184982	0.245885849	0.311511993	0.40429306	0.520921707	0.761108398	1.13183403
11.4758358	0.044466019	0.136281967	0.25189209	0.318380356	0.412309647	0.531564713	0.771774292	1.14129448
14.9266863	0.046726227	0.140850067	0.258304596	0.325572968	0.420520782	0.542085648	0.782318115	1.15078163
19.0677071	0.049402237	0.145998001	0.265235901	0.33322525	0.429098129	0.552742004	0.792999268	1.16051674
24.036932	0.052600861	0.151823044	0.272783279	0.341442108	0.438165665	0.563709259	0.80398941	1.17064667
30.0000019	0.056438446	0.158418655	0.281038284	0.350318909	0.447828293	0.575120926	0.815423965	1.18129349
32.311367	0.057928085	0.160913467	0.28411293	0.353607178	0.451381683	0.579284668	0.819599152	1.1851902
35.0850067	0.059717178	0.163843155	0.287685394	0.357414246	0.45548439	0.584043503	0.824365616	1.18966103
38.413372	0.061861038	0.167266846	0.291799545	0.361780167	0.460163116	0.589416504	0.829750061	1.19473267
42.4074097	0.06444931	0.171274185	0.29655838	0.366811752	0.465536118	0.595525742	0.835868835	1.20052528
47.2002563	0.067552567	0.175916672	0.301980972	0.37251091	0.471580505	0.602331161	0.842685699	1.20700264
52.9516716	0.071279526	0.181297302	0.308174133	0.378992081	0.478420258	0.609947205	0.850313187	1.21427917
59.8533707	0.07575798	0.187509537	0.315206528	0.386312485	0.486097336	0.618423462	0.85880661	1.22241974
68.1354141	0.081129074	0.19467926	0.323207855	0.394603729	0.494747162	0.62786293	0.86825943	1.23152161
78.0738602	0.08757019	0.20293808	0.332286835	0.403968811	0.504465103	0.63835907	0.878767014	1.24168396
90	0.095283508	0.212434769	0.342571259	0.414525986	0.515361786	0.650009155	0.890432358	1.25301361
93.4670486	0.097522736	0.21516037	0.345510483	0.417535782	0.51845932	0.653308868	0.893735886	1.25622559
97.6275024	0.100208282	0.218389511	0.348978043	0.421087265	0.522111893	0.657186508	0.89761734	1.26000595
102.620049	0.103427887	0.222208023	0.353059769	0.425260544	0.526399612	0.661722183	0.90215683	1.26443481
108.611107	0.107286453	0.22672081	0.357851028	0.430147171	0.531404495	0.667001724	0.907442093	1.26959801
115.800377	0.111909866	0.232049942	0.363492966	0.435899734	0.537298203	0.673183441	0.913629532	1.27565956
124.427498	0.117444992	0.238315582	0.370073318	0.442590714	0.544124603	0.680318832	0.920768738	1.28266525
134.780045	0.124069214	0.245687485	0.377771378	0.450403214	0.552080154	0.688589096	0.929044724	1.29080009
147.20311	0.131994247	0.254360199	0.386768341	0.459514618	0.561336517	0.698163986	0.938627243	1.30023956
162.110779	0.141475677	0.264566422	0.397294998	0.470151901	0.572118759	0.709264755	0.949733734	1.311203
179.999985	0.152814865	0.27658844	0.409618378	0.482585907	0.584690094	0.722150803	0.962623596	1.32395363
186.934082	0.157205582	0.281211853	0.414339066	0.48733902	0.589483261	0.727054596	0.967531204	1.32880783
195.25499	0.162466049	0.286725998	0.419965744	0.493005753	0.595201492	0.732894897	0.973371506	1.33459473
205.240082	0.168769836	0.293308258	0.426679611	0.499771118	0.602035522	0.739866257	0.98034668	1.34151077
217.222198	0.176322937	0.301137924	0.43463707	0.50777626	0.610103607	0.748075485	0.988557816	1.34965897
231.600739	0.185371399	0.310461044	0.44408989	0.517280579	0.619672775	0.757795334	0.998279572	1.35931206
248.85498	0.196210861	0.321573257	0.455331802	0.528572083	0.631031036	0.769313812	1.00980186	1.37076187
269.560089	0.209199905	0.334817886	0.468704224	0.541996002	0.644527435	0.782976151	1.0234642	1.38434792
294.406219	0.2247715	0.350635529	0.484649658	0.557994843	0.660598755	0.799219131	1.03970909	1.4005146
324.221558	0.243421555	0.369503021	0.503639221	0.577035904	0.679714203	0.8185215	1.05901337	1.41973305
359.999969	0.265781403	0.392063141	0.526321411	0.599773407	0.702531815	0.841537476	1.08203125	1.44265938
384.654541	0.281187057	0.407592773	0.541927338	0.615413666	0.718221664	0.85735321	1.09784889	1.4584198
414.240021	0.299661636	0.426183701	0.560600281	0.634126663	0.73699379	0.876274109	1.11676979	1.47727013
449.742584	0.321819305	0.448461533	0.582963943	0.656534195	0.759466171	0.898918152	1.13941383	1.49983215
492.345673	0.348415375	0.475189209	0.609794617	0.683416367	0.786426544	0.926073074	1.16657066	1.52689934
543.46936	0.380313873	0.507228851	0.641946793	0.71562767	0.818727493	0.958604813	1.19910622	1.55932426
604.81781	0.41856575	0.545637131	0.680482864	0.754228592	0.857431412	0.997583389	1.2380867	1.59817696
678.435913	0.46446991	0.591720581	0.72672081	0.800548553	0.903877258	1.04435921	1.28486824	1.644804
766.77771	0.519557953	0.647024155	0.782209396	0.856136322	0.959615707	1.10048676	1.34099579	1.70074463
872.787842	0.585706711	0.713432312	0.848848343	0.922897339	1.02656364	1.16790962	1.40841866	1.76794434
1000	0.665039063	0.793075562	0.928762436	1.00295639	1.10684586	1.24876595	1.48927689	1.84853172

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 80m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000299454	0.001050949	0.003271103	0.009616852	0.05418396	0.045013428	0.020805359	0.015300751
2.54250145	0.00075531	0.00258255	0.009138107	0.023366928	0.086761475	0.076911926	0.043445587	0.033800125
4.20668411	0.001333237	0.004621506	0.017082214	0.03780365	0.108528137	0.099590302	0.063539505	0.051860809
6.20370388	0.002052307	0.007350922	0.02646637	0.051900864	0.12582016	0.117925644	0.0813694	0.068799973
8.60012722	0.002950668	0.010953903	0.036819458	0.065603256	0.141080856	0.134141922	0.09775734	0.08482933
11.4758358	0.004074097	0.015579224	0.047883987	0.079092026	0.155374527	0.149295807	0.113328934	0.100297928
14.9266863	0.005495071	0.021314621	0.059551239	0.092563629	0.169250488	0.163946152	0.128492355	0.115484238
19.0677071	0.007307053	0.028202057	0.071783066	0.106174469	0.18303299	0.178430557	0.143526077	0.13061142
24.036932	0.009635925	0.036252976	0.084587097	0.120052338	0.196939468	0.192974091	0.158622742	0.145837784
30.0000019	0.012630463	0.04545784	0.097978592	0.134300232	0.211122513	0.207733154	0.173919678	0.161281586
32.311367	0.013818741	0.048950195	0.102909088	0.139511108	0.21629715	0.21310997	0.179489136	0.166906357
35.0850067	0.015287399	0.053037643	0.10849762	0.145383835	0.222120285	0.219148636	0.18573761	0.173215866
38.413372	0.017101288	0.057785034	0.114801407	0.15196991	0.228639603	0.225891113	0.192707062	0.180257797
42.4074097	0.01934433	0.063270569	0.121871948	0.159317017	0.235904694	0.233392715	0.20044899	0.188076019
47.2002563	0.022117615	0.069562912	0.129760742	0.167472839	0.243965149	0.241695404	0.209005356	0.196714401
52.9516716	0.025537491	0.076738358	0.138515472	0.176486969	0.252874374	0.250846863	0.218416214	0.206212997
59.8533707	0.029747009	0.084869385	0.148191452	0.186405182	0.262678146	0.260892868	0.228725433	0.21661377
68.1354141	0.034908295	0.094036102	0.158842087	0.197284698	0.273433685	0.271886826	0.239982605	0.227962494
78.0738602	0.041204453	0.104326248	0.170536041	0.209188461	0.285211563	0.2838974	0.252248764	0.240318298
90	0.048845291	0.115839005	0.183353424	0.222198486	0.298099518	0.2970047	0.265602112	0.253759384
93.8137512	0.051294327	0.119440079	0.187337875	0.226238251	0.302101135	0.301073074	0.269742966	0.257925034
98.3902512	0.054243088	0.123659134	0.191970825	0.230934143	0.306756973	0.305797577	0.274547577	0.262758255
103.882057	0.057788849	0.128582001	0.197341919	0.236368179	0.312149048	0.311265945	0.280101776	0.268342972
110.472221	0.062049866	0.134315491	0.203544617	0.242639542	0.318376541	0.317575455	0.286500931	0.274776459
118.380417	0.067165375	0.140972137	0.210689545	0.249856949	0.325546265	0.324832916	0.29385376	0.282161713
127.870255	0.073303223	0.14868927	0.218902588	0.258144379	0.333795547	0.333169937	0.302284241	0.290628433
139.258057	0.080656052	0.157619476	0.228328705	0.267644882	0.343257904	0.342720032	0.311929703	0.30030632
152.923431	0.089456558	0.167951584	0.239141464	0.278533936	0.354114532	0.353662491	0.322961807	0.311372757
169.321869	0.099975586	0.179916382	0.251562119	0.291028976	0.366584778	0.366214752	0.335594177	0.324035645
189	0.112545013	0.19380188	0.265871048	0.305410385	0.38095665	0.380661011	0.350112915	0.338579178
195.587387	0.116744995	0.198400497	0.270599365	0.310161591	0.385704041	0.385433197	0.354906082	0.343381882
203.492249	0.121778488	0.203859329	0.276197433	0.315784454	0.391328812	0.391082764	0.360578537	0.349061966
212.978088	0.12780571	0.21033287	0.282819748	0.322435379	0.397981644	0.397762299	0.367279053	0.355772018
224.361099	0.13502121	0.218006134	0.290647507	0.330295563	0.405849457	0.405656815	0.375196457	0.363697052
238.020706	0.143663406	0.227106094	0.299907684	0.339588165	0.415161133	0.414999008	0.384555817	0.373060226
254.412247	0.154008865	0.237897873	0.31085968	0.350578308	0.426174164	0.426040649	0.395612717	0.384122849
274.082092	0.166391373	0.250705719	0.323825836	0.363584518	0.439210892	0.439100266	0.408683777	0.397199631
297.685913	0.181215286	0.265922546	0.339200974	0.379005432	0.45467186	0.454589844	0.42417717	0.412696838
326.010498	0.19896698	0.284032822	0.357465744	0.397319794	0.473045349	0.472984314	0.442569733	0.431089401
360	0.220233917	0.305618286	0.379209518	0.419116974	0.494918823	0.494882584	0.464458466	0.452972412
384.654572	0.235645294	0.321220398	0.39491272	0.434862137	0.510719299	0.510698318	0.480264664	0.468774796
414.240051	0.25412178	0.339887619	0.41368866	0.453681946	0.52960968	0.529598236	0.499149323	0.48765564
449.742615	0.276279449	0.362234116	0.436155319	0.476203918	0.552215576	0.55222702	0.521757126	0.510253906
492.345703	0.302854538	0.389001846	0.463058472	0.503170013	0.579288483	0.579317093	0.548816681	0.537305832
543.469421	0.334732056	0.42108345	0.495296478	0.535482407	0.611730576	0.611778259	0.581245422	0.569719315
604.817871	0.372974396	0.459552765	0.533945084	0.574220657	0.650623322	0.650693893	0.62011528	0.608573914
678.436035	0.418848038	0.505680084	0.580278397	0.620658875	0.697244644	0.697336197	0.666702271	0.655143738
766.777832	0.47388649	0.561019897	0.635877609	0.676389694	0.753206253	0.753332138	0.722635269	0.711053848
872.787964	0.539924622	0.627418518	0.702583313	0.743251801	0.820346832	0.820510864	0.789735794	0.778125763
1000.00012	0.619165421	0.707090378	0.782627106	0.823486328	0.900913239	0.901124954	0.870252609	0.858608246

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 80m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.032590866	0.11300087	0.216592789	0.273267746	0.331132889	0.593730927	0.889736176	1.20672226
2.54E+00	0.0397892	0.127801895	0.237798691	0.297523499	0.360078812	0.623628616	0.918563843	1.23514175
4.21E+00	0.041921616	0.13228035	0.244876862	0.306156158	0.371761322	0.634935379	0.92832756	1.24428558
6.20E+00	0.043491364	0.135797501	0.250492096	0.312952042	0.38082695	0.643712997	0.935955048	1.25145149
8.60012722	0.045171738	0.139448166	0.256046295	0.319501877	0.389240265	0.651914597	0.943237305	1.25836372
11.4758358	0.047107697	0.14345932	0.261859894	0.326198578	0.397558212	0.66006279	0.950595856	1.26540565
14.9266863	0.049385071	0.147943497	0.268074036	0.333219528	0.406044006	0.668409348	0.958246231	1.27277756
19.0677071	0.052087784	0.153003693	0.274808884	0.340705872	0.414876938	0.677122116	0.966320038	1.28059769
24.036932	0.05532074	0.158731461	0.282161713	0.348766327	0.424196243	0.686338425	0.97495079	1.28899574
30.0000019	0.059196472	0.165214539	0.290212631	0.357484818	0.434089661	0.696144104	0.984220505	1.29805183
32.311367	0.060699463	0.167669296	0.293222427	0.360729218	0.437746048	0.699766159	0.987649918	1.30140877
35.0850067	0.062503815	0.170553207	0.29671669	0.364477158	0.441942215	0.703929901	0.991611481	1.30528831
38.413372	0.064670563	0.173923492	0.300746918	0.368780136	0.446723938	0.708677292	0.996143341	1.30973625
42.4074097	0.067272186	0.177852631	0.305381775	0.373706818	0.452156067	0.714076996	1.00131416	1.31481743
47.2002563	0.070394516	0.182420731	0.310695648	0.379325867	0.458307266	0.720191956	1.0071888	1.32060051
52.9516716	0.074148178	0.187728882	0.316789627	0.385736465	0.465269089	0.727127075	1.01388168	1.32719421
59.8533707	0.078645706	0.1938591	0.323717117	0.392986298	0.473077774	0.734903336	1.02140808	1.33462334
68.1354141	0.084035873	0.200933456	0.331598282	0.401191711	0.481843948	0.743637085	1.02989578	1.34301376
78.0738602	0.090496063	0.209095001	0.340559006	0.410470963	0.491676331	0.753440857	1.03945541	1.35247993
90	0.098222733	0.218494415	0.350732803	0.420953751	0.502695084	0.764429092	1.05020905	1.36314011
93.8137512	0.100690842	0.221458435	0.35392189	0.42423439	0.506132126	0.767856598	1.05356789	1.36647415
98.3902512	0.103649139	0.224971771	0.357688904	0.428100586	0.510173798	0.771888733	1.05752373	1.37039948
103.882057	0.107192993	0.229122162	0.36211586	0.432640076	0.514904022	0.776607513	1.06215858	1.37500191
110.472221	0.111440659	0.234022141	0.367311478	0.437953949	0.520423889	0.782115936	1.06757545	1.38038445
118.380417	0.116523743	0.239793777	0.37339592	0.444164276	0.526853561	0.788532257	1.07389641	1.38666916
127.870255	0.122612	0.246603012	0.38053894	0.451438904	0.534358978	0.796031952	1.08129311	1.3940239
139.258057	0.129896164	0.254610062	0.388874054	0.459907532	0.543060303	0.804719925	1.0898819	1.40257263
152.923431	0.138605118	0.264028549	0.398618698	0.46978569	0.55316925	0.814815521	1.0998745	1.41252708
169.321869	0.149019241	0.275125504	0.410030365	0.481327057	0.564937592	0.826576233	1.11153793	1.42414856
189	0.161476135	0.288209915	0.423408508	0.494827271	0.578651428	0.840278625	1.12514305	1.43771935
195.587387	0.165641785	0.29255867	0.427841187	0.499294281	0.583183289	0.844799042	1.12963295	1.4421978
203.492249	0.170635223	0.297758102	0.433135986	0.504629135	0.588592529	0.85020256	1.13500404	1.44755745
212.978088	0.176618576	0.303956985	0.439437866	0.510974884	0.595016479	0.856620789	1.14138603	1.45392609
224.361099	0.183786392	0.311349869	0.446939468	0.51852417	0.602651596	0.864246368	1.14897346	1.46149635
238.020706	0.192380905	0.320180893	0.455892563	0.527528763	0.611749649	0.873346329	1.15803146	1.47053719
254.412247	0.202676773	0.330701828	0.466527939	0.538215637	0.622529984	0.884117126	1.16875839	1.48124695
274.082092	0.215013504	0.343257904	0.479200363	0.550941467	0.635353088	0.896936417	1.18153572	1.49400711
297.685913	0.229791641	0.35823822	0.494293213	0.566087723	0.650600433	0.912174225	1.19672203	1.50917435
326.010498	0.247516632	0.376159668	0.512325287	0.584173203	0.668790817	0.930355072	1.21485519	1.52728844
360	0.268764496	0.397583008	0.533857346	0.605762482	0.690490723	0.952041626	1.23648643	1.54889679
384.654572	0.284170151	0.413097382	0.549442291	0.621383667	0.706186295	0.967727661	1.25213623	1.56453323
414.240051	0.302646637	0.431684494	0.568109512	0.64009285	0.724977493	0.986513138	1.27088165	1.5832634
449.742615	0.324810028	0.453960419	0.590467453	0.662496567	0.747476578	1.00899696	1.29331398	1.60567665
492.345703	0.351400375	0.480669022	0.617269516	0.689353943	0.774442673	1.03594971	1.32021141	1.63255119
543.469421	0.383300781	0.512699127	0.649406433	0.721551895	0.806770325	1.06825829	1.35245514	1.66477013
604.817871	0.421575546	0.551120758	0.687953949	0.760169983	0.845539093	1.10700798	1.39112854	1.70341301
678.436035	0.467485428	0.597198486	0.734174728	0.806476593	0.892021179	1.15346336	1.43749237	1.74974442
766.777832	0.522571564	0.652482986	0.789634705	0.862039566	0.94780159	1.20921516	1.49313164	1.80533791
872.787964	0.588670731	0.718824387	0.85618782	0.928718567	1.01473999	1.27611732	1.55990028	1.87205505
1000.00012	0.667995453	0.798435211	0.936052322	1.00873184	1.09506607	1.35640144	1.64002419	1.95211792

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 160m
 Layer 2 B=0.6
 Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000326157	0.001176834	0.012020111	0.103616714	0.012182236	0.007352829	0.007665634	0.00802803
2.54250145	0.000814438	0.002998352	0.025032044	0.127773285	0.026433945	0.01698494	0.016670227	0.016820908
4.20668411	0.001434326	0.005540848	0.036653519	0.14074707	0.0399189	0.027833939	0.026674271	0.026416779
6.20370388	0.002202988	0.008932114	0.047275543	0.151191711	0.052595139	0.039346695	0.037498474	0.036840439
8.60012722	0.003160477	0.013231278	0.057481766	0.160905838	0.064853668	0.051271439	0.048967362	0.047990799
11.4758358	0.004360199	0.01845932	0.067674637	0.170520782	0.07702446	0.063549042	0.060979843	0.059776306
14.9266863	0.005874634	0.024621964	0.078102112	0.180318832	0.089324951	0.076206207	0.073507309	0.072154999
19.0677071	0.007808685	0.031723023	0.088928223	0.190479279	0.101886749	0.089244843	0.086519241	0.085083008
24.036932	0.010280609	0.03978157	0.10027504	0.201135635	0.114864349	0.102777481	0.100084305	0.098604202
30.0000019	0.013439179	0.048814774	0.112218857	0.212368011	0.128284454	0.11677742	0.114164352	0.112674713
32.311367	0.014690399	0.052223206	0.116638184	0.216535568	0.133232117	0.121932983	0.119354248	0.117864609
35.0850067	0.01622963	0.056190491	0.121667862	0.22127533	0.138824463	0.127761841	0.125221252	0.123735428
38.413372	0.018121719	0.060783386	0.127368927	0.22665596	0.145114899	0.134309769	0.131820679	0.130342484
42.4074097	0.020450592	0.066072464	0.133798599	0.232730865	0.152162552	0.141641617	0.13920784	0.137741089
47.2002563	0.023313522	0.072132111	0.141014099	0.239562988	0.160001755	0.149772644	0.147407532	0.145961761
52.9516716	0.026821137	0.07903862	0.149080276	0.247224808	0.168704987	0.158782959	0.156492233	0.155067444
59.8533707	0.031118393	0.086872101	0.158056259	0.255786896	0.178314209	0.168718338	0.166503906	0.165102005
68.1354141	0.036355972	0.095720291	0.168016434	0.265319824	0.188901901	0.179628372	0.177494049	0.176122665
78.0738602	0.04271698	0.105680466	0.179035187	0.275913239	0.200523376	0.191570282	0.189519882	0.188177109
90	0.050409317	0.116863251	0.191209793	0.287670135	0.213272095	0.204627991	0.202659607	0.201347351
93.4670486	0.052648544	0.120052338	0.194675446	0.29101944	0.216901779	0.208335876	0.206392288	0.205089569
97.6275024	0.055339813	0.123800278	0.198720932	0.294942856	0.221126556	0.212654114	0.210735321	0.209442139
102.620049	0.058572769	0.128192902	0.203437805	0.299520493	0.226028442	0.217660904	0.215768814	0.214485168
108.611107	0.062454224	0.133321762	0.208909988	0.30484581	0.231700897	0.223455429	0.221590042	0.220317841
115.800377	0.067111969	0.139305115	0.215255737	0.311038971	0.238260269	0.230119705	0.228290558	0.227033615
124.427498	0.072696686	0.14626503	0.2225914	0.318218231	0.24581337	0.237791061	0.235998154	0.234754562
134.780045	0.079385757	0.154350281	0.231056213	0.326522827	0.25450325	0.246604919	0.244848251	0.243618011
147.20311	0.0873909	0.163736343	0.240821838	0.33613205	0.264503479	0.256729126	0.255008698	0.253793716
162.110779	0.096963882	0.174625397	0.252061844	0.347225189	0.275951385	0.268306732	0.266616821	0.265415192
179.999985	0.108402252	0.187299728	0.265096664	0.360162735	0.289199829	0.28166008	0.280004501	0.278816223
186.934082	0.112829208	0.192157745	0.270078659	0.365106583	0.294254303	0.286750793	0.285108566	0.28392601
195.25499	0.118127823	0.197919846	0.275976181	0.370962143	0.300237656	0.292772293	0.291143417	0.289964676
205.240082	0.124477386	0.204746246	0.282945633	0.377895355	0.307296753	0.299879074	0.298261642	0.297088623
217.222198	0.132078171	0.212827682	0.291162491	0.386074066	0.315595627	0.308233261	0.306627274	0.305456161
231.600739	0.141174316	0.222402573	0.300893784	0.395782471	0.325405121	0.318073273	0.316484451	0.315322876
248.85498	0.15206337	0.233757019	0.31240654	0.407297134	0.337024689	0.329744339	0.328166962	0.327007294
269.560089	0.16509819	0.247215271	0.325990677	0.420864105	0.350667953	0.343425751	0.341859818	0.340707779
294.406219	0.180698395	0.263221741	0.342168808	0.437084198	0.366962433	0.359760284	0.358207703	0.357055664
324.221558	0.199378967	0.282276154	0.361387253	0.456350327	0.386264801	0.379087448	0.377544403	0.376399994
359.999969	0.221755981	0.304986954	0.38425827	0.479291916	0.409221649	0.402070999	0.400537491	0.399394989
384.654541	0.237163544	0.320583344	0.399957657	0.495046616	0.424978256	0.417844772	0.416316986	0.415178299
414.240021	0.255638123	0.33924675	0.418729782	0.513889313	0.443809509	0.436693192	0.43516922	0.43403244
449.742584	0.277791977	0.361587524	0.441194534	0.536447525	0.466339111	0.45923996	0.457719803	0.45658493
492.345673	0.304363251	0.38835144	0.468097687	0.563467026	0.493312836	0.486228943	0.484714508	0.483581543
543.46936	0.336235046	0.420427322	0.500339508	0.595853806	0.52563858	0.518575668	0.517066956	0.515932083
604.81781	0.374462128	0.458850861	0.538927078	0.634607315	0.564306259	0.557273865	0.555770874	0.554637909
678.435913	0.420333862	0.504997253	0.585319519	0.68122673	0.610807419	0.603755951	0.602272034	0.601148605
766.77771	0.475383759	0.560354233	0.640951157	0.737127304	0.666585922	0.659563065	0.658090591	0.656972885
872.787842	0.541431427	0.626768112	0.707696915	0.804189682	0.733491898	0.726501465	0.72504425	0.723928452
1000	0.62068367	0.706466675	0.787801743	0.884681702	0.813814163	0.806858063	0.8054142	0.804300308

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 160m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.035358429	0.120992661	0.218696594	0.20100975	0.452390671	0.728000641	0.985277176	1.29051018
2.54E+00	0.042823792	0.13584137	0.239255905	0.22454071	0.476535797	0.753404617	1.01116562	1.31658363
4.21E+00	0.044910431	0.139980316	0.245904922	0.234697342	0.483415604	0.75951767	1.01701355	1.32229424
6.20E+00	0.046392441	0.143241882	0.251216888	0.242837906	0.488916397	0.764404297	1.02167892	1.32683945
8.60012722	0.048036575	0.14670372	0.256536484	0.250587463	0.494434357	0.769411087	1.02650261	1.33156395
11.4758358	0.049980164	0.15054512	0.262172699	0.258434296	0.500299454	0.774831772	1.03176498	1.33674049
14.9266863	0.052236557	0.154872894	0.268234253	0.266580582	0.506608963	0.780738831	1.03752708	1.34242249
19.0677071	0.054979324	0.159795761	0.274850845	0.275180817	0.513484955	0.787267685	1.04393387	1.3487587
24.036932	0.058206558	0.165359497	0.282094955	0.284341812	0.52100563	0.794445038	1.05098915	1.35574532
30.0000019	0.062116623	0.171701431	0.290067673	0.294153214	0.529266357	0.802423477	1.05886459	1.36355782
32.311367	0.063644409	0.174123764	0.293085098	0.297819138	0.532375336	0.805402756	1.06180191	1.36647415
35.0850067	0.065460205	0.176939011	0.296552658	0.30200386	0.535955429	0.808862686	1.06521988	1.36986732
38.413372	0.067640305	0.180240631	0.300559998	0.306787491	0.540088654	0.812870026	1.06918335	1.37380791
42.4074097	0.070249558	0.184082031	0.30516243	0.312223434	0.544822693	0.817466736	1.07373428	1.37833214
47.2002563	0.073390961	0.188552856	0.310441971	0.318384171	0.550251007	0.822759628	1.07897949	1.38355255
52.9516716	0.077135086	0.193761826	0.316495895	0.325349808	0.556453705	0.828811646	1.08498192	1.38952446
59.8533707	0.081672669	0.199813843	0.323423386	0.333209991	0.563558578	0.835796356	1.09192085	1.39643478
68.1354141	0.087078095	0.206789017	0.331287384	0.342023849	0.571586609	0.843675613	1.09975052	1.40423775
78.0738602	0.093553543	0.214849472	0.340234756	0.351911545	0.580705643	0.852657318	1.10868454	1.41314507
90	0.101285934	0.224140167	0.350383759	0.362979889	0.591011047	0.862821579	1.11880302	1.42323875
93.4670486	0.10351181	0.226802826	0.353288651	0.366136551	0.593942642	0.865690231	1.12165642	1.42608643
97.6275024	0.106201172	0.229969025	0.356719971	0.369850159	0.597425461	0.869129181	1.12508202	1.42950249
102.620049	0.109418869	0.233716965	0.360757828	0.374195099	0.601514816	0.873176575	1.12911415	1.43352699
108.611107	0.113273621	0.238143921	0.365495682	0.379272461	0.606319427	0.877946854	1.13386726	1.43826866
115.800377	0.117908478	0.243391037	0.371080399	0.385206223	0.611965179	0.883525848	1.13942909	1.44382477
124.427498	0.123443604	0.249570847	0.377613068	0.392112732	0.618564606	0.890069962	1.14595413	1.45033836
134.780045	0.130065918	0.256847382	0.385250092	0.40013504	0.626272202	0.897724152	1.15359116	1.45796585
147.20311	0.137985229	0.265405655	0.394172668	0.409452438	0.635251999	0.906627655	1.16247368	1.46683884
162.110779	0.147438049	0.275499344	0.404605865	0.420269012	0.645748138	0.91708374	1.17291451	1.47727013
179.999985	0.158786774	0.287471771	0.41693306	0.432956696	0.658155441	0.929433823	1.18524551	1.48958778
186.934082	0.163179398	0.292076111	0.421655655	0.437810898	0.662900925	0.934164047	1.18997002	1.49430847
195.25499	0.168432236	0.297550201	0.427259445	0.443359647	0.668518066	0.939741135	1.19553566	1.4998703
205.240082	0.17474556	0.3040905	0.433935165	0.450386047	0.675214767	0.946414948	1.20220184	1.50653267
217.222198	0.182275772	0.31187439	0.441850662	0.458457947	0.683160782	0.954349518	1.2101326	1.51445961
231.600739	0.191339493	0.32116127	0.451284409	0.468055725	0.69260788	0.963760376	1.21953392	1.52385712
248.85498	0.202157974	0.332252502	0.462530136	0.479467392	0.703897476	0.975034714	1.23080063	1.5351162
269.560089	0.215154648	0.345432281	0.475820541	0.492923737	0.717191696	0.988300323	1.24405861	1.54837418
294.406219	0.230695724	0.361223221	0.491775513	0.509046555	0.733182907	1.00426483	1.26001358	1.56432152
324.221558	0.249357224	0.380081177	0.510772705	0.528215408	0.75220108	1.02324486	1.27898026	1.58328438
359.999969	0.271715164	0.402622223	0.533445358	0.55106163	0.7748909	1.04590225	1.30162621	1.6059227
384.654541	0.28710556	0.418125153	0.549032211	0.566759109	0.790491104	1.06148338	1.31719971	1.62149239
414.240021	0.305587769	0.436704636	0.56769371	0.585538864	0.809158325	1.08012581	1.33583641	1.64012718
449.742584	0.32774353	0.458969116	0.590051651	0.608030319	0.831523895	1.10246658	1.35816574	1.6624527
492.345673	0.354326248	0.48566246	0.616847992	0.634979248	0.858329773	1.12924194	1.38493156	1.6892128
543.46936	0.38621521	0.517677307	0.648981094	0.667285919	0.890474319	1.16135788	1.41703415	1.72130775
604.81781	0.424453735	0.556020737	0.687433243	0.705942154	0.928916931	1.19977188	1.45544052	1.7597084
678.435913	0.470371246	0.602119446	0.733716965	0.752464294	0.975233078	1.24601173	1.5016613	1.80591965
766.77771	0.525463104	0.657411575	0.789203644	0.808238983	1.03074074	1.30147552	1.55710983	1.86136055
872.787842	0.591566086	0.723739624	0.855760574	0.875146866	1.09731102	1.36797714	1.62359238	1.92782974
1000	0.67090416	0.803339005	0.935640335	0.955450058	1.17721748	1.44779396	1.70337677	2.00759888

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 250m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000326157	0.002019882	0.009010315	0.004358292	0.00472641	0.006322861	0.0073452	0.00790596
2.54250145	0.000816345	0.005537033	0.019220352	0.010826111	0.010959625	0.01360321	0.015180588	0.015964508
4.20668411	0.001440048	0.01002121	0.028701782	0.018600464	0.018381119	0.021532059	0.023368835	0.024234772
6.20370388	0.002216339	0.01512146	0.037693024	0.027225494	0.026845932	0.030199051	0.032119751	0.032991409
8.60012722	0.003190994	0.020704269	0.046630859	0.036500931	0.036212921	0.039653778	0.041568756	0.04240036
11.4758358	0.004423141	0.026779175	0.055799484	0.046367645	0.046375275	0.049901962	0.051774979	0.052547455
14.9266863	0.006000519	0.033414841	0.065387726	0.056835175	0.057279587	0.060932159	0.062761307	0.063470841
19.0677071	0.008022308	0.040699005	0.075515747	0.0679245	0.068891525	0.072725296	0.074523926	0.075181961
24.036932	0.010614395	0.048723221	0.086265564	0.079669952	0.081209183	0.085268021	0.087060928	0.087677002
30.0000019	0.013910294	0.057573319	0.097707748	0.092098236	0.094228745	0.098550797	0.100358963	0.100950241
32.311367	0.015213013	0.060899735	0.101955414	0.096698761	0.0990448	0.103467941	0.105283737	0.105865479
35.0850067	0.016813278	0.064758301	0.106807709	0.101938248	0.104522705	0.109062195	0.110891342	0.111463547
38.413372	0.018770218	0.069213867	0.112325668	0.107873917	0.110719681	0.11538887	0.117235184	0.117803574
42.4074097	0.02117157	0.074337006	0.118566513	0.114564896	0.11769104	0.122505188	0.12437439	0.124940872
47.2002563	0.024106979	0.08020401	0.125593185	0.122068405	0.125494003	0.130462646	0.132362366	0.132932663
52.9516716	0.027687073	0.086893082	0.133470535	0.130437851	0.134178162	0.139318466	0.14125061	0.14182663
59.8533707	0.032049179	0.094488144	0.142261505	0.139736176	0.143800735	0.149120331	0.151092529	0.151676178
68.1354141	0.037343979	0.103082657	0.152042389	0.150020599	0.154413223	0.159917831	0.161933899	0.162528992
78.0738602	0.043754578	0.112781525	0.162889481	0.161361694	0.166078568	0.171772003	0.173835754	0.174446106
90	0.051483154	0.123706818	0.174905777	0.173852921	0.178880692	0.184762955	0.18687439	0.1875
93.4670486	0.053731918	0.12682724	0.178329468	0.17741394	0.182525635	0.188453674	0.190578461	0.191205978
97.6275024	0.056432724	0.130496979	0.182327271	0.18155098	0.186761856	0.192750931	0.194890976	0.195520401
102.620049	0.059677124	0.134803772	0.186988831	0.18637085	0.191682816	0.19773674	0.199893951	0.200529099
108.611107	0.063568115	0.139842987	0.192411423	0.191961288	0.197385788	0.20350647	0.205682755	0.206323624
115.800377	0.06823349	0.145721436	0.198690414	0.198423386	0.203968048	0.210163116	0.212358475	0.213008881
124.427498	0.073825836	0.152578354	0.205968857	0.205883026	0.211551666	0.217824936	0.220043182	0.220701218
134.780045	0.08052063	0.160558701	0.214372635	0.214473724	0.22026825	0.226621628	0.228862762	0.229530334
147.20311	0.088527679	0.169834137	0.224060059	0.224351883	0.2302742	0.236709595	0.238977432	0.239654541
162.110779	0.09810257	0.180631638	0.235267639	0.235740662	0.241786957	0.248300552	0.250591278	0.251279831
179.999985	0.109539032	0.193208694	0.248228073	0.24887085	0.2550354	0.26162529	0.263940811	0.264636993
186.934082	0.113964081	0.198036194	0.253202438	0.25390625	0.26011467	0.266735077	0.26905632	0.269752502
195.25499	0.119264603	0.203762054	0.259077072	0.259845734	0.266098022	0.27274704	0.27507782	0.275775909
205.240082	0.125612259	0.210552216	0.266021729	0.266857147	0.27315712	0.279836655	0.282176971	0.282878876
217.222198	0.133211136	0.218603134	0.27422905	0.275133133	0.281480789	0.288192749	0.290542603	0.291250229
231.600739	0.142305374	0.228145599	0.283929825	0.284900665	0.291297913	0.298042297	0.300403595	0.301116943
248.85498	0.153190613	0.239465714	0.295412064	0.296449661	0.302894592	0.309671402	0.312044144	0.312761307
269.560089	0.166221619	0.252904892	0.309001923	0.310100555	0.31659317	0.323404312	0.325788498	0.326511383
294.406219	0.181819916	0.268880844	0.32513237	0.326288223	0.332824707	0.339666367	0.342061996	0.342790604
324.221558	0.200500488	0.28789711	0.34428215	0.345487595	0.352064133	0.358940125	0.361349106	0.362085342
359.999969	0.22287941	0.310602188	0.367174149	0.368432999	0.375055313	0.381965637	0.384380341	0.385110855
384.654541	0.238286972	0.326183319	0.382820129	0.384101868	0.39074707	0.397676468	0.400100708	0.400840759
414.240021	0.256761551	0.344829559	0.401556015	0.402860641	0.40953064	0.416482925	0.418916702	0.419662476
449.742584	0.278917313	0.367183685	0.424053192	0.425394058	0.432094574	0.439069748	0.441509247	0.442249298
492.345673	0.305492401	0.393960953	0.450956345	0.452322006	0.459056854	0.466062546	0.468509674	0.469249725
543.46936	0.337371826	0.426052094	0.483186722	0.484584808	0.491353989	0.498390198	0.50084877	0.501594543
604.81781	0.375616074	0.464529037	0.521821976	0.523254395	0.530065536	0.537139893	0.539609909	0.540363312
678.435913	0.421499252	0.510679245	0.568157196	0.569625854	0.576486588	0.58360672	0.586093903	0.586853027
766.77771	0.476554871	0.566051483	0.623756409	0.625268936	0.632184982	0.639358521	0.641868591	0.642633438
872.787842	0.542619705	0.632492065	0.690475464	0.692045212	0.699029922	0.706268311	0.70880127	0.709575653
1000	0.621883392	0.712209702	0.770526886	0.772165298	0.77923584	0.786554337	0.789115906	0.789901733

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 250m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 3

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.035409927	0.115306854	0.244150162	0.35418129	0.503175735	0.760457993	1.01308441	1.31389236
2.54E+00	0.042951584	0.130130768	0.264167786	0.376180649	0.527038574	0.785907745	1.03911972	1.34016609
4.21E+00	0.045036316	0.13451004	0.26987648	0.381435394	0.532077789	0.790805817	1.04394913	1.34495544
6.20E+00	0.046567917	0.137973785	0.274423599	0.385620117	0.536071777	0.794652939	1.04772758	1.34868813
8.60012722	0.048238754	0.141584396	0.279075623	0.38999176	0.540300369	0.79876709	1.05178261	1.352705
11.4758358	0.050191879	0.145559311	0.284091949	0.394779205	0.544979095	0.803352356	1.05631638	1.35720634
14.9266863	0.052503586	0.150009155	0.289600372	0.400085449	0.550193787	0.808486938	1.06140327	1.36226273
19.0677071	0.055269241	0.155035019	0.295715332	0.406021118	0.556055069	0.814279556	1.06715393	1.36798286
24.036932	0.058567047	0.160707474	0.30248642	0.412620544	0.562587738	0.820753098	1.07358932	1.37439156
30.0000019	0.062522888	0.167144775	0.31004715	0.420024872	0.569936752	0.828048706	1.08084869	1.38162613
32.311367	0.064065933	0.169618607	0.312948227	0.422880173	0.572776794	0.830869675	1.0836544	1.38442039
35.0850067	0.065910339	0.172489166	0.316272736	0.426137924	0.576002121	0.834068298	1.08683968	1.38759613
38.413372	0.068119049	0.175853729	0.320150375	0.429956436	0.579811096	0.837856293	1.0906105	1.39135361
42.4074097	0.07075882	0.179754257	0.324594498	0.434329987	0.584159851	0.842182159	1.09492302	1.39565659
47.2002563	0.073925018	0.184295654	0.329723358	0.439388275	0.589191437	0.847192764	1.09991646	1.40064049
52.9516716	0.077713013	0.189561844	0.335615158	0.445207596	0.594993591	0.85297966	1.10569	1.40640068
59.8533707	0.082258225	0.195659637	0.342365265	0.451889038	0.601665497	0.859640121	1.11233711	1.41303635
68.1354141	0.087690353	0.202705383	0.350084305	0.459531784	0.609289169	0.86724472	1.11992645	1.42061424
78.0738602	0.094182968	0.210826874	0.358875275	0.468250275	0.617988586	0.875930786	1.12859917	1.42927551
90	0.101940155	0.220193863	0.368902206	0.478204727	0.62792778	0.885852814	1.13850784	1.43917465
93.4670486	0.10418129	0.22287178	0.371753693	0.481019974	0.630727768	0.888652802	1.14130974	1.44197464
97.6275024	0.106880188	0.226068497	0.375152588	0.48440361	0.634109497	0.892024994	1.1446743	1.44533539
102.620049	0.110116959	0.229850769	0.379161835	0.488391876	0.638093948	0.89600563	1.14865112	1.4493084
108.611107	0.113992691	0.234325409	0.38388443	0.493093491	0.642791748	0.900697708	1.15333557	1.45398903
115.800377	0.118606567	0.239555359	0.389350891	0.49851799	0.648204803	0.906108856	1.15874672	1.45940018
124.427498	0.124166489	0.245798111	0.39589119	0.50504303	0.654729843	0.912626266	1.16525459	1.46590042
134.780045	0.130802155	0.253112793	0.40348053	0.512601852	0.662281036	0.920167923	1.17279243	1.47343254
147.20311	0.138715744	0.261695862	0.412326813	0.521409988	0.671081543	0.928966522	1.18158722	1.48222733
162.110779	0.148206711	0.271858215	0.422767639	0.531826019	0.681491852	0.939371109	1.19198799	1.49262238
179.999985	0.159543991	0.283823013	0.434991837	0.544021606	0.69367981	0.951555252	1.20416641	1.50479698
186.934082	0.163934708	0.288442612	0.439710617	0.548725128	0.698379517	0.956251144	1.2088604	1.50948906
195.25499	0.169193268	0.293937683	0.445299149	0.554302216	0.703952789	0.961820602	1.21442986	1.51505852
205.240082	0.175497055	0.300487518	0.451950073	0.560939789	0.710588455	0.968454361	1.22106171	1.52168846
217.222198	0.183048248	0.308292389	0.459863663	0.568840027	0.718484879	0.976348877	1.22895432	1.52957916
231.600739	0.192090988	0.317586899	0.469257355	0.57821846	0.727859497	0.985721588	1.23832321	1.53894806
248.85498	0.20293045	0.328681946	0.48046875	0.589420319	0.739059448	0.996917725	1.24951553	1.55013657
269.560089	0.215913773	0.341896057	0.493778229	0.602712631	0.752346039	1.01020241	1.26280022	1.56341934
294.406219	0.23147583	0.357681274	0.509664536	0.618585587	0.768215179	1.02606583	1.27865982	1.57927895
324.221558	0.250125885	0.376522064	0.528583527	0.637487411	0.787111282	1.04495811	1.29755211	1.59816933
359.999969	0.272483826	0.399093628	0.55125618	0.660131454	0.809741974	1.06757927	1.32016945	1.62078476
384.654541	0.287885666	0.414588928	0.566791534	0.675662994	0.825273514	1.08311081	1.33569908	1.63631439
414.240021	0.306362152	0.433168411	0.585422516	0.694284439	0.843889236	1.10172272	1.35430908	1.65492249
449.742584	0.328517914	0.455461502	0.607782364	0.716617584	0.86621666	1.1240406	1.37662315	1.67723274
492.345673	0.355110168	0.482181549	0.63457489	0.743394852	0.892980576	1.1508007	1.40338135	1.70398903
543.46936	0.387004852	0.514205933	0.666660309	0.775457382	0.925031662	1.18284607	1.4354229	1.73602867
604.81781	0.425279617	0.552627563	0.705163956	0.813934326	0.963497162	1.22130394	1.47387695	1.77448082
678.435913	0.471200943	0.598718643	0.751346588	0.860090256	1.00963593	1.26743126	1.52000046	1.82060242
766.77771	0.526302338	0.654020309	0.806753159	0.915462494	1.06499481	1.3227787	1.57534027	1.87593842
872.787842	0.592418671	0.720375061	0.873231888	0.981897354	1.1314106	1.38918495	1.64174271	1.94233894
1000	0.671749115	0.799991608	0.953001022	1.06161499	1.21110535	1.46886444	1.72141457	2.02200699

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 500m

Layer 2 B=0.6

Drawdown (m) vs. Time (Days)

Zone 1

Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.15568244	0.000337601	0.001386642	0.002729416	0.003559113	0.004747391	0.006456375	0.007478714	0.008037567
2.54250145	0.000883102	0.003429413	0.006340027	0.00815773	0.010620117	0.013780594	0.015420914	0.016218185
4.20668411	0.00164032	0.006069183	0.010673523	0.013542175	0.017225266	0.021549225	0.023593903	0.024524689
6.20370388	0.002651215	0.009336472	0.015787125	0.01971817	0.024528503	0.029800415	0.032140732	0.033166885
8.60012722	0.003952026	0.013267517	0.021743774	0.02671051	0.032543182	0.038608551	0.041183472	0.042285919
11.4758358	0.005578995	0.017913818	0.028598785	0.034545898	0.041296005	0.04804039	0.05080986	0.051971436
14.9266863	0.007577896	0.023342133	0.036388397	0.04325676	0.050827026	0.058153153	0.061084747	0.062297821
19.0677071	0.010015488	0.029624939	0.04514122	0.052864075	0.061166763	0.068996429	0.072067261	0.073322296
24.036932	0.0129776	0.036834717	0.054878235	0.063392639	0.072347641	0.08061409	0.083803177	0.085092545
30.0000019	0.016584396	0.045034409	0.065607071	0.07485199	0.08439064	0.093038559	0.096328735	0.097644806
32.311367	0.017988205	0.048145294	0.069629669	0.079130173	0.088871002	0.097646713	0.100963593	0.102287292
35.0850067	0.019685745	0.051790237	0.074279785	0.08405304	0.094007492	0.102916718	0.106267929	0.107601166
38.413372	0.021738052	0.05603981	0.079624176	0.089689255	0.099868774	0.108922958	0.112312317	0.113656998
42.4074097	0.024219513	0.060968399	0.085731506	0.096099854	0.106510162	0.115716934	0.119146347	0.120498657
47.2002563	0.02722168	0.066659927	0.092662811	0.103347778	0.114002228	0.123355865	0.126821518	0.128185272
52.9516716	0.030851364	0.073194504	0.100492477	0.111501694	0.122398376	0.13189888	0.135402679	0.136774063
59.8533707	0.035243988	0.080661774	0.109287262	0.120620728	0.131759644	0.141412735	0.144952774	0.146335602
68.1354141	0.040548325	0.089155197	0.119115829	0.130771637	0.142148972	0.151948929	0.155525208	0.156915665
78.0738602	0.046953201	0.098783493	0.130060196	0.142028809	0.15363884	0.163572311	0.167175293	0.168571472
90	0.05465889	0.109664917	0.142204285	0.154474258	0.166305542	0.176374435	0.180011749	0.181415558
93.4670486	0.056900024	0.112773895	0.145658493	0.158008575	0.169900894	0.180007935	0.183654785	0.185062408
97.6275024	0.059591293	0.116434097	0.149700165	0.162139893	0.174098969	0.184247971	0.187906265	0.189315796
102.620049	0.062820435	0.120731354	0.154415131	0.166955948	0.178983688	0.189180374	0.192846298	0.194257736
108.611107	0.066696167	0.125762939	0.159898758	0.172542572	0.184652328	0.194898605	0.198579788	0.199996948
115.800377	0.071340561	0.131645203	0.166259766	0.179016113	0.1912117	0.201507568	0.205198288	0.206617355
124.427498	0.076906204	0.138502121	0.173614502	0.186491013	0.198774338	0.209119797	0.212827682	0.214250565
134.780045	0.083574295	0.14648819	0.18211174	0.195104599	0.20747757	0.217884064	0.221605301	0.223031998
147.20311	0.091552734	0.155778885	0.19190979	0.205024719	0.217489243	0.227954865	0.23169136	0.233121872
162.110779	0.101091385	0.166589737	0.203212738	0.216442108	0.22899437	0.239522934	0.243280411	0.244718552
179.999985	0.112493515	0.179187775	0.216281891	0.229623795	0.242261887	0.252841949	0.256608963	0.258049011
186.934082	0.11690712	0.184017181	0.221271515	0.23465538	0.24732399	0.257921219	0.261695862	0.263137817
195.25499	0.122192383	0.189748764	0.227178574	0.240608215	0.253307343	0.26392746	0.267705917	0.269151688
205.240082	0.12852478	0.196546555	0.23415947	0.247634888	0.260368347	0.271009445	0.27479744	0.276245117
217.222198	0.136106491	0.204603195	0.242406845	0.255924225	0.268697739	0.279371262	0.2831707	0.284620285
231.600739	0.145183563	0.214155197	0.252149582	0.265716553	0.278530121	0.289232254	0.293039322	0.294492722
248.85498	0.156051636	0.225482941	0.26366806	0.277282715	0.29013443	0.300857544	0.304670334	0.306125641
269.560089	0.169063568	0.238929749	0.277296066	0.290958405	0.303850174	0.314611435	0.318435669	0.319894791
294.406219	0.184644699	0.25491333	0.293451309	0.307161331	0.320091248	0.330884933	0.334718704	0.336181641
324.221558	0.20331192	0.273944855	0.312656403	0.326416016	0.339382172	0.350191116	0.354028702	0.355495453
359.999969	0.225673676	0.296630859	0.335483551	0.349283218	0.362295151	0.373151779	0.377008438	0.378479004
384.654541	0.241073608	0.312215805	0.351163864	0.364994049	0.378030777	0.388906479	0.39276886	0.39424324
414.240021	0.259544373	0.330871582	0.369922638	0.383787155	0.396852493	0.407735825	0.41160202	0.413076401
449.742584	0.28169632	0.353208542	0.392364502	0.406263351	0.419353485	0.430263519	0.434137344	0.43561554
492.345673	0.308267593	0.379970551	0.419235229	0.433172226	0.446298599	0.457237244	0.461122513	0.46260643
543.46936	0.340143204	0.41204834	0.451435089	0.465415955	0.478586197	0.489561081	0.493457794	0.494947433
604.81781	0.378387451	0.450517654	0.49004364	0.504074097	0.517295837	0.528312683	0.532226563	0.533720016
678.435913	0.42427063	0.496656418	0.536346436	0.55043602	0.563714981	0.574781418	0.578714371	0.580215454
766.77771	0.47933197	0.55201149	0.59189415	0.606056213	0.619403839	0.630531311	0.634483337	0.635993958
872.787842	0.545402527	0.618436813	0.658548355	0.672794342	0.686223984	0.697422028	0.701402664	0.702924728
1000	0.624692917	0.69814682	0.738534927	0.752882004	0.76640892	0.777694702	0.781707764	0.783245087

Appendix A - Data Table

Pumping from Zone 3 w abandoned well 500m

Layer 2 B=0.6

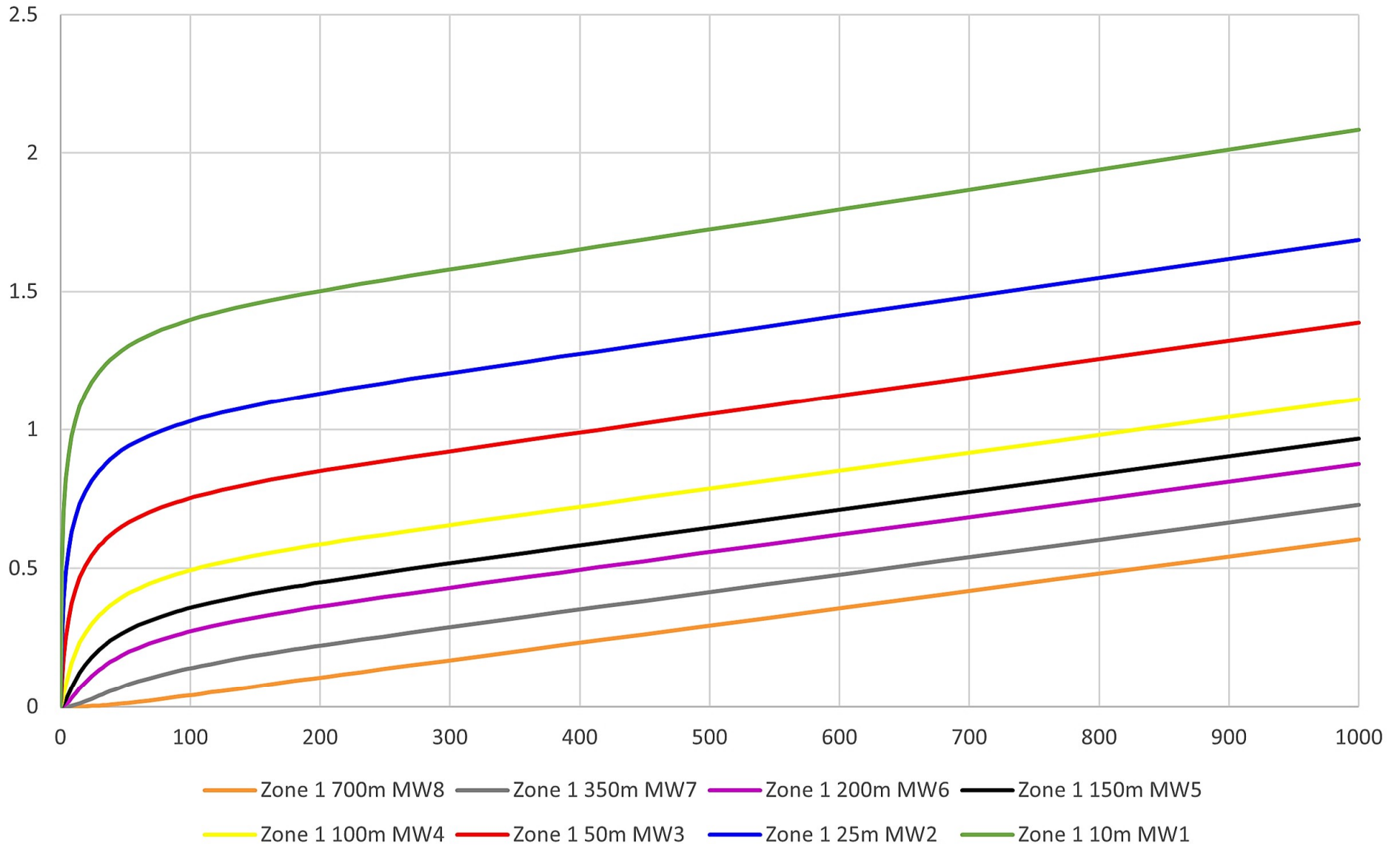
Drawdown (m) vs. Time (Days)

Zone 3

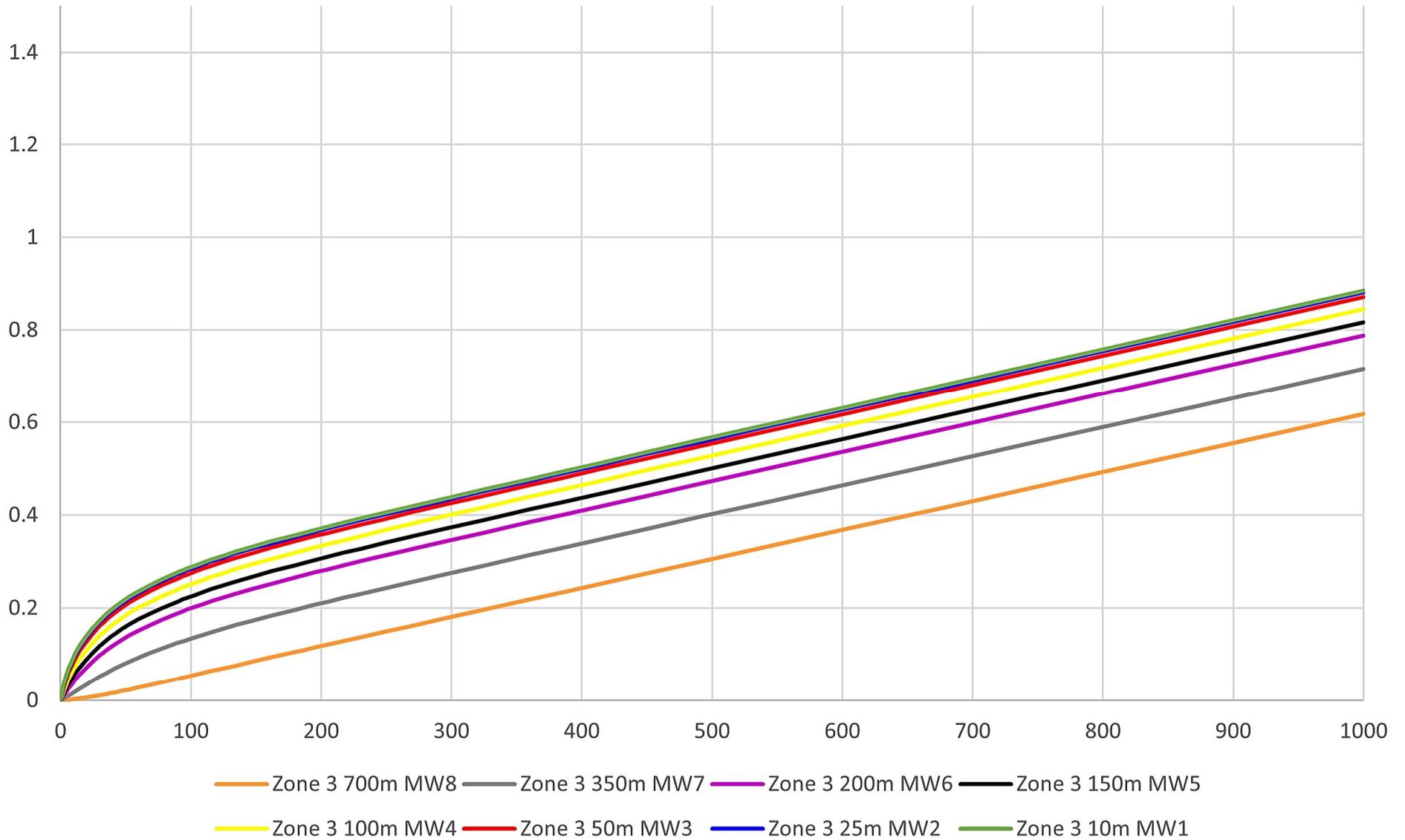
Well Distance Time	700m MW8	350m MW7	200m MW6	150m MW5	100m MW4	50m MW3	25m MW2	10m MW1
1.16E+00	0.035270691	0.142286301	0.296401978	0.388496399	0.528081894	0.779350281	1.02970505	1.32932281
2.54E+00	0.042758942	0.157552719	0.317401886	0.411453247	0.552885056	0.805709839	1.05663109	1.35647202
4.21E+00	0.044837952	0.160833359	0.321174622	0.415395737	0.556976318	0.809906006	1.06085587	1.36070633
6.20E+00	0.046360016	0.16330719	0.324008942	0.418355942	0.560043335	0.81303978	1.06400681	1.36386108
8.60012722	0.048019409	0.166025162	0.327150345	0.421634674	0.563432693	0.816501617	1.06748581	1.367342
11.4758358	0.049959183	0.169158936	0.330774307	0.425405502	0.56731987	0.820463181	1.07146263	1.37132454
14.9266863	0.052259445	0.172800064	0.334960938	0.42974472	0.571779251	0.824998856	1.07601738	1.3758812
19.0677071	0.055002213	0.177038193	0.339790344	0.434734344	0.576892853	0.830184937	1.08122253	1.38109016
24.036932	0.058290482	0.181962967	0.345344543	0.440452576	0.582735062	0.836101532	1.0871563	1.38702774
30.0000019	0.062231064	0.187667847	0.351701736	0.446975708	0.589382172	0.842824936	1.09389496	1.39377022
32.311367	0.063760757	0.189849854	0.354118347	0.449449539	0.591897964	0.845365524	1.09644127	1.39631844
35.0850067	0.06559372	0.192428589	0.356962204	0.452360153	0.594856262	0.84835434	1.09943771	1.39931488
38.413372	0.06778717	0.195478439	0.360321045	0.455797195	0.598352432	0.851882935	1.10297012	1.40284729
42.4074097	0.070423126	0.19906044	0.364229202	0.459785461	0.602399826	0.855962753	1.10705757	1.40693855
47.2002563	0.073583603	0.203268051	0.368789673	0.464431763	0.607107162	0.860708237	1.11181068	1.41169167
52.9516716	0.07736969	0.208189011	0.374080658	0.469814301	0.612556458	0.866195679	1.11730766	1.41719055
59.8533707	0.081905365	0.213935852	0.380220413	0.476045609	0.61885643	0.872537613	1.12365913	1.42354202
68.1354141	0.087329865	0.220626831	0.387310028	0.483232498	0.626113892	0.879835129	1.13096619	1.43085098
78.0738602	0.093826294	0.228441238	0.395551682	0.491580963	0.634534836	0.88829422	1.13942909	1.43931389
90	0.101581573	0.237491608	0.405002594	0.501127243	0.644151688	0.897951126	1.14909363	1.44897842
93.4670486	0.10383606	0.240100861	0.407716751	0.503866196	0.646909714	0.900720596	1.15186691	1.45175171
97.6275024	0.106533051	0.243196487	0.410932541	0.507110596	0.650175095	0.903997421	1.15514565	1.45503235
102.620049	0.109766006	0.246870041	0.414741516	0.510951996	0.654039383	0.907876968	1.1590271	1.4589138
108.611107	0.113636017	0.251220703	0.419237137	0.515483856	0.658596039	0.912446976	1.16360283	1.46348953
115.800377	0.118267059	0.256374359	0.424545288	0.520830154	0.663970947	0.917837143	1.1689949	1.46888161
124.427498	0.123809814	0.262460709	0.43079567	0.527118683	0.670286179	0.92416954	1.17533112	1.47521973
134.780045	0.130437851	0.269651413	0.438154221	0.534517288	0.677715302	0.931615829	1.18278122	1.48266983
147.20311	0.138370514	0.278146744	0.446813583	0.543216705	0.686443329	0.940361023	1.19153023	1.49142075
162.110779	0.147850037	0.28817749	0.457006454	0.553449631	0.696704865	0.950639725	1.20181274	1.50170326
179.999985	0.159187317	0.300037384	0.469020844	0.565500259	0.708784103	0.962734222	1.21391106	1.51380157
186.934082	0.163574219	0.304609299	0.473649979	0.570144653	0.713438034	0.967393875	1.21857071	1.51846123
195.25499	0.168834686	0.310066223	0.479162216	0.575670242	0.71897316	0.97293663	1.22411537	1.52400589
205.240082	0.175134659	0.316572189	0.485729218	0.582252502	0.725566864	0.979536057	1.23071671	1.53060722
217.222198	0.182683945	0.324331284	0.493549347	0.590087891	0.733413696	0.987388611	1.23857117	1.53846359
231.600739	0.191724777	0.333583832	0.50286293	0.599414825	0.742752075	0.996734619	1.24791908	1.54781151
248.85498	0.202560425	0.344629288	0.513973236	0.610544205	0.753892899	1.00788116	1.25906563	1.55895805
269.560089	0.21554184	0.357803345	0.527202606	0.623785019	0.76714325	1.02113914	1.27232742	1.57221985
294.406219	0.231098175	0.373538971	0.542989731	0.639585495	0.782953262	1.03695679	1.28814507	1.5880394
324.221558	0.24974823	0.392356873	0.561859131	0.658470154	0.801847458	1.0558548	1.30704498	1.60693741
359.999969	0.272098541	0.41484642	0.584386826	0.681003571	0.824390411	1.07840538	1.32959747	1.62949181
384.654541	0.287494659	0.430328369	0.599897385	0.696523666	0.839916229	1.09393311	1.3451252	1.64501953
414.240021	0.305967331	0.448886871	0.61848259	0.715116501	0.858514786	1.11253548	1.36372757	1.6636219
449.742584	0.328125	0.471124649	0.640745163	0.737386703	0.88079071	1.13481331	1.3860054	1.68589973
492.345673	0.354709625	0.49779129	0.667438507	0.764087677	0.907497406	1.16152191	1.41271591	1.71261024
543.46936	0.386604309	0.529773712	0.699449539	0.796106339	0.93952179	1.19355202	1.44474602	1.74464035
604.81781	0.424873352	0.568141937	0.737850189	0.834518433	0.977939606	1.23197365	1.48316765	1.78306198
678.435913	0.470788956	0.614162445	0.783905029	0.880580902	1.02401161	1.27805138	1.52924728	1.82914162
766.77771	0.525888443	0.669387817	0.839166641	0.935855865	1.07929611	1.3333416	1.58454132	1.88443565
872.787842	0.592010498	0.735656738	0.905481339	1.00218201	1.1456337	1.39968872	1.65088844	1.95078468
1000	0.671361923	0.81518364	0.985063553	1.08177948	1.22524261	1.47930527	1.7305069	2.03040314

Appendix B: Drawdown Curves

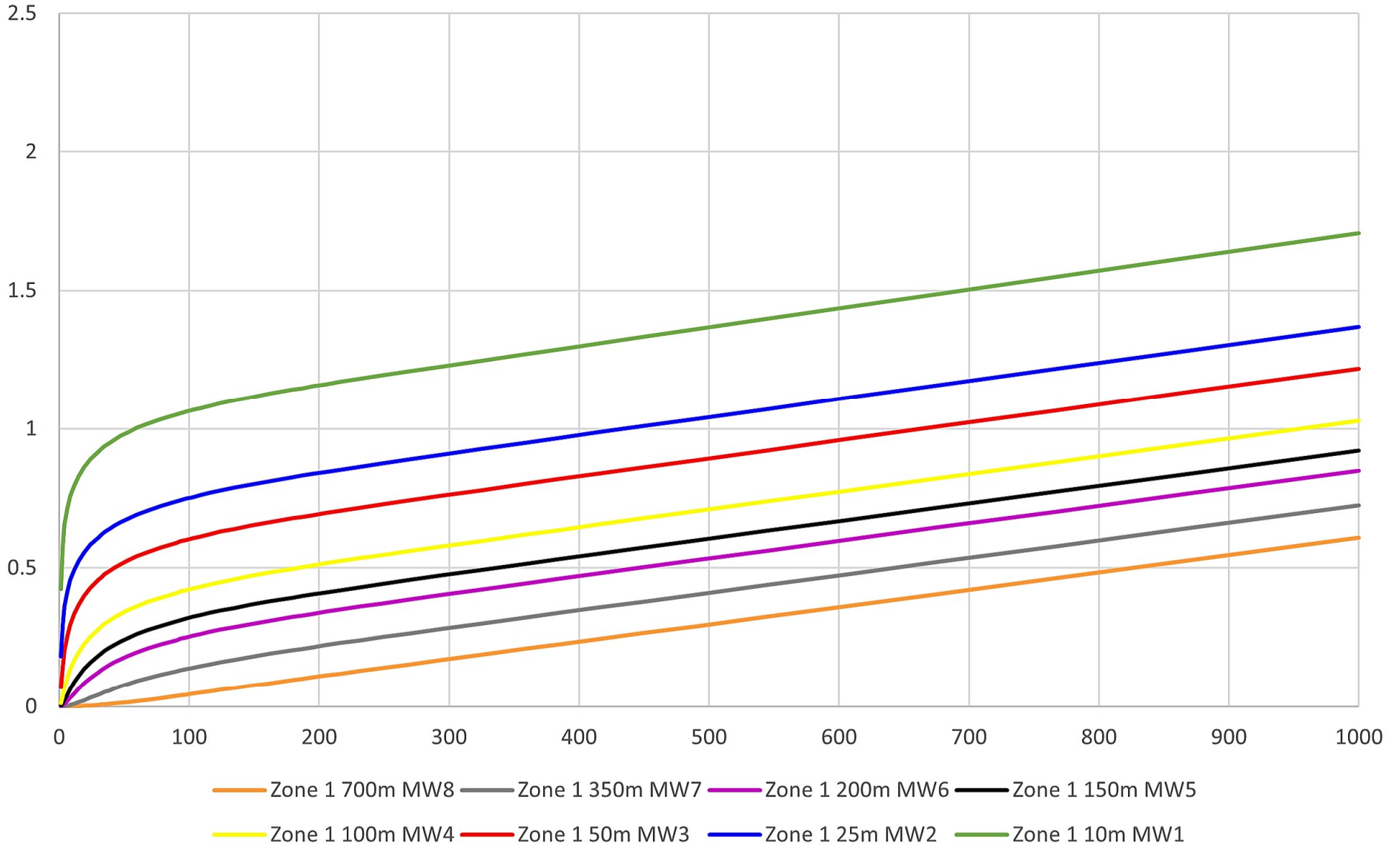
Numerical Model 1.1 Monitoring Wells in Layer 1 Scenario 1 Zone 1



Numerical Model 1.1 Monitoring Wells in Layer 3 Scenario 1 Zone 1



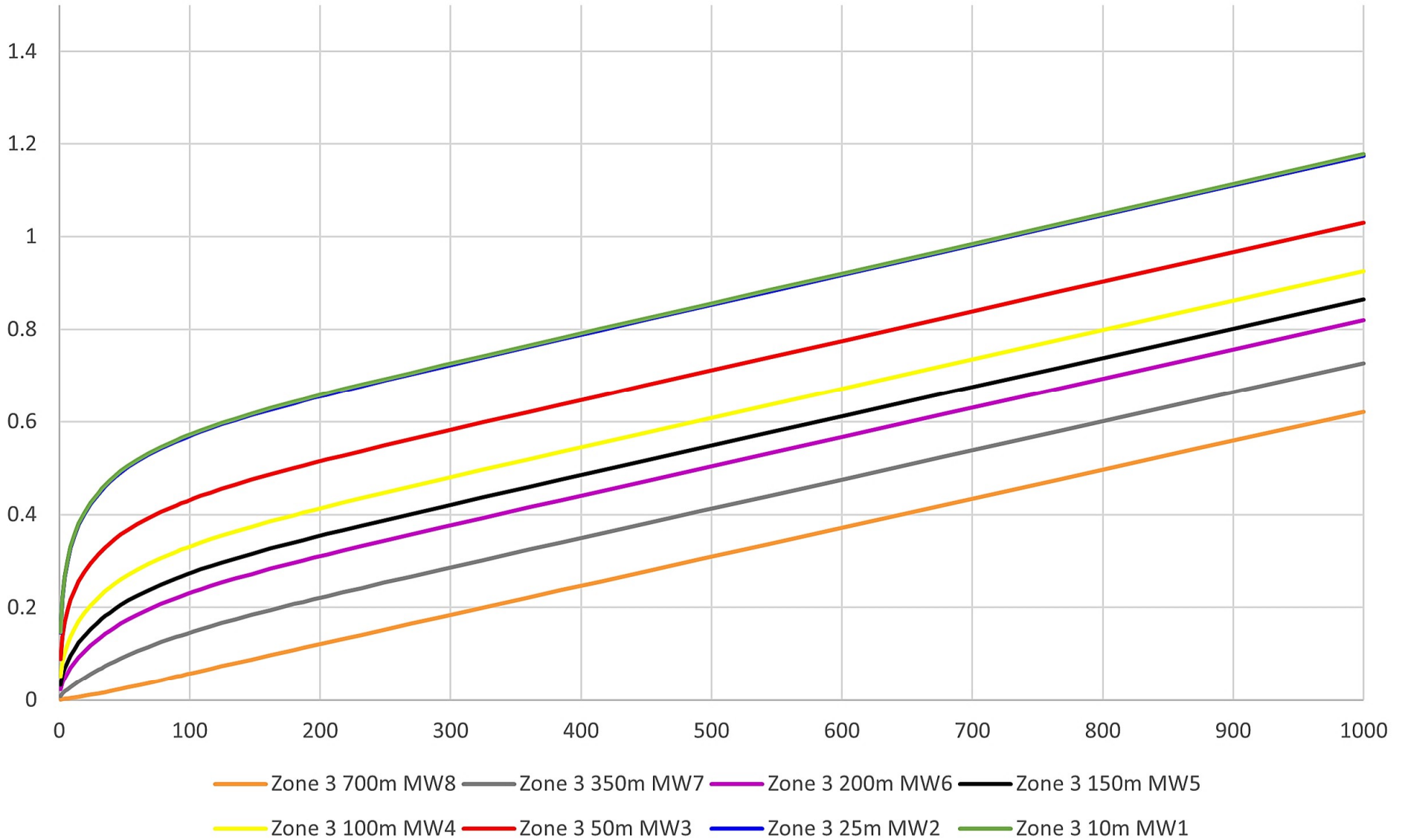
Numerical Model 1.2 Monitoring Wells in Layer 1 Scenario 1 Zone 1 Abandoned Well 20m



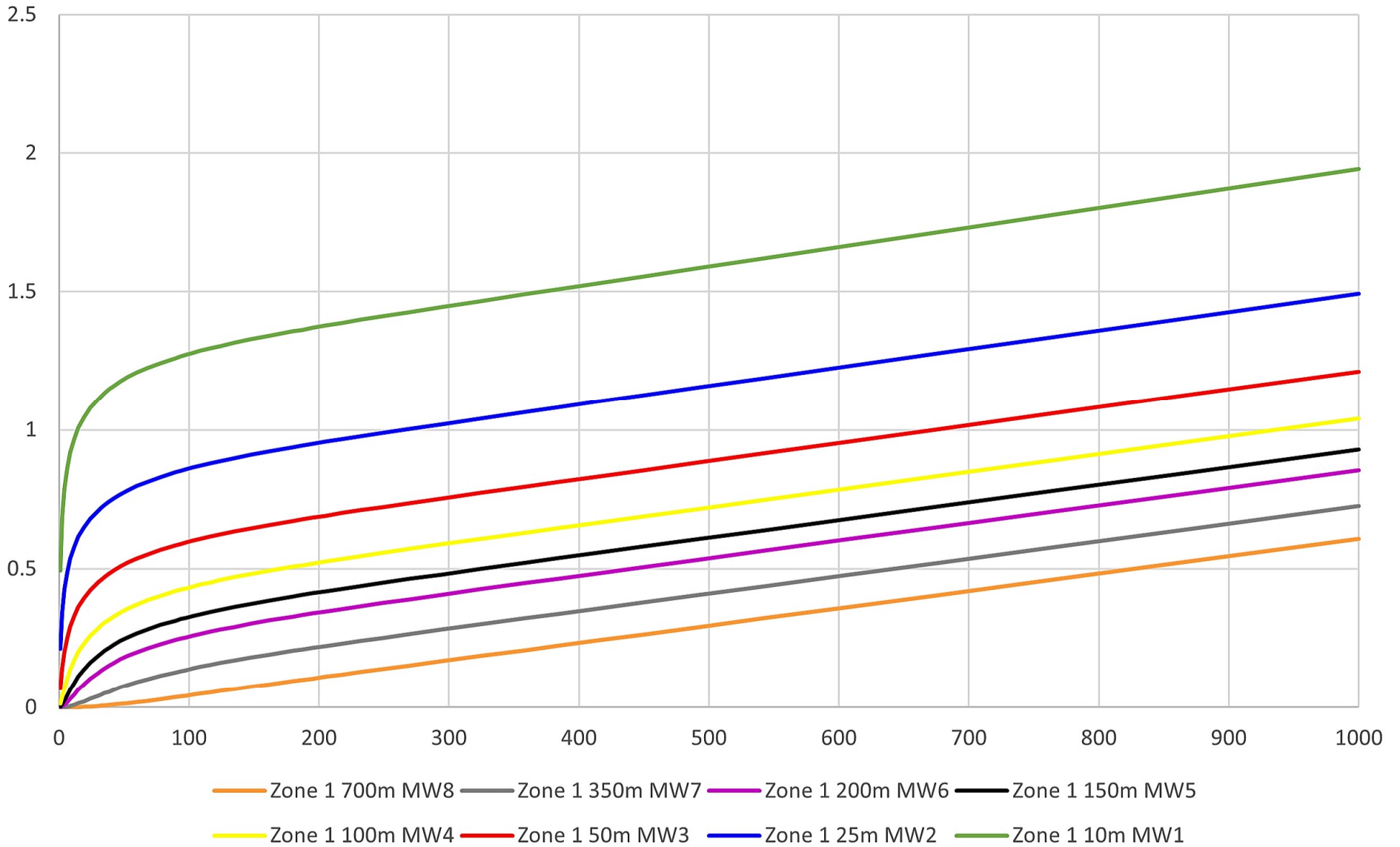
Numerical Model 1.2

Monitoring Wells in Layer 3

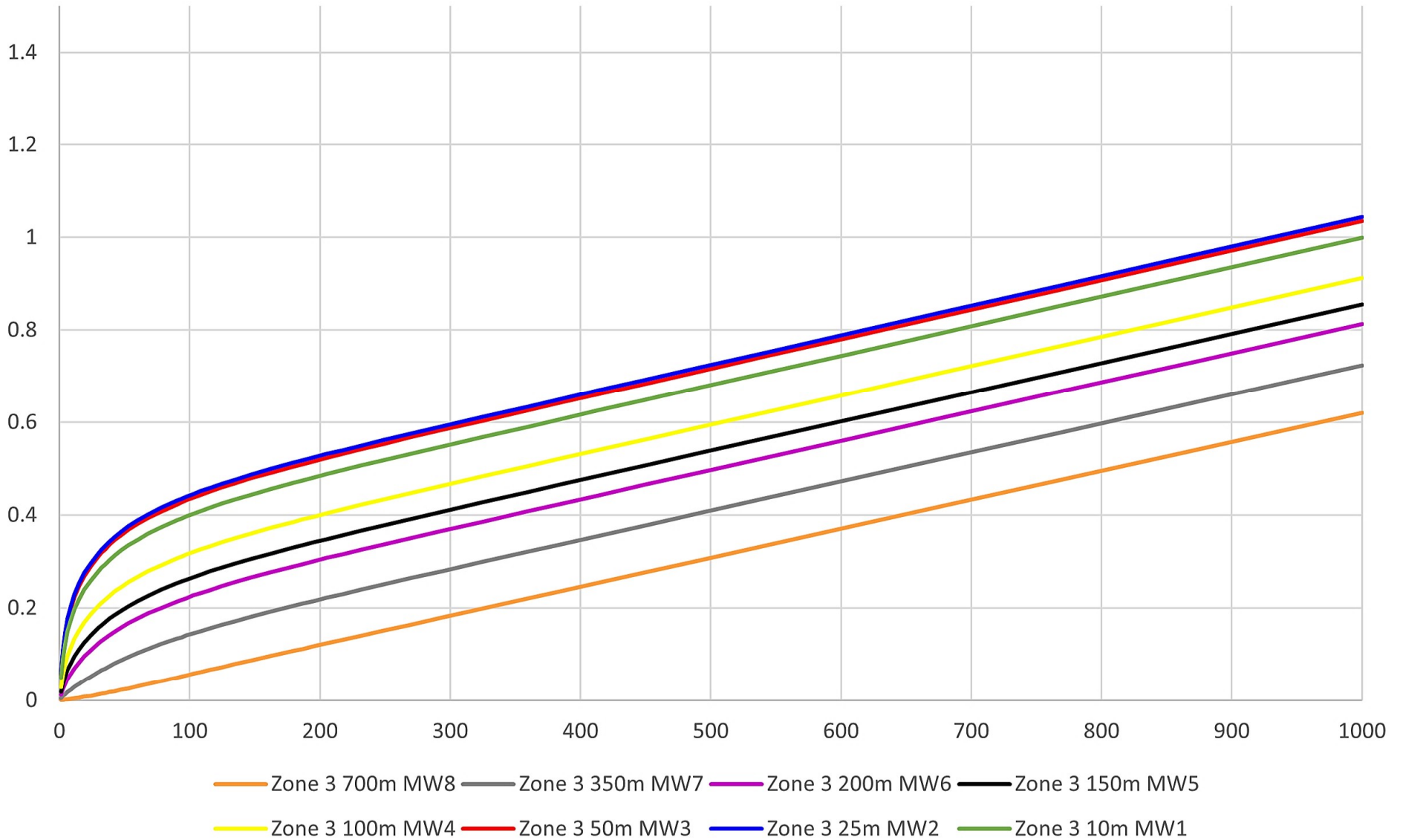
Scenario 1 Zone 1 Abandoned Well 20m



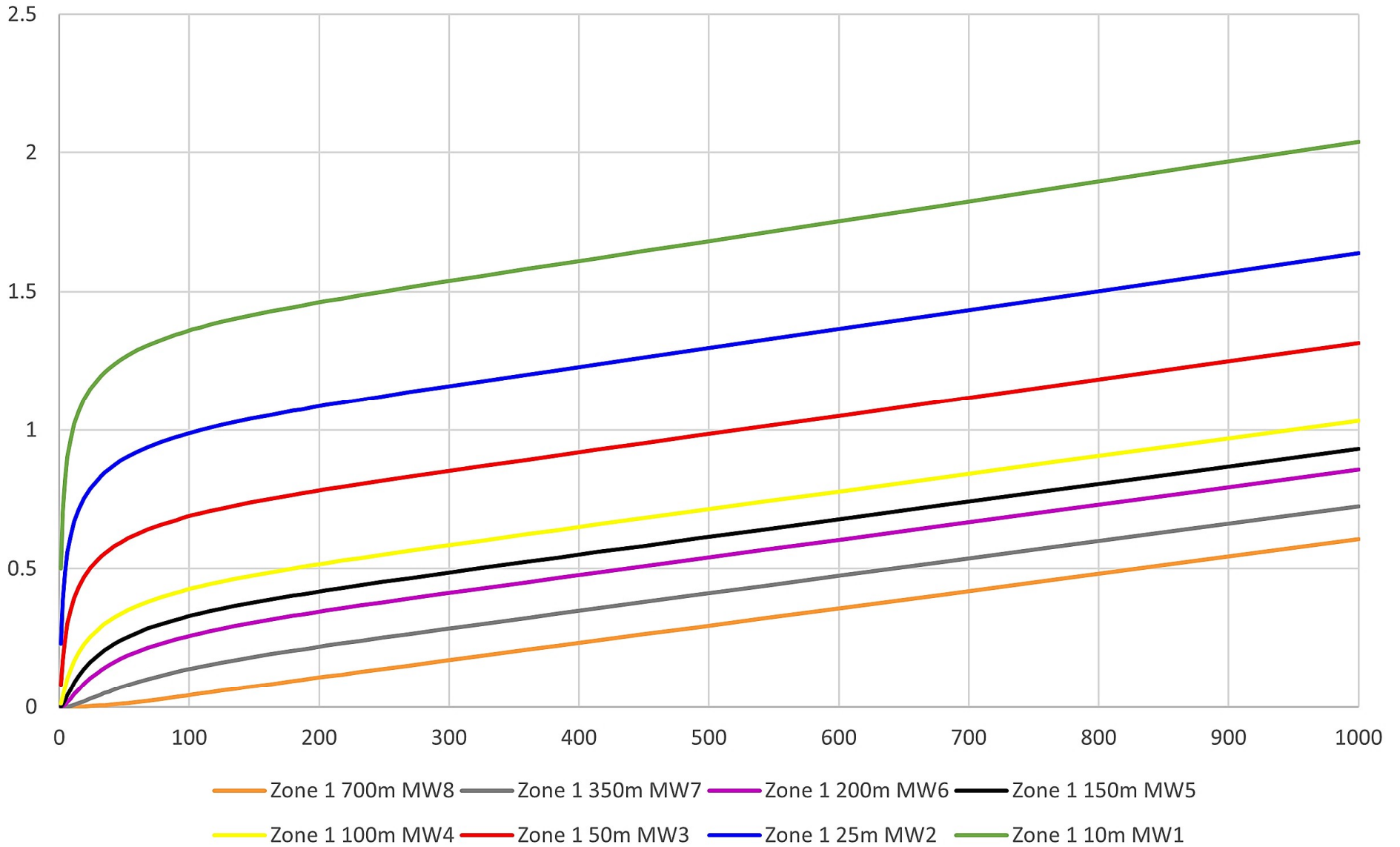
Numerical Model 1.3 Monitoring Wells in Layer 1 Scenario 1 Zone 1 Abandoned Well 40m



Numerical Model 1.3 Monitoring Wells in Layer 3 Scenario 1 Zone 1 Abandoned Well 40m



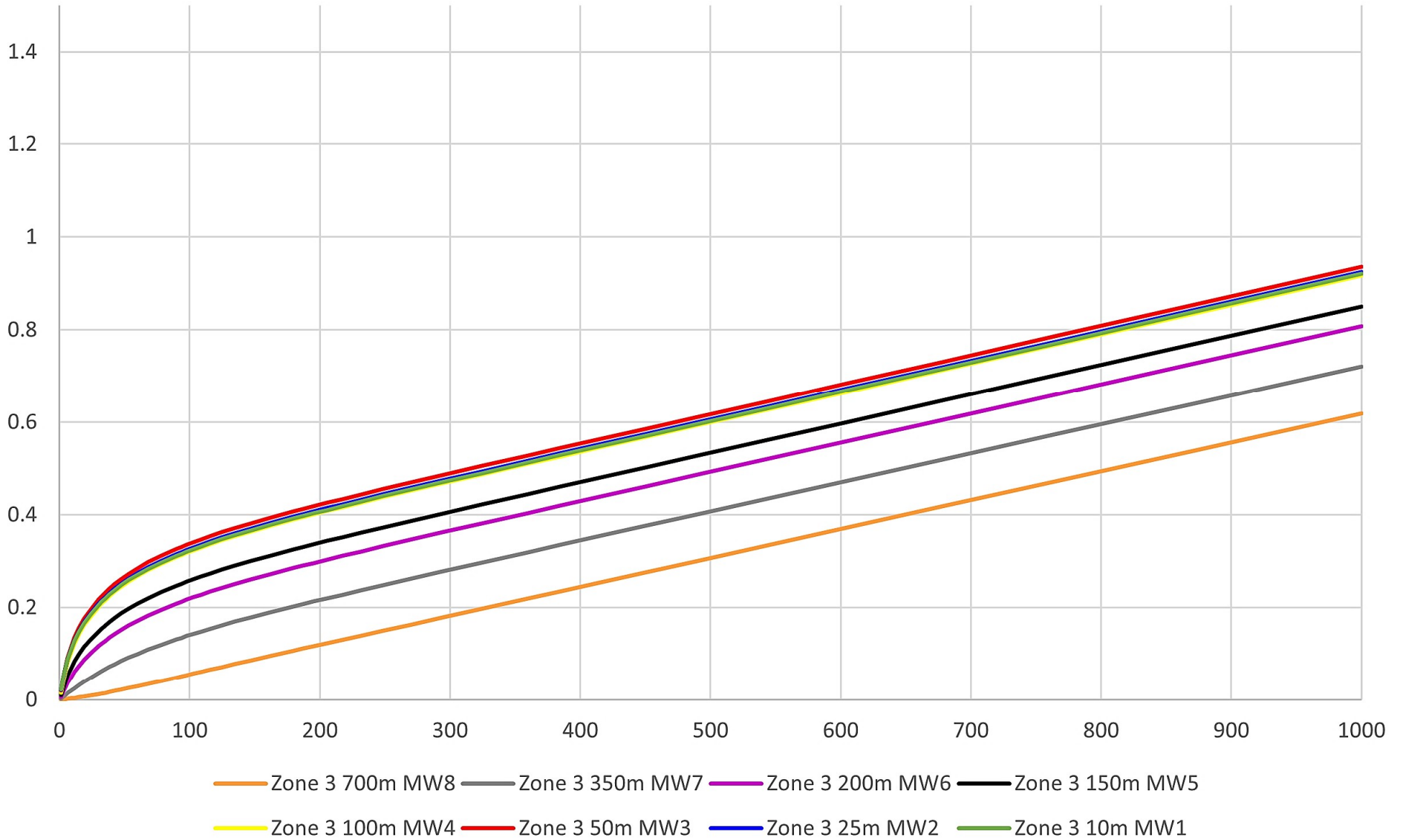
Numerical Model 1.4 Monitoring Wells in Layer 1 Scenario 1 Zone 1 Abandoned Well 80m



Numerical Model 1.4

Monitoring Wells in Layer 3

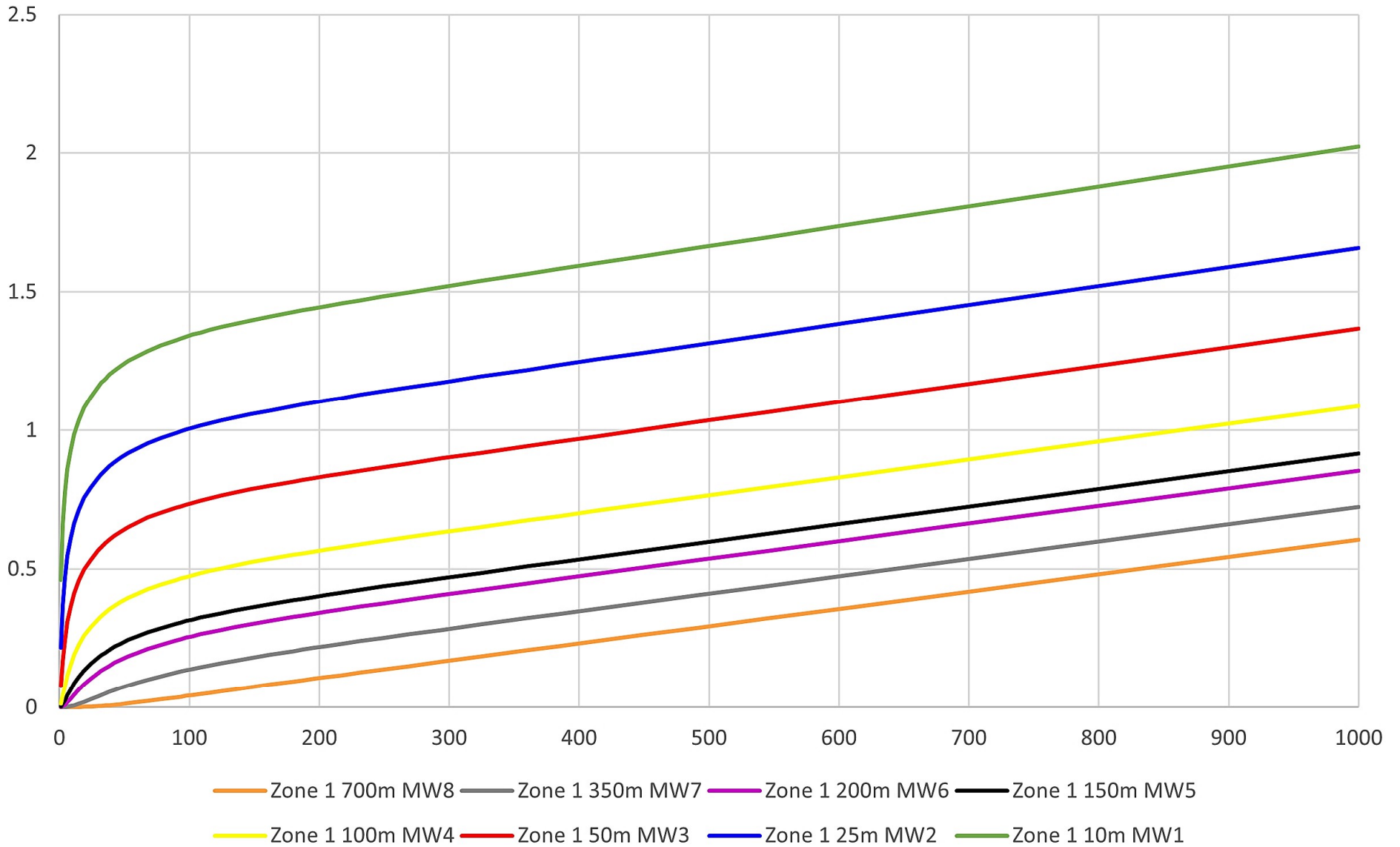
Scenario 1 Zone 1 Abandoned Well 80m



Numerical Model 1.5

Monitoring Wells in Layer 1

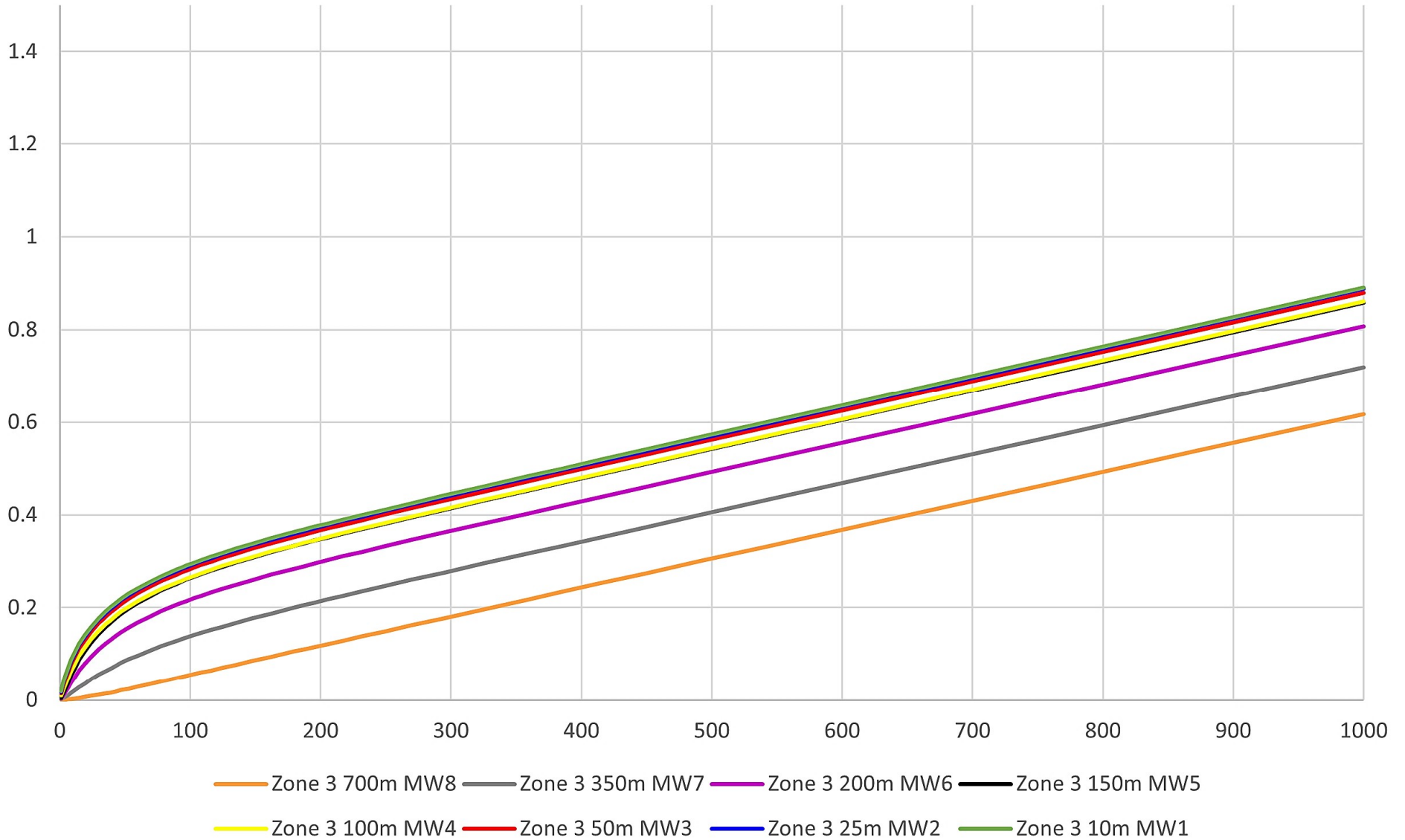
Scenario 1 Zone 1 Abandoned Well 160m



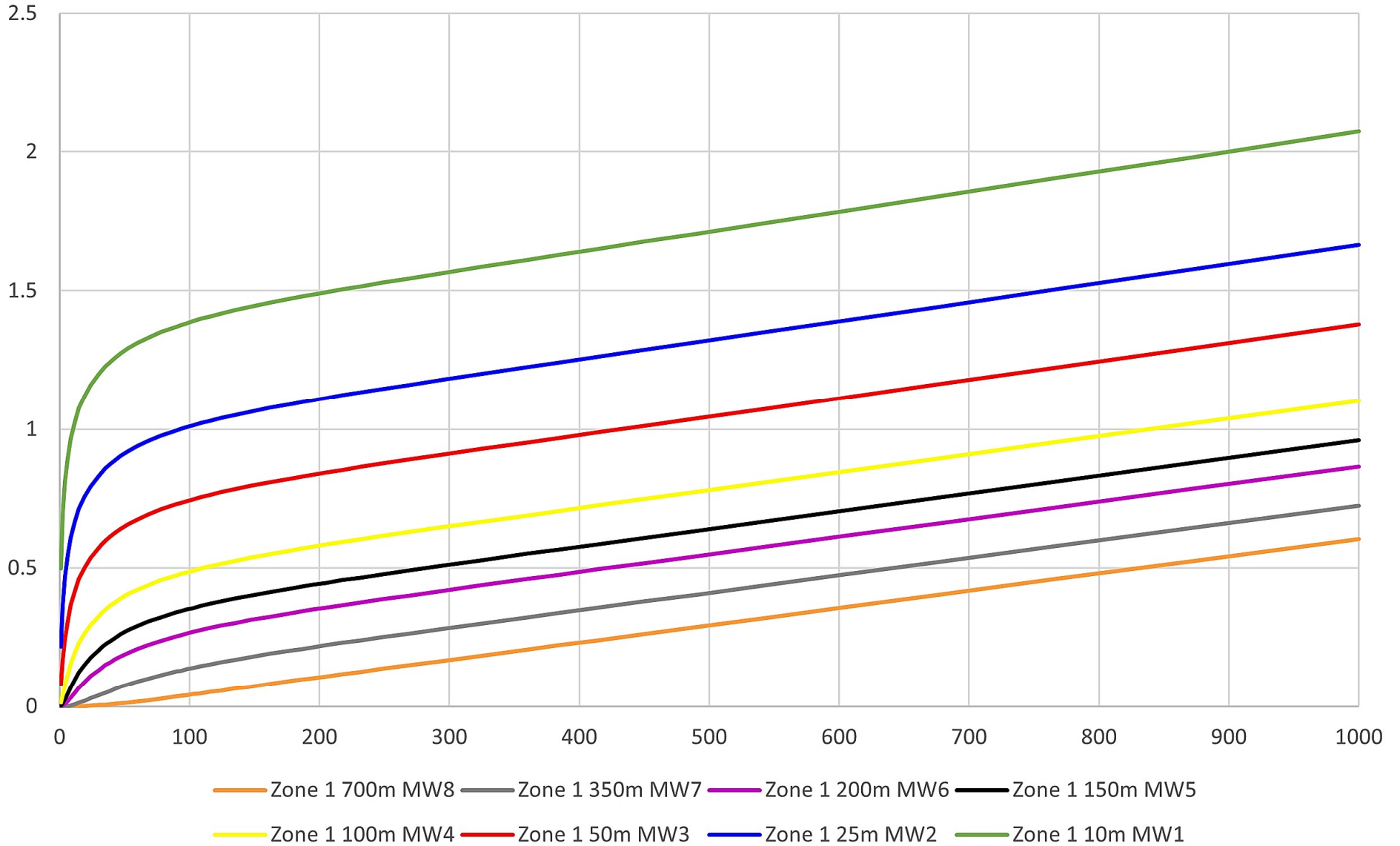
Numerical Model 1.5

Monitoring Wells in Layer 3

Scenario 1 Zone 1 Abandoned Well 160m



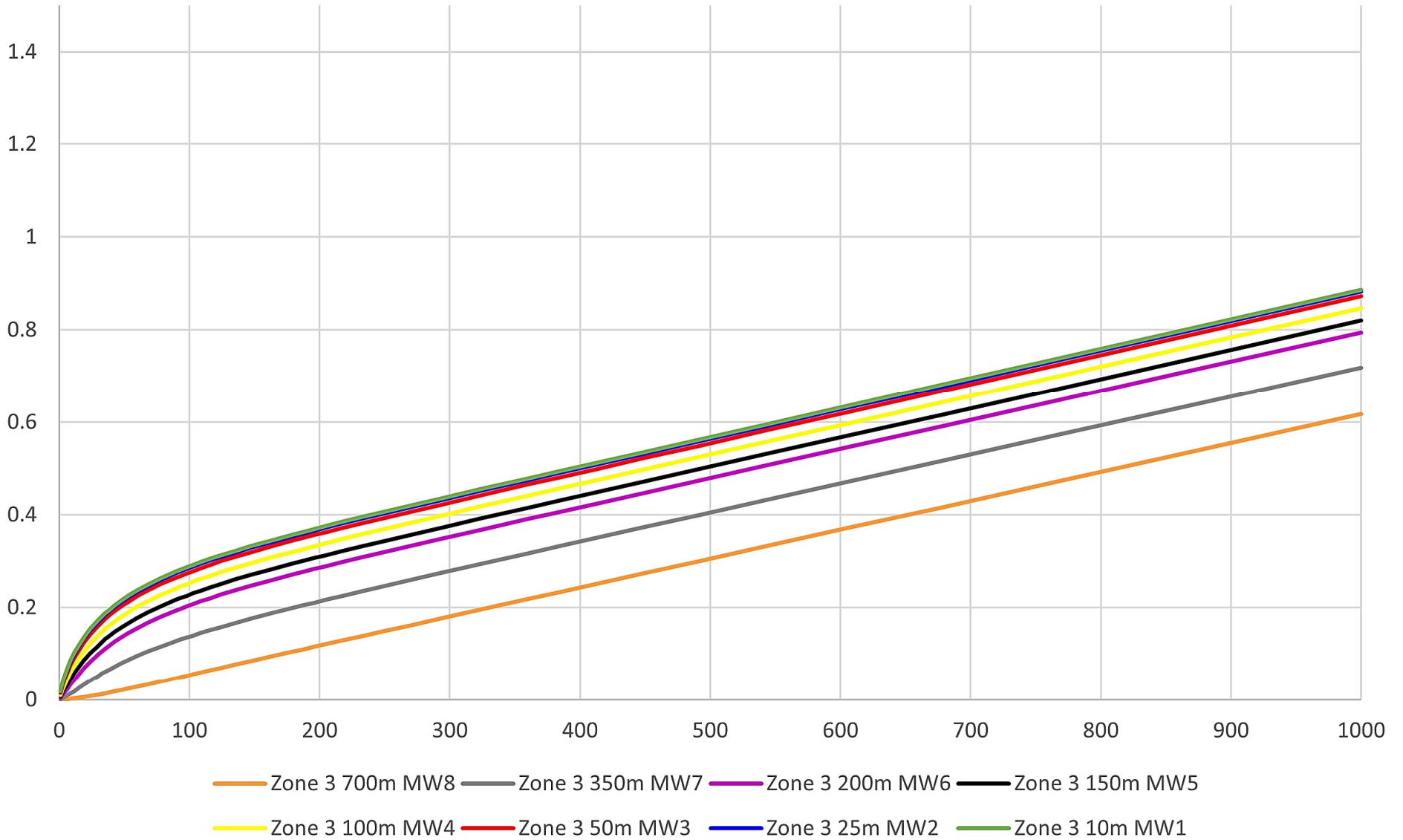
Numerical Model 1.6 Monitoring Wells in Layer 1 Scenario 1 Zone 1 Abandoned Well 250m



Numerical Model 1.6

Monitoring Wells in Layer 3

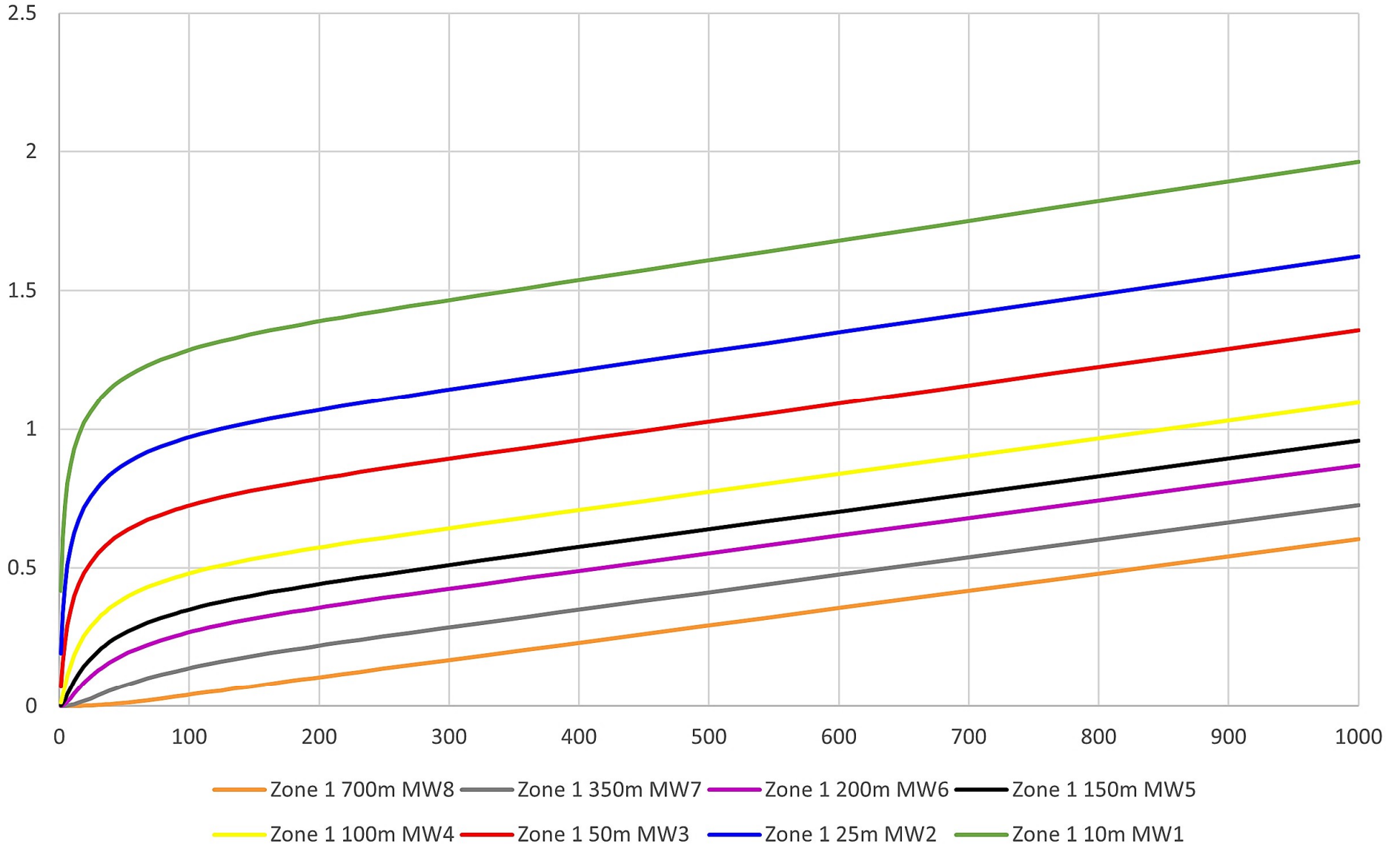
Scenario 1 Zone 1 Abandoned Well 250m



Numerical Model 1.7

Monitoring Wells in Layer 1

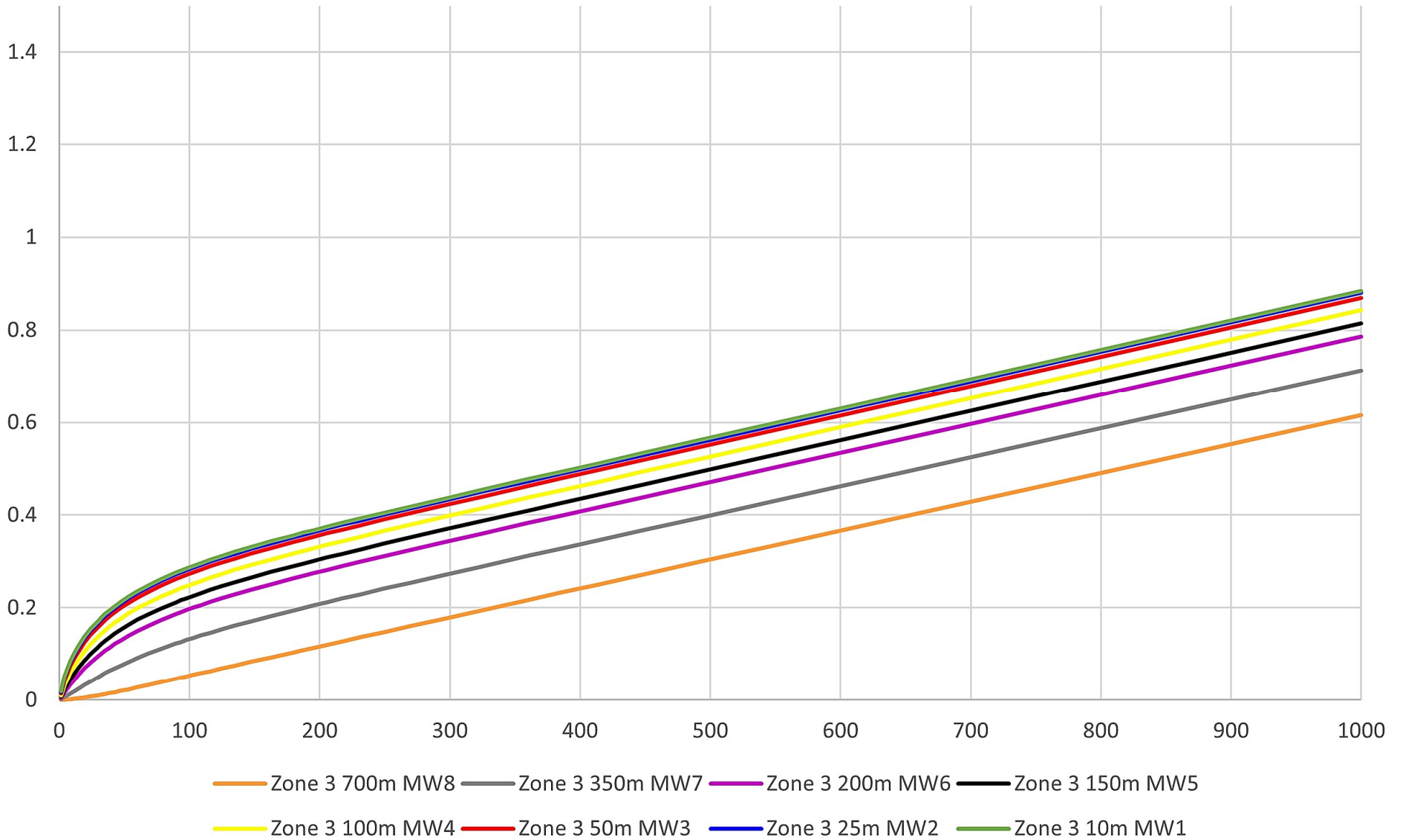
Scenario 1 Zone 1 Abandoned Well 500m



Numerical Model 1.7

Monitoring Wells in Layer 3

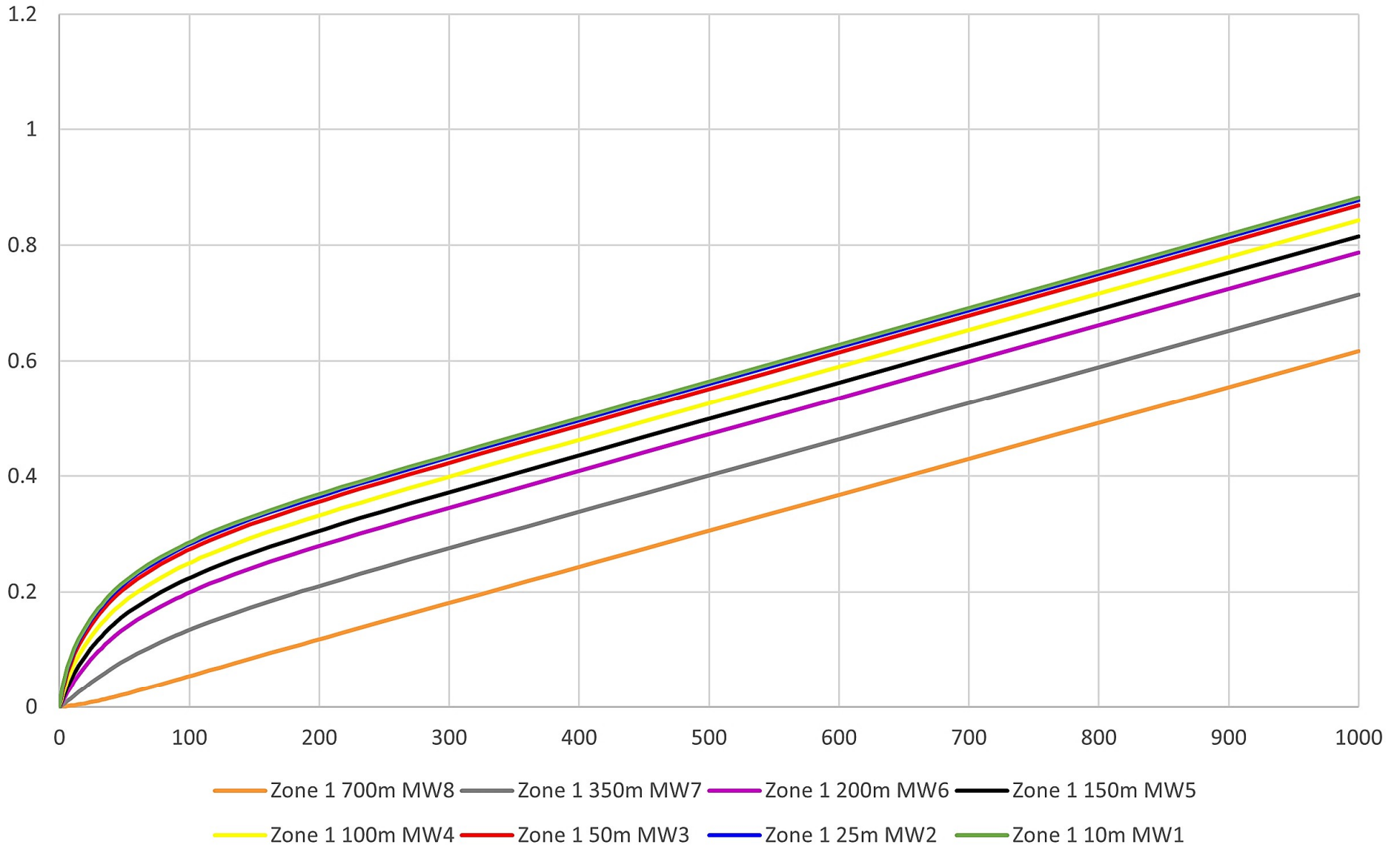
Scenario 1 Zone 1 Abandoned Well 500m



Numerical Model 2.1

Monitoring Wells in Layer 1

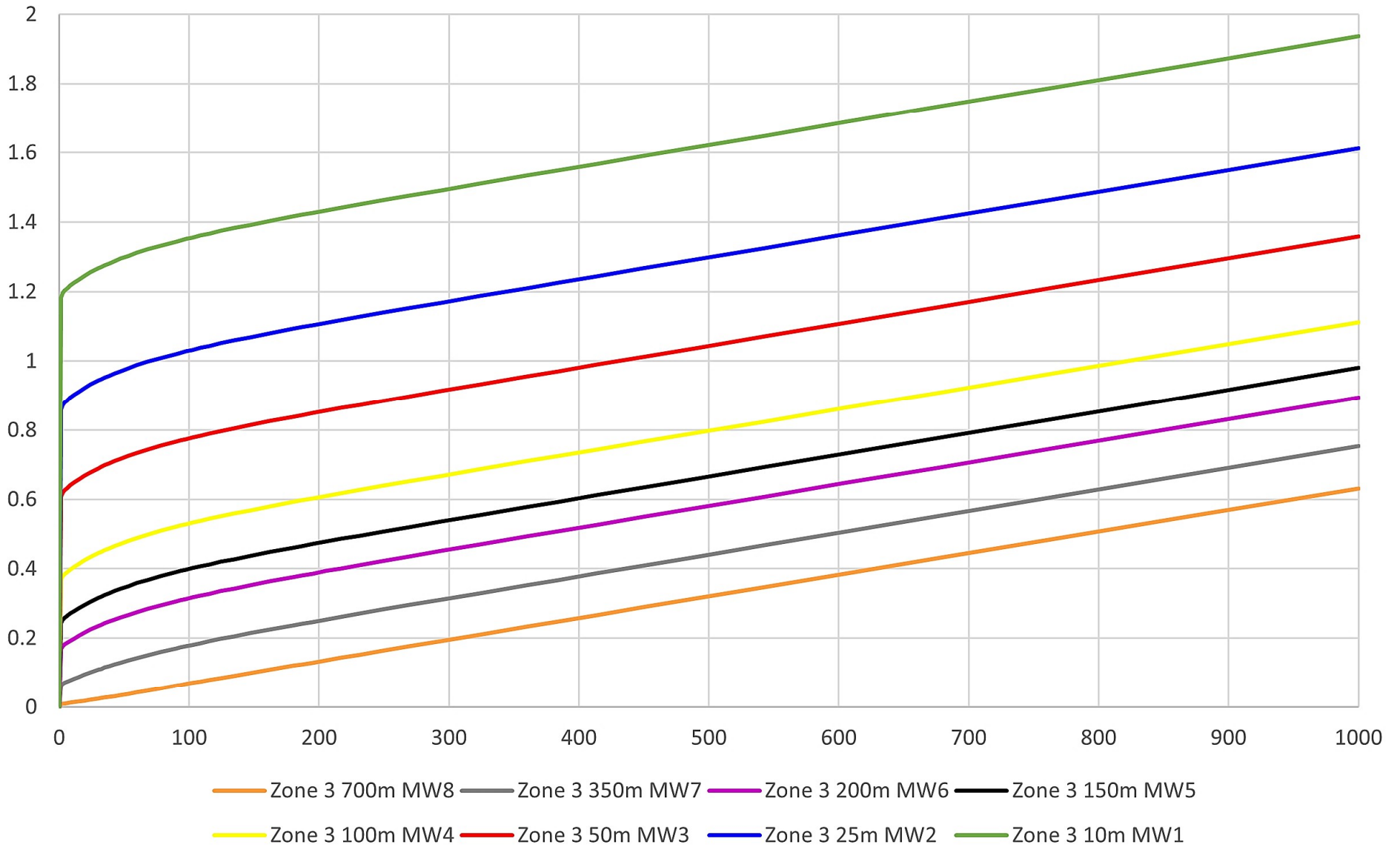
Scenario 2 Zone 3 No Abandoned Well



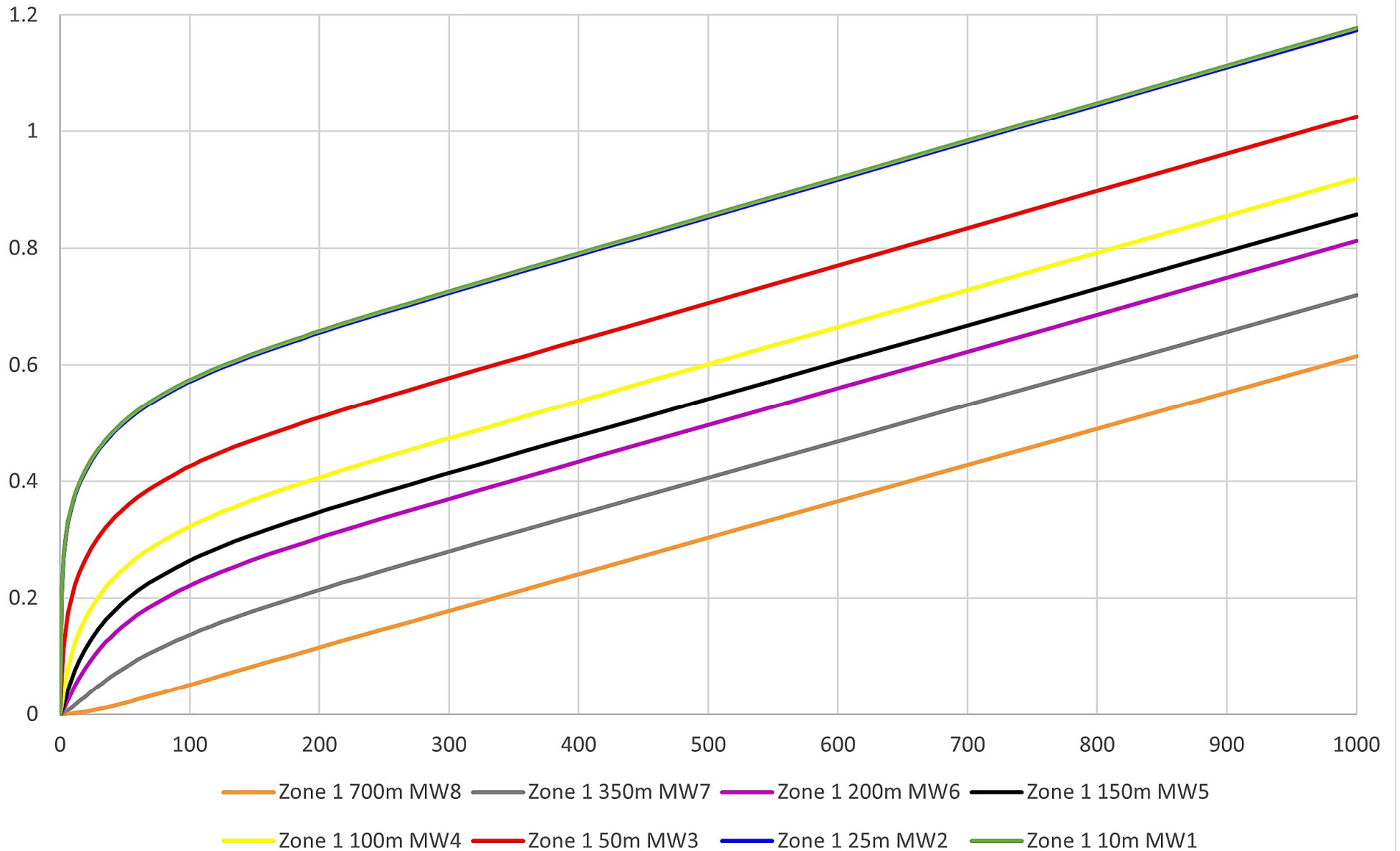
Numerical Model 2.1

Monitoring Wells in Layer 3

Scenario 2 Zone 3 No Abandoned Well



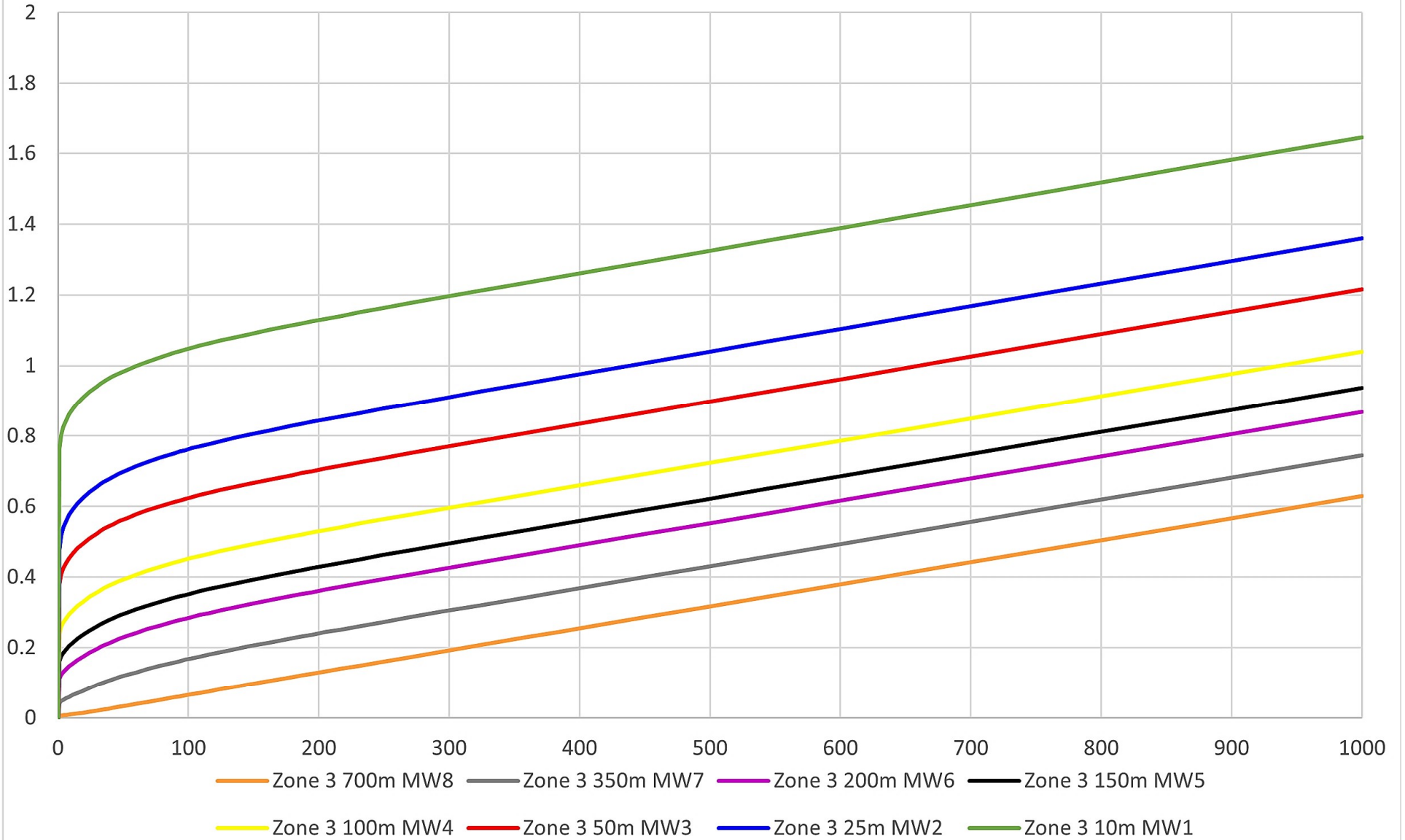
Numerical Model 2.2 Monitoring Wells in Layer 1 Scenario 2 Zone 3 Abandoned Well 20m



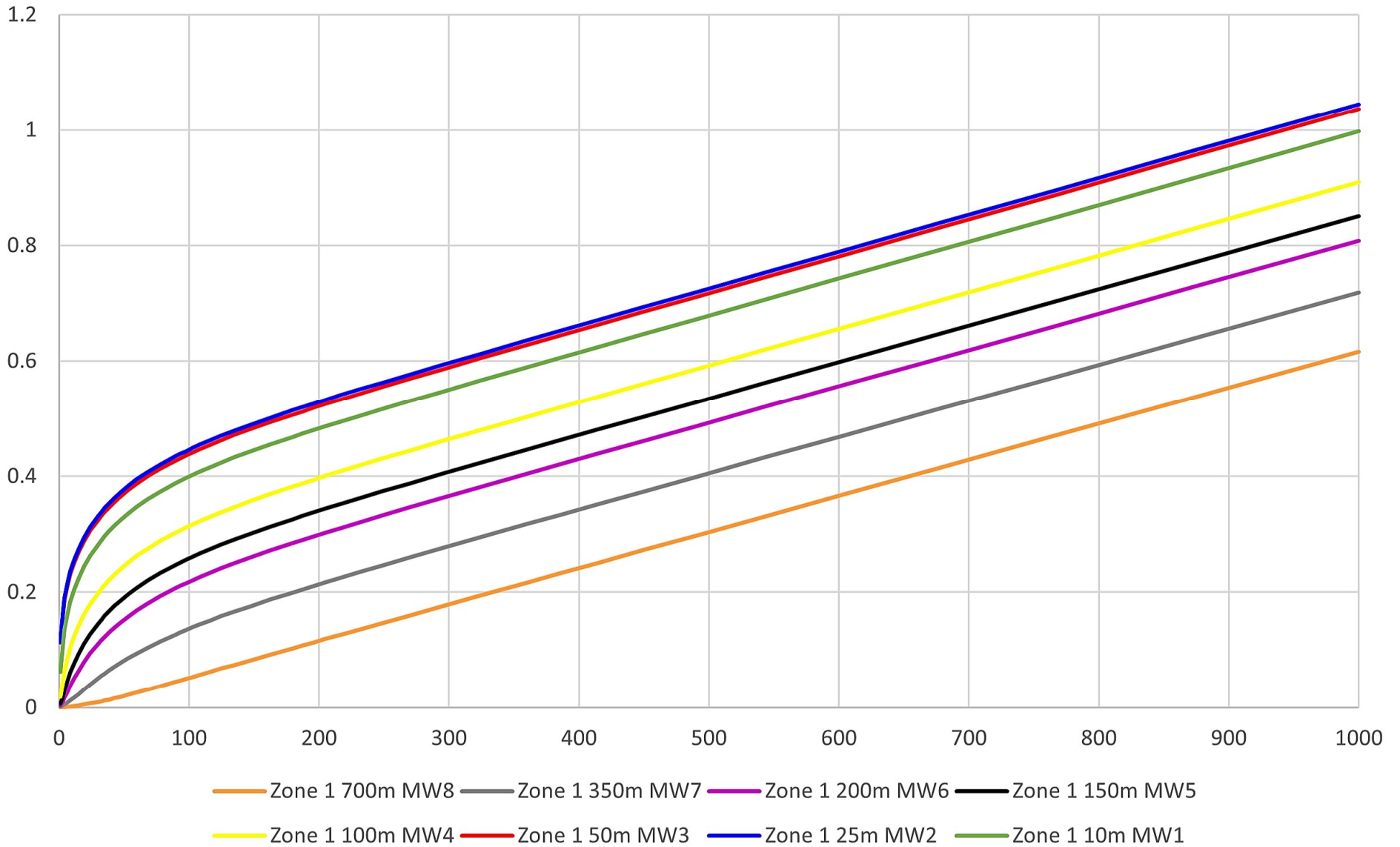
Numerical Model 2.2

Monitoring Wells Layer 3

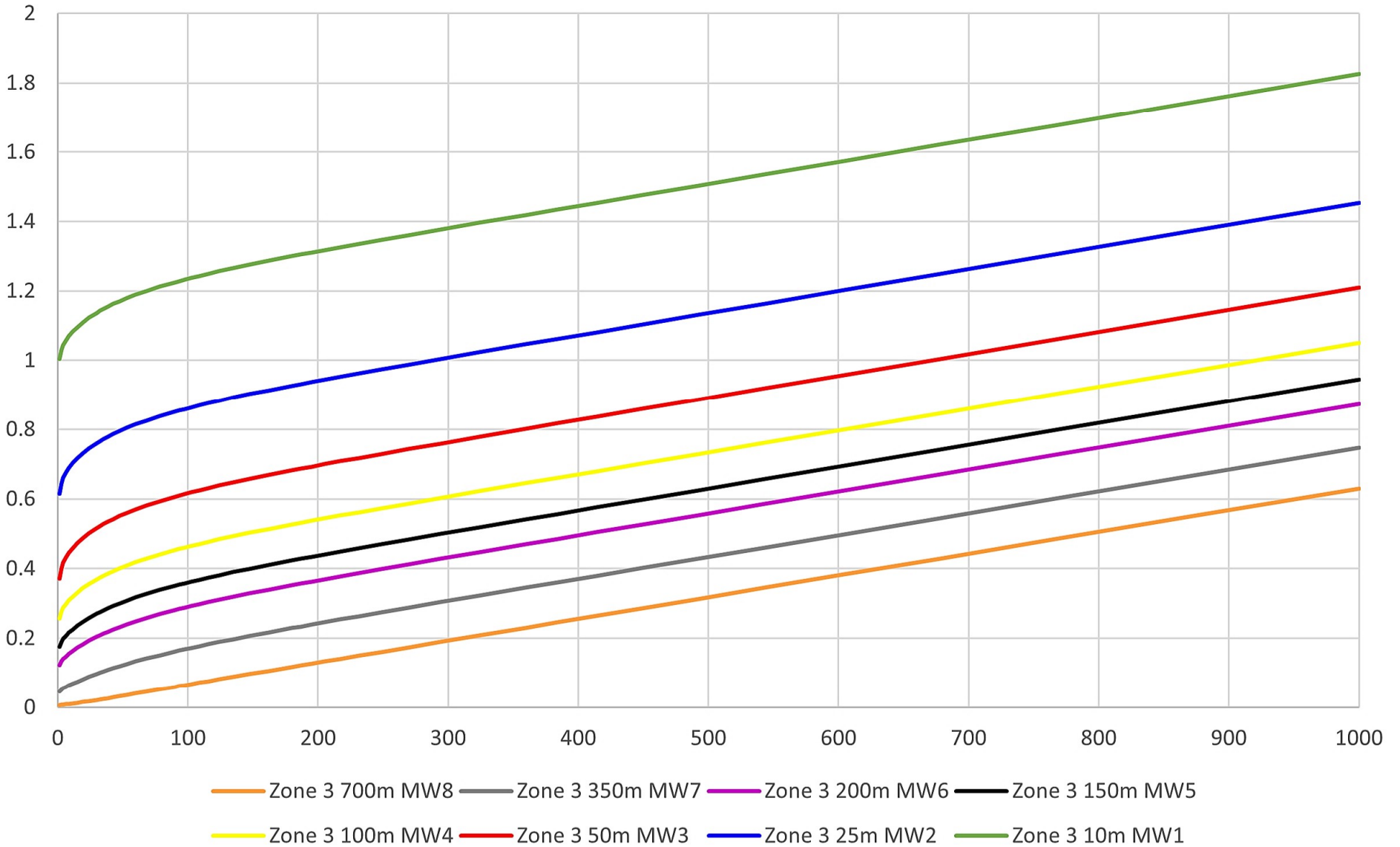
Scenario 2 Zone 3 Abandoned Well 20m



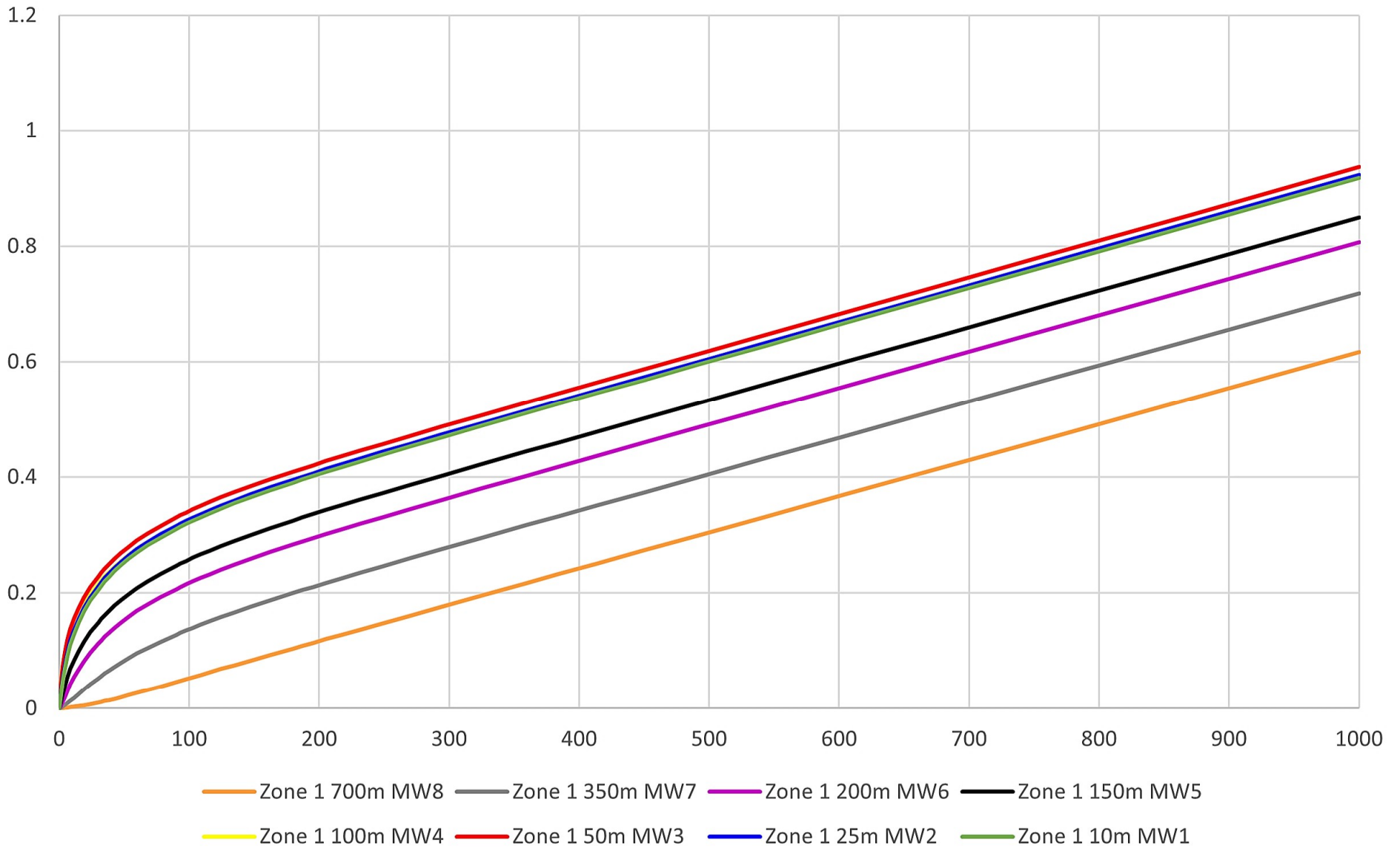
Numerical Model 2.3 Monitoring Wells in Layer 1 Scenario 2 Zone 3 Abandoned Well 40m



Numerical Model 2.3 Monitoring Wells in Layer 3 Scenario 2 Zone 3 Abandoned Well 40m



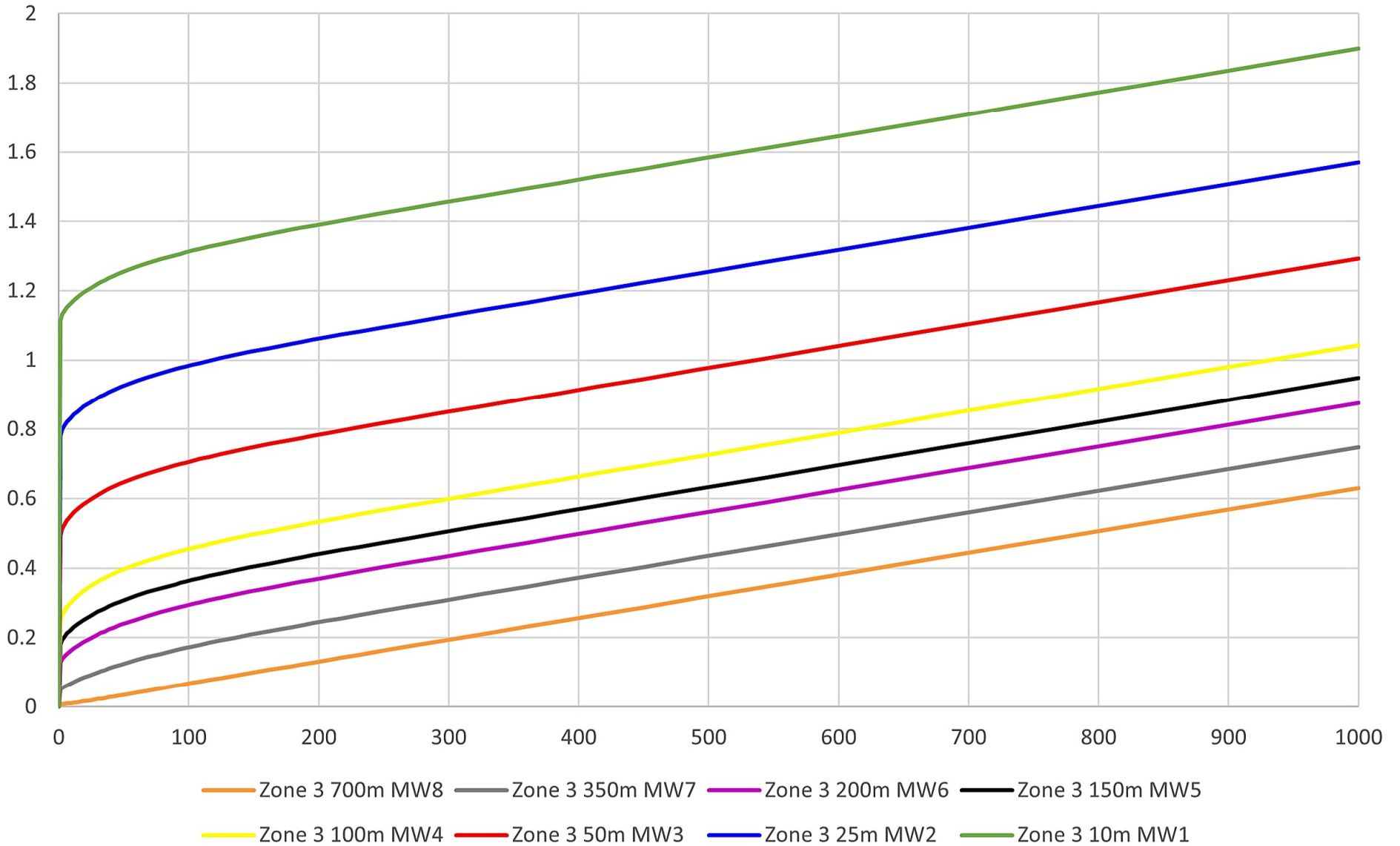
Numerical Model 2.4 Monitoring Wells in Layer 1 Scenario 2 Zone 3 Abandoned Well 80m



Numerical Model 2.4

Monitoring Wells in Layer 3

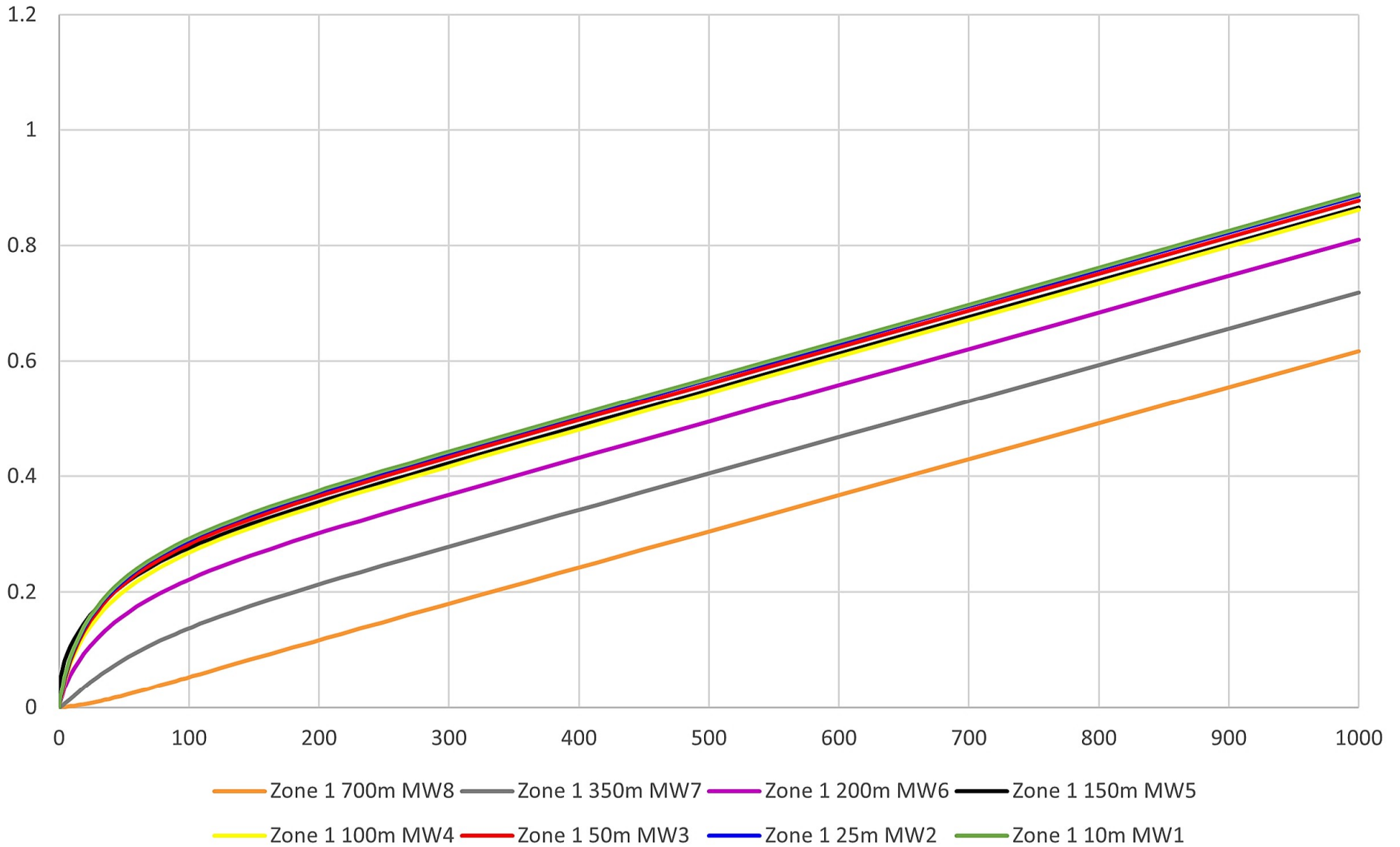
Scenario 2 Zone 3 Abandoned Well 80m



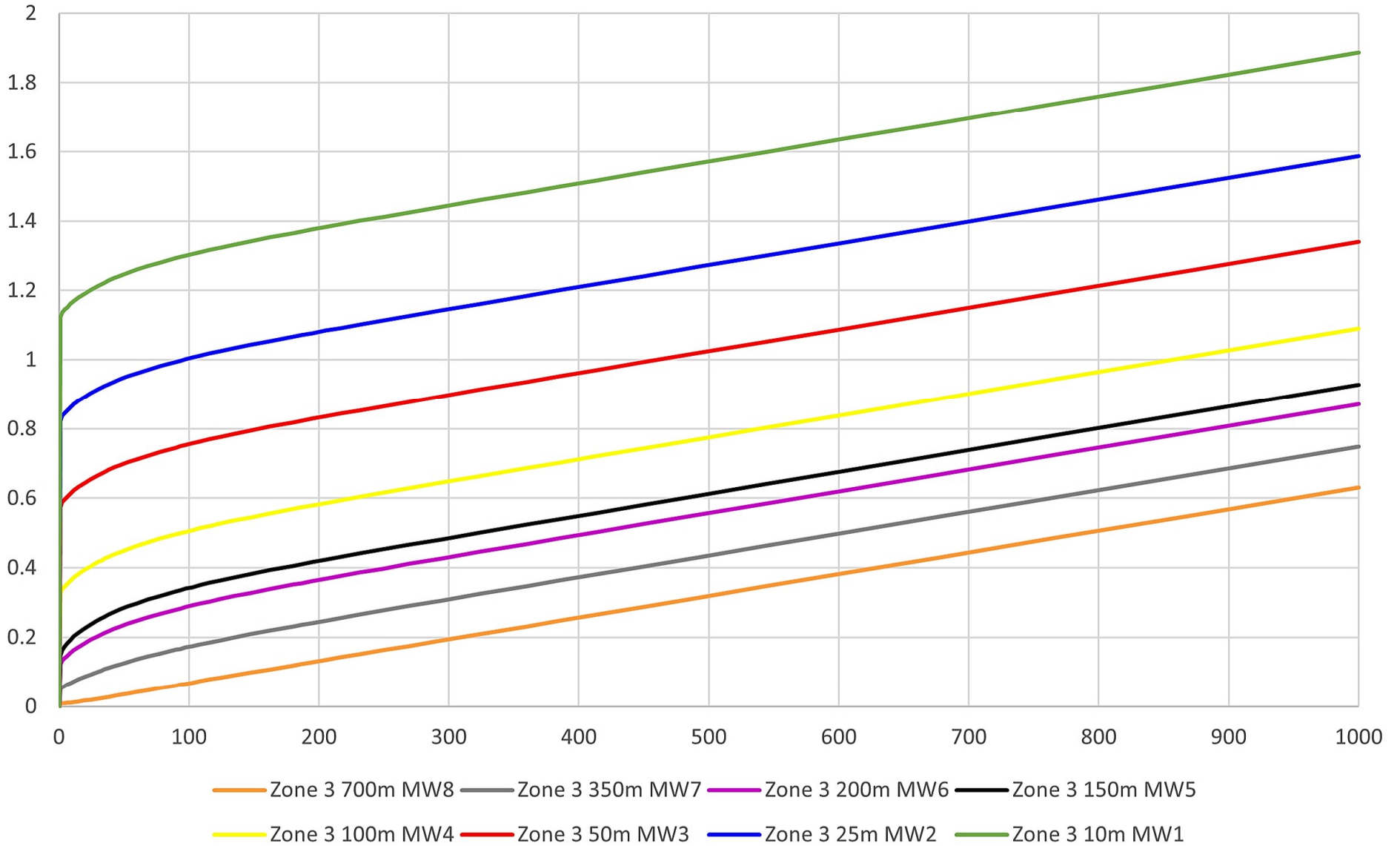
Numerical Model 2.5

Monitoring Wells in Layer 1

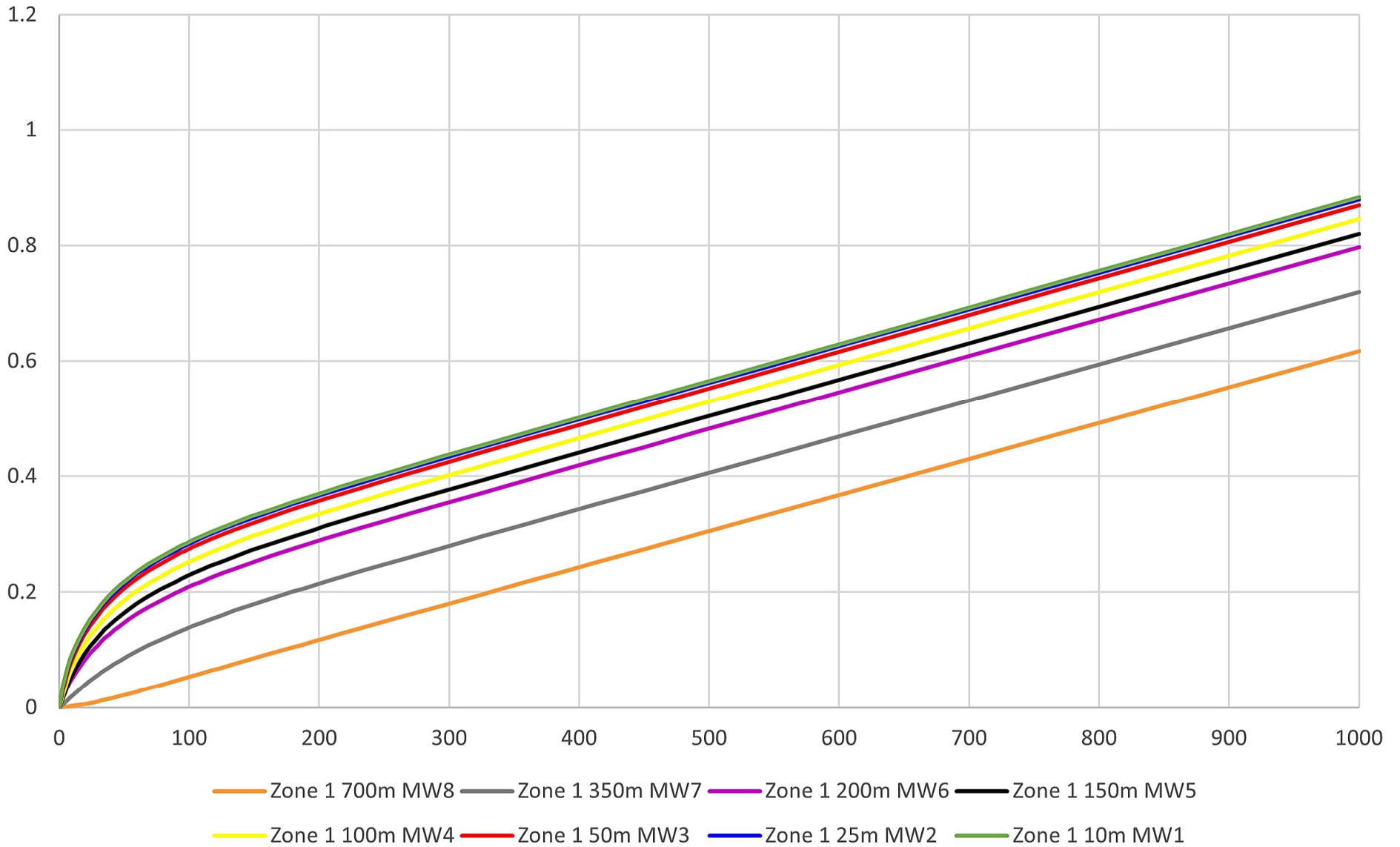
Scenario 2 Zone 3 Abandoned Well 160



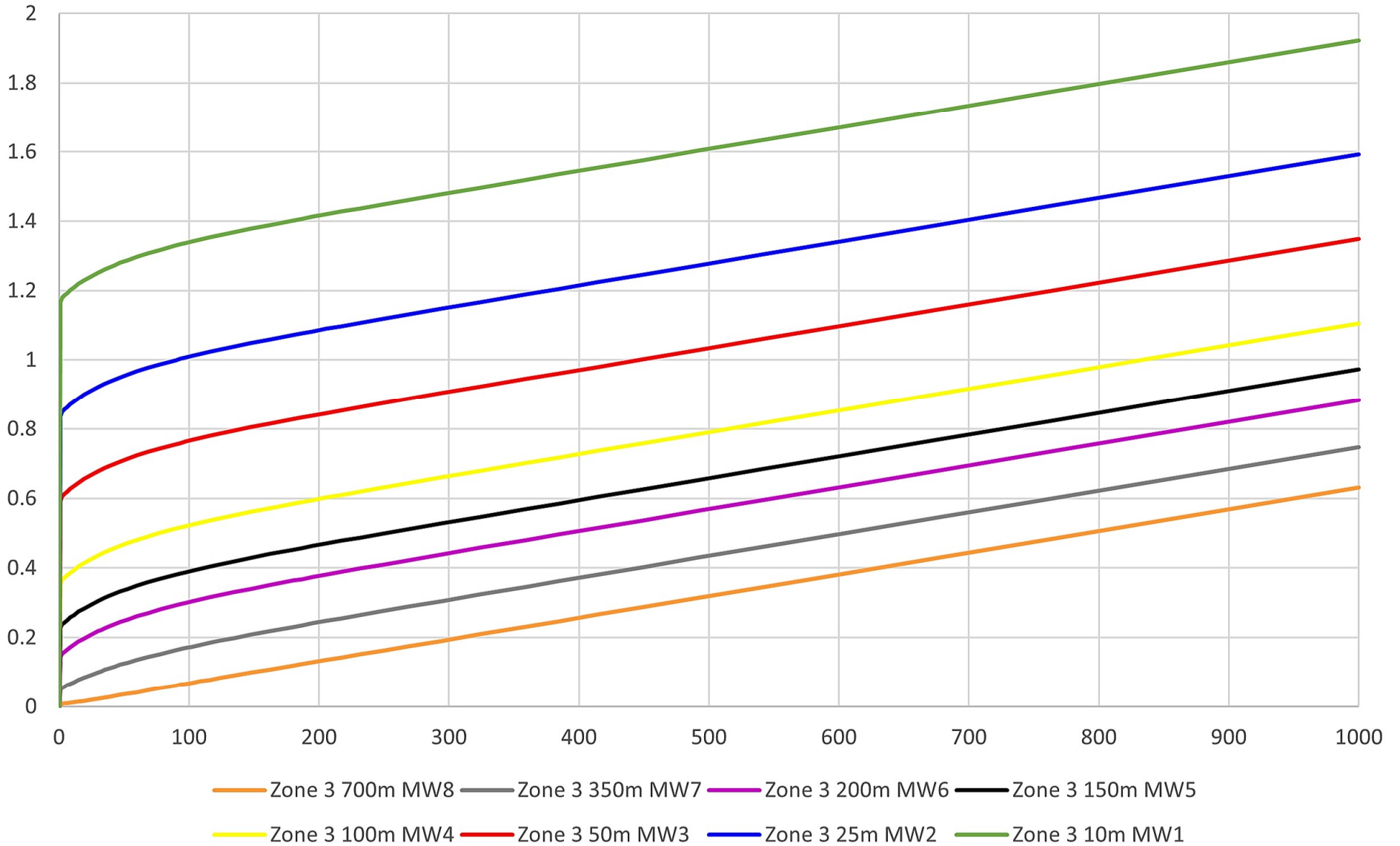
Numerical Model 2.5 Monitoring Wells in Layer 3 Scenario 2 Zone 3 Abandoned Well 160m



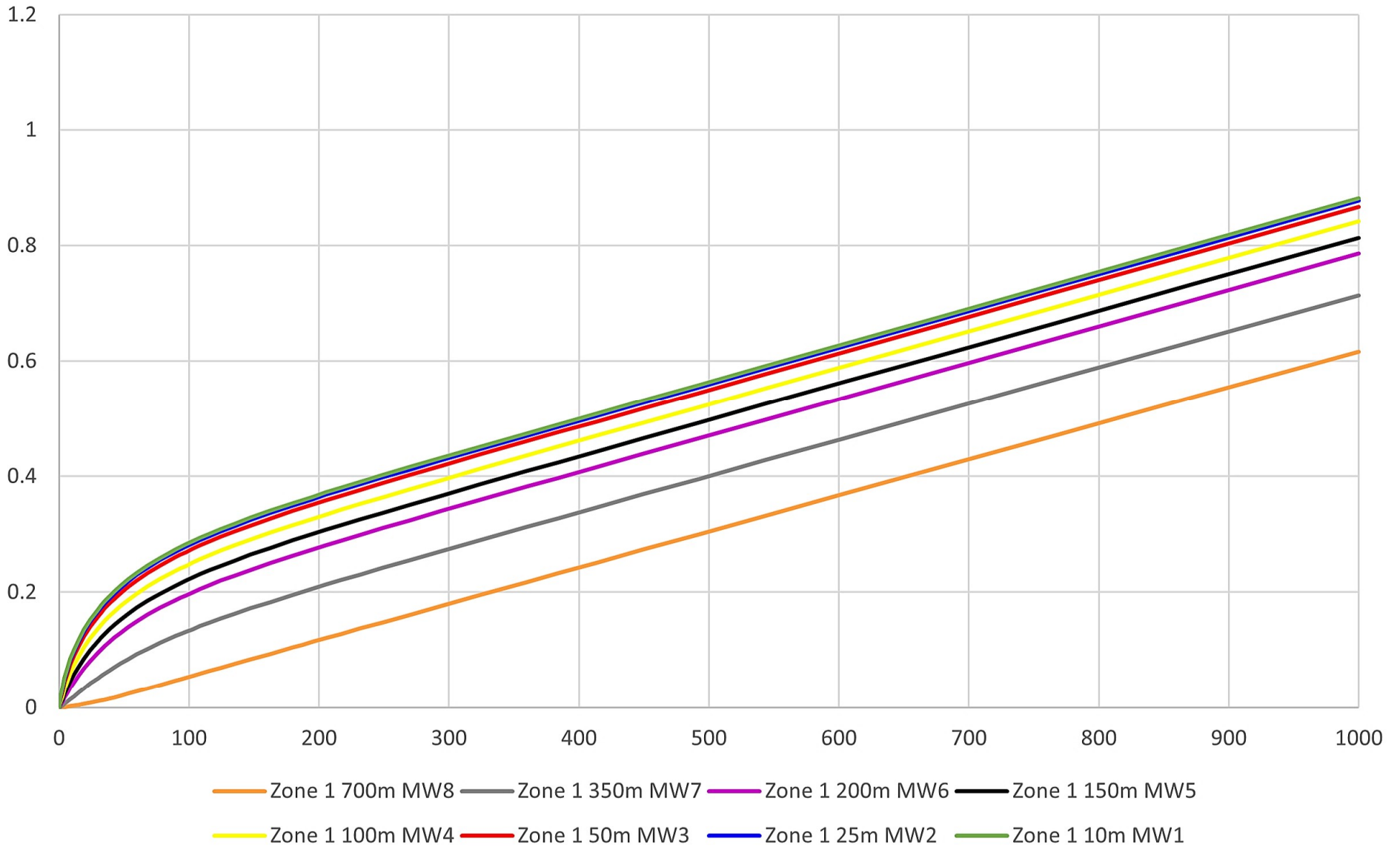
Numerical Model 2.6 Monitoring Wells in Layer 1 Scenario 2 Zone 3 Abandoned Well 250m



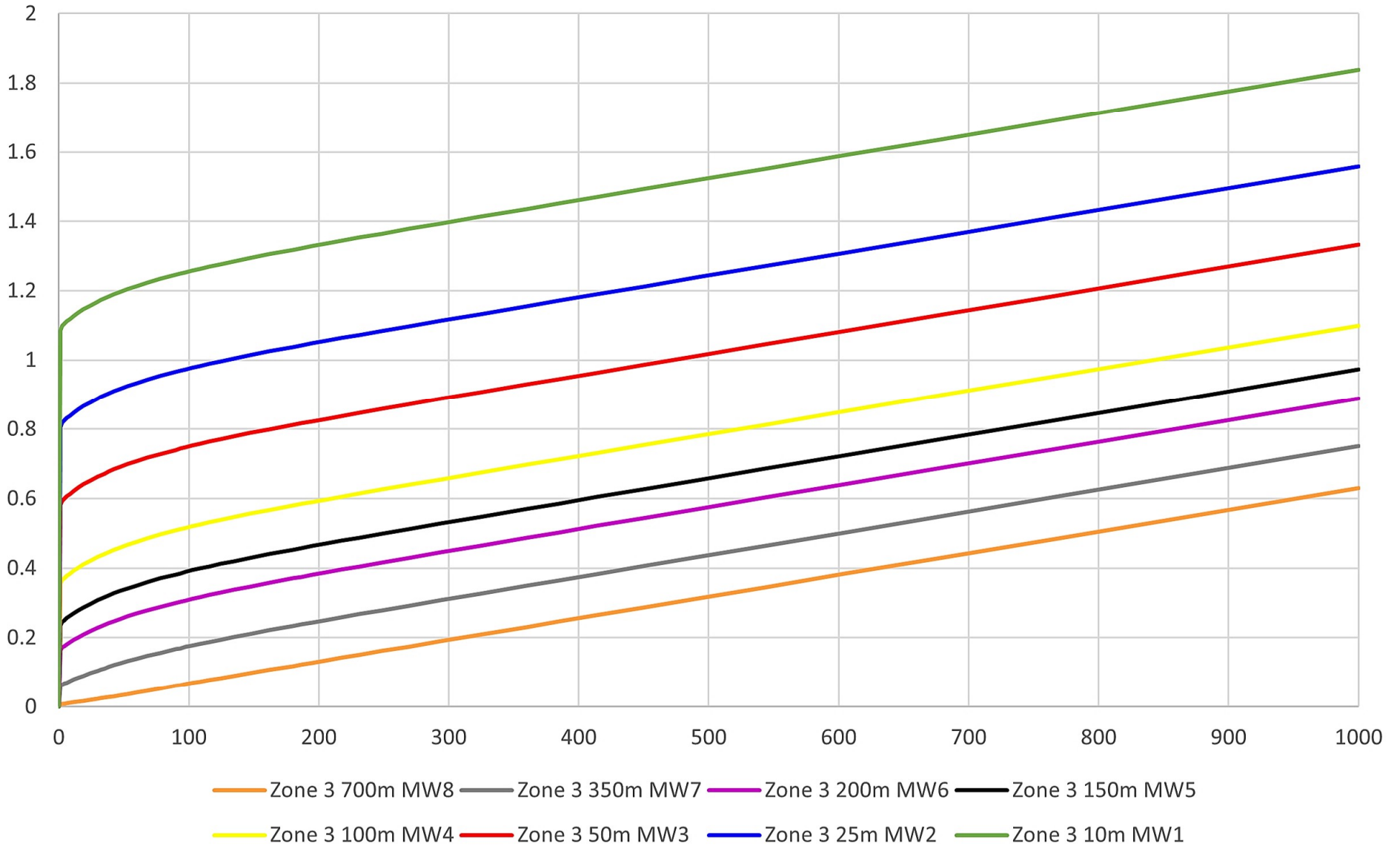
Numerical Model 2.6 Monitoring Wells in Layer 3 Scenario 2 Zone 3 Abandoned Well 250m



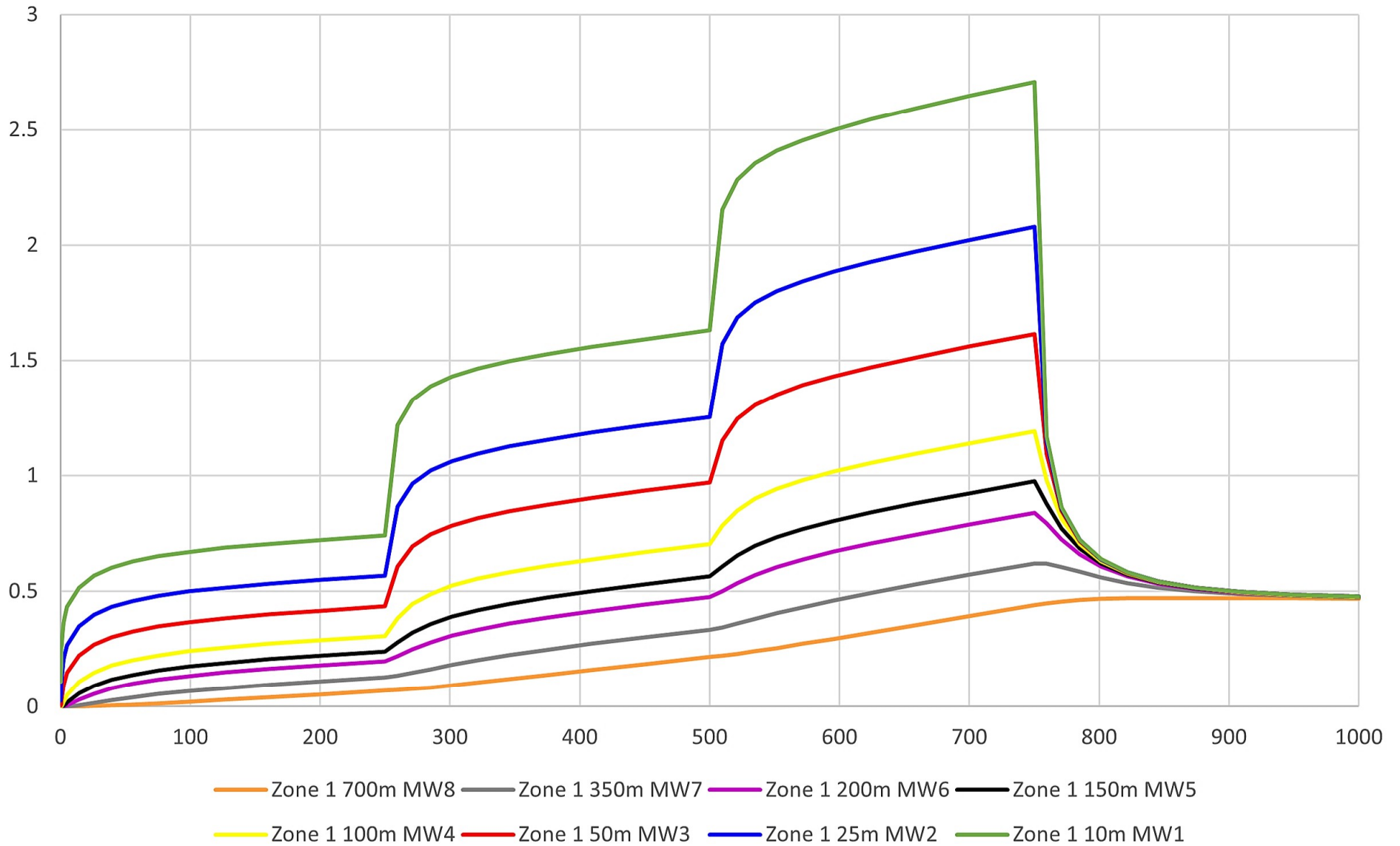
Numerical Model 2.7 Monitoring Wells in Layer 1 Scenario 2 Zone 3 Abandoned Well 500m



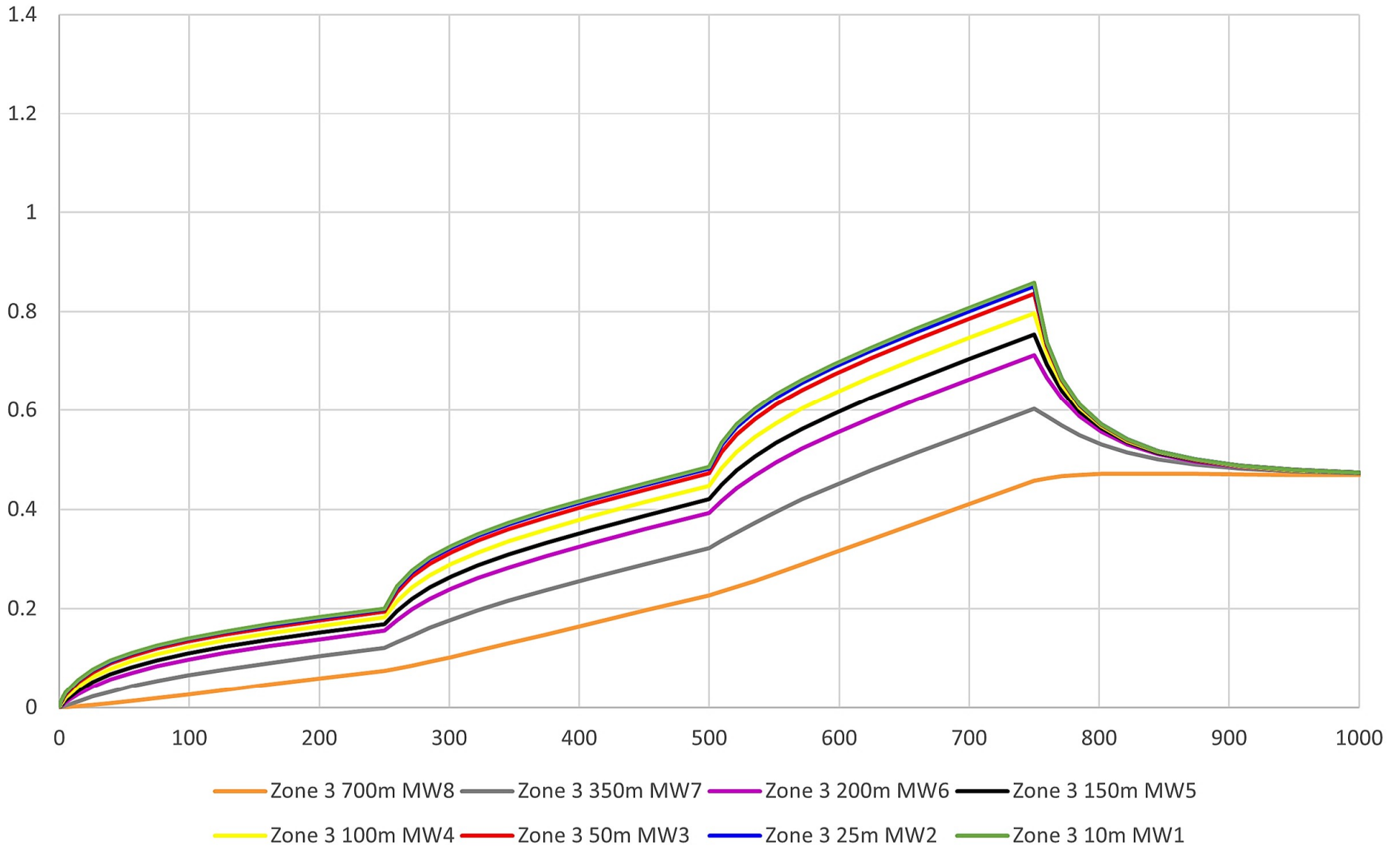
Numerical Model 2.7 Monitoring Wells in Layer 3 Scenario 2 Zone 3 Abandoned Well 500m



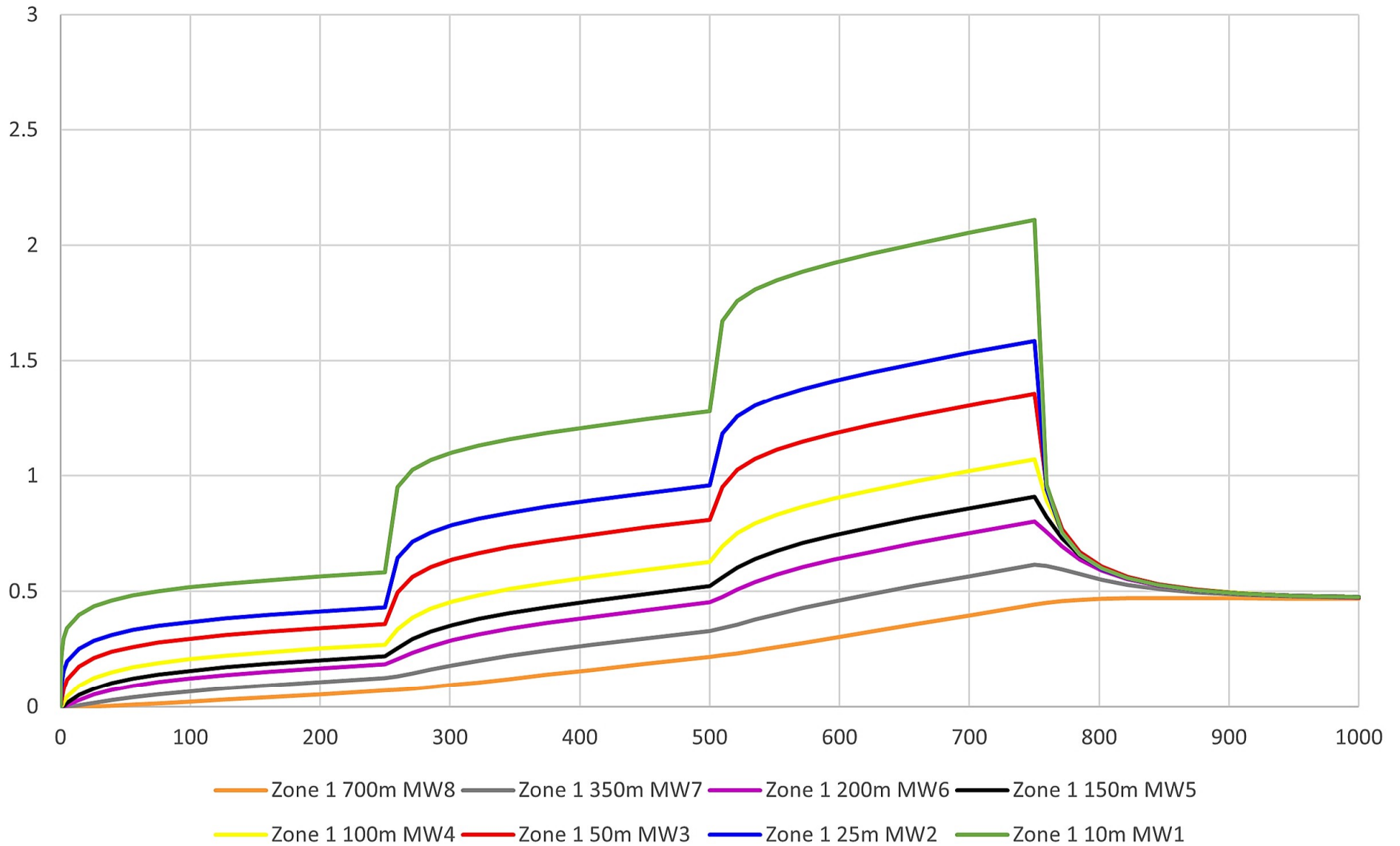
Numerical Model 3.1 Monitoring Wells in Layer 1 Scenario 3 Zone 1 No Abandoned Well



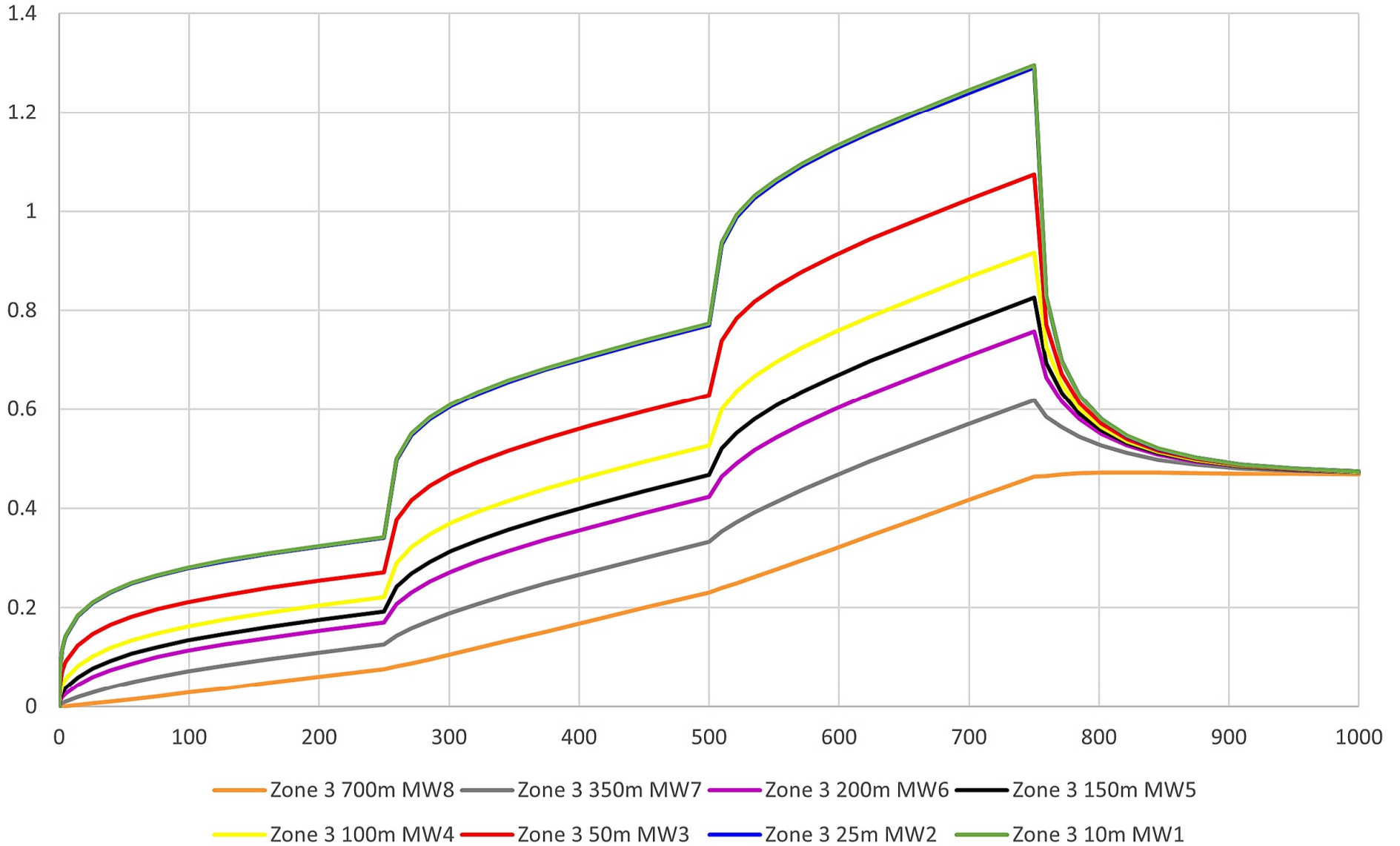
Numerical Model 3.1 Monitoring Wells in Layer 3 Scenario 3 Zone 1 No Abandoned Well



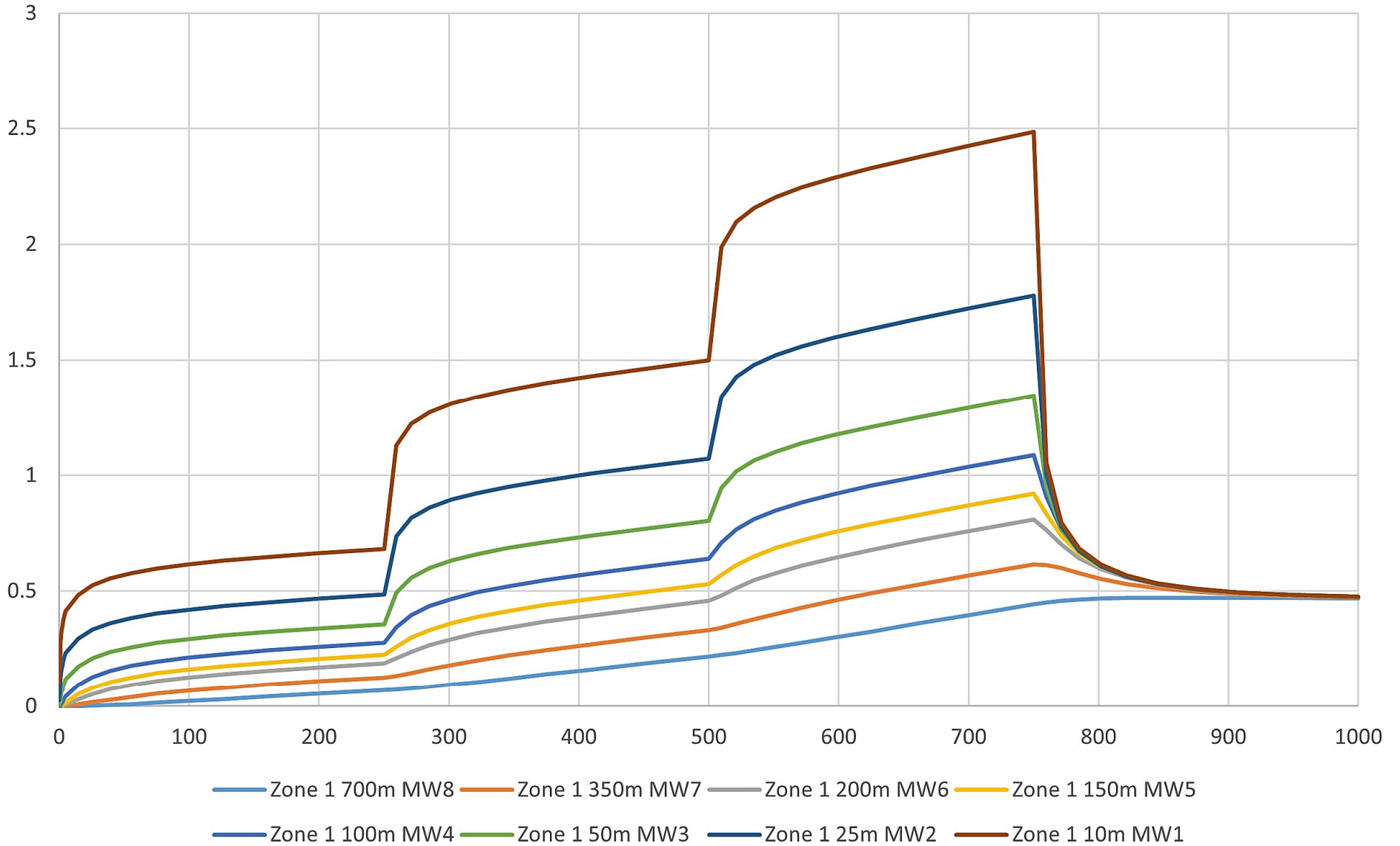
Numerical Model 3.2 Monitoring Wells in Layer 1 Scenario 3 Zone 1 Abandoned Well 20m



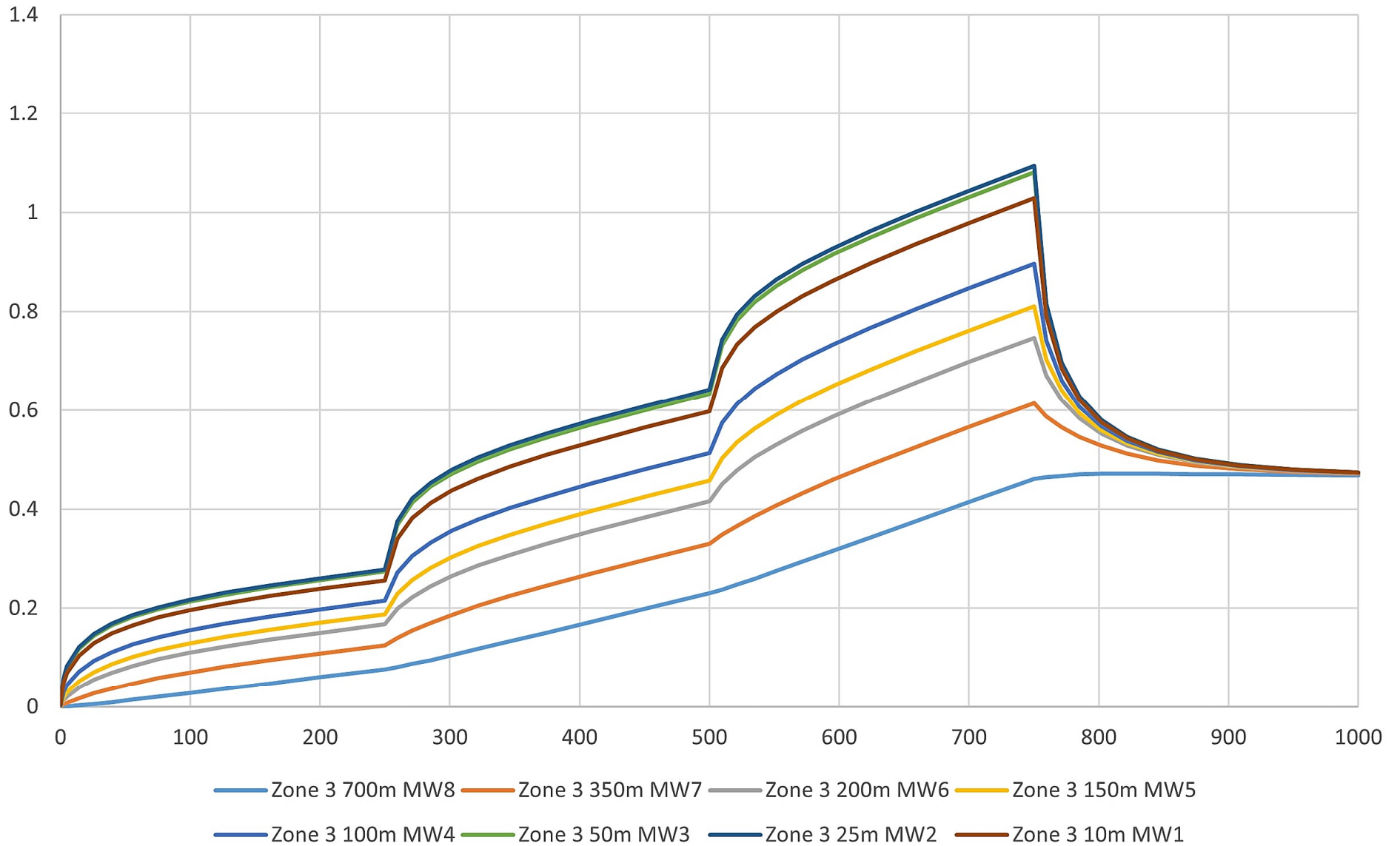
Numerical Model 3.2 Monitoring Wells in Layer 3 Scenario 3 Zone 1 Abandoned Well 20m



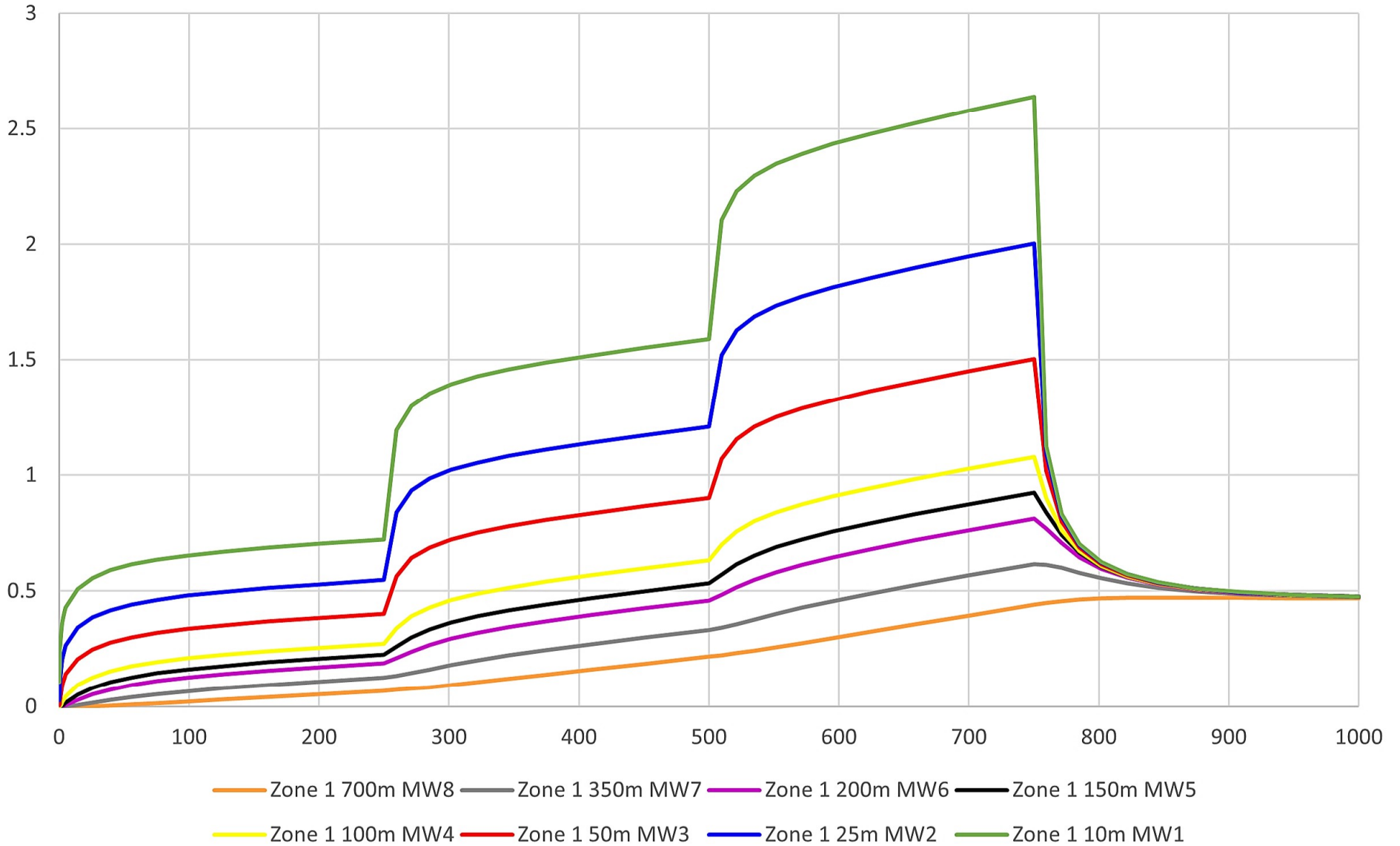
Numerical Model 3.3 Monitoring Wells in Layer 1 Scenario 3 Zone 1 Abandoned Well 40m



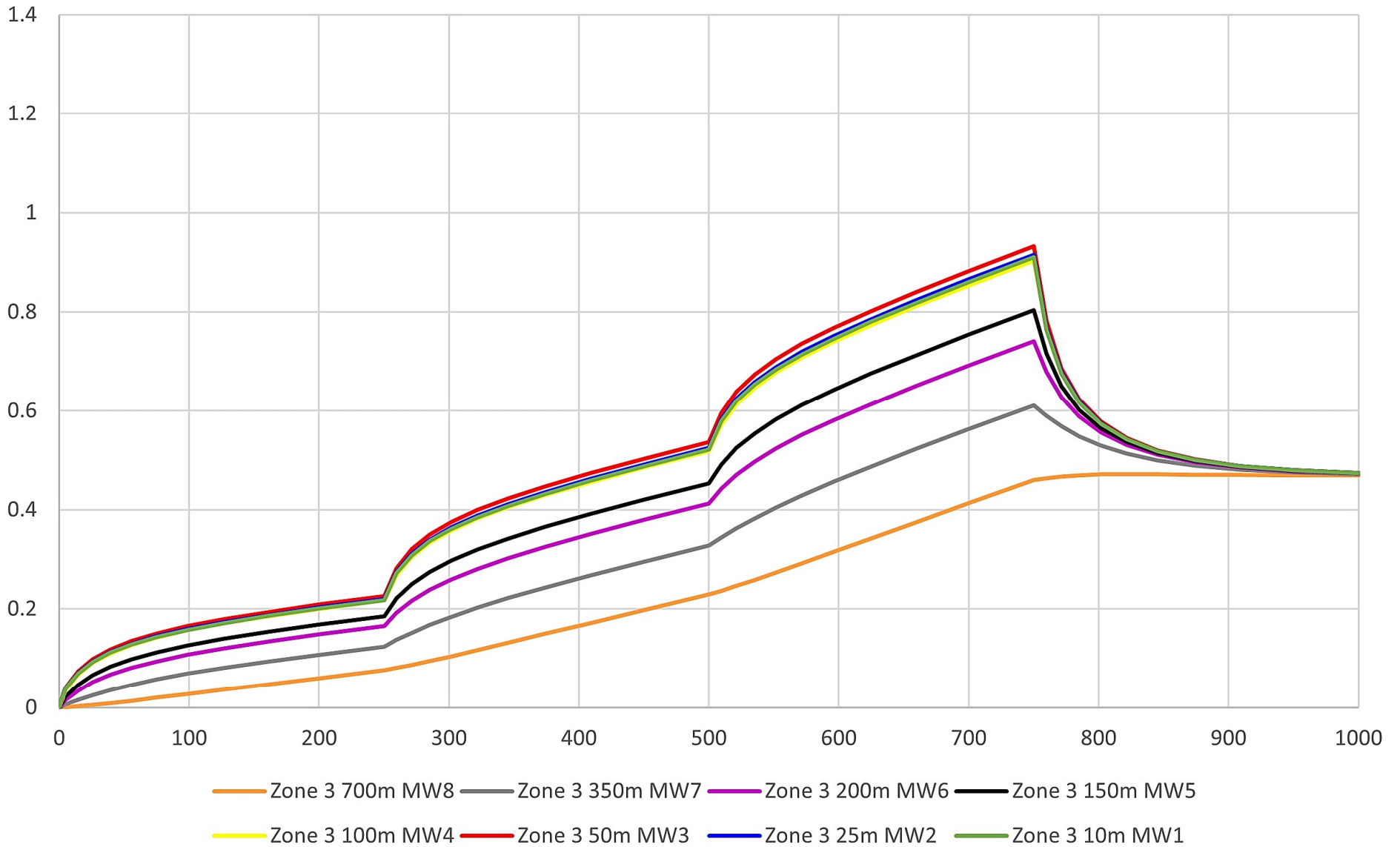
Numerical Model 3.3 Monitoring Wells in Layer 3 Scenario 3 Zone 1 No Abandoned Well



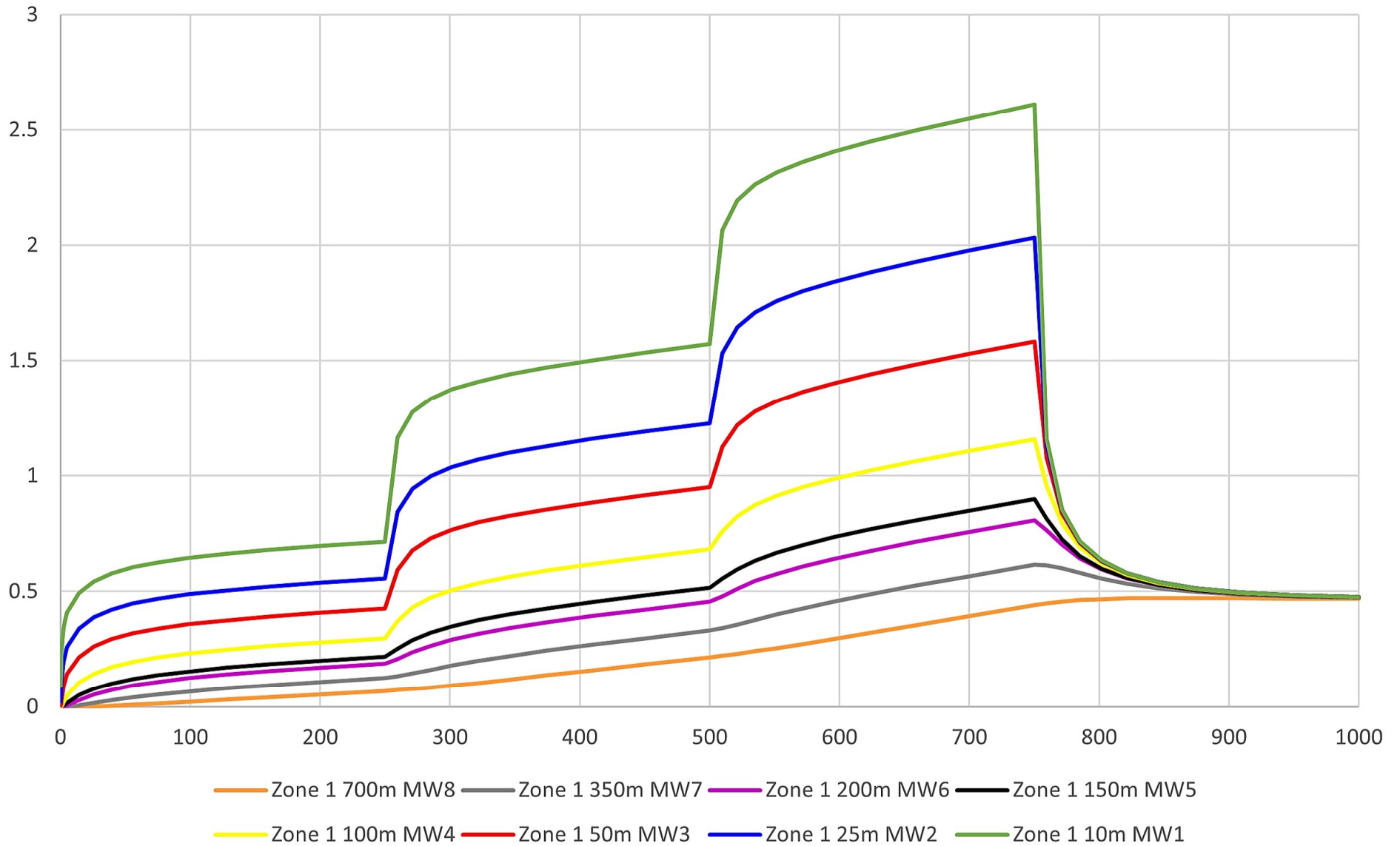
Numerical Model 3.4 Monitoring Wells in Layer 1 Scenario 3 Zone 1 Abandoned Well 80m



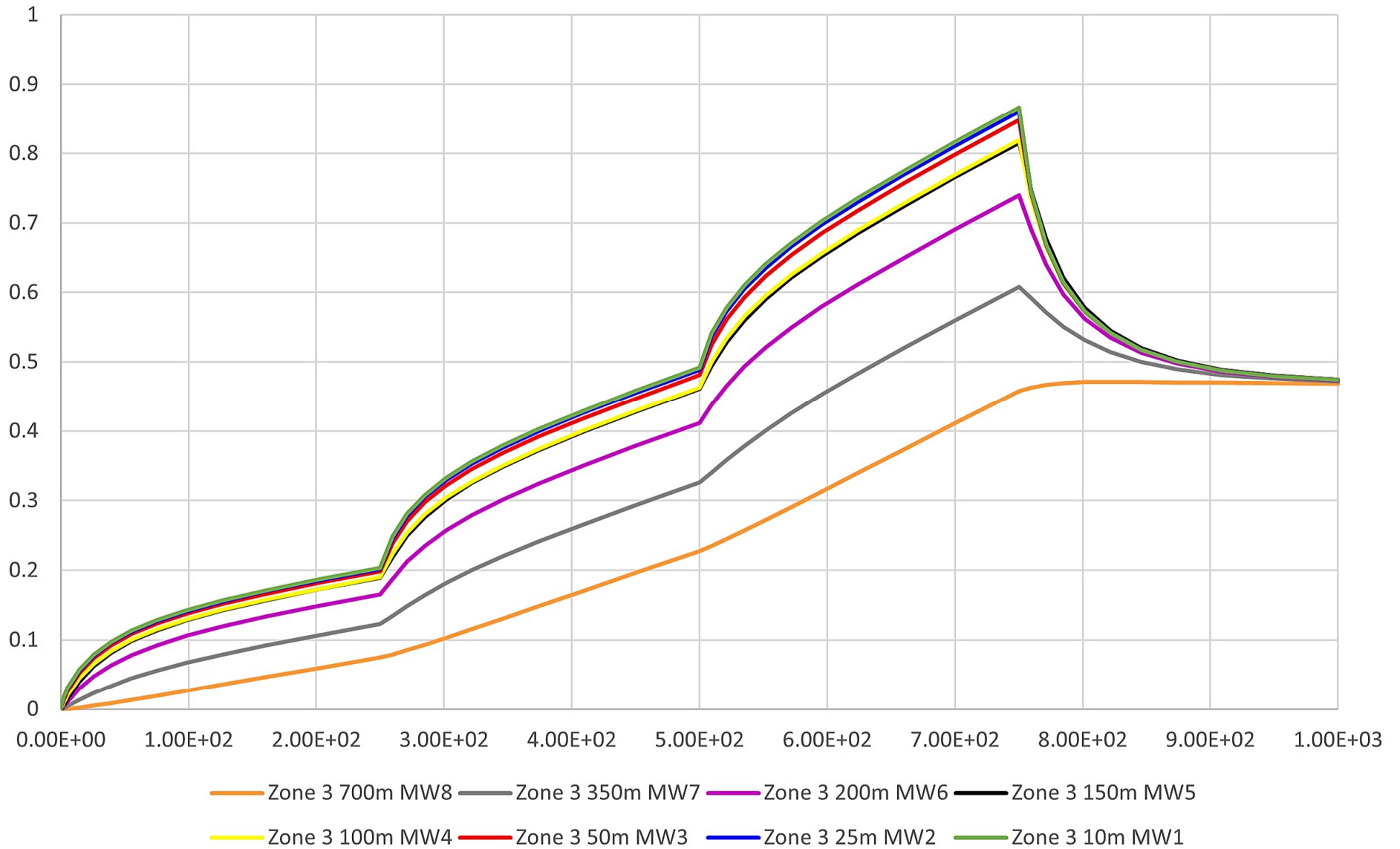
Numerical Model 3.4 Monitoring Wells in Layer 3 Scenario 3 Zone 1 Abandoned Well 80m



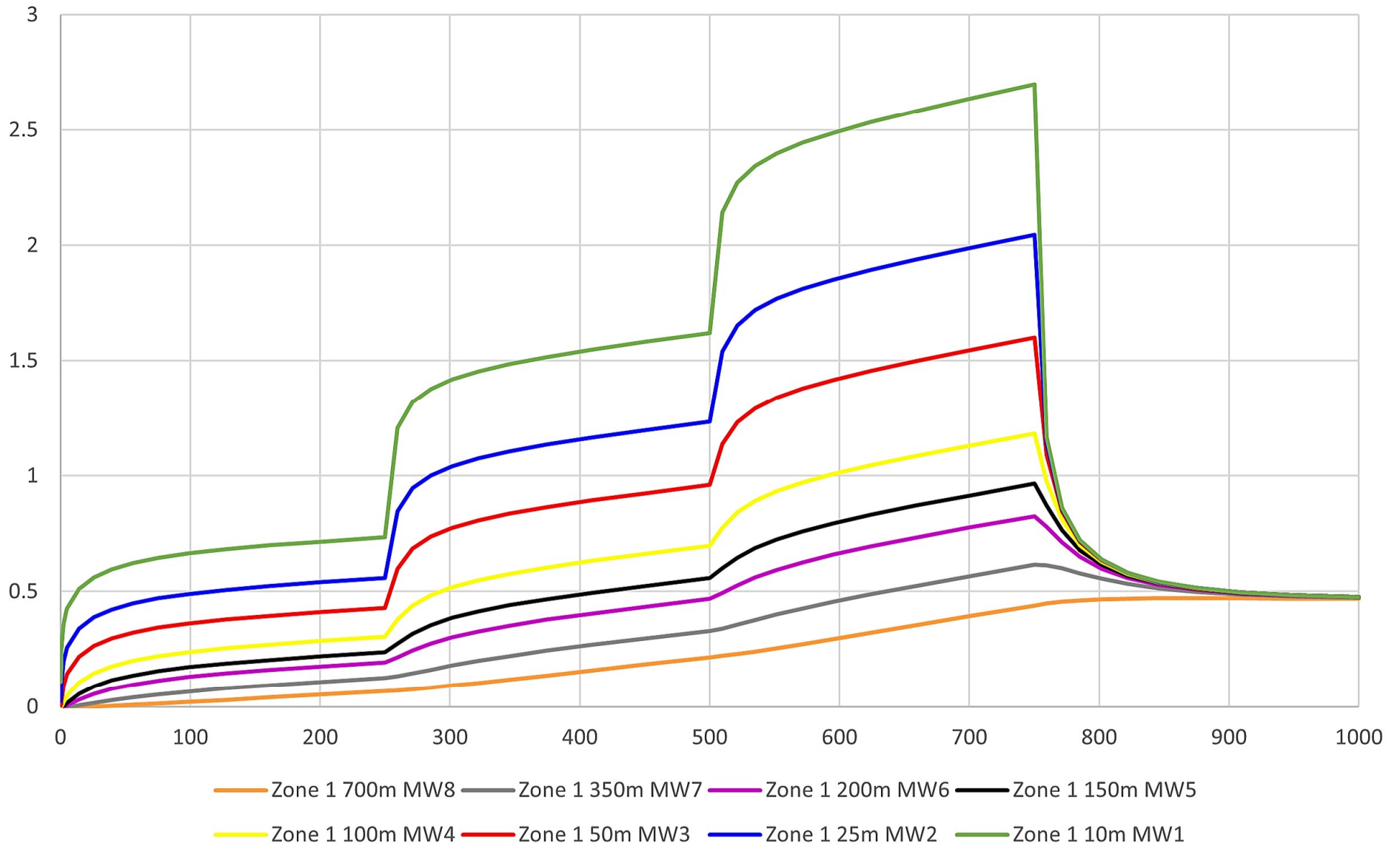
Numerical Model 3.5 Monitoring Wells in Layer 1 Scenario 3 Zone 1 Abandoned Well 160m



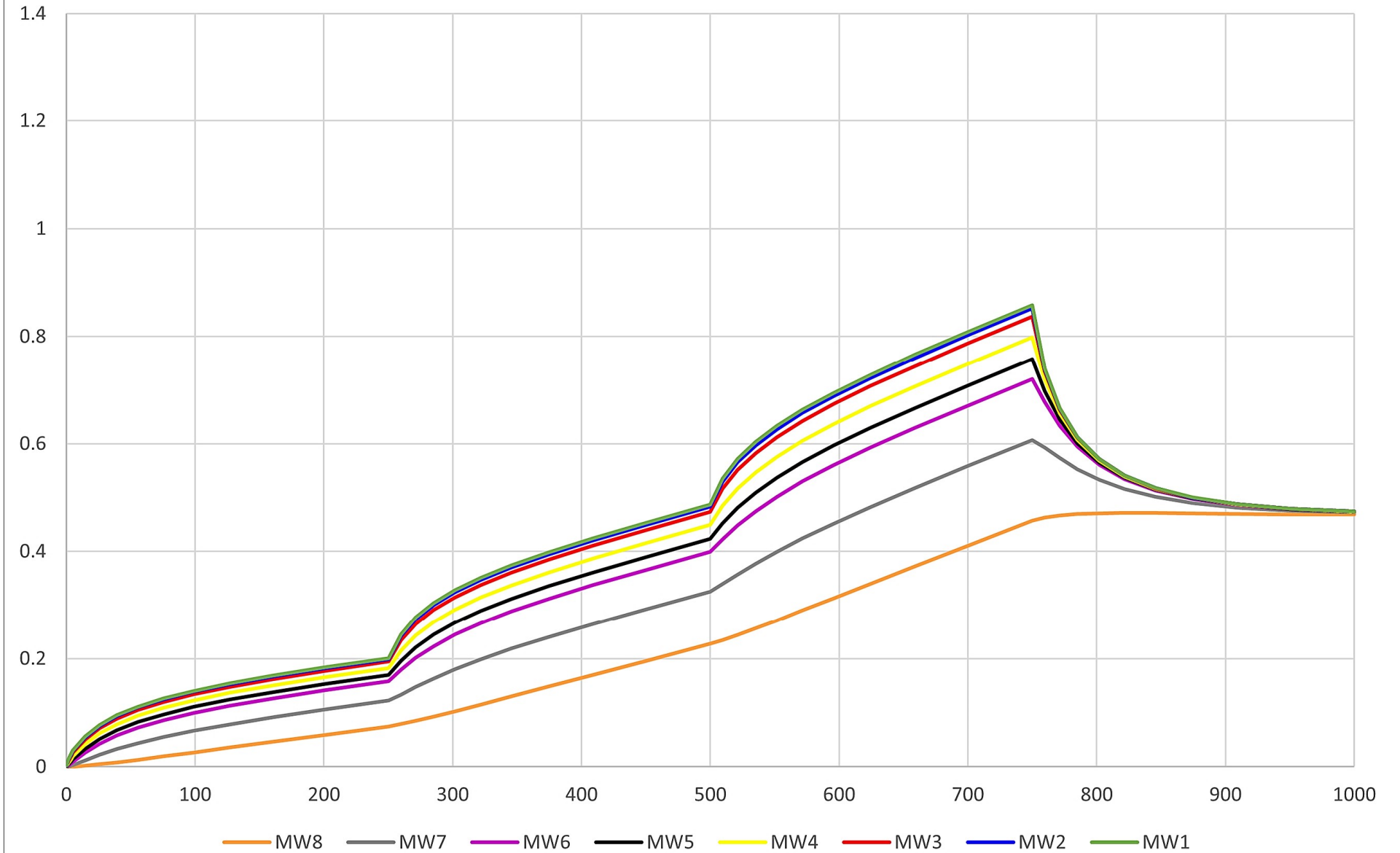
Numerical Model 3.5 Monitoring Wells in Layer 3 Scenario 3 Zone 1 Abandoned Well 160m



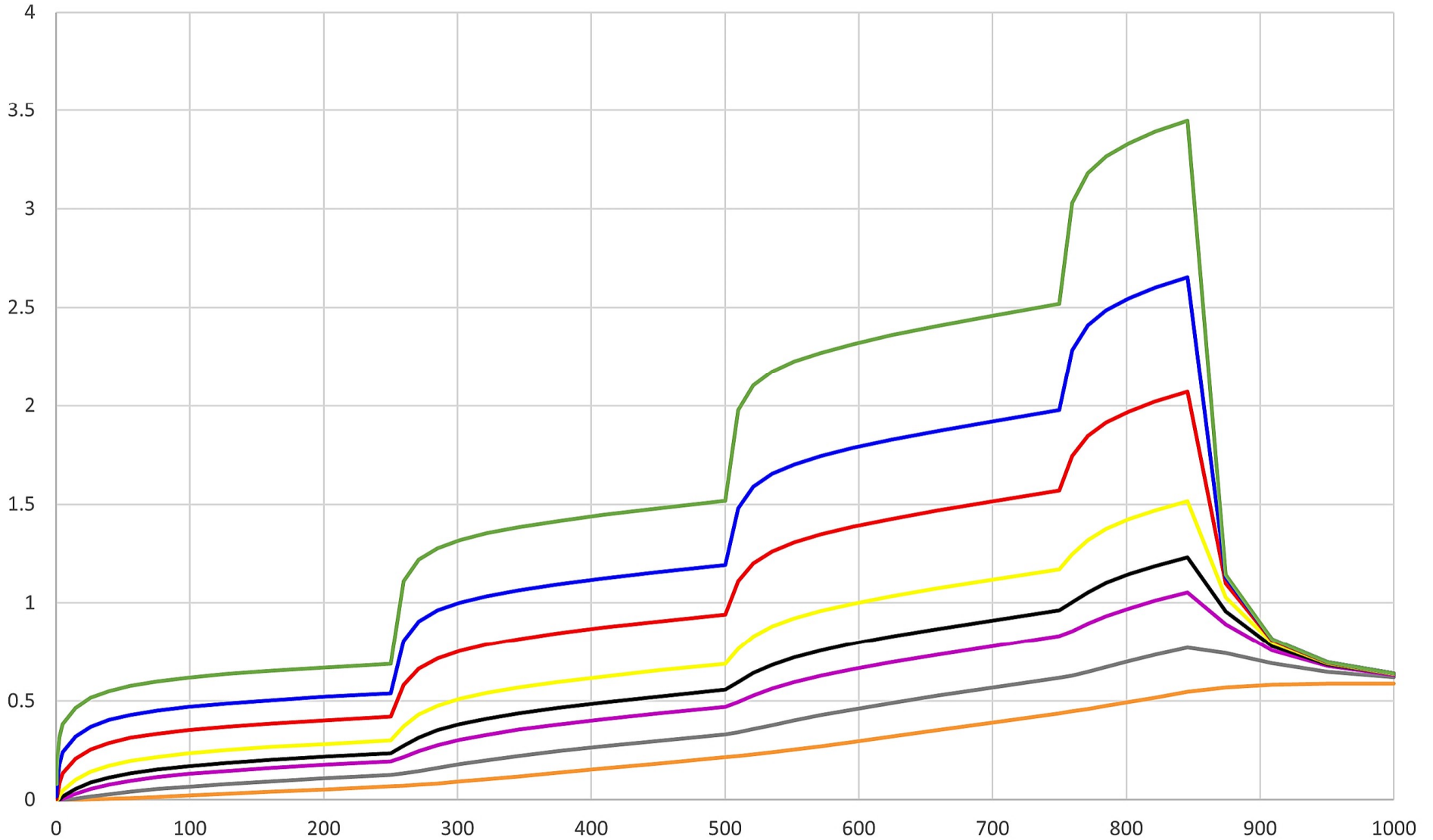
Numerical Model 3.6 Monitoring Wells in Layer 1 Scenario 3 Zone 1 Abandoned Well 250m



Numerical Model 3.6
Monitoring Wells in Layer 3
Scenario 3 Zone 1 Abandoned Well 250

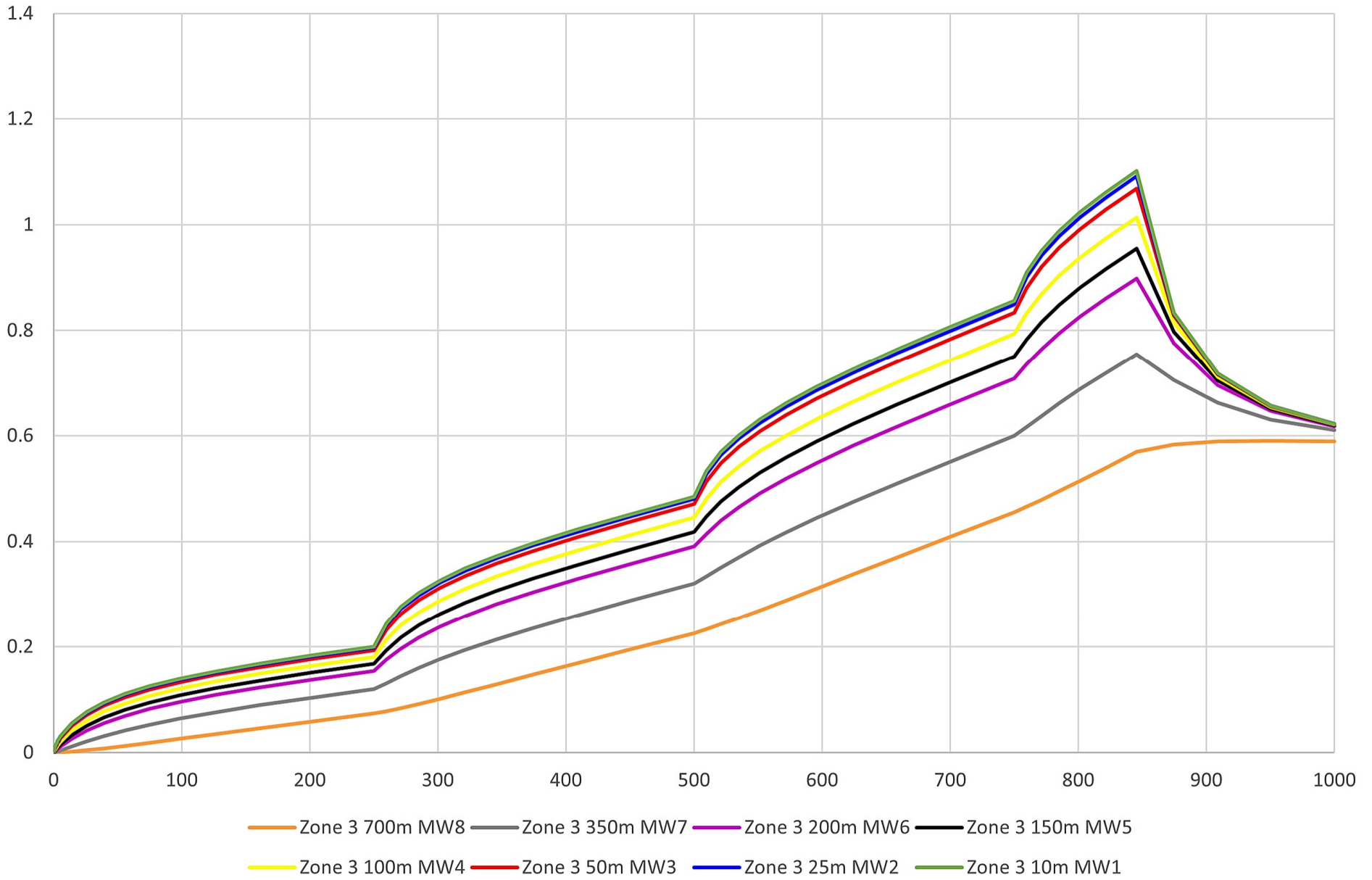


Numerical Model 3.7 Monitoring Wells in Layer 1 Scenario 3 Zone 1 Abandoned Well 500m



— Zone 1 700m MW8 — Zone 1 350m MW7 — Zone 1 200m MW6 — Zone 1 150m MW5
— Zone 1 100m MW4 — Zone 1 50m MW3 — Zone 1 25m MW2 — Zone 1 10m MW1

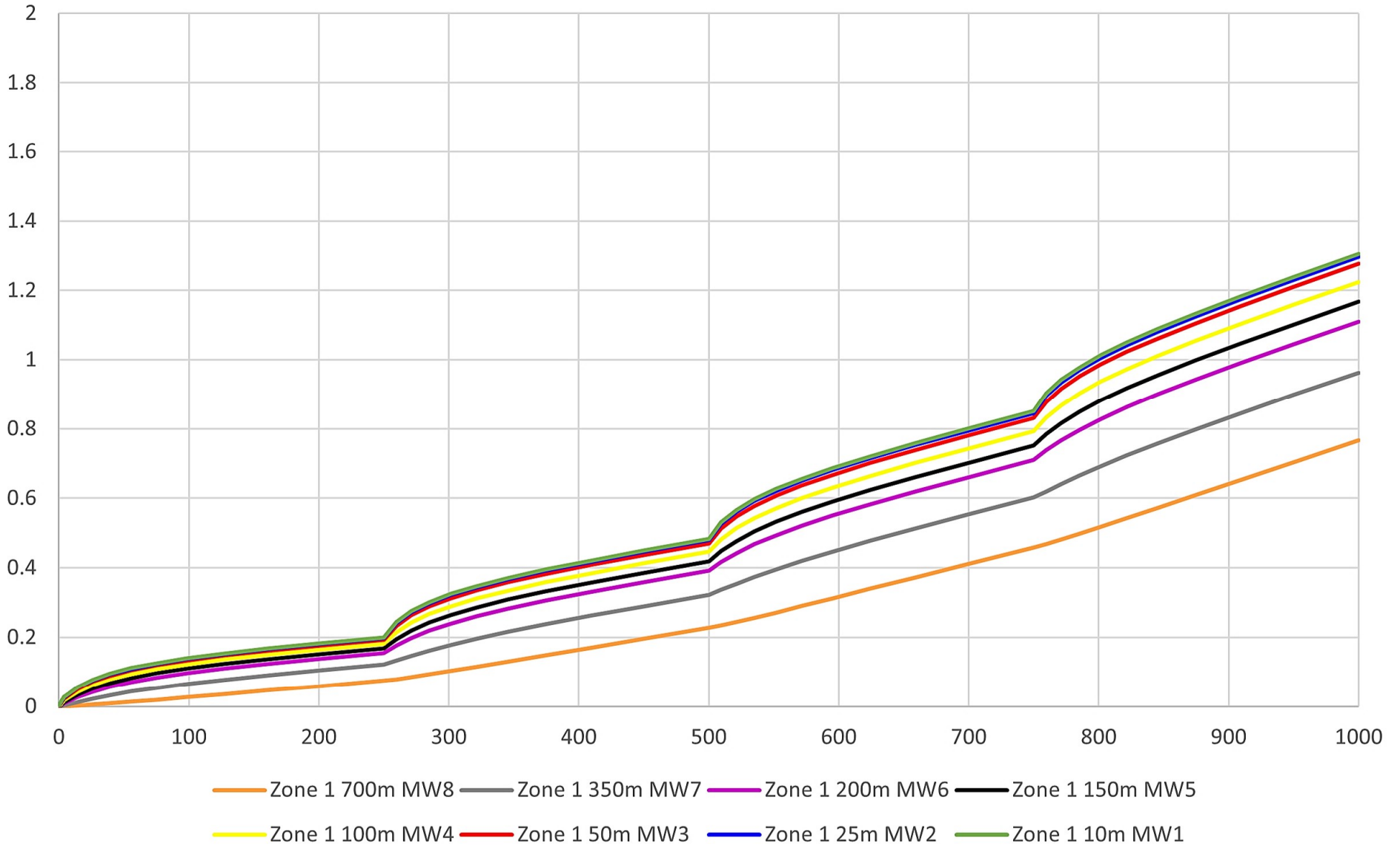
Numerical Model 3.7 Monitoring Wells in Layer 3 Scenario 3 Zone 1 Abandoned Well 500m



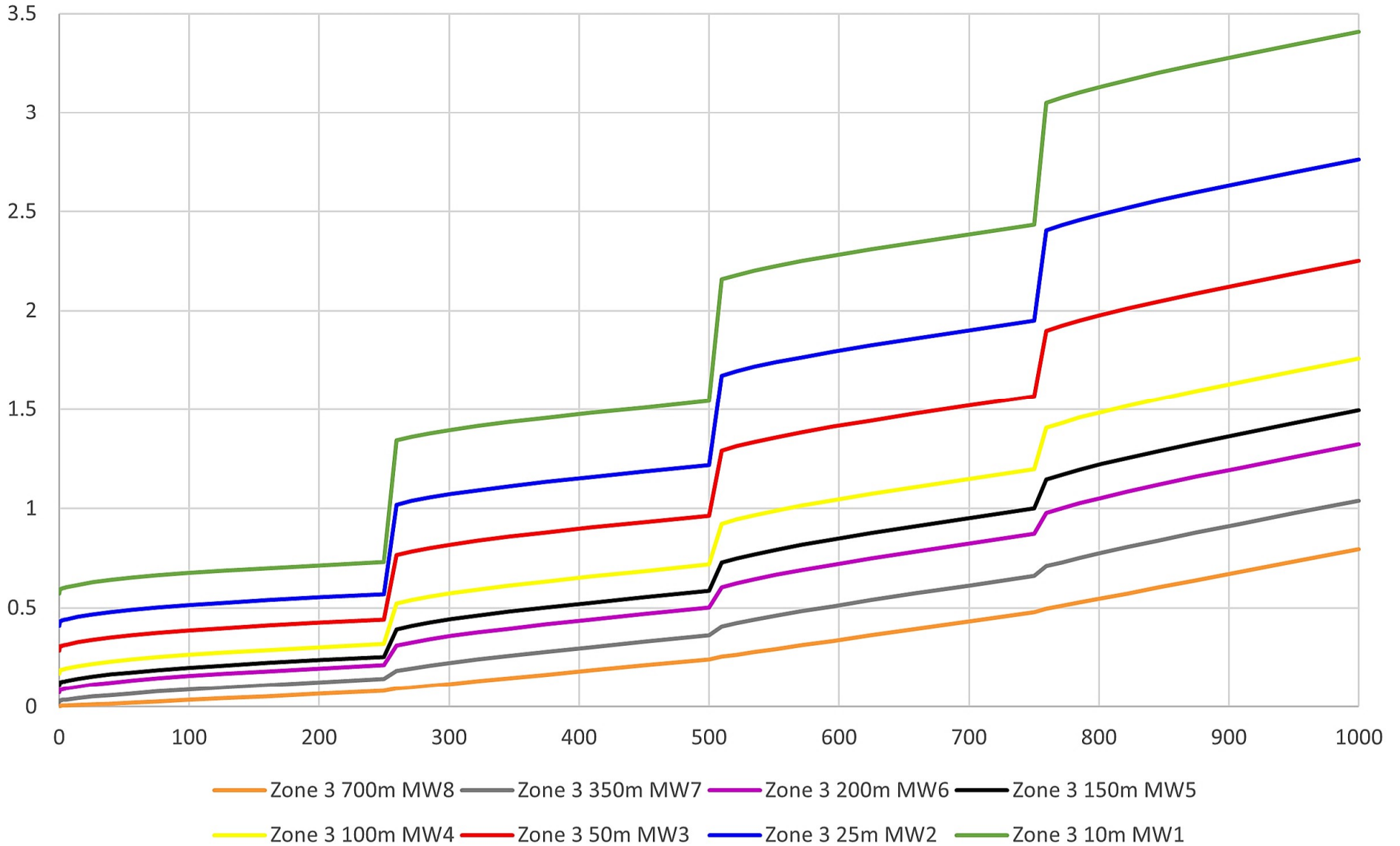
Numerical Model 4.1

Monitoring Wells in Layer 1

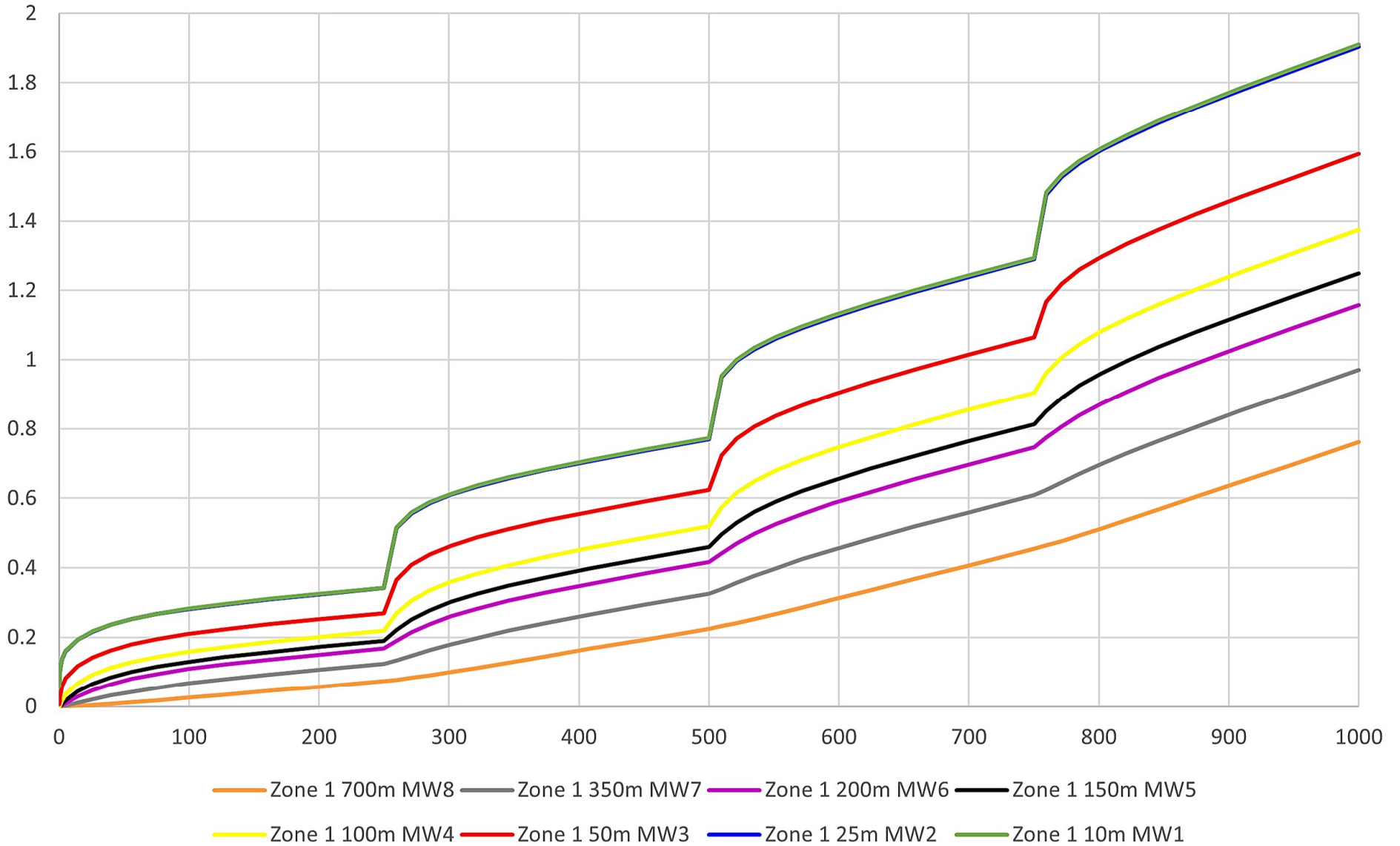
Scenario 4 Zone 3 No Abandoned Well



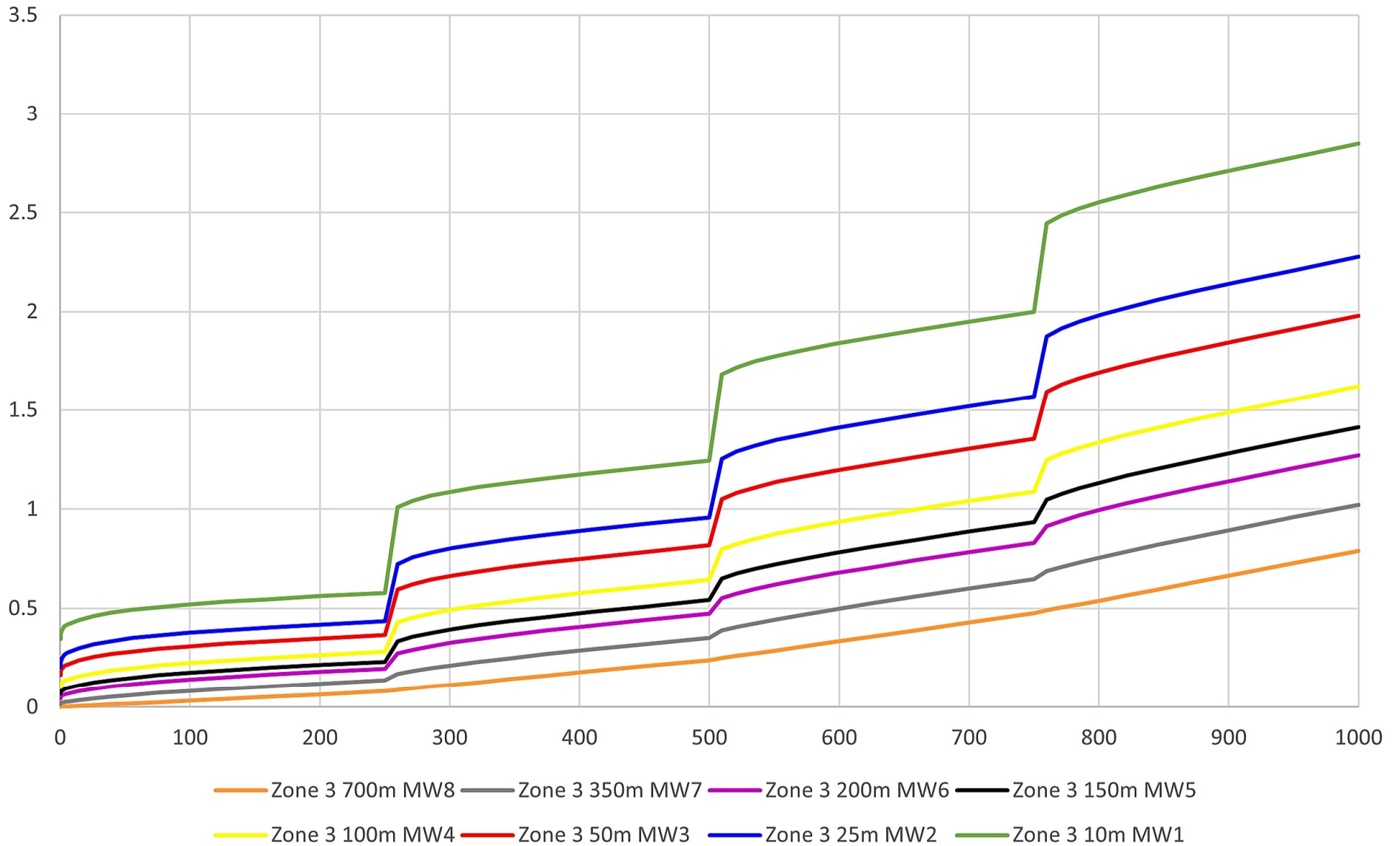
Numerical Model 4.1 Monitoring Wells in Layer 3 Scenario 4 Zone 3 No Abandoned Well



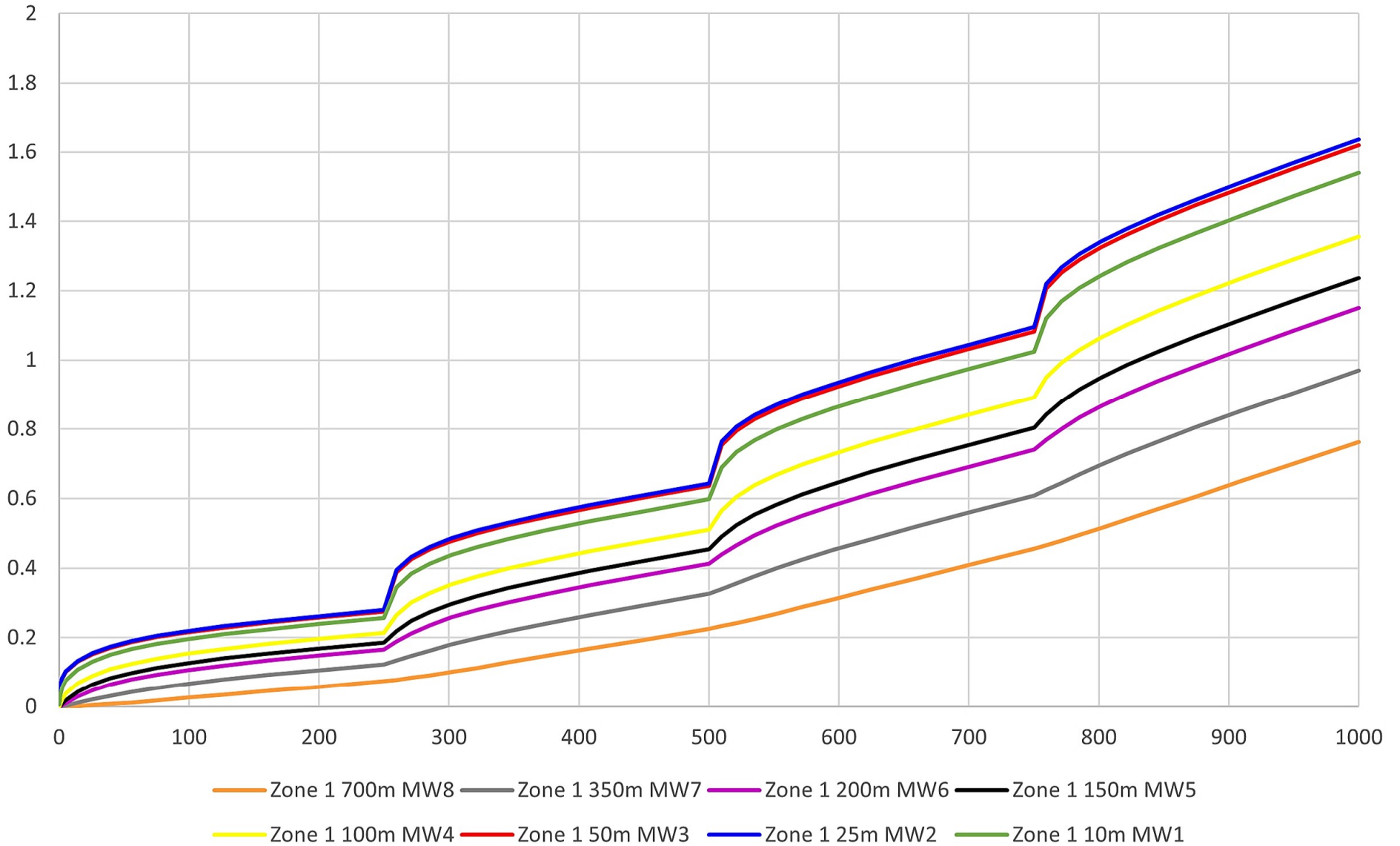
Numerical Model 4.2 Monitoring Wells in Layer 1 Scenario 4 Zone 3 Abandoned Well 20m



Numerical Model 4.2 Monitoring Wells in Layer 3 Scenario 4 Zone 3 Abandoned Well 20m



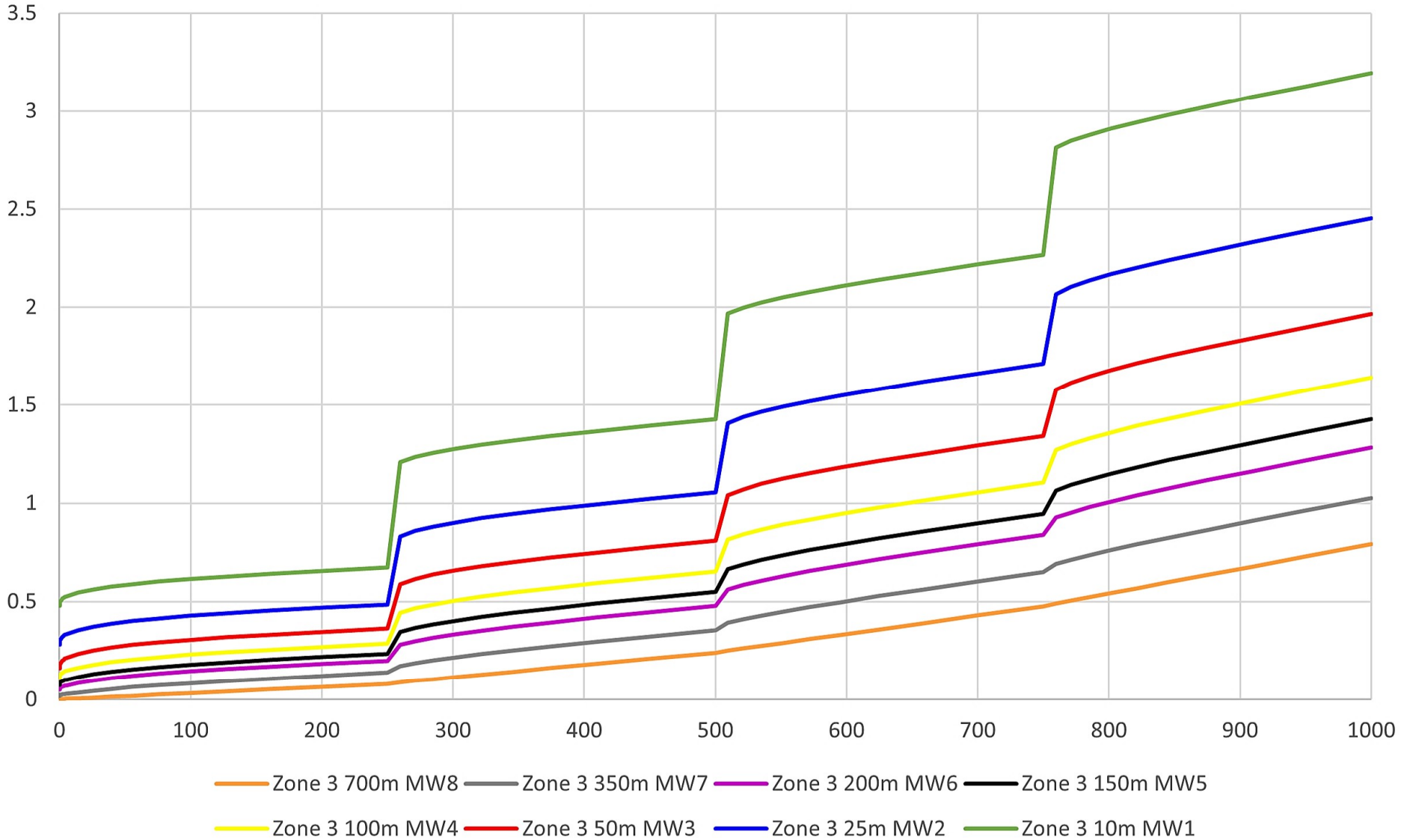
Numerical Model 4.3 Monitoring Wells in Layer 1 Scenario 4 Zone 3 Abandoned Well 40m



Numerical Model 4.3

Monitoring Wells in Layer 3

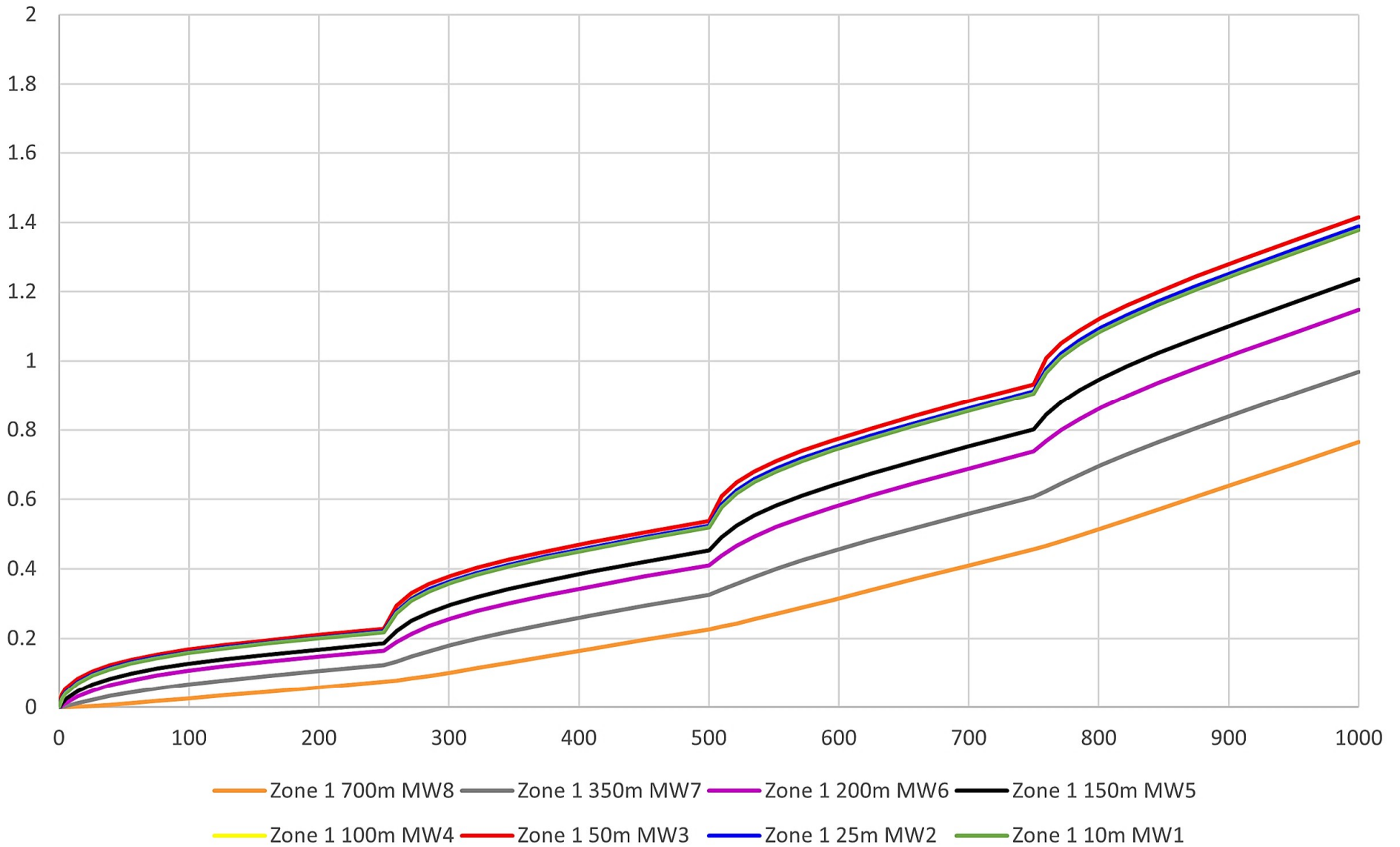
Scenario 4 Zone 3 Abandoned Well 40m



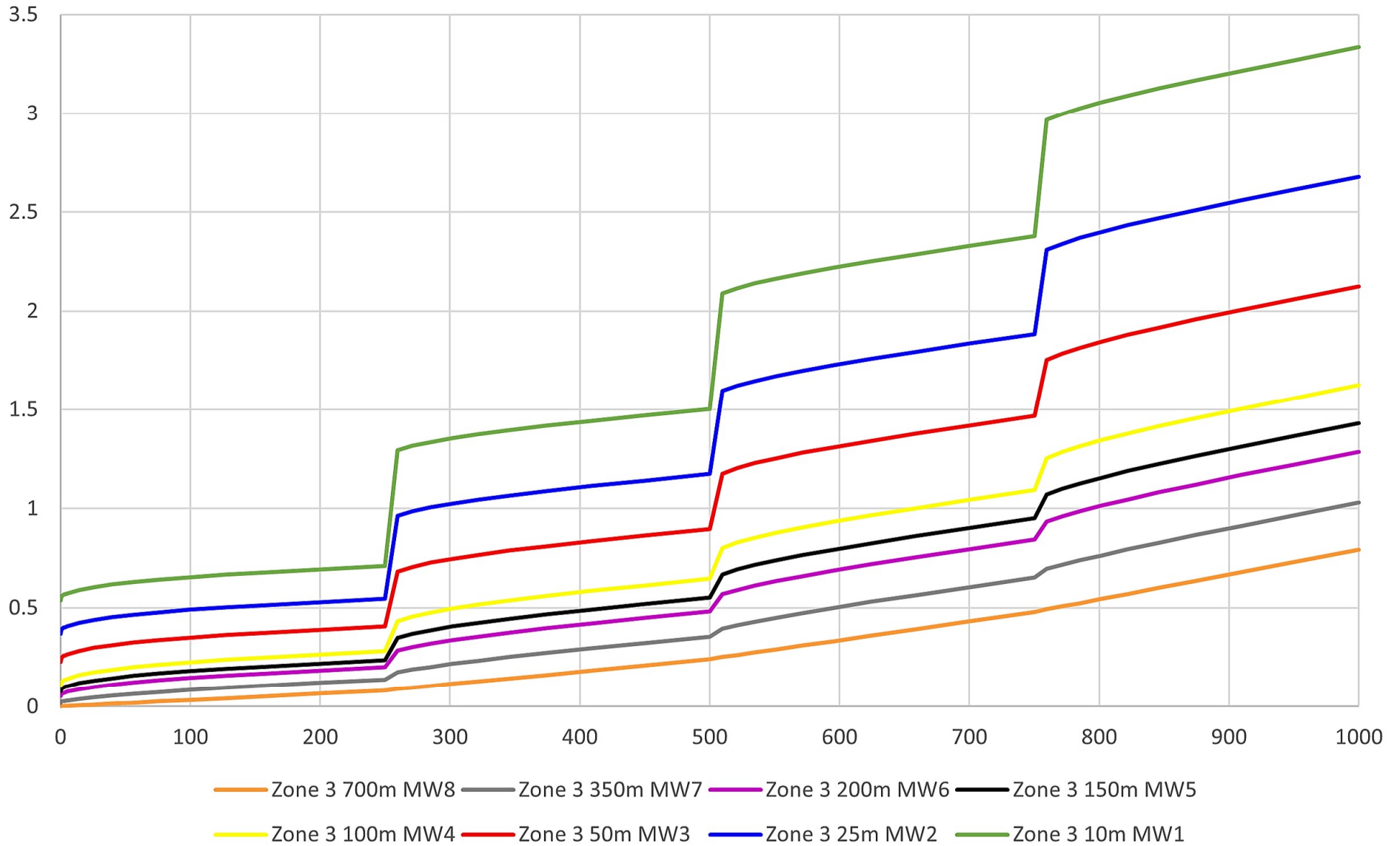
Numerical Model 4.4

Monitoring Wells in Layer 1

Scenario 4 Zone 3 Abandoned Well 80m



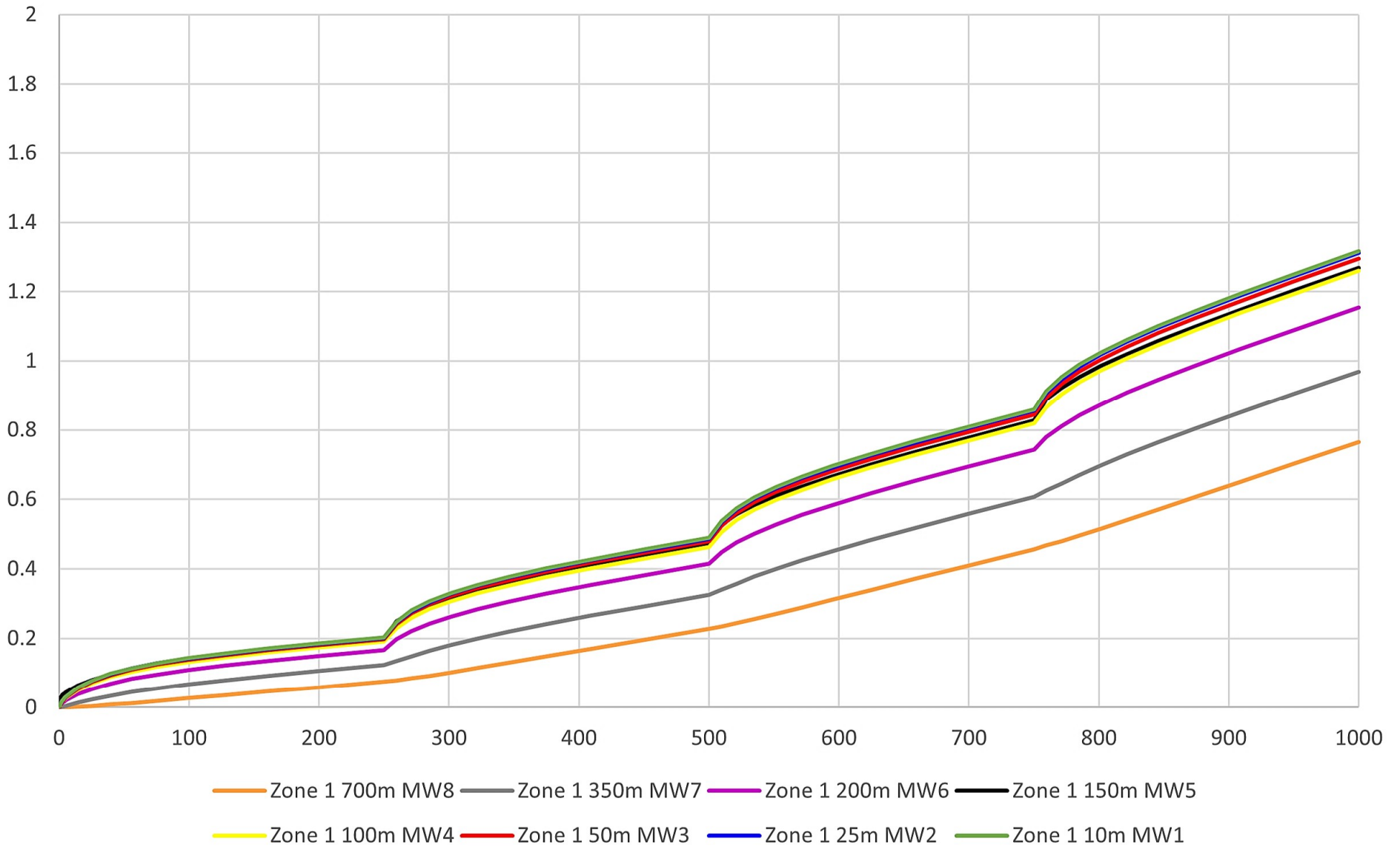
Numerical Model 4.4 Monitoring Wells in Layer 3 Scenario 4 Zone 3 Abandoned Well 80m



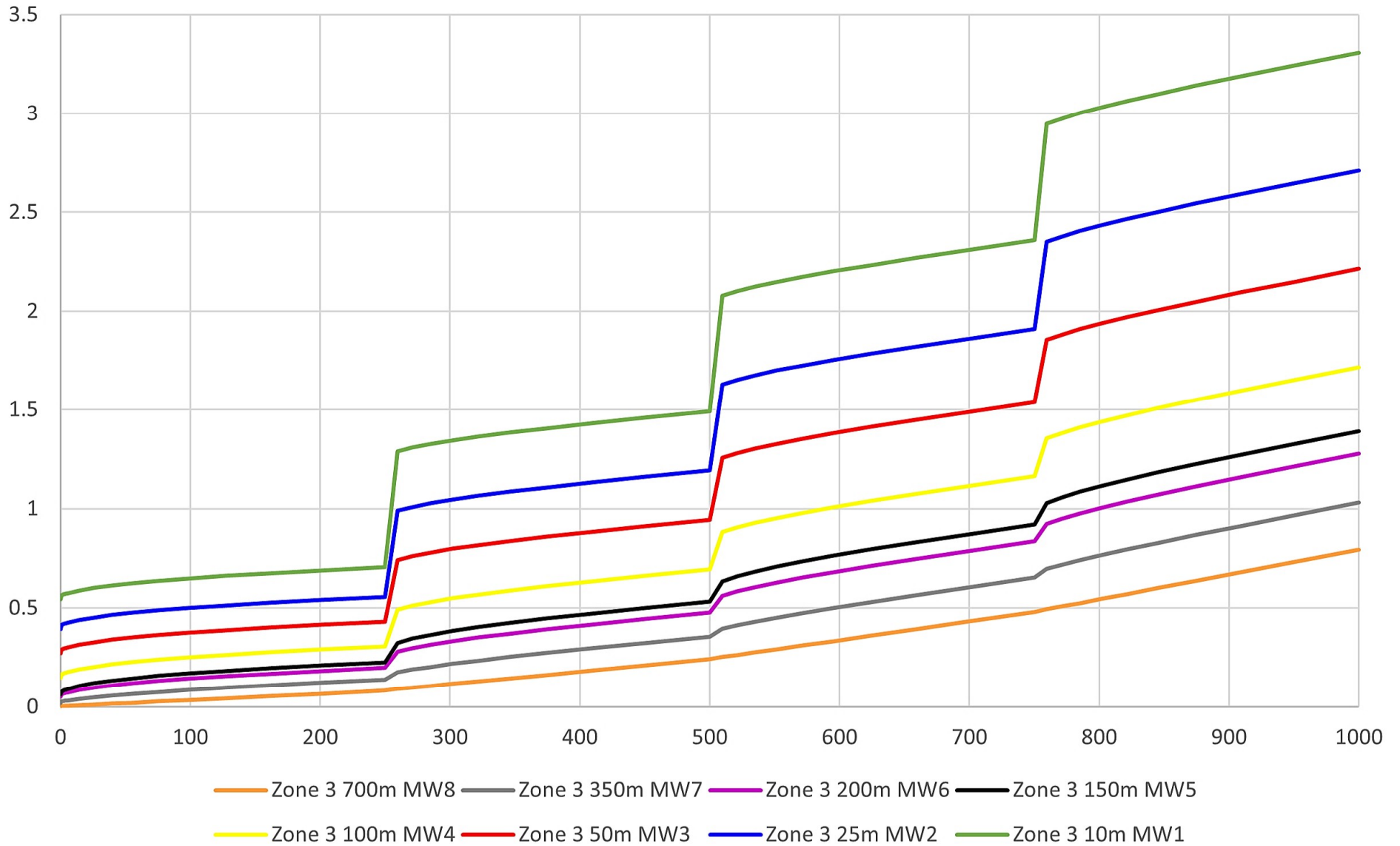
Numerical Model 4.5

Monitoring Wells in Layer 1

Scenario 4 Zone 3 Abandoned Well 160m



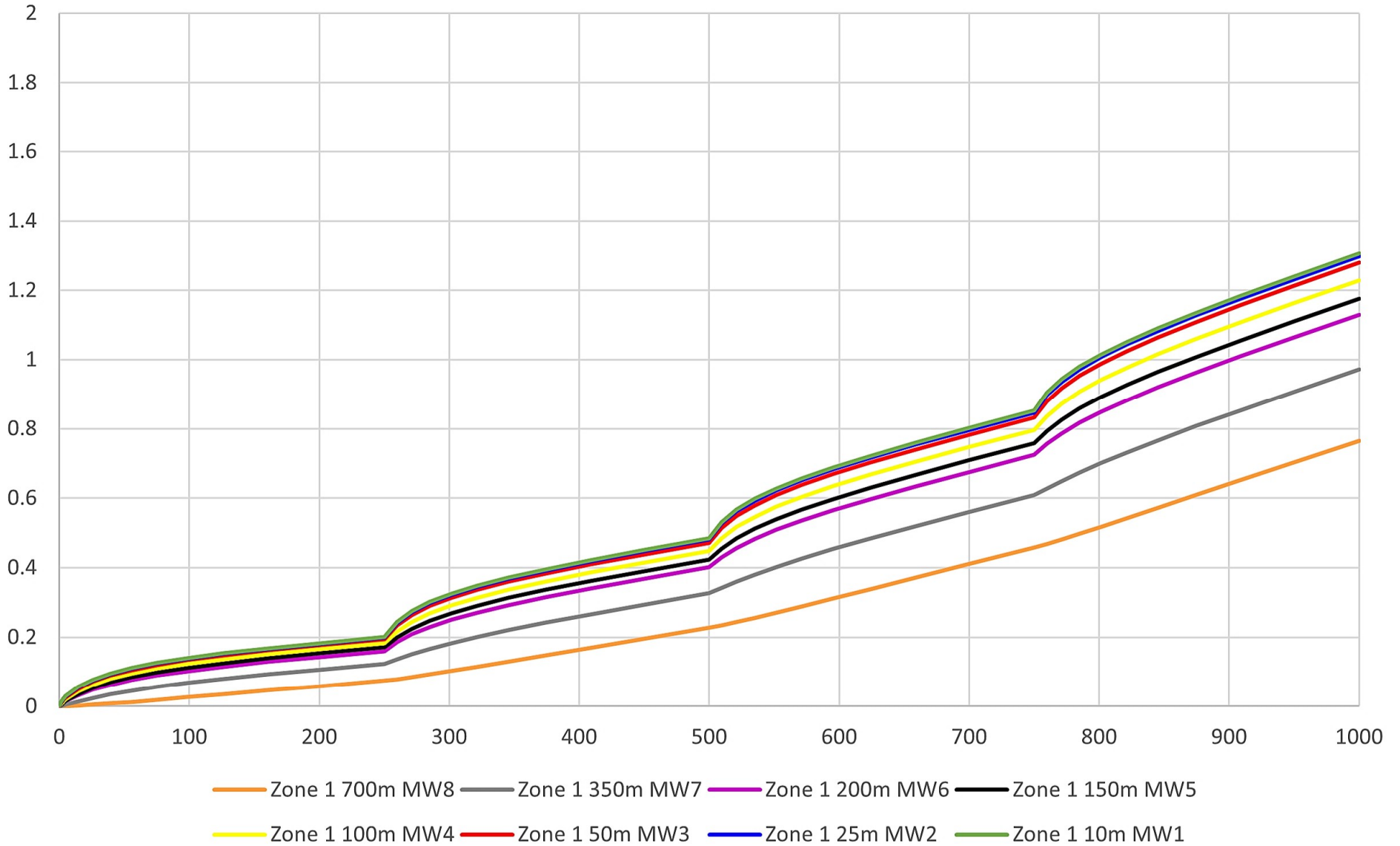
Numerical Model 4.5 Monitoring Wells in Layer 3 Scenario 4 Zone 3 Abandoned Well 160m



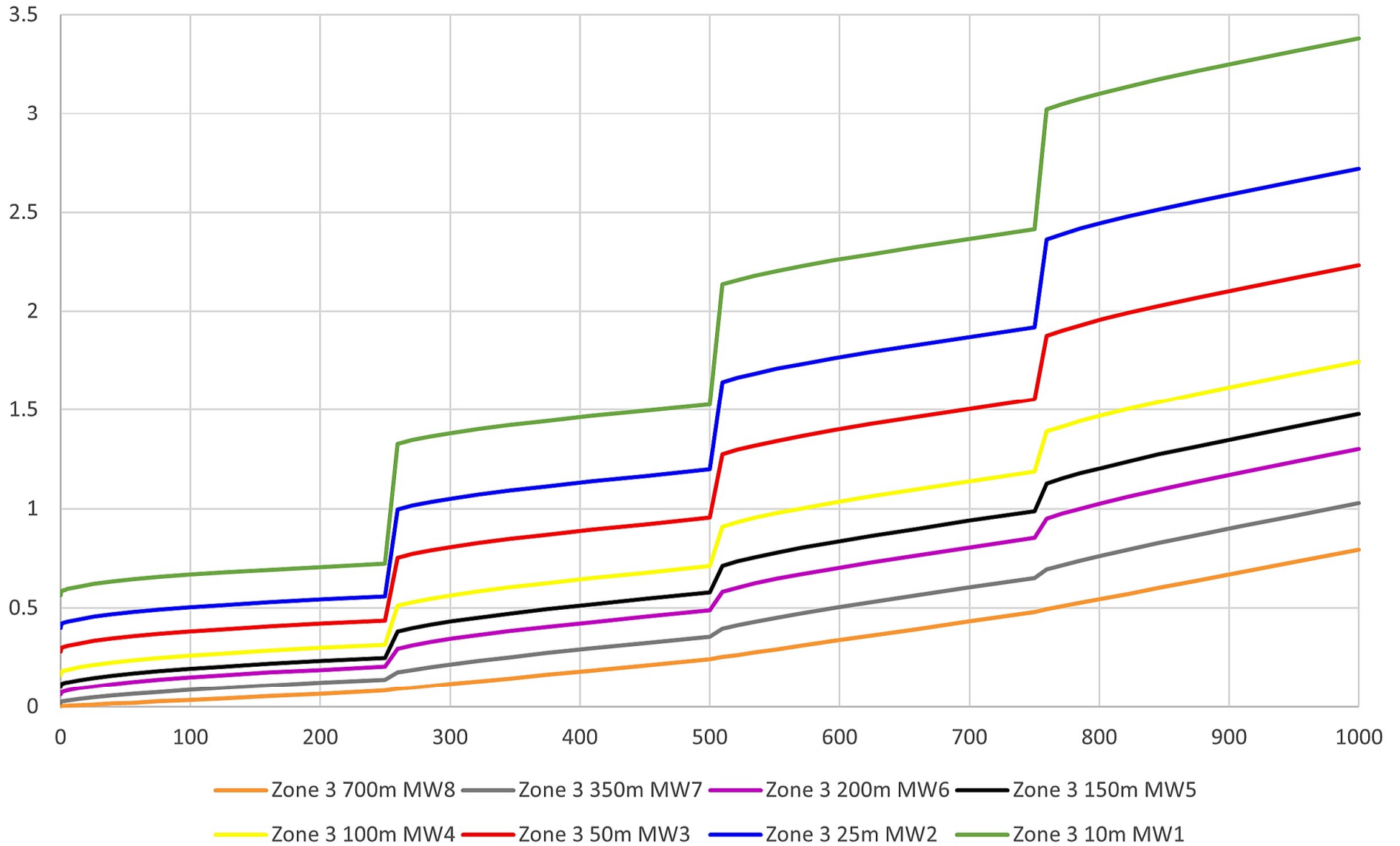
Numerical Model 4.6

Monitoring Wells in Layer 1

Scenario 4 Zone 3 Abandoned Well 250m



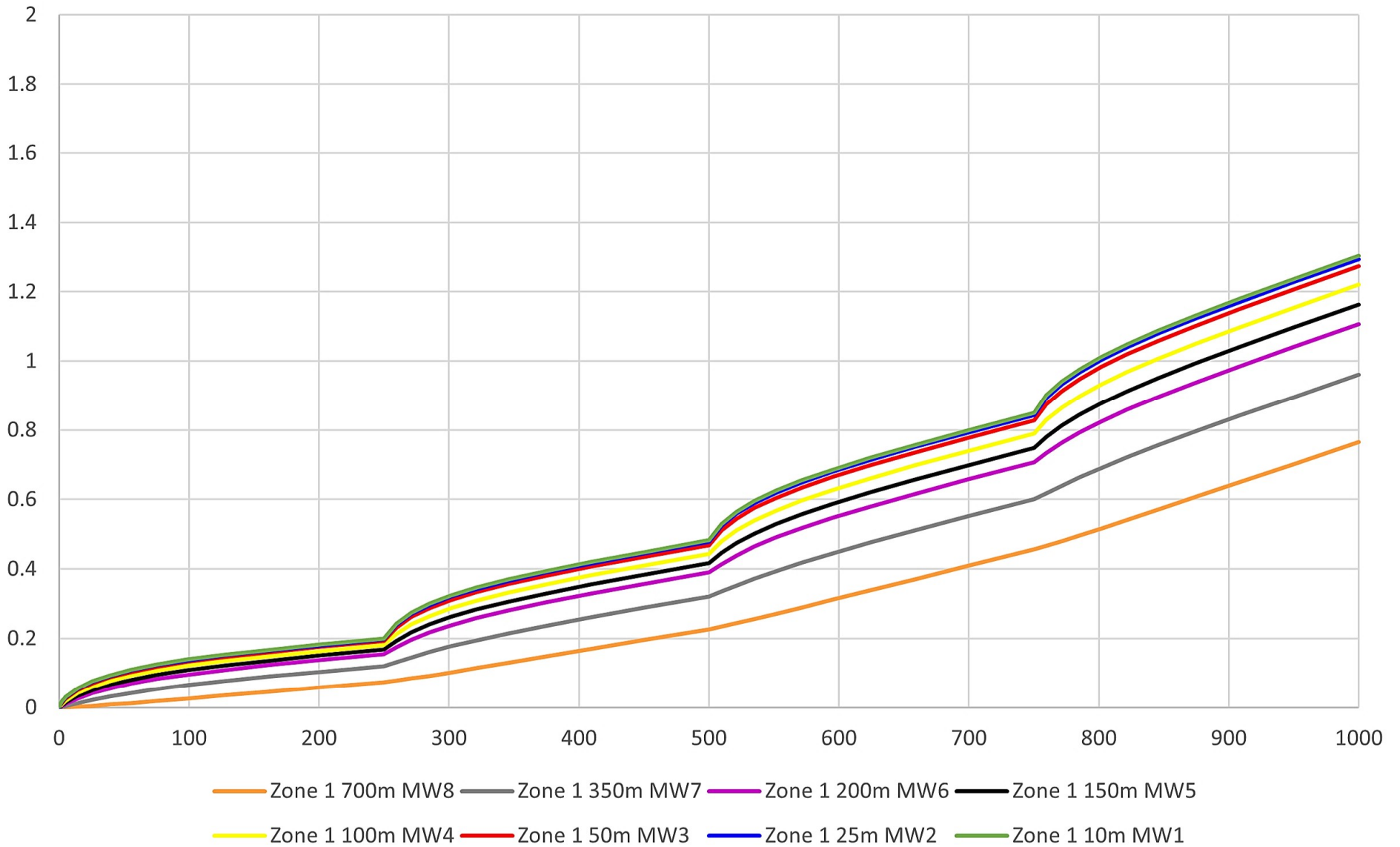
Numerical Model 4.6 Monitoring Wells in Layer 3 Scenario 4 Zone 3 Abandoned Well 250m



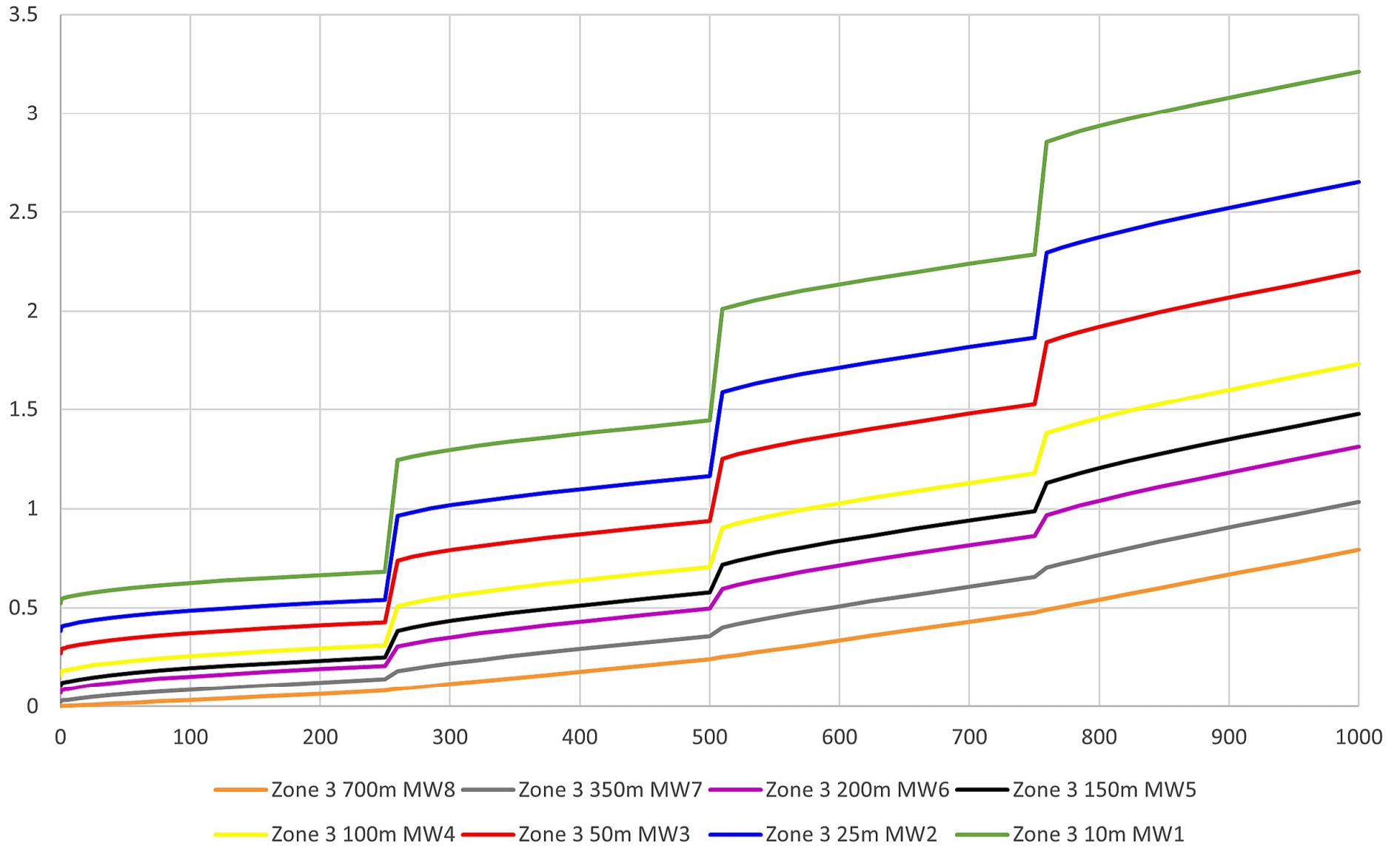
Numerical Model 4.7

Monitoring Wells in Layer 1

Scenario 4 Zone 3 Abandoned Well 500m



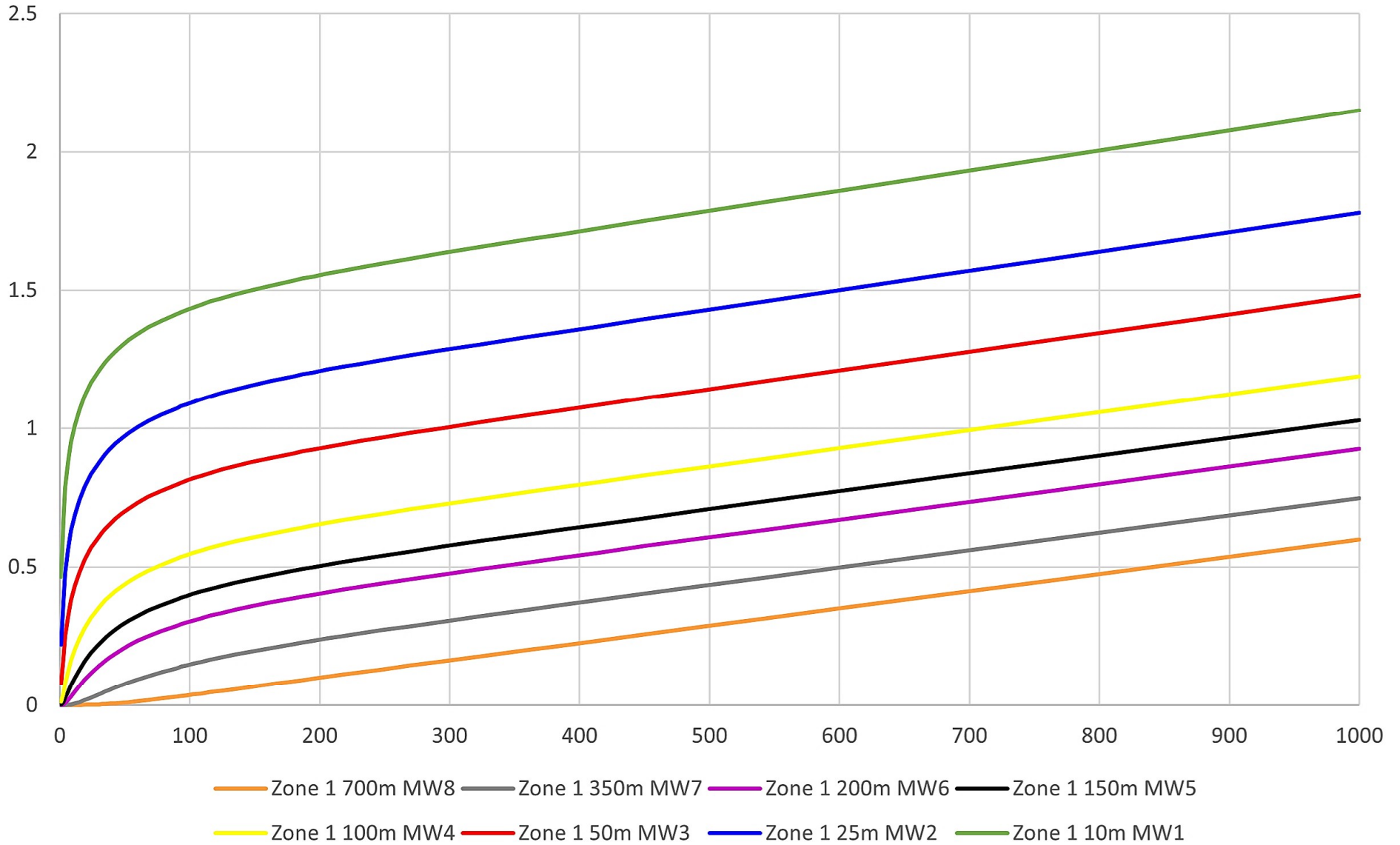
Numerical Model 4.7 Monitoring Wells in Layer 3 Scenario 4 Zone 3 Abandoned Well 500m



Numerical Model 5.1

Monitoring Wells in Layer 1

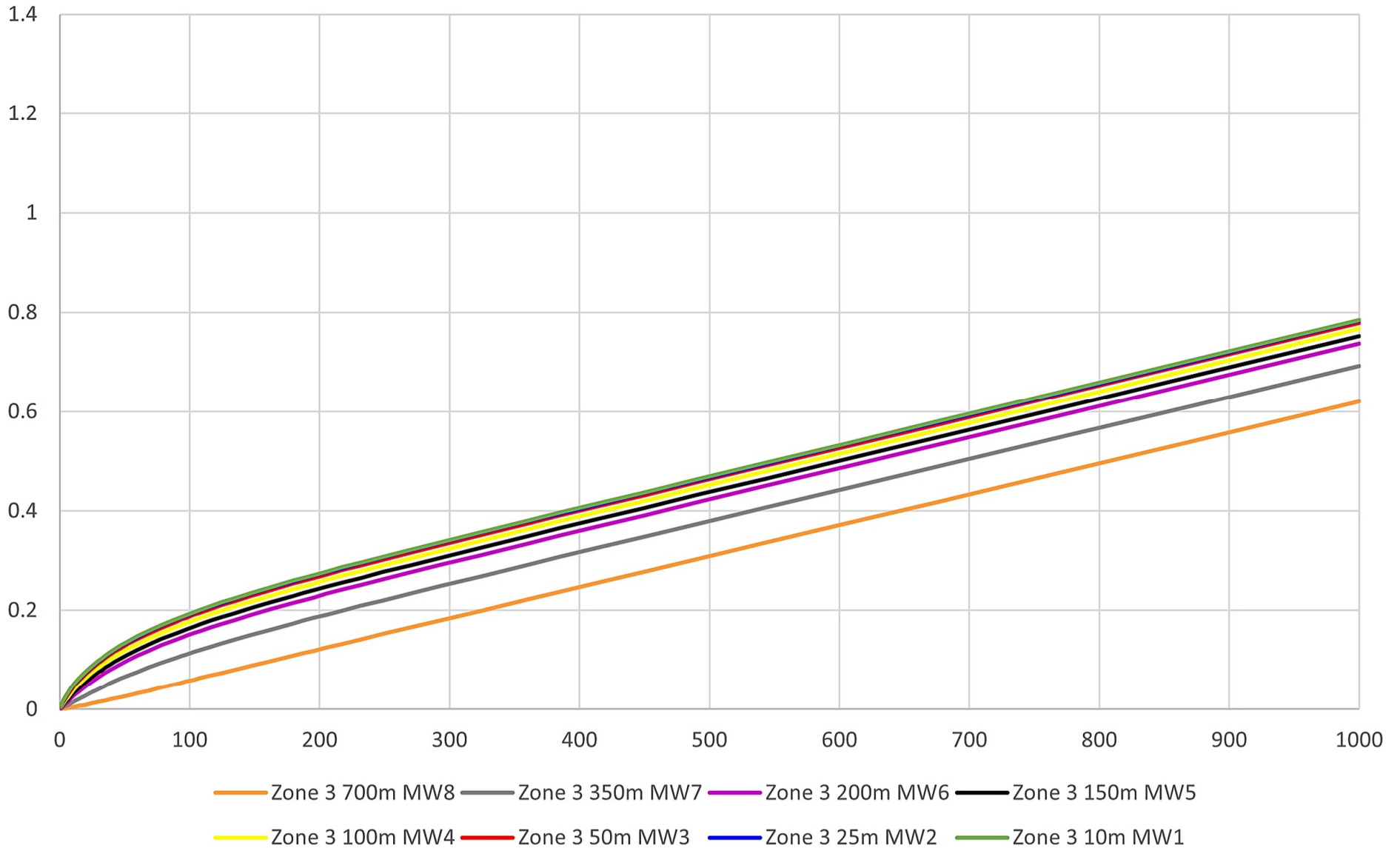
Scenario 5 Zone 1 No Abandoned Well



Numerical Model 5.1

Monitoring Wells in Layer 3

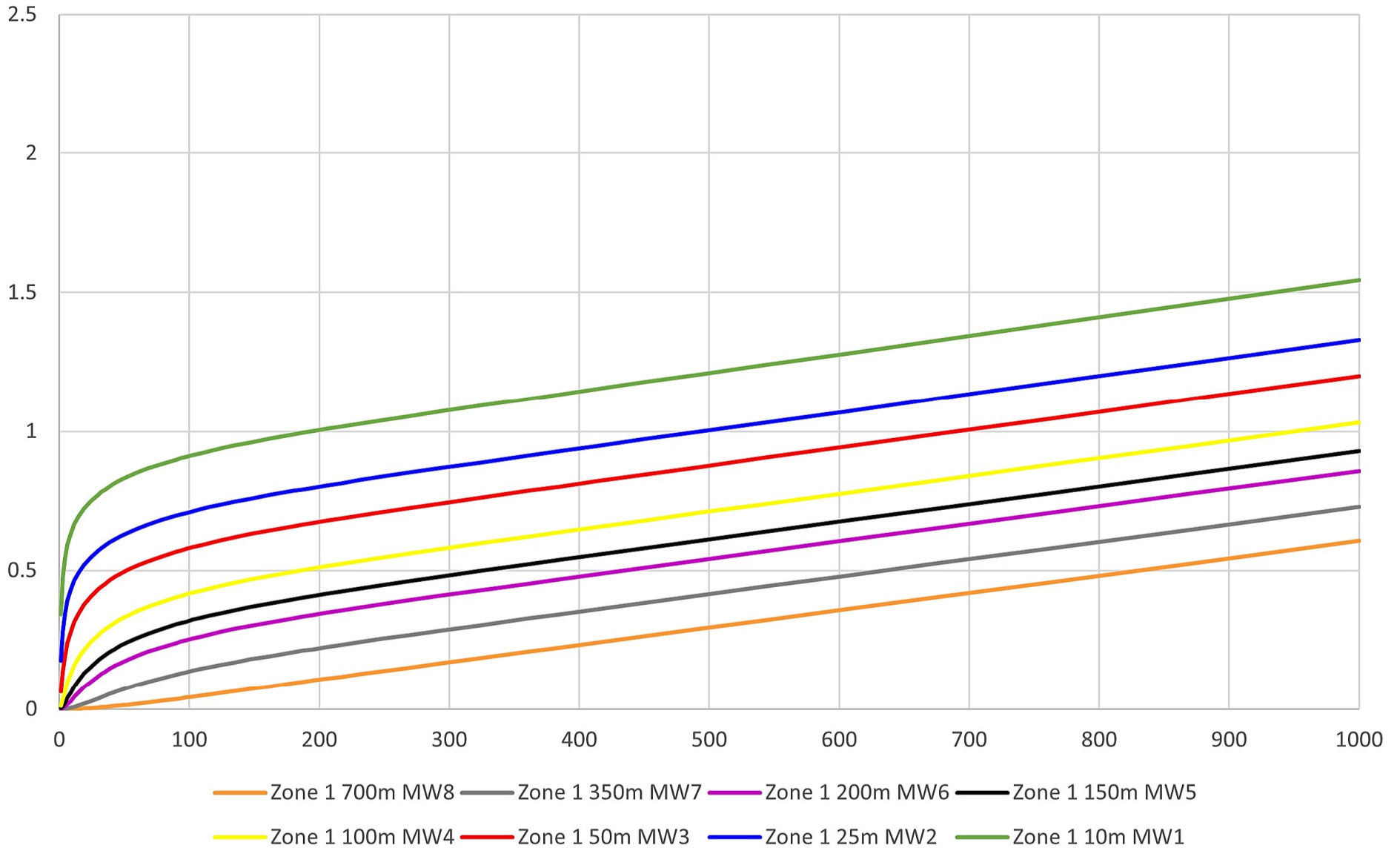
Scenario 5 Zone 1 No Abandoned Well



Numerical Model 5.2

Monitoring Wells in Layer 1

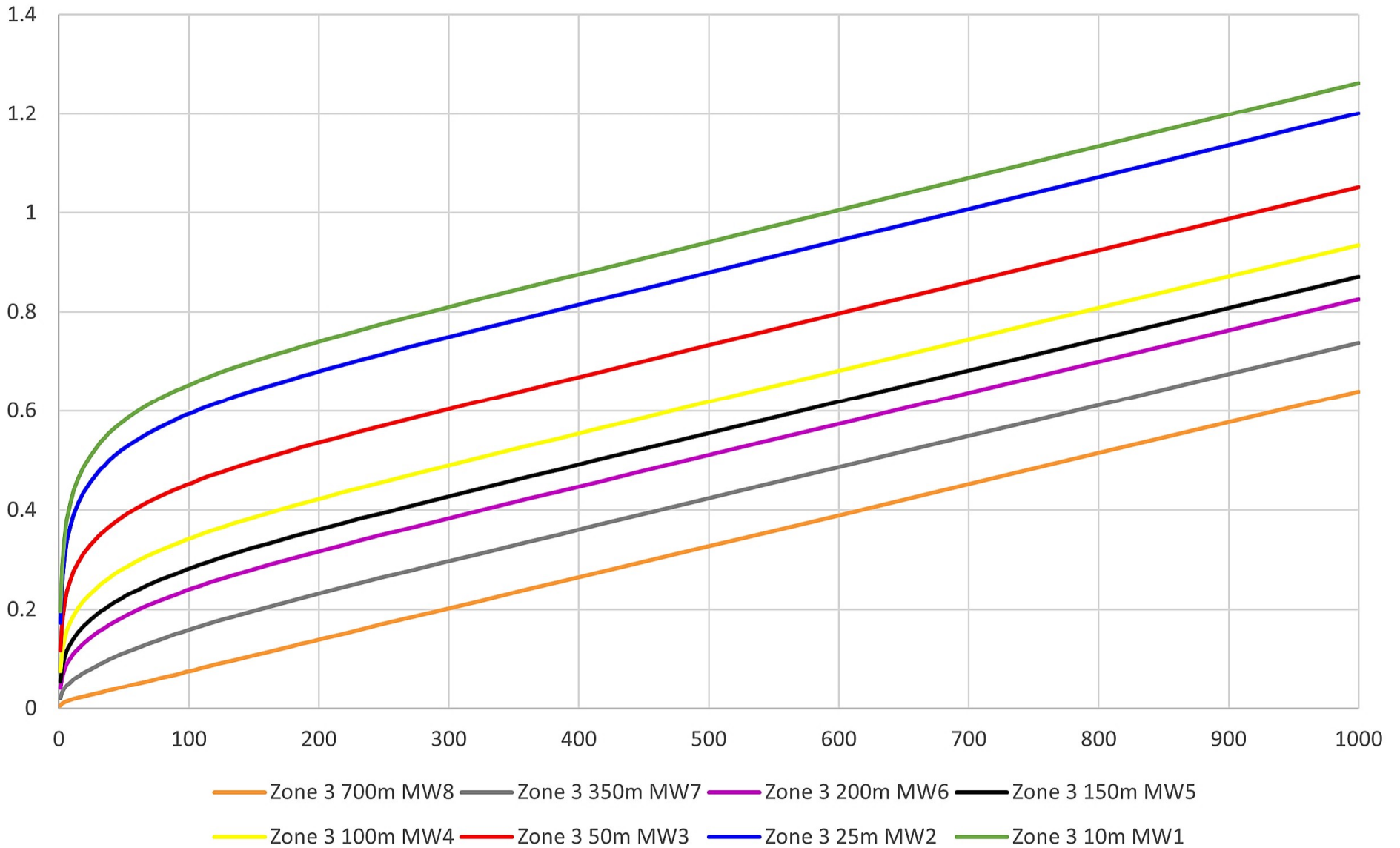
Scenario 5 Zone 1 Abandoned Well 20m



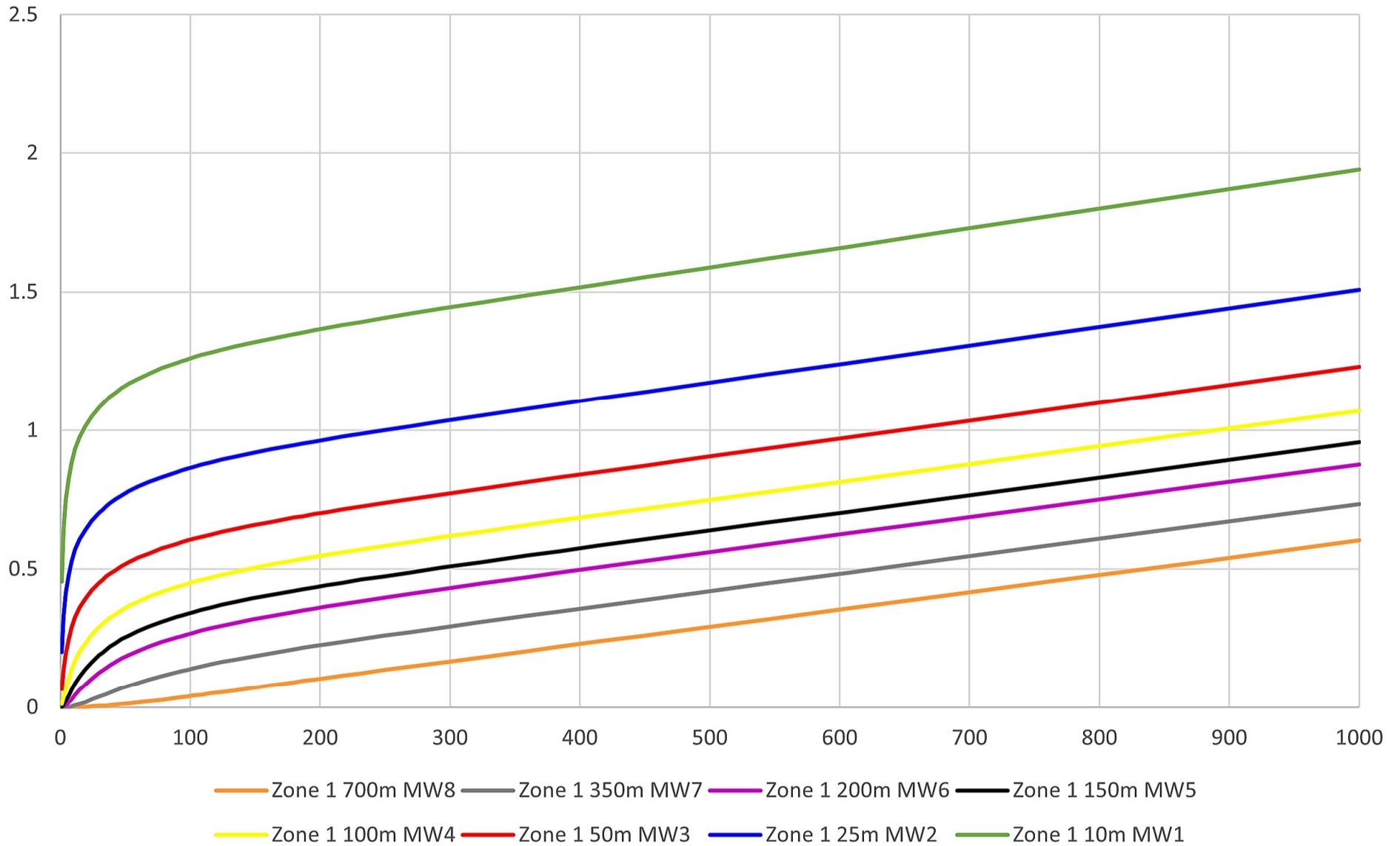
Numerical Model 5.2

Monitoring Wells in Layer 3

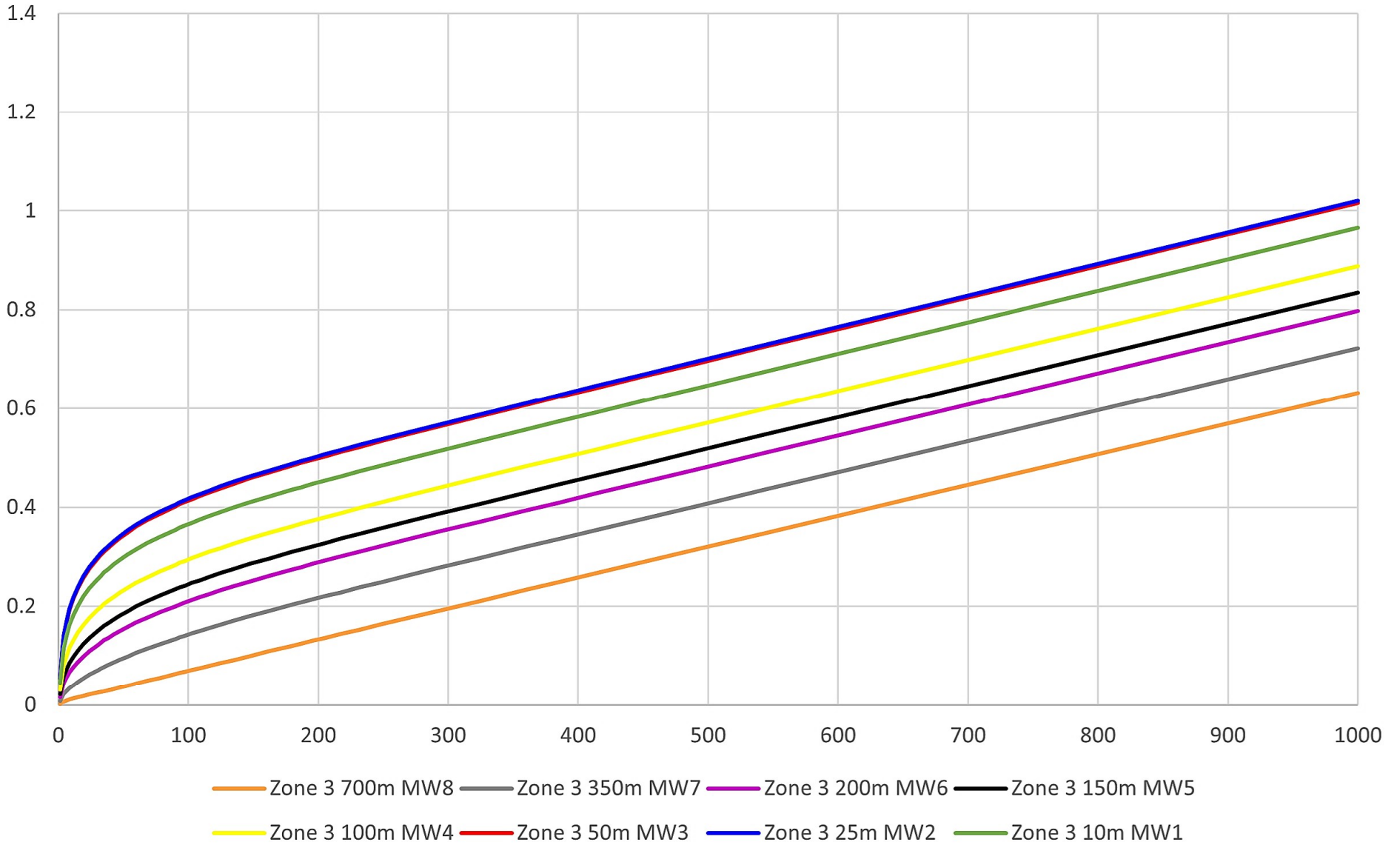
Scenario 5 Zone 1 Abandoned Well 20m



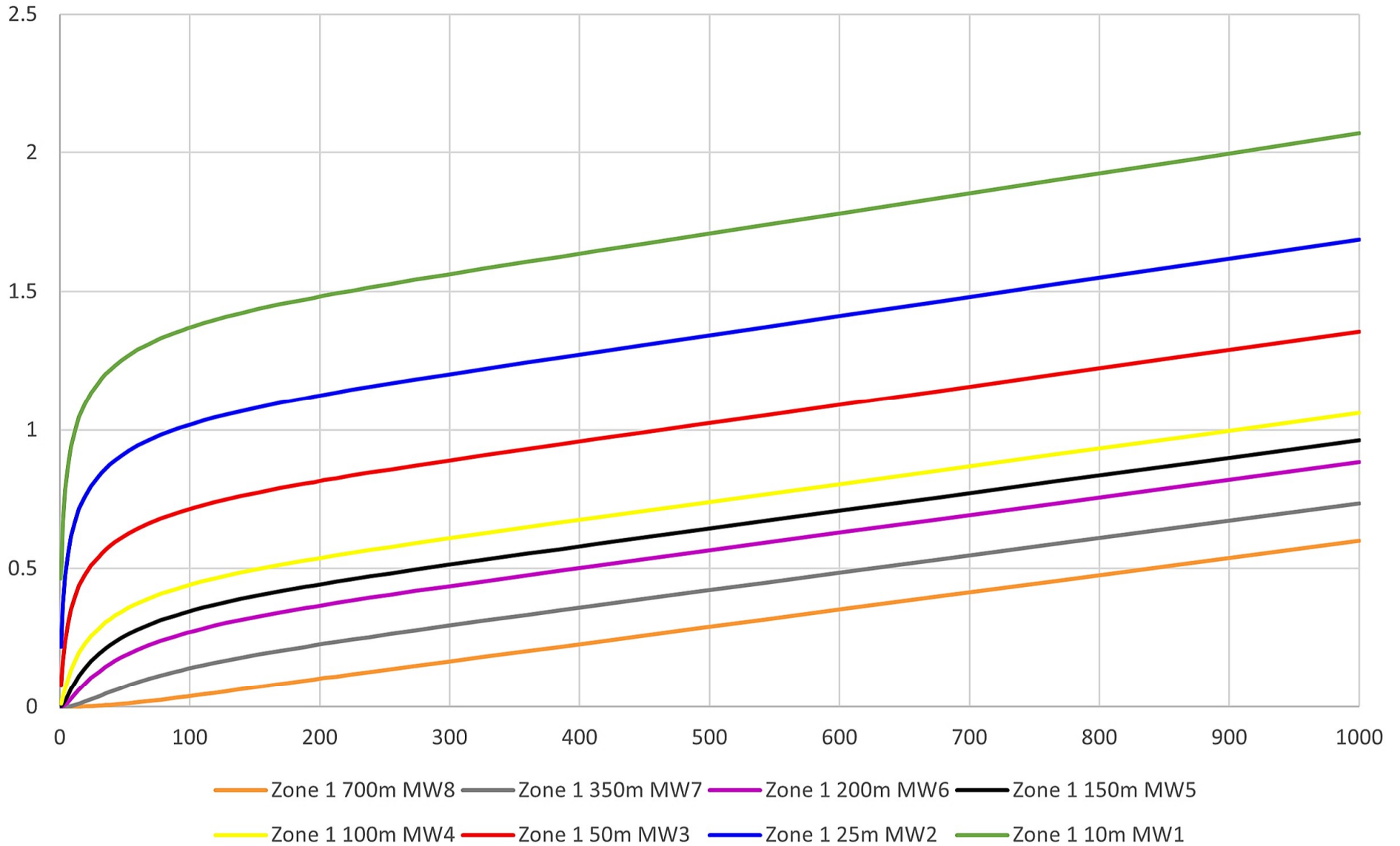
Numerical Model 5.3 Monitoring Wells in Layer 1 Scenario 5 Zone 1 Abandoned Well 40m



Numerical Model 5.3 Monitoring Wells in Layer 3 Scenario 3 Zone 1 Abandoned Well 40m



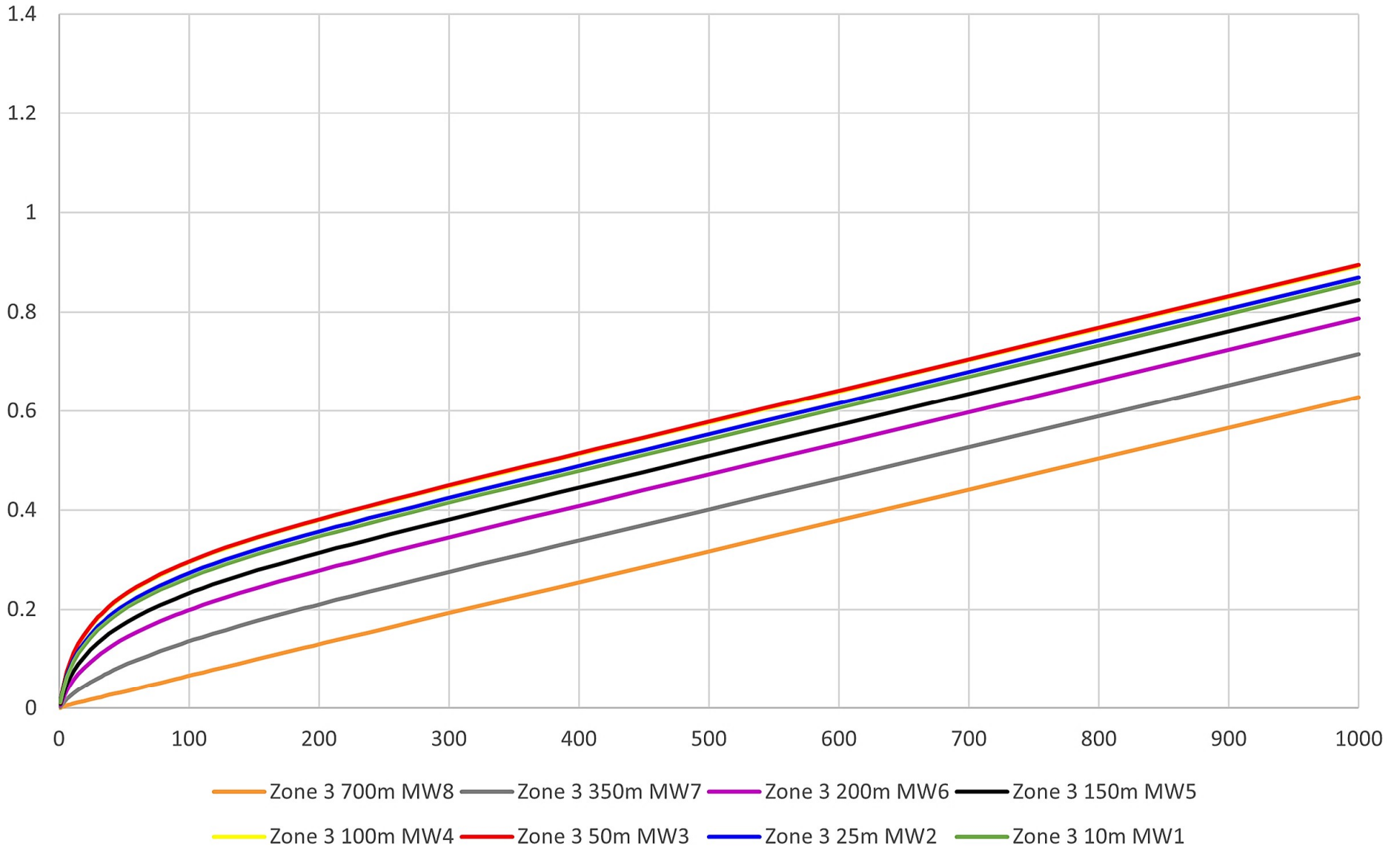
Numerical Model 5.4 Monitoring Wells in Layer 1 Scenario 5 Zone 1 Abandoned Well 80m



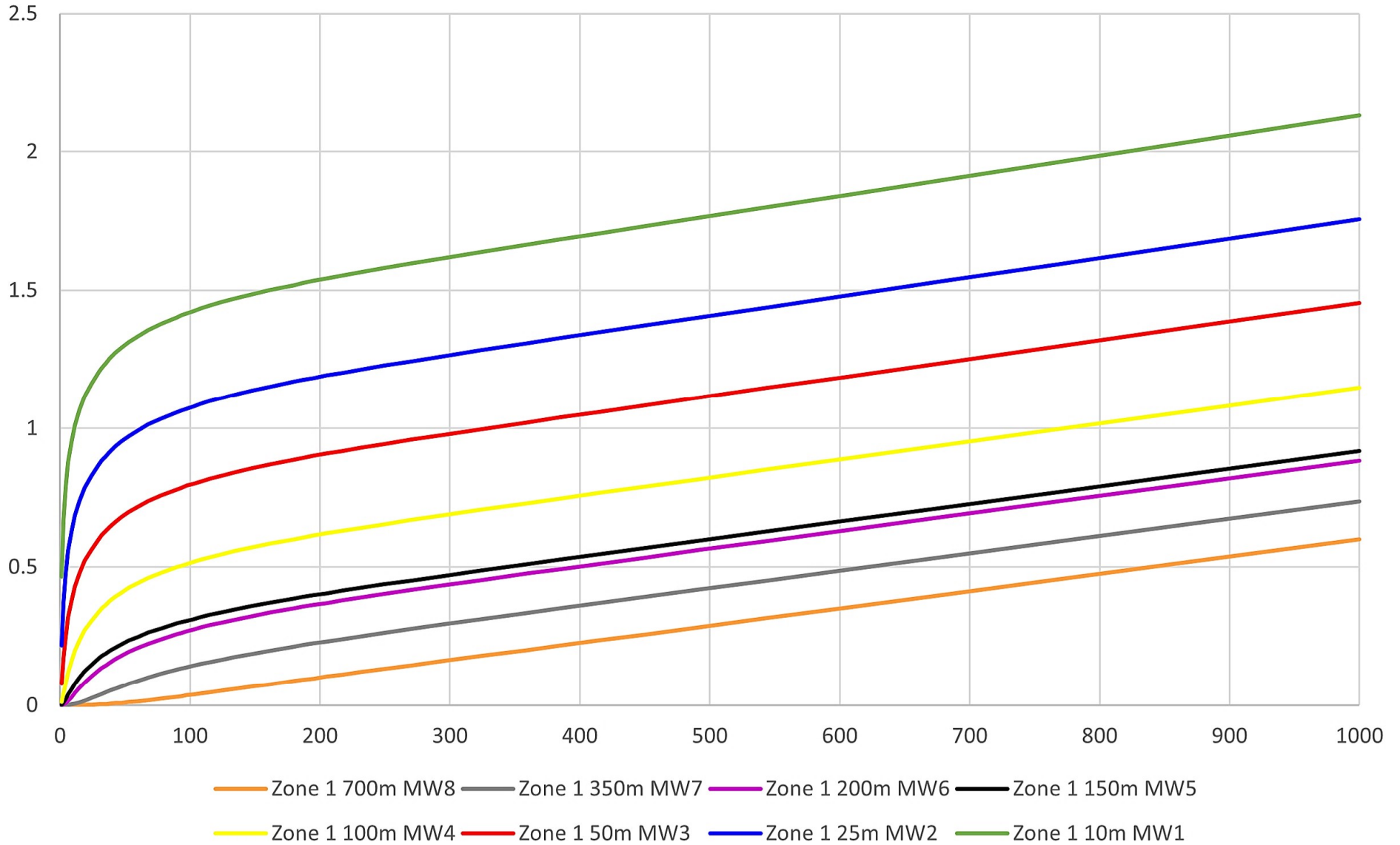
Numerical Model 5.4

Monitoring Wells in Layer 3

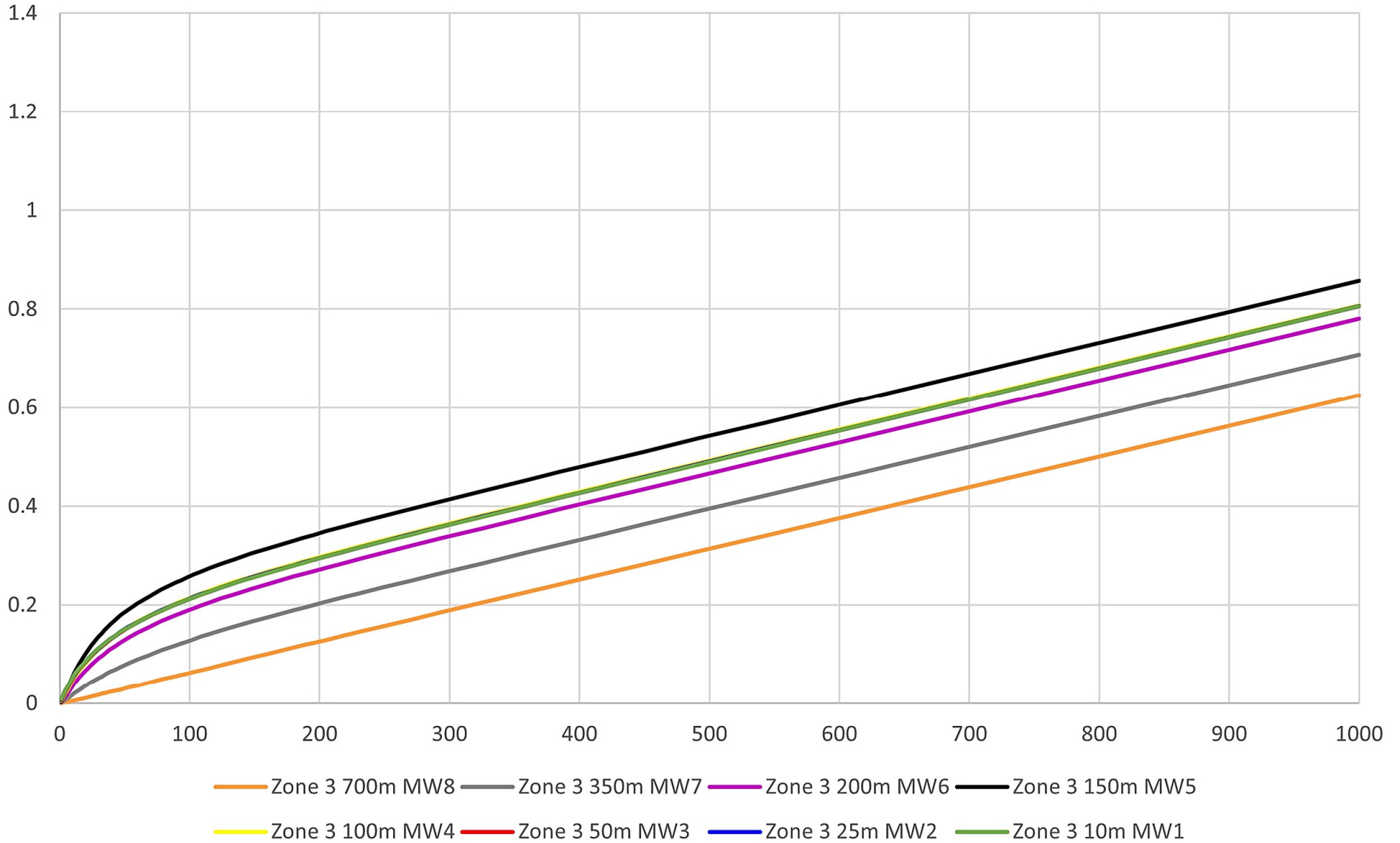
Scenario 5 Zone 1 Abandoned Well 80m



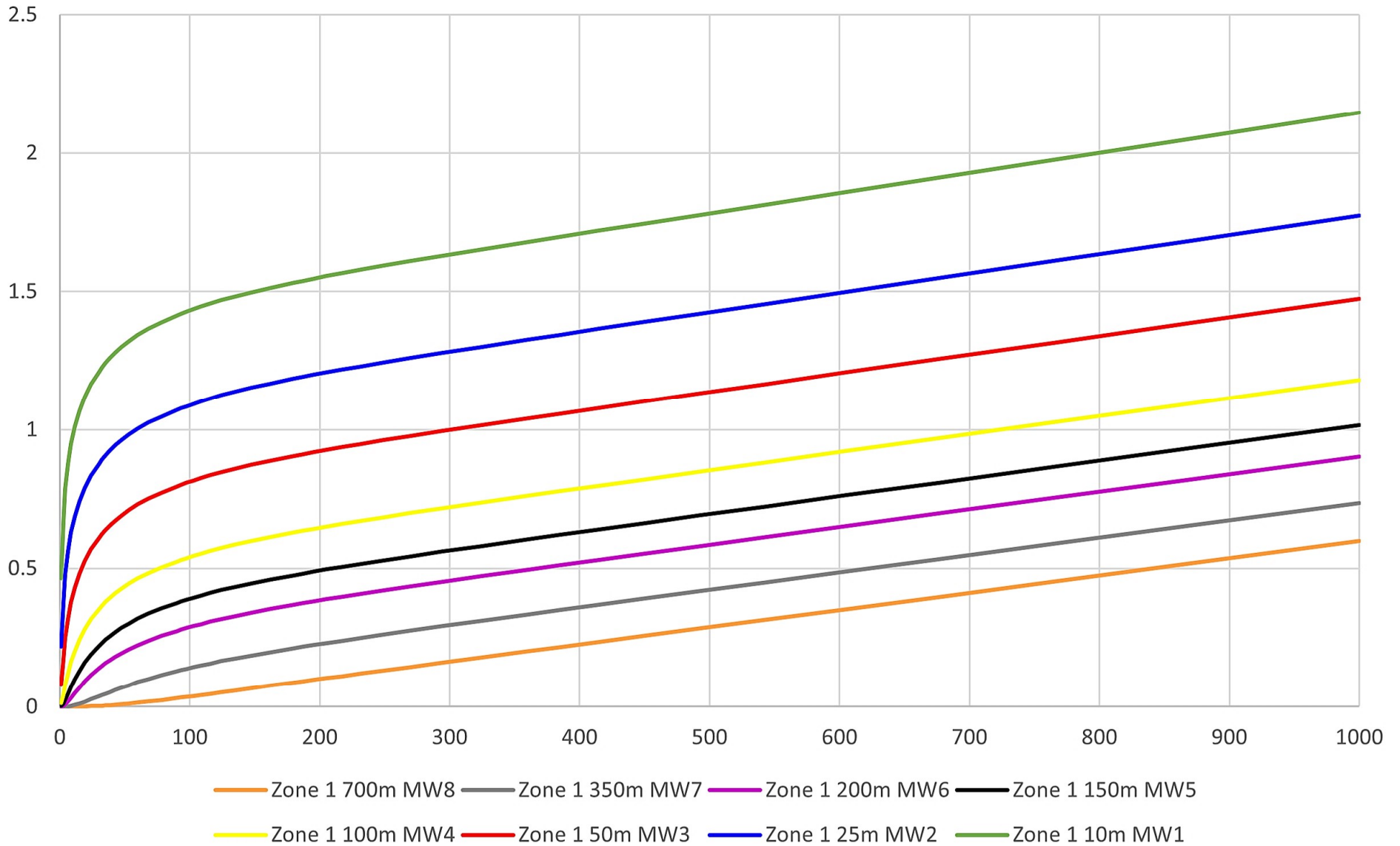
Numerical Model 5.5 Monitoring Wells in Layer 1 Scenario 5 Zone 1 Abandoned Well 160m



Numerical Model 5.5 Monitoring Wells in Layer 3 Scenario 5 Zone 1 Abandoned Well 160m



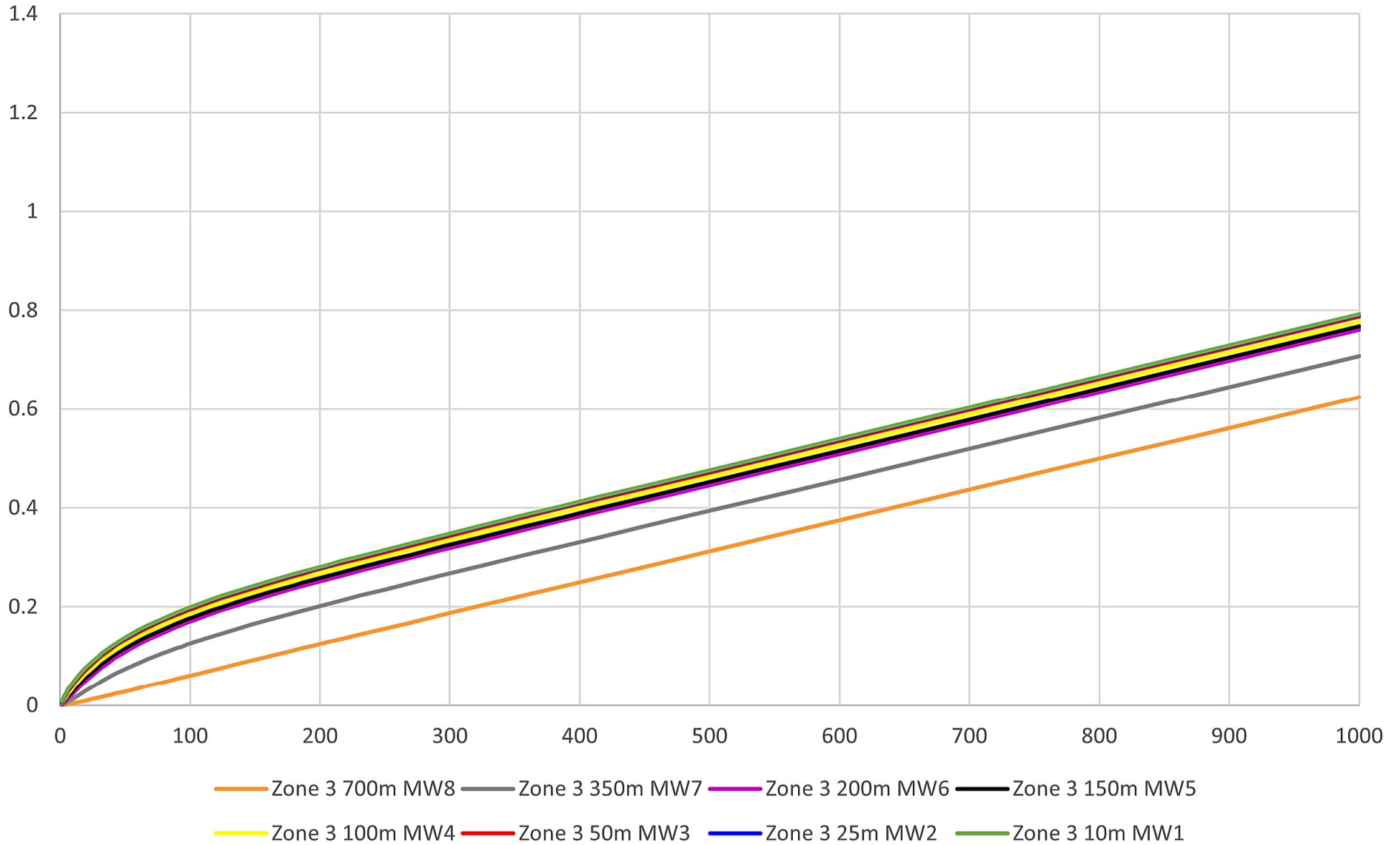
Numerical Model 5.6 Monitoring Wells in Layer 1 Scenario 5 Zone 1 Abandoned Well 250m



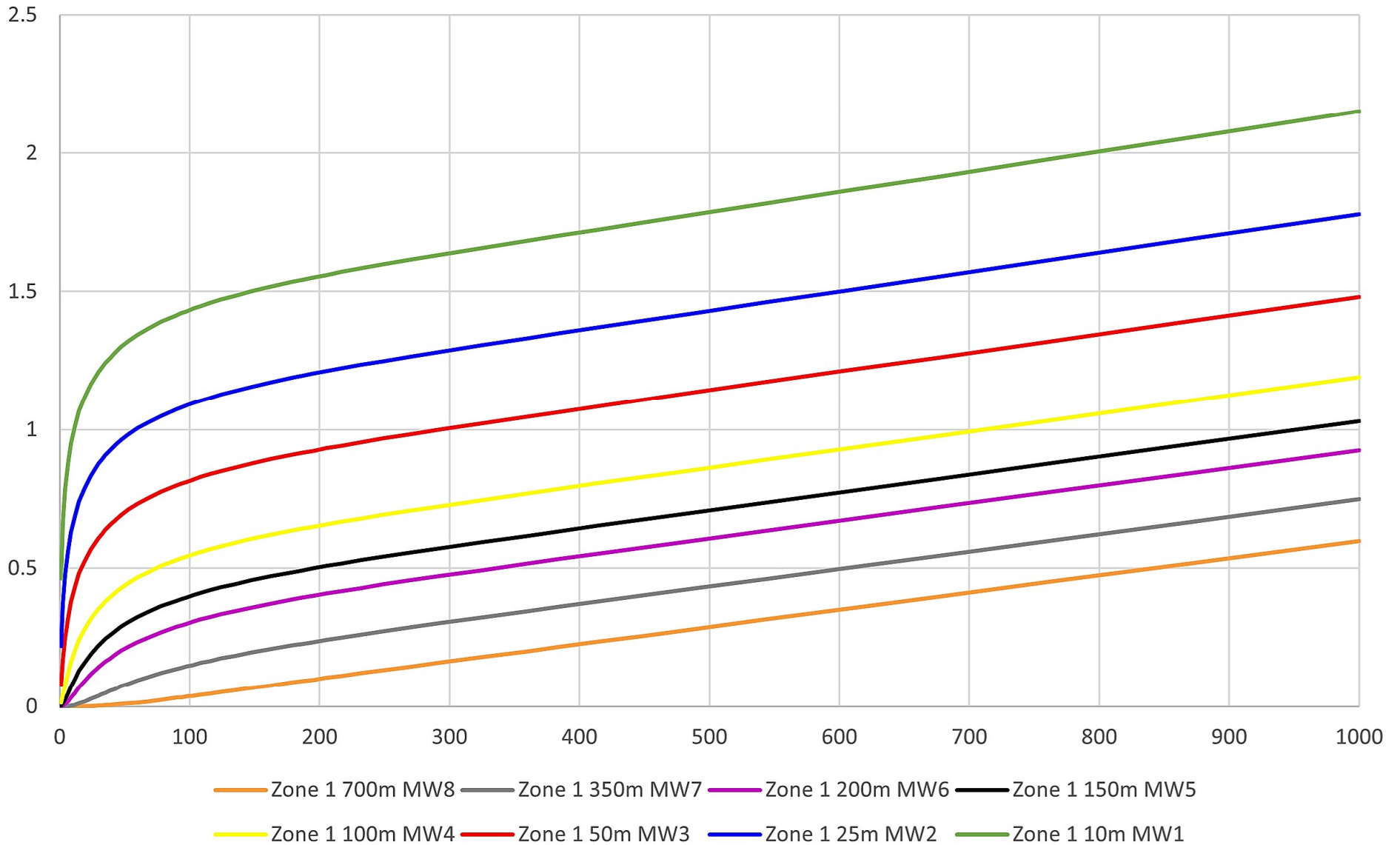
Numerical Model 5.6

Monitoring Wells in Layer 3

Scenario 5 Zone 1 Abandoned Well 250m



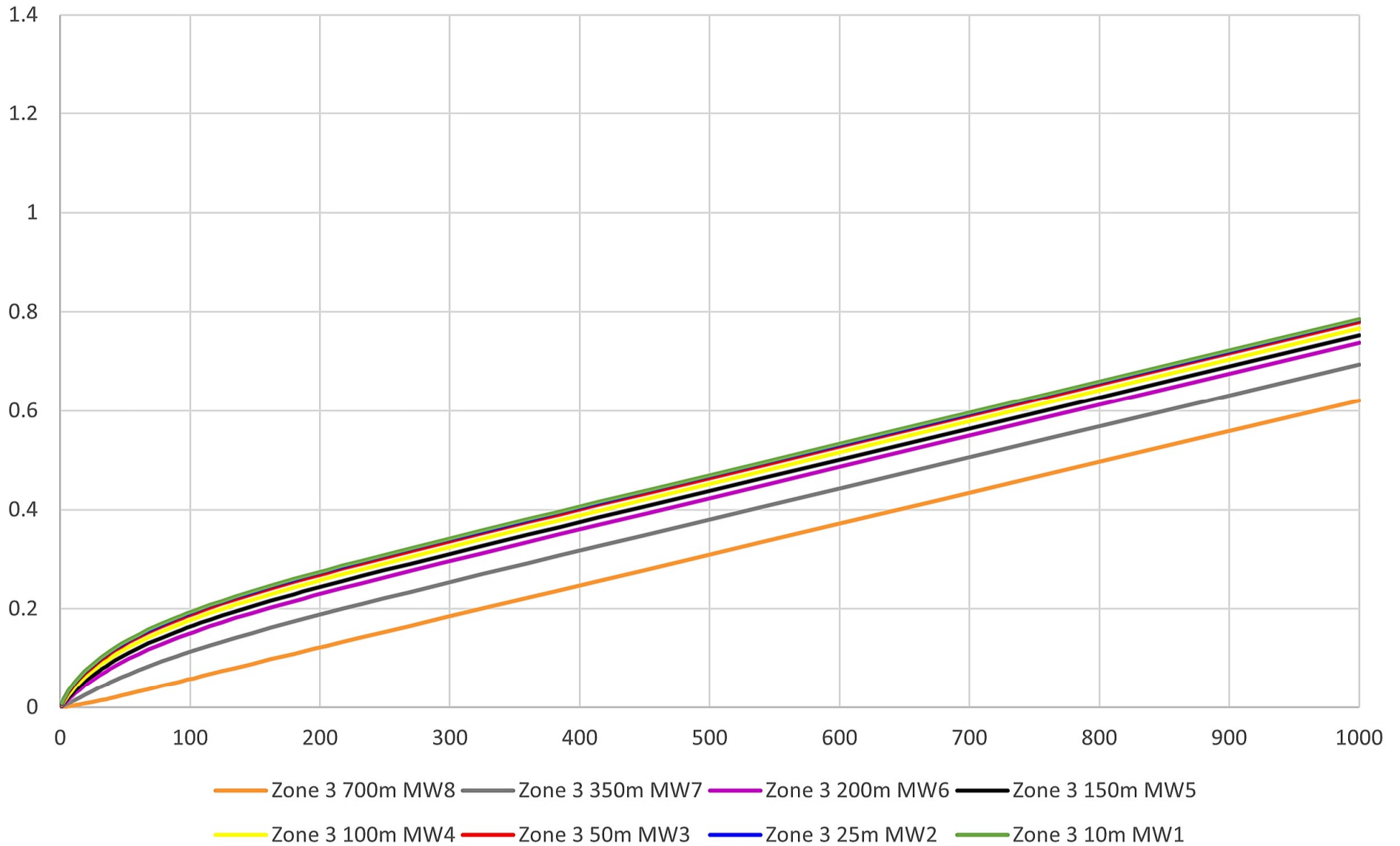
Numerical Model 5.7 Monitoring Wells in Layer 1 Scenario 5 Zone 1 Abandoned Well 500m



Numerical Model 5.7

Monitoring Wells in Layer 3

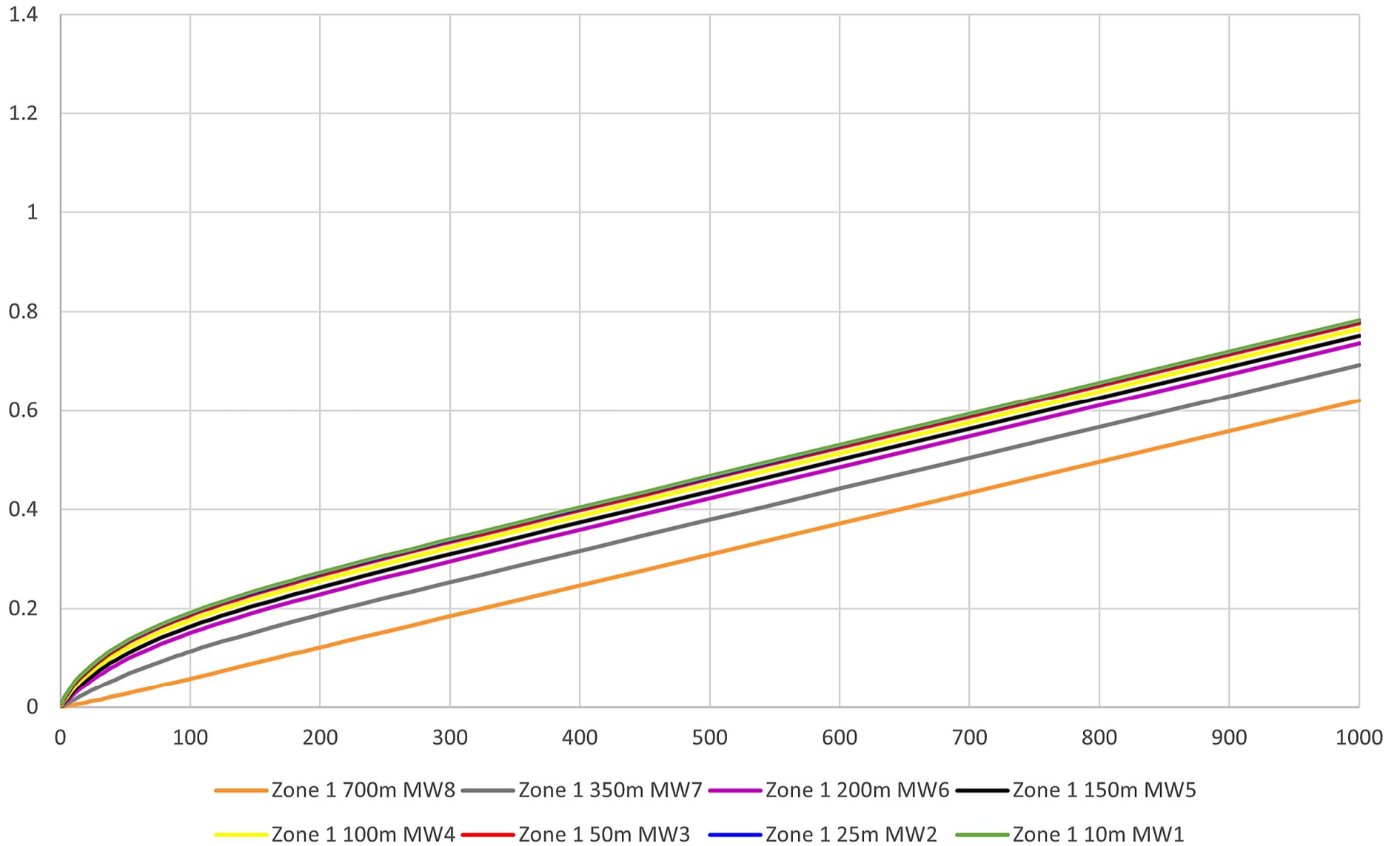
Scenario 5 Zone 1 Abandoned Well 500m



Numerical Model 6.1

Monitoring Wells in Layer 1

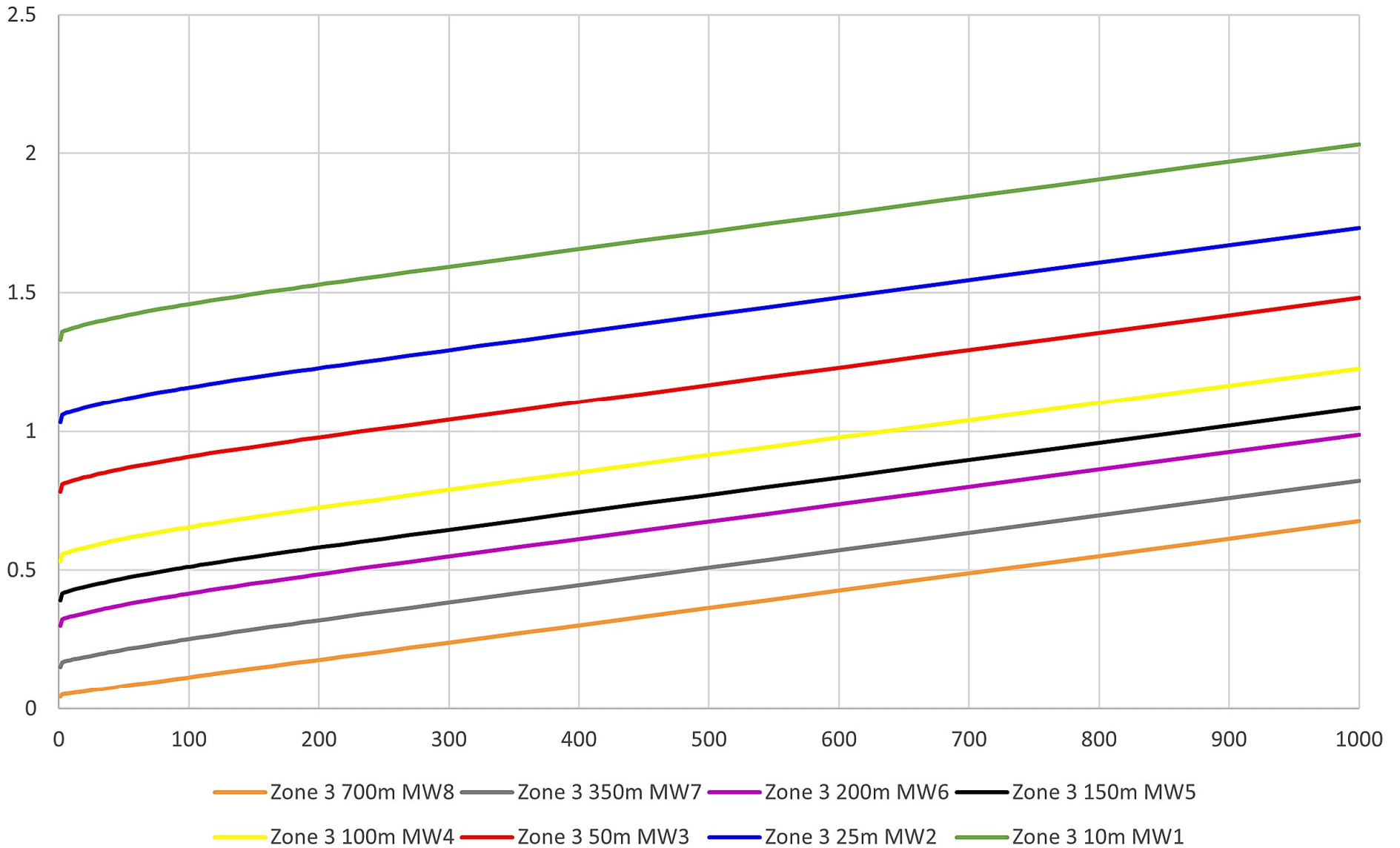
Scenario 6 Zone 3 No Abandoned Well



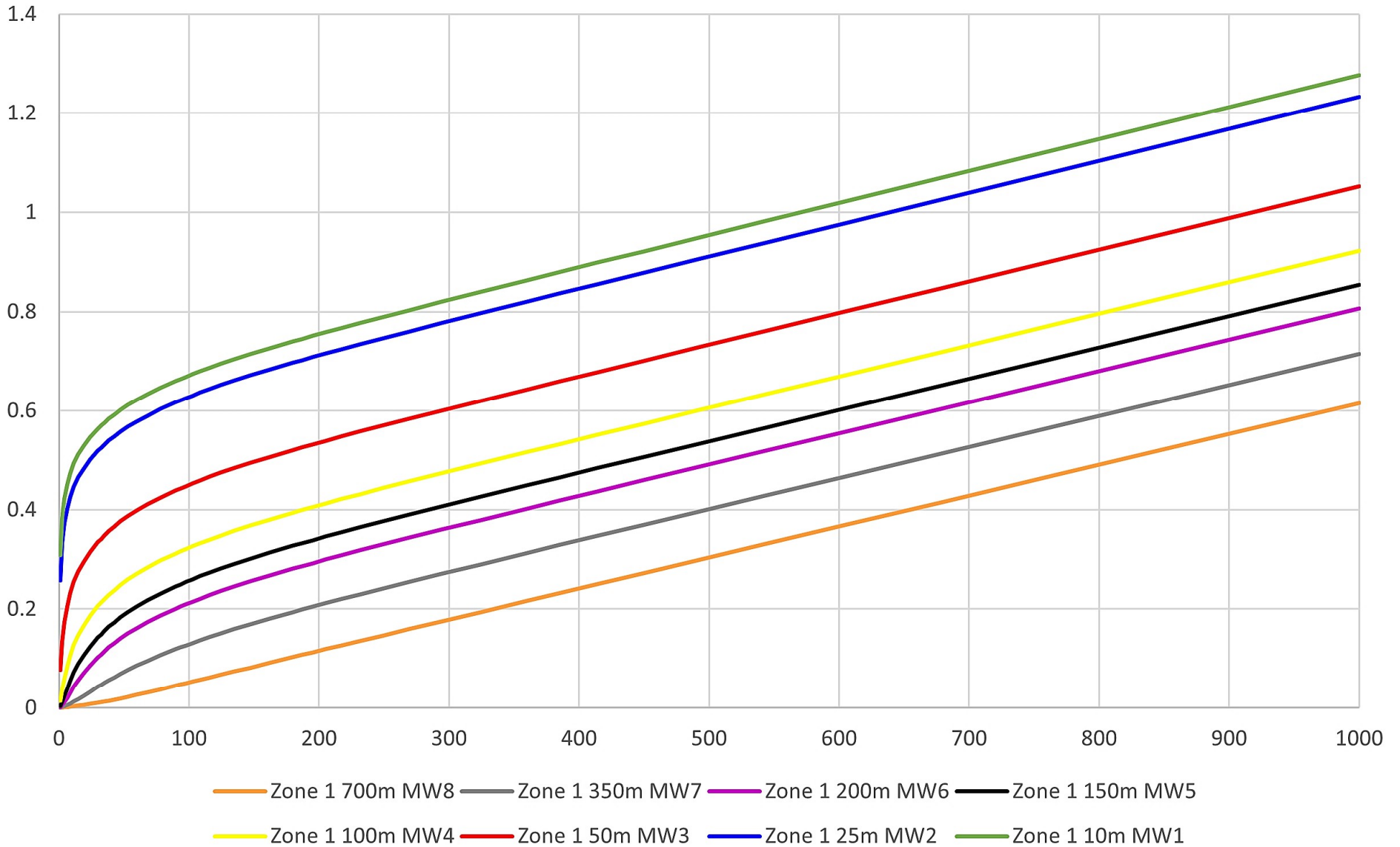
Numerical Model 6.1

Monitoring Wells in Layer 3

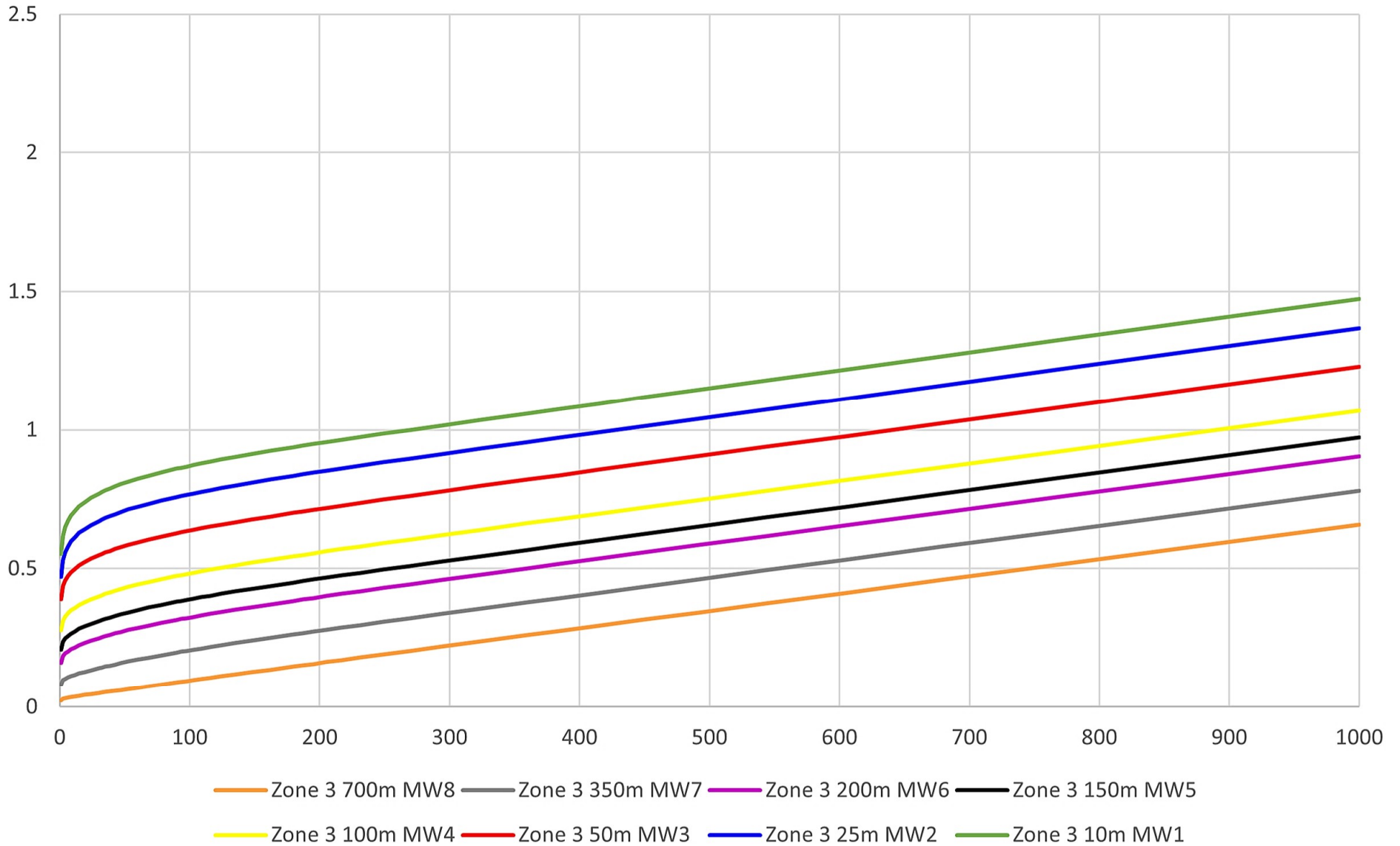
Scenario 6 Zone 3 No Abandoned Well



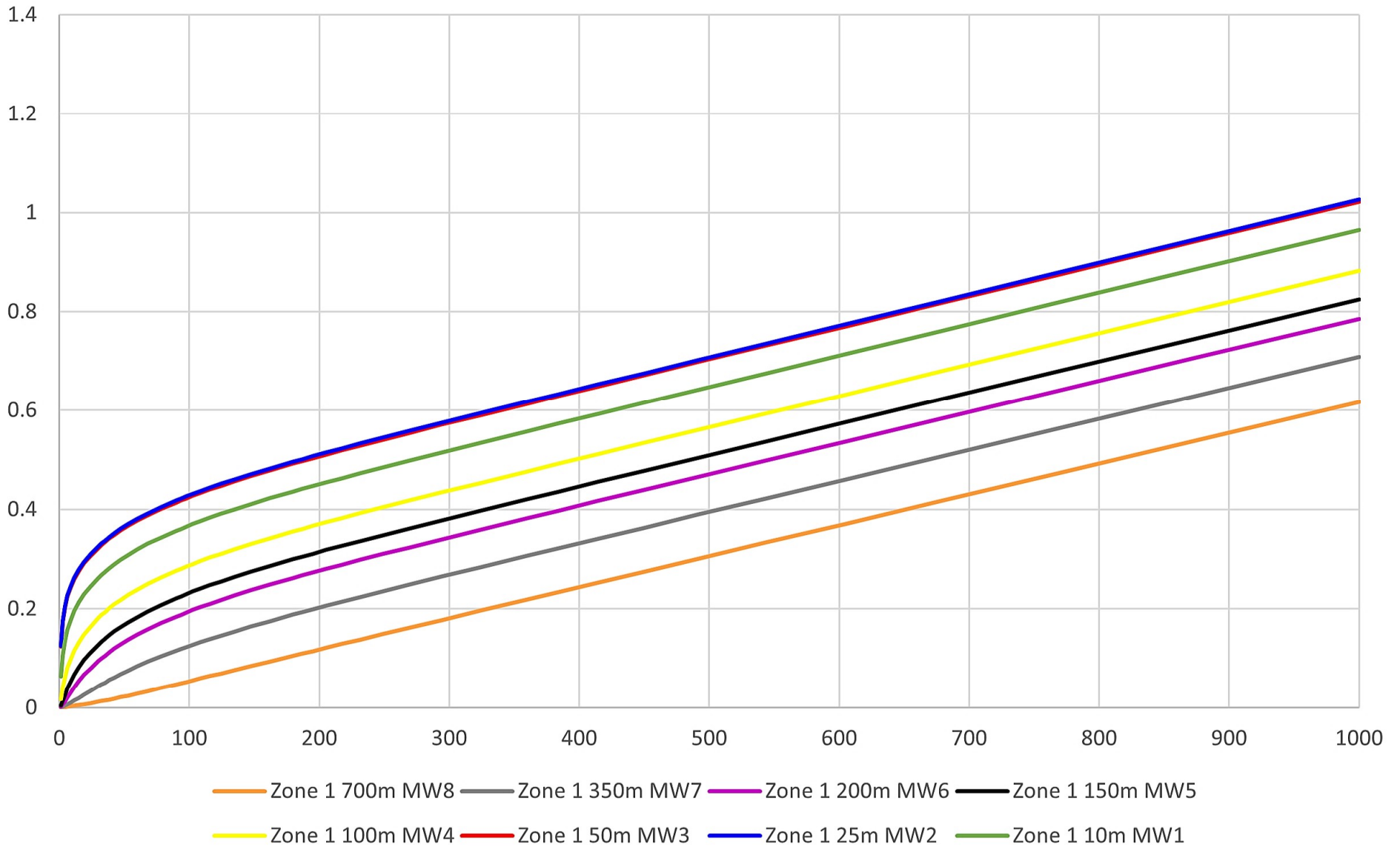
Numerical Model 6.2 Monitoring Wells in Layer 1 Scenario 6 Zone 3 Abandoned Well 20m



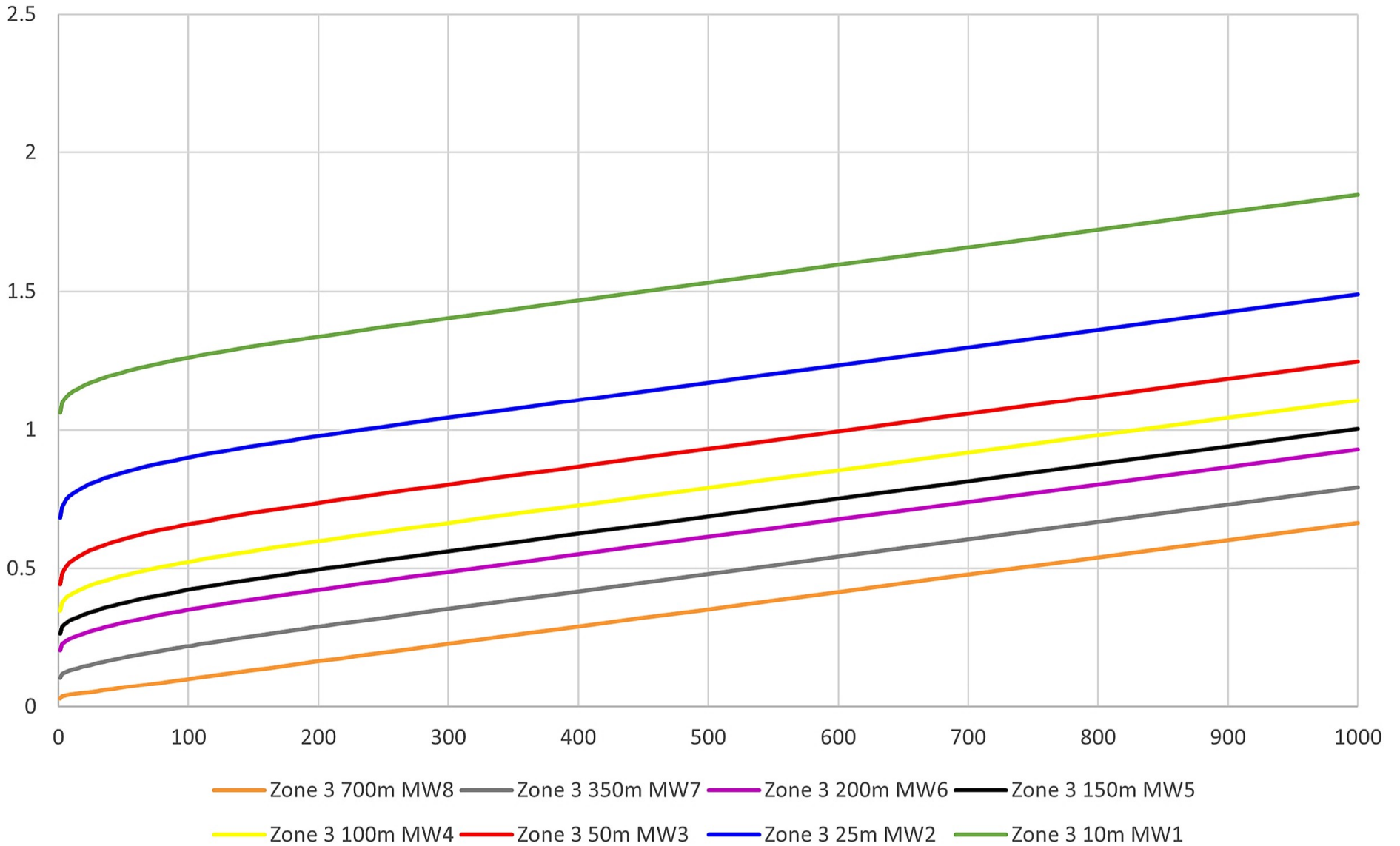
Numerical Model 6.2 Monitoring Wells in Layer 3 Scenario 6 Zone 3 Abandoned Well 20m



Numerical Model 6.3 Monitoring Wells in Layer 1 Scenario 6 Zone 3 Abandoned Well 40m



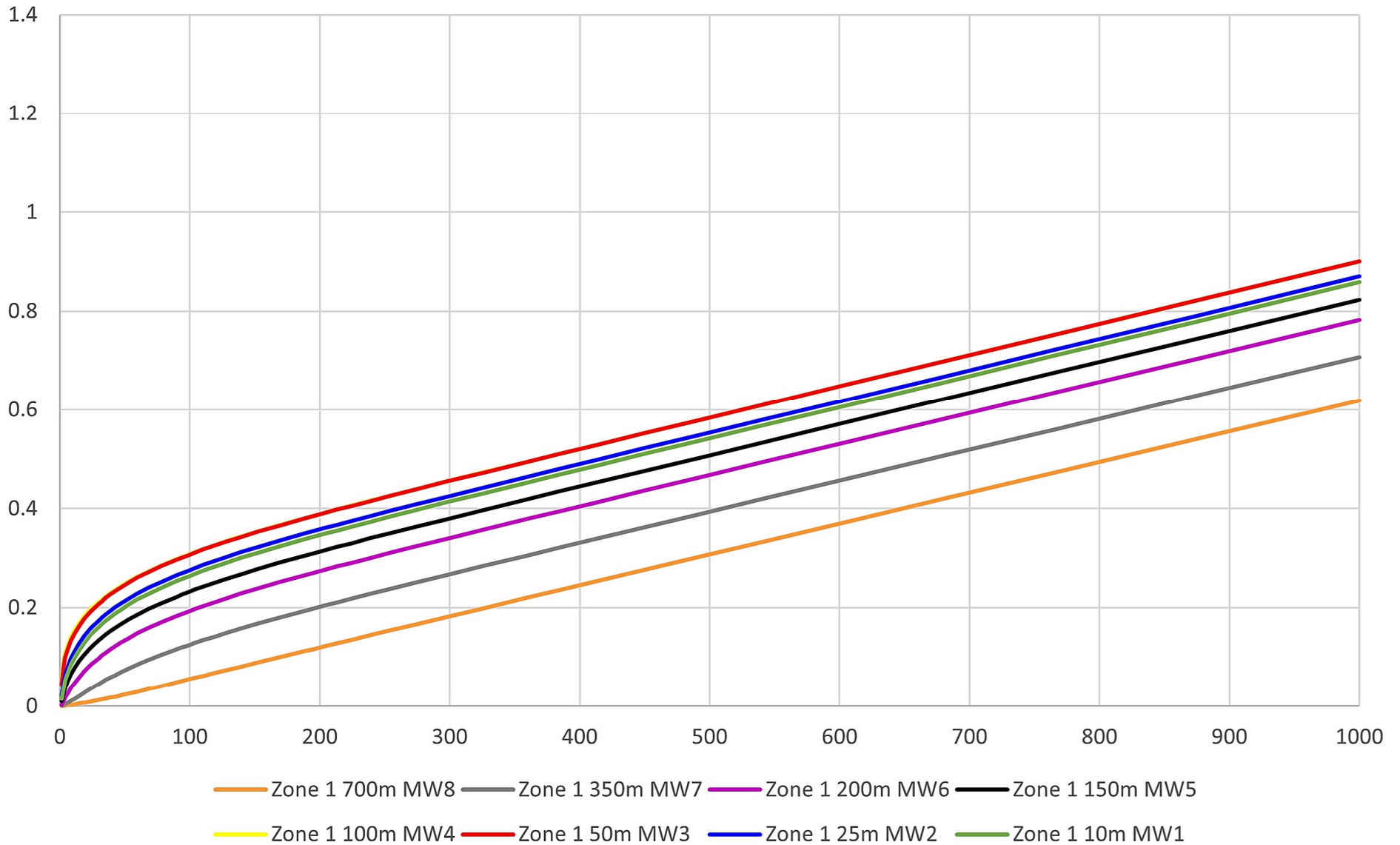
Numerical Model 6.3 Monitoring Wells in Layer 3 Scenario 6 Zone 3 Abandoned Well 40m



Numerical Model 6.4

Monitoring Wells in Layer 1

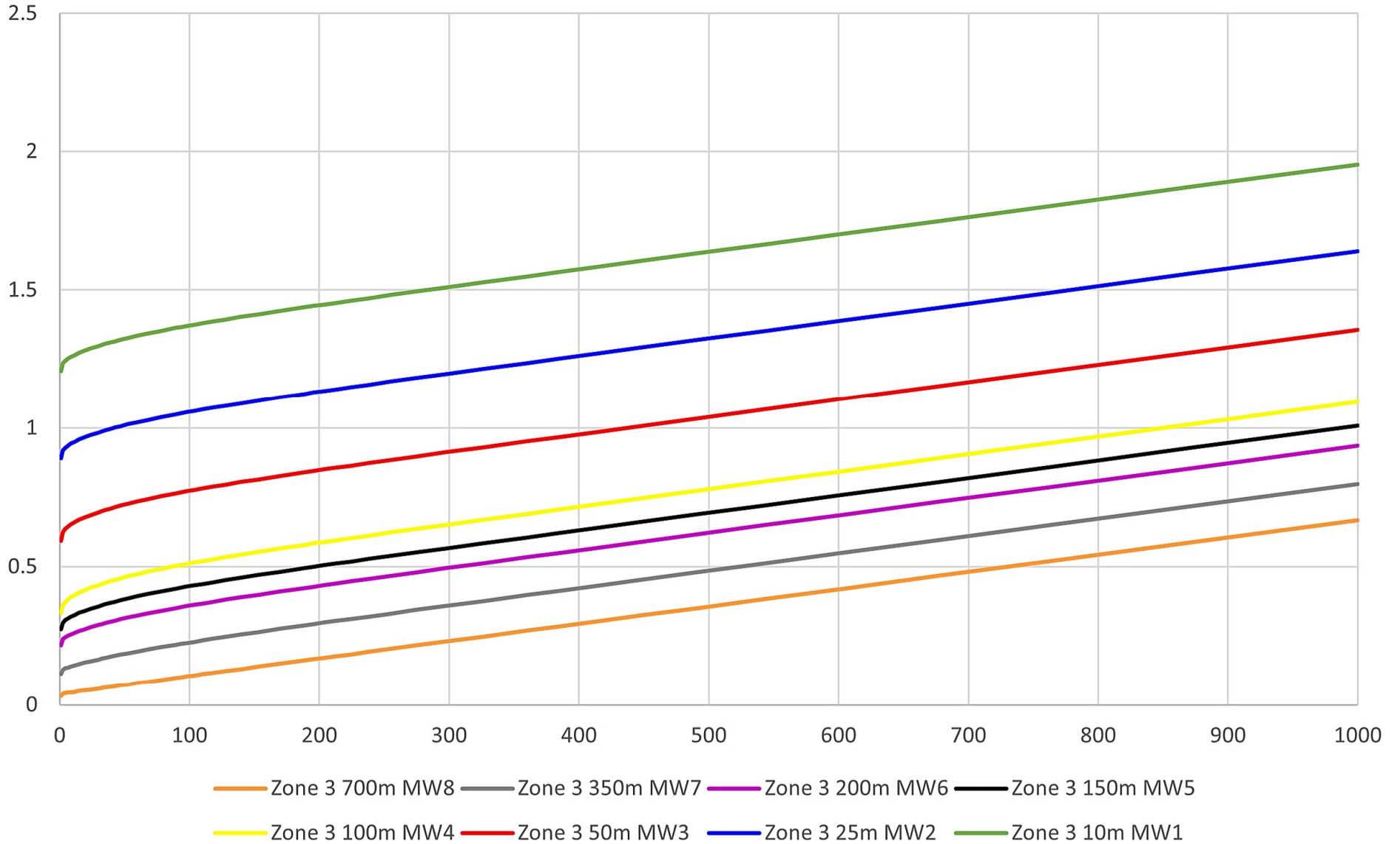
Scenario 6 Zone 3 Abandoned Well 80m



Numerical Model 6.4

Monitoring Wells in Layer 3

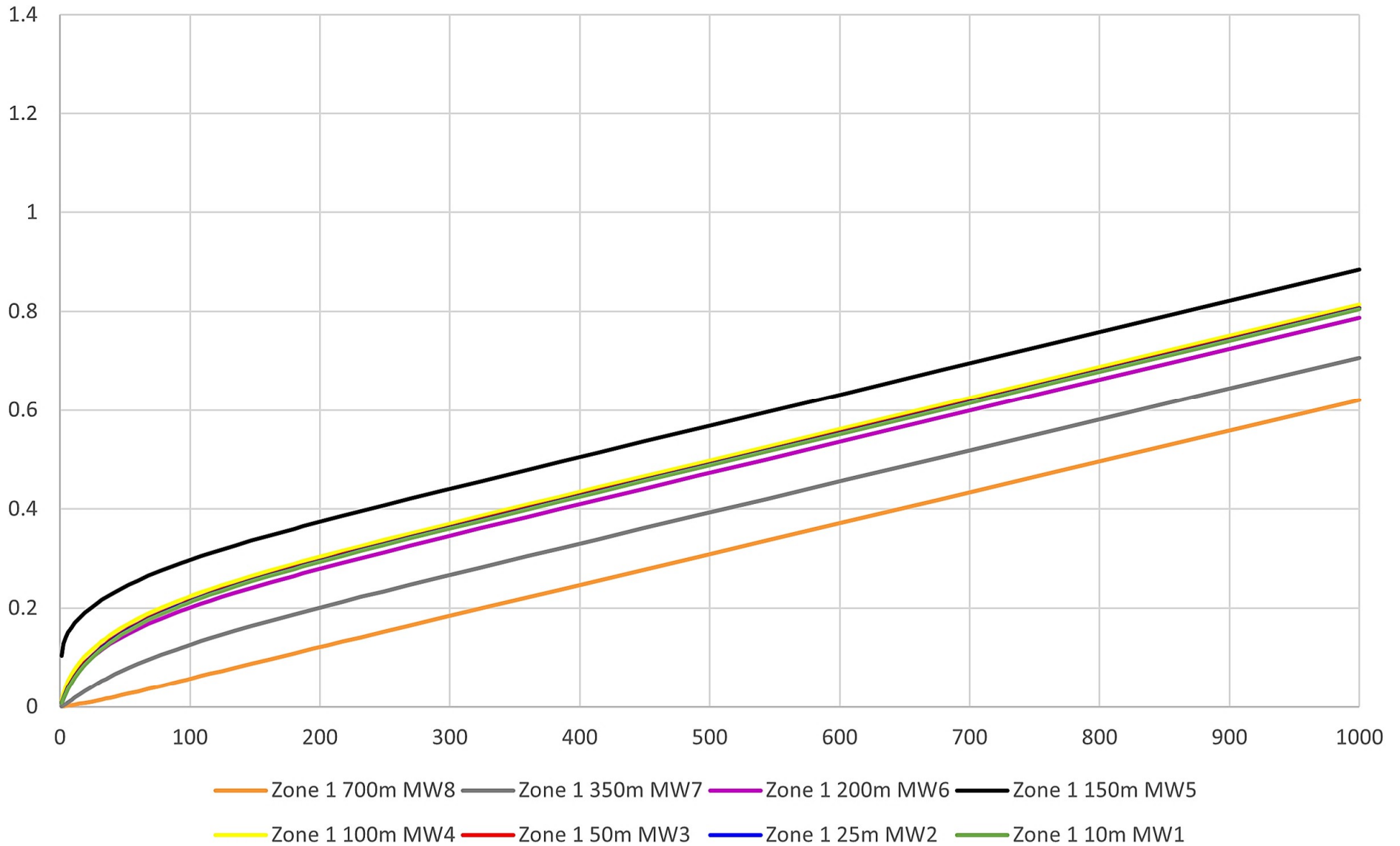
Scenario 6 Zone 3 Abandoned Well 80m



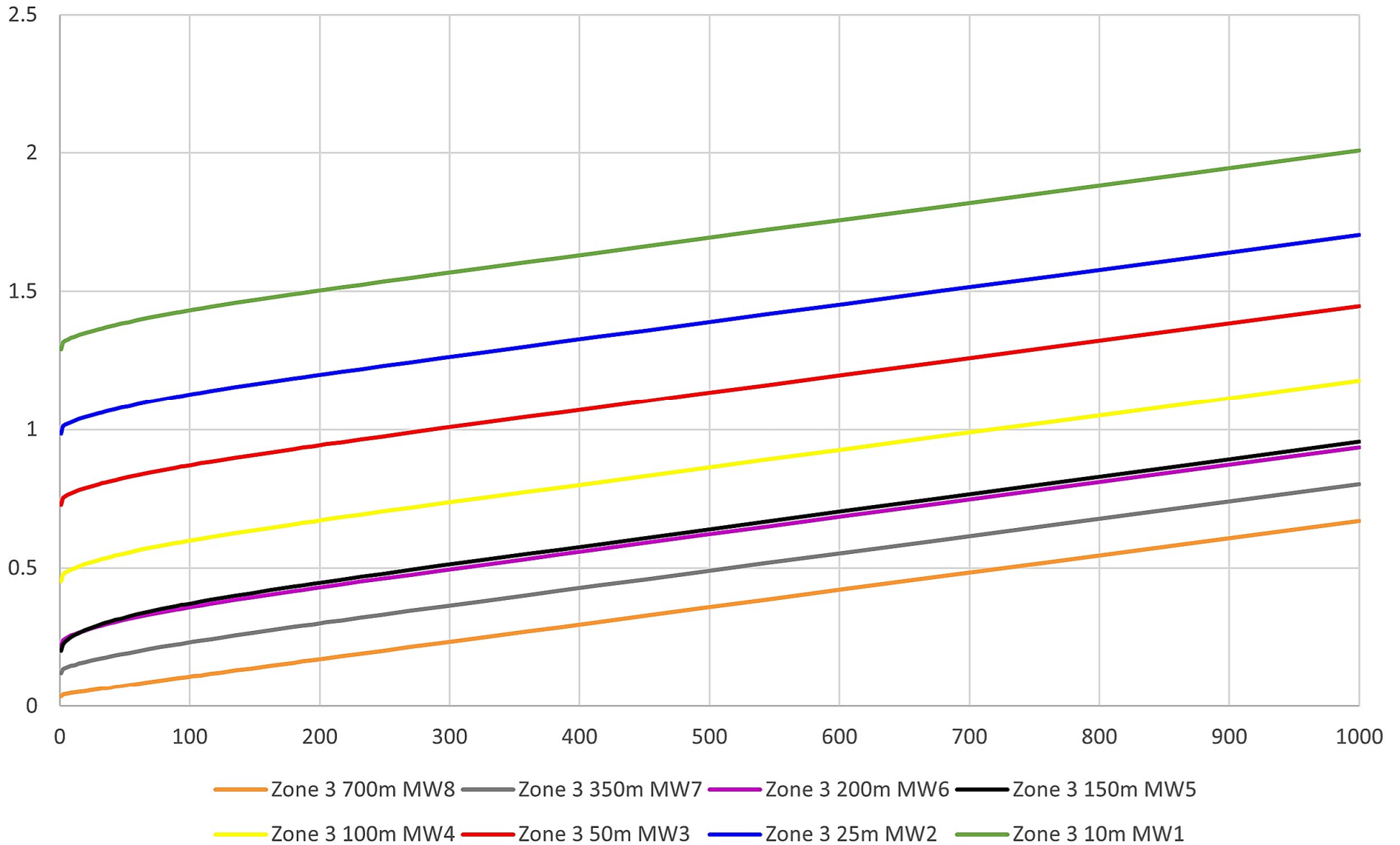
Numerical Model 6.5

Monitoring Wells in Layer 1

Scenario 6 Zone 3 Abandoned Well 160m



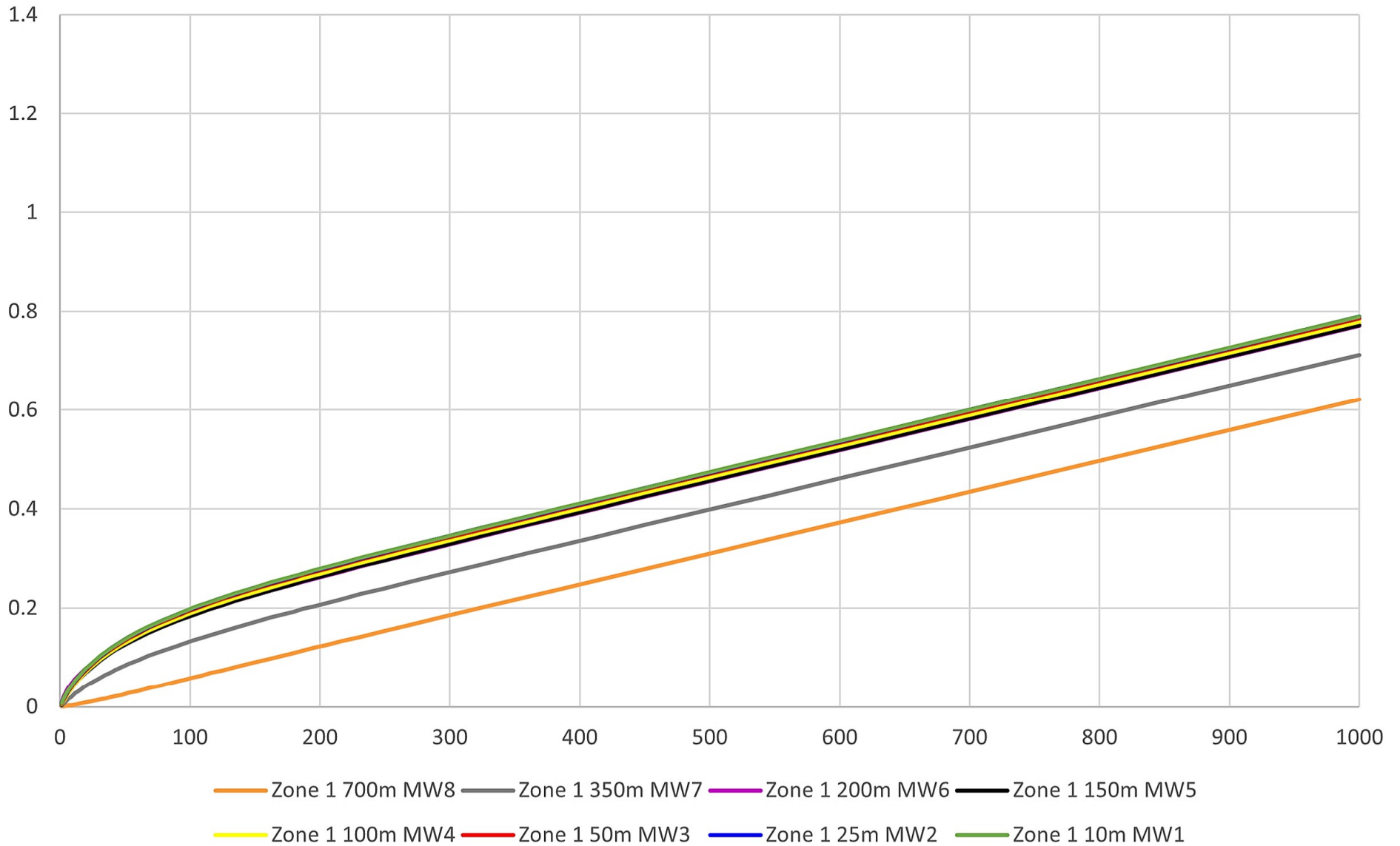
Numerical Model 6.5 Monitoring Wells in Layer 3 Scenario 6 Zone 3 Abandoned Well 160m



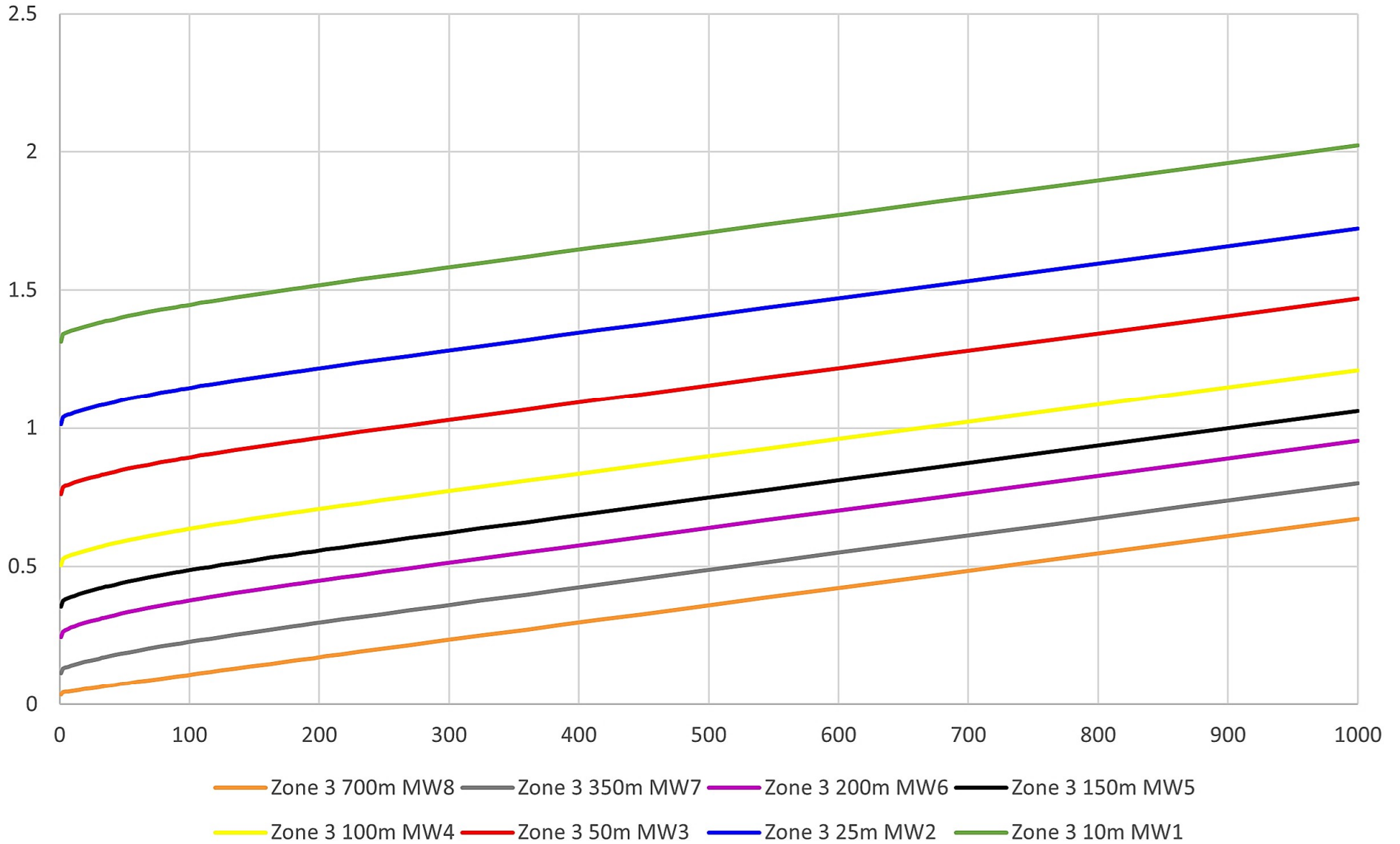
Numerical Model 6.6

Monitoring Wells in Layer 1

Scenario 6 Zone 3 Abandoned Well 250m



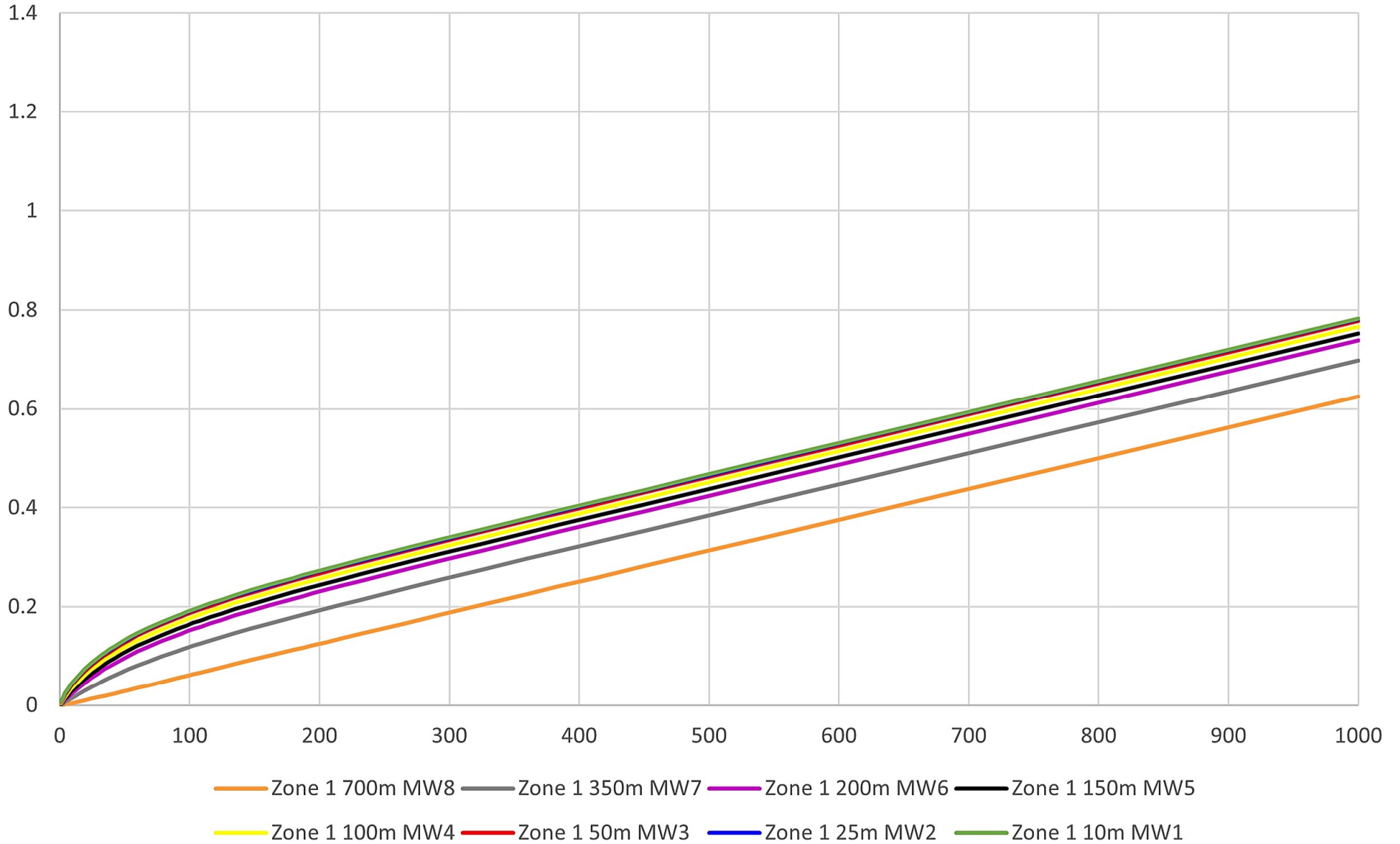
Numerical Model 6.6 Monitoring Wells in Layer 3 Scenario 6 Zone 3 Abandoned Well 250m



Numerical Model 6.7

Monitoring Wells in Layer 1

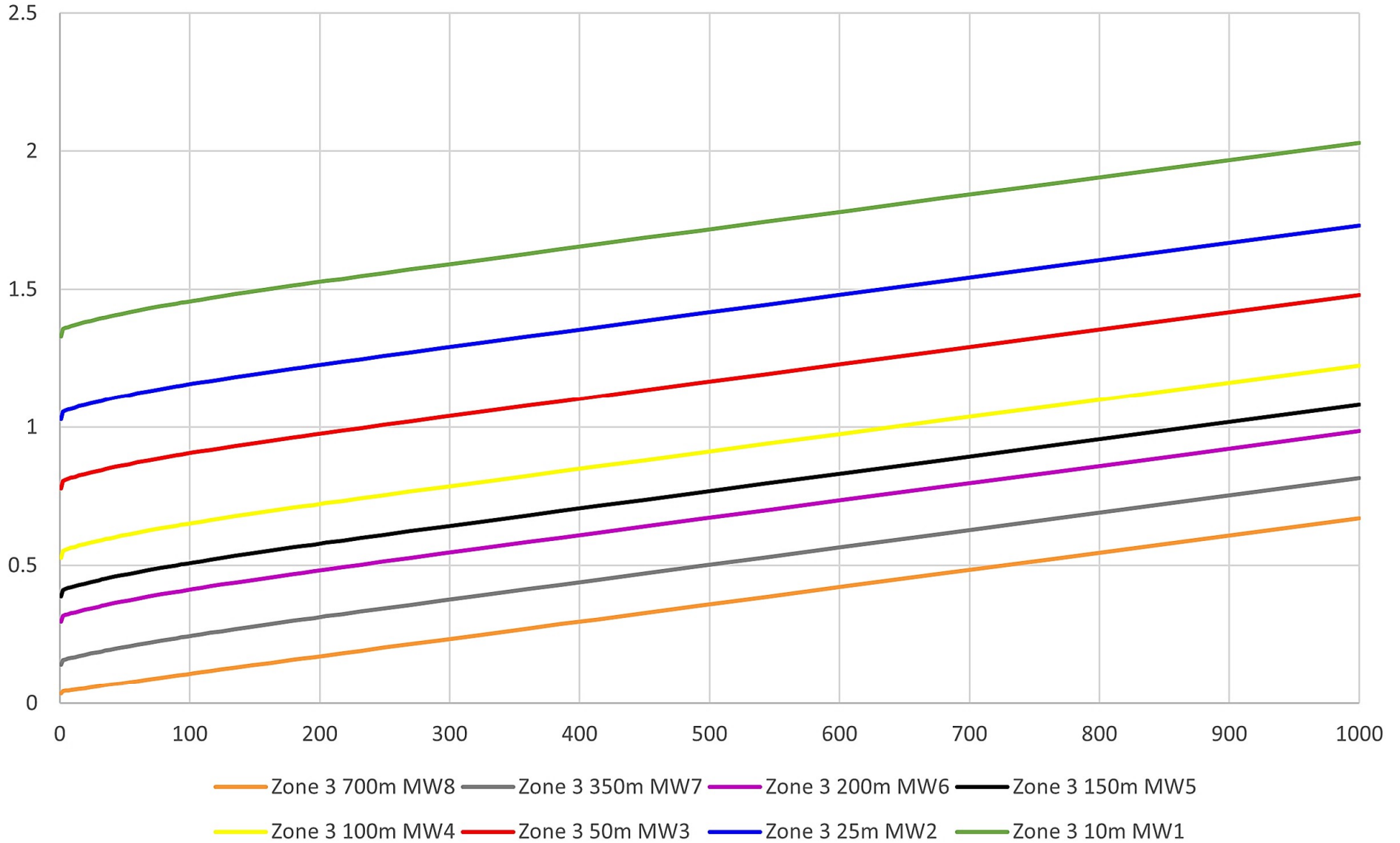
Scenario 6 Zone 3 Abandoned Well 500m



Numerical Model 6.7

Monitoring Wells in Layer 3

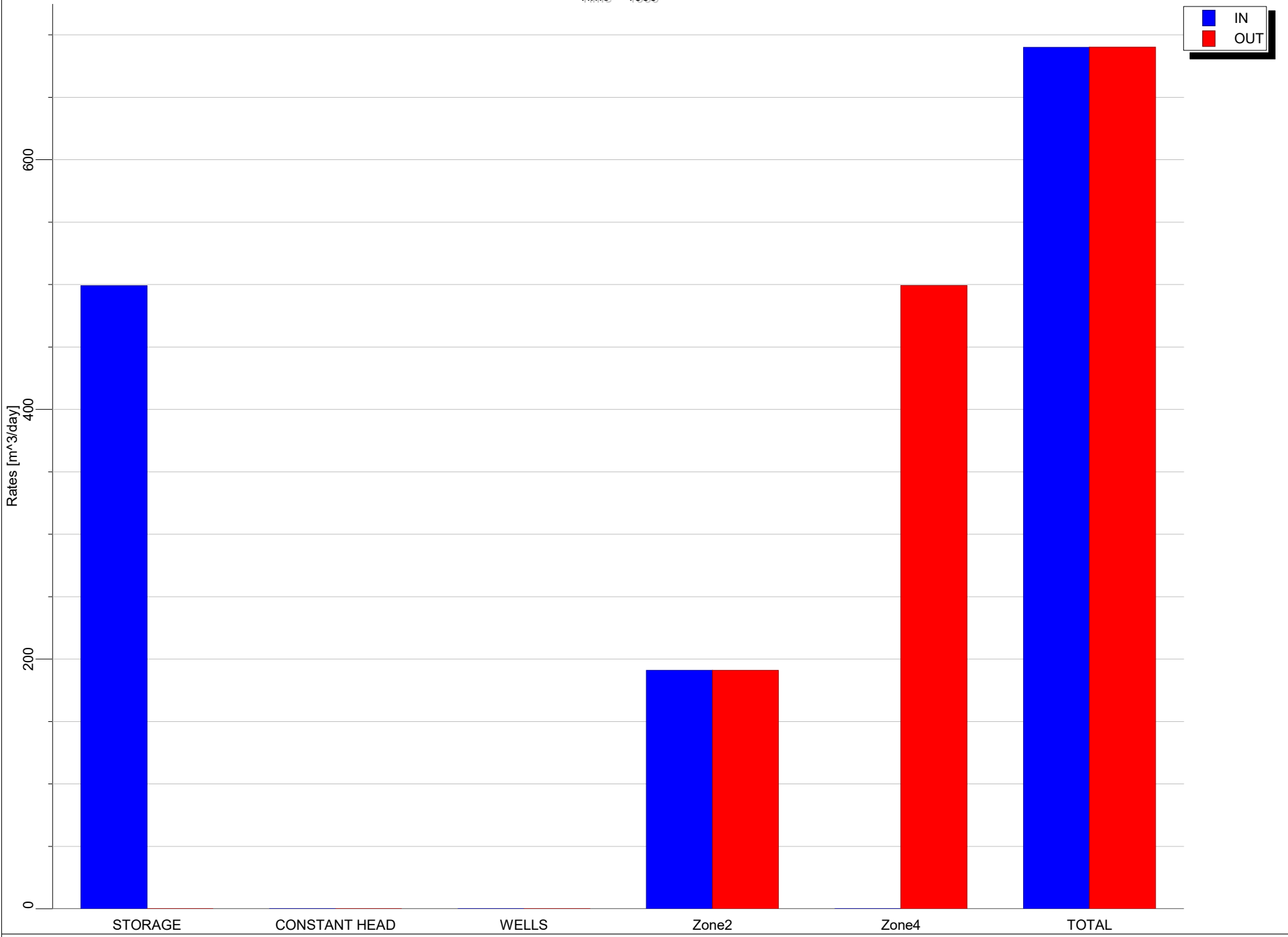
Scenario 6 Zone 3 Abandoned Well 500m



Appendix C: Zone Budget Charts

Appendix C - Zone Budget Charts

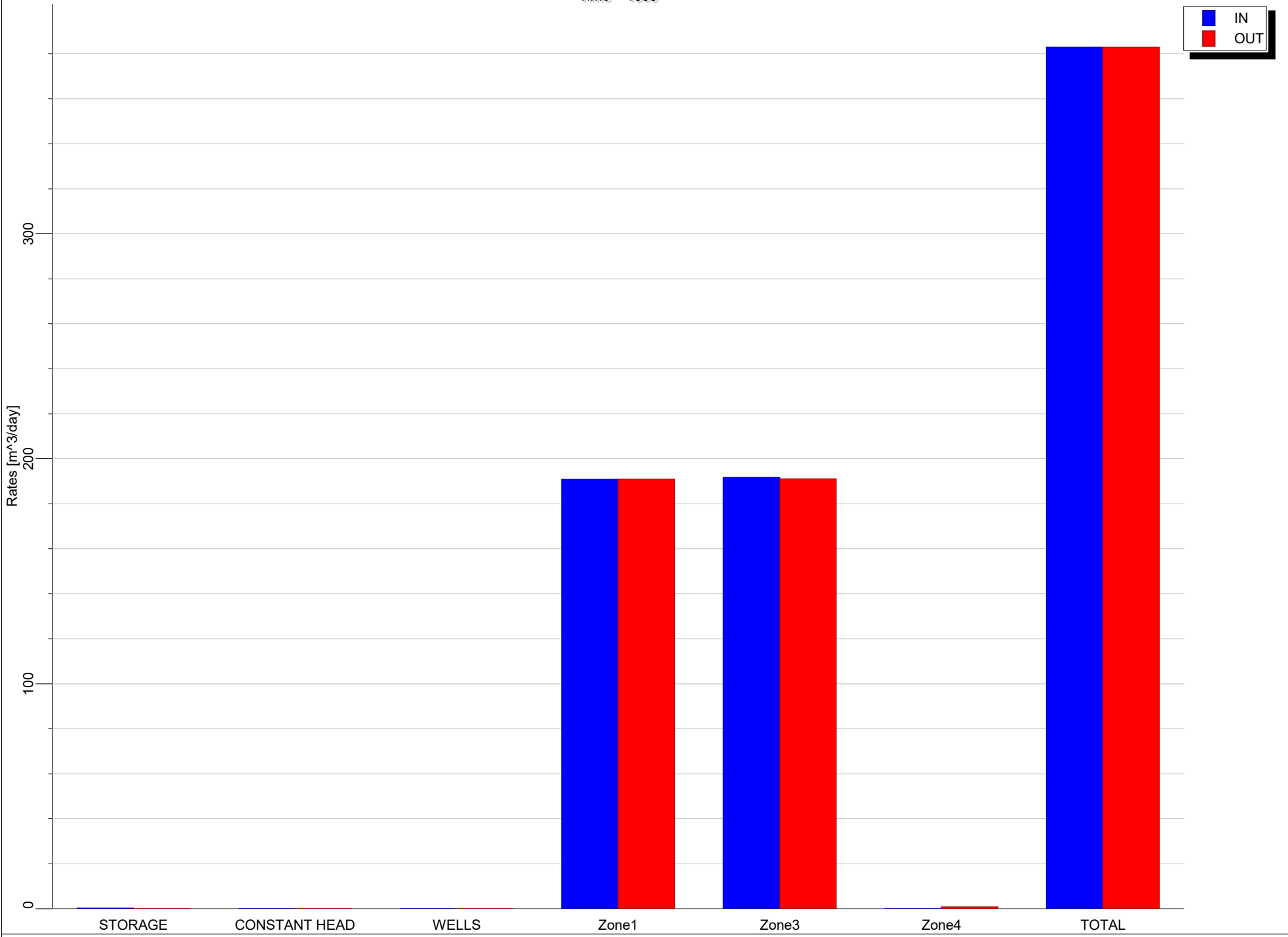
Time = 1000



Zone 1
Scenario 1.1
No Abandoned Well

Appendix C - Zone Budget Charts

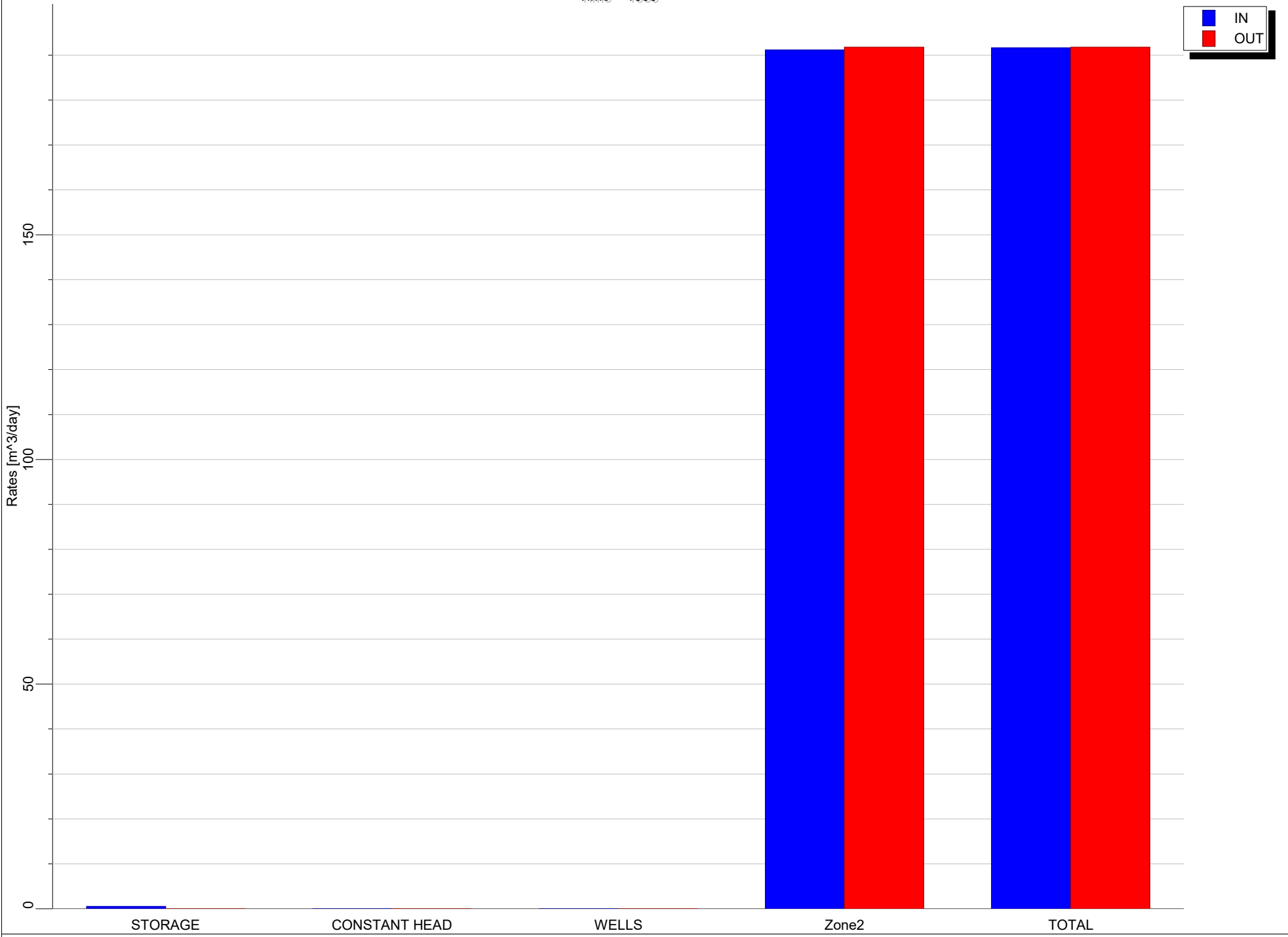
Time = 1000



Zone 2
Scenario 1.1
No Abandoned Well

Appendix C - Zone Budget Charts

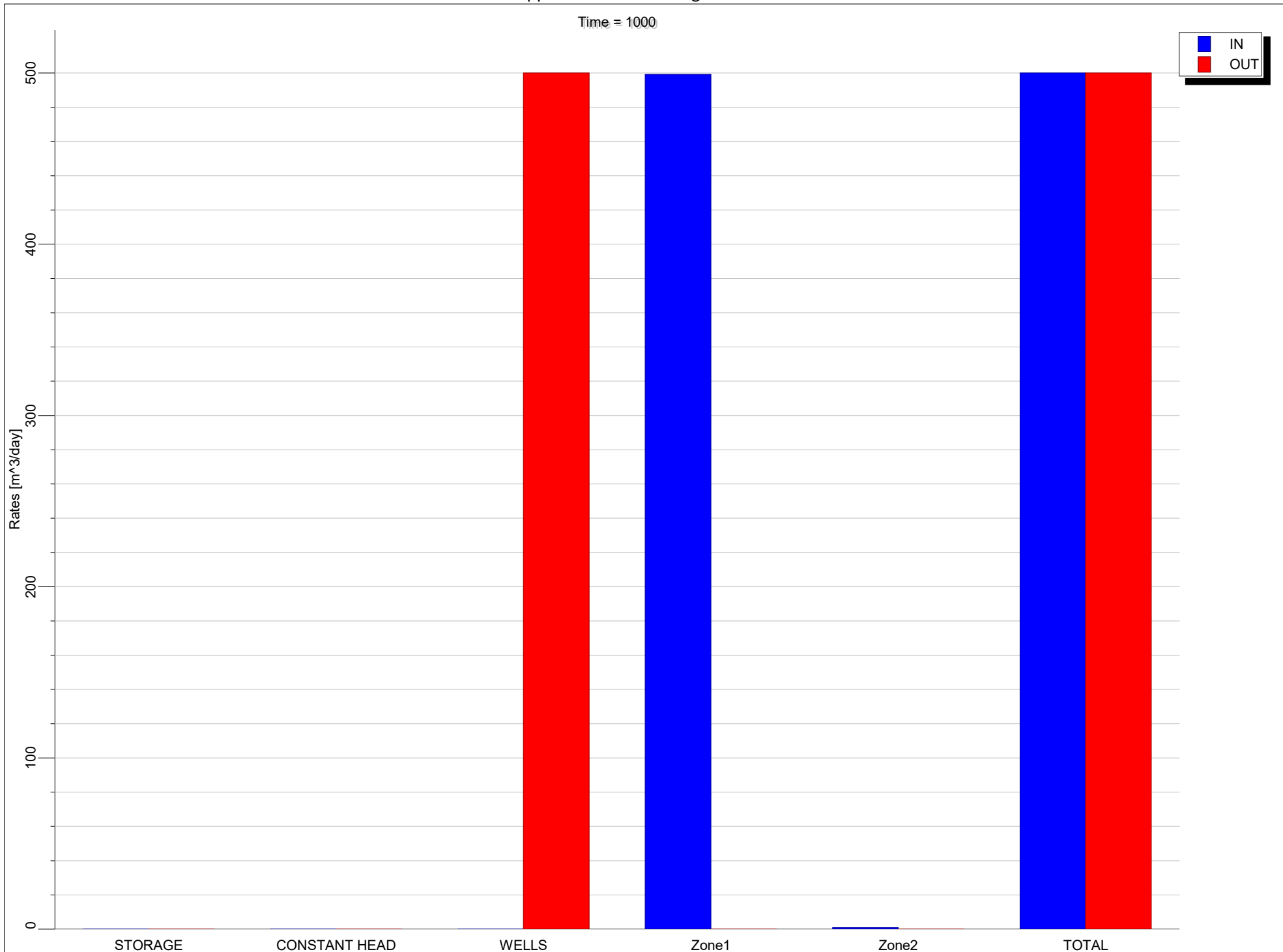
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Zone 3
Scenario 1.1
No Abandoned Well

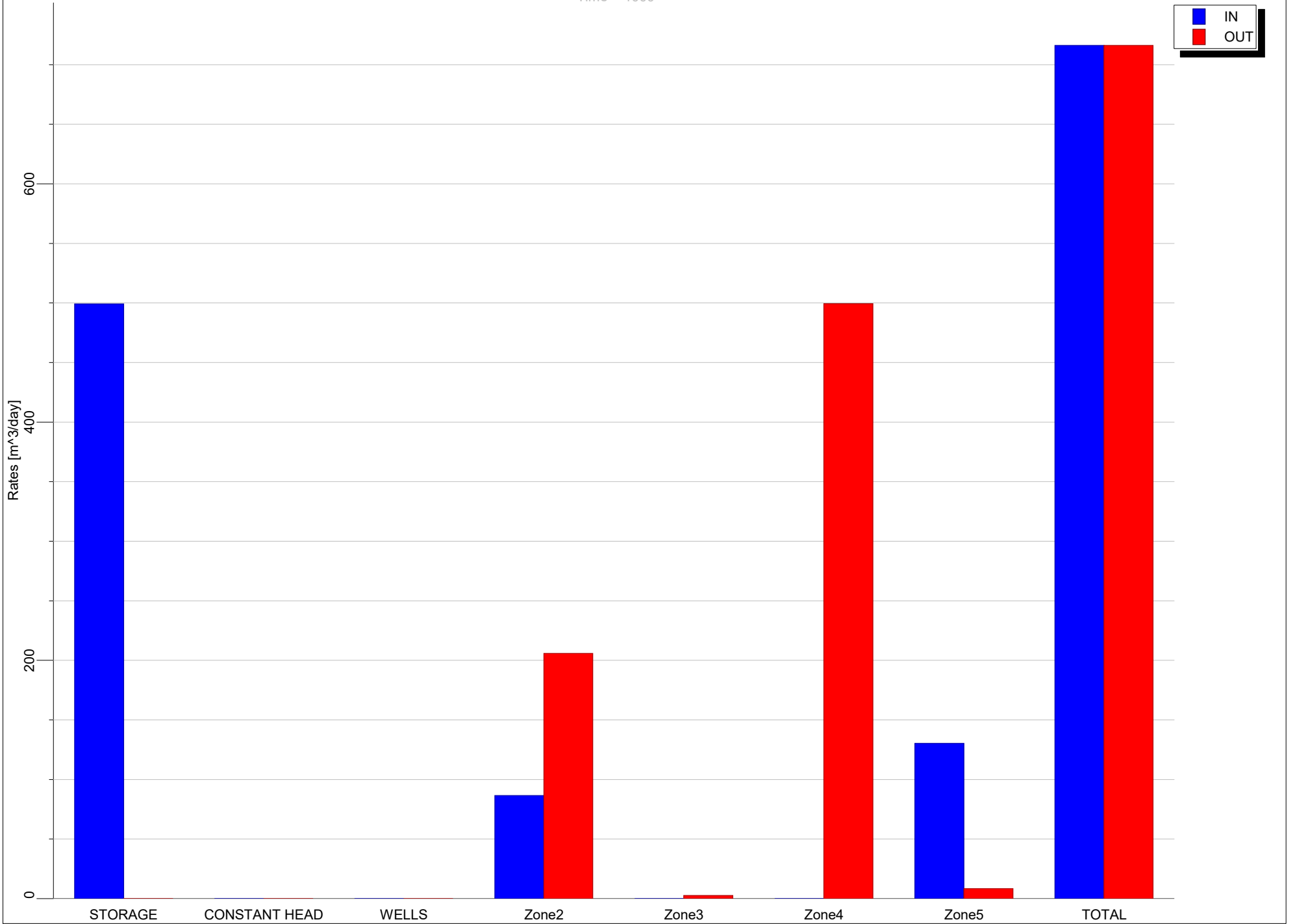
Appendix C - Zone Budget Charts

Time = 1000



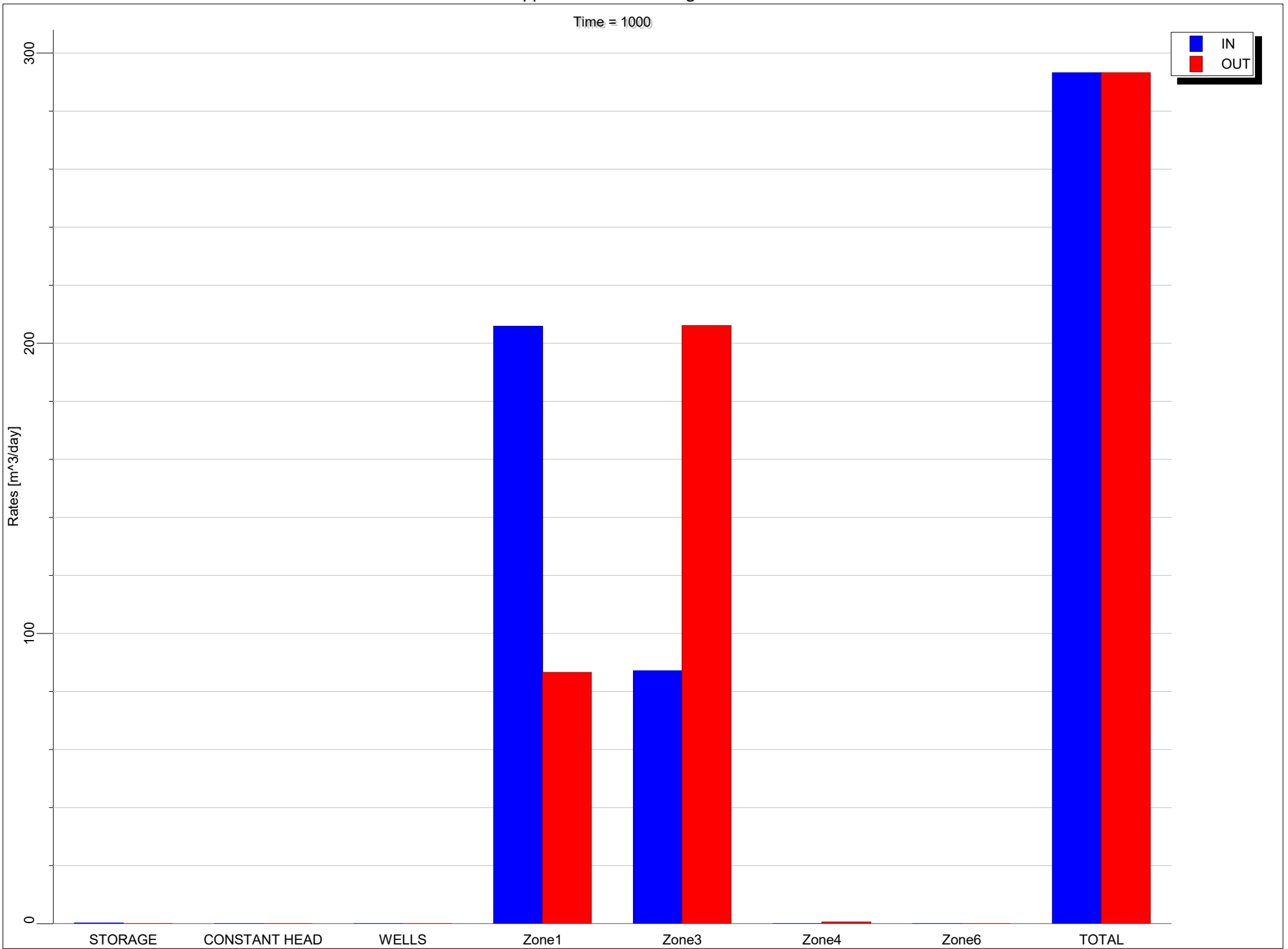
Appendix C - Zone Budget Charts

Time = 1000



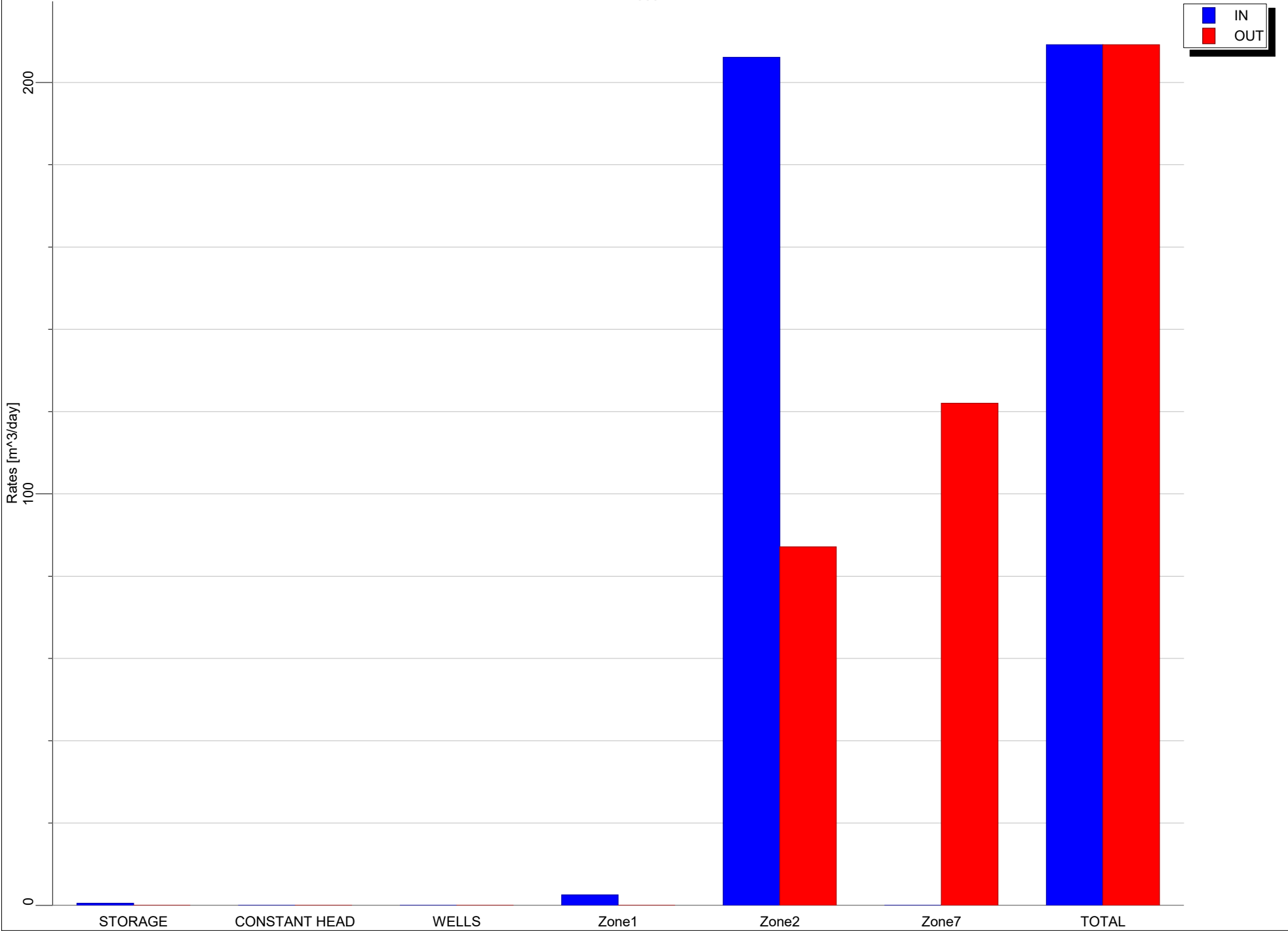
Appendix C - Zone Budget Charts

Time = 1000



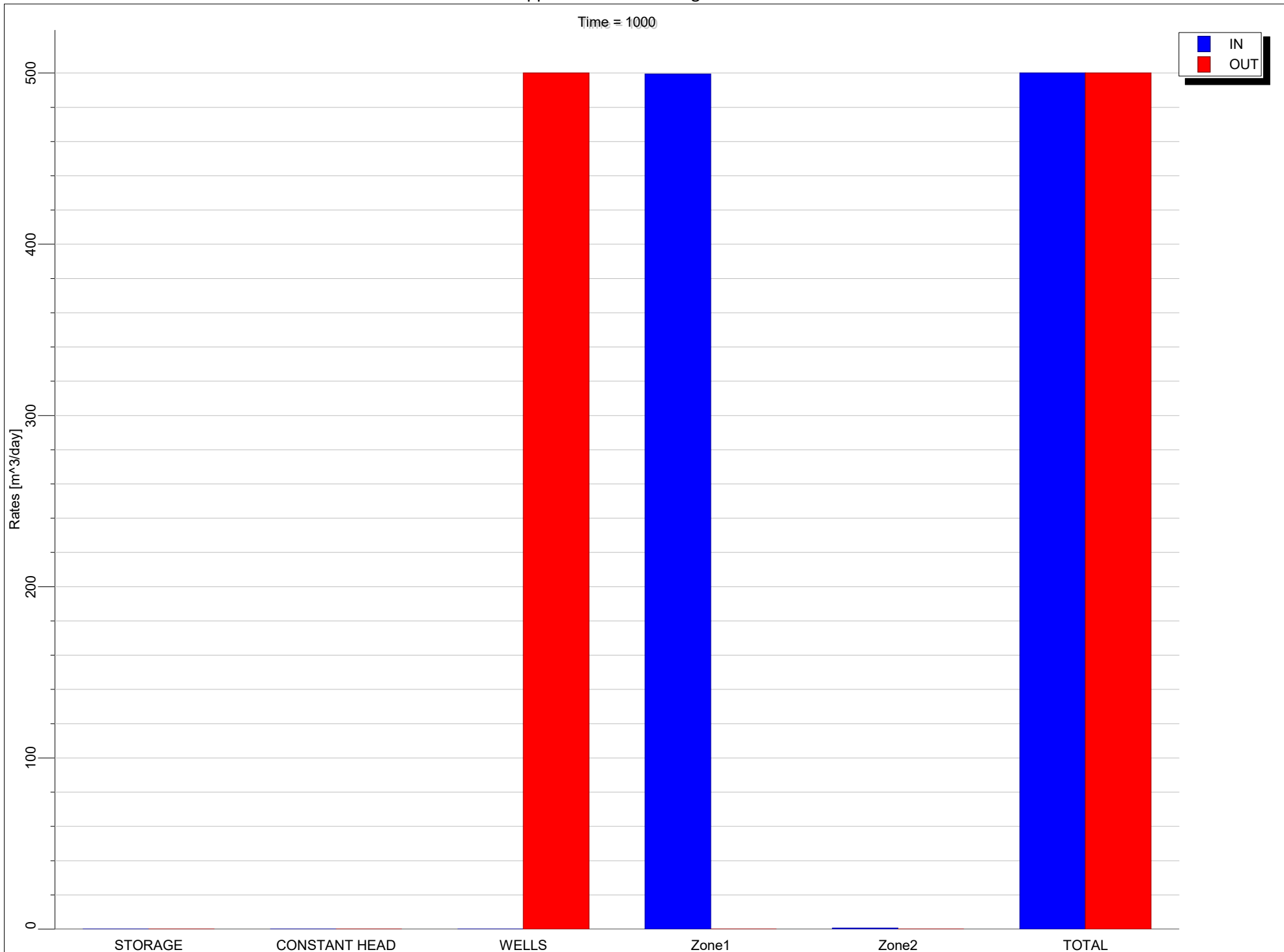
Appendix C - Zone Budget Charts

Time = 1000



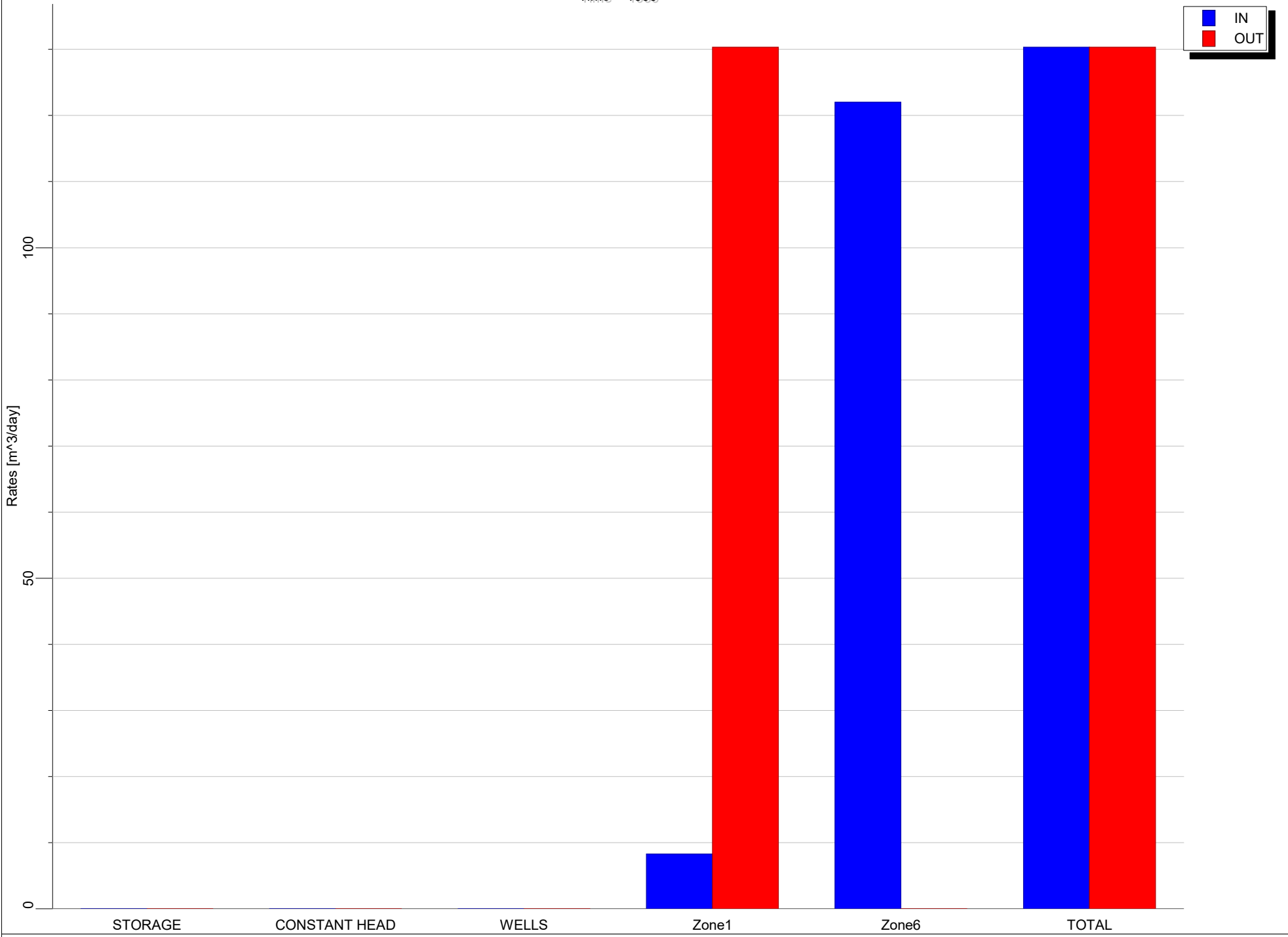
Appendix C - Zone Budget Charts

Time = 1000



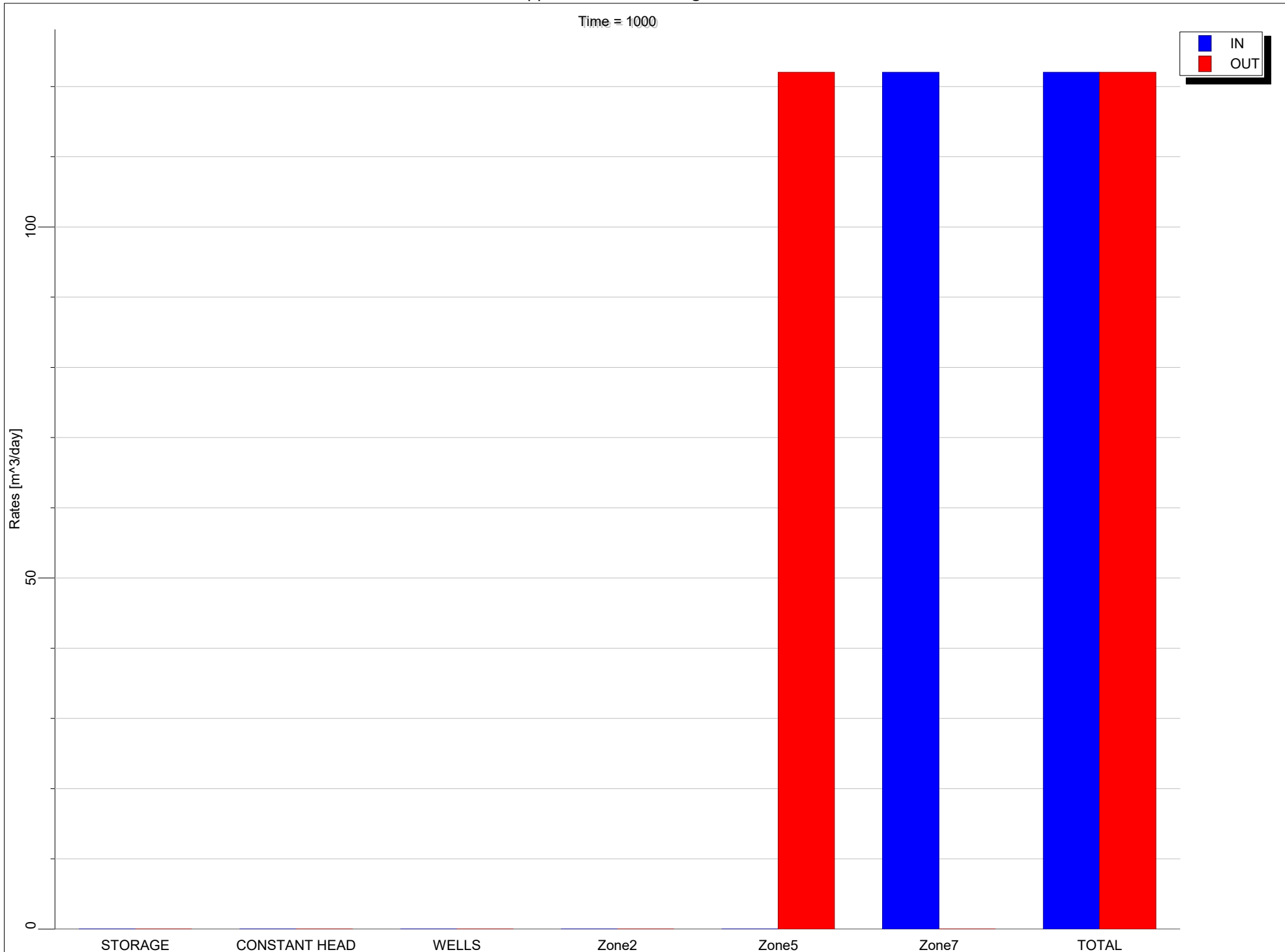
Appendix C - Zone Budget Charts

Time = 1000



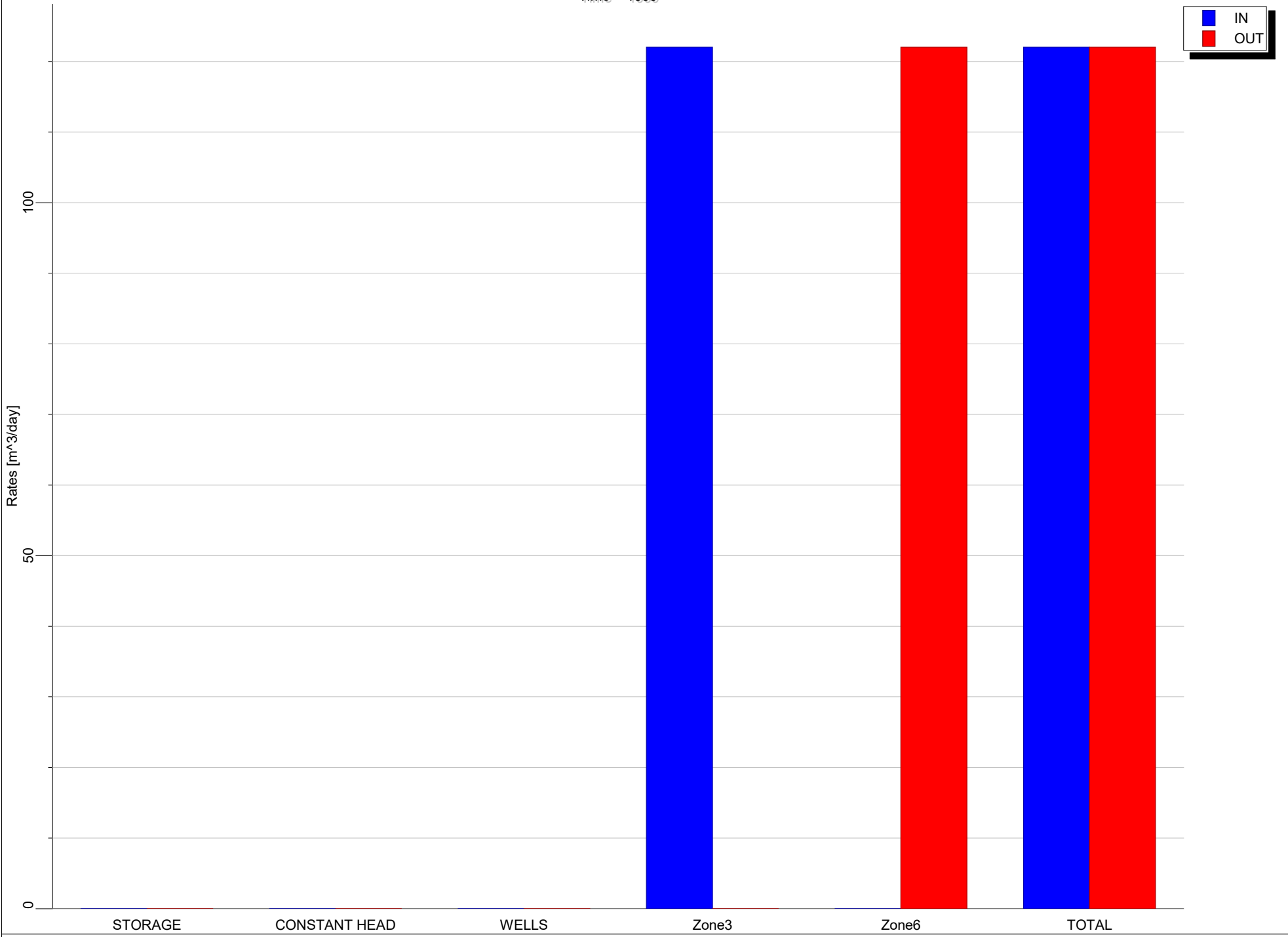
Appendix C - Zone Budget Charts

Time = 1000



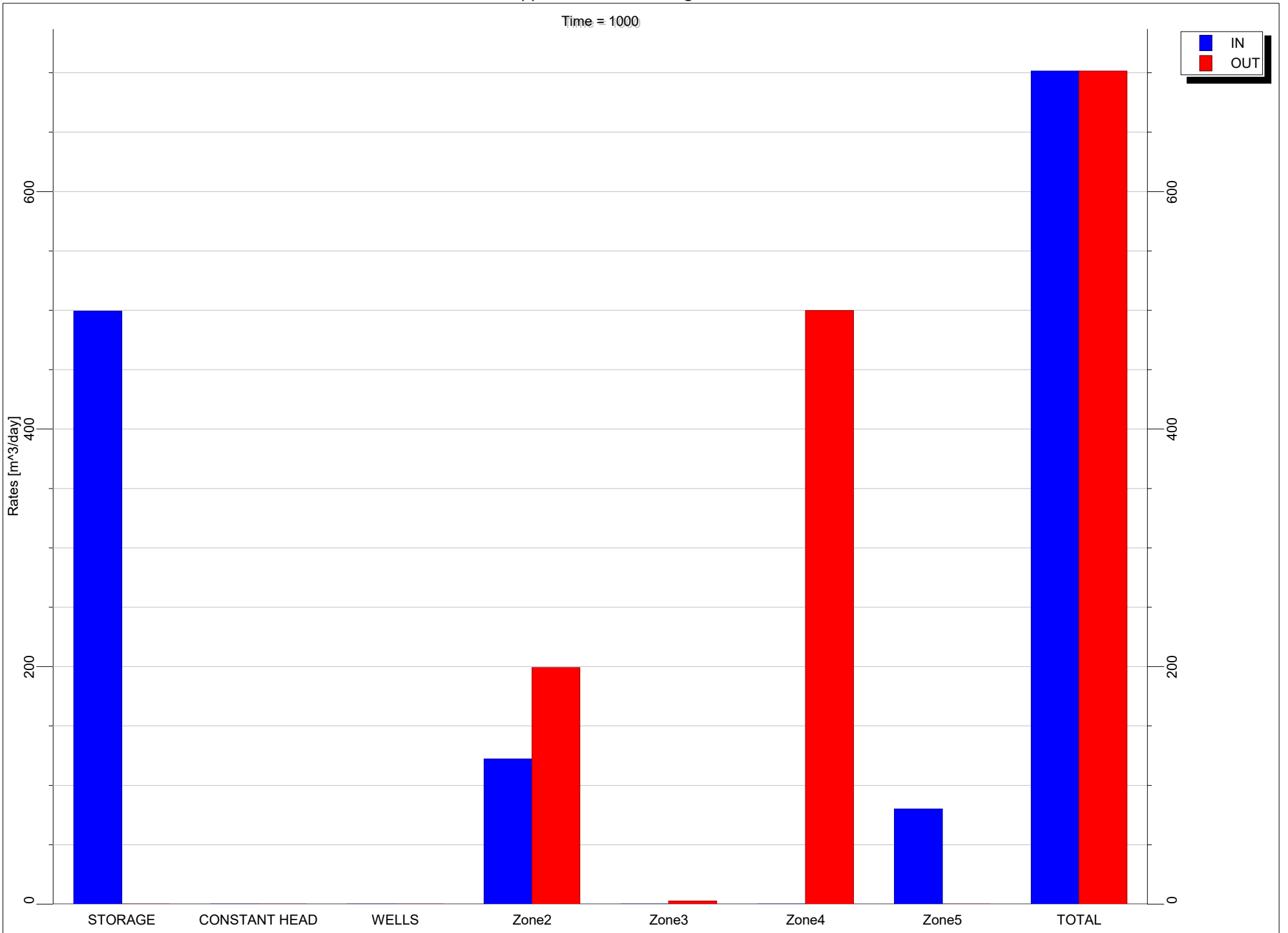
Appendix C - Zone Budget Charts

Time = 1000



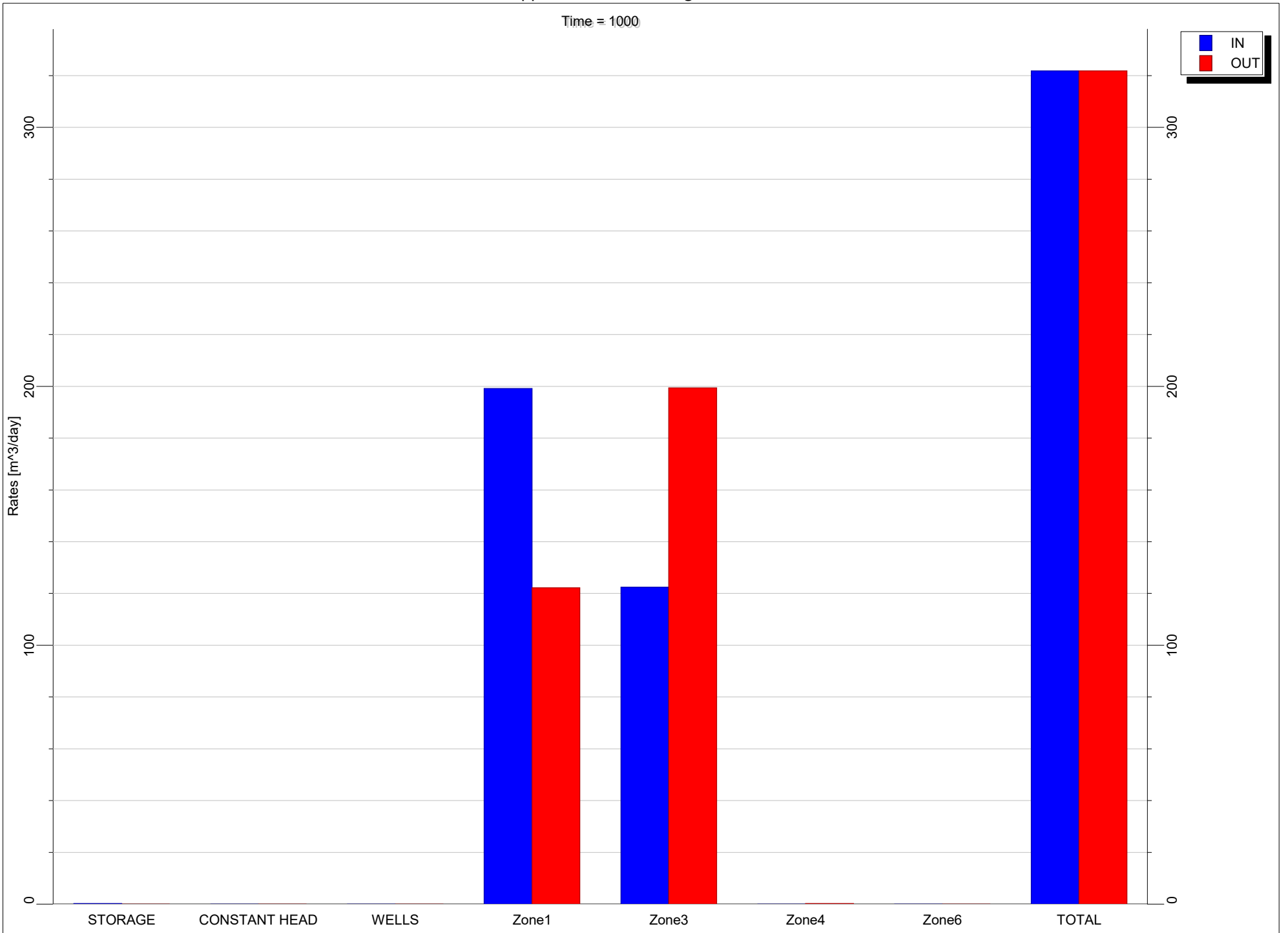
Appendix C - Zone Budget Charts

Time = 1000



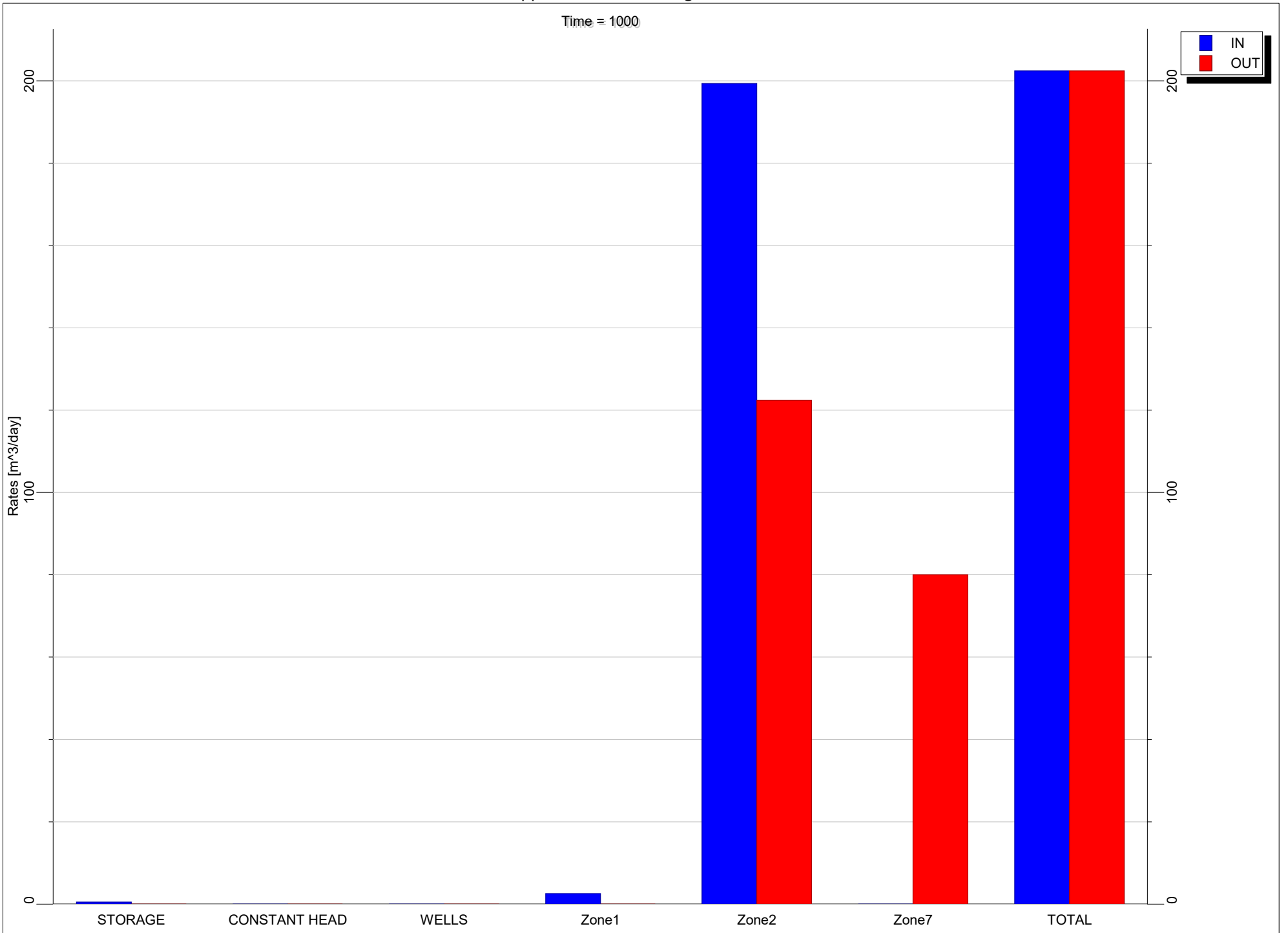
Appendix C - Zone Budget Charts

Time = 1000



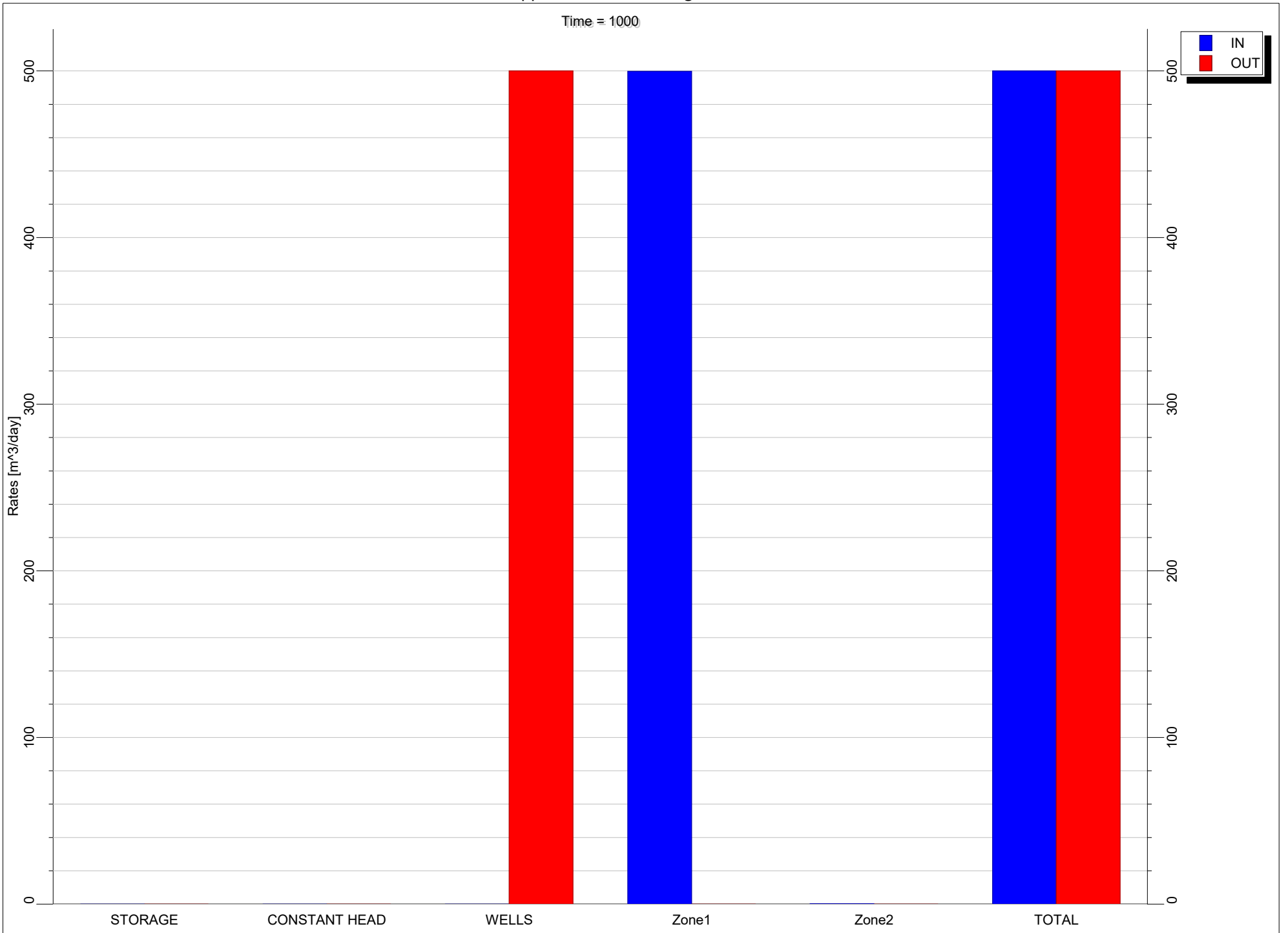
Appendix C - Zone Budget Charts

Time = 1000



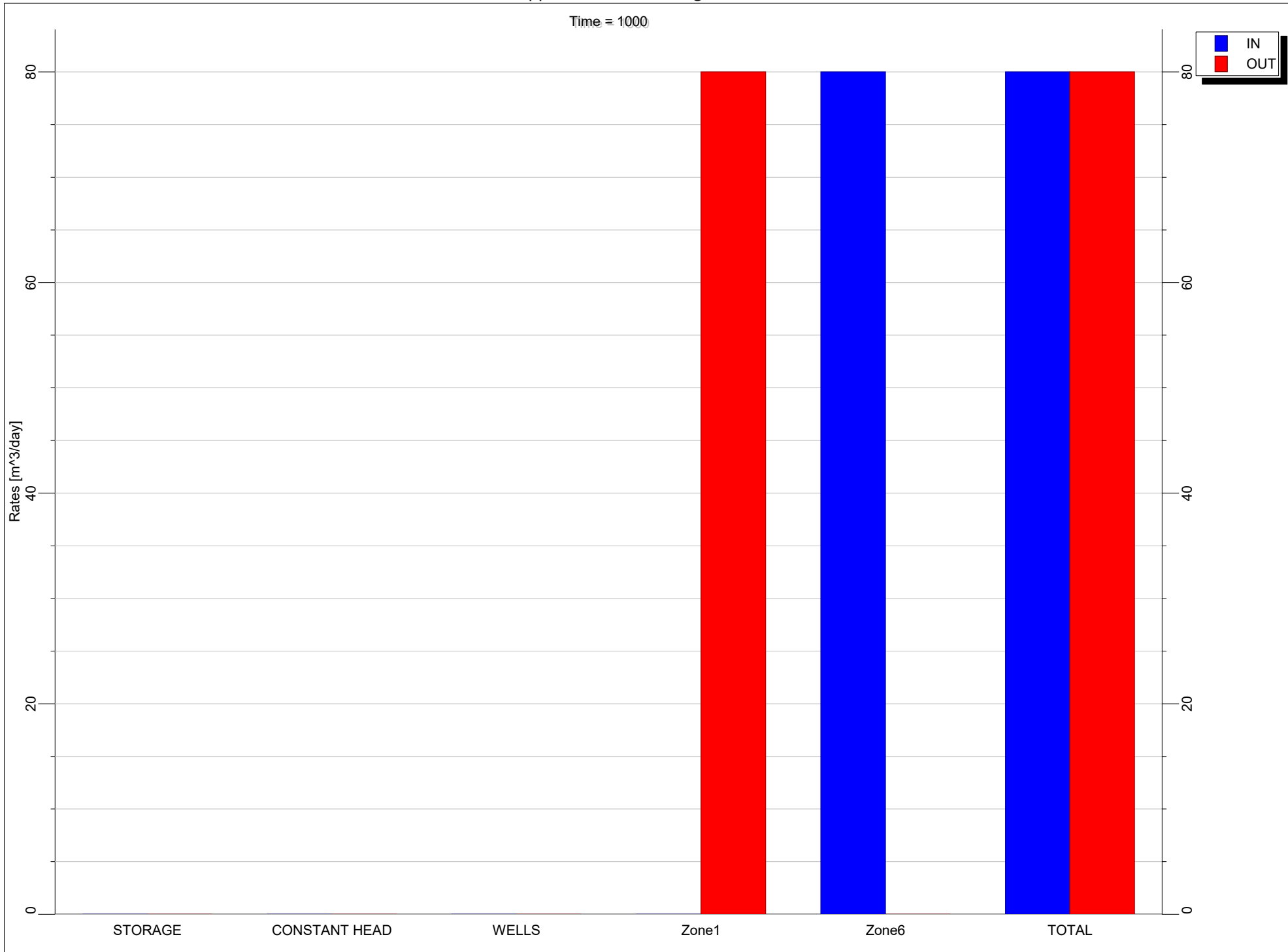
Appendix C - Zone Budget Charts

Time = 1000



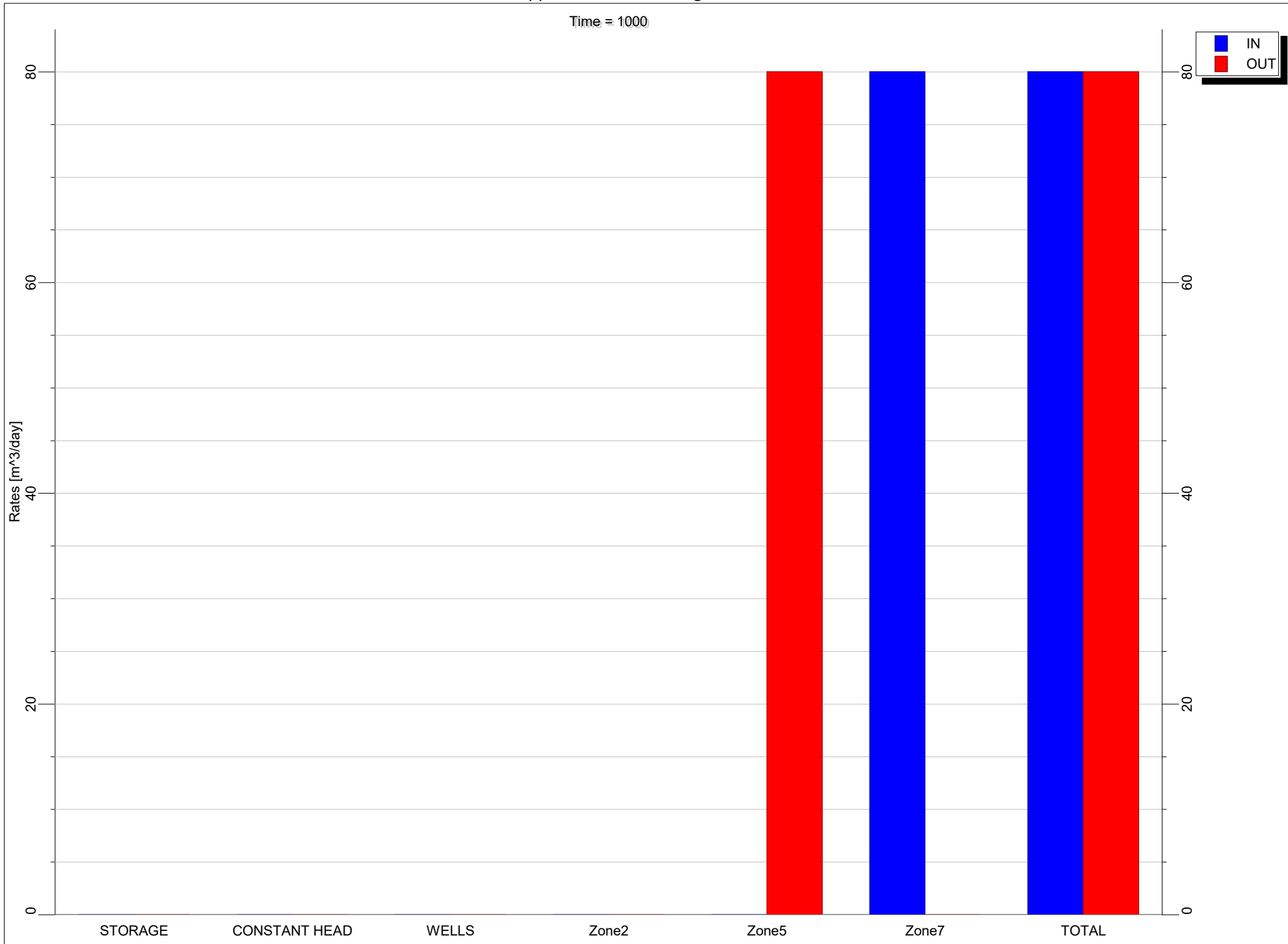
Appendix C - Zone Budget Charts

Time = 1000



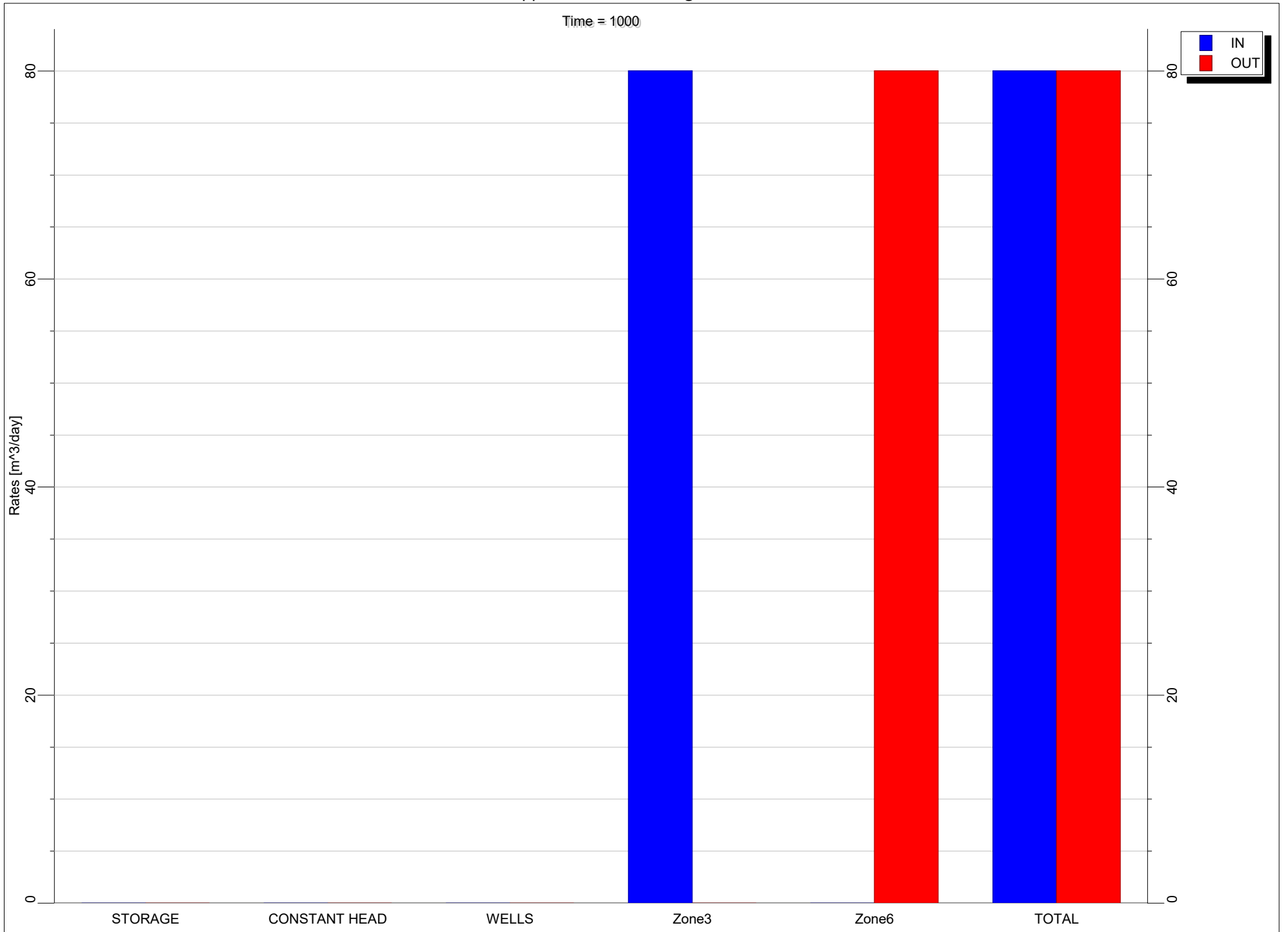
Appendix C - Zone Budget Charts

Time = 1000



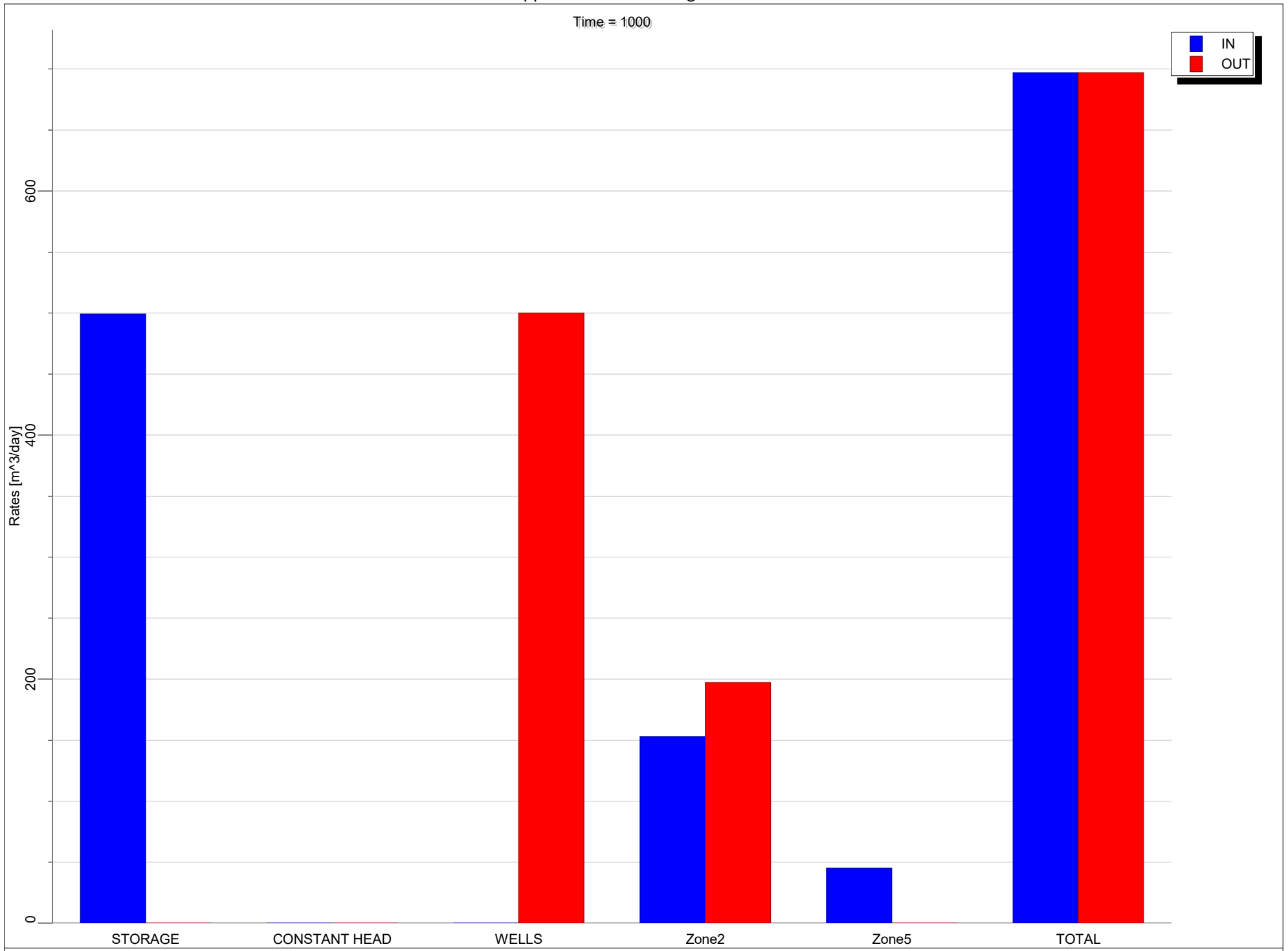
Appendix C - Zone Budget Charts

Time = 1000



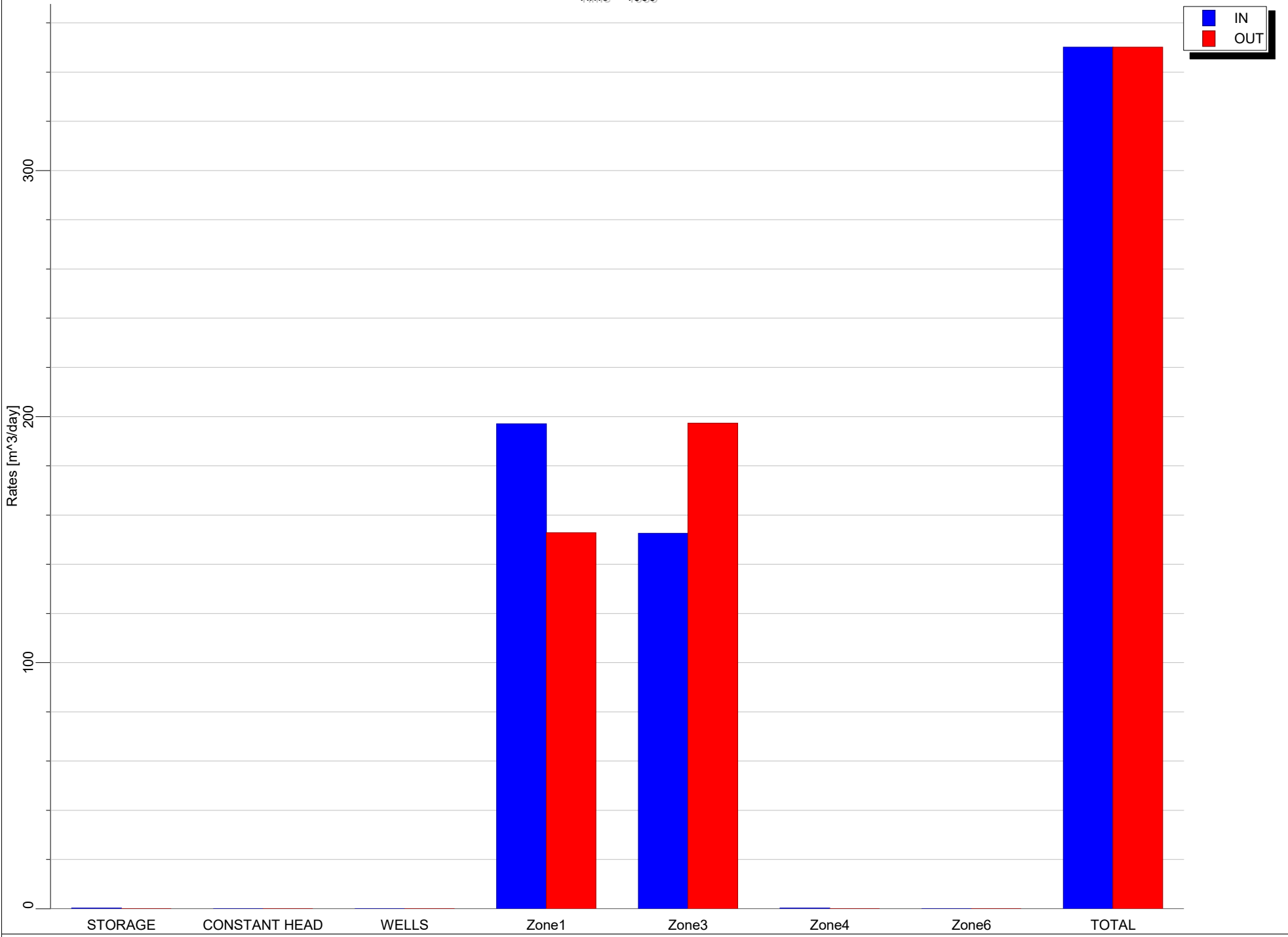
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

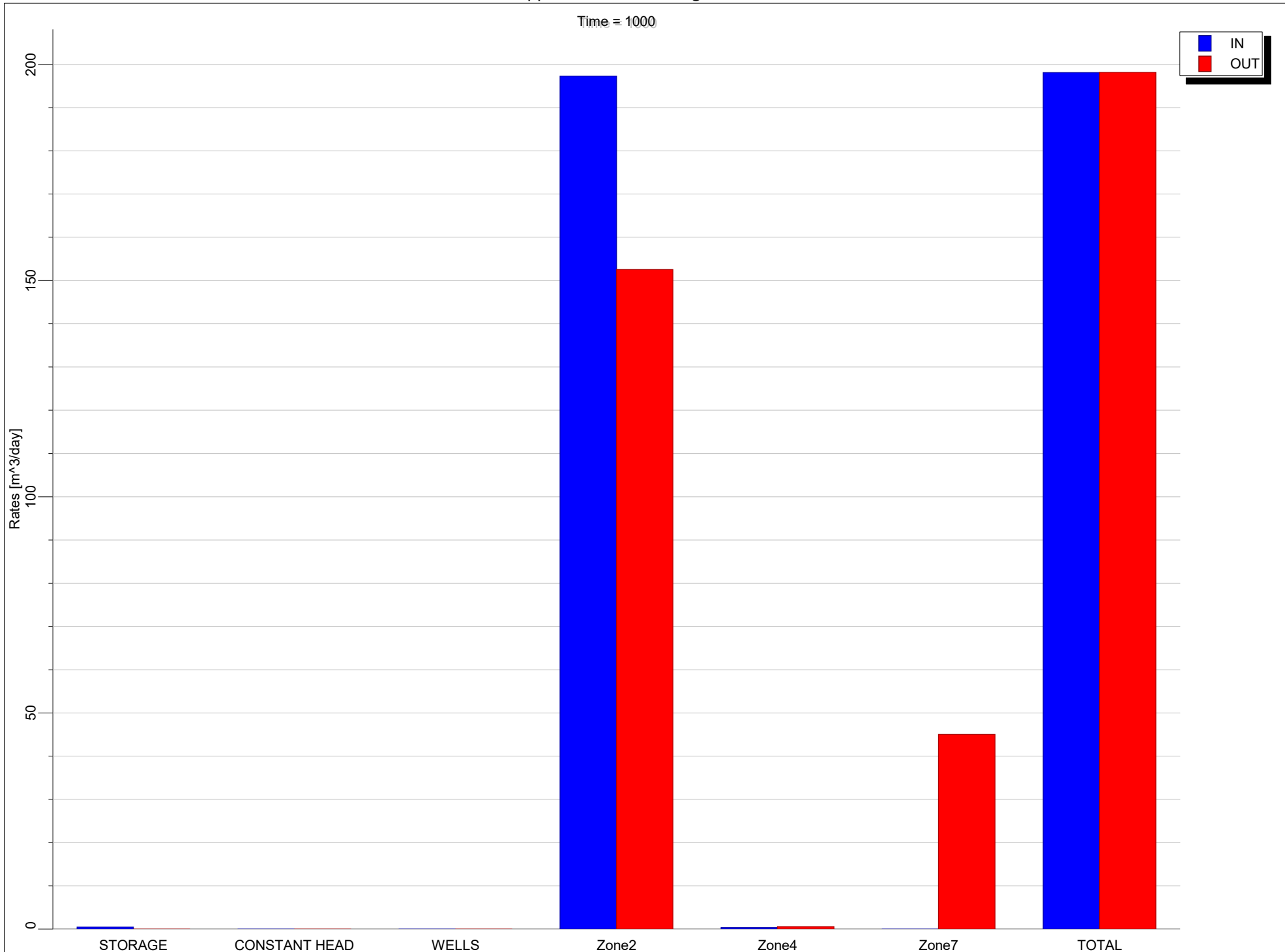
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Zone 2
Scenario 1.4
Abandoned Well 80m

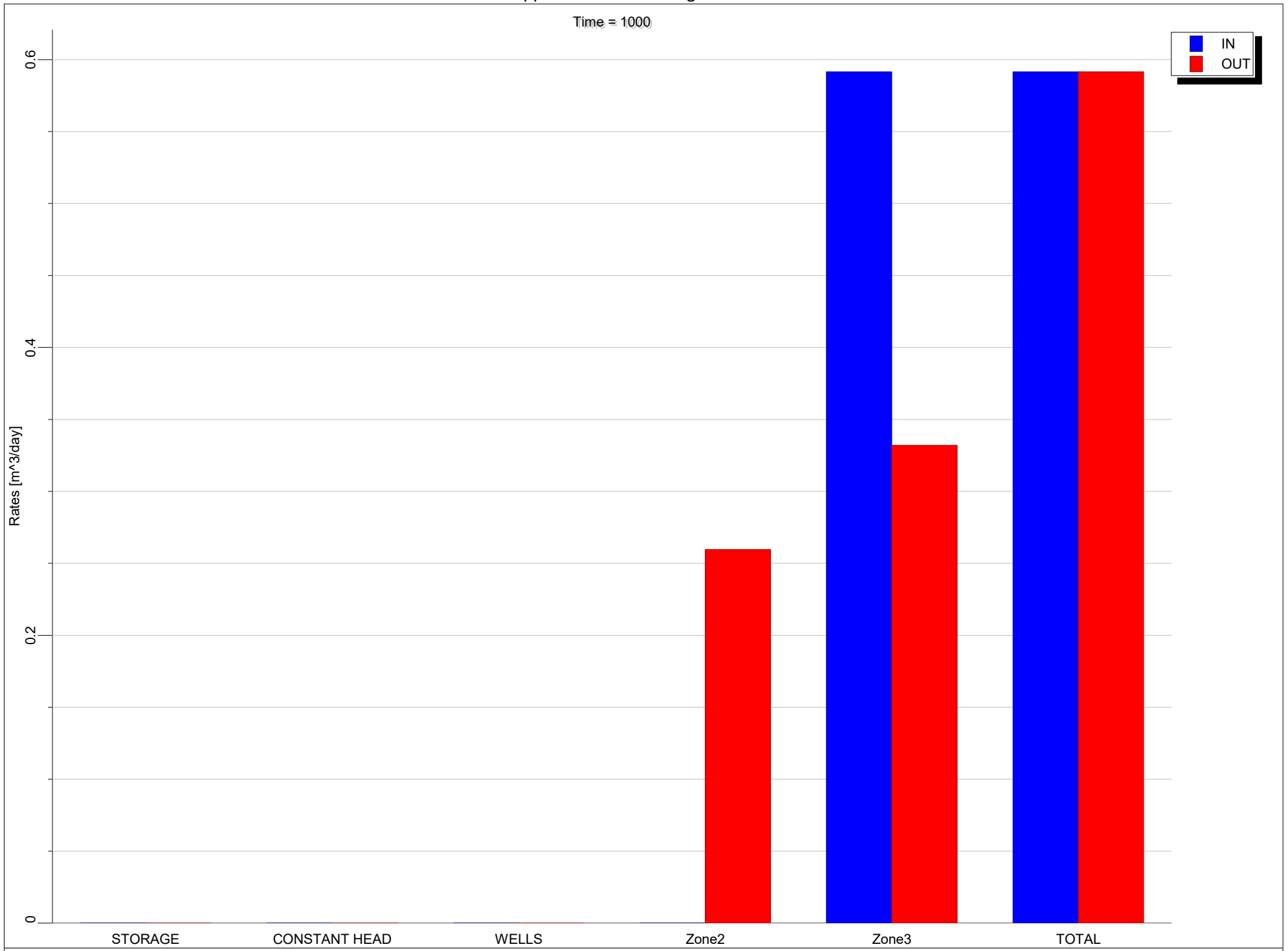
Appendix C - Zone Budget Charts

Time = 1000



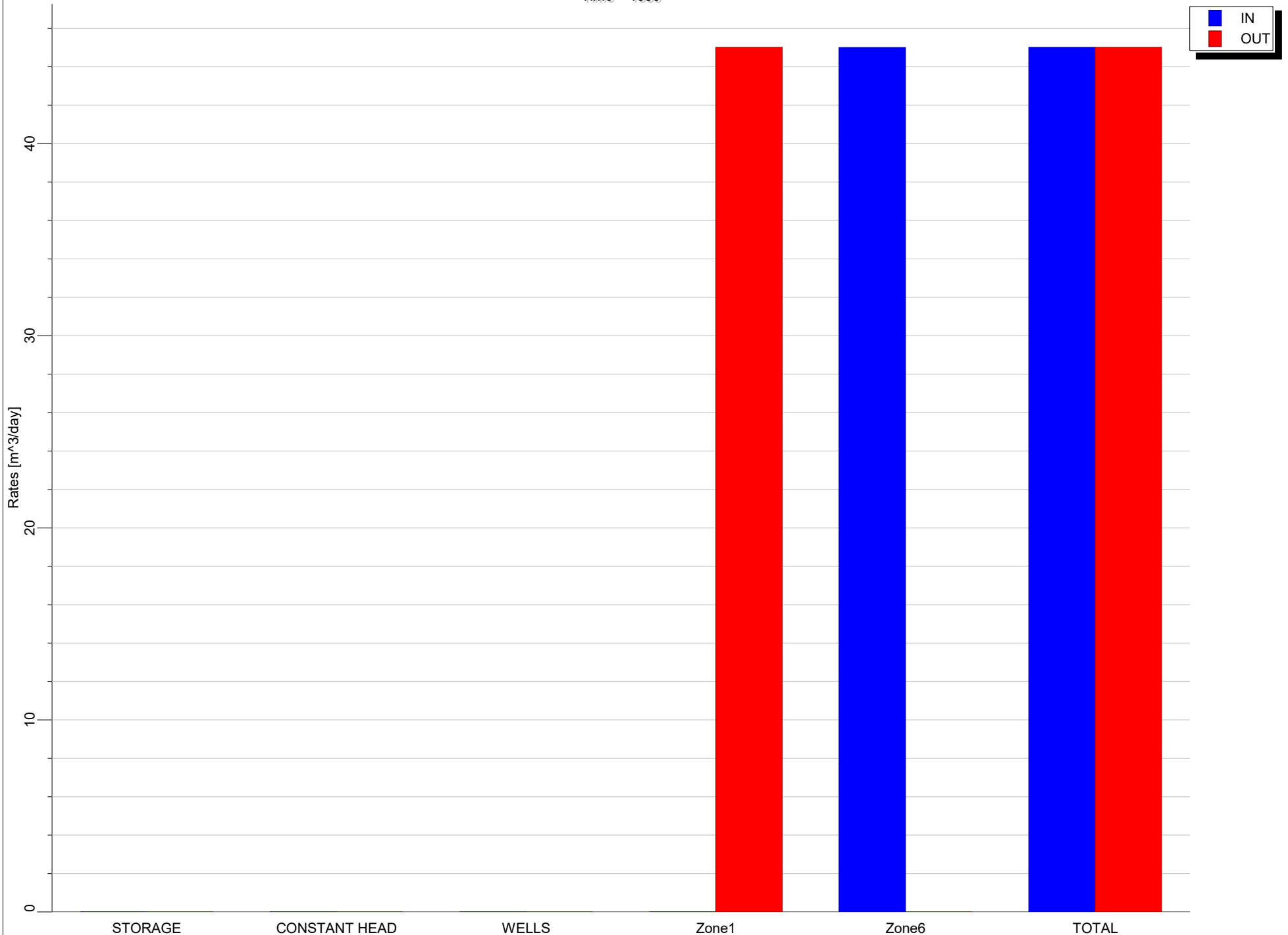
Appendix C - Zone Budget Charts

Time = 1000



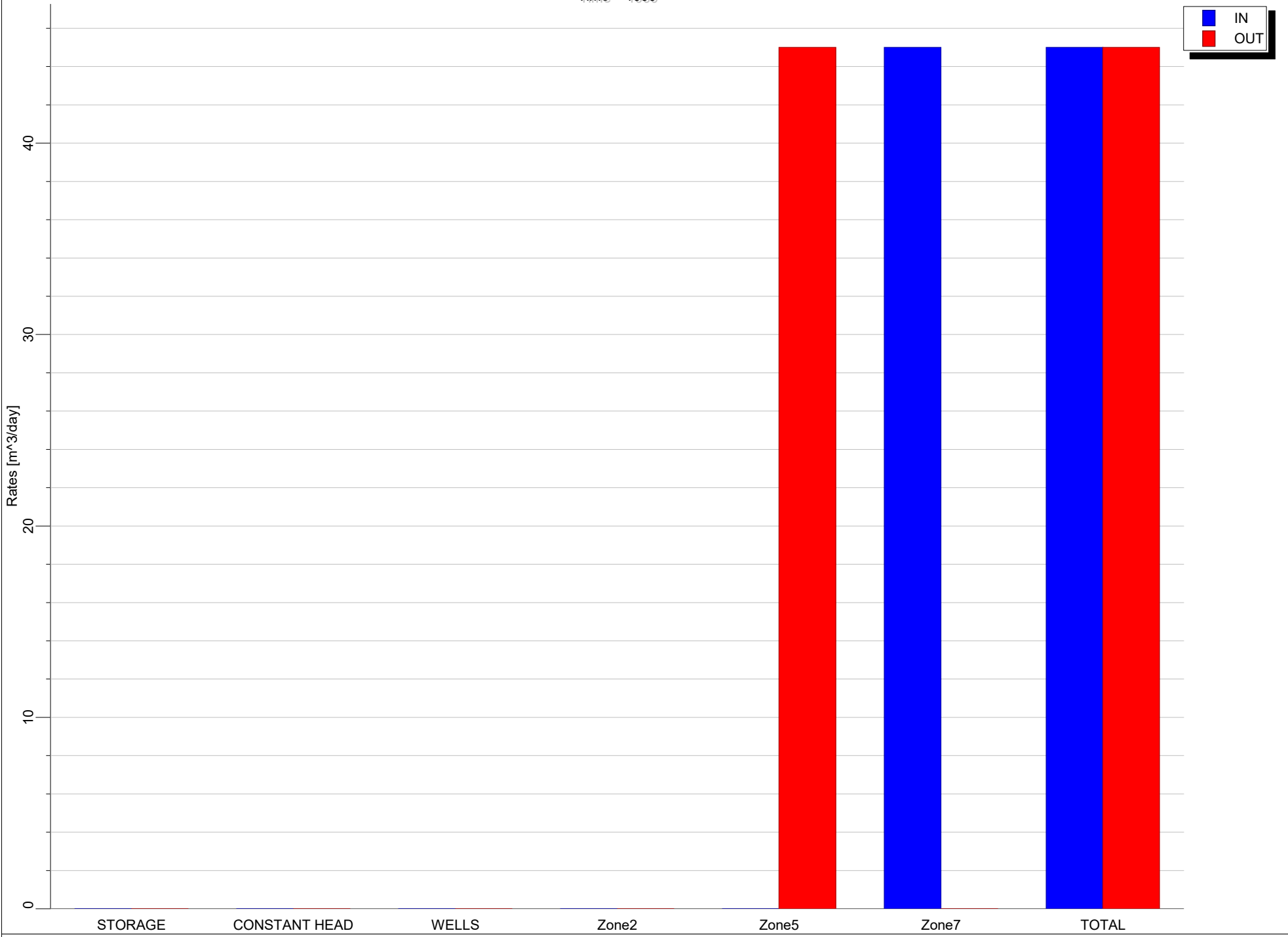
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

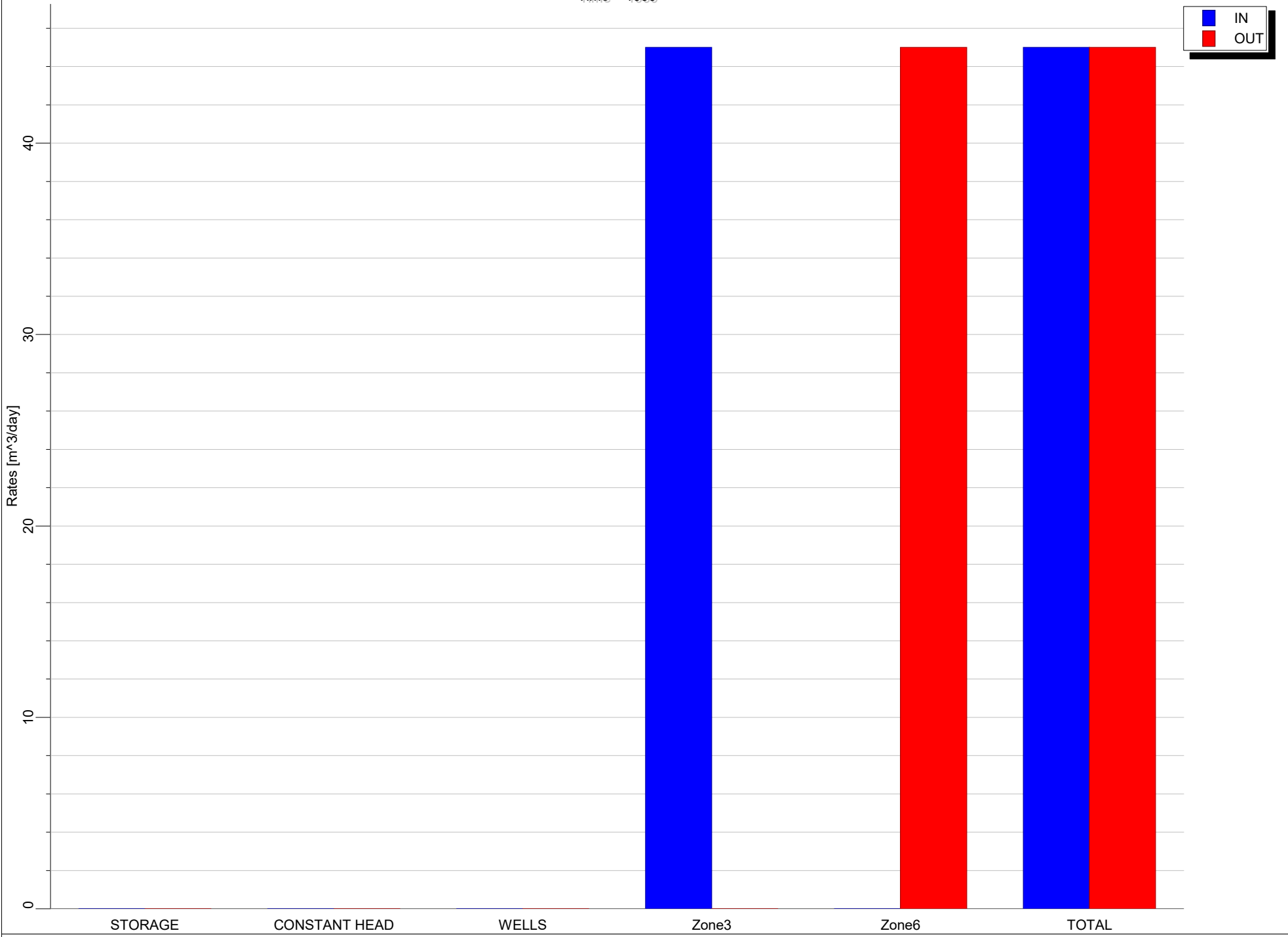
Time = 1000



Zone 6
Scenario 1.4
Abandoned Well 80m

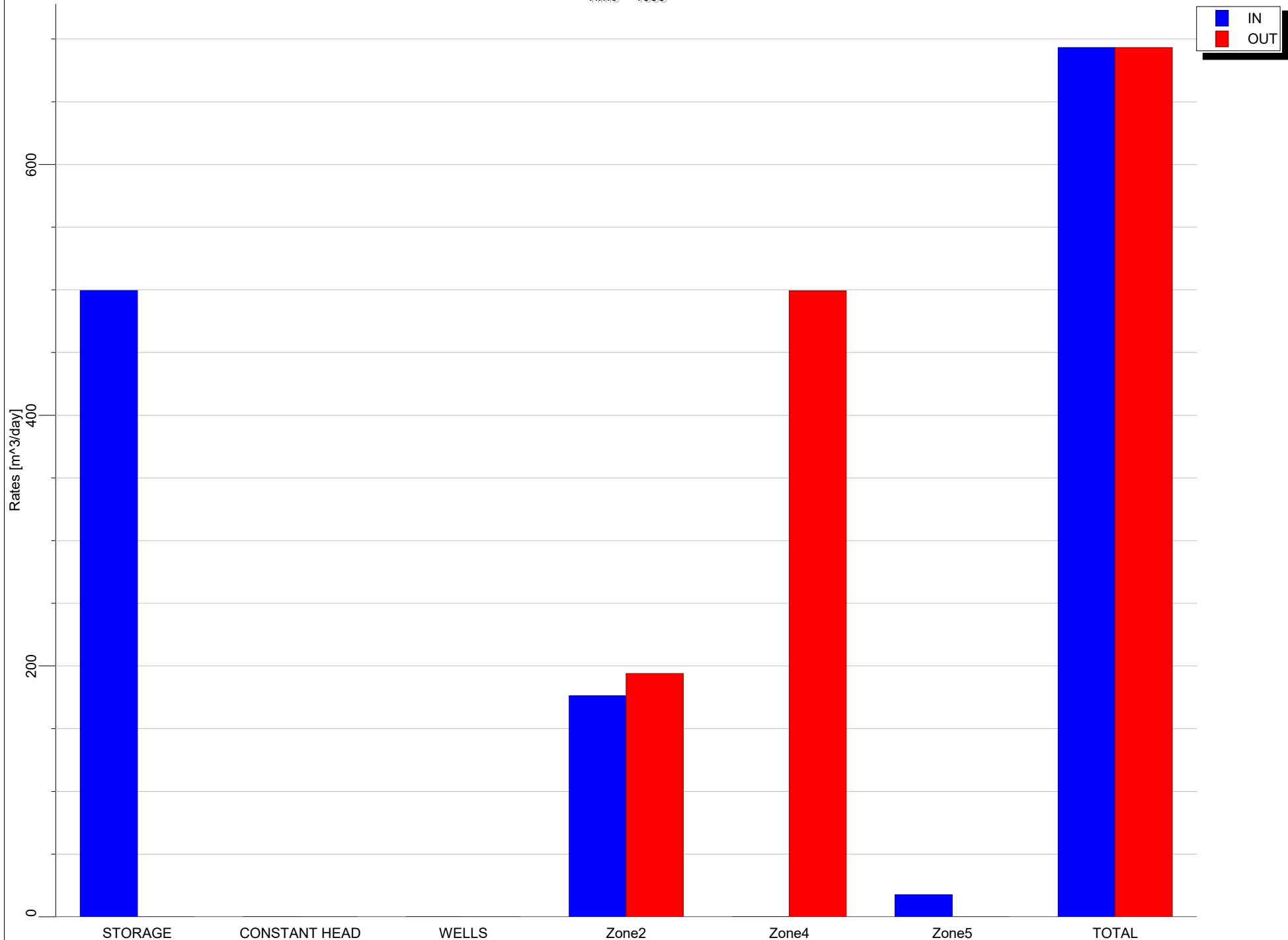
Appendix C - Zone Budget Charts

Time = 1000



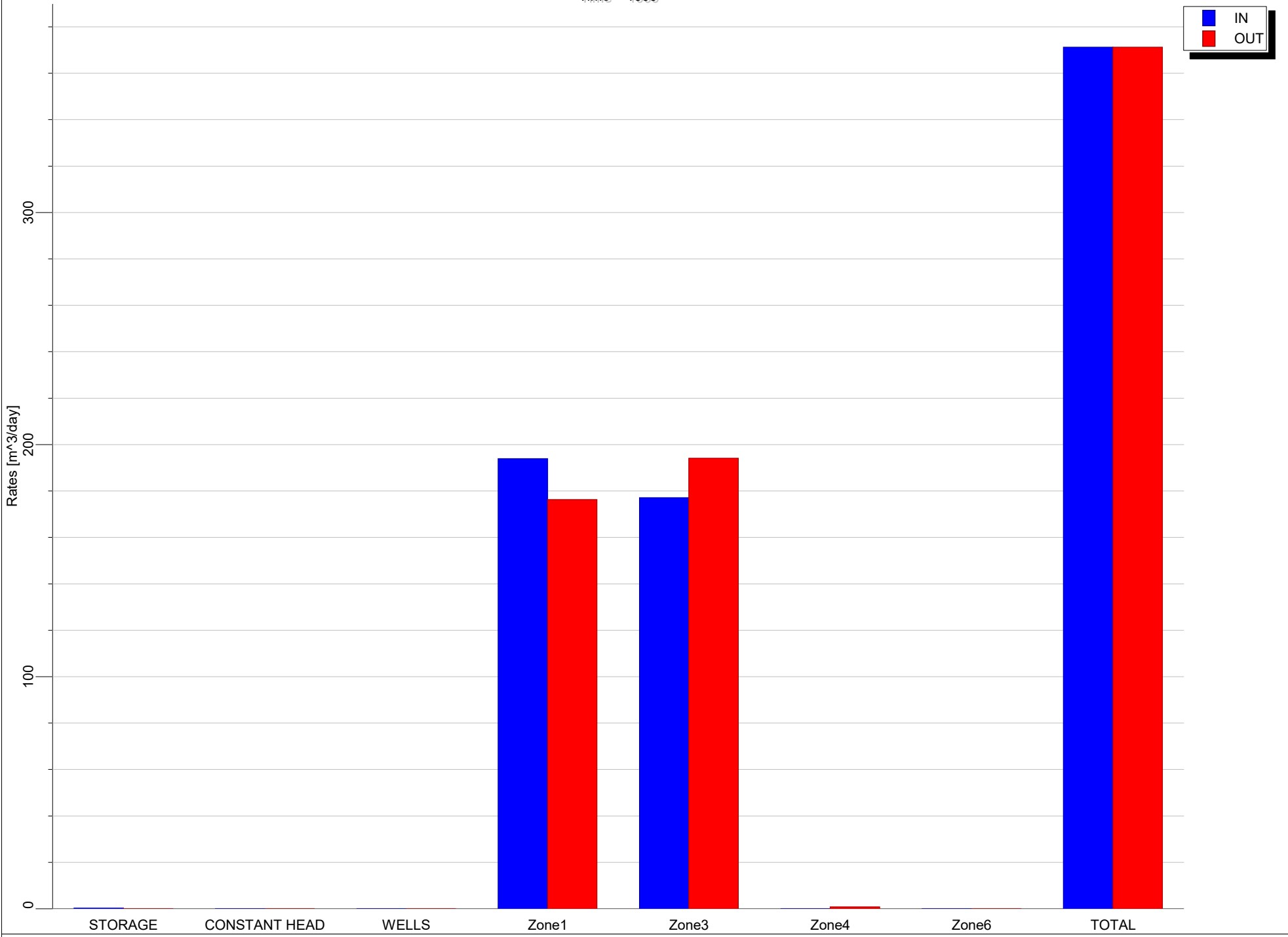
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

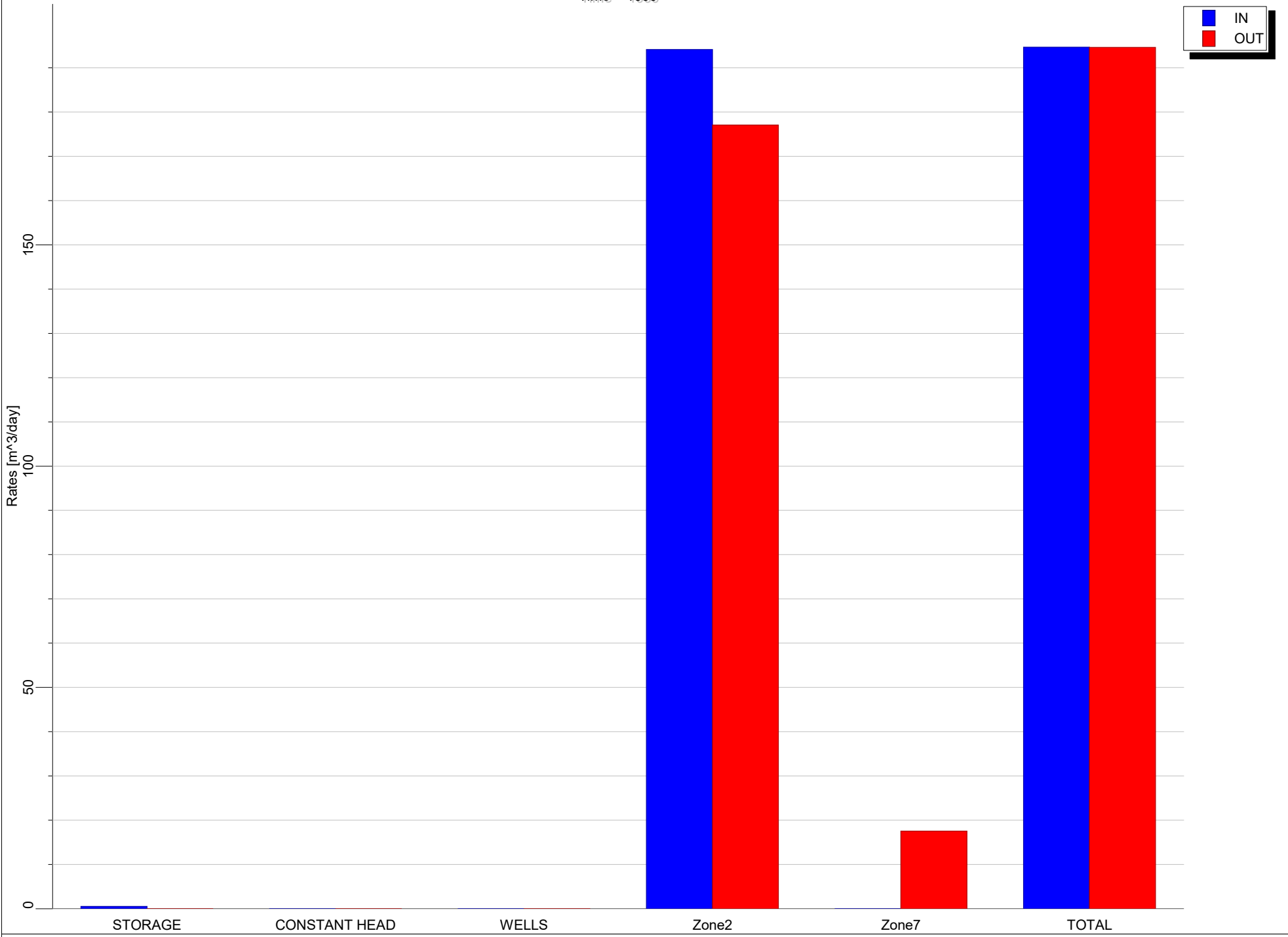
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Zone 2
Scenario 1.5
Abandoned Well 160m

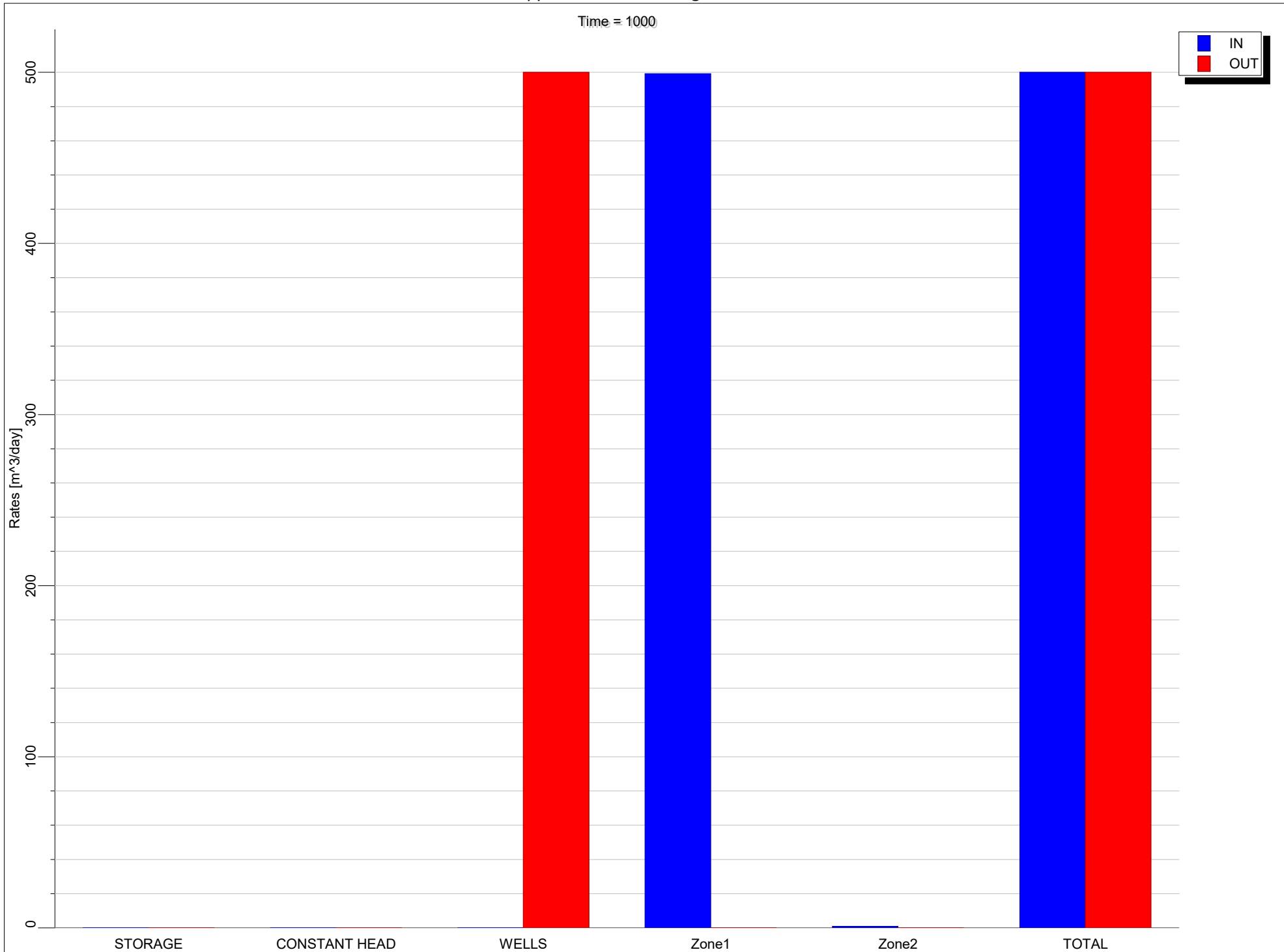
Appendix C - Zone Budget Charts

Time = 1000



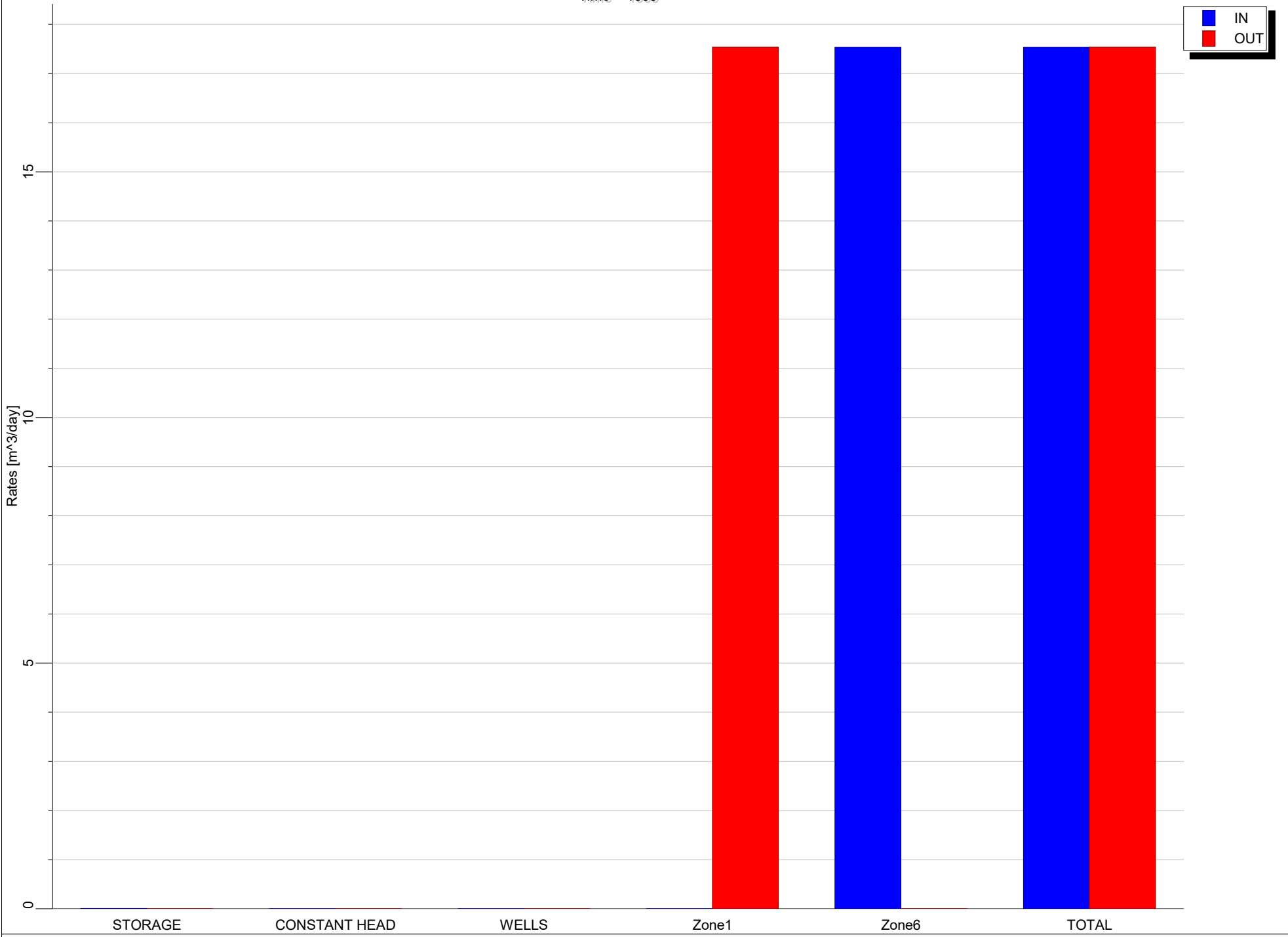
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

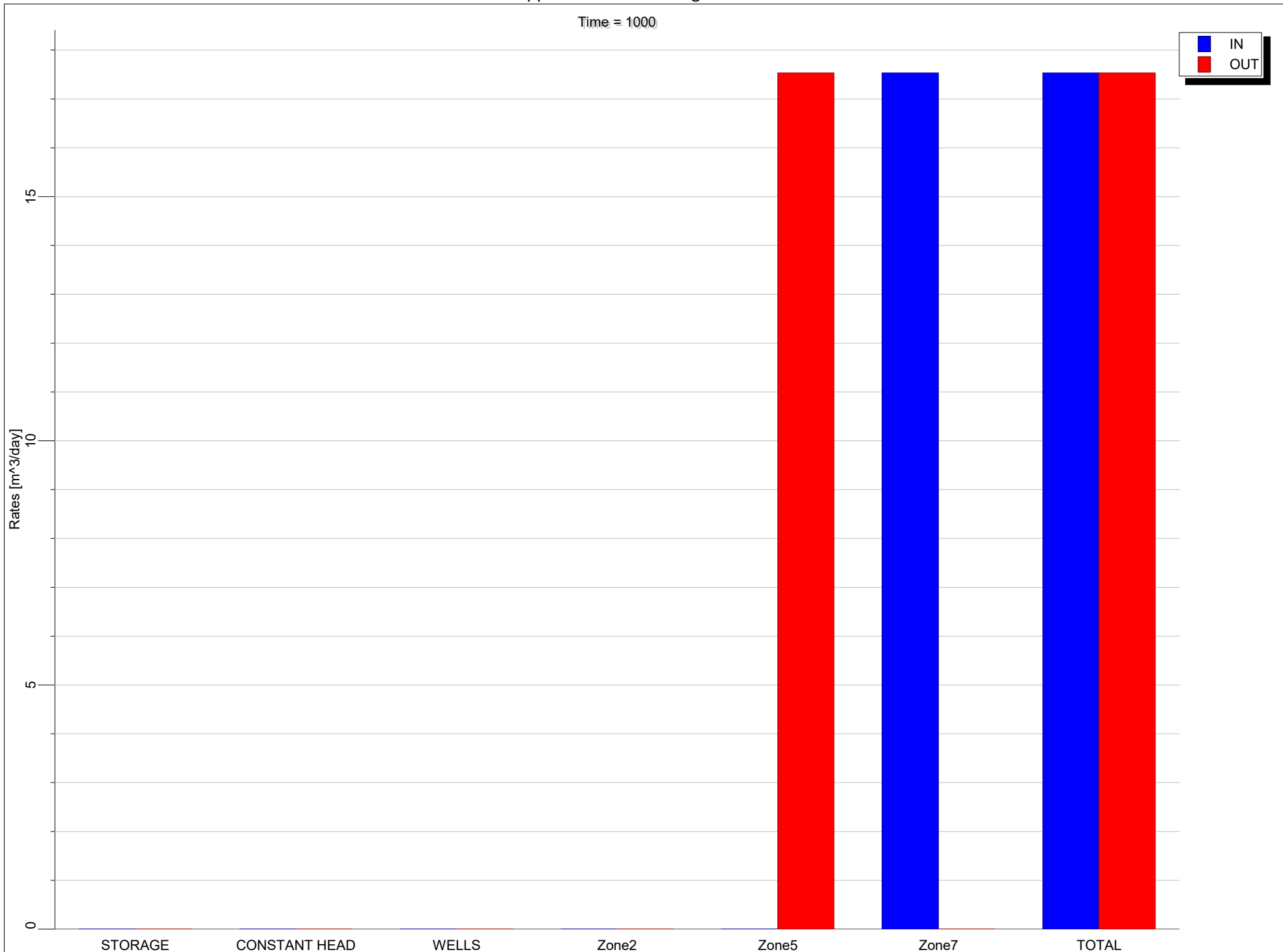
Time = 1000



Zone 5
Scenario 1.5
Abandoned Well 160m

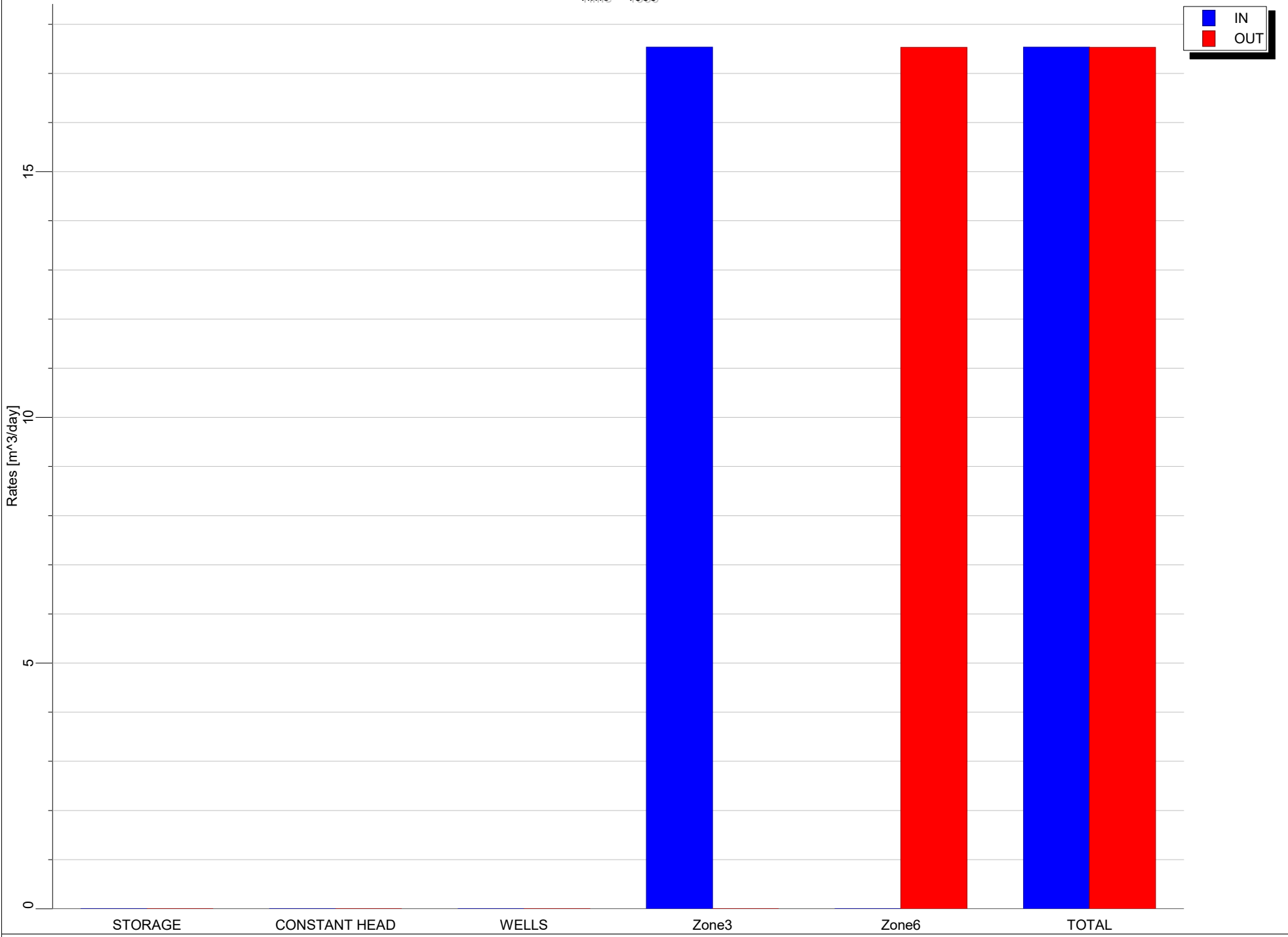
Appendix C - Zone Budget Charts

Time = 1000



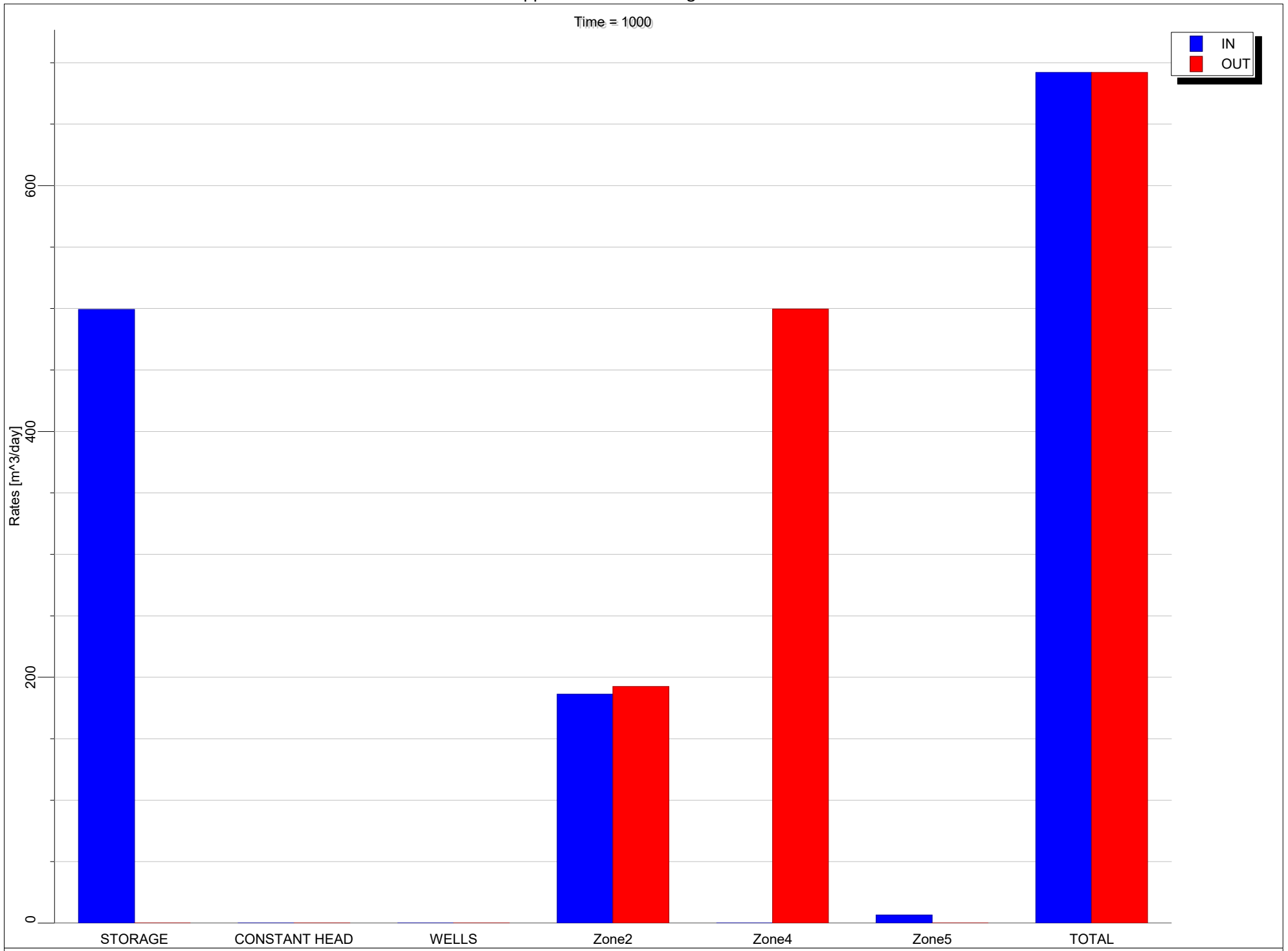
Appendix C - Zone Budget Charts

Time = 1000



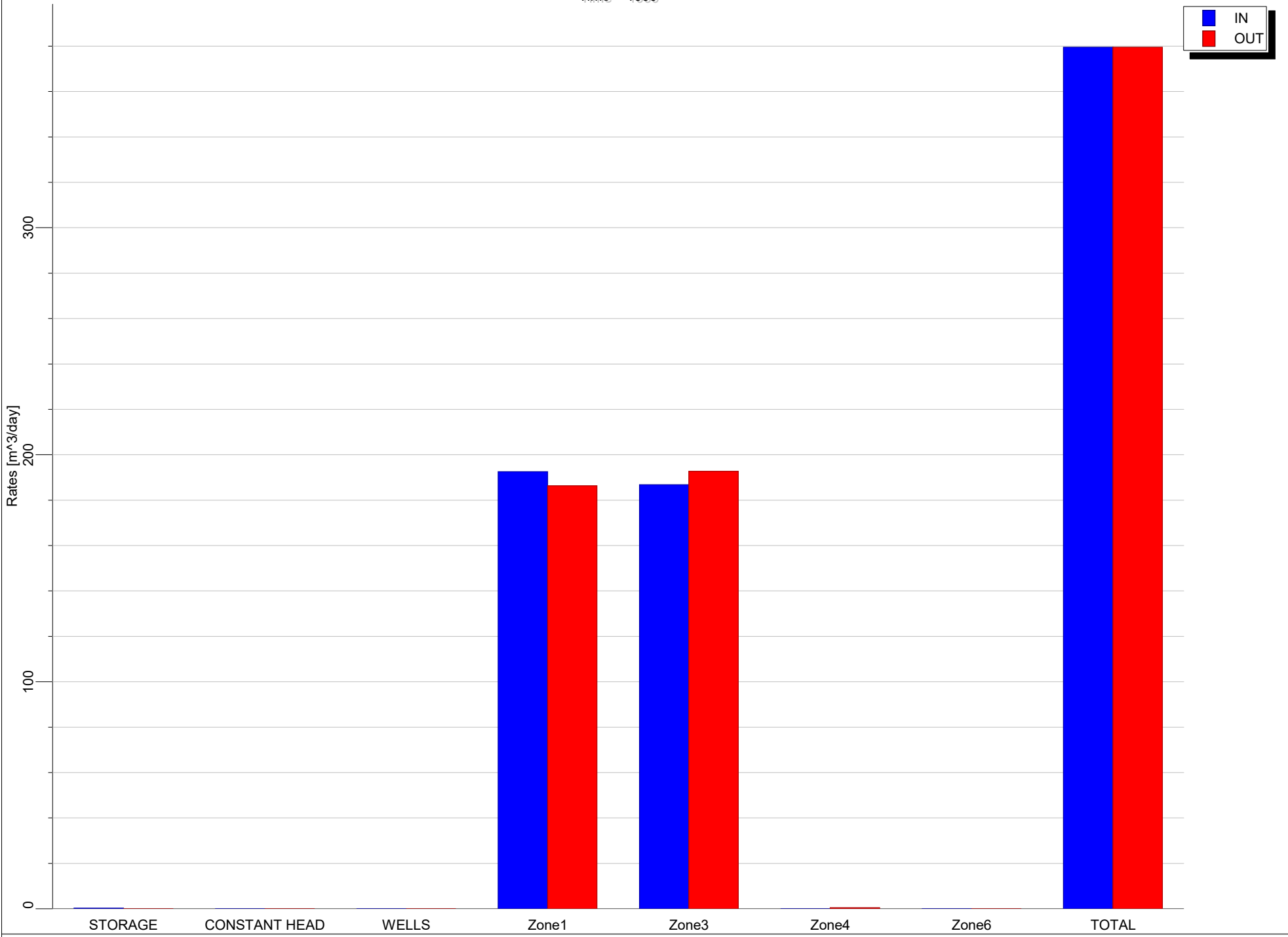
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

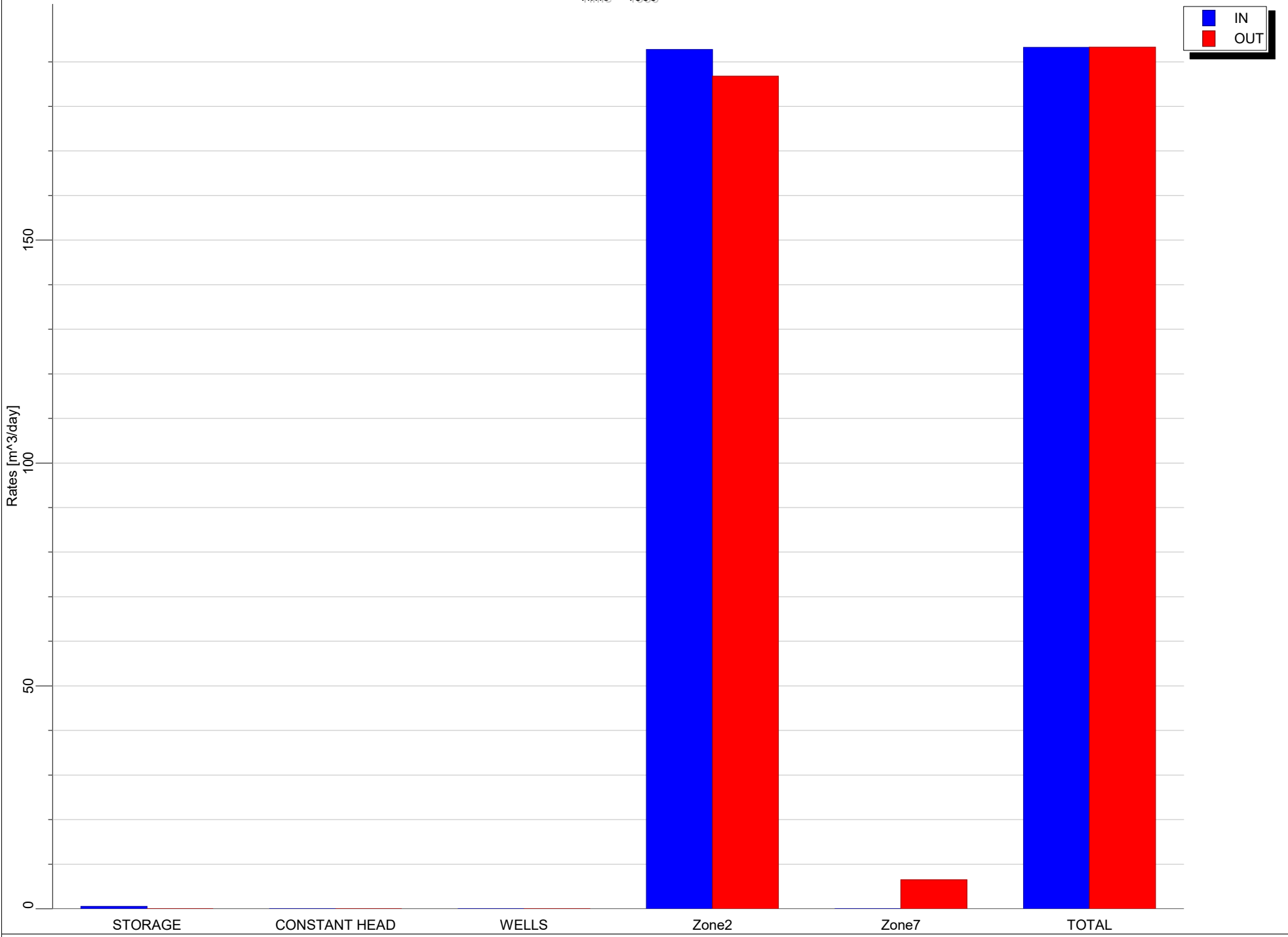
Time = 1000



Zone 2
Scenario 1.6
Abandoned Well 250m

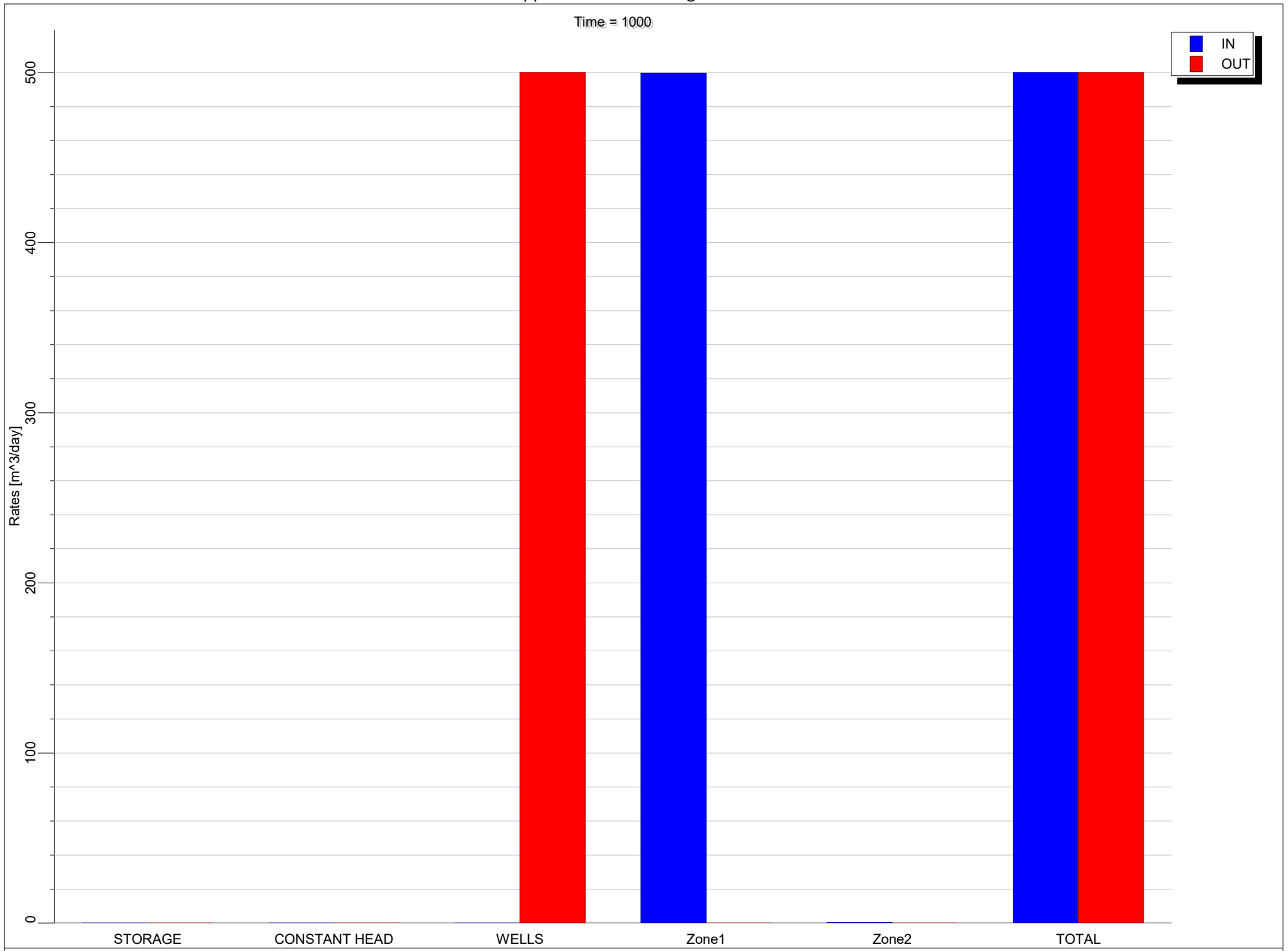
Appendix C - Zone Budget Charts

Time = 1000



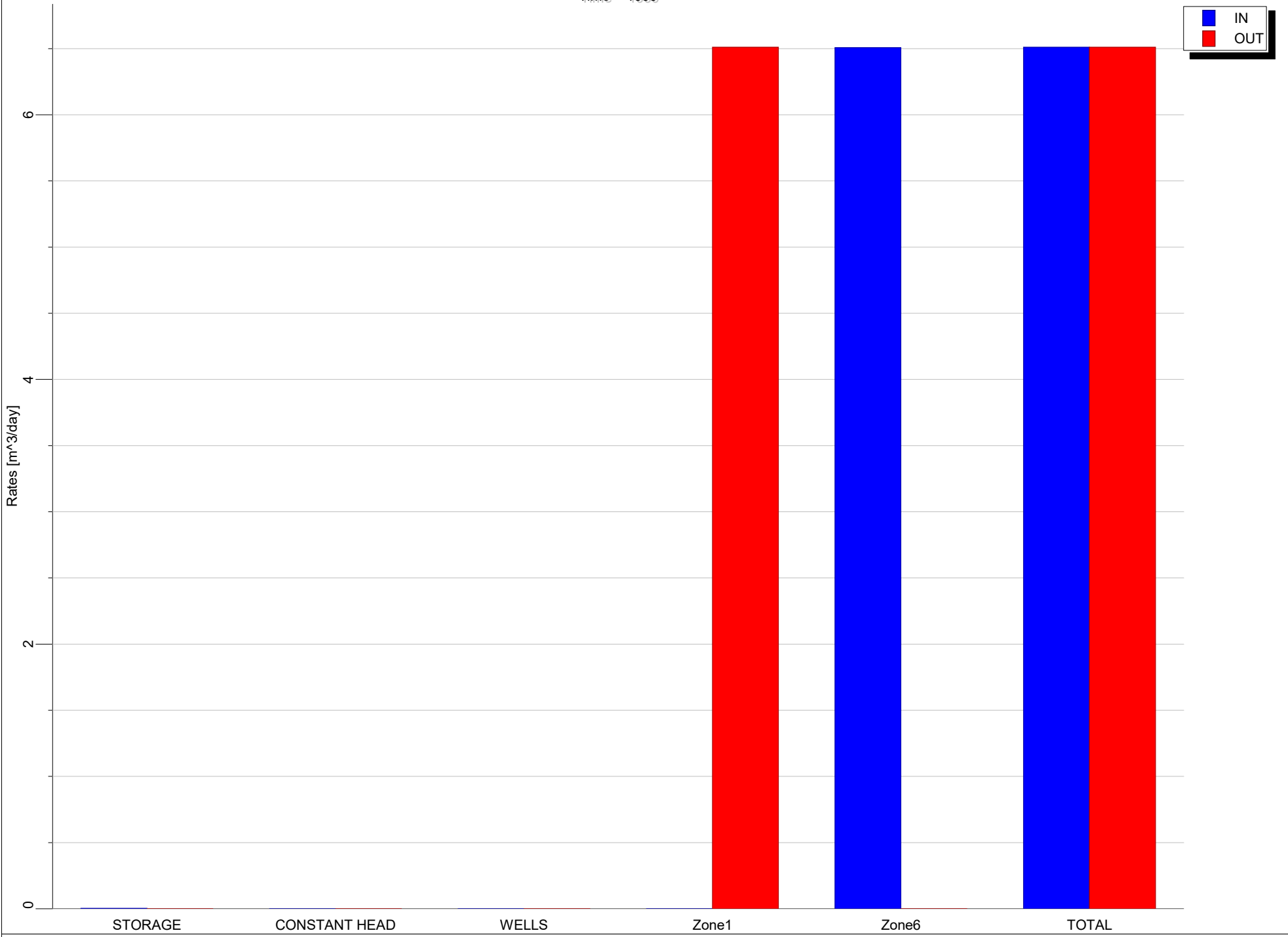
Appendix C - Zone Budget Charts

Time = 1000



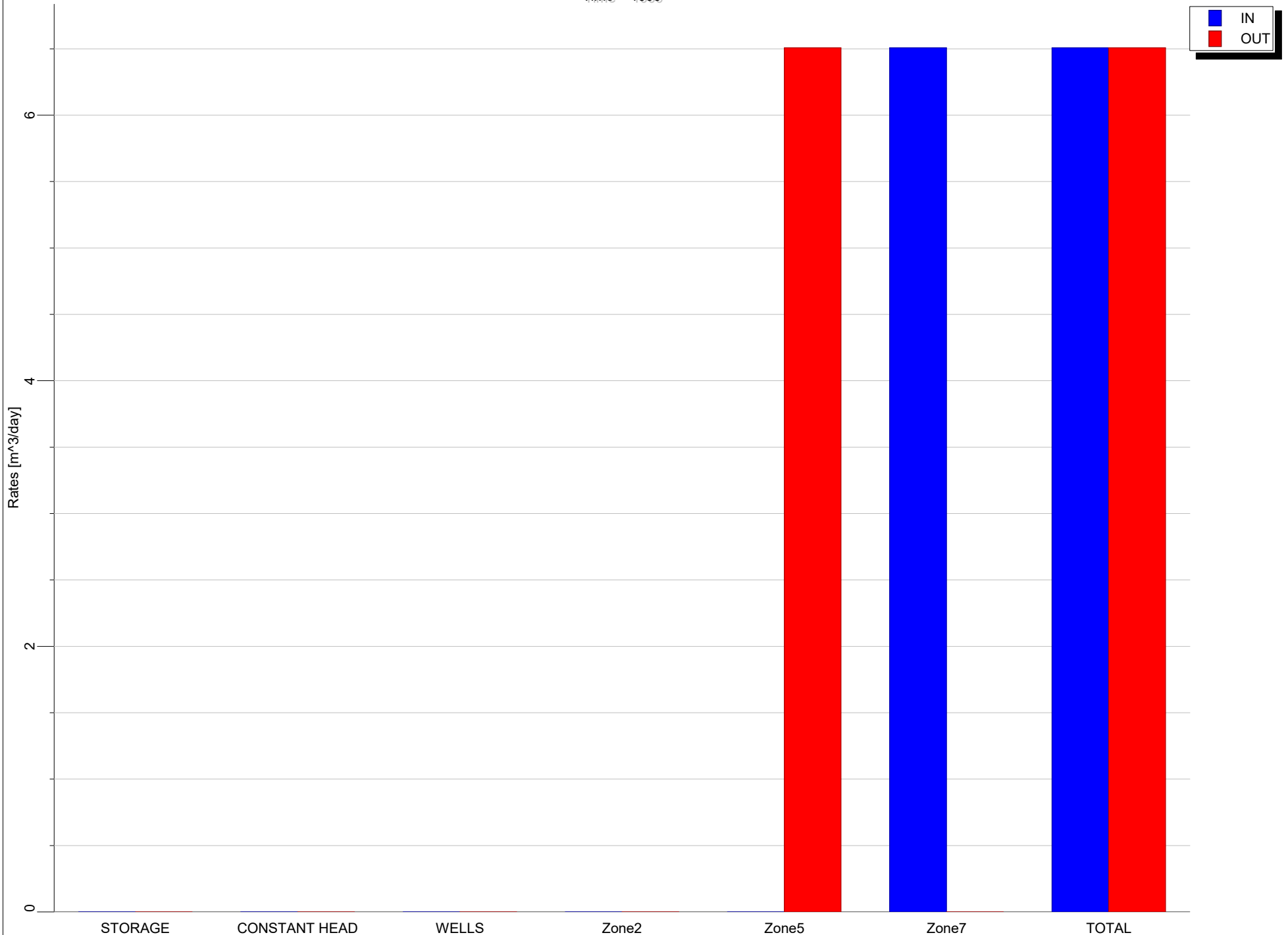
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

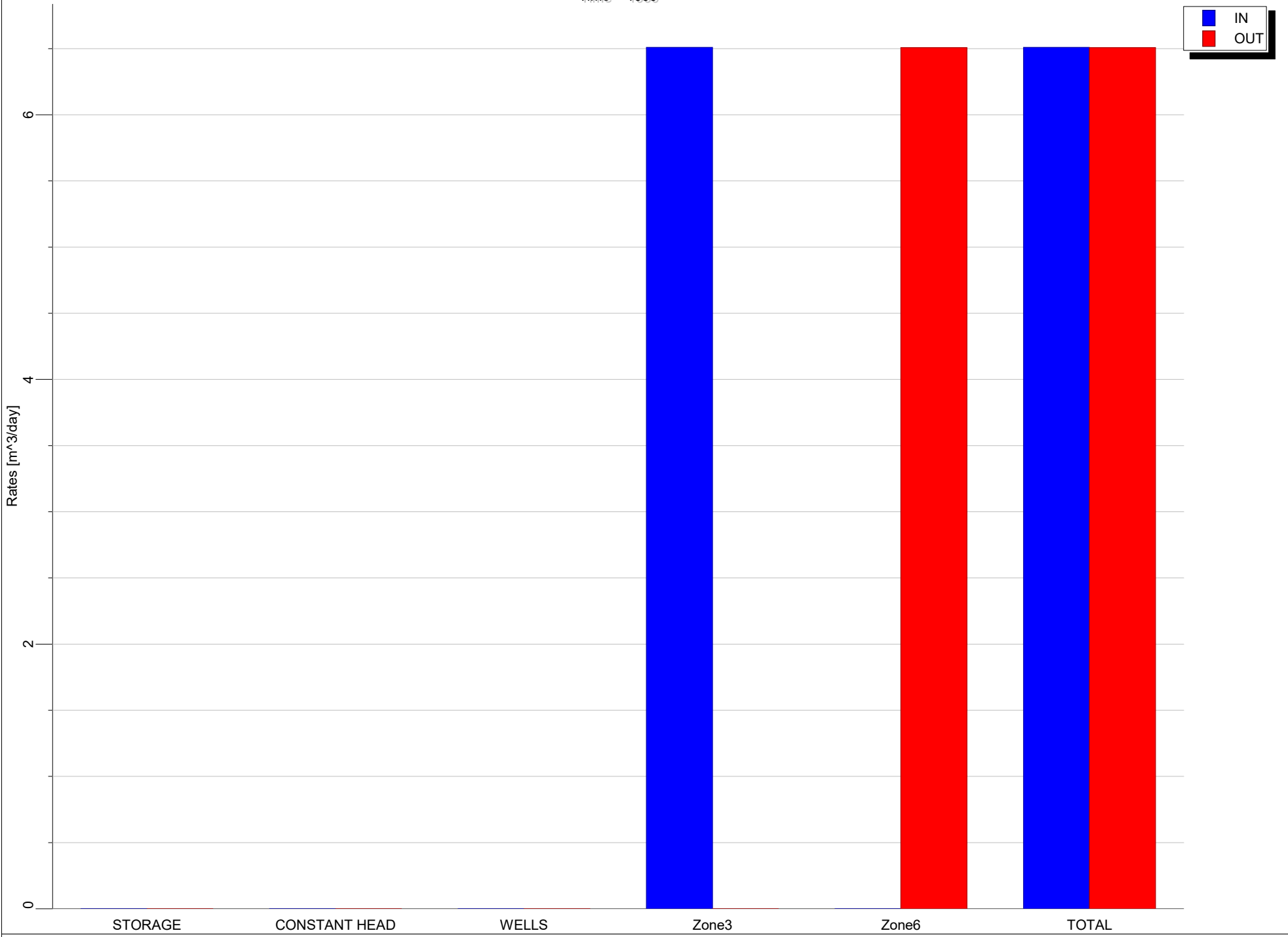
Time = 1000



Zone 6
Scenario 1.6
Abandoned Well 250m

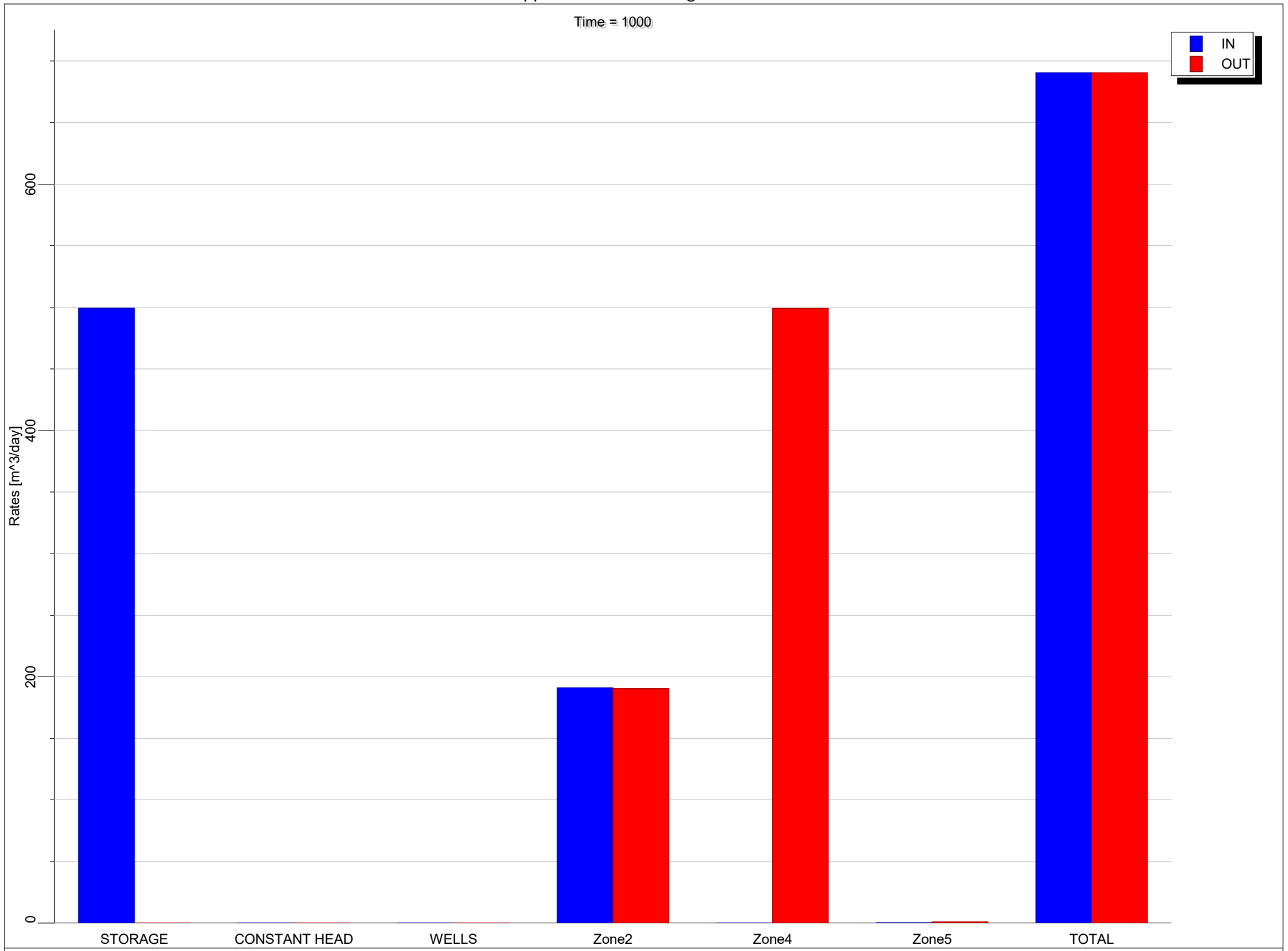
Appendix C - Zone Budget Charts

Time = 1000



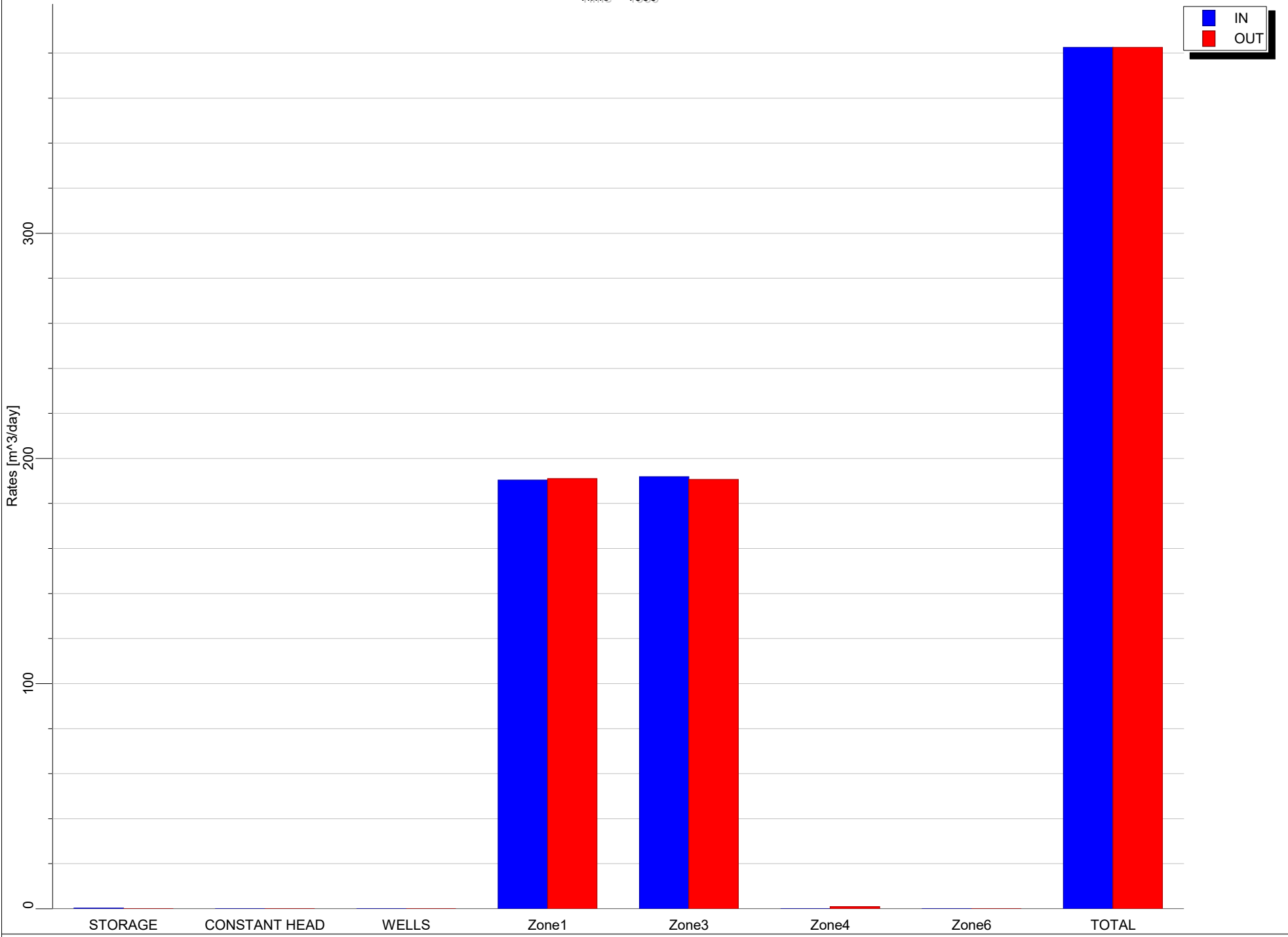
Appendix C - Zone Budget Charts

Time = 1000



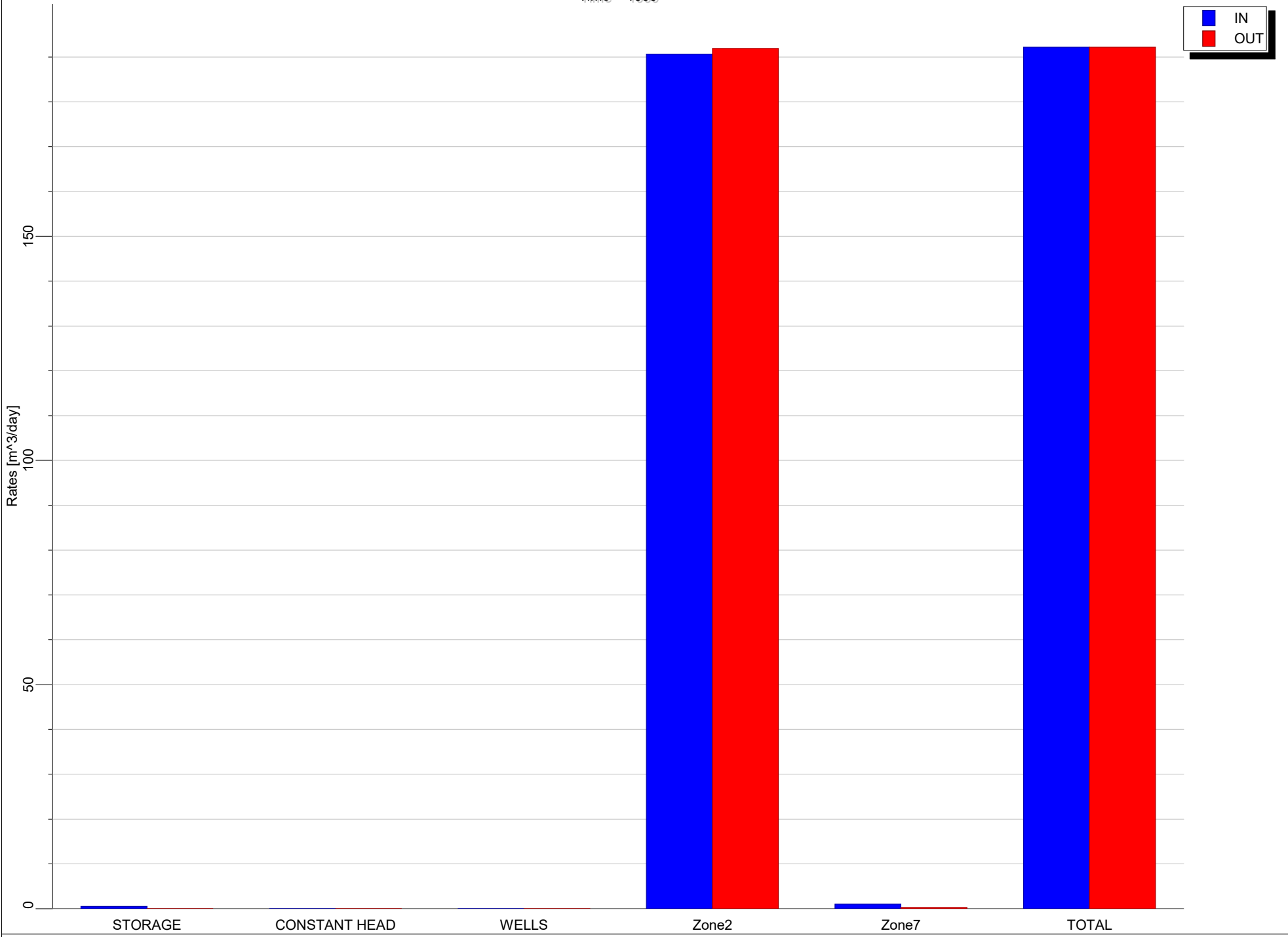
Appendix C - Zone Budget Charts

Time = 1000



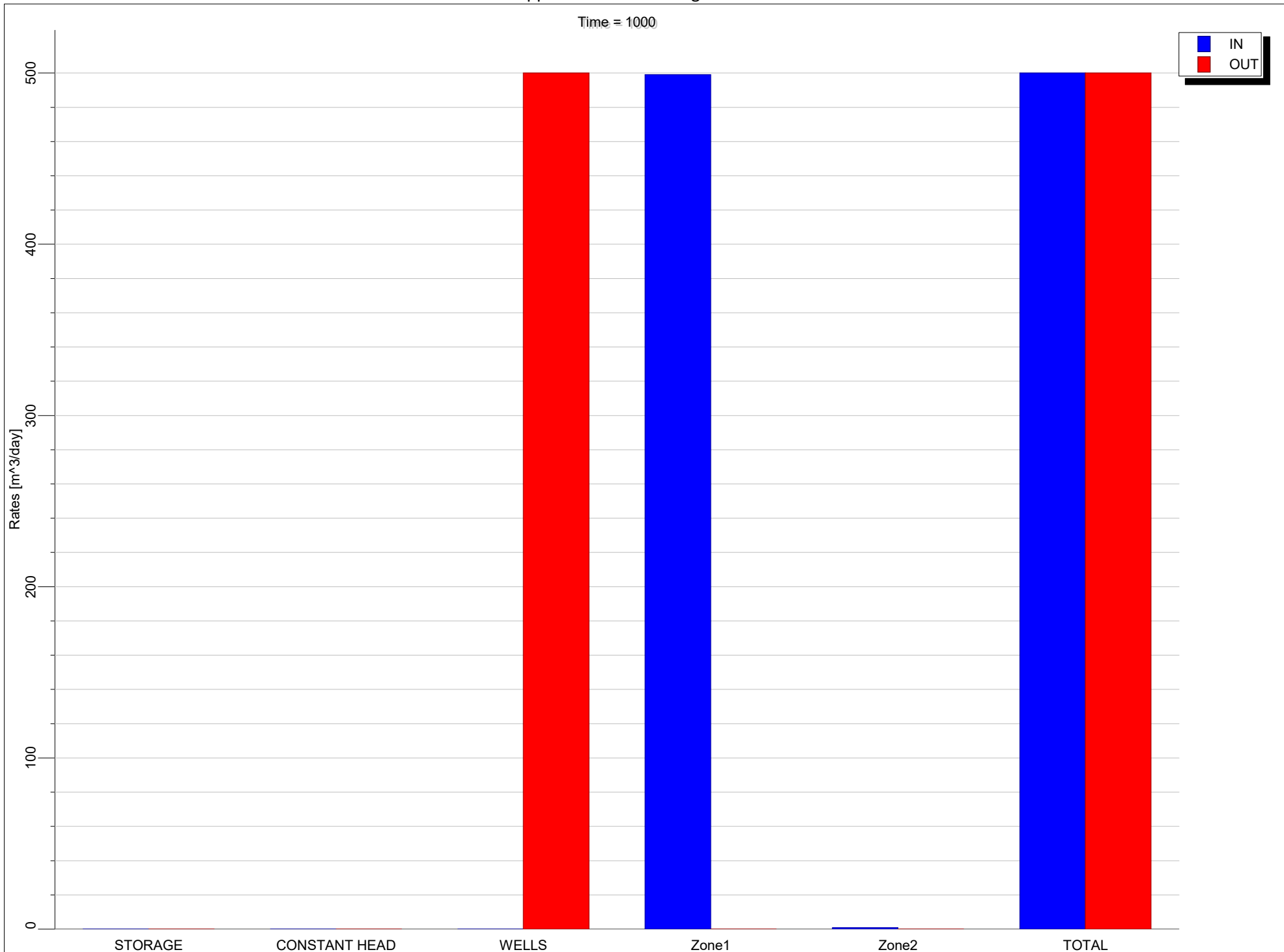
Appendix C - Zone Budget Charts

Time = 1000



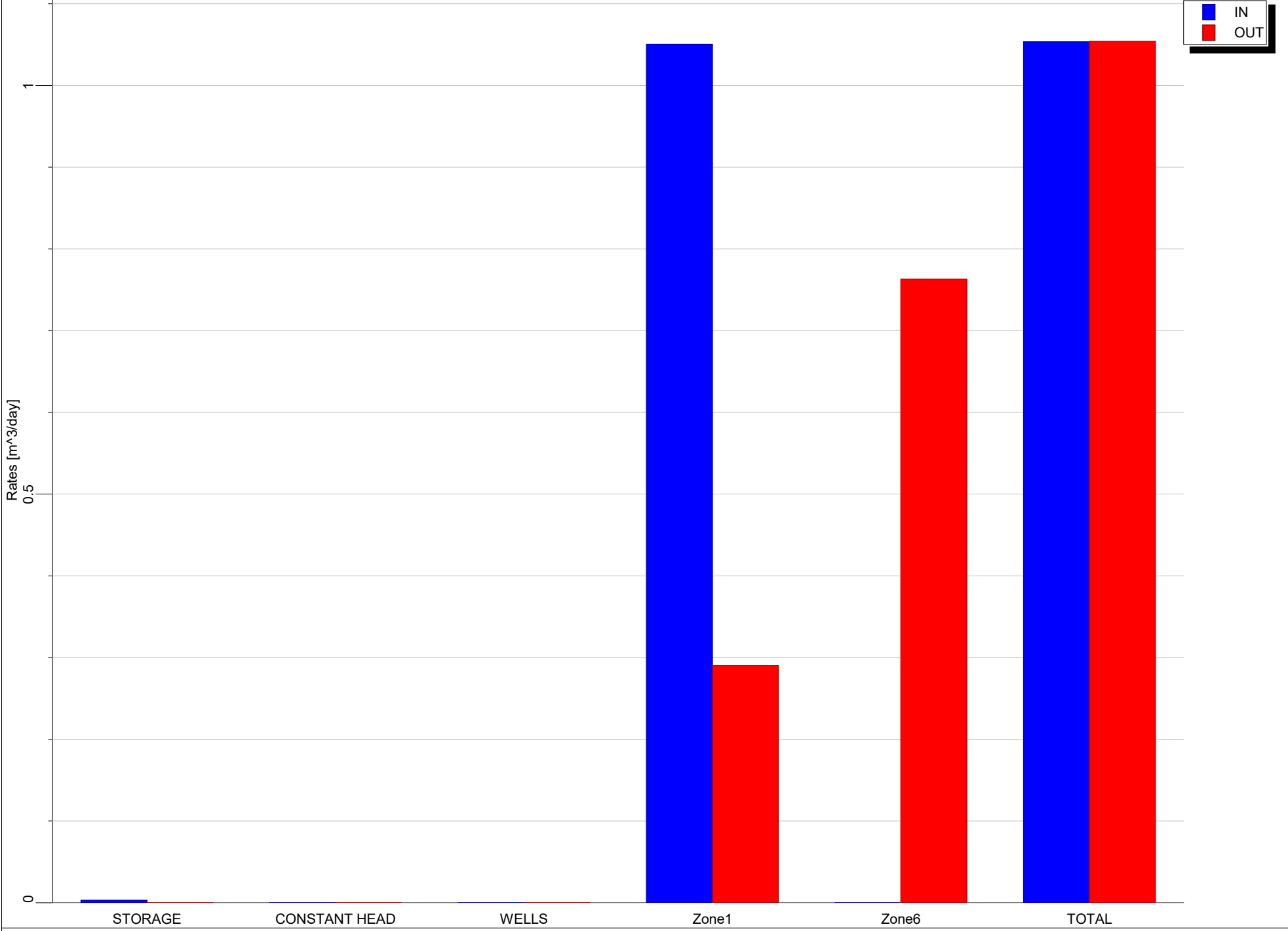
Appendix C - Zone Budget Charts

Time = 1000



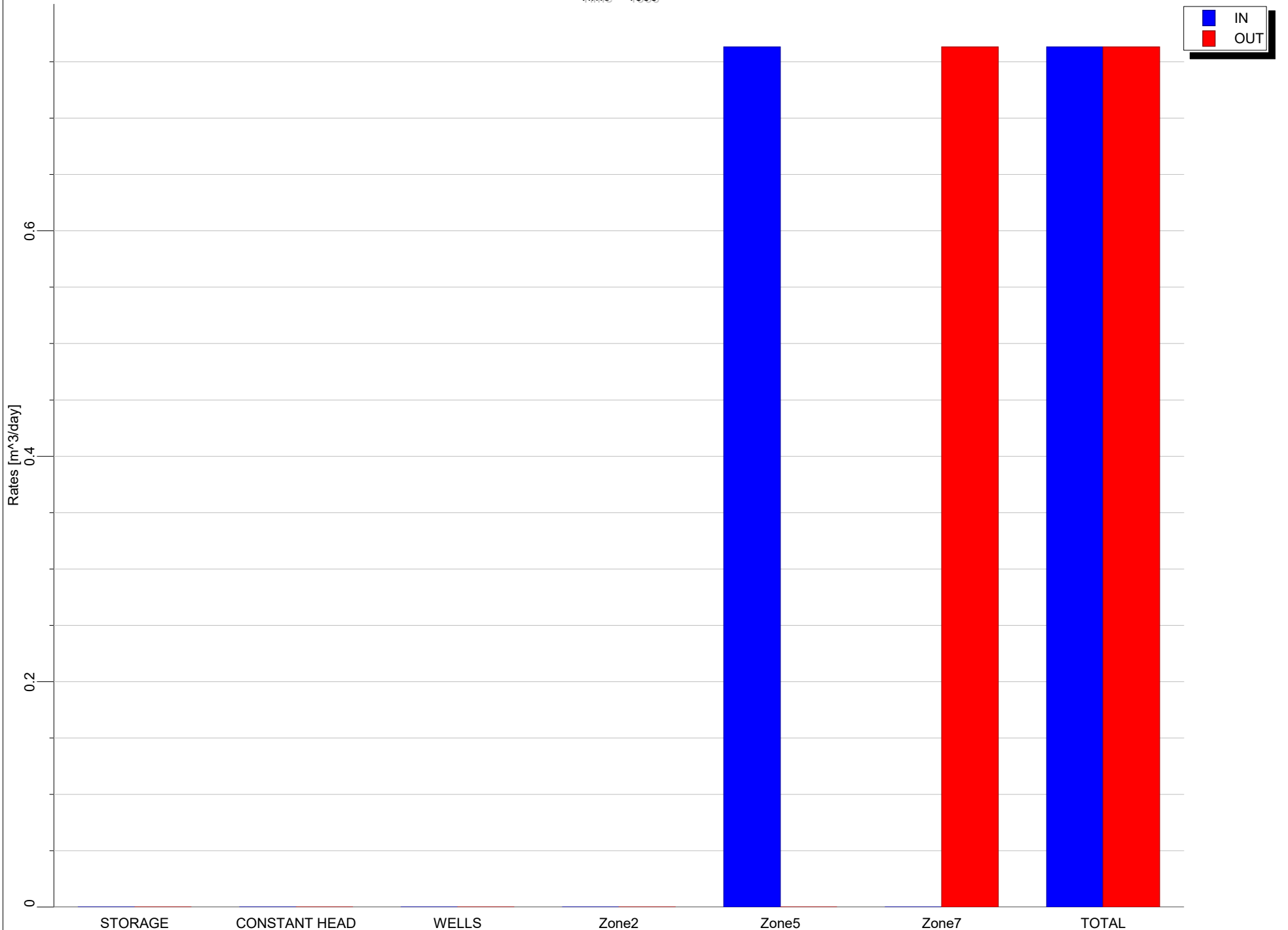
Appendix C - Zone Budget Charts

Time = 1000



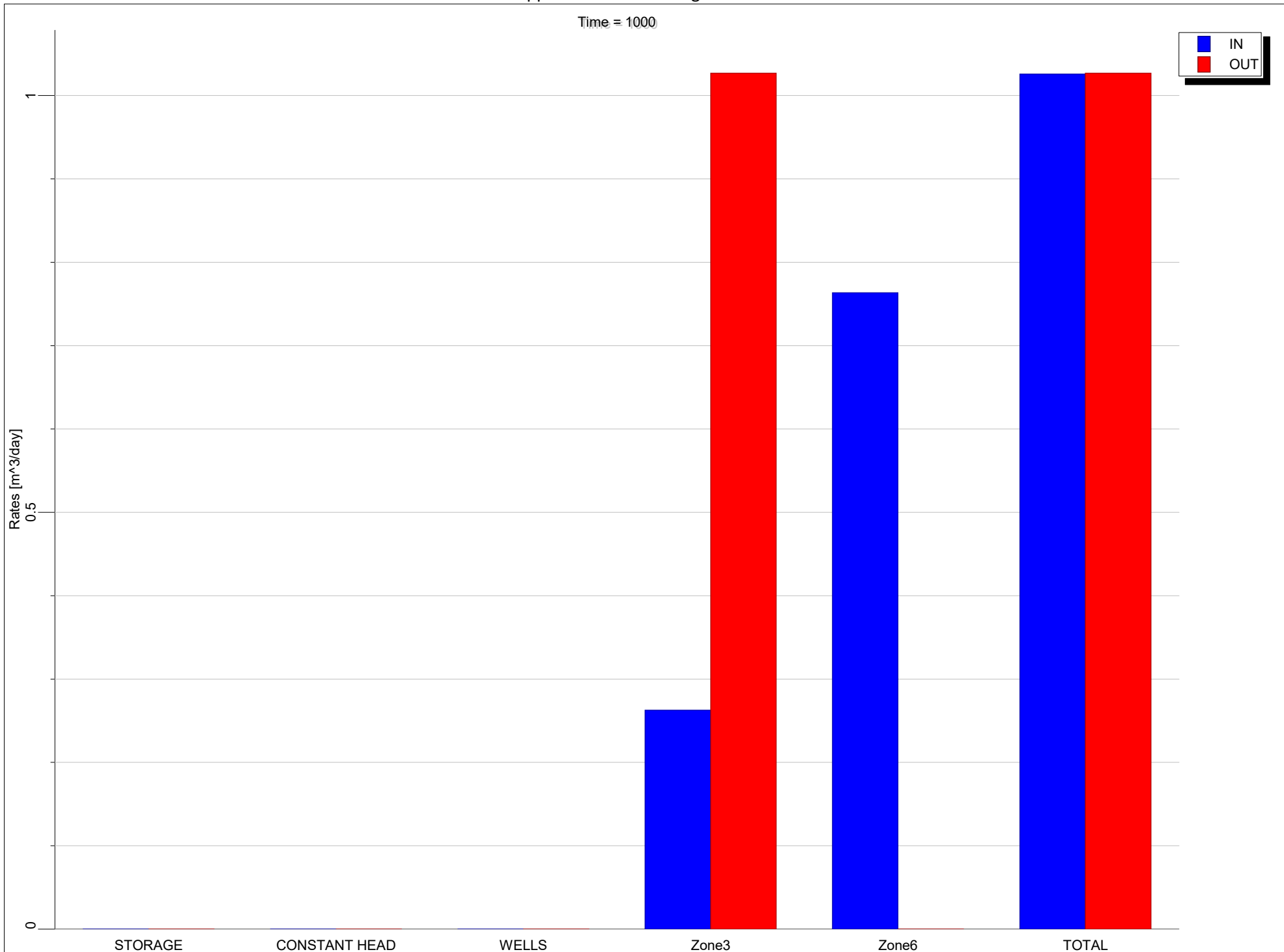
Appendix C - Zone Budget Charts

Time = 1000



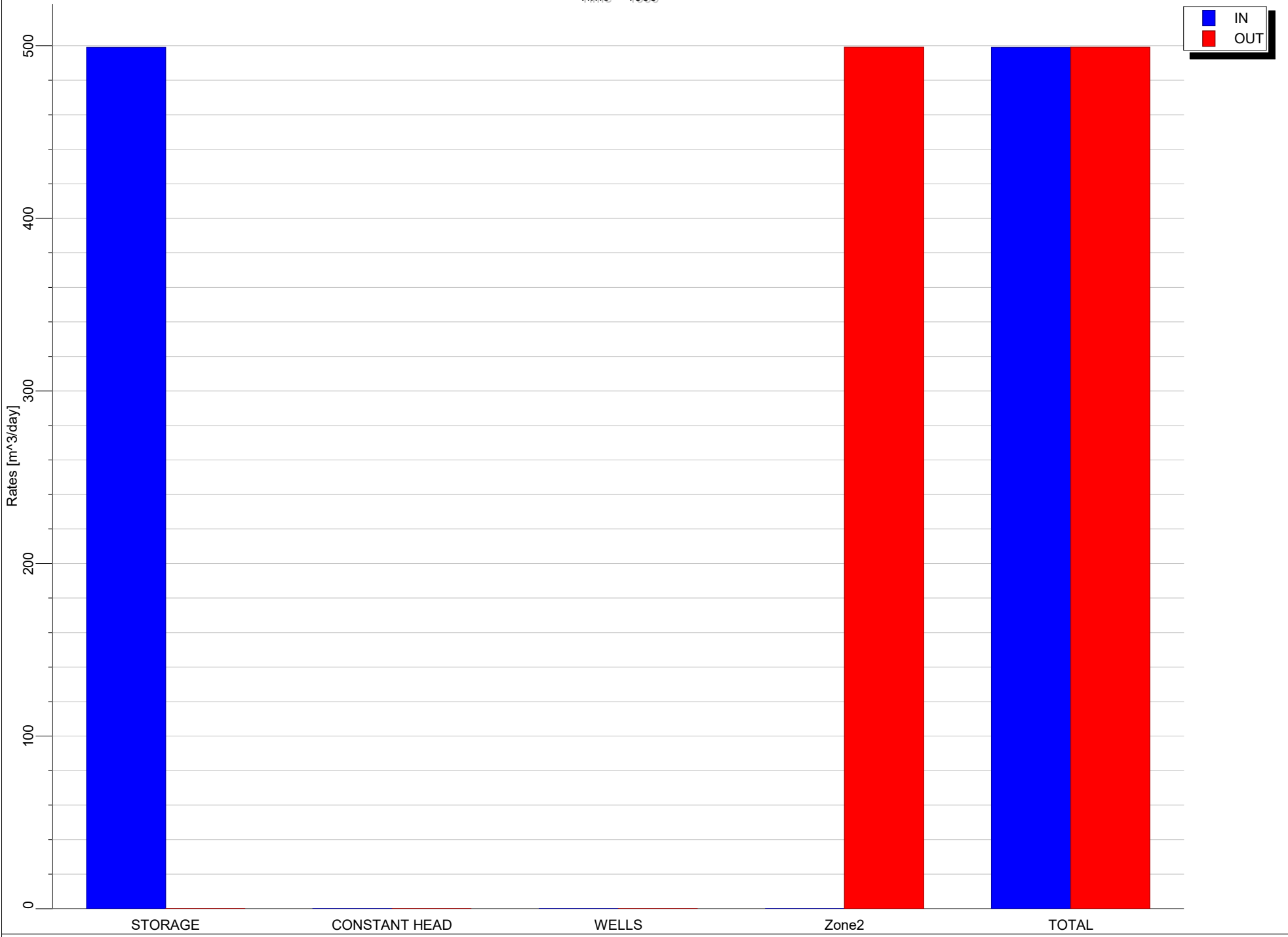
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

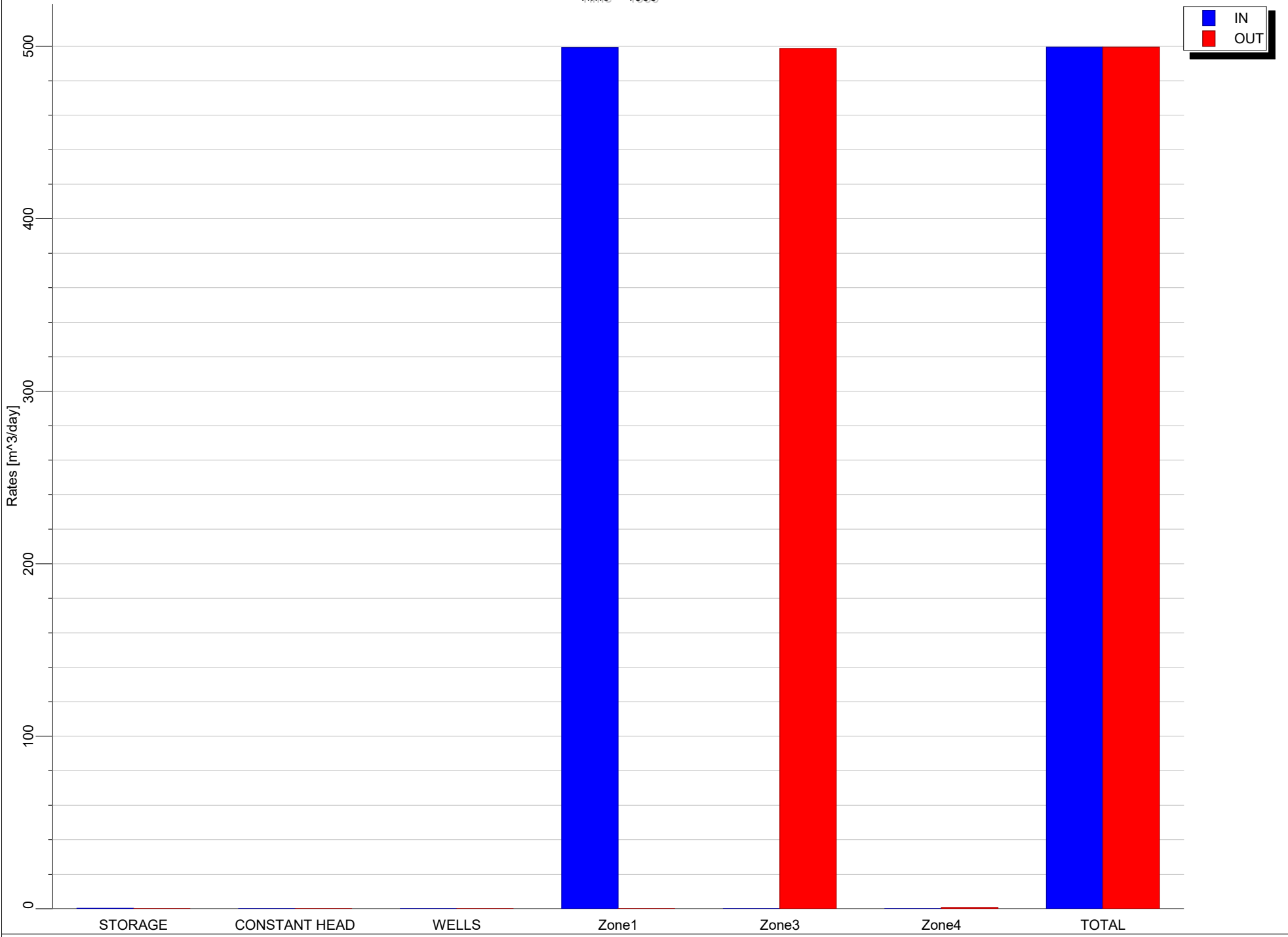
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Zone 1
Scenario 2.1
No Abandoned Well

Appendix C - Zone Budget Charts

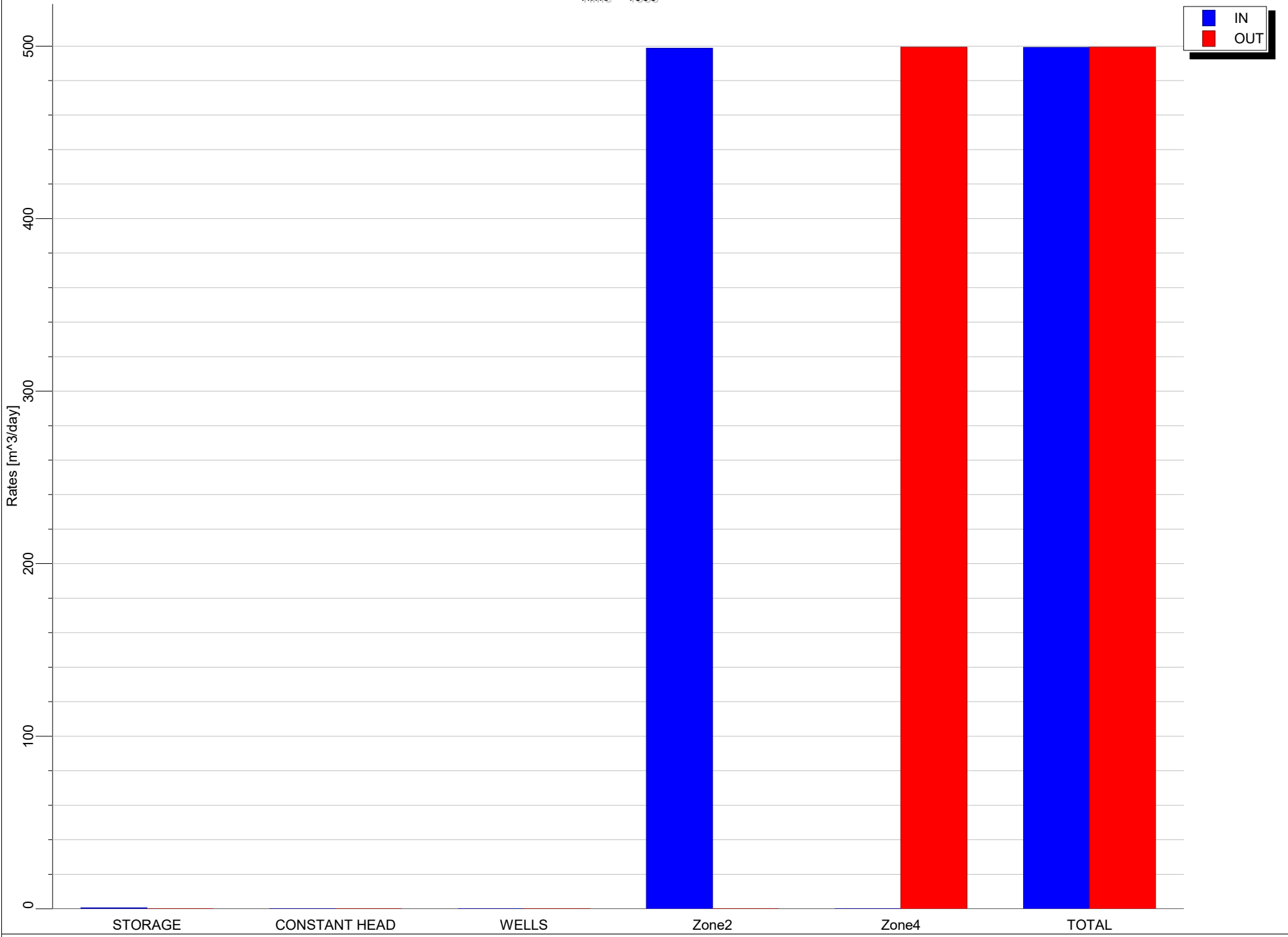
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Zone 2
Scenario 2.1
No Abandoned Well

Appendix C - Zone Budget Charts

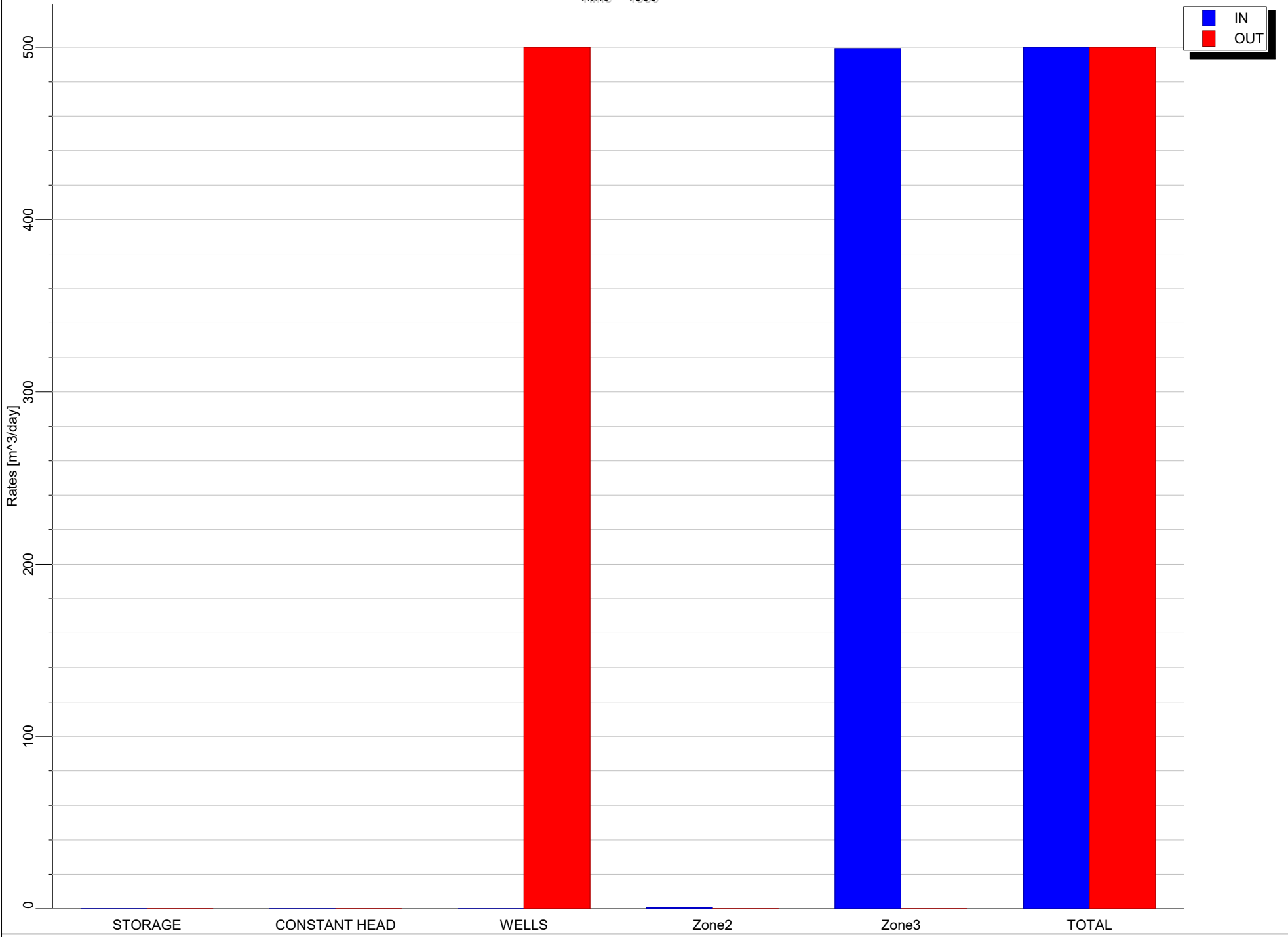
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Zone 3
Scenario 2.1
No Abandoned Well

Appendix C - Zone Budget Charts

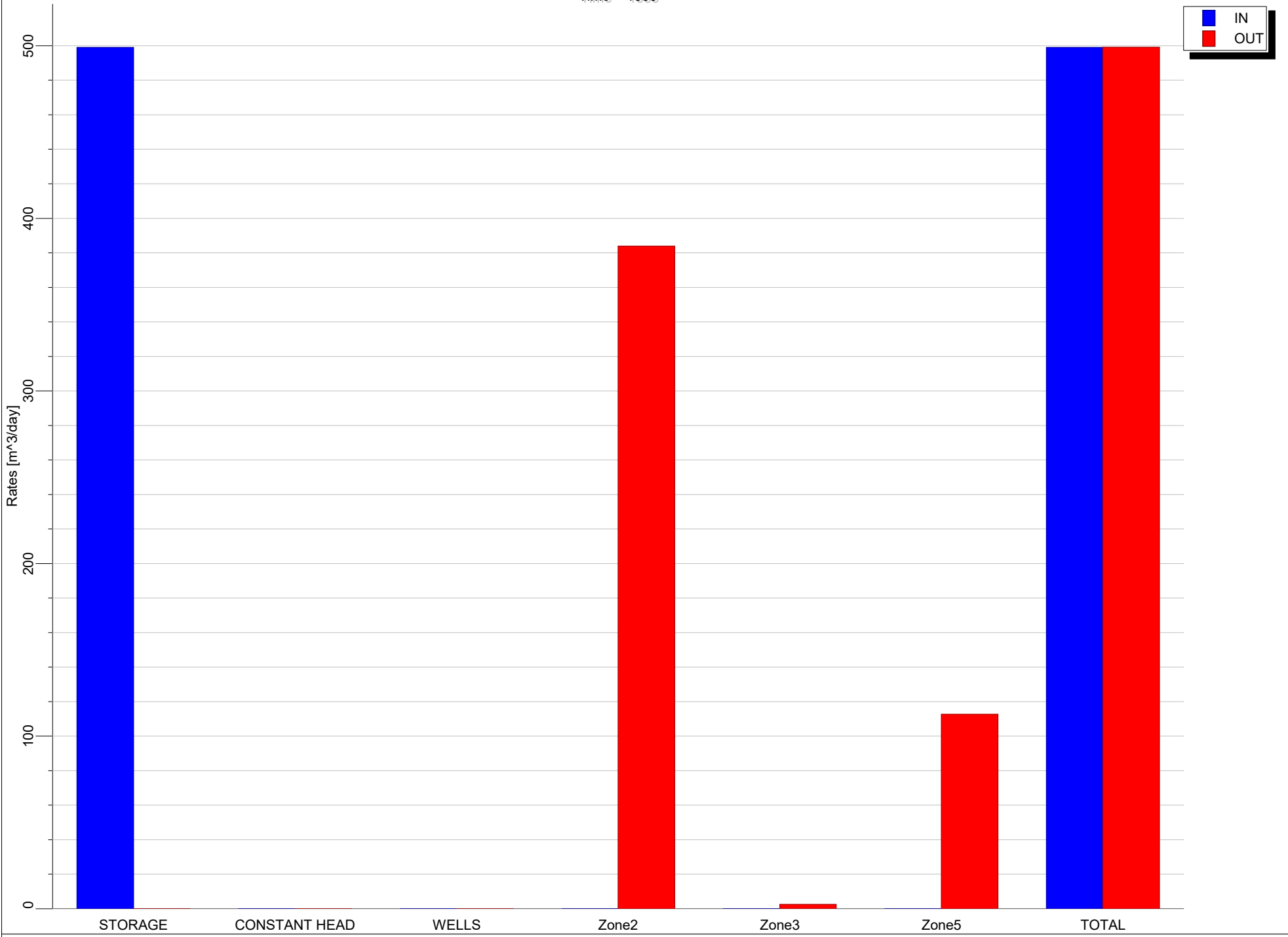
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Zone 4
Scenario 2.1
No Abandoned Well

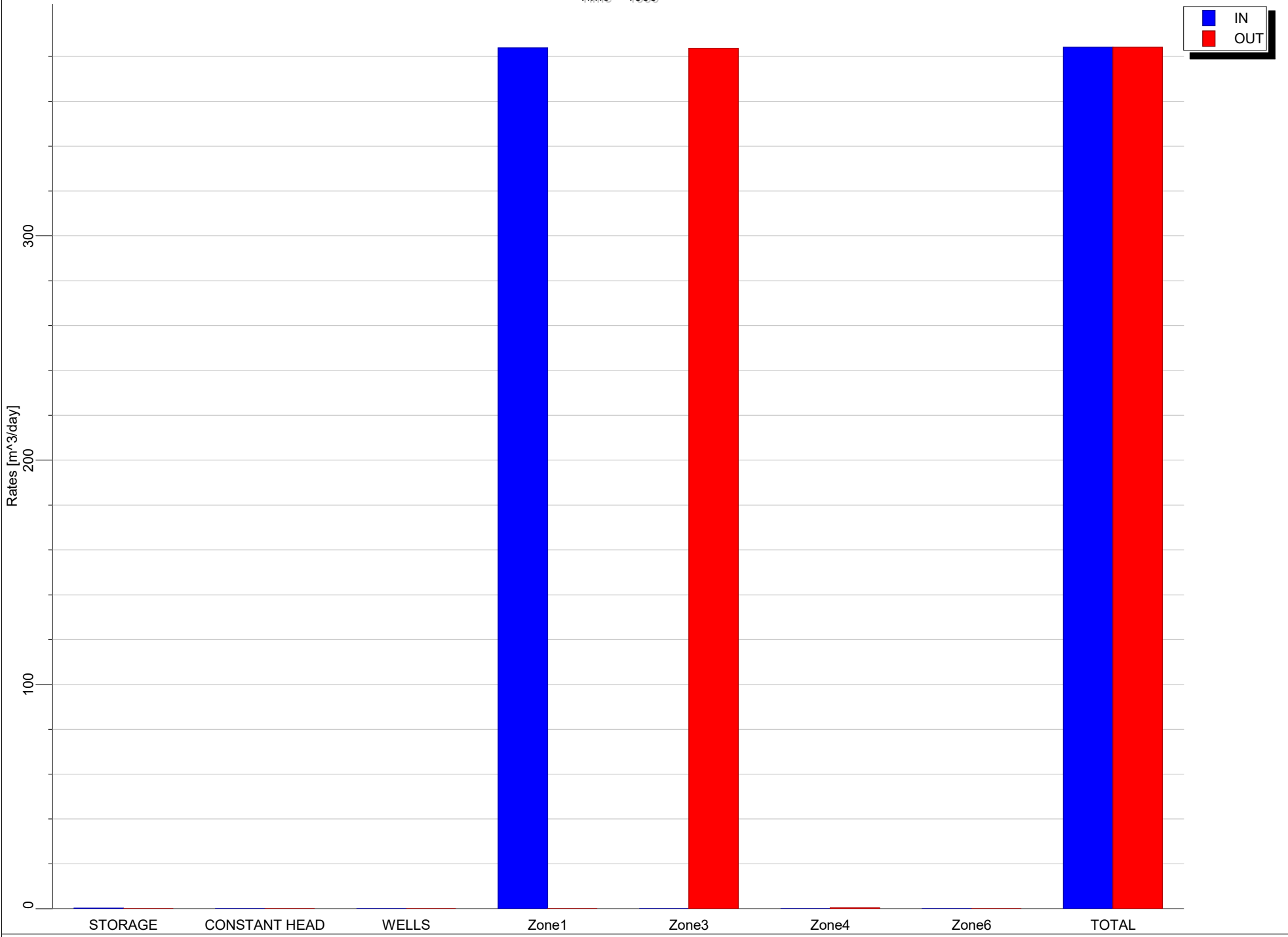
Appendix C - Zone Budget Charts

Time = 1000



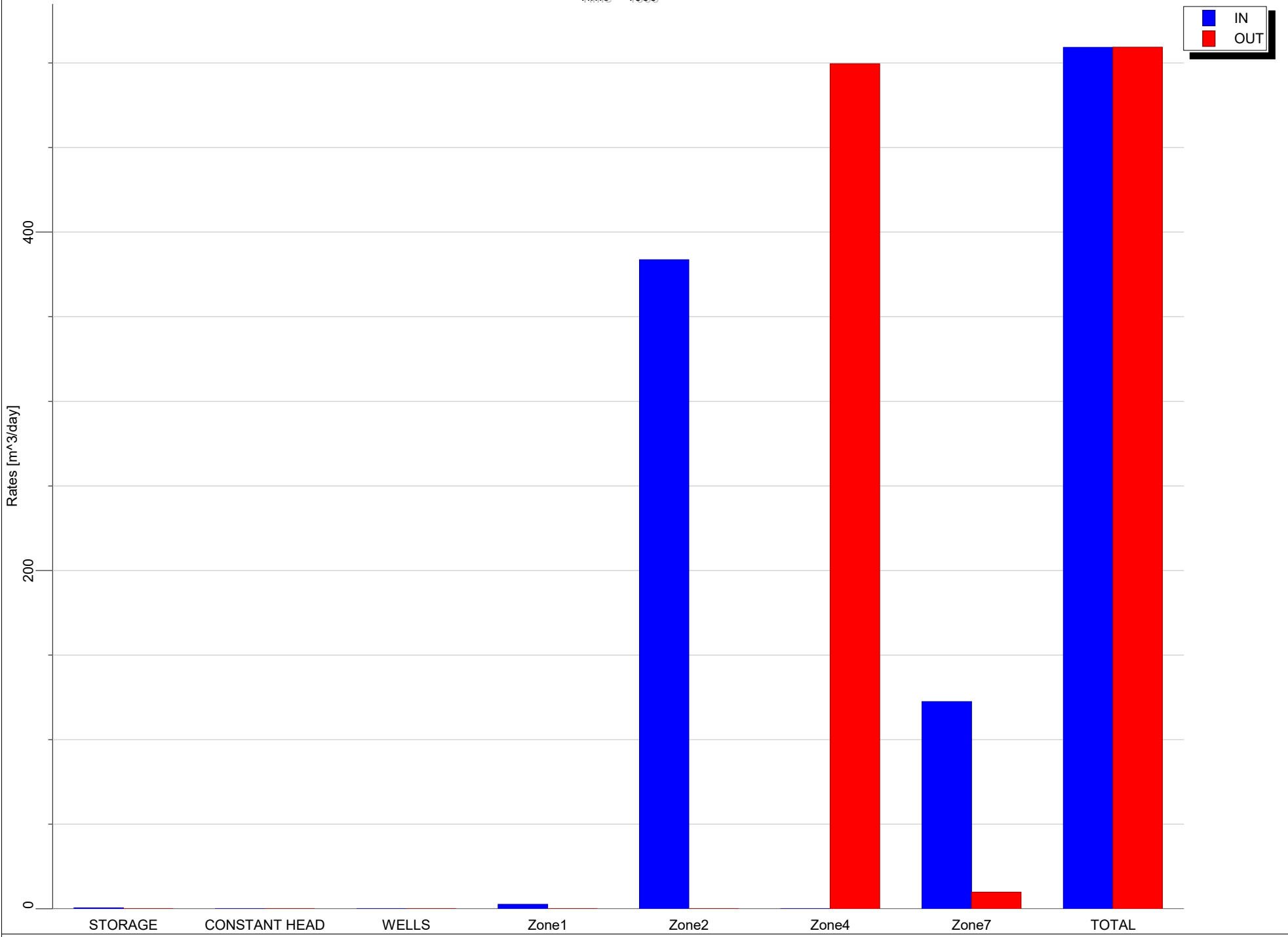
Appendix C - Zone Budget Charts

Time = 1000



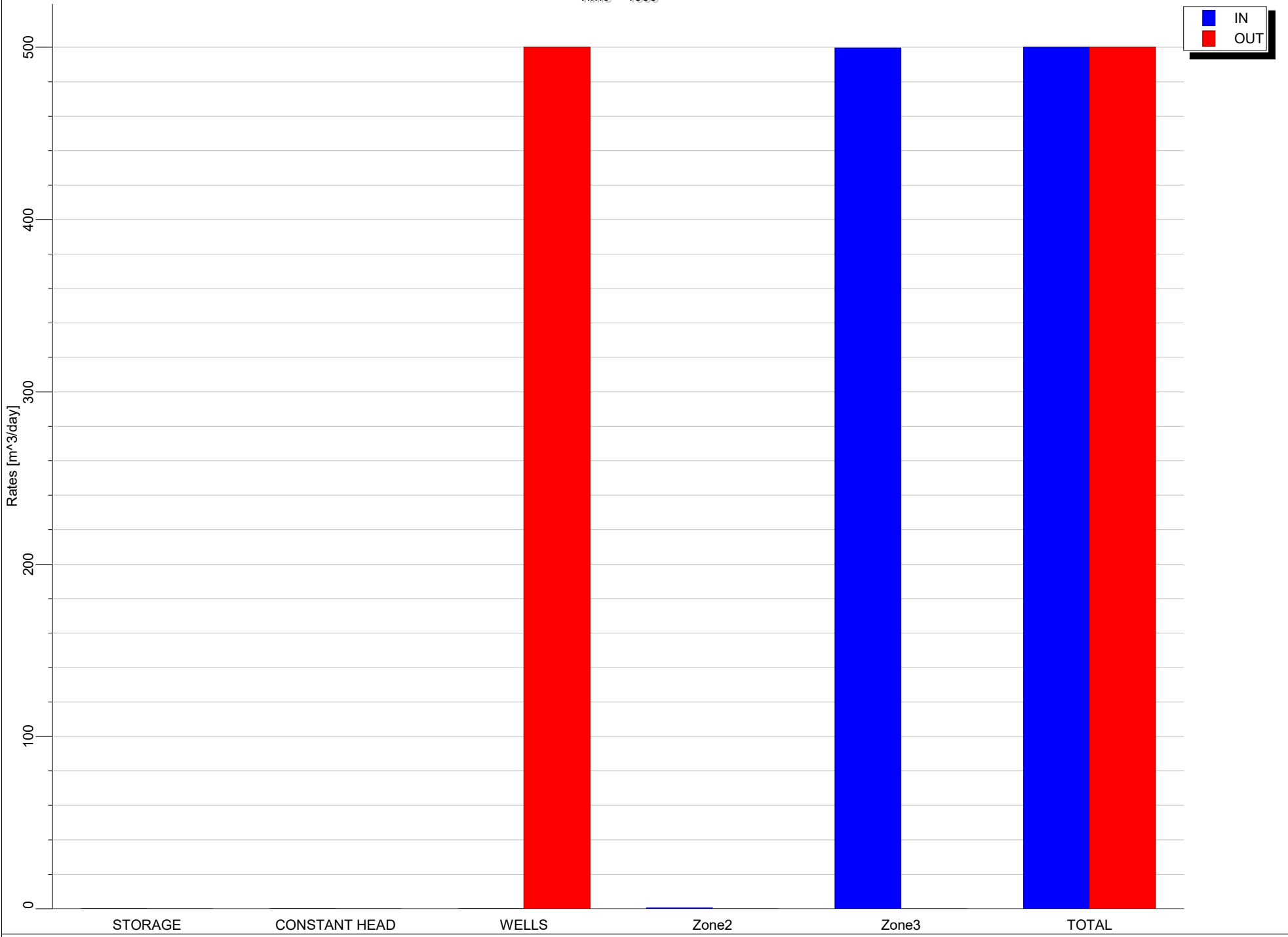
Appendix C - Zone Budget Charts

Time = 1000



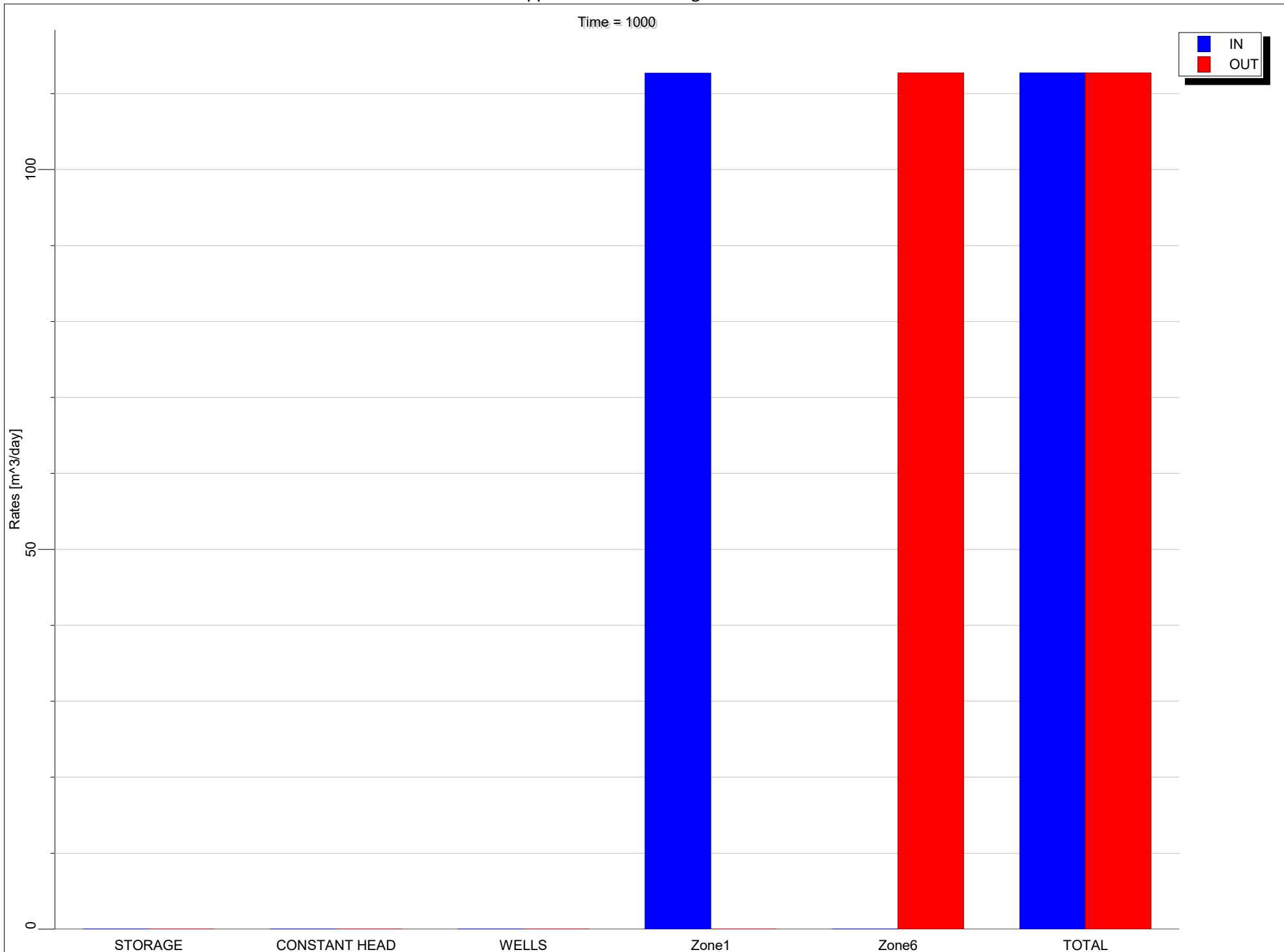
Appendix C - Zone Budget Charts

Time = 1000



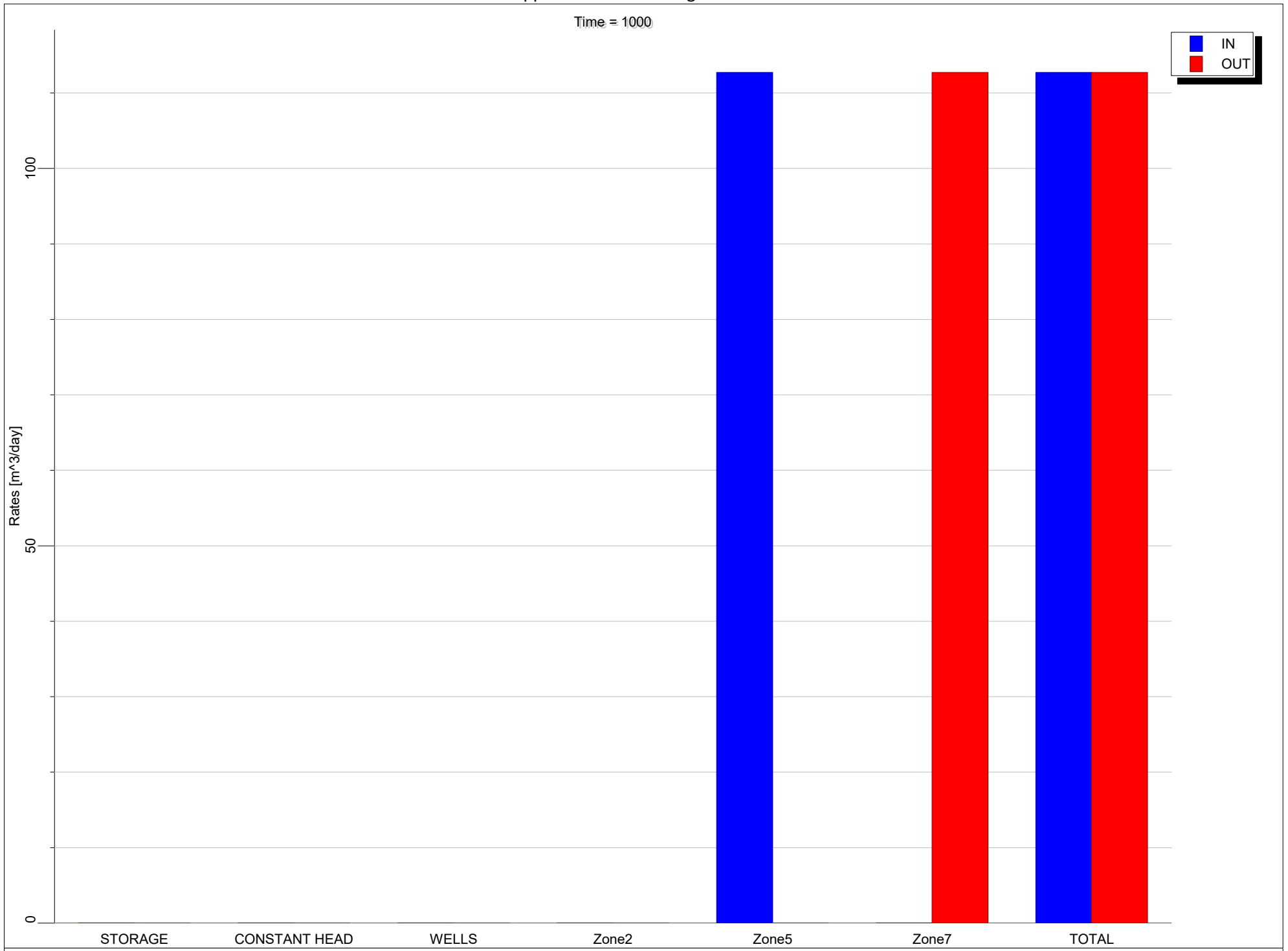
Appendix C - Zone Budget Charts

Time = 1000



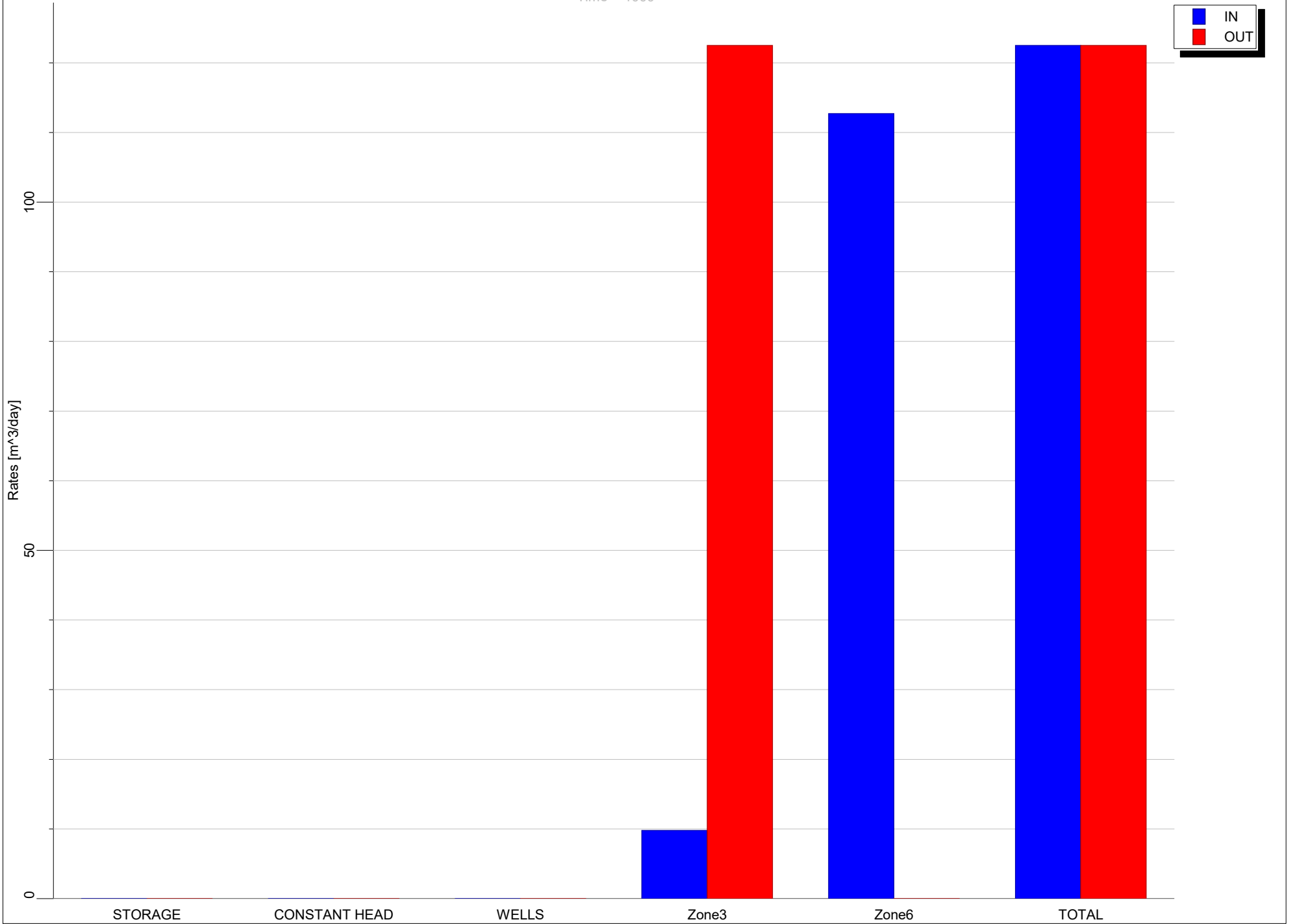
Appendix C - Zone Budget Charts

Time = 1000



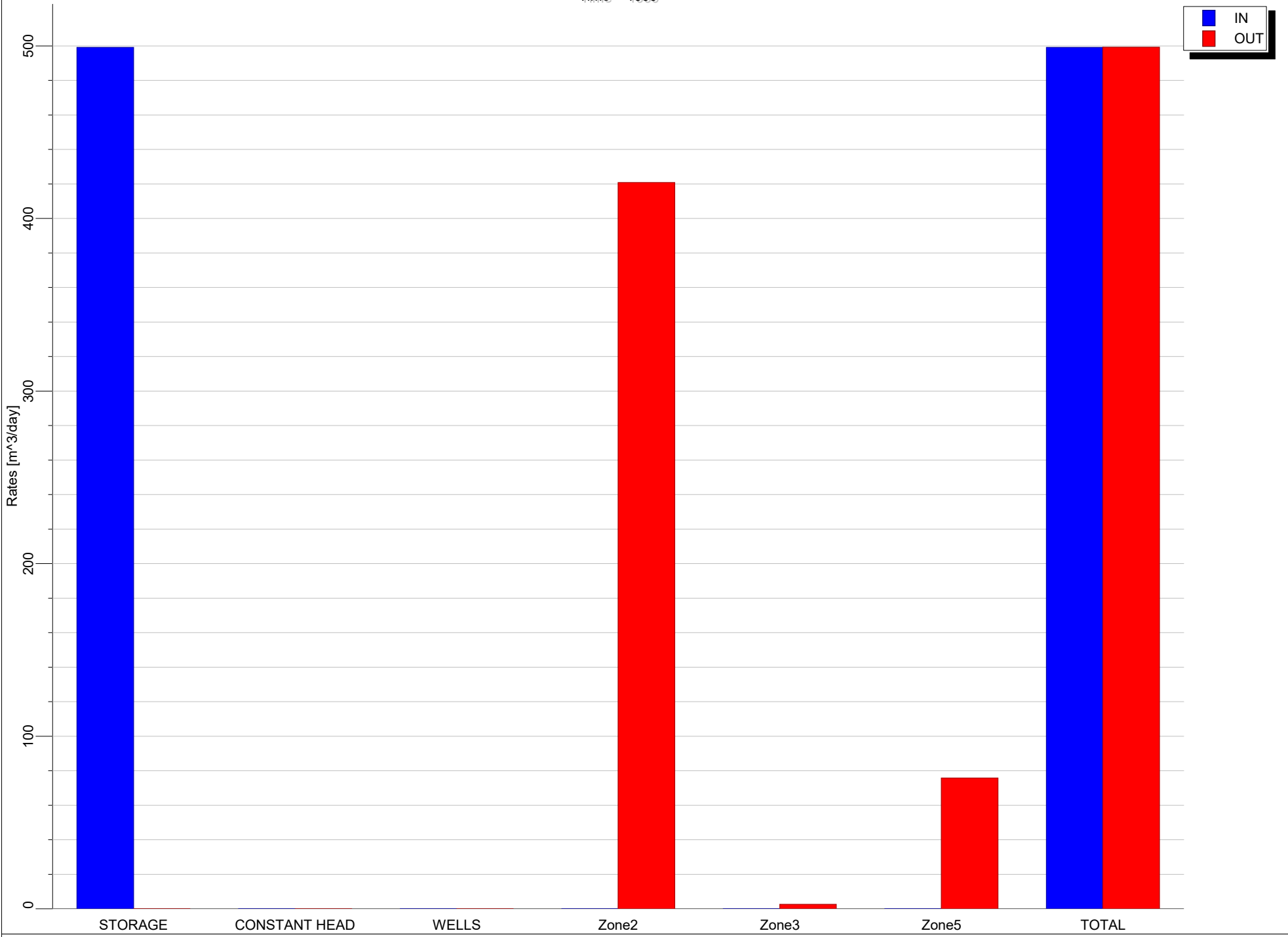
Appendix C - Zone Budget Charts

Time = 1000



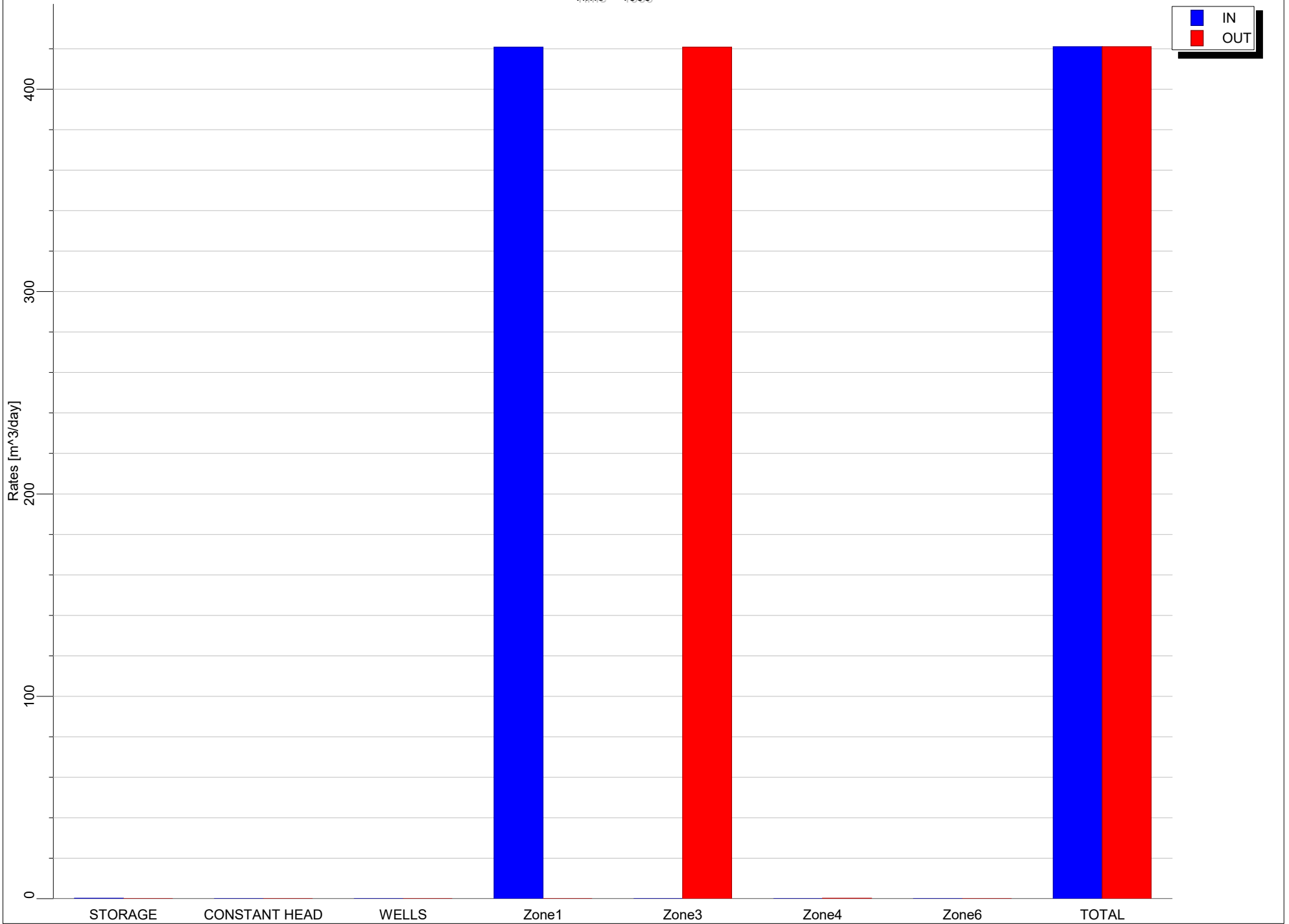
Appendix C - Zone Budget Charts

Time = 1000



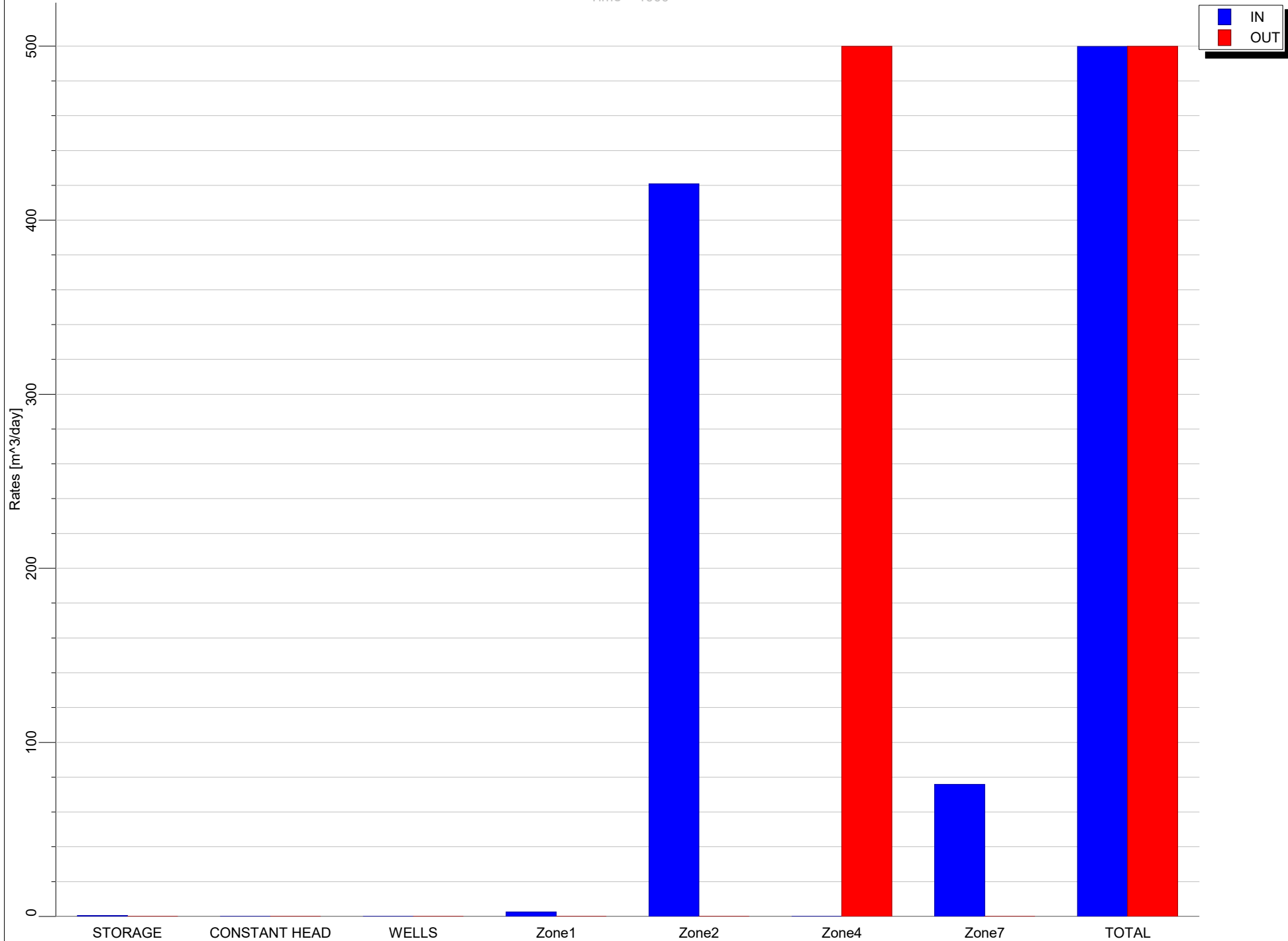
Appendix C - Zone Budget Charts

Time = 1000



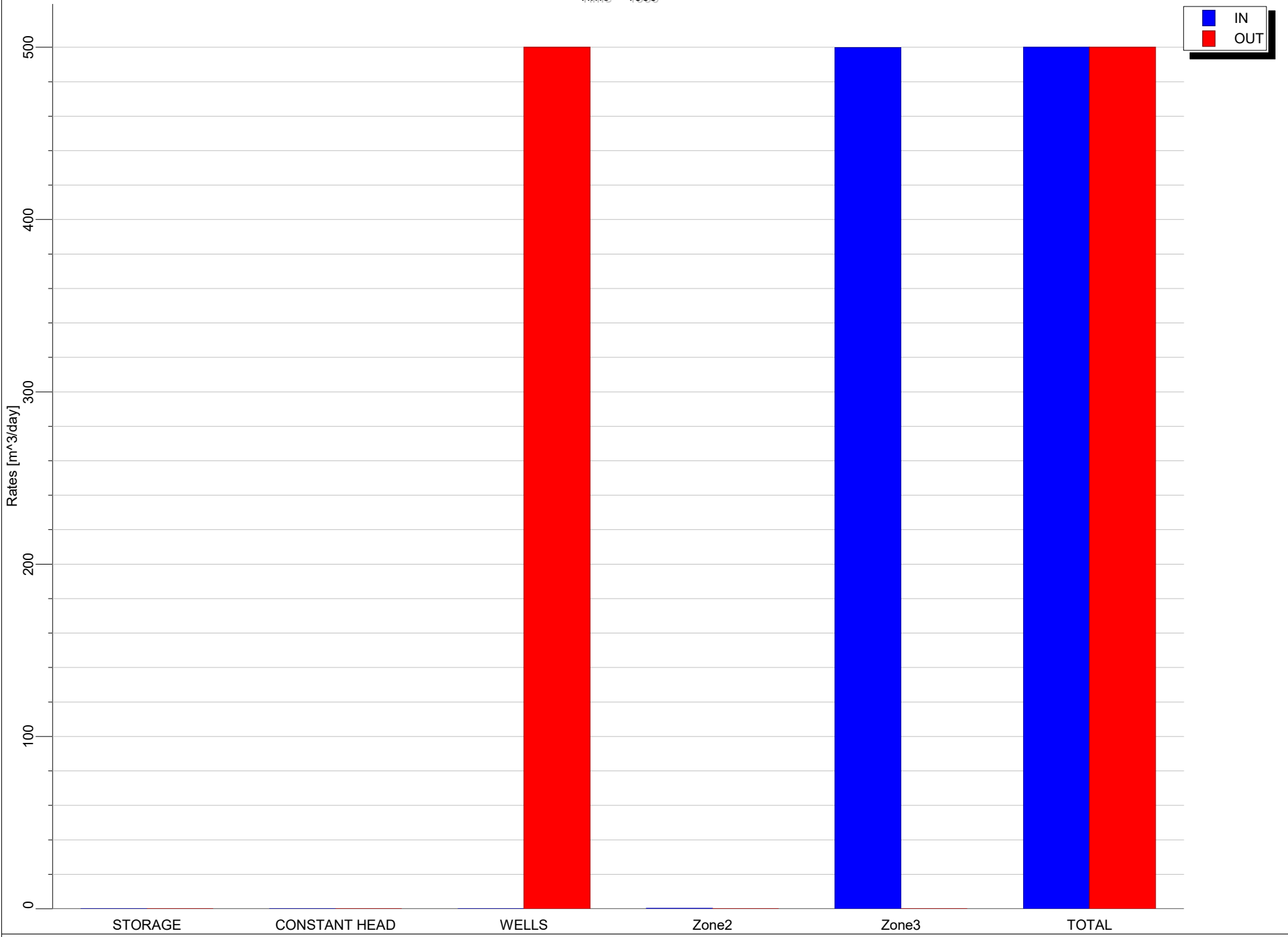
Appendix C - Zone Budget Charts

Time = 1000



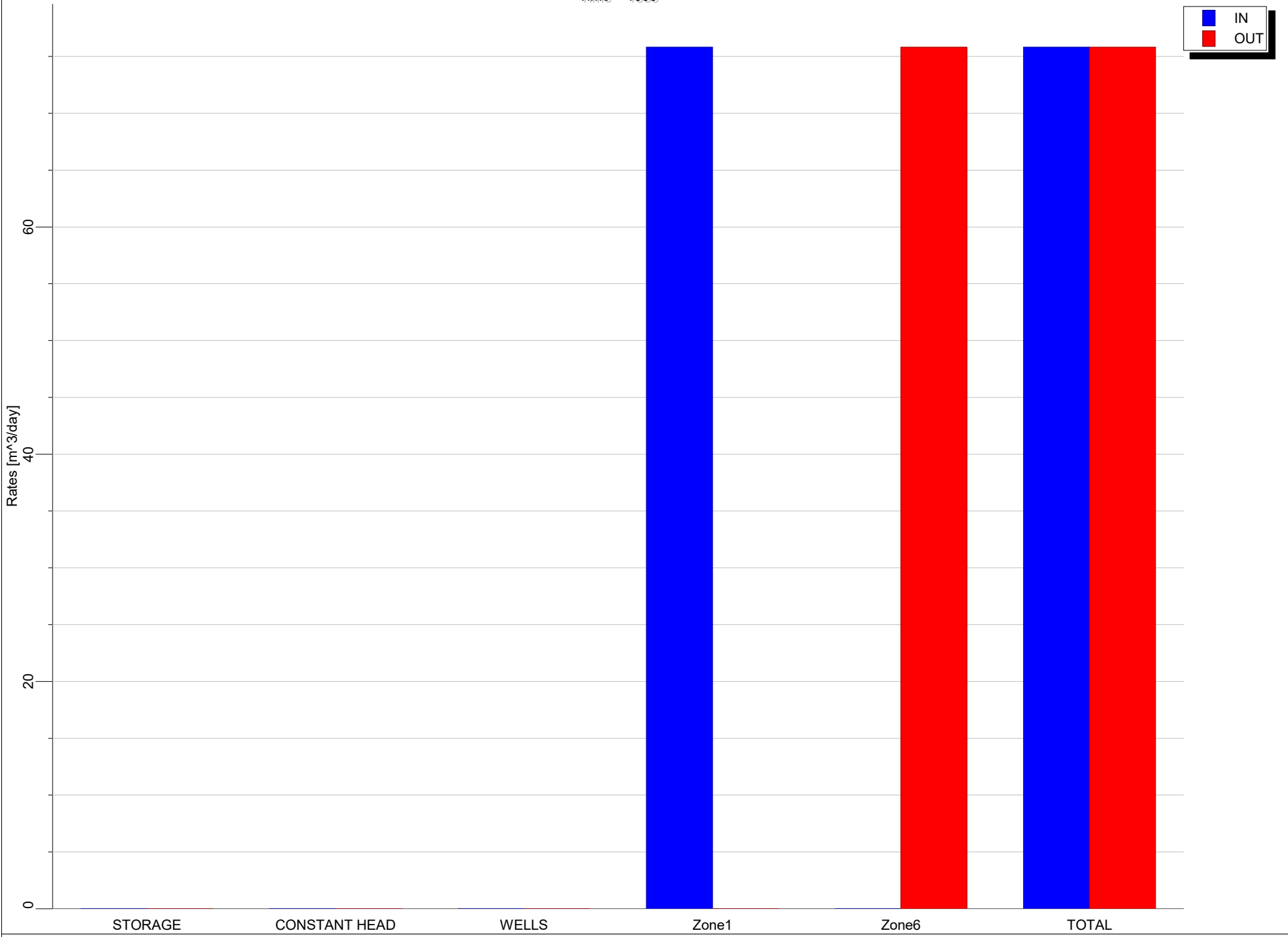
Appendix C - Zone Budget Charts

Time = 1000



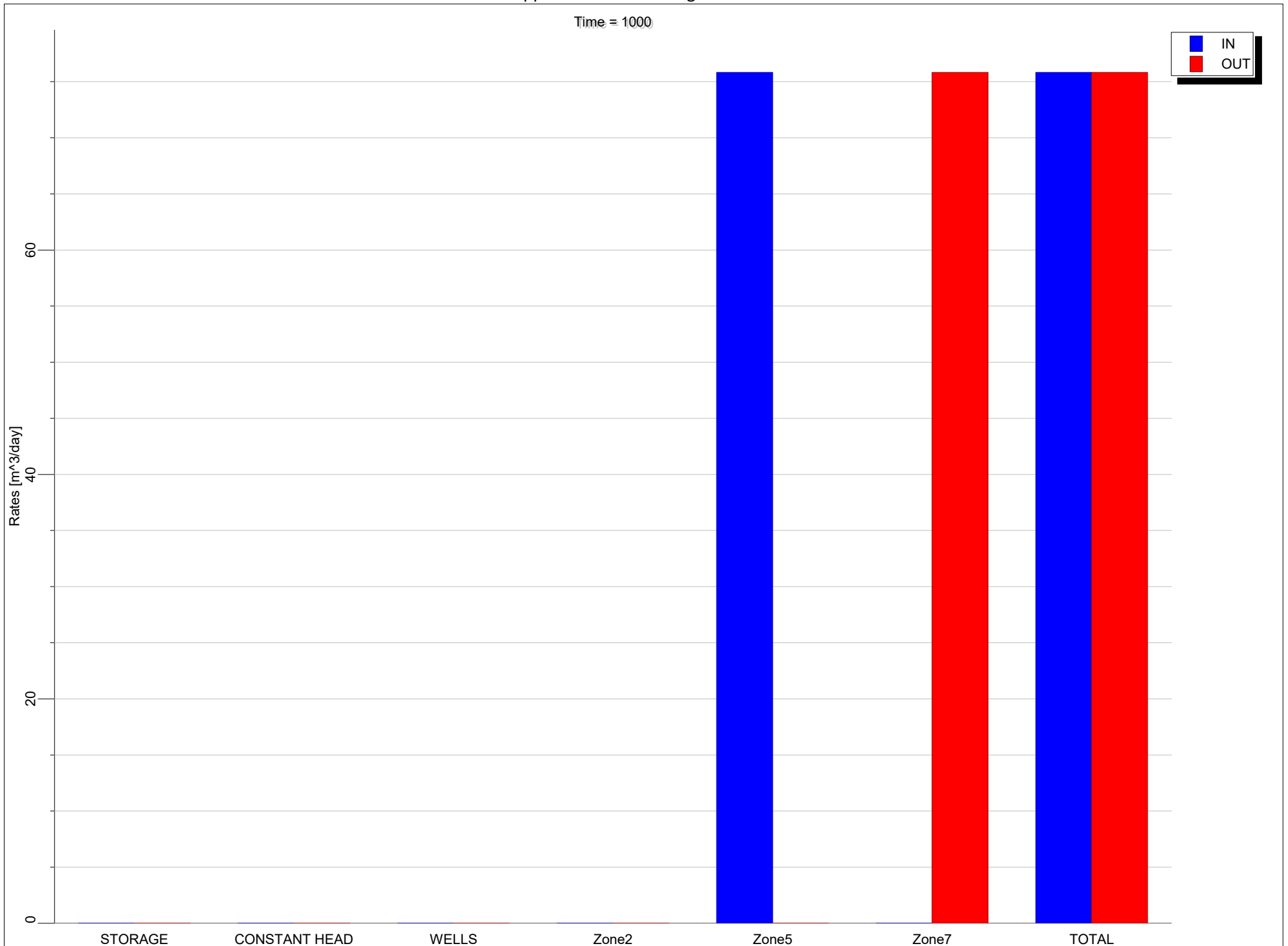
Appendix C - Zone Budget Charts

Time = 1000



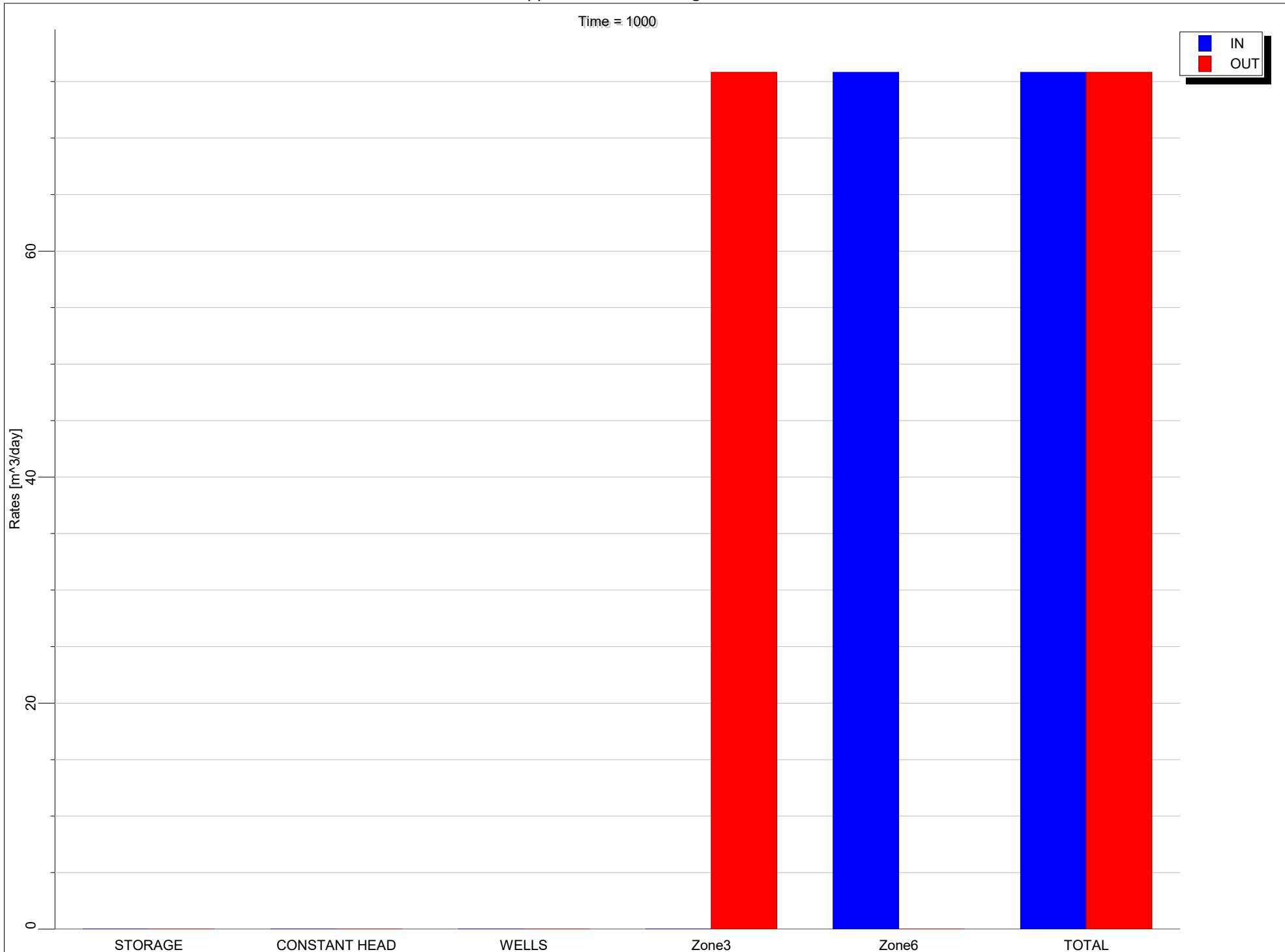
Appendix C - Zone Budget Charts

Time = 1000



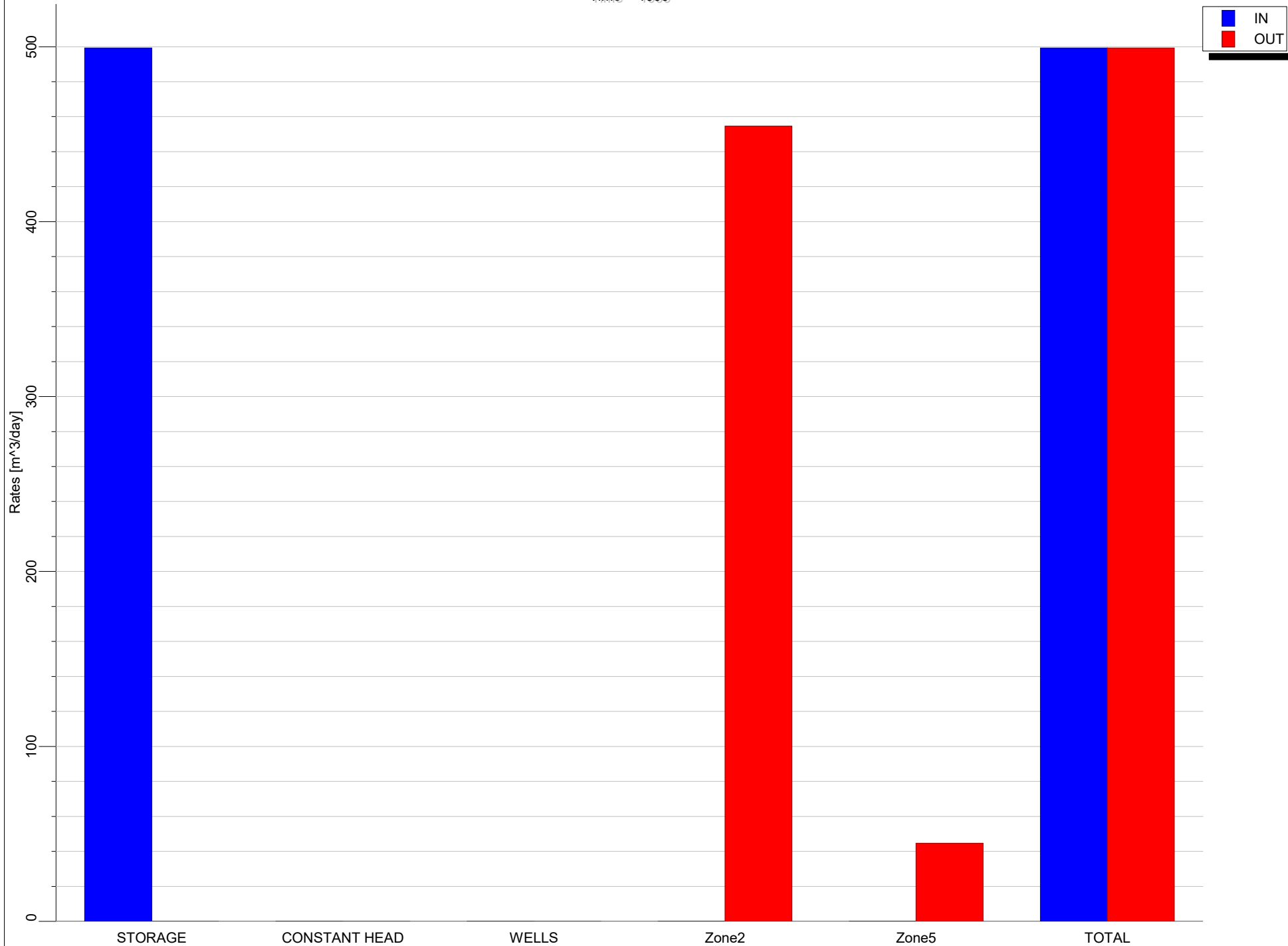
Appendix C - Zone Budget Charts

Time = 1000



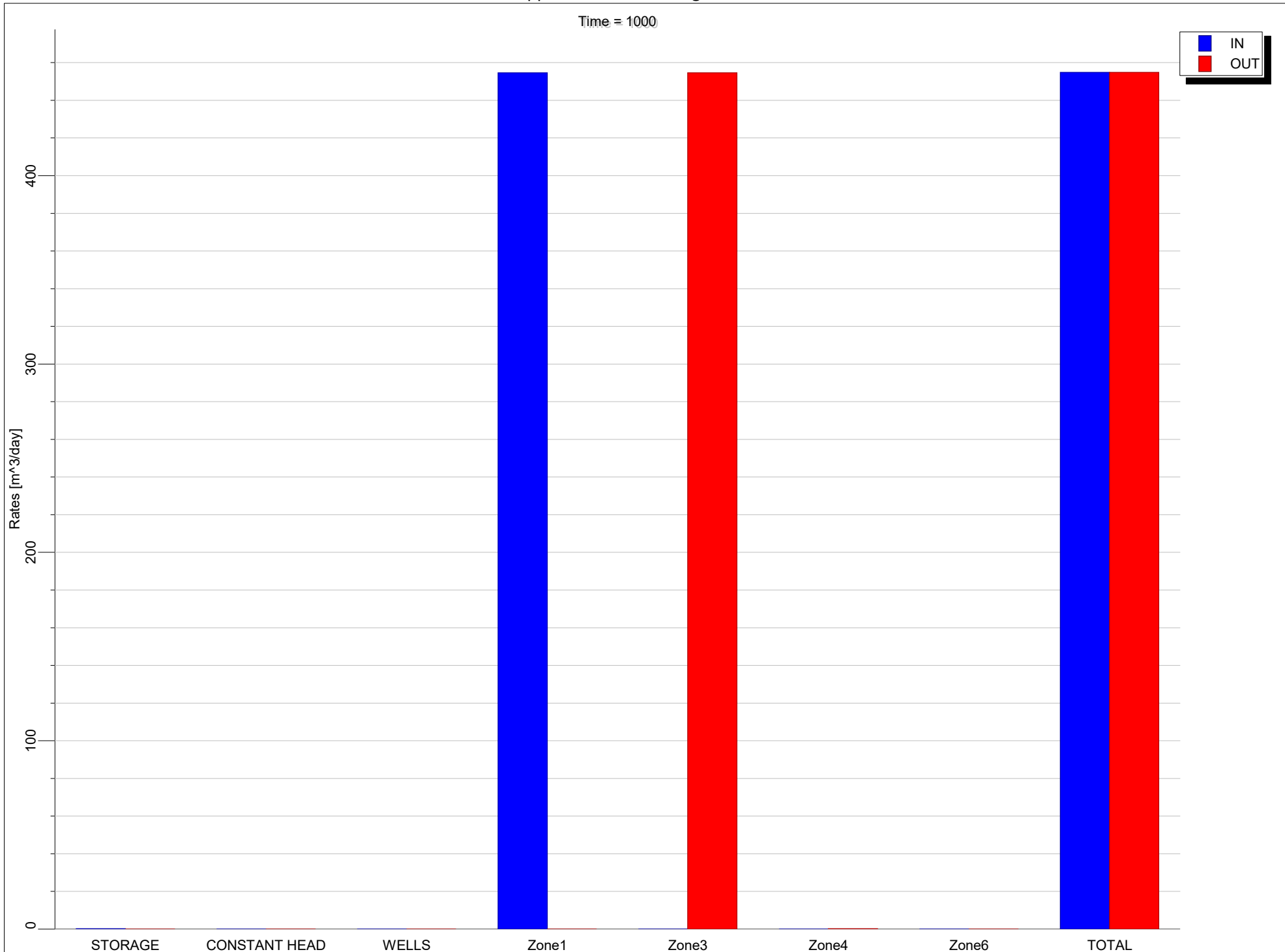
Appendix C - Zone Budget Charts

Time = 1000



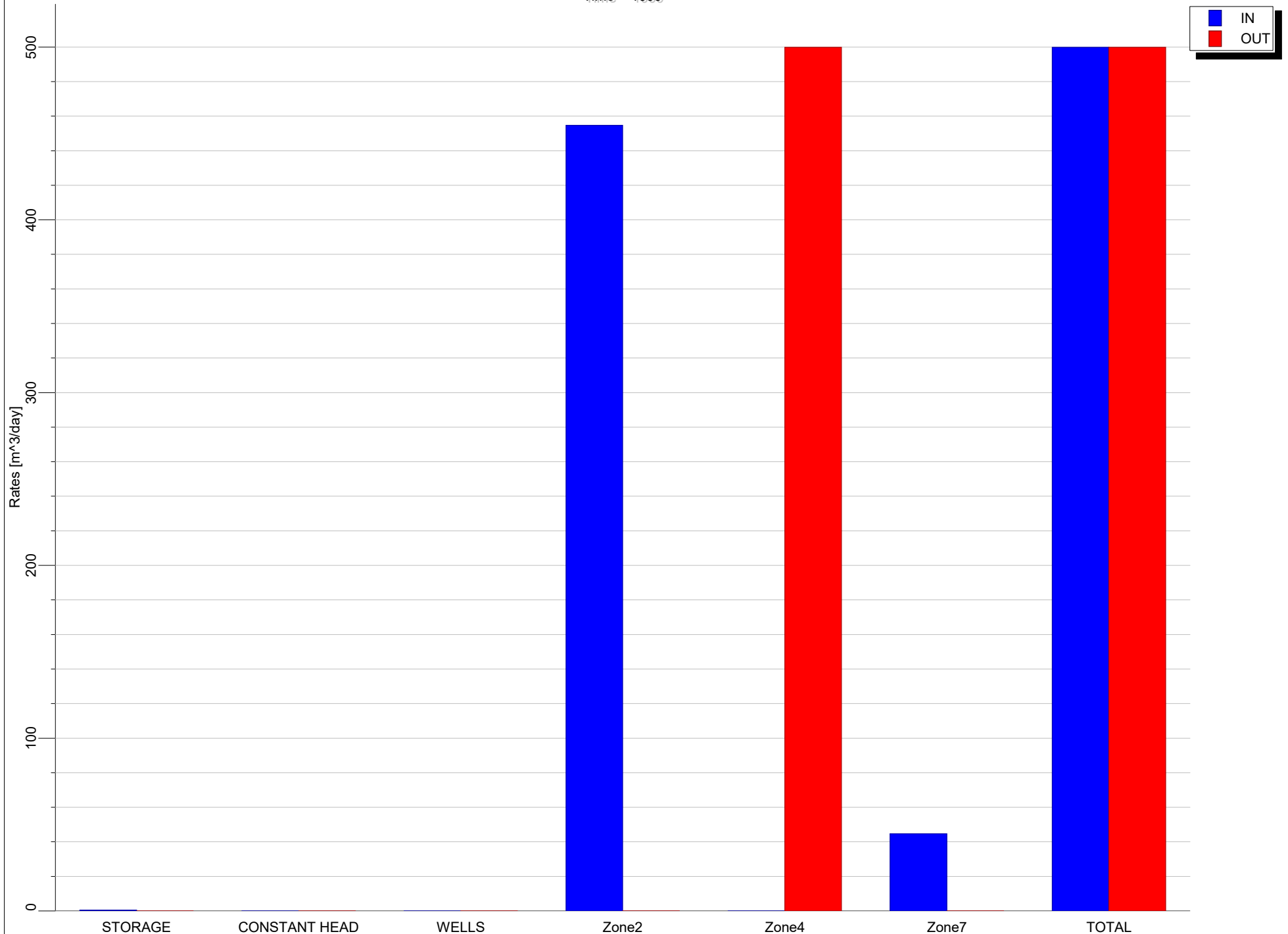
Appendix C - Zone Budget Charts

Time = 1000



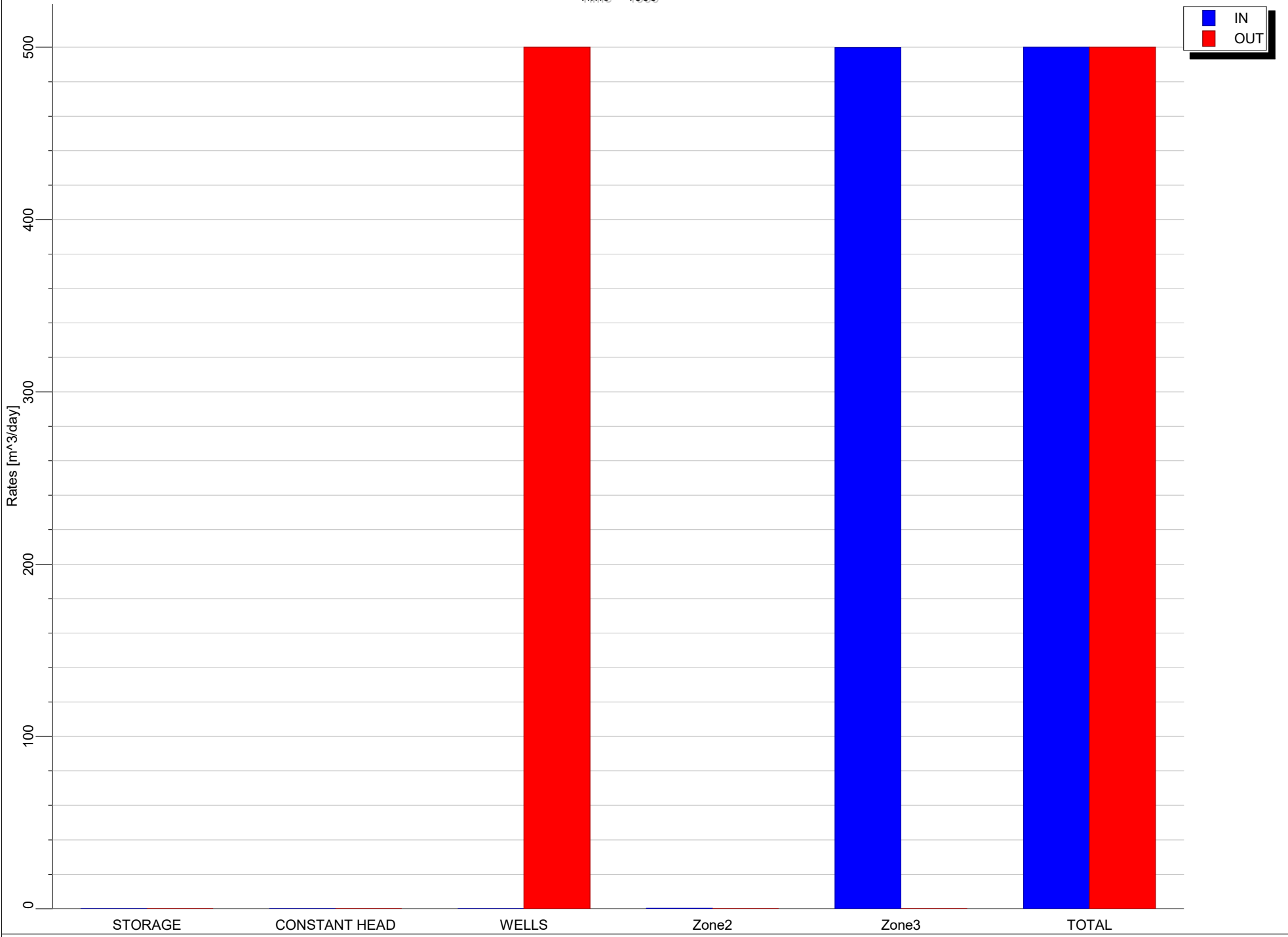
Appendix C - Zone Budget Charts

Time = 1000



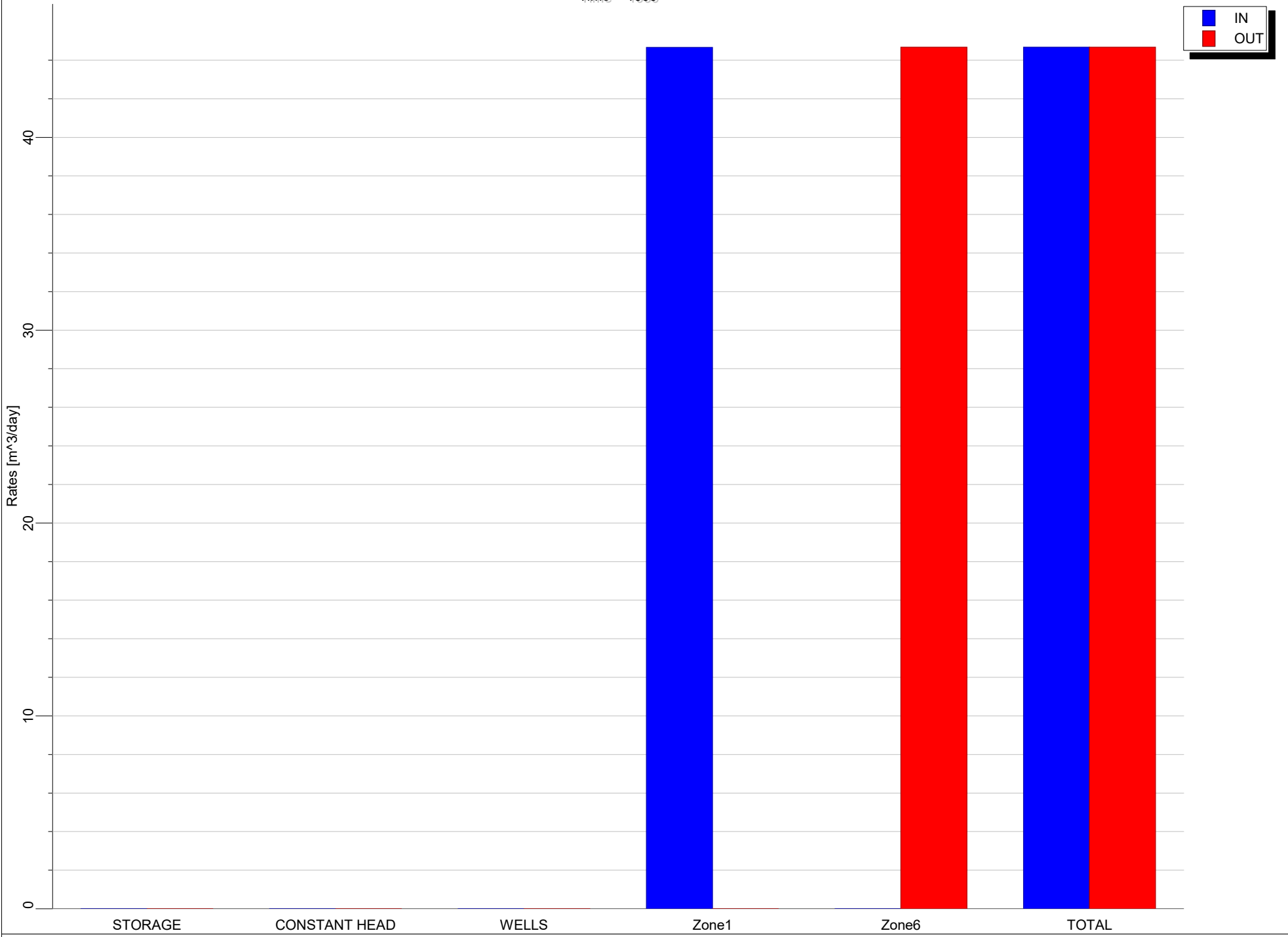
Appendix C - Zone Budget Charts

Time = 1000



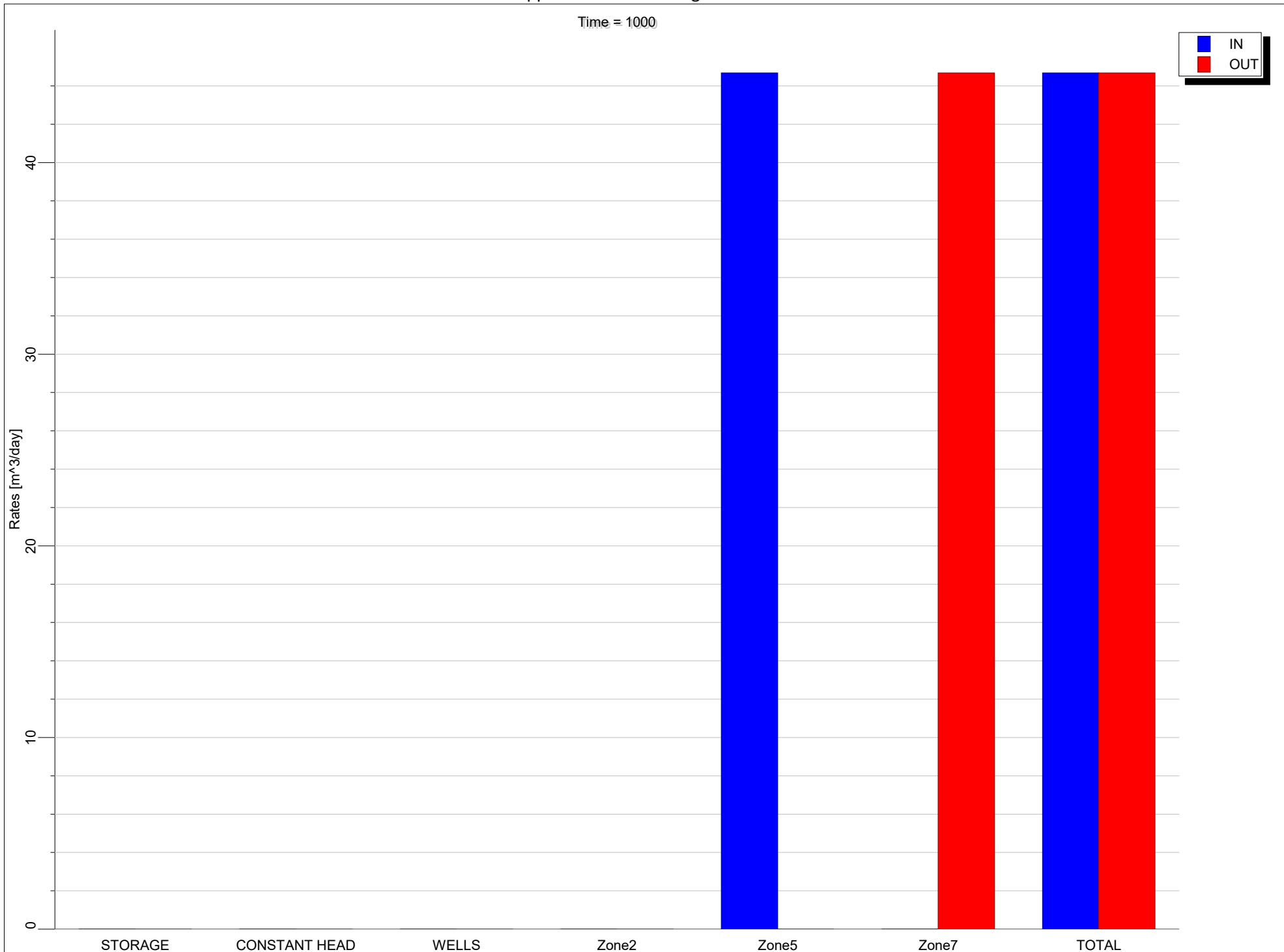
Appendix C - Zone Budget Charts

Time = 1000



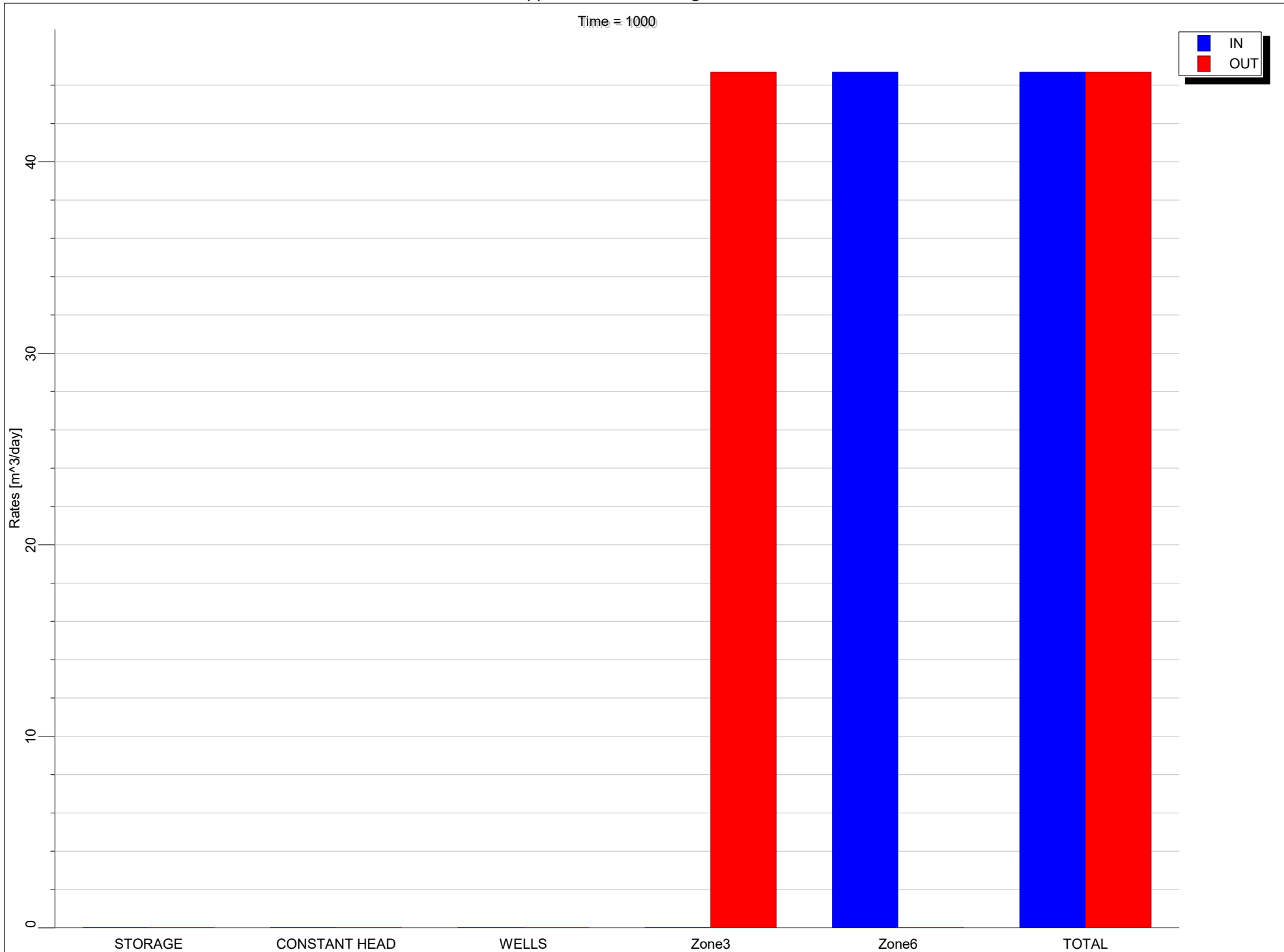
Appendix C - Zone Budget Charts

Time = 1000



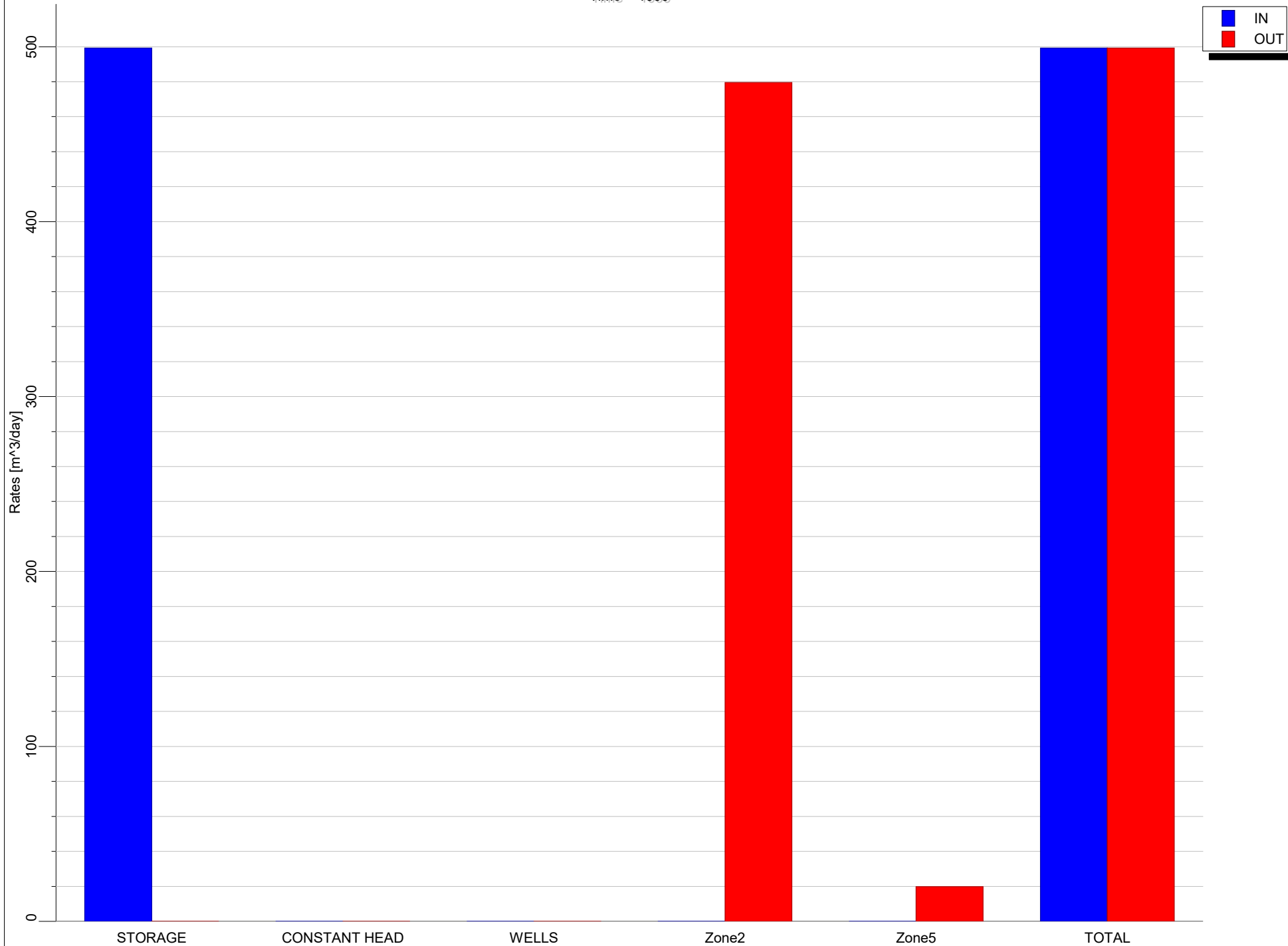
Appendix C - Zone Budget Charts

Time = 1000



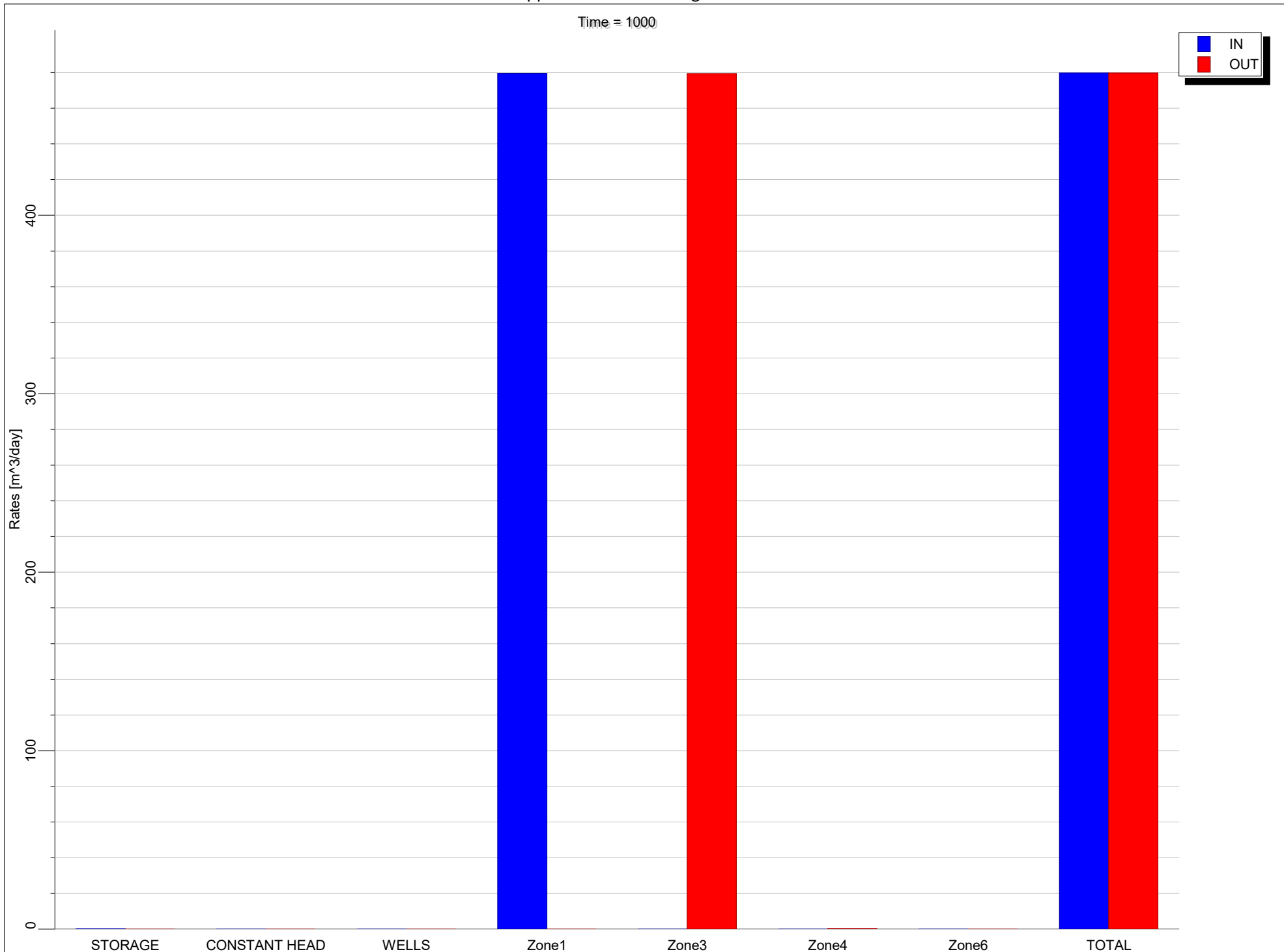
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

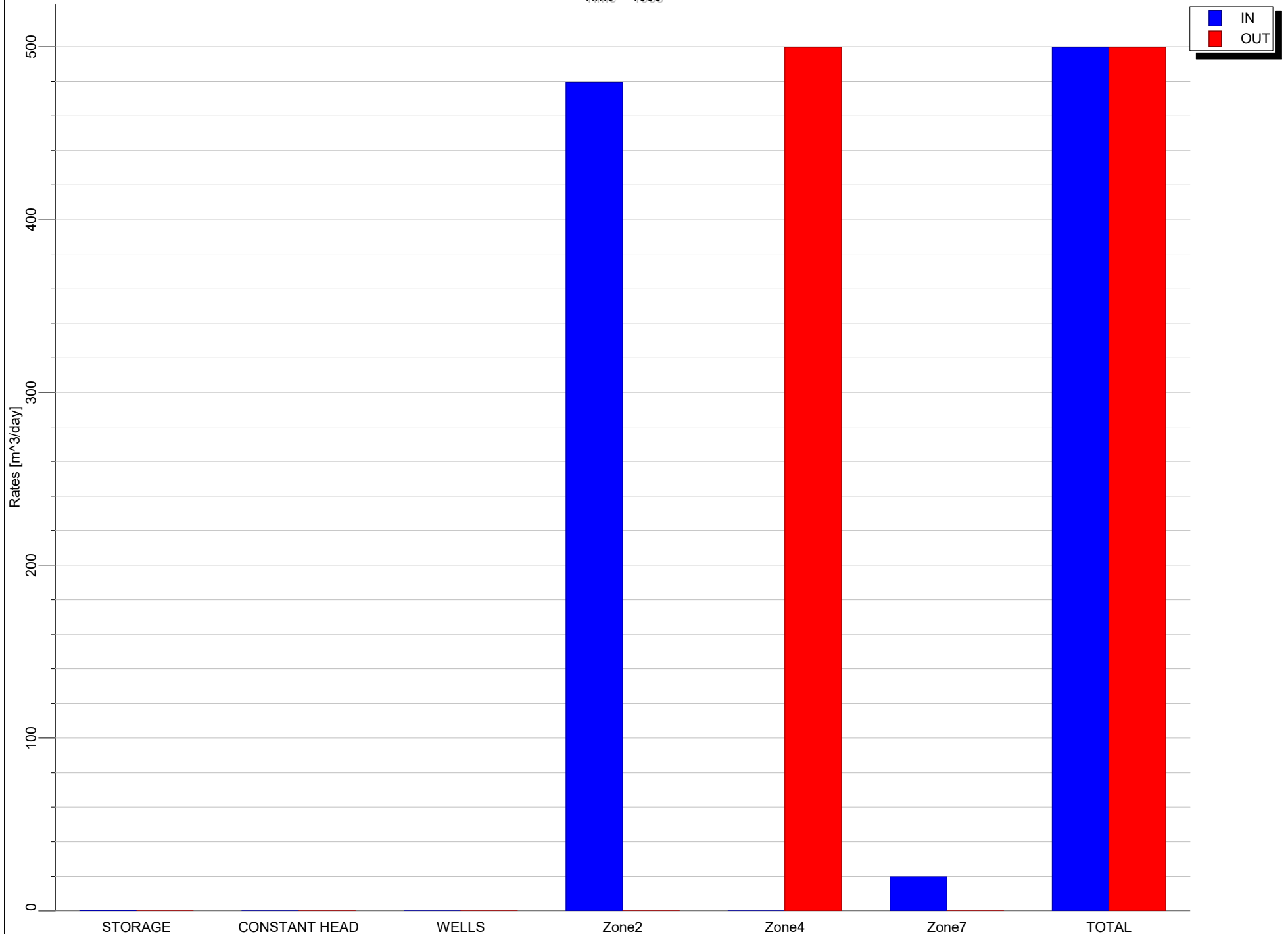
Time = 1000



Zone 2
Scenario 2.5
Abandoned Well 160m

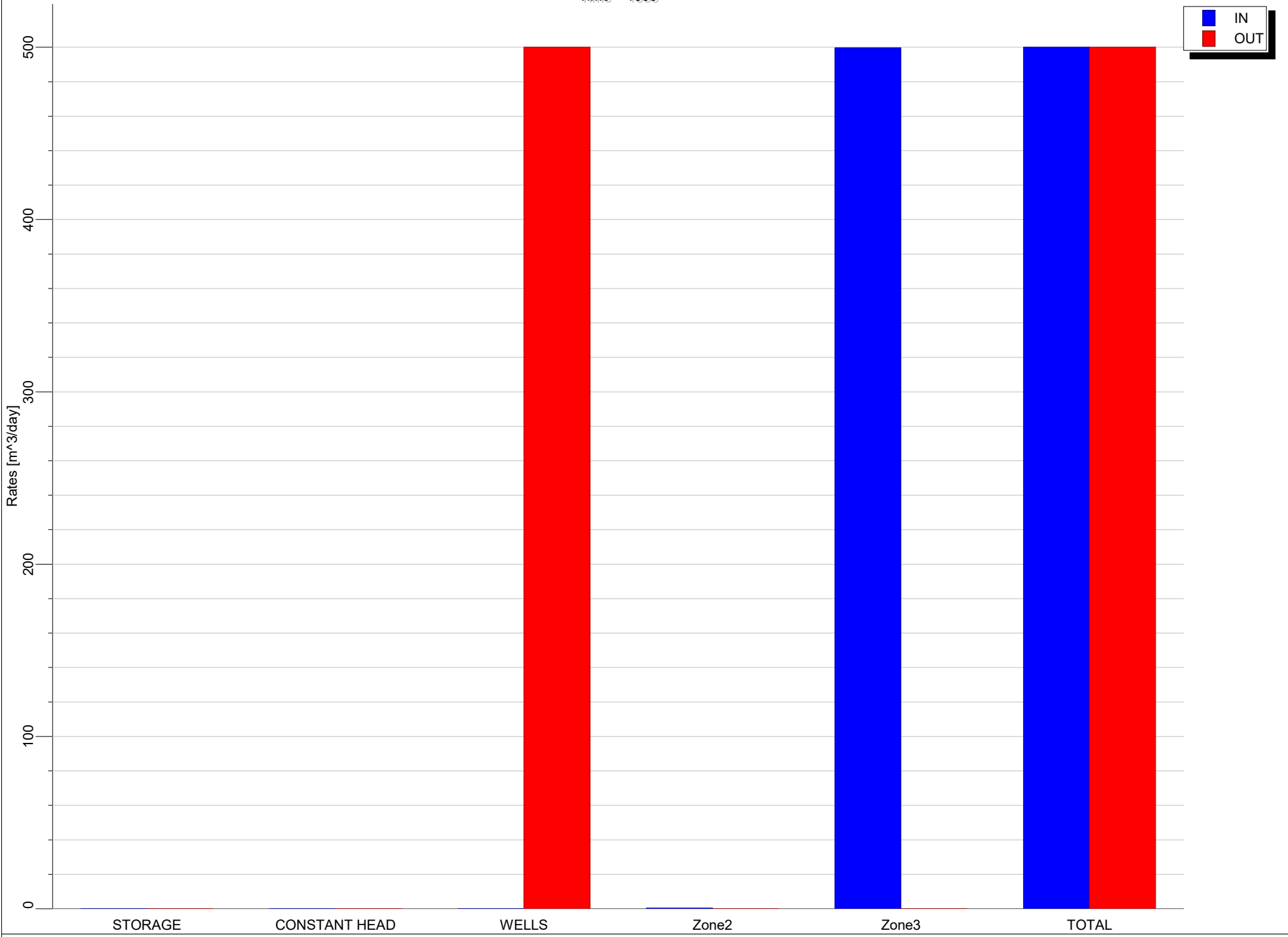
Appendix C - Zone Budget Charts

Time = 1000



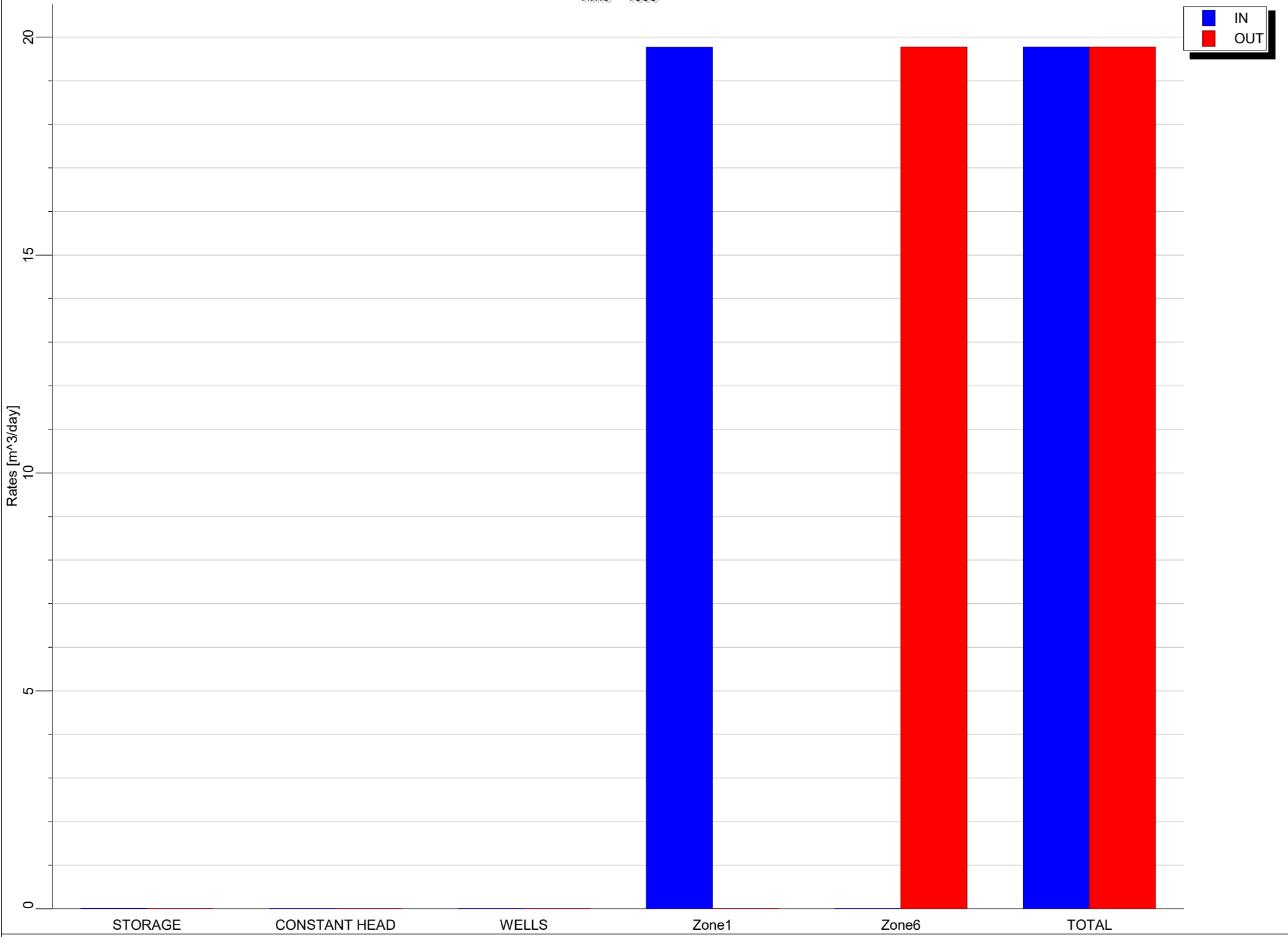
Appendix C - Zone Budget Charts

Time = 1000



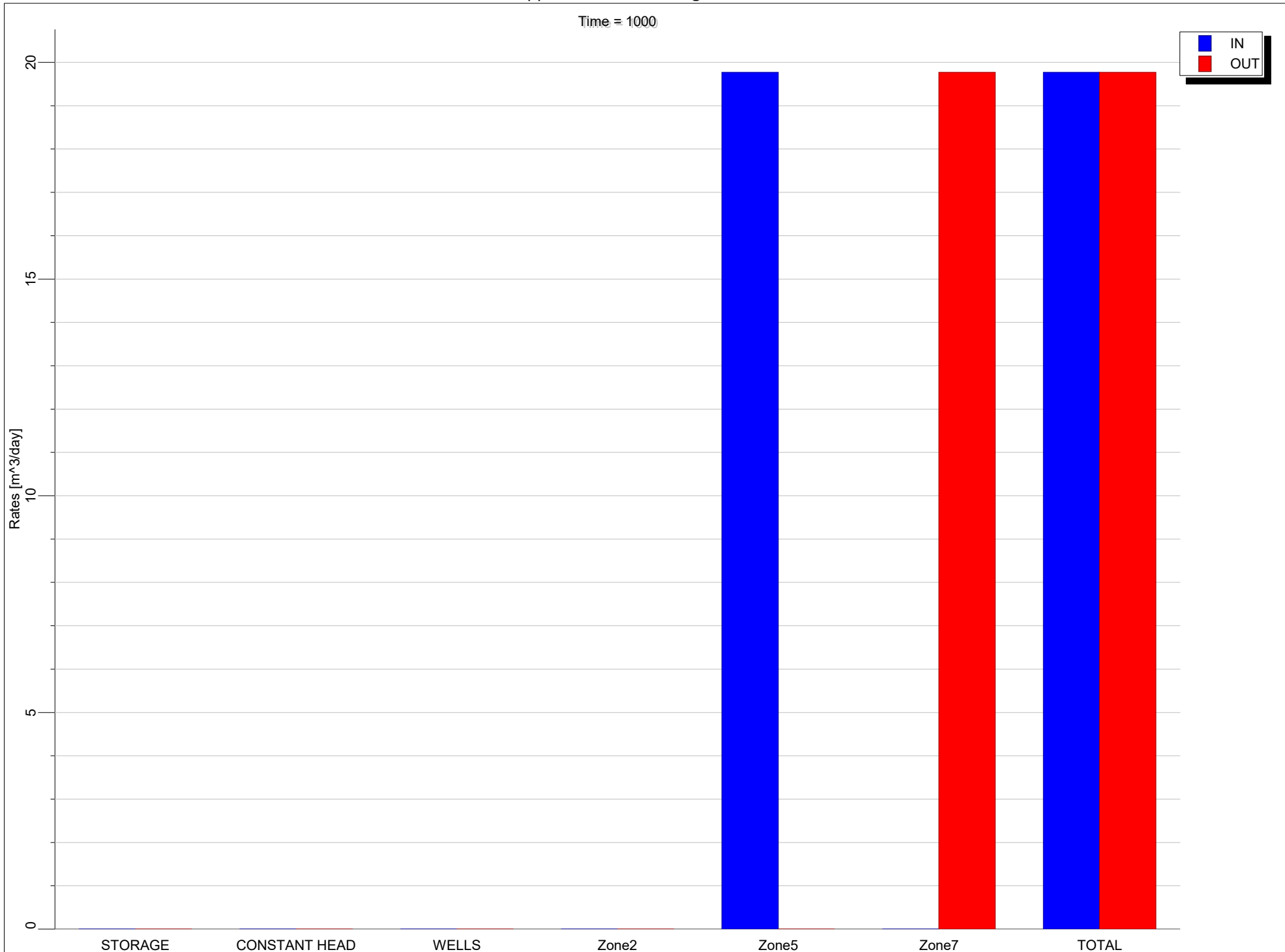
Appendix C - Zone Budget Charts

Time = 1000



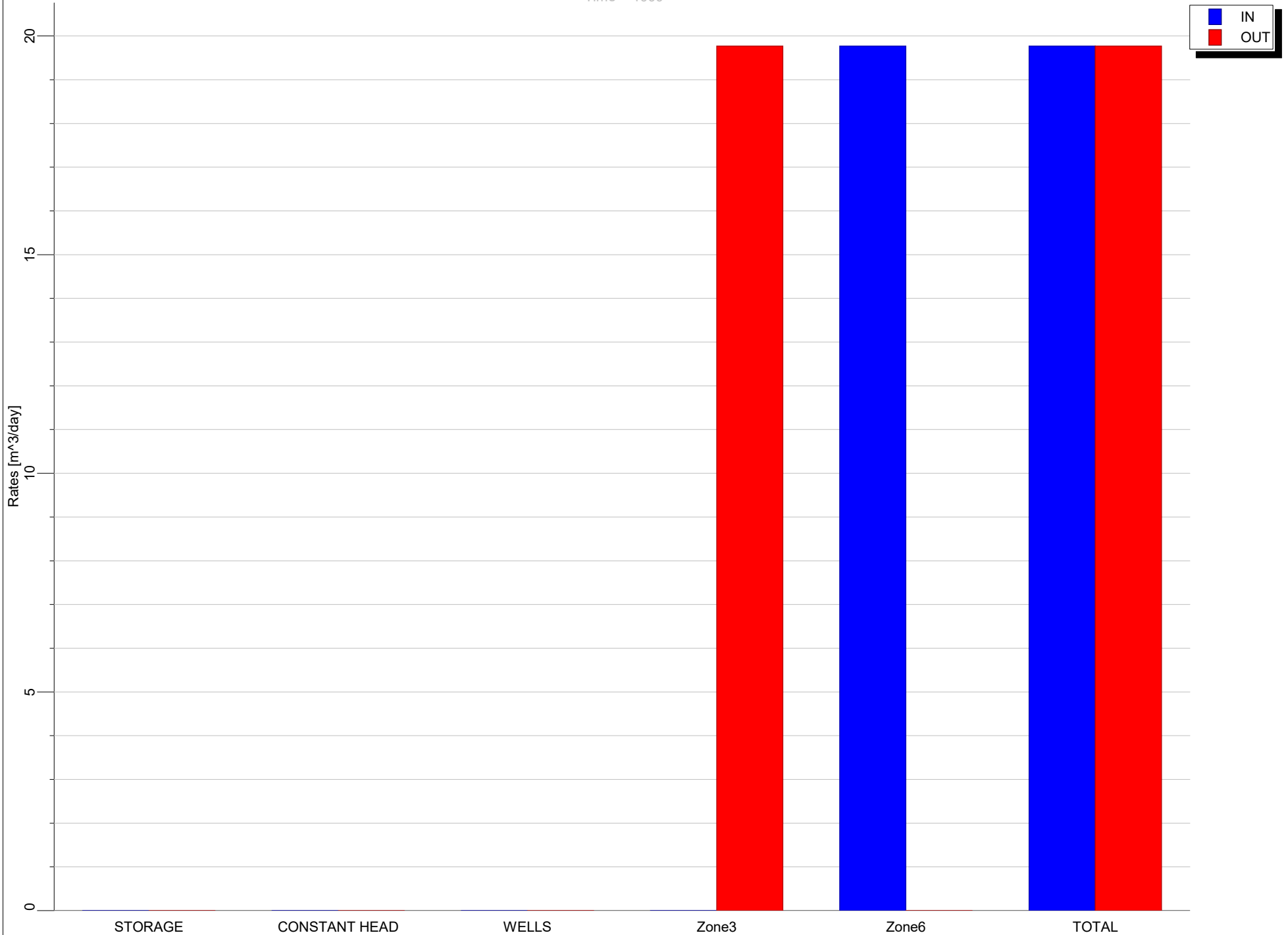
Appendix C - Zone Budget Charts

Time = 1000



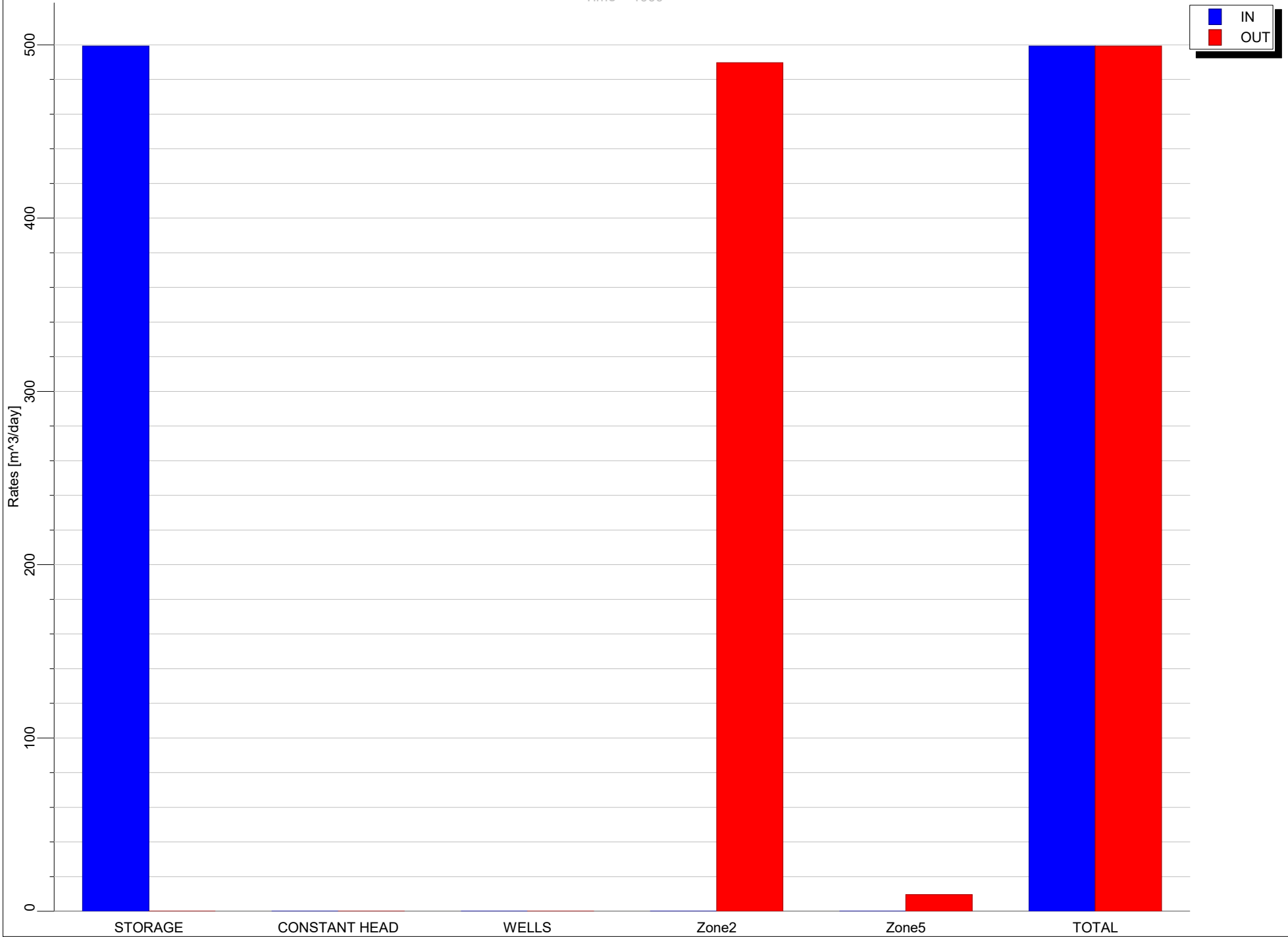
Appendix C - Zone Budget Charts

Time = 1000



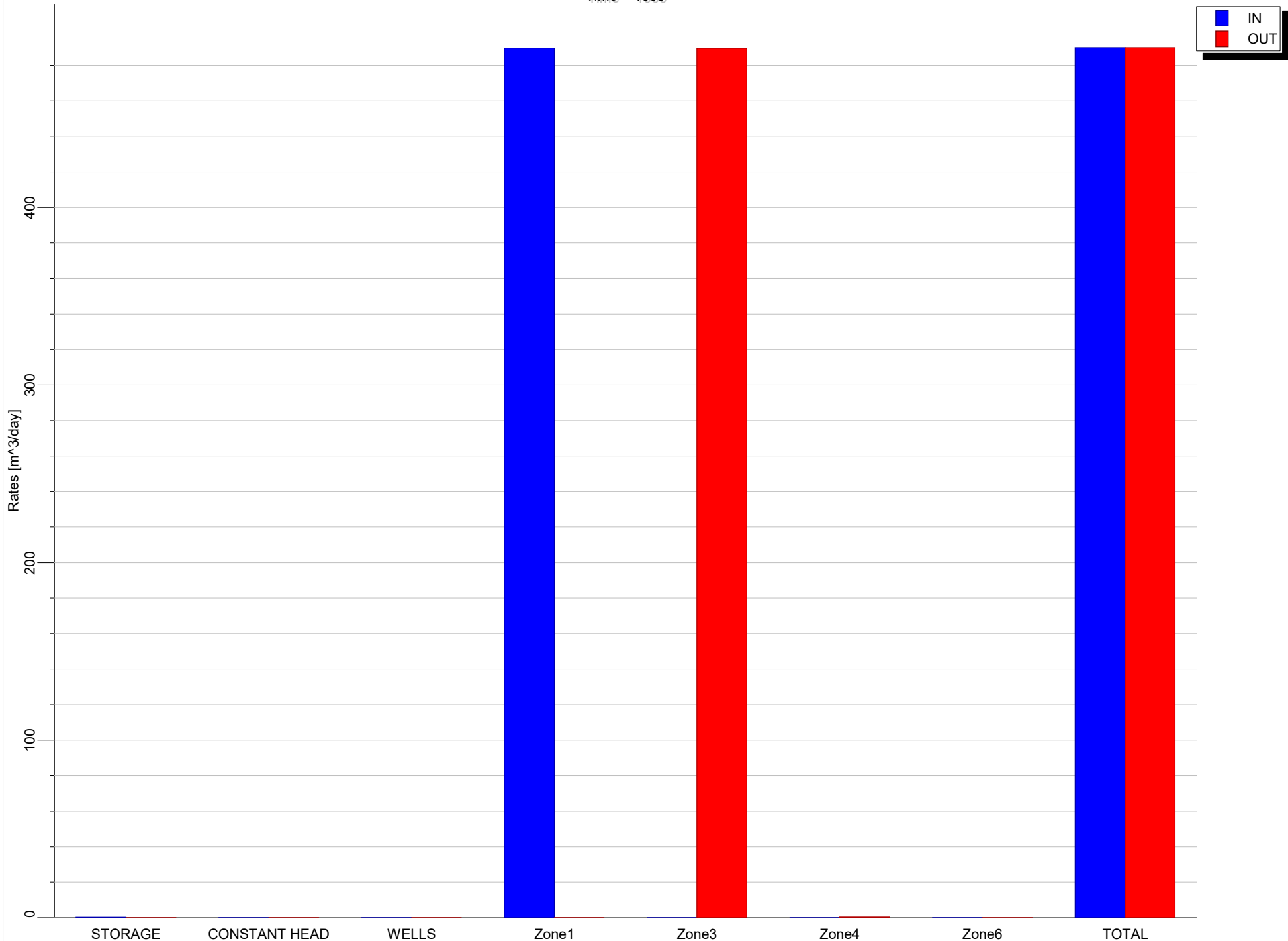
Appendix C - Zone Budget Charts

Time = 1000



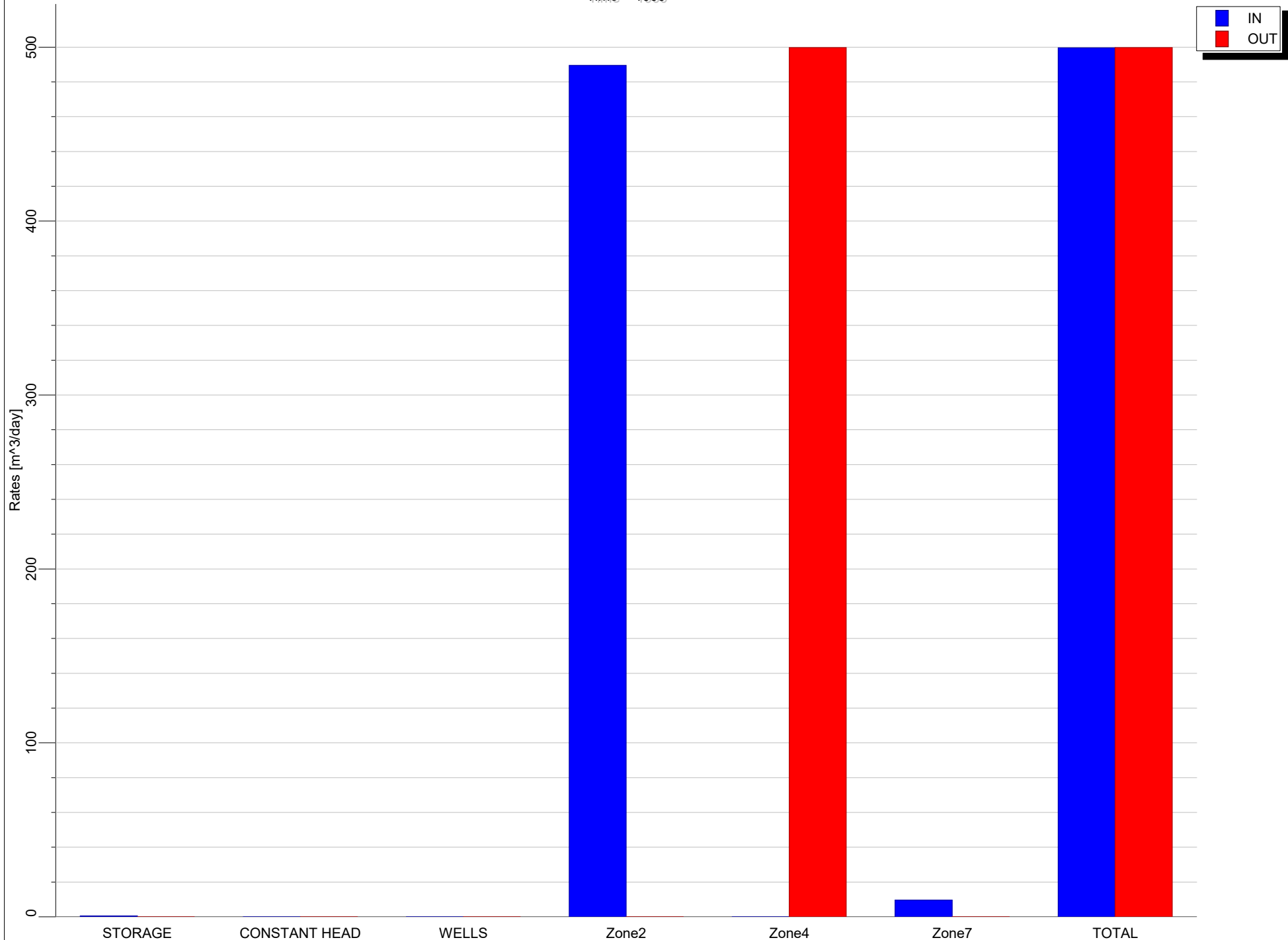
Appendix C - Zone Budget Charts

Time = 1000



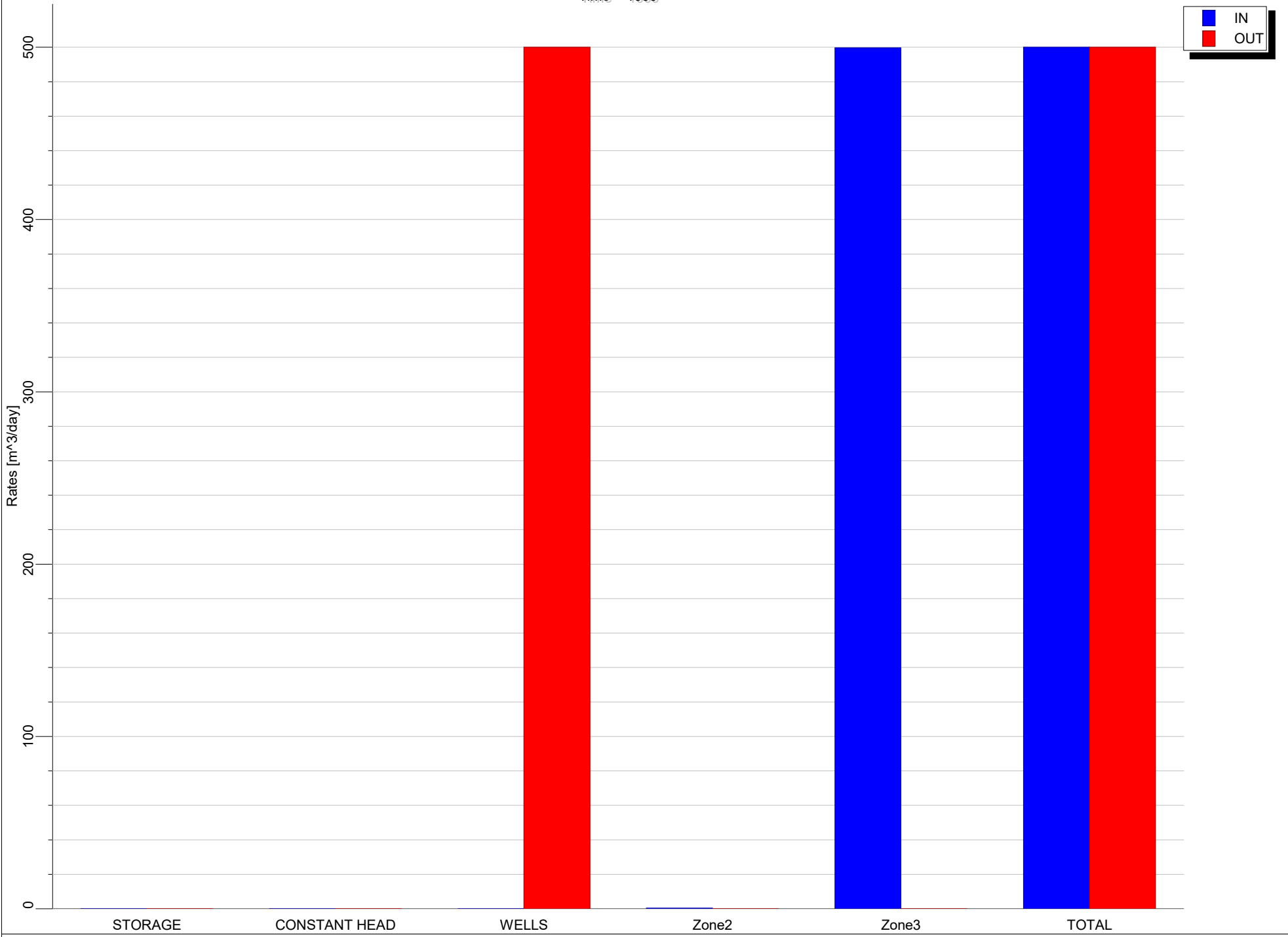
Appendix C - Zone Budget Charts

Time = 1000



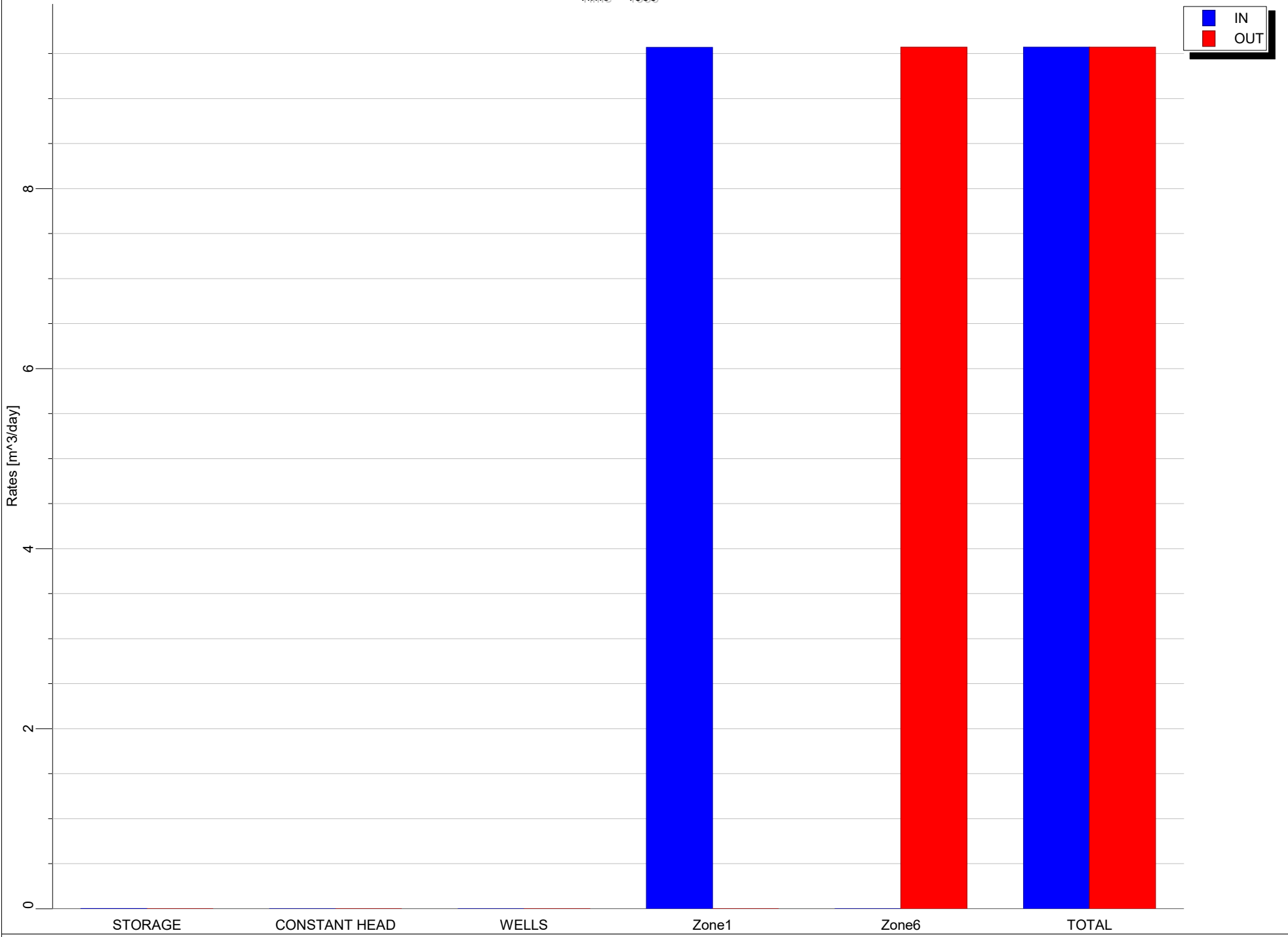
Appendix C - Zone Budget Charts

Time = 1000



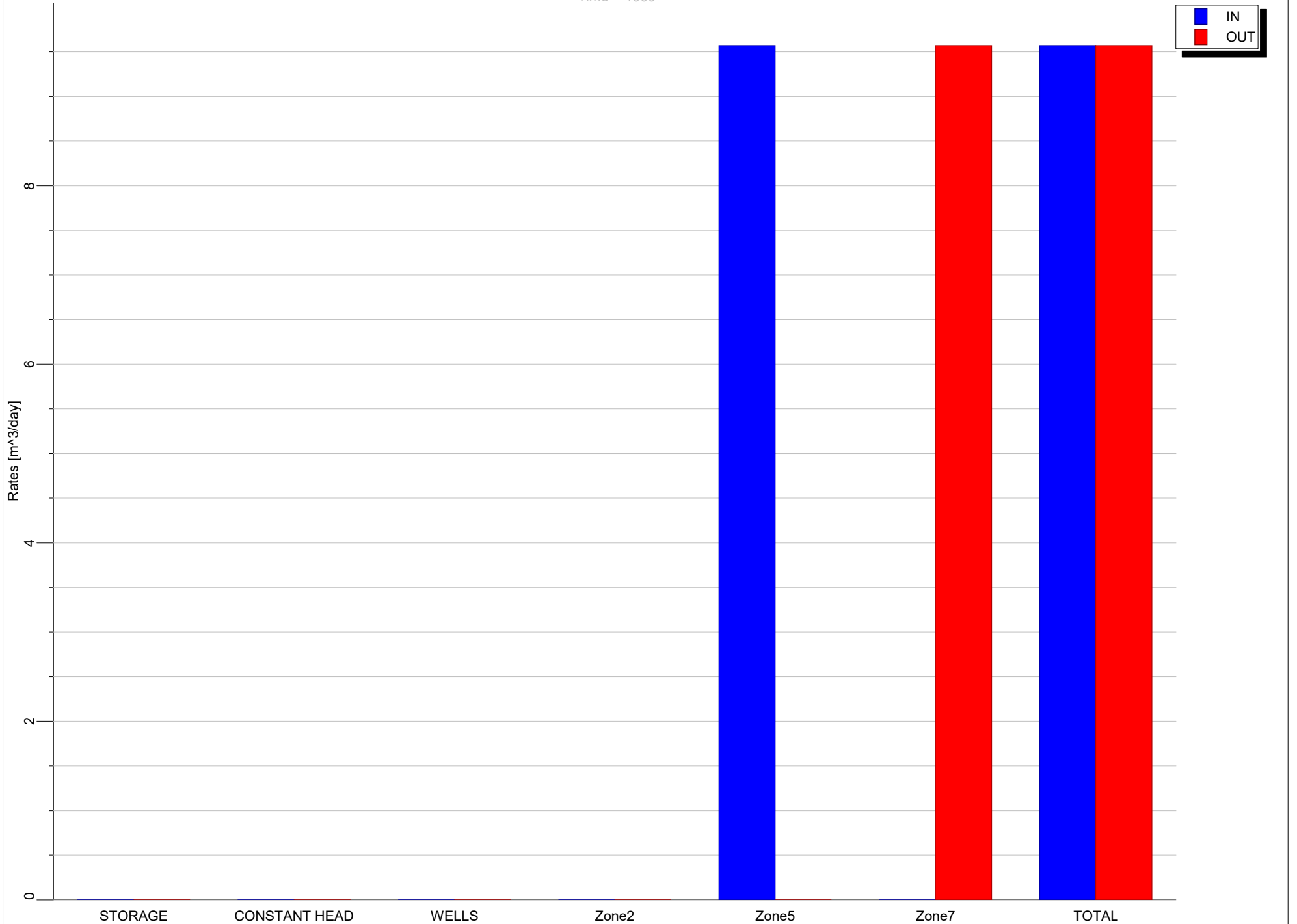
Appendix C - Zone Budget Charts

Time = 1000



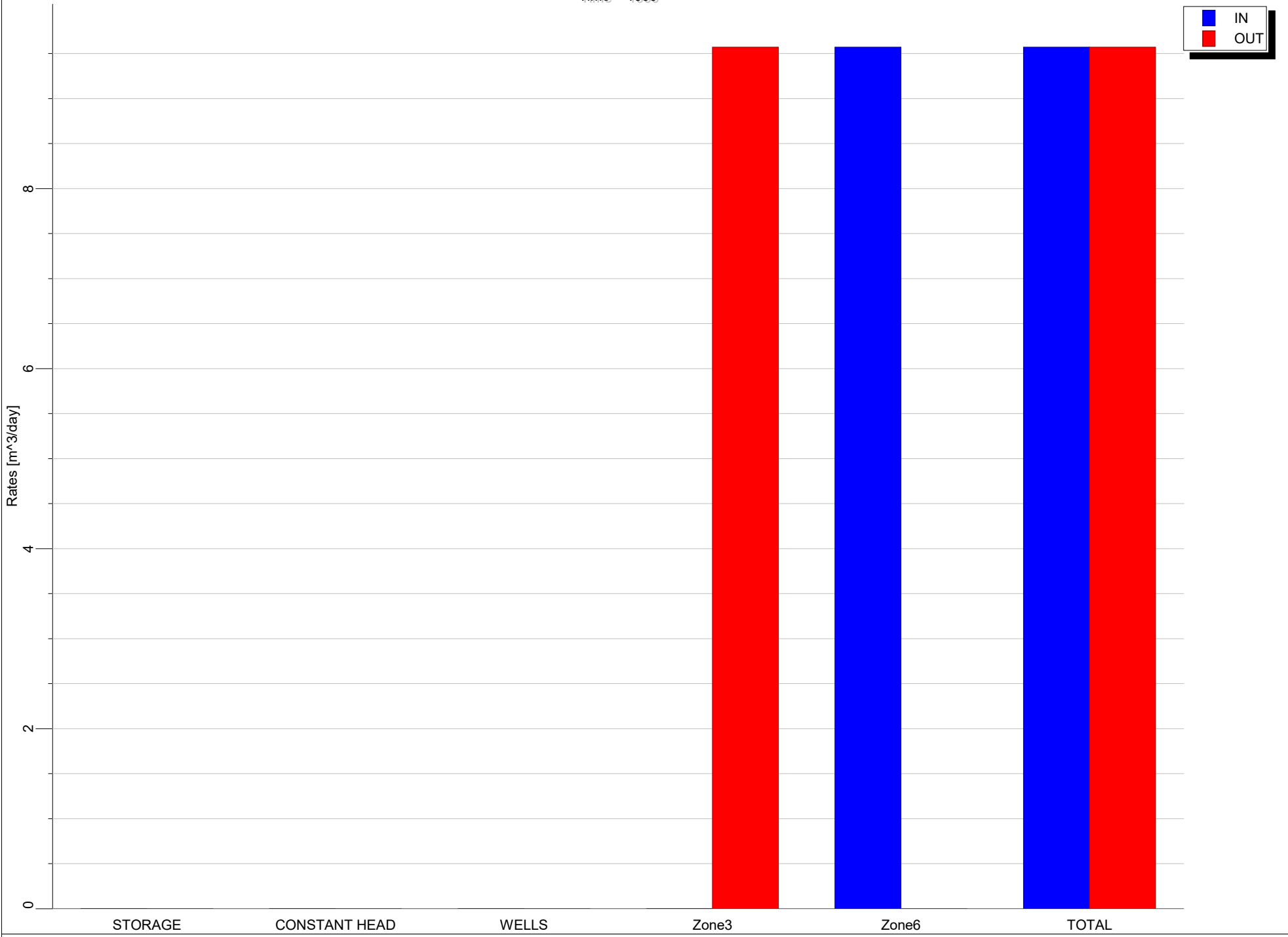
Appendix C - Zone Budget Charts

Time = 1000



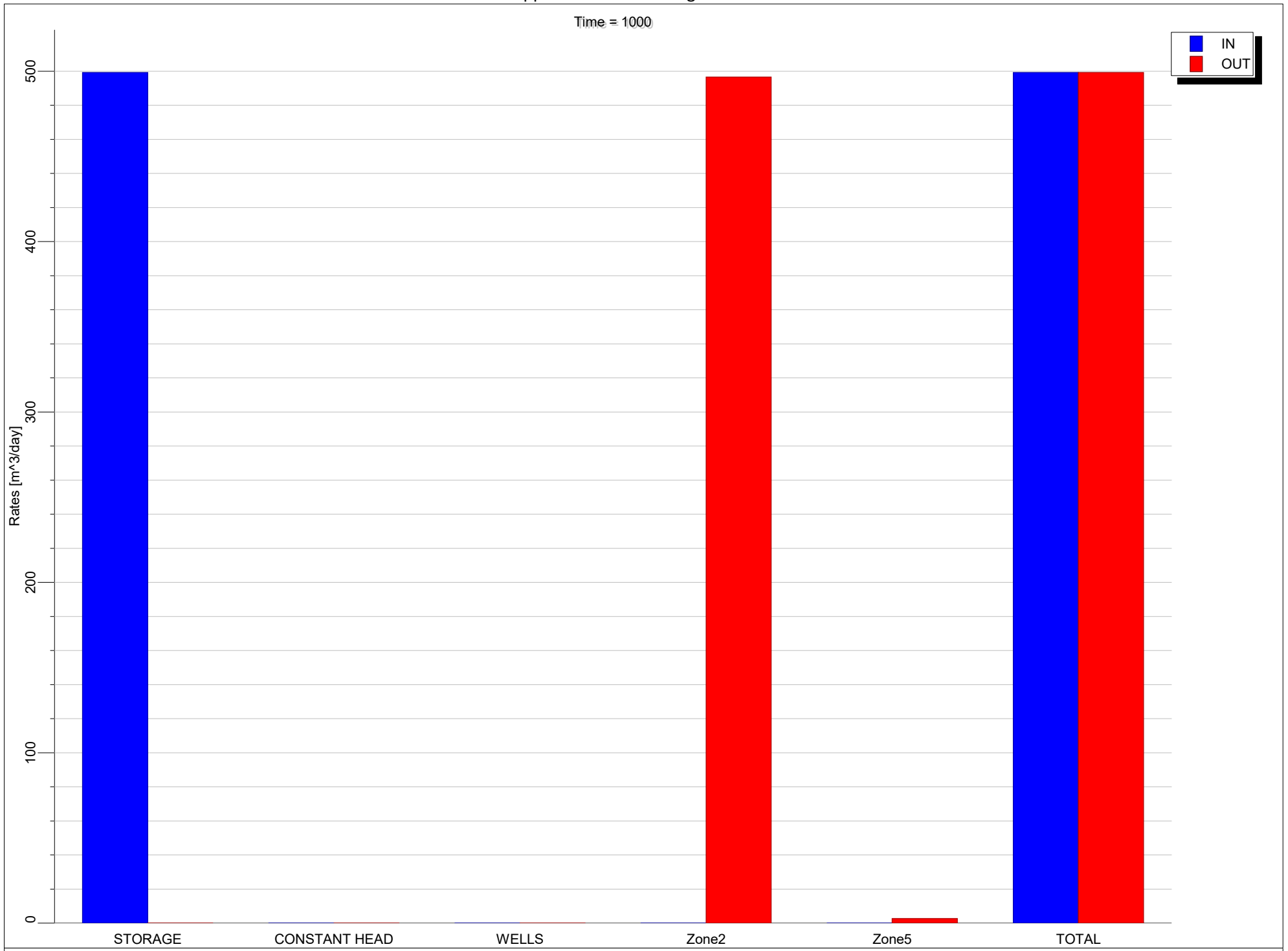
Appendix C - Zone Budget Charts

Time = 1000



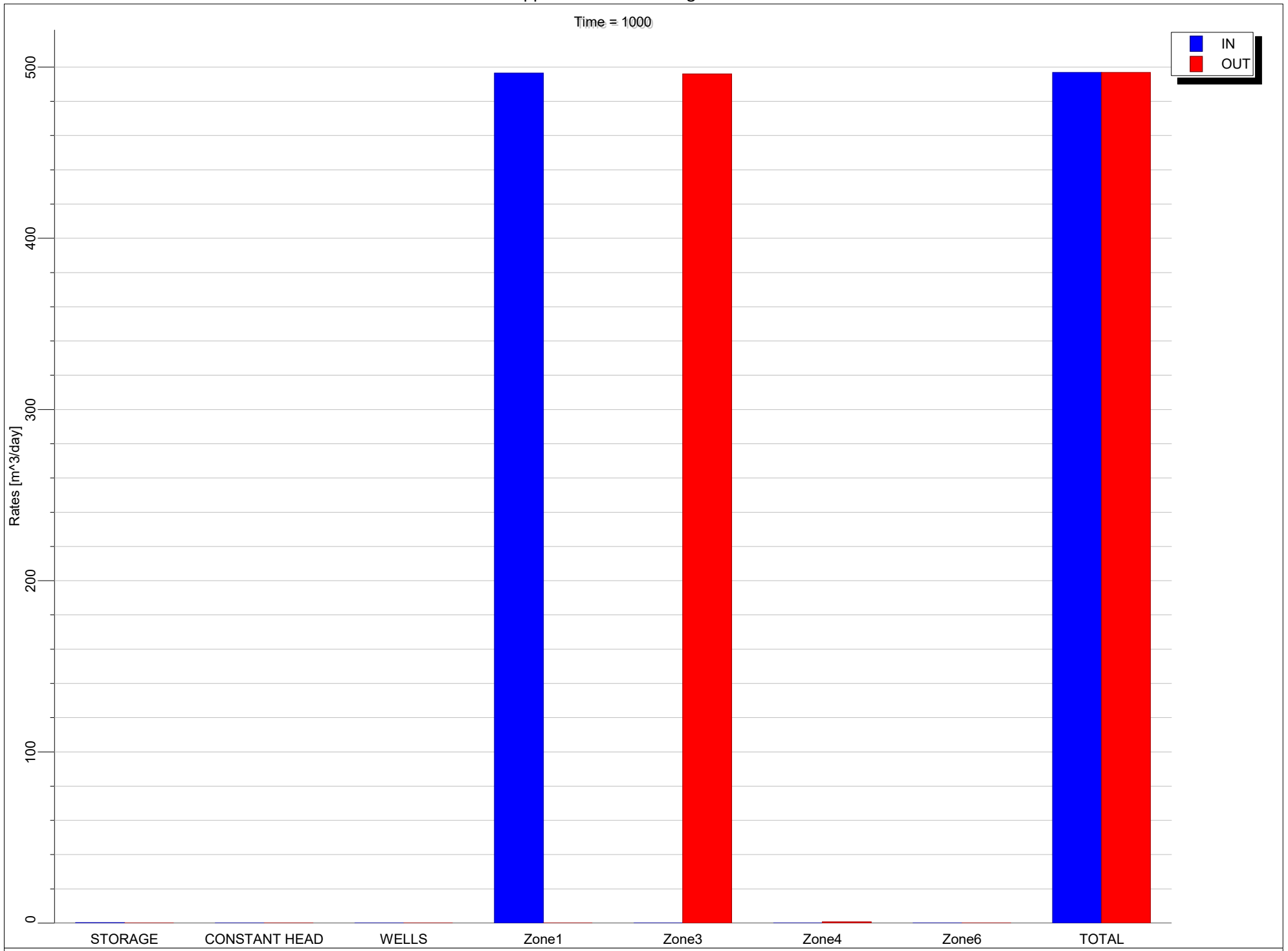
Appendix C - Zone Budget Charts

Time = 1000



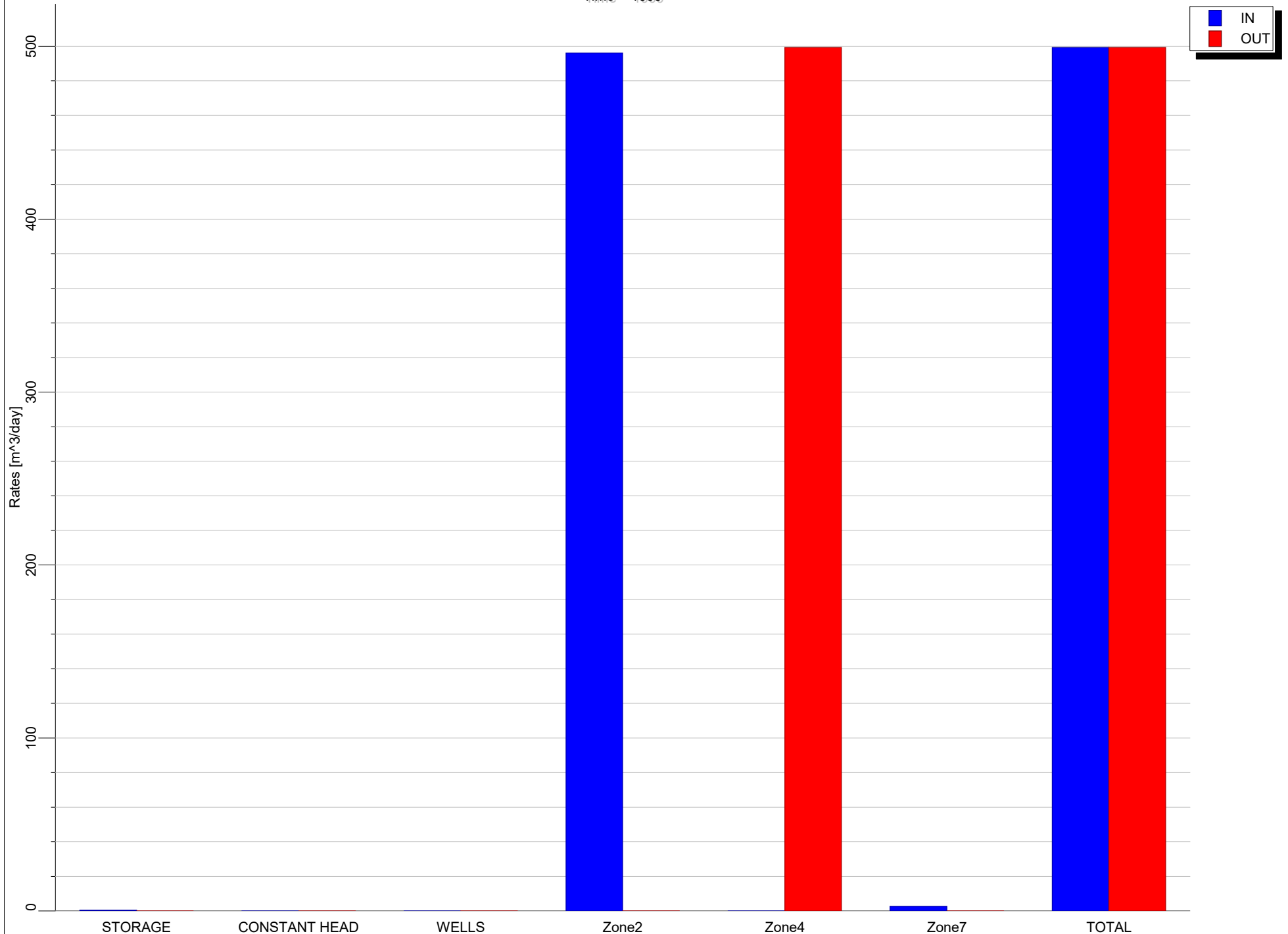
Appendix C - Zone Budget Charts

Time = 1000



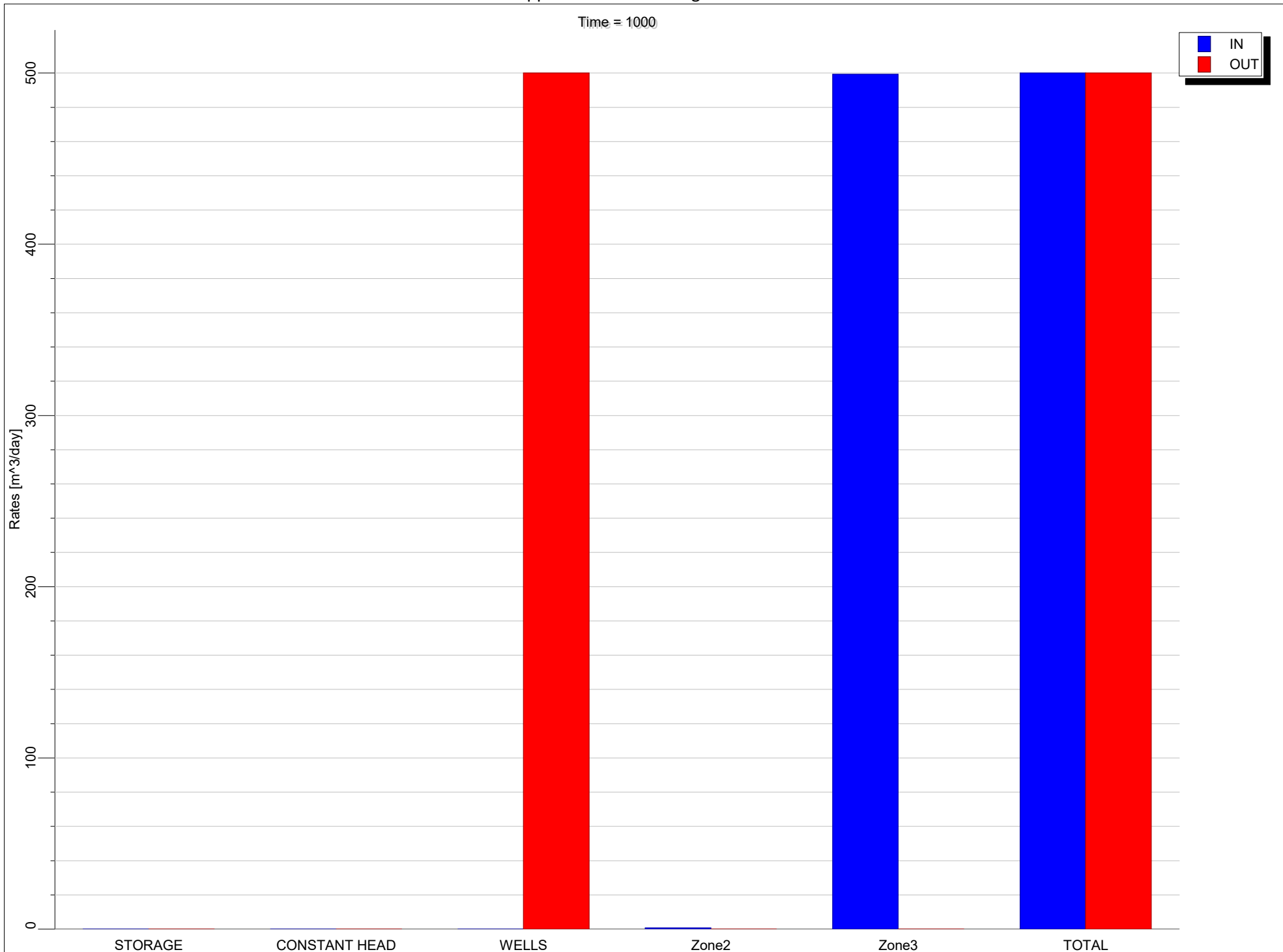
Appendix C - Zone Budget Charts

Time = 1000



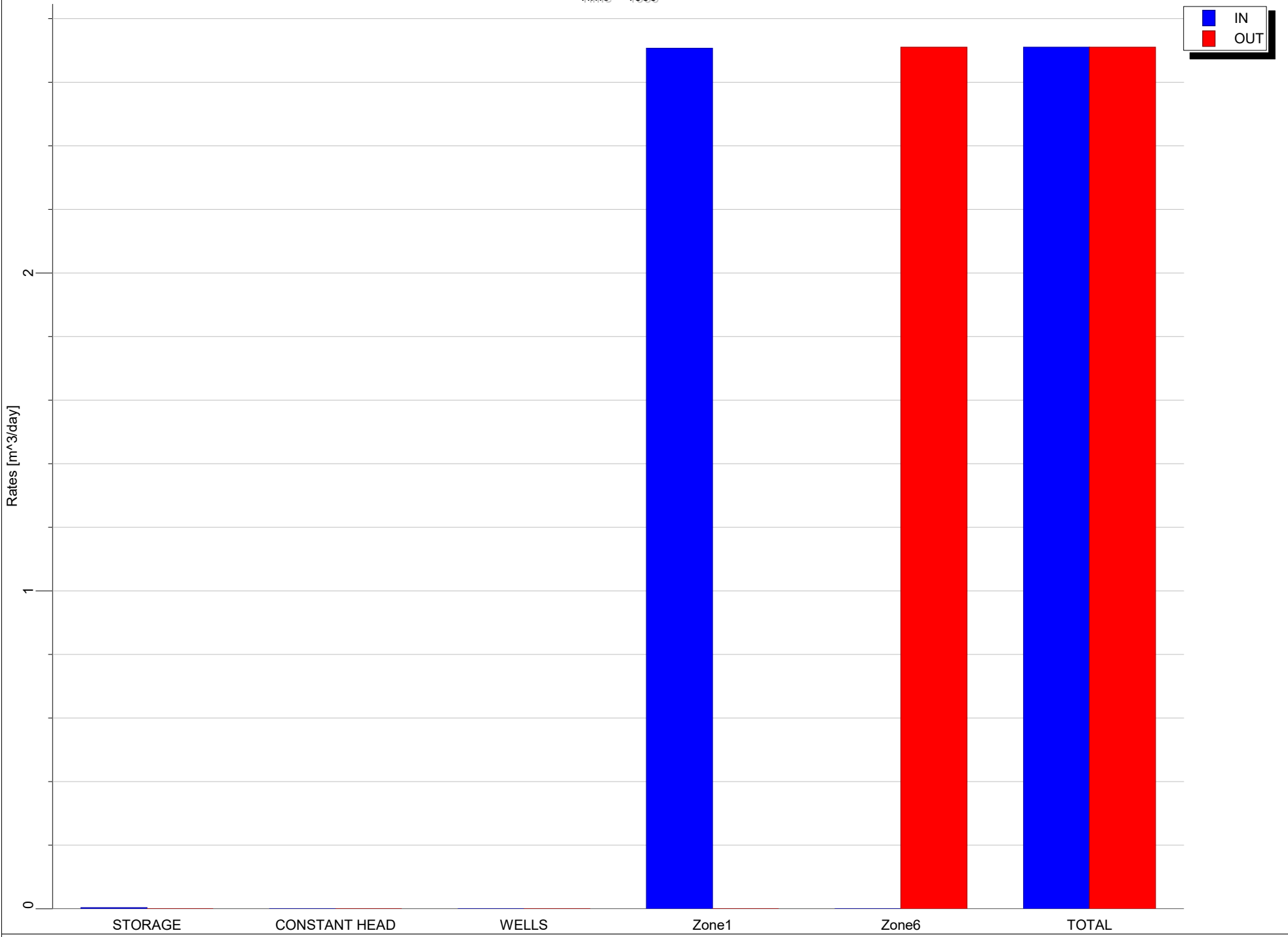
Appendix C - Zone Budget Charts

Time = 1000



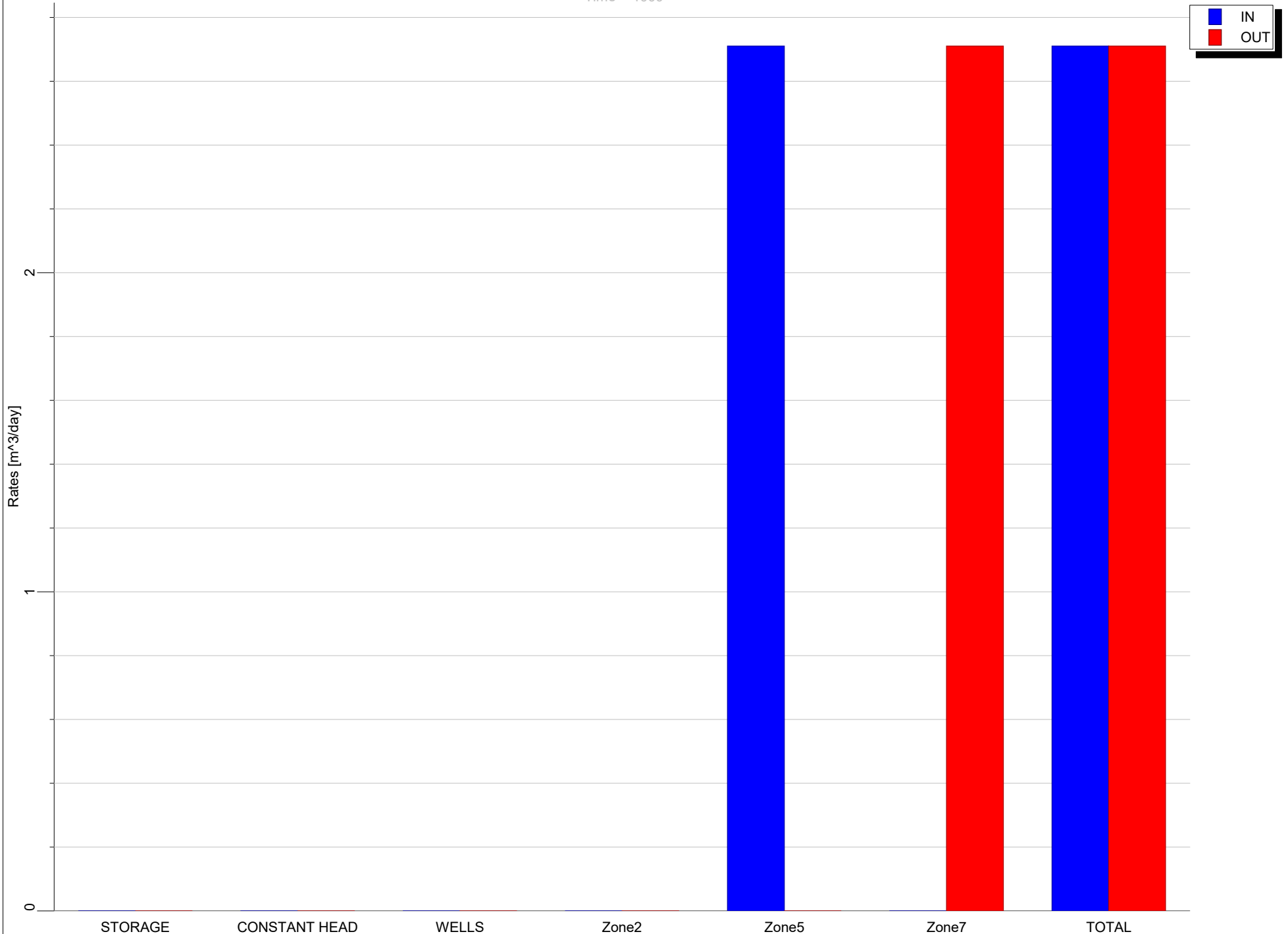
Appendix C - Zone Budget Charts

Time = 1000



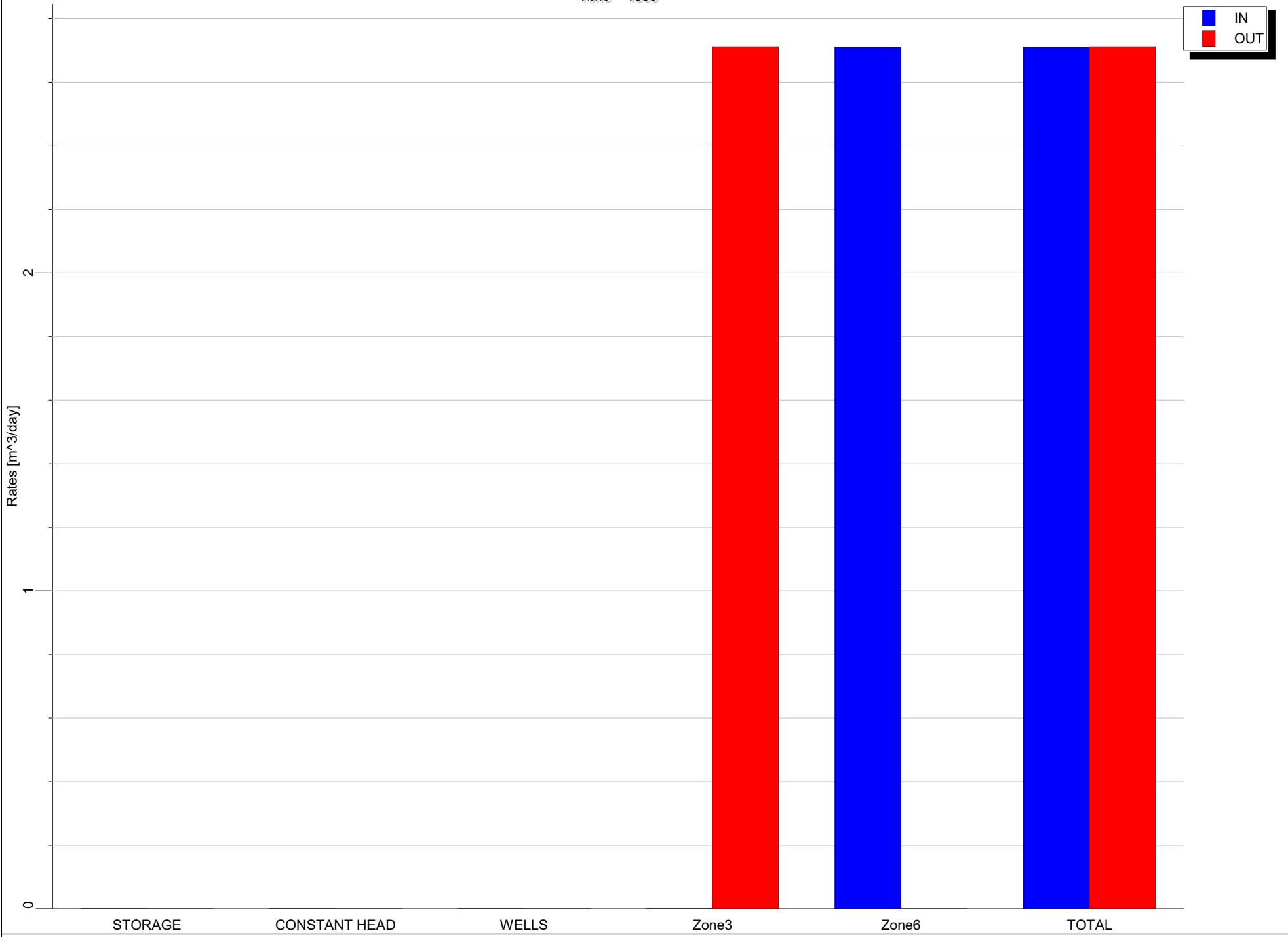
Appendix C - Zone Budget Charts

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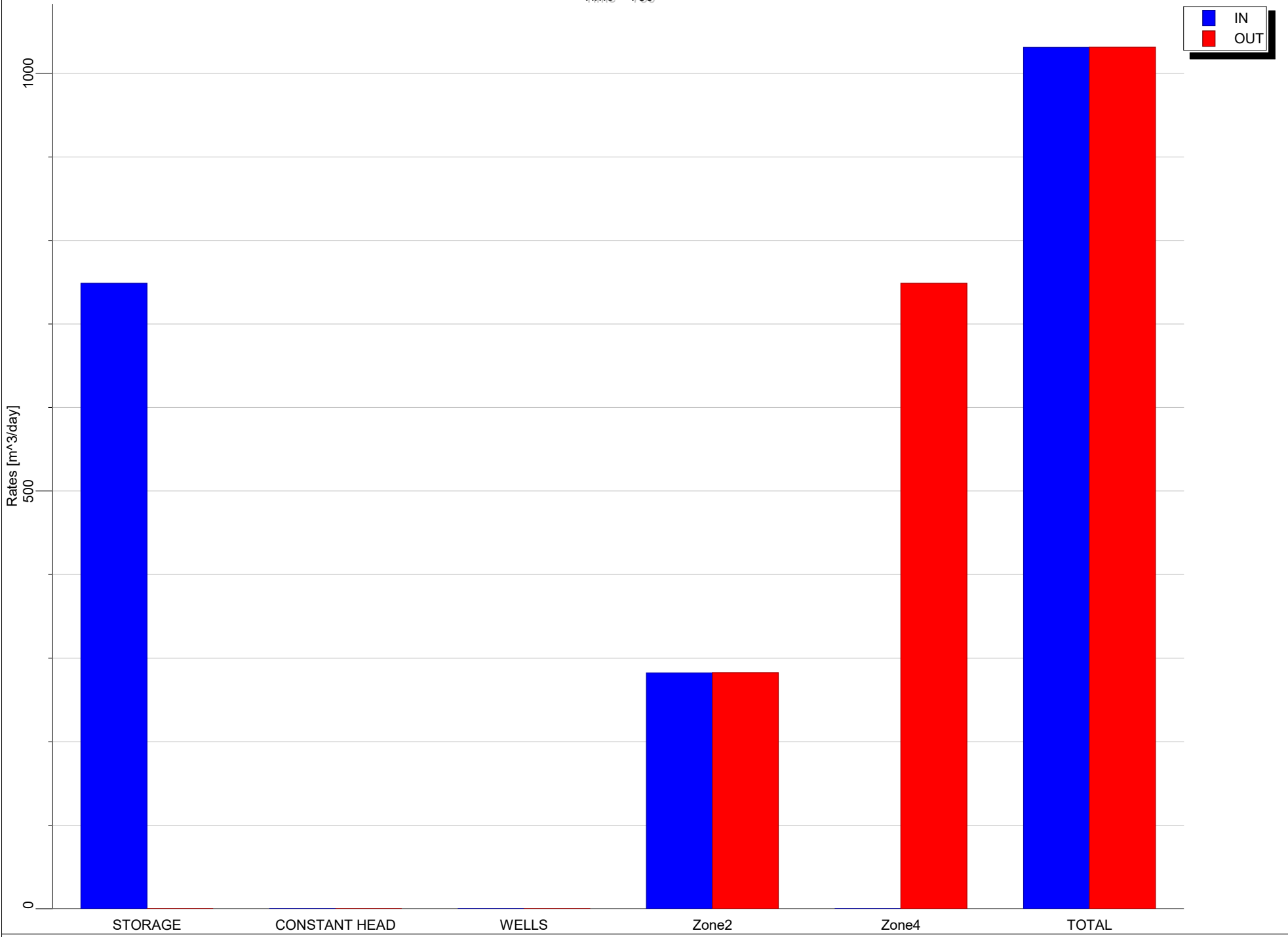
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

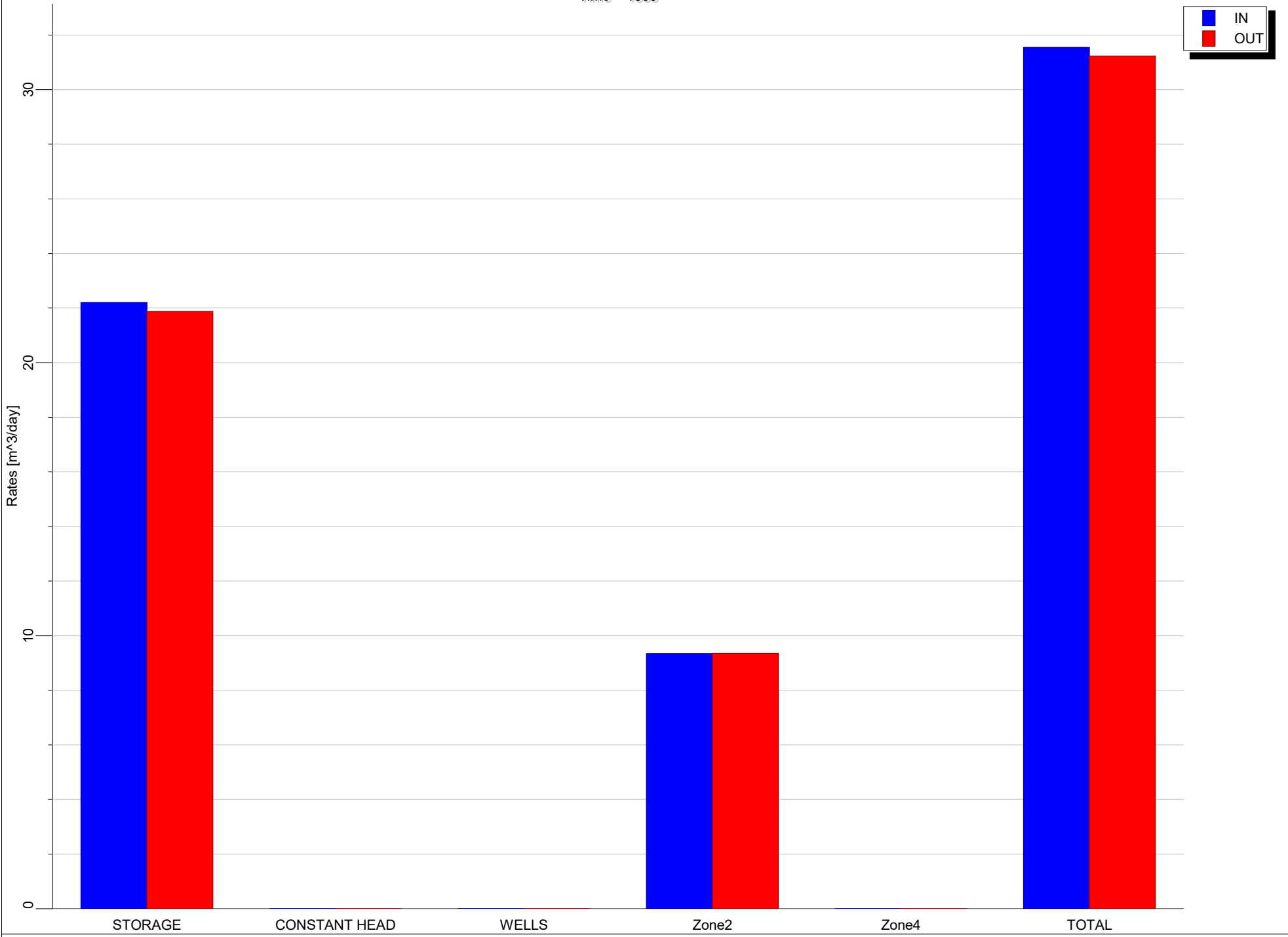
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Zone 1
Scenario 3.1
No Abandoned Well

Appendix C - Zone Budget Charts

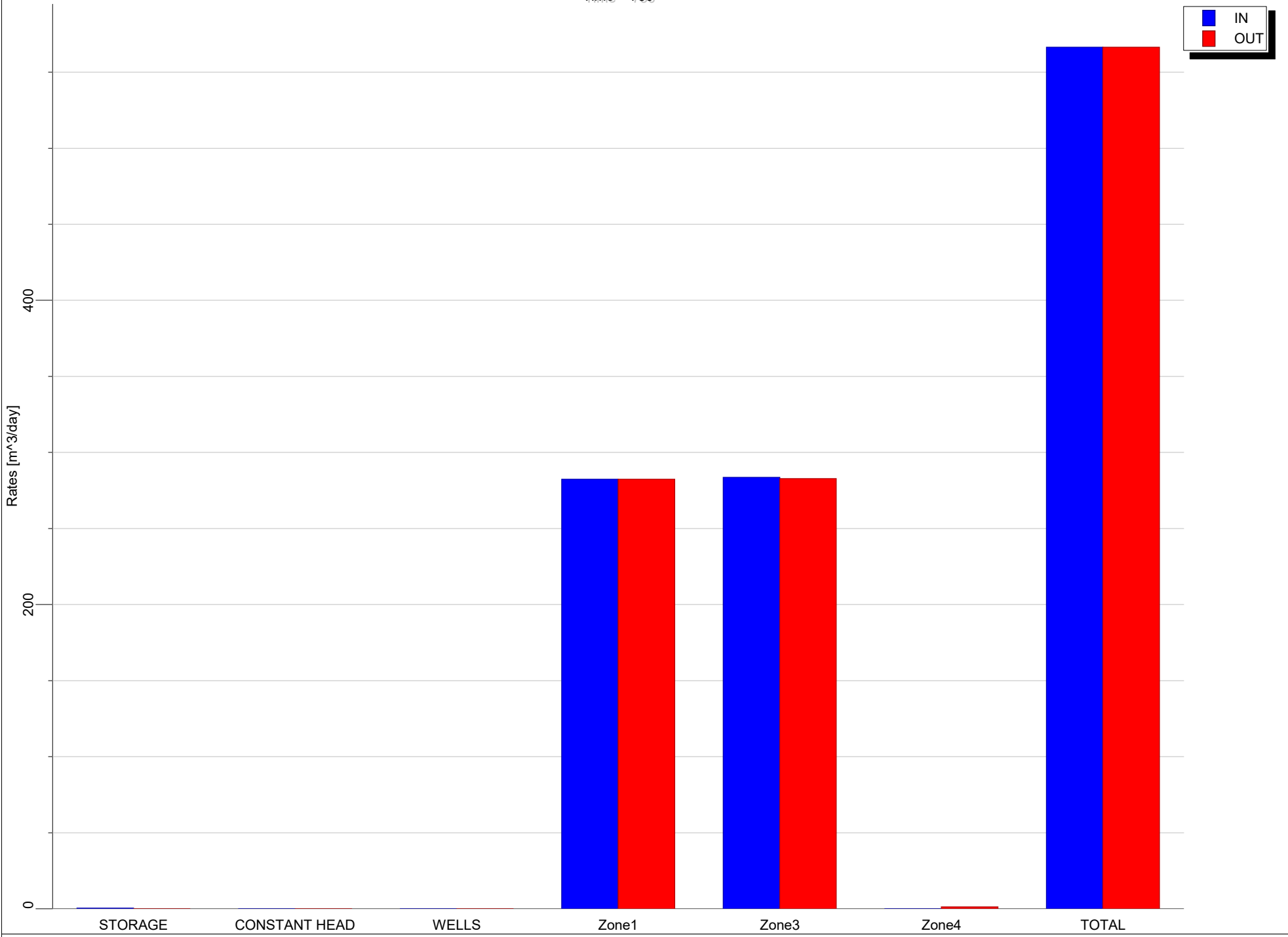
Time = 1000



Zone 1
Scenario 3.1
No Abandoned Well

Appendix C - Zone Budget Charts

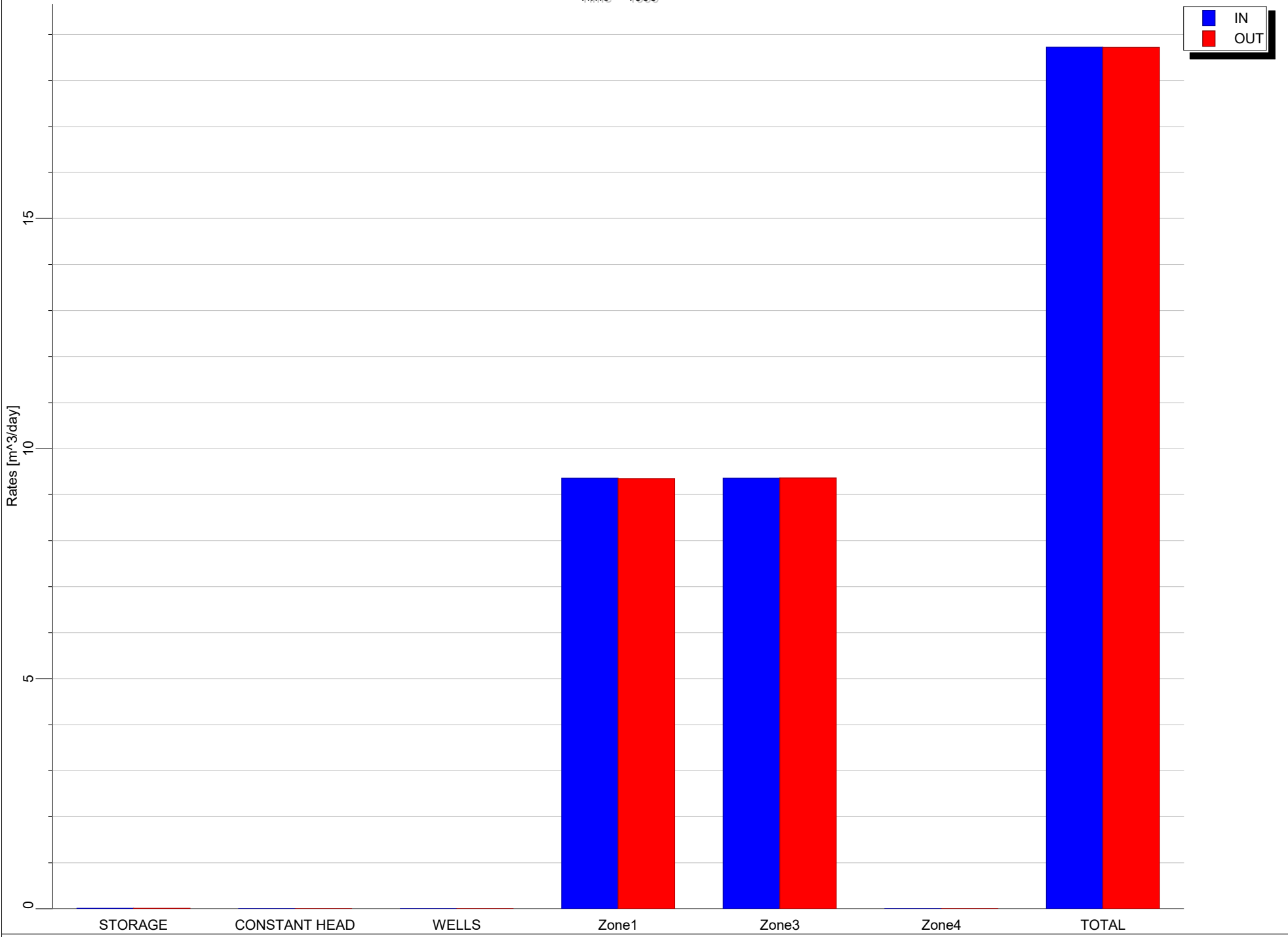
Time = 750



Zone 2
Scenario 3.1
No Abandoned Well

Appendix C - Zone Budget Charts

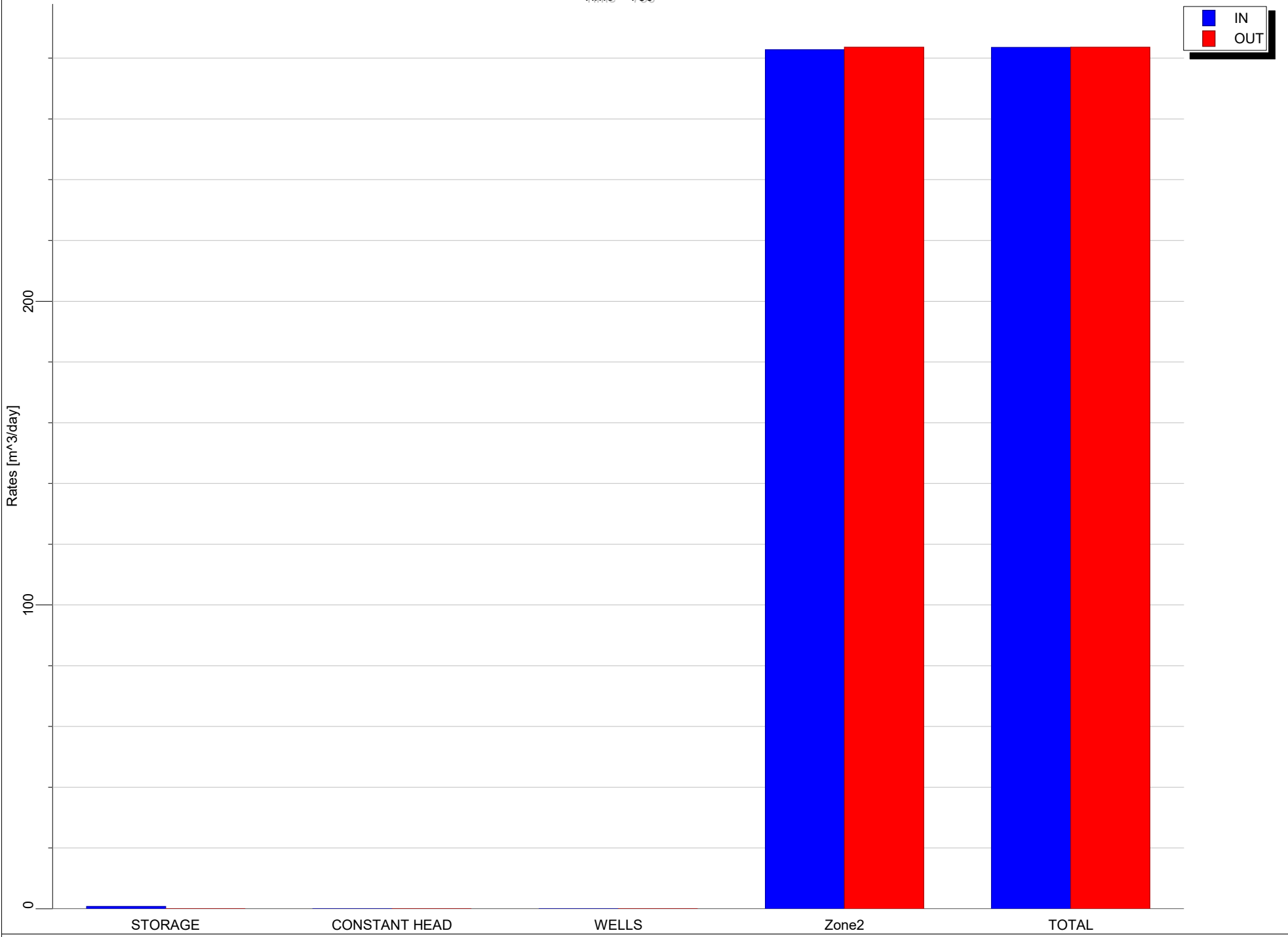
Time = 1000



Zone 2
Scenario 3.1
No Abandoned Well

Appendix C - Zone Budget Charts

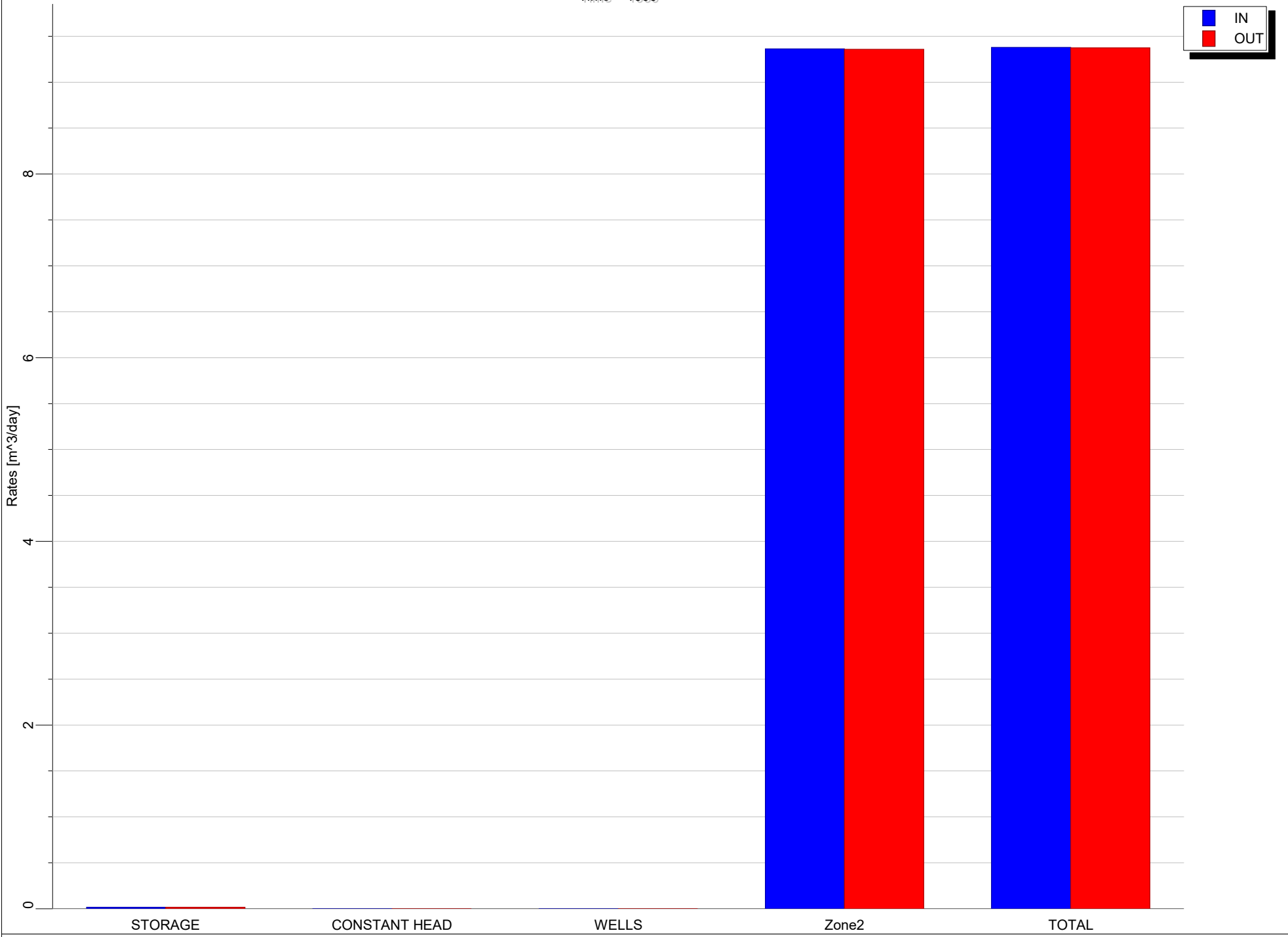
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Zone 3
Scenario 3.1
No Abandoned Well

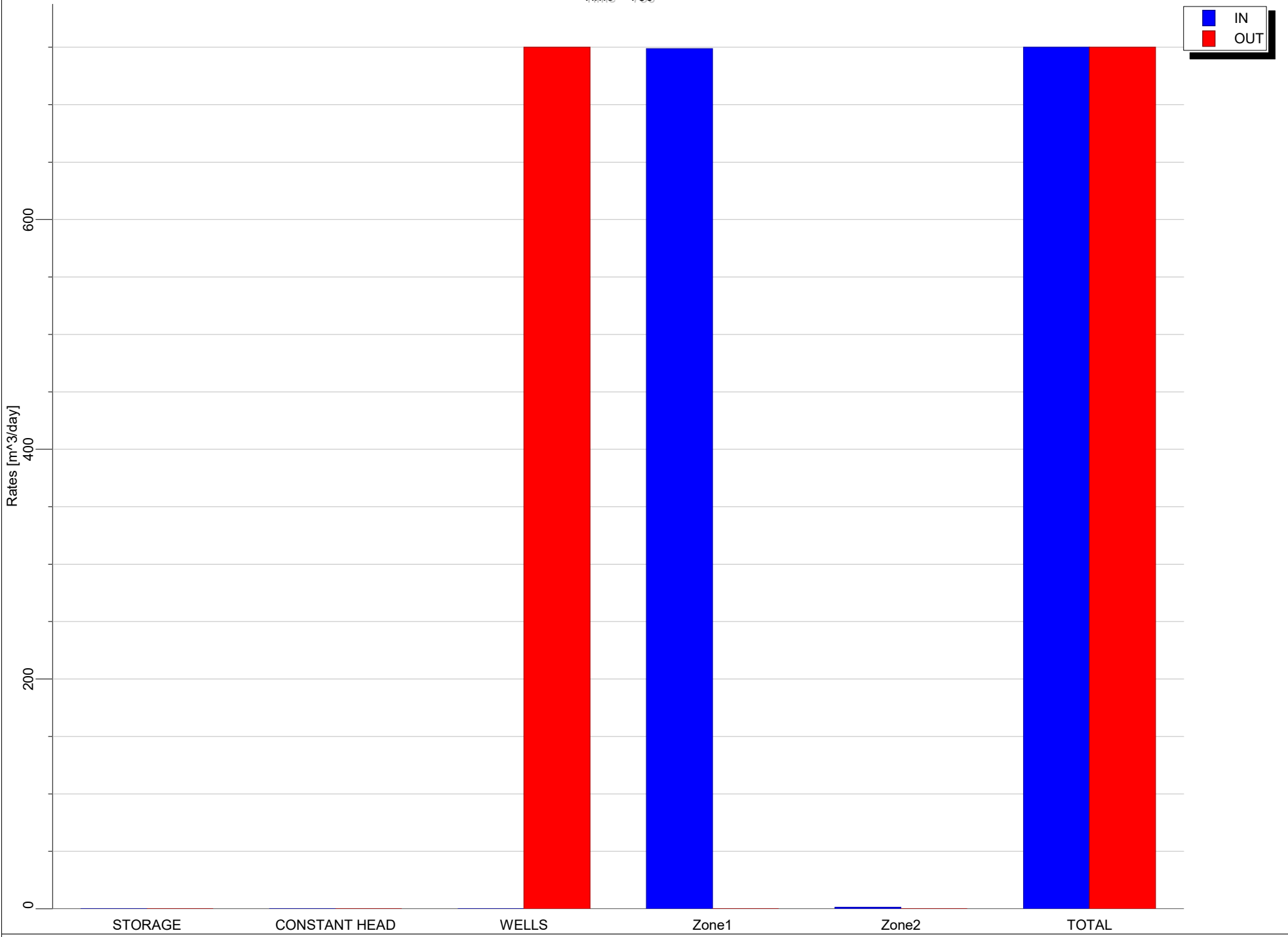
Appendix C - Zone Budget Charts

Time = 1000



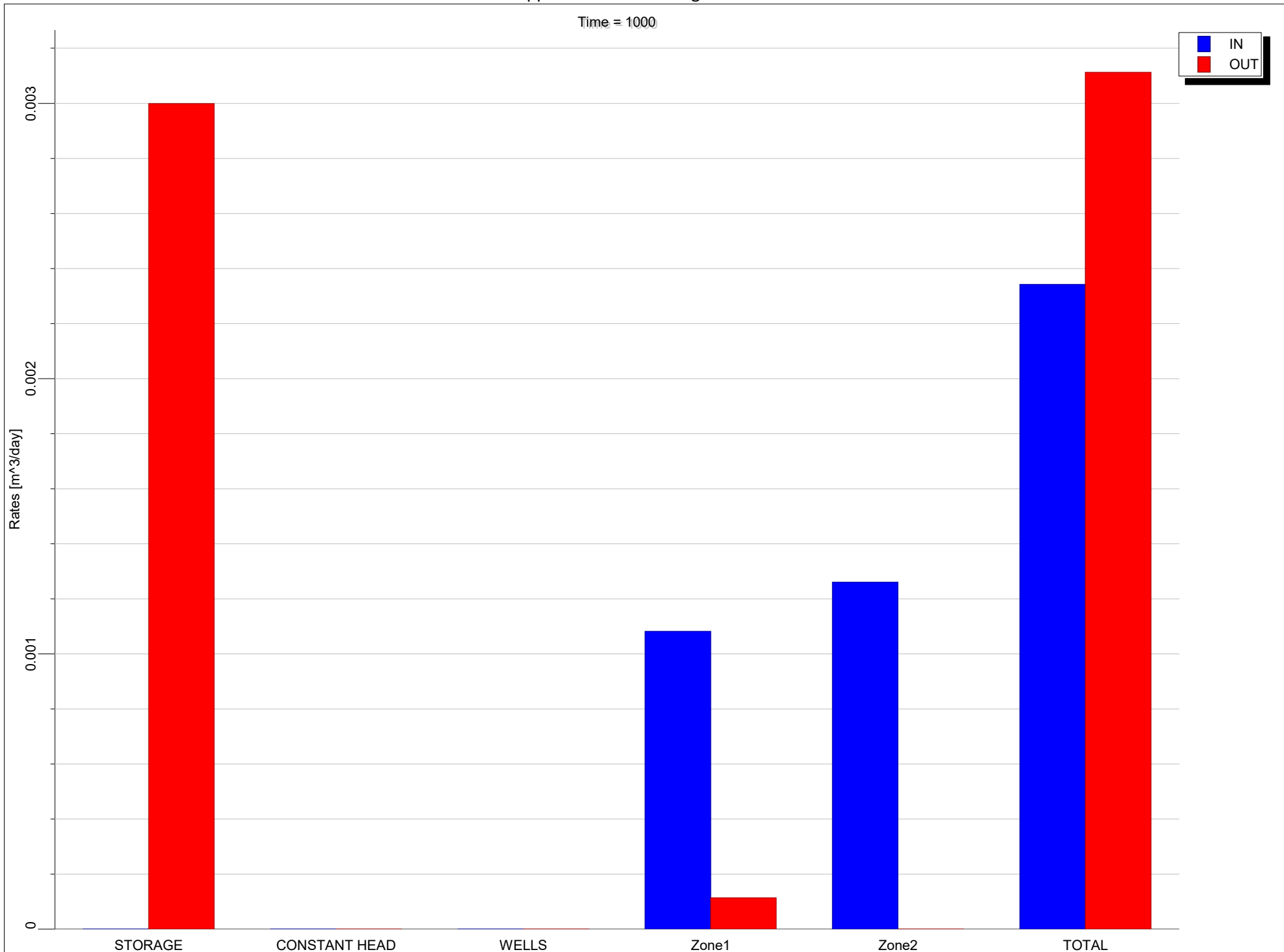
Appendix C - Zone Budget Charts

Time = 750



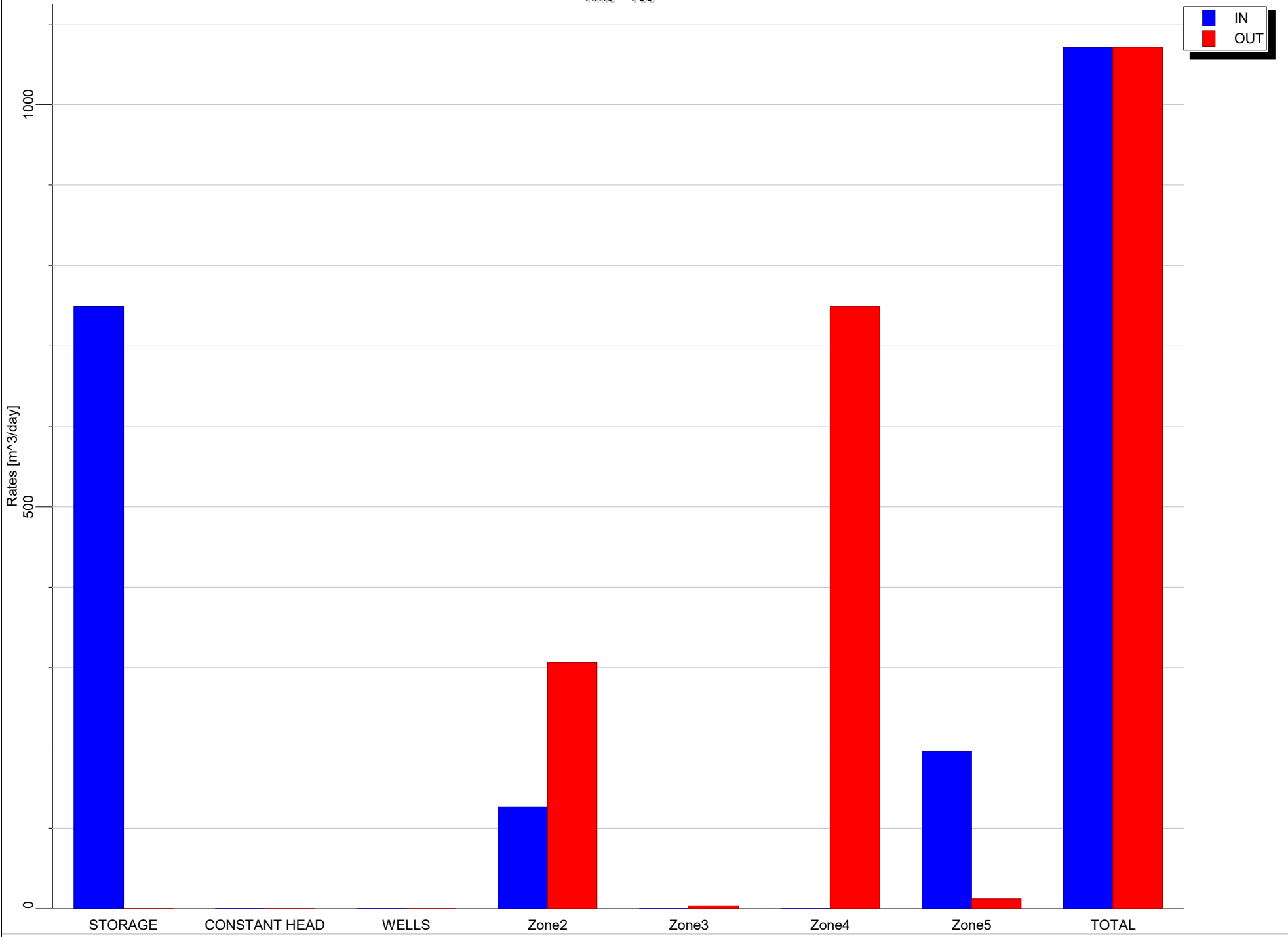
Zone 4
Scenario 3.1
No Abandoned Well

Time = 1000



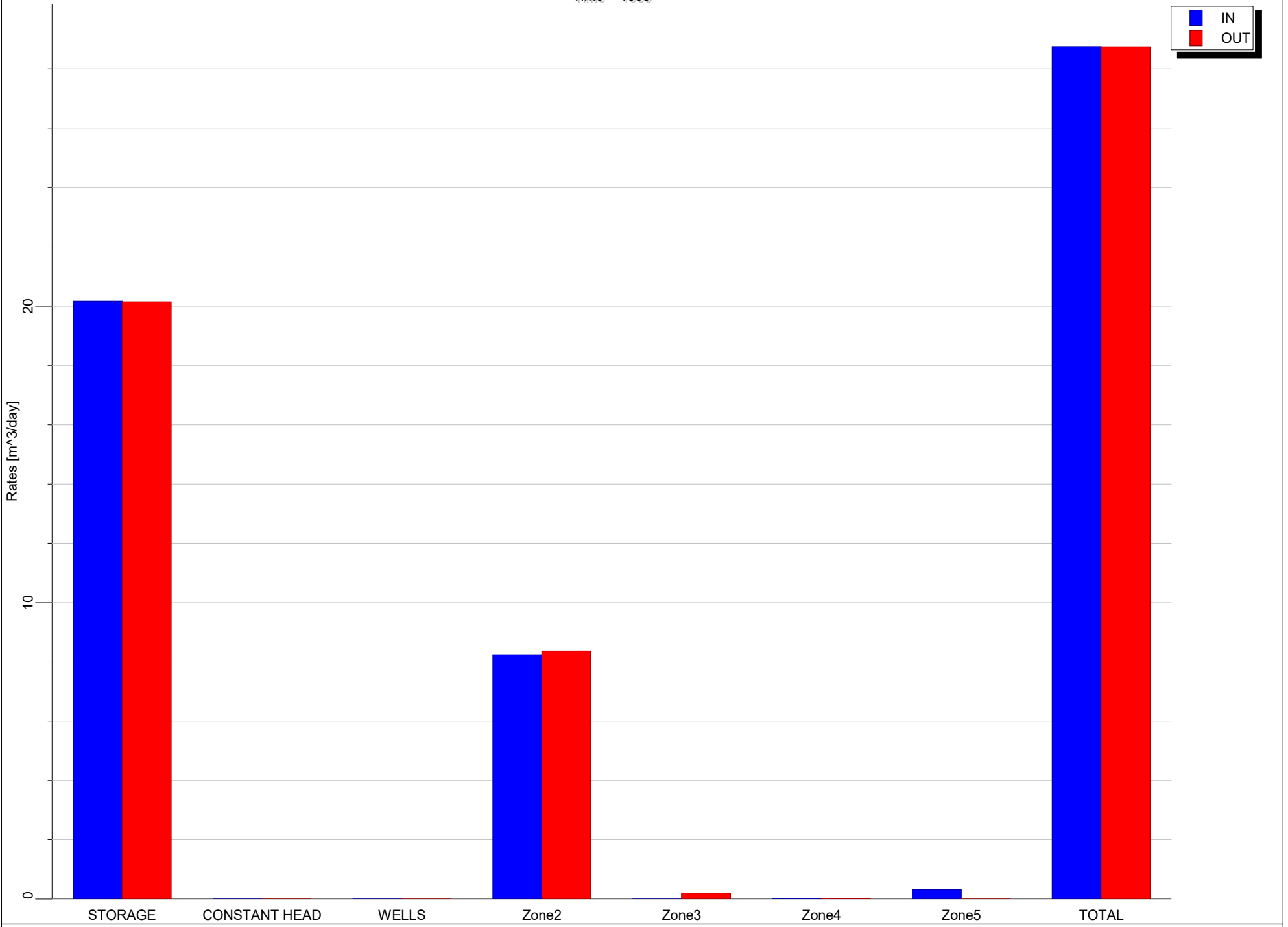
Appendix C - Zone Budget Charts

Time = 750



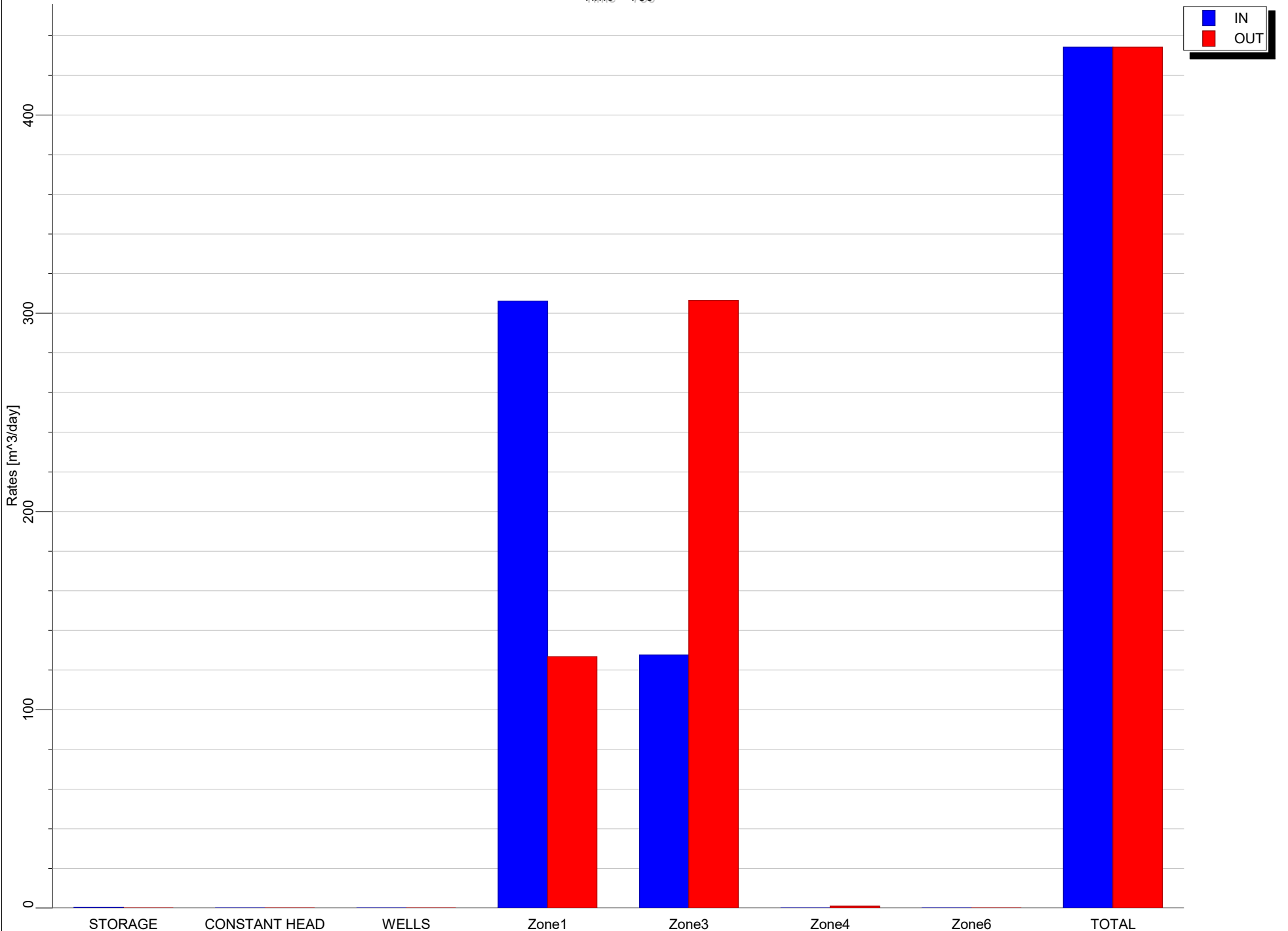
Appendix C - Zone Budget Charts

Time = 1000



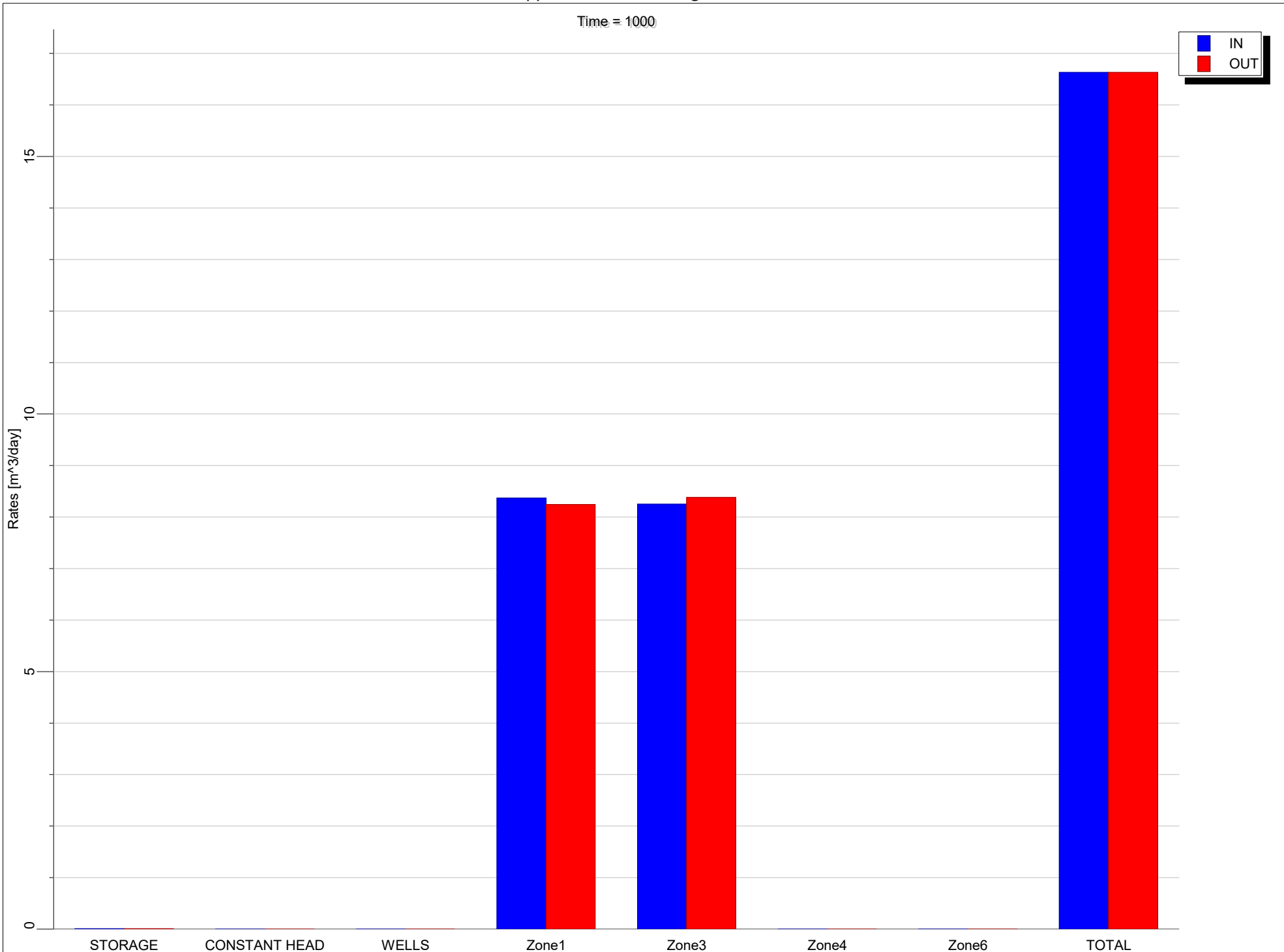
Appendix C - Zone Budget Charts

Time = 750



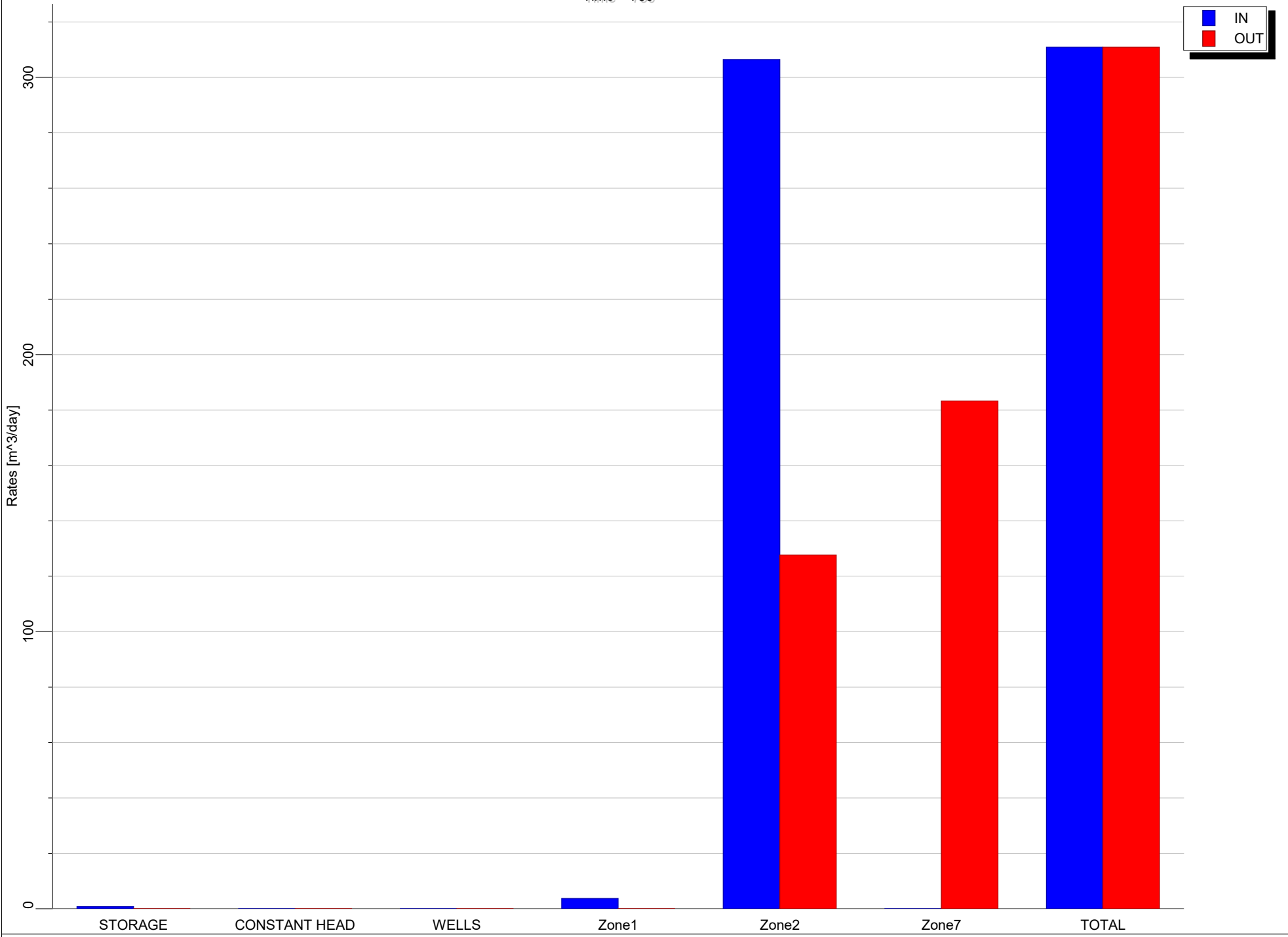
Appendix C - Zone Budget Charts

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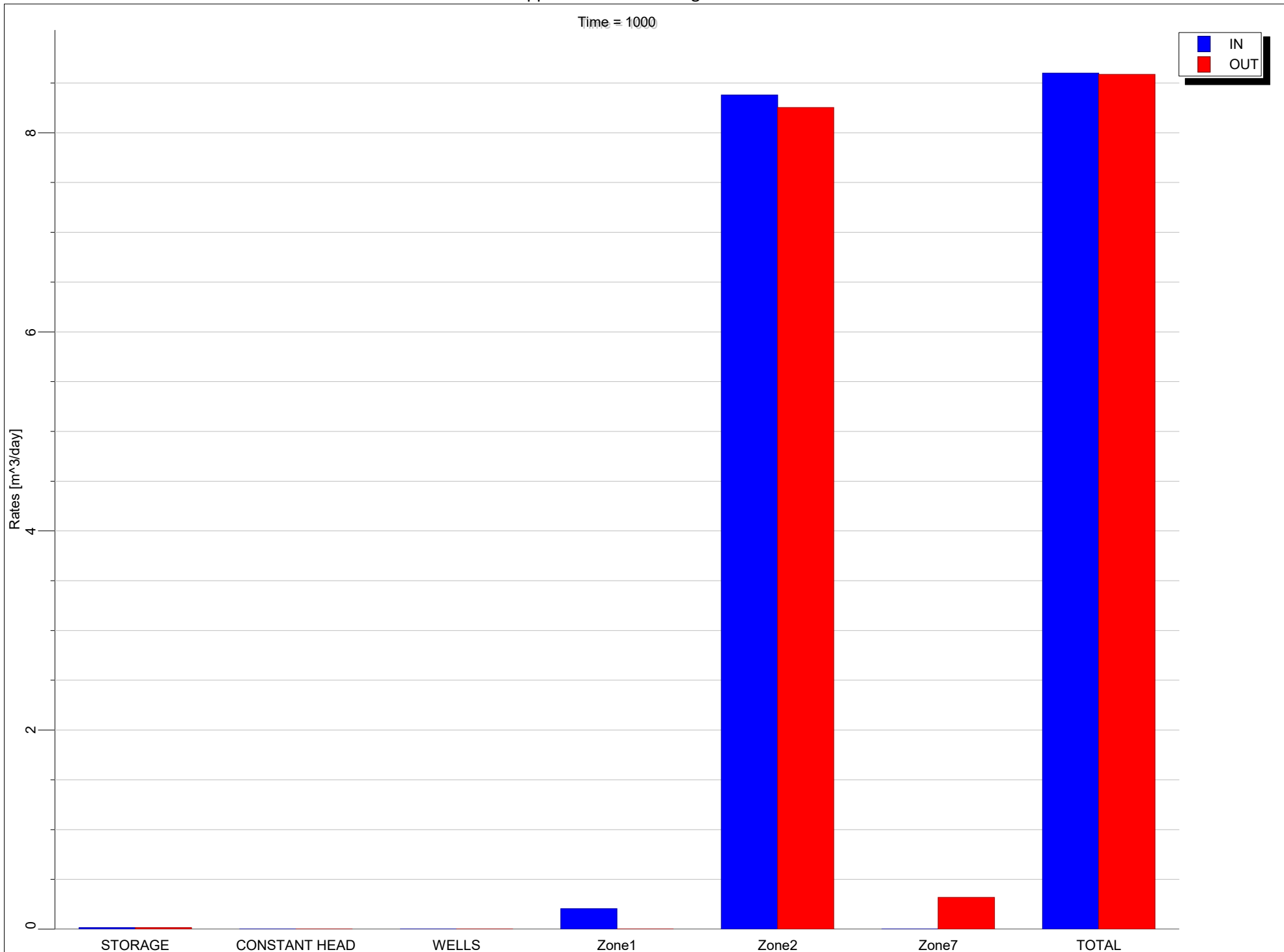
Appendix C - Zone Budget Charts

Time = 750



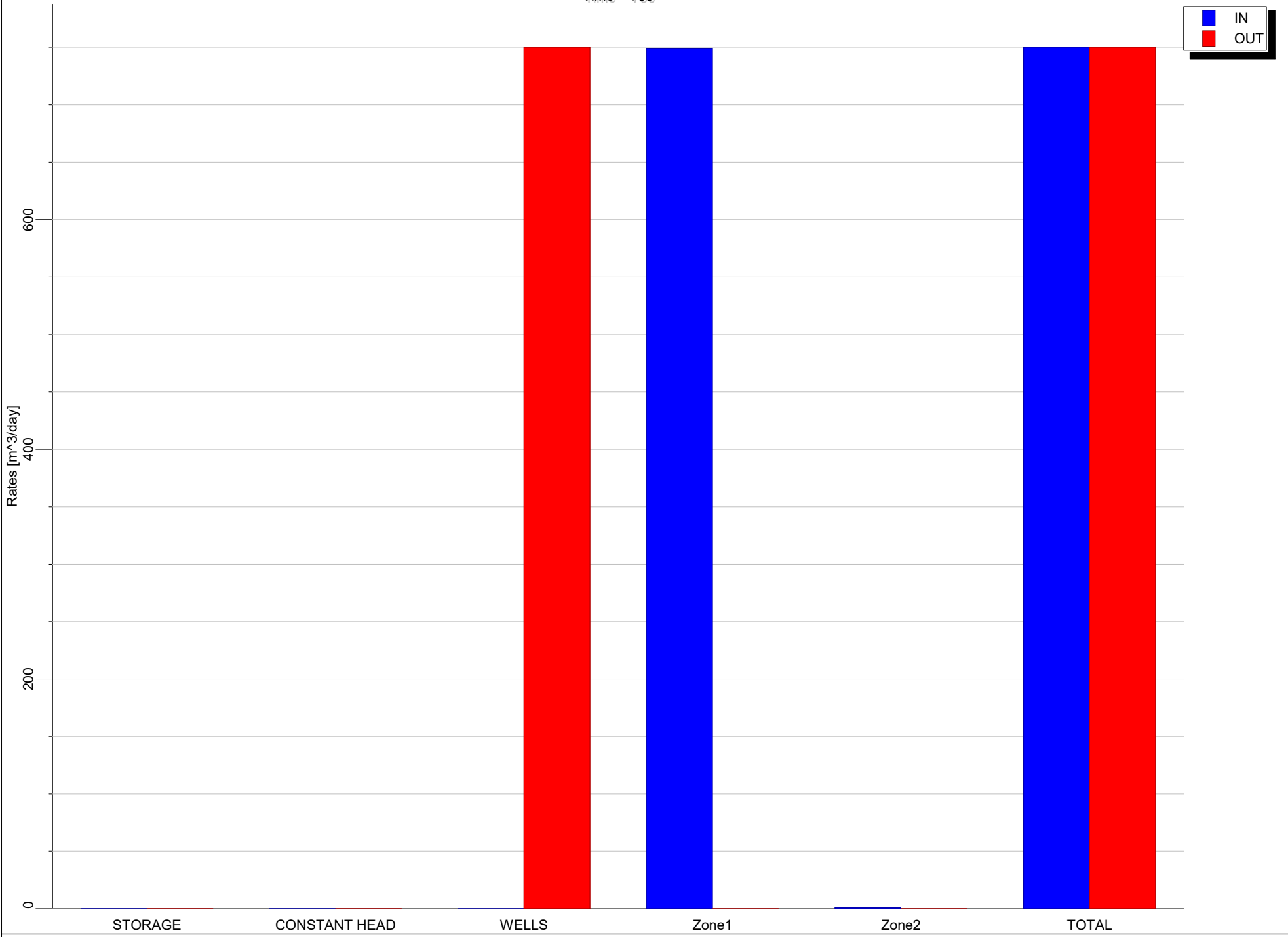
Appendix C - Zone Budget Charts

Time = 1000



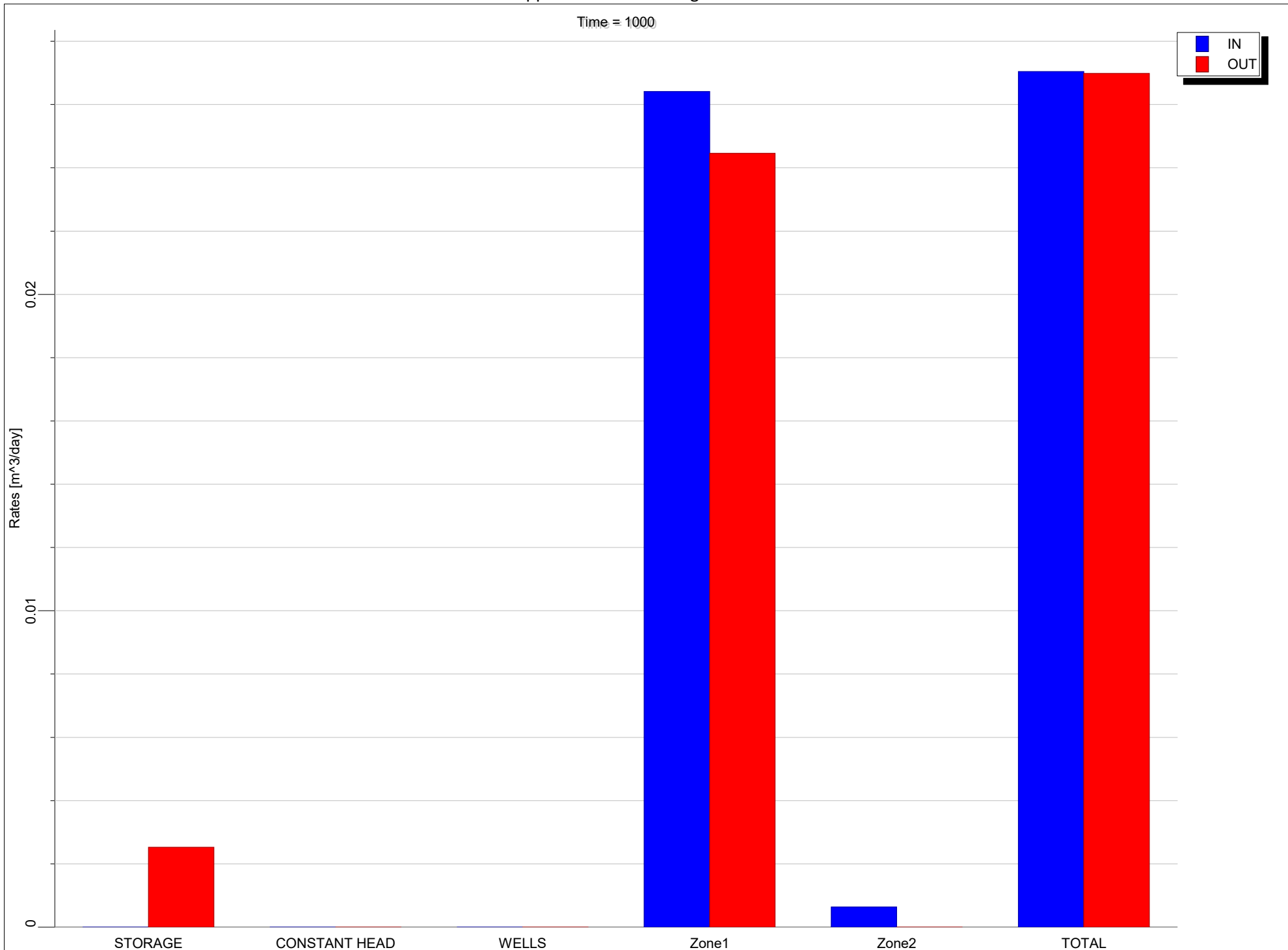
Appendix C - Zone Budget Charts

Time = 750



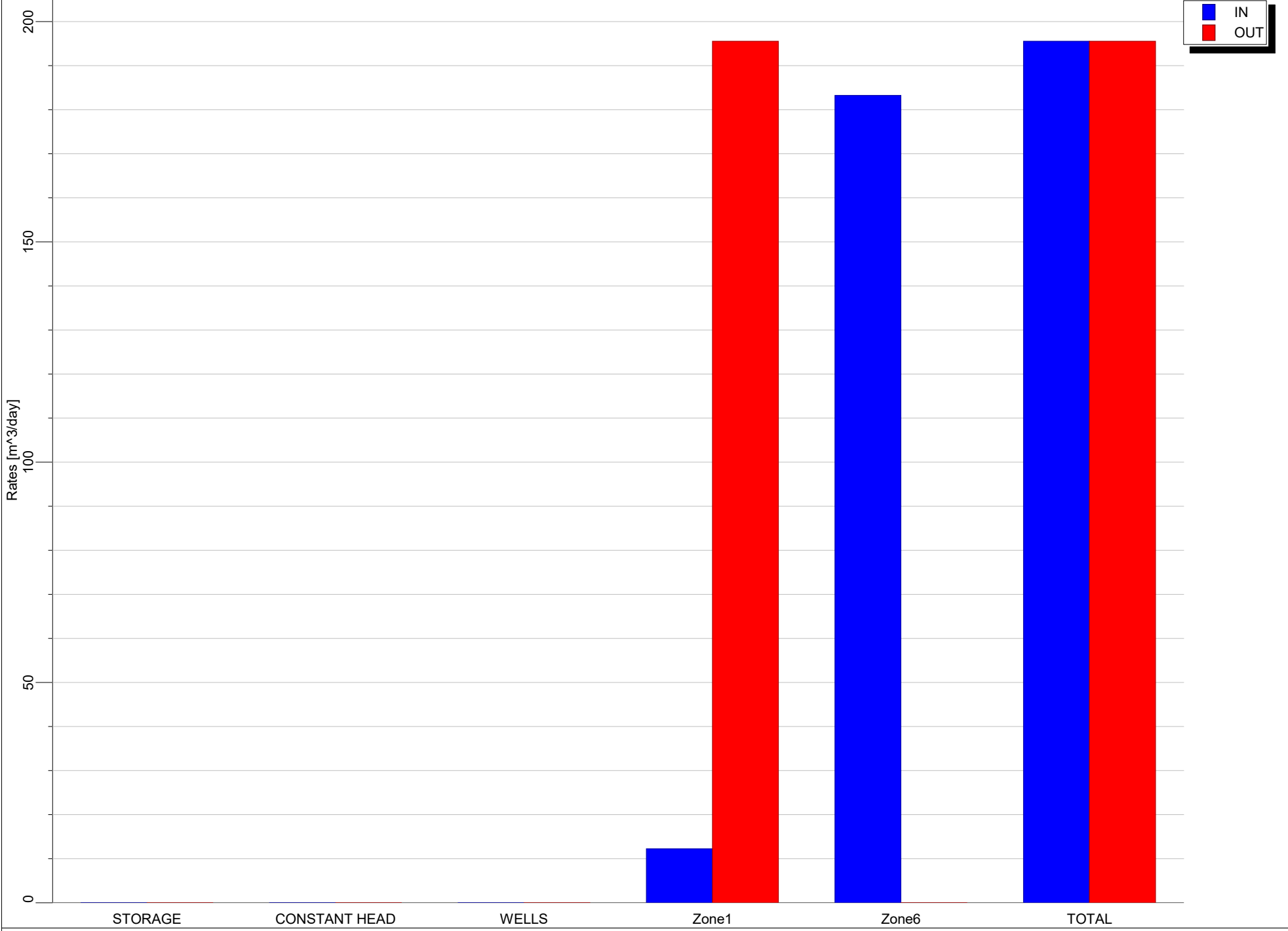
Appendix C - Zone Budget Charts

Time = 1000



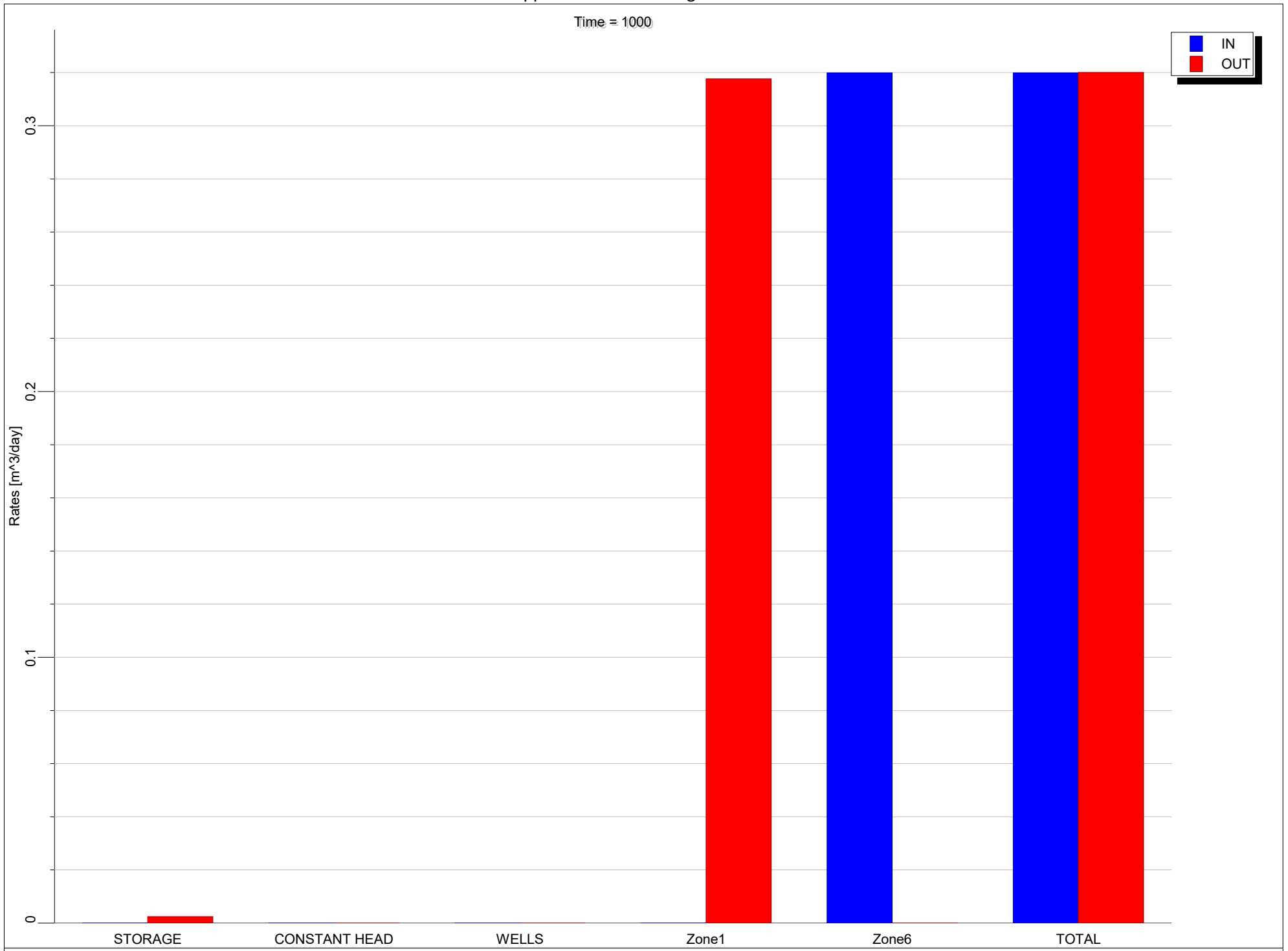
Appendix C - Zone Budget Charts

Time = 750



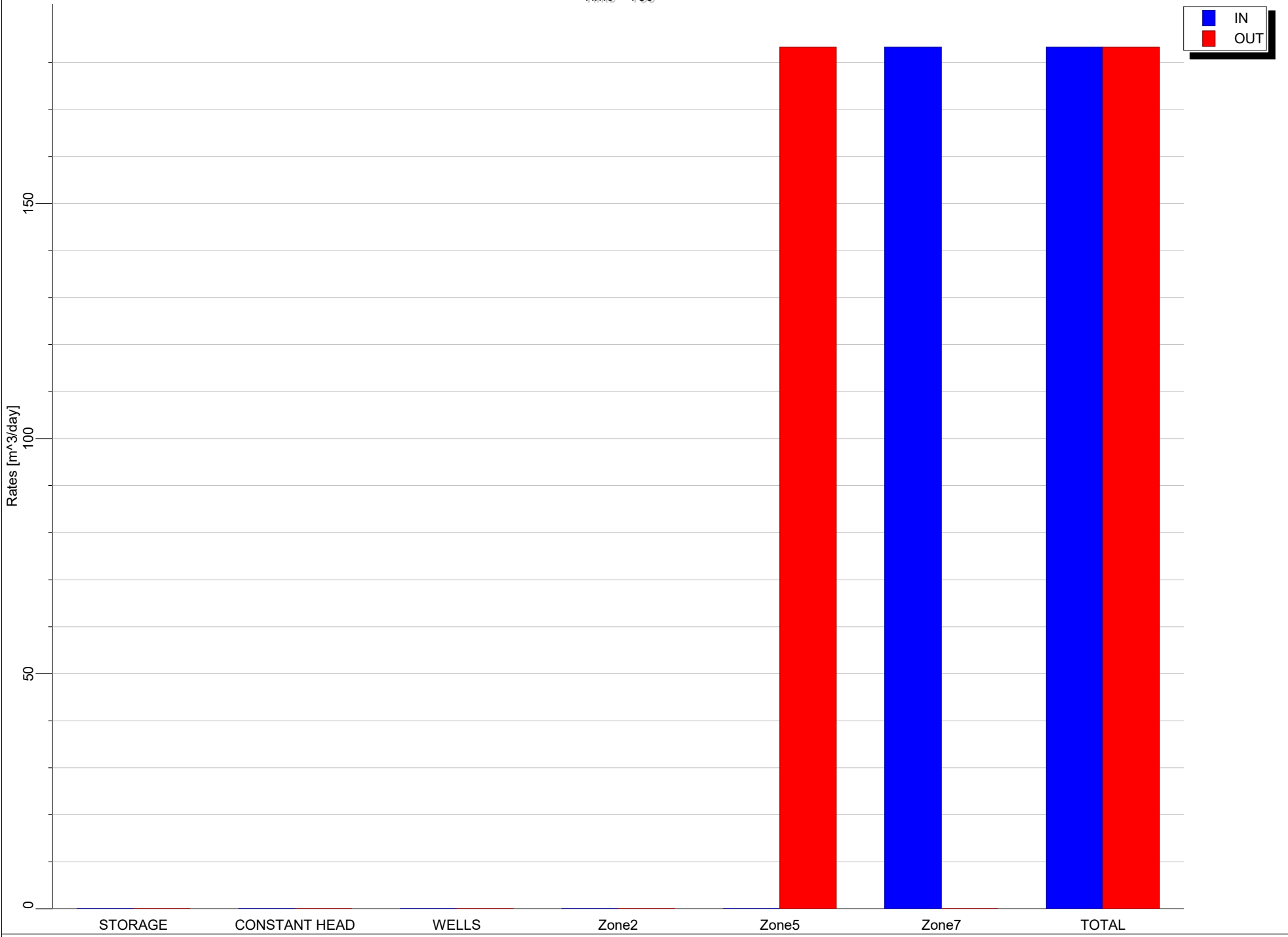
Appendix C - Zone Budget Charts

Time = 1000



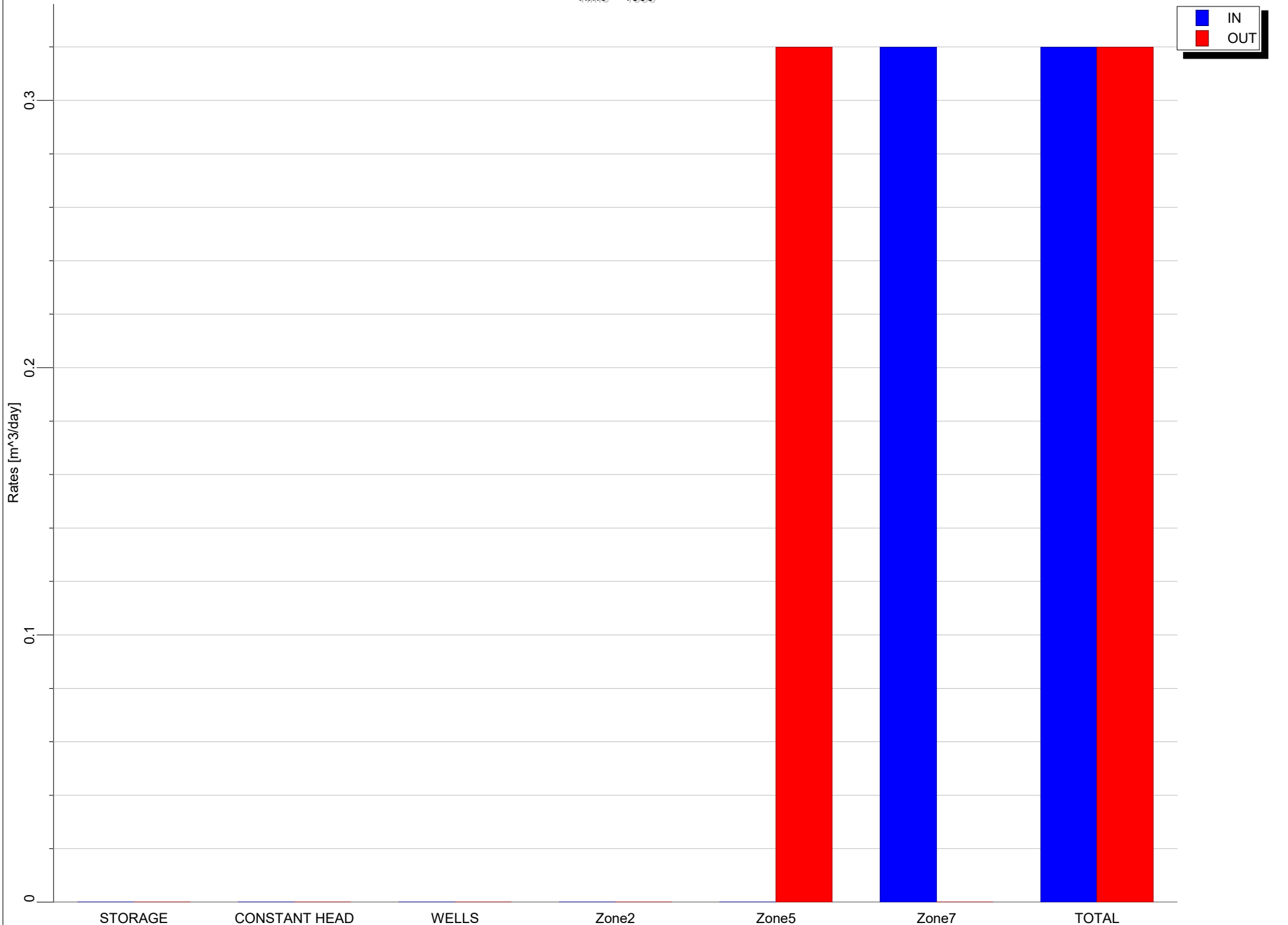
Appendix C - Zone Budget Charts

Time = 750



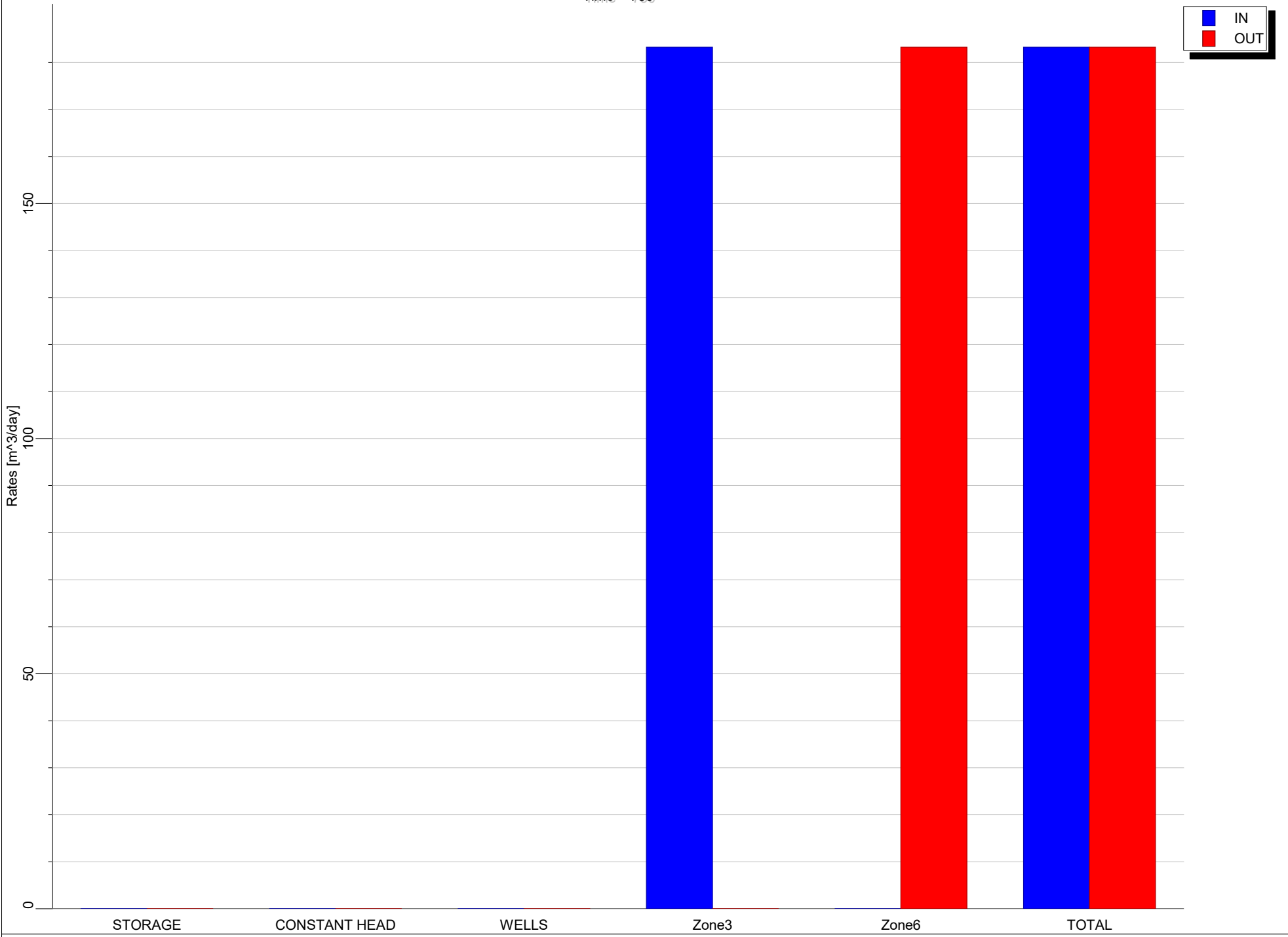
Appendix C - Zone Budget Charts

Time = 1000



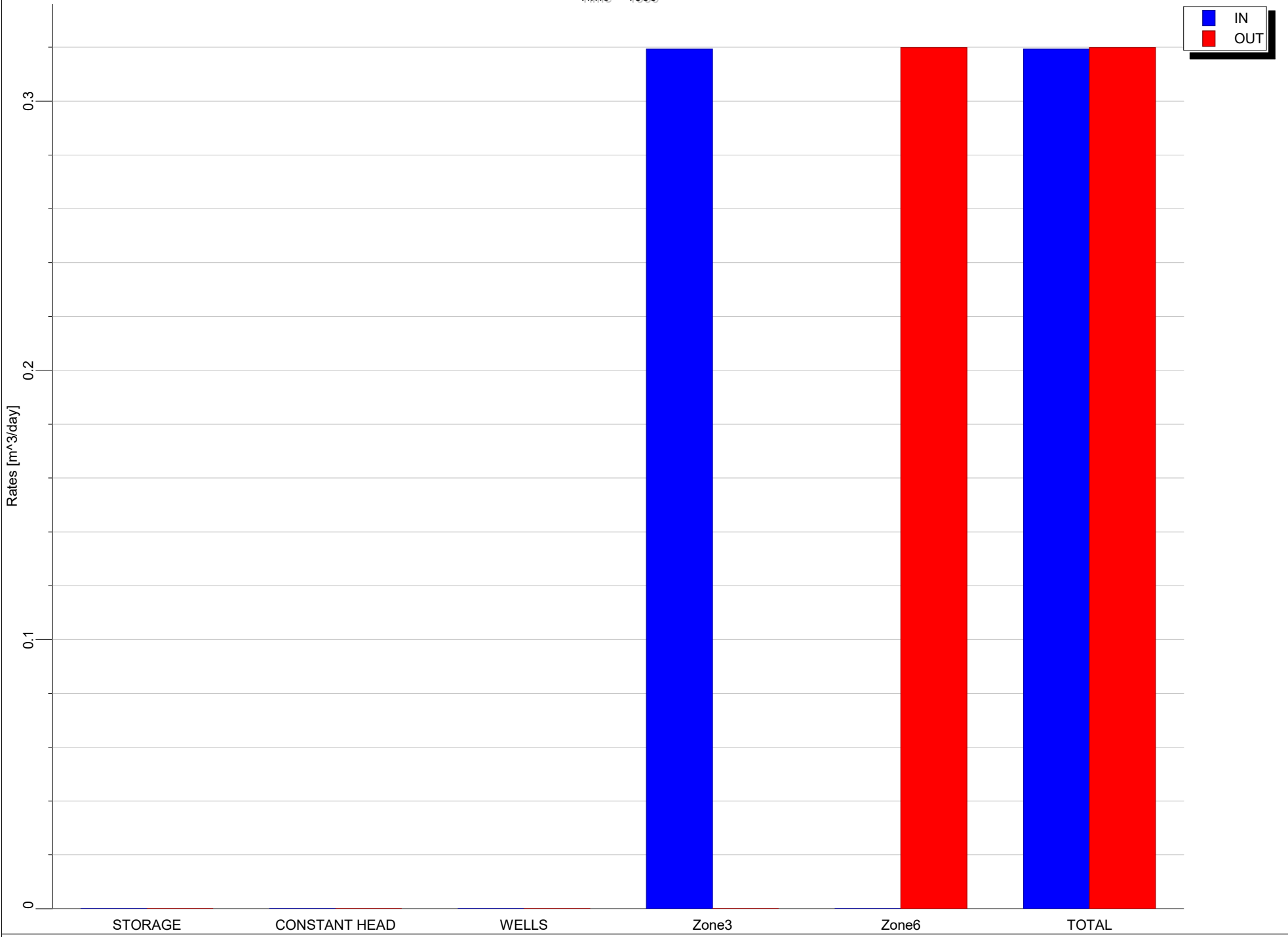
Appendix C - Zone Budget Charts

Time = 750



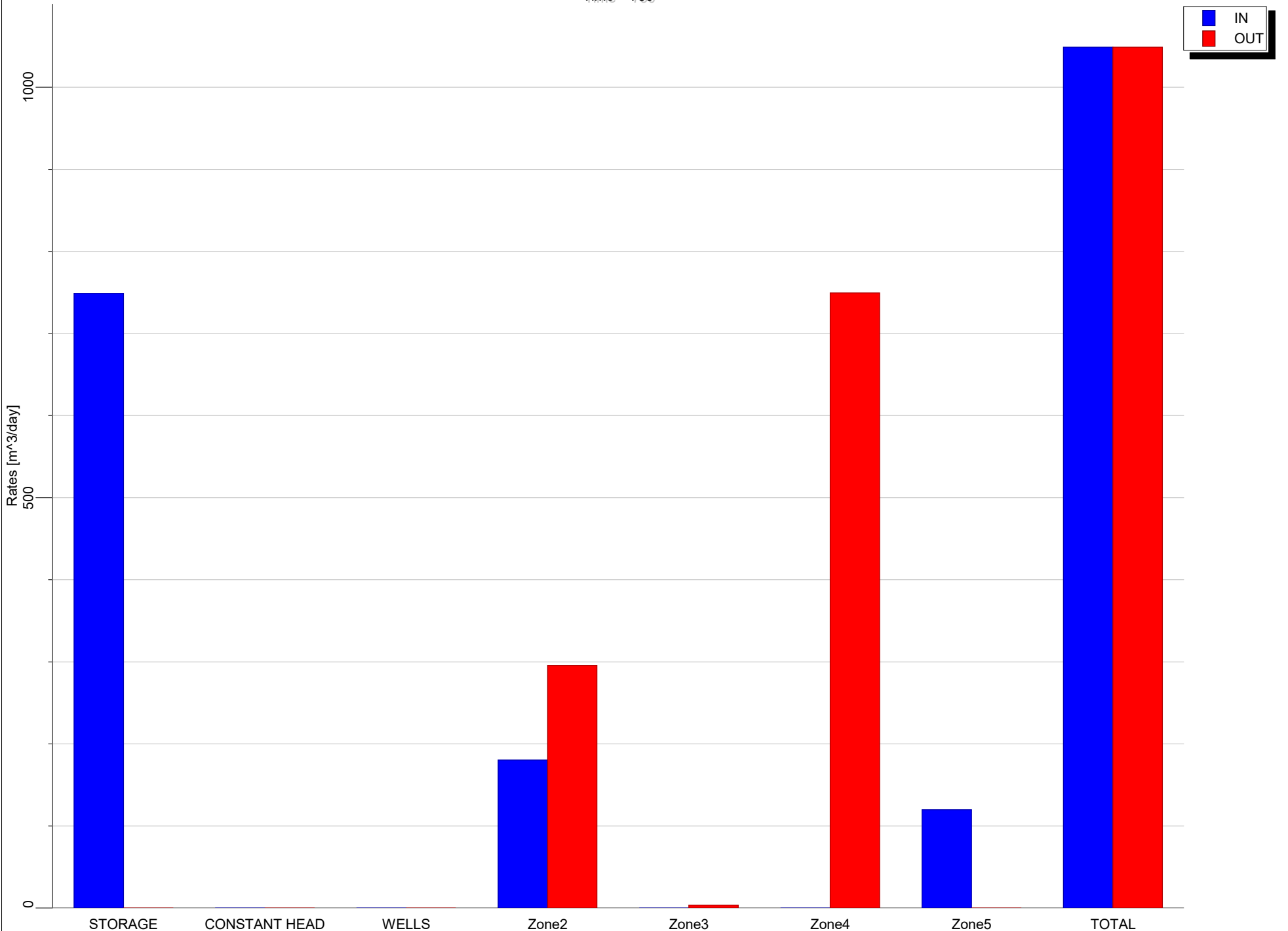
Appendix C - Zone Budget Charts

Time = 1000



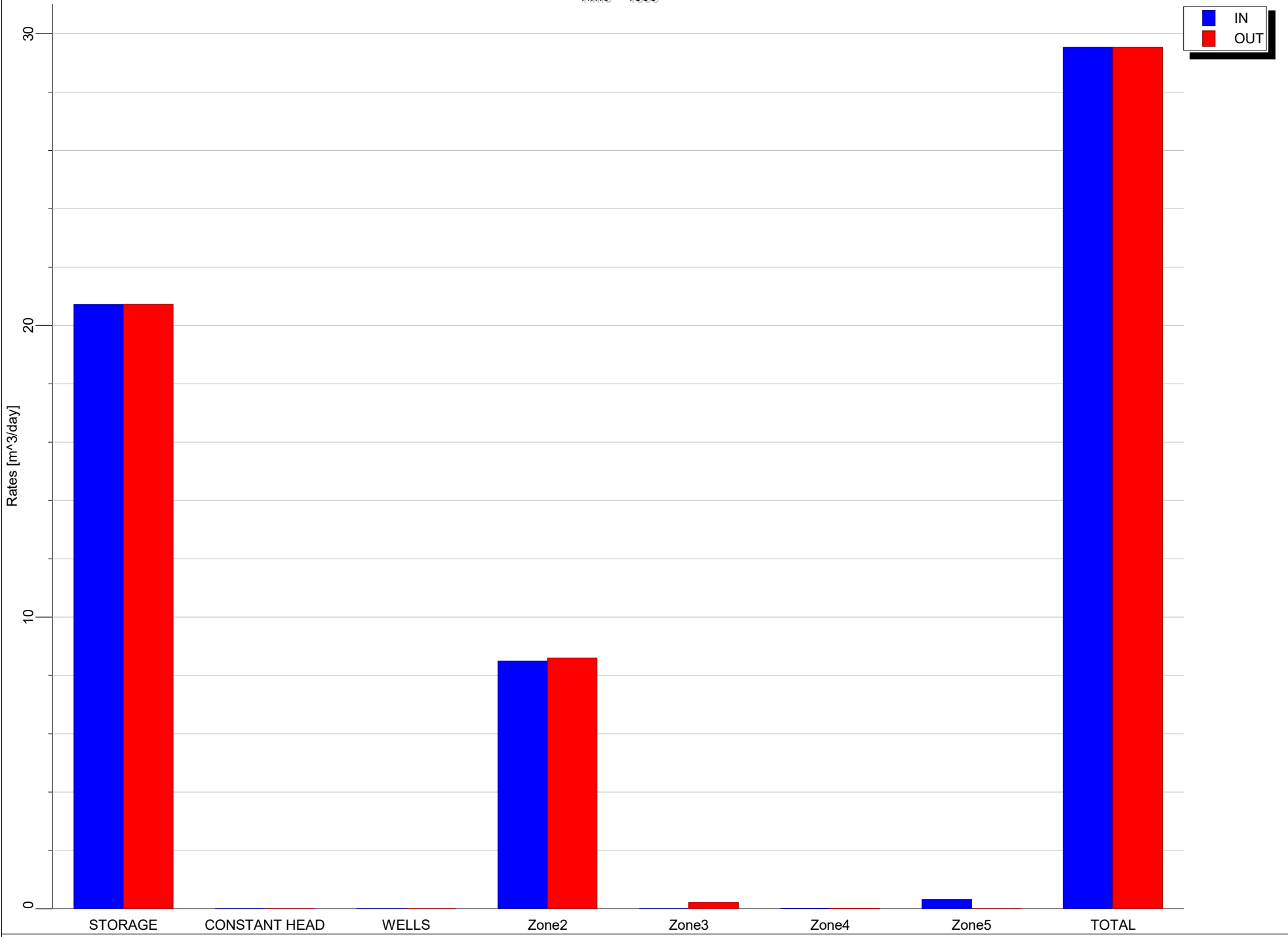
Appendix C - Zone Budget Charts

Time = 750



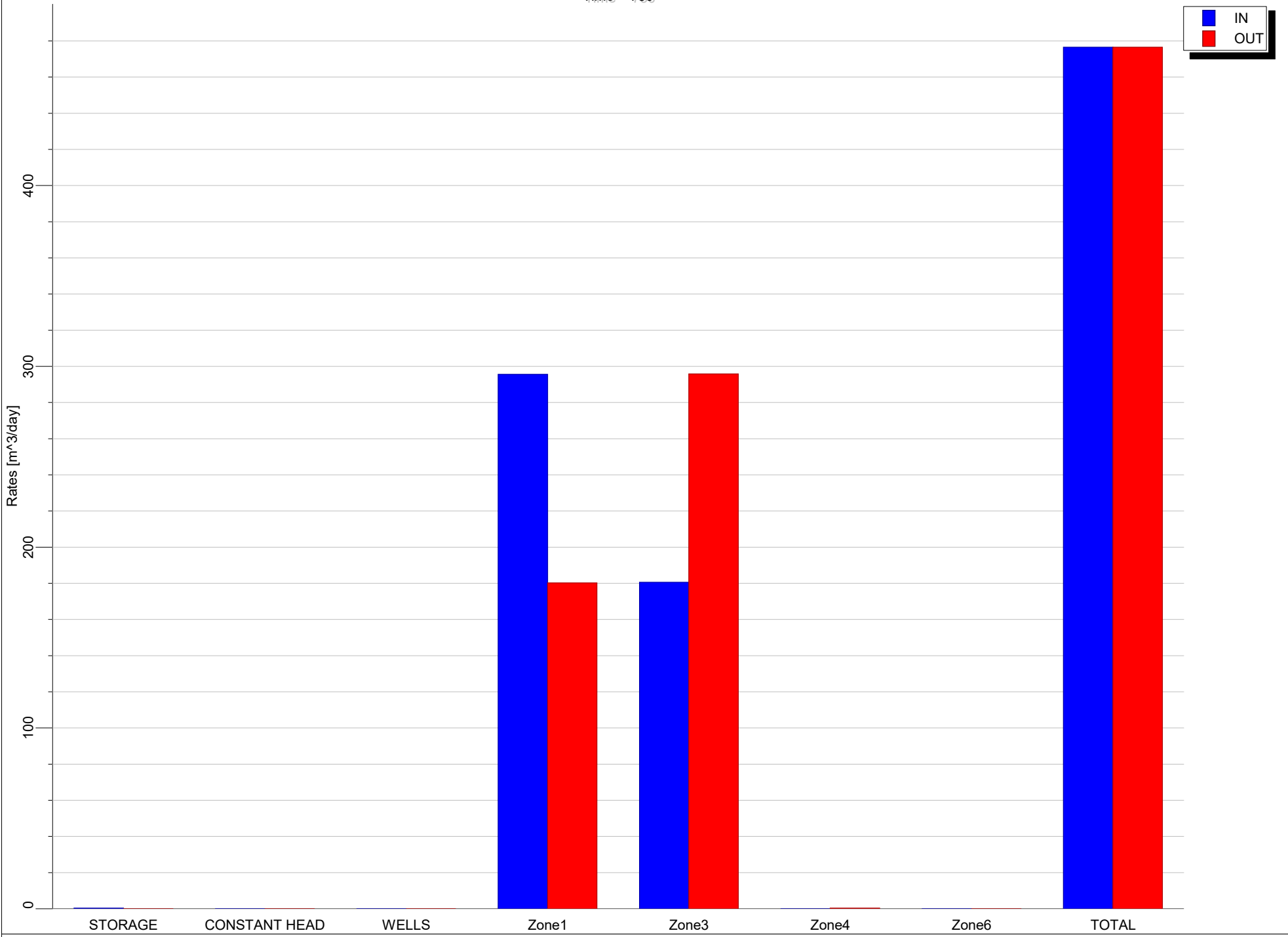
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

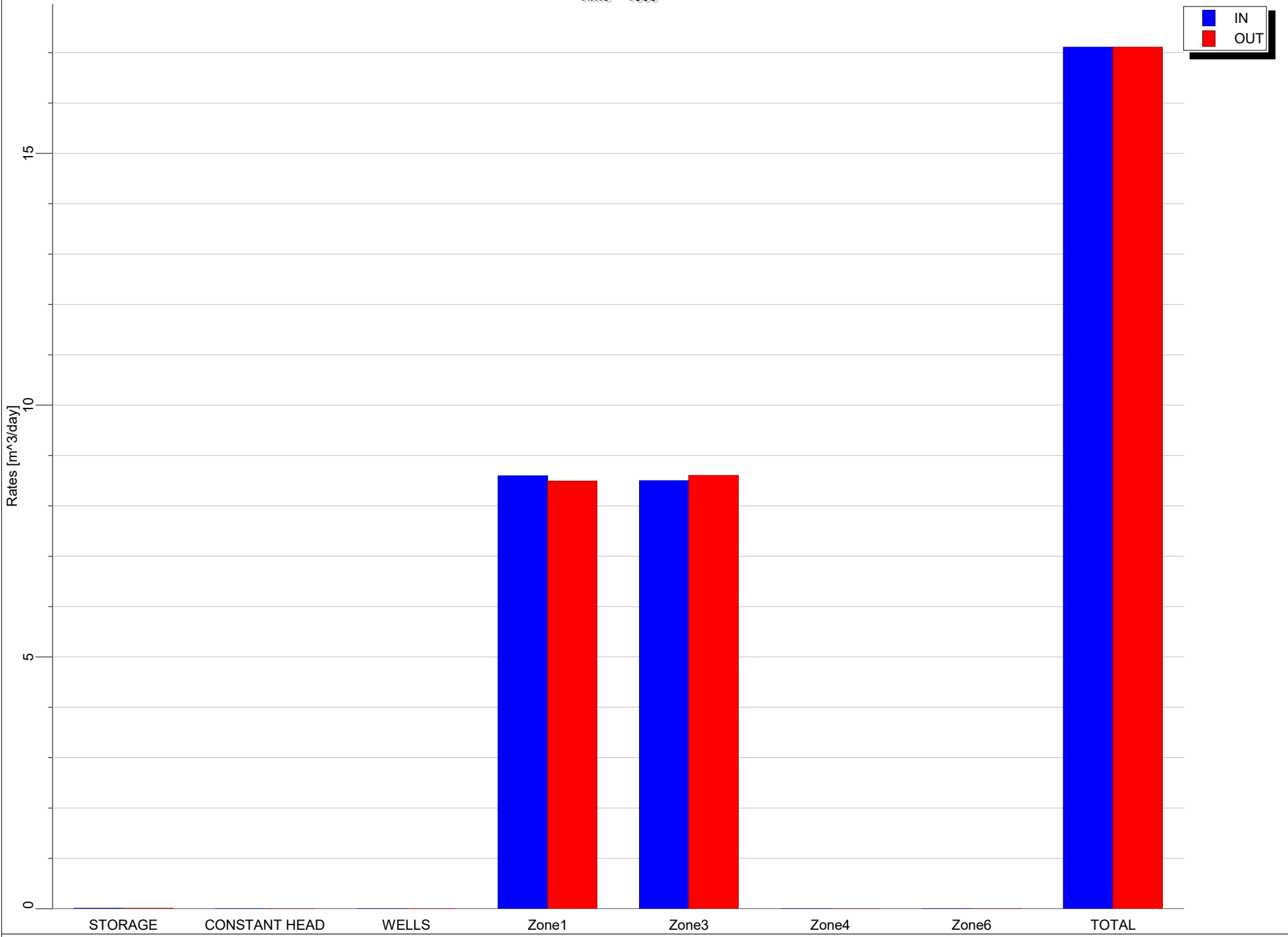
Time = 750



Zone 2
Scenario 3.3
Abandoned Well 40m

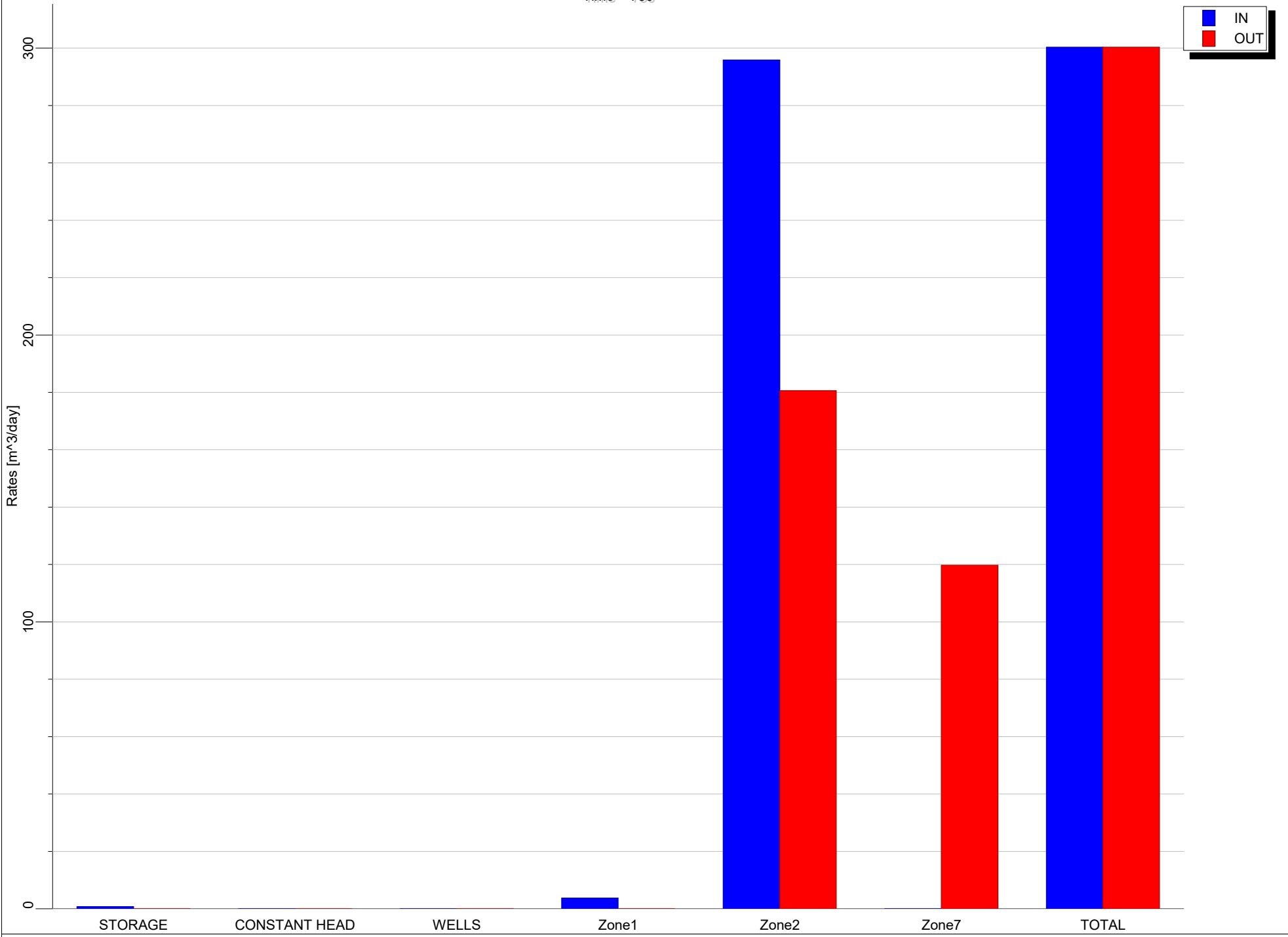
Appendix C - Zone Budget Charts

Time = 1000



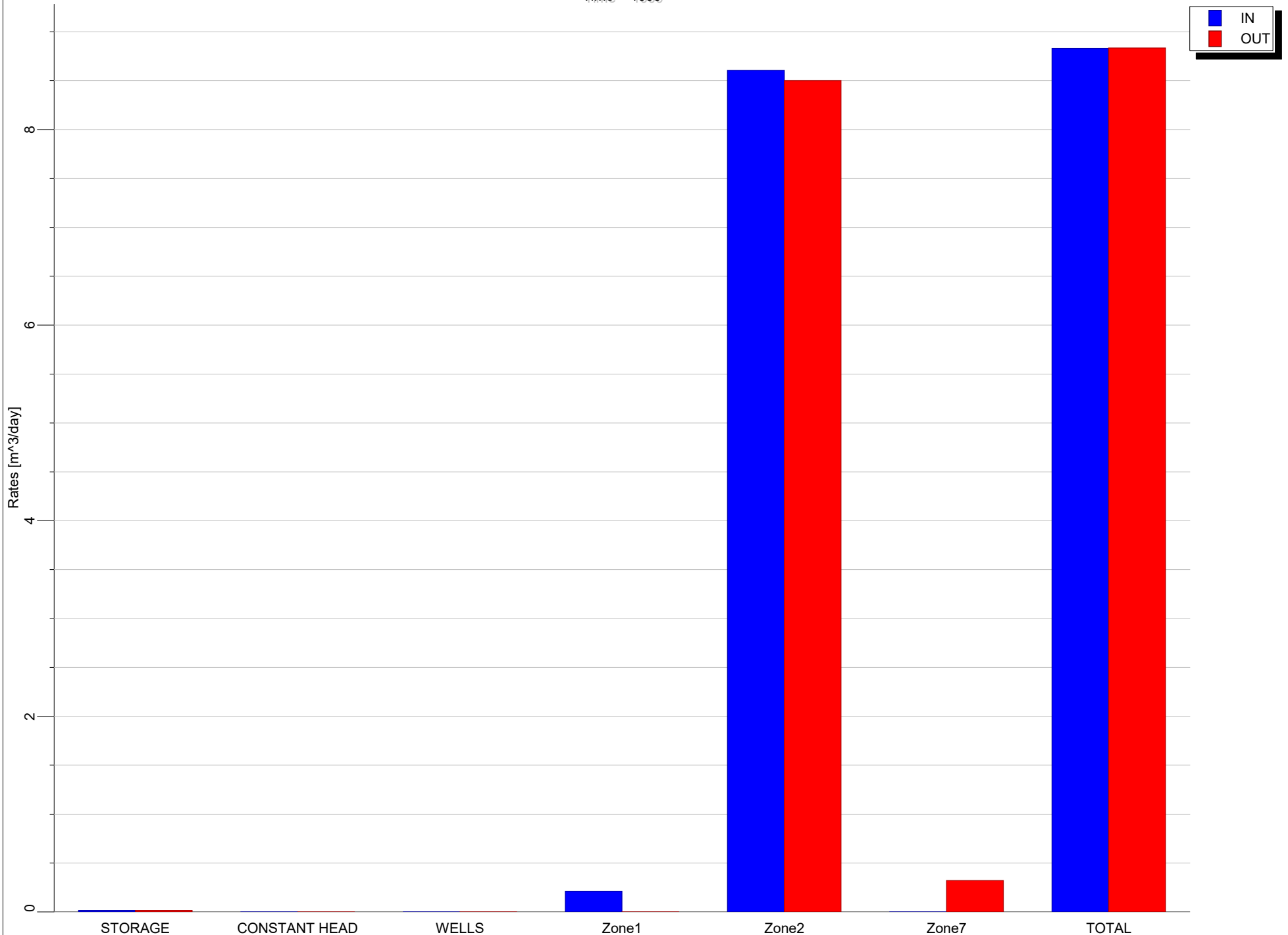
Appendix C - Zone Budget Charts

Time = 750



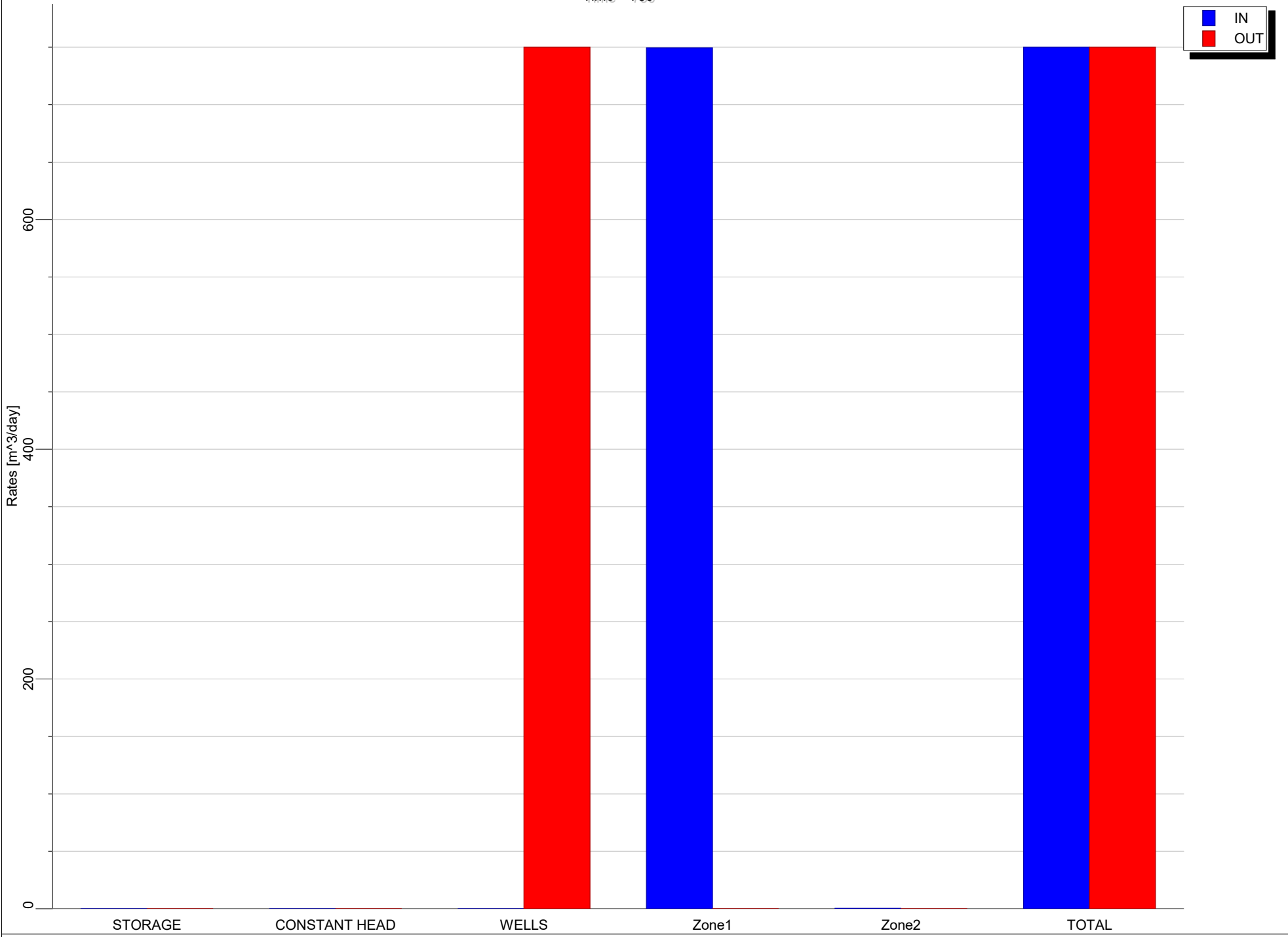
Appendix C - Zone Budget Charts

Time = 1000



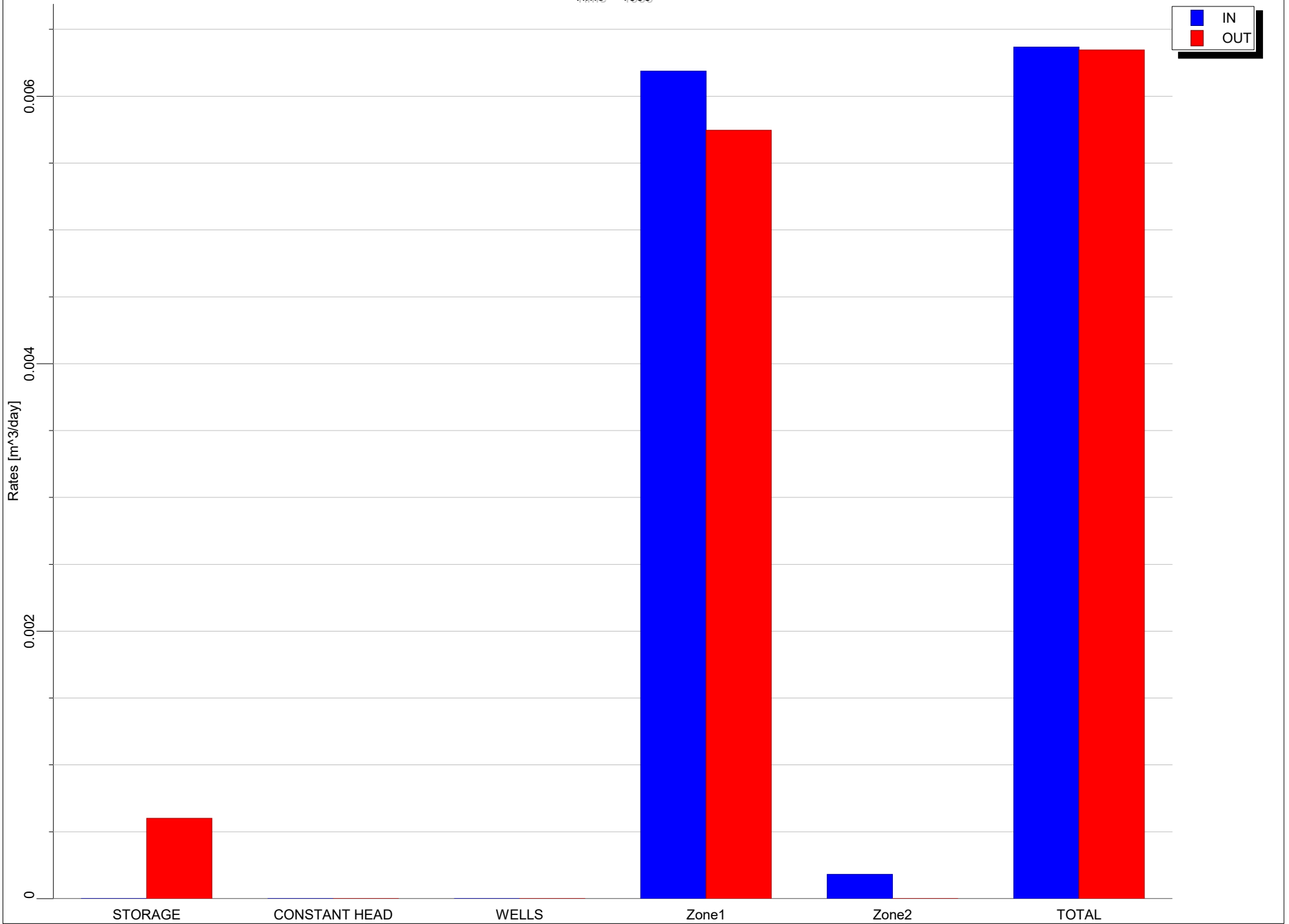
Appendix C - Zone Budget Charts

Time = 750



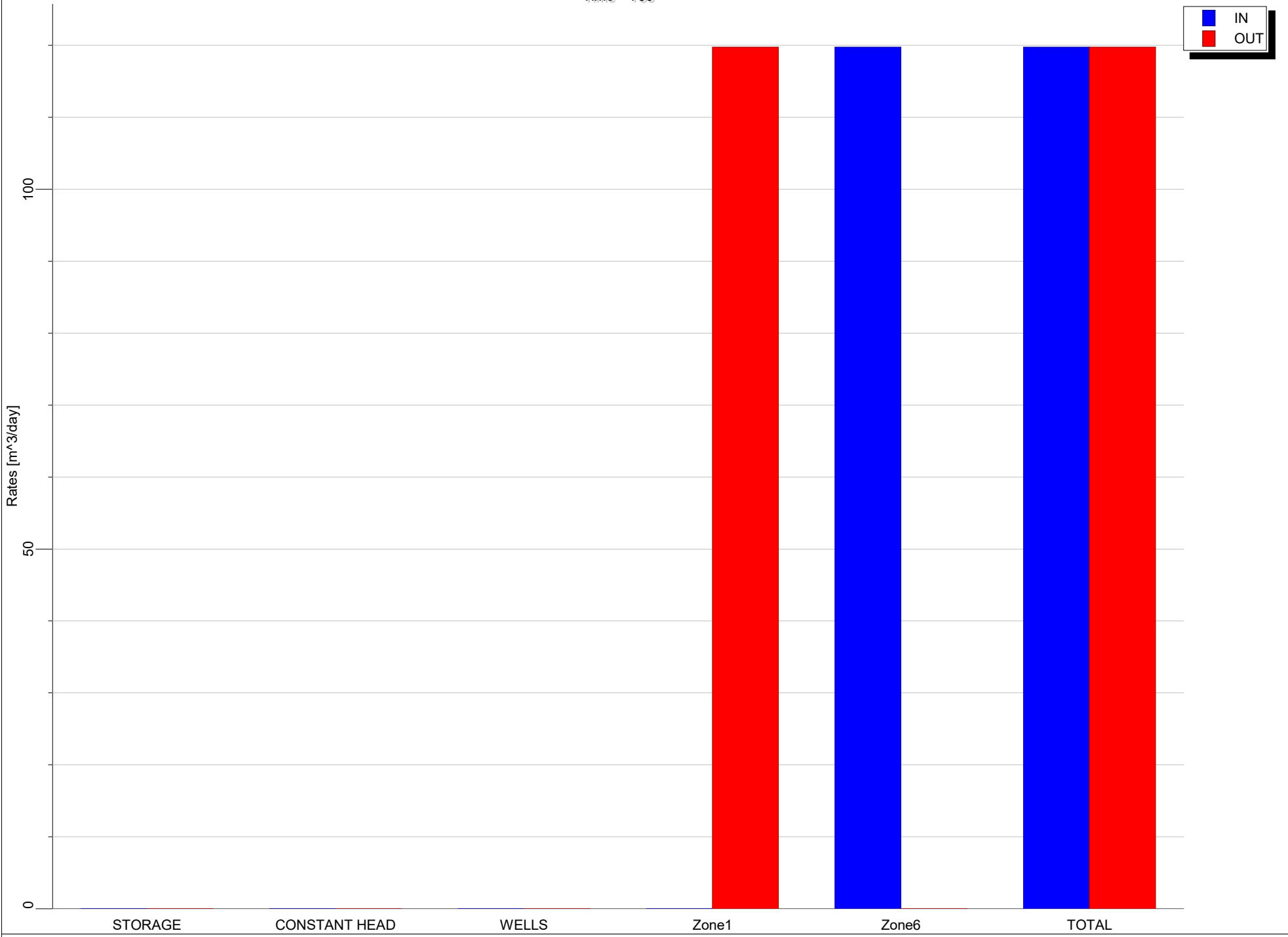
Appendix C - Zone Budget Charts

Time = 1000



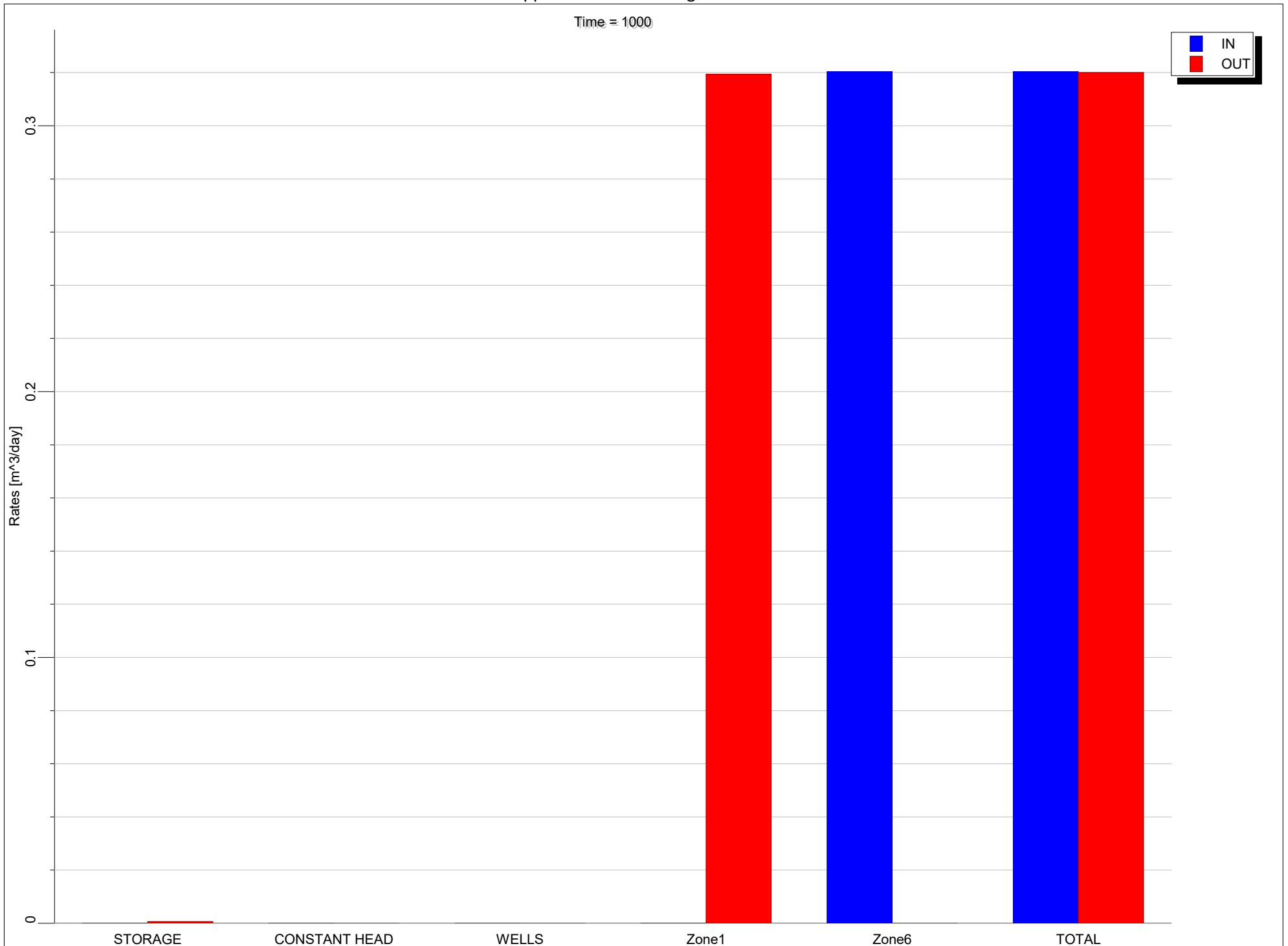
Appendix C - Zone Budget Charts

Time = 750



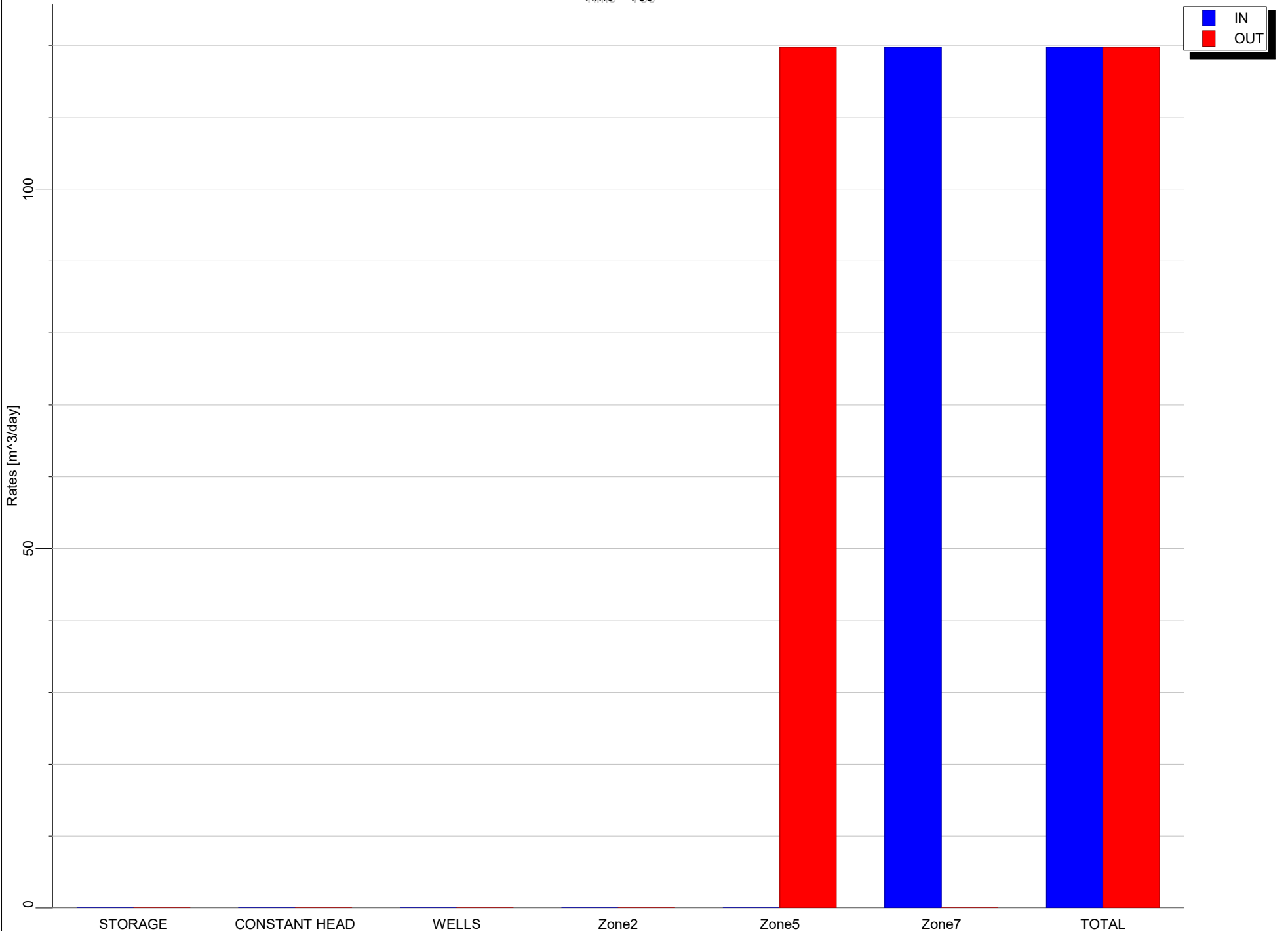
Appendix C - Zone Budget Charts

Time = 1000



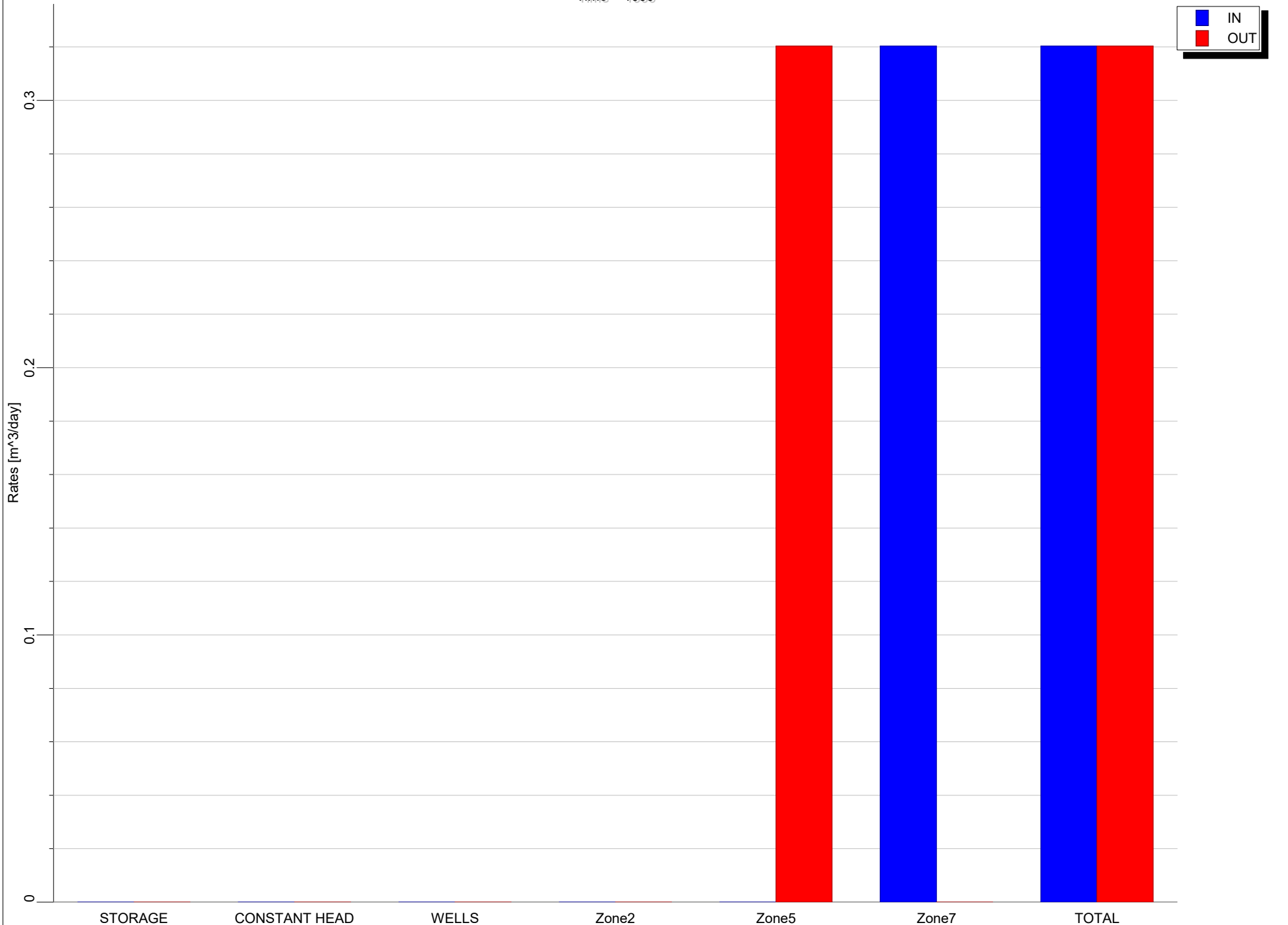
Appendix C - Zone Budget Charts

Time = 750



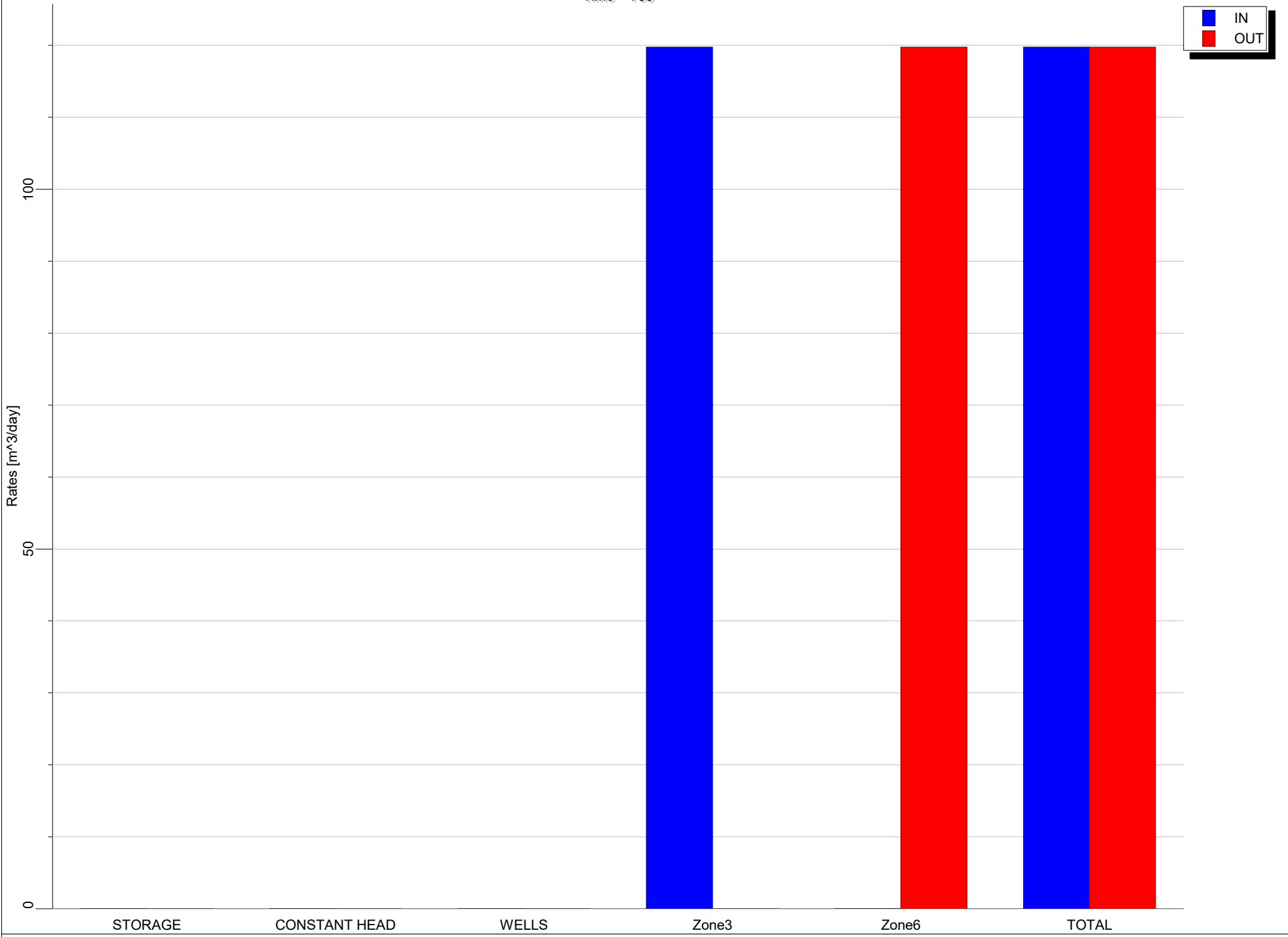
Appendix C - Zone Budget Charts

Time = 1000



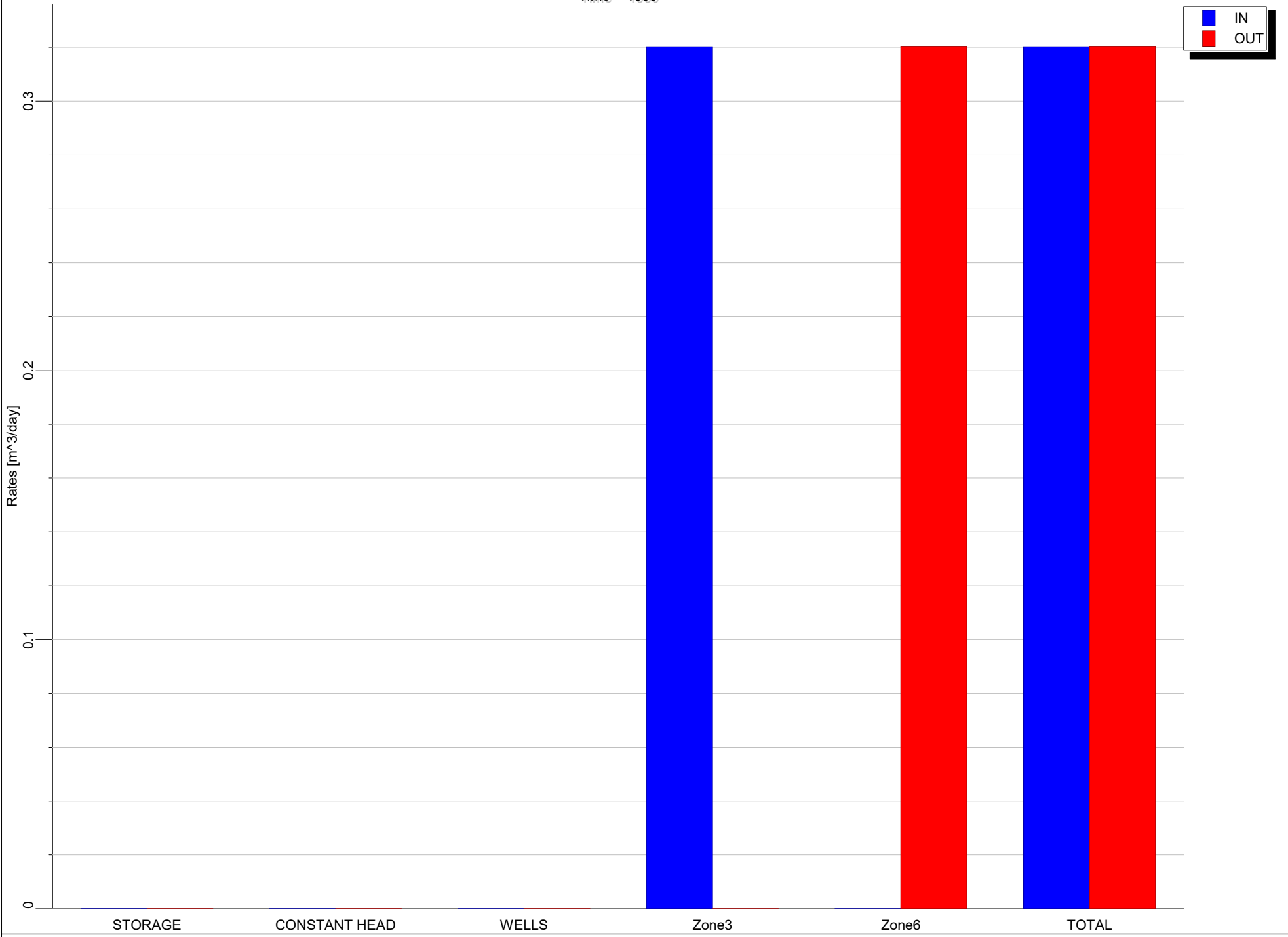
Appendix C - Zone Budget Charts

Time = 750



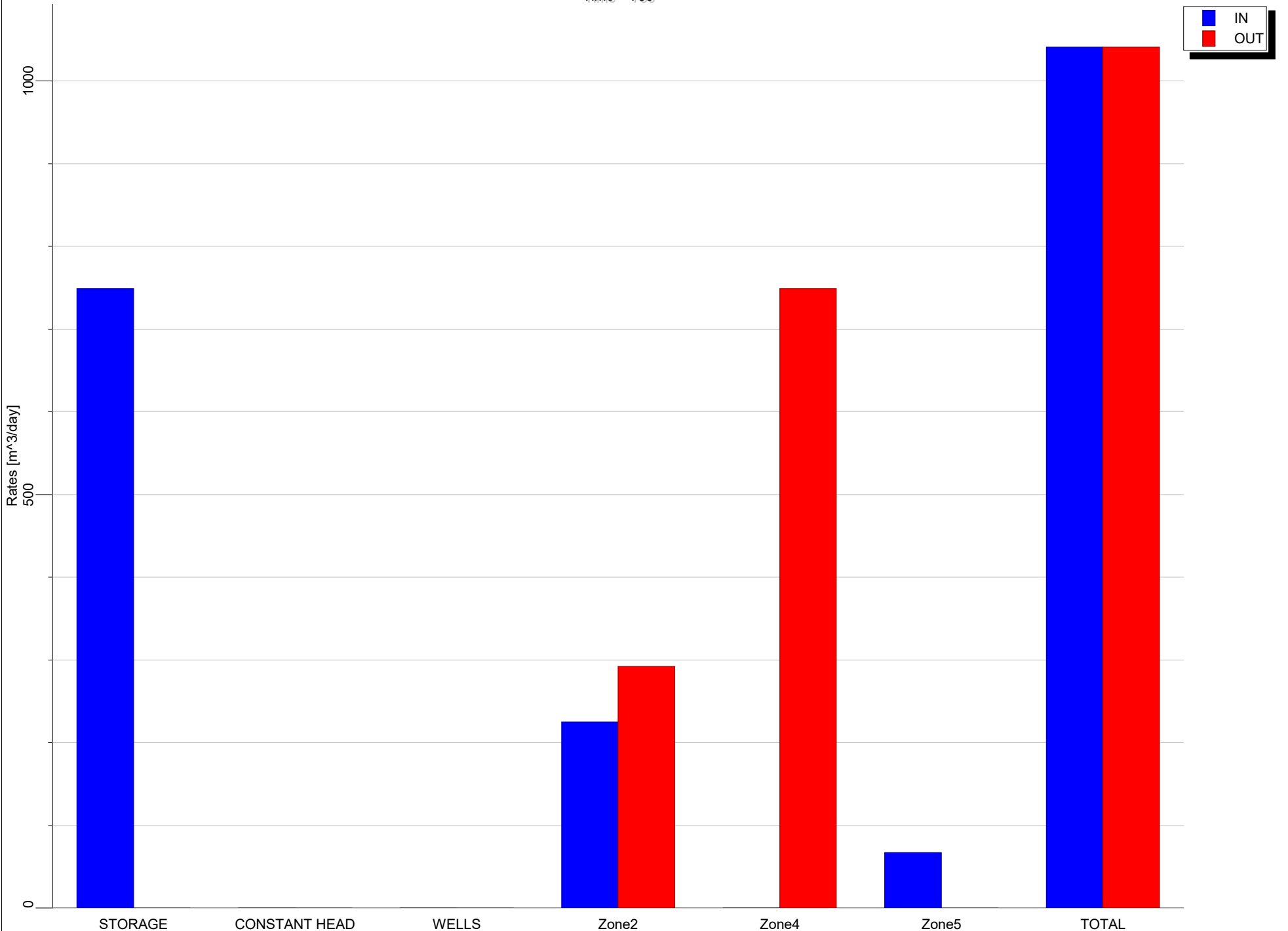
Appendix C - Zone Budget Charts

Time = 1000



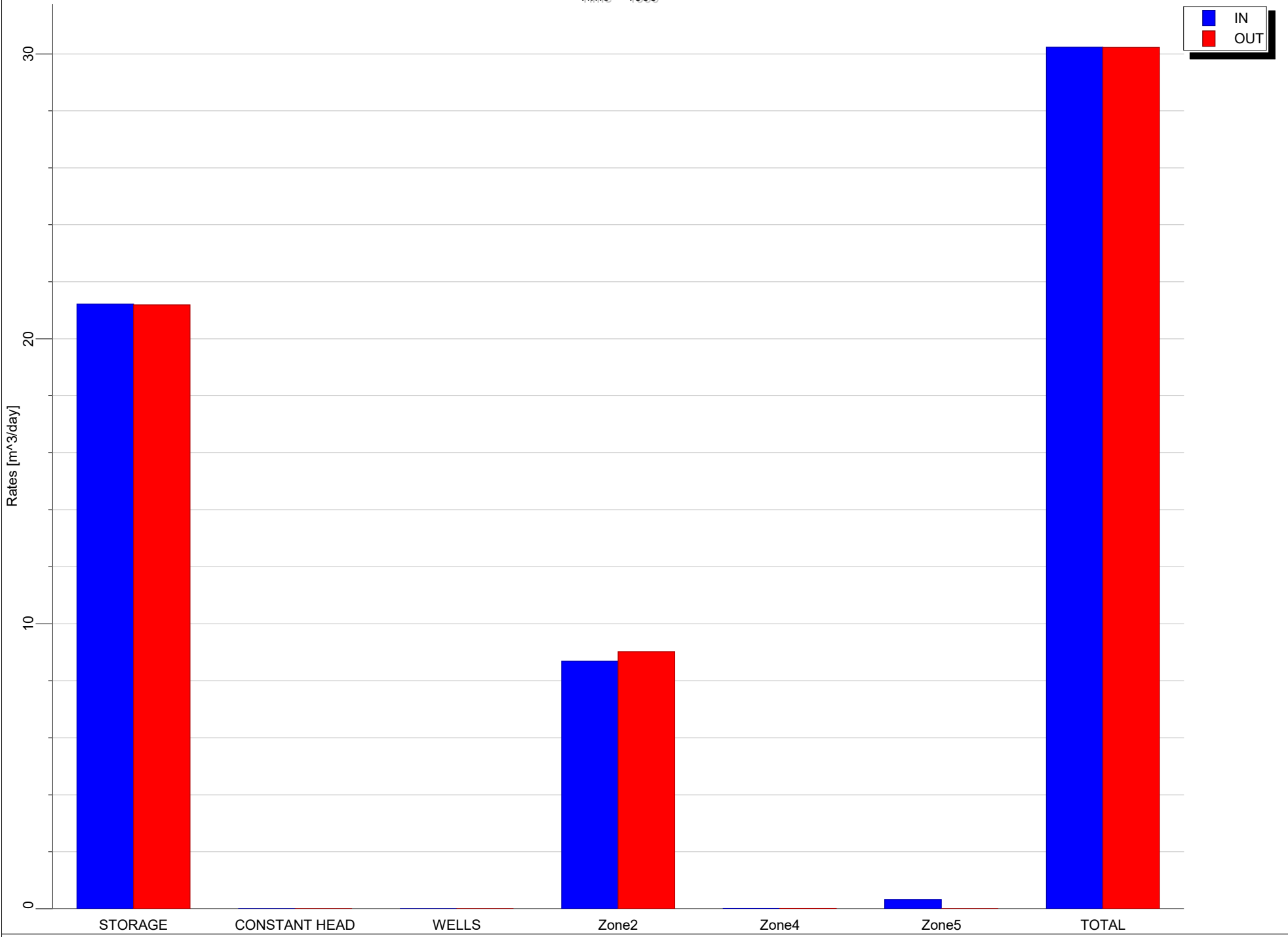
Appendix C - Zone Budget Charts

Time = 750



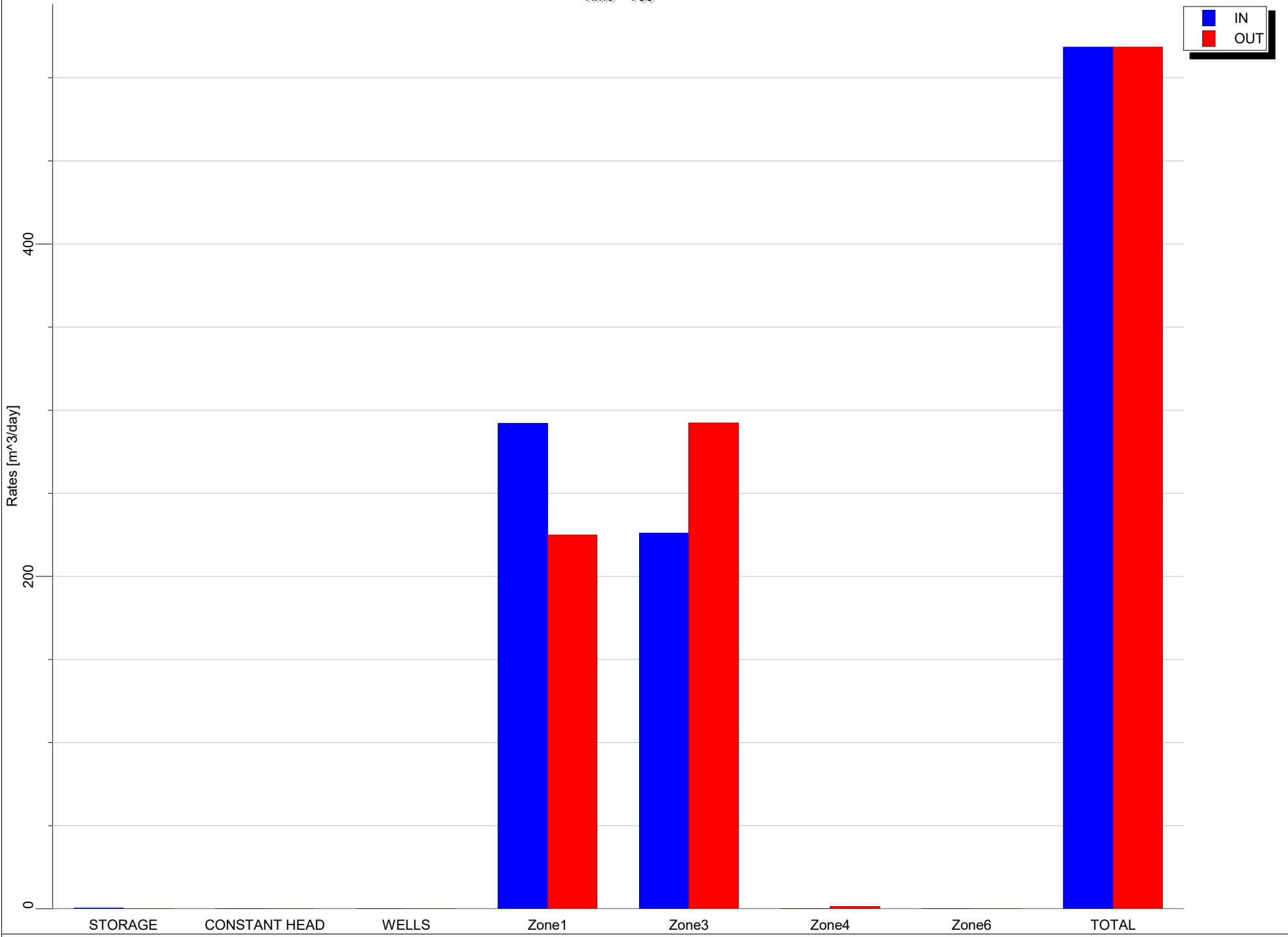
Appendix C - Zone Budget Charts

Time = 1000



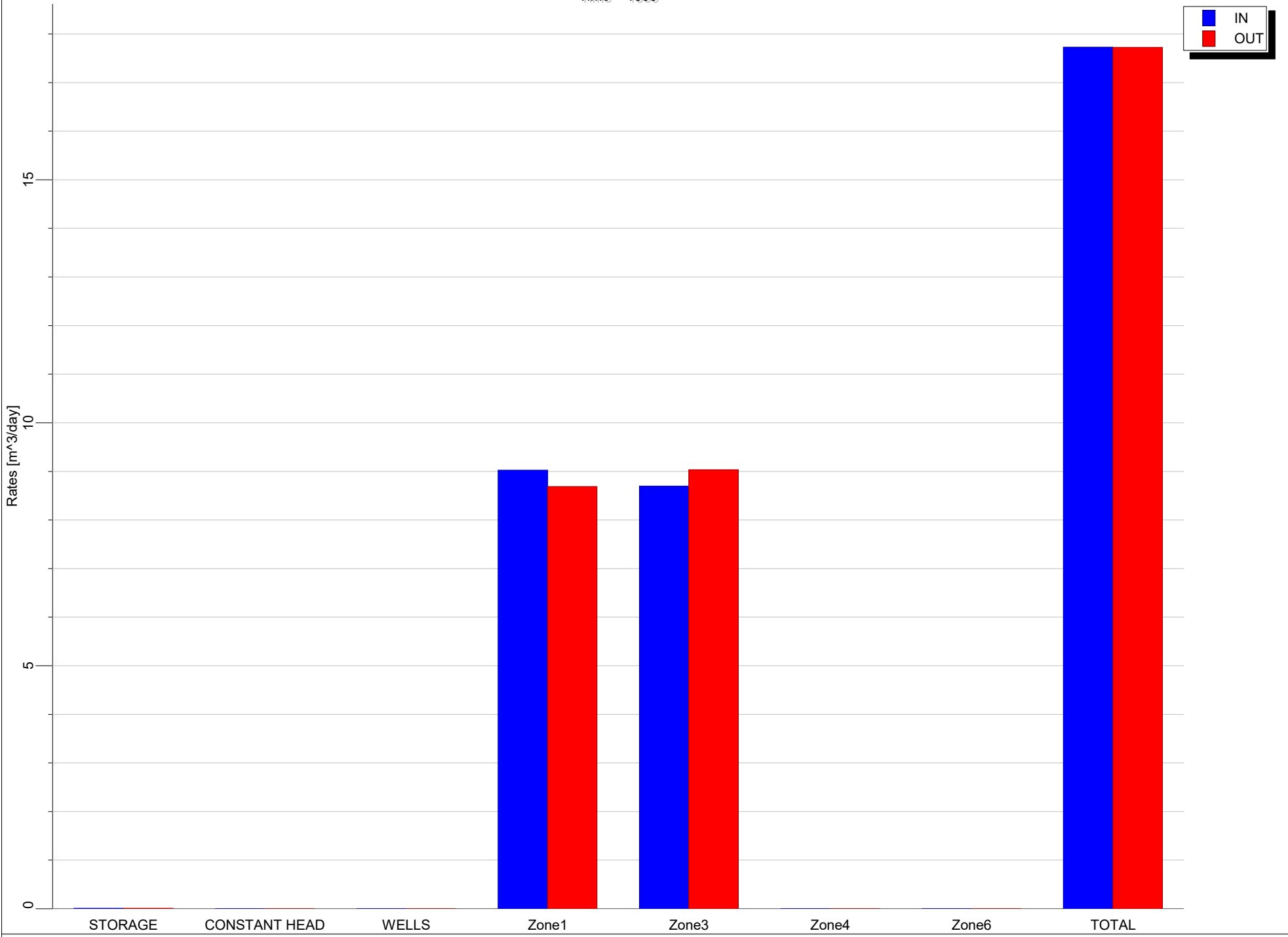
Appendix C - Zone Budget Charts

Time = 750



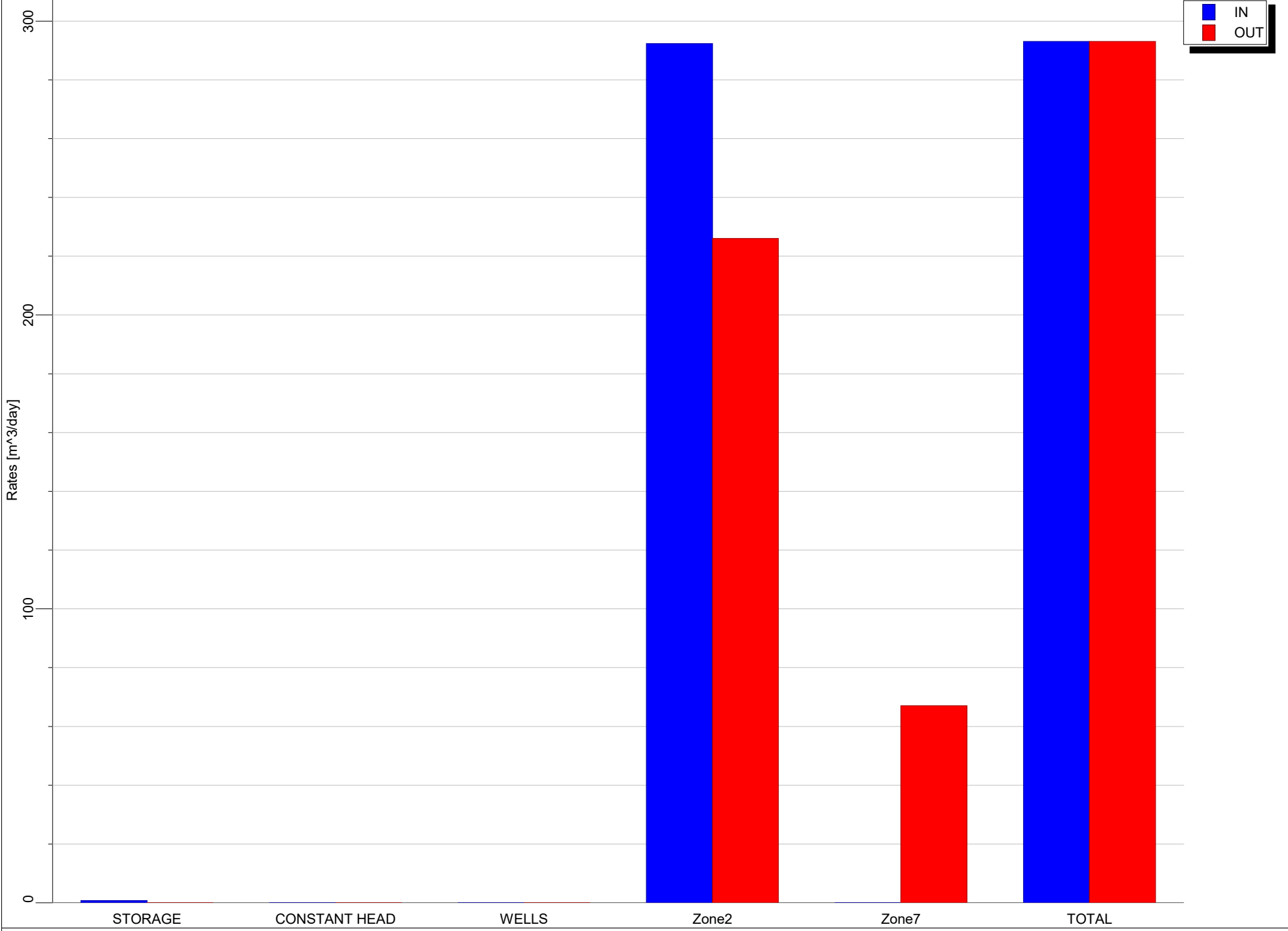
Appendix C - Zone Budget Charts

Time = 1000



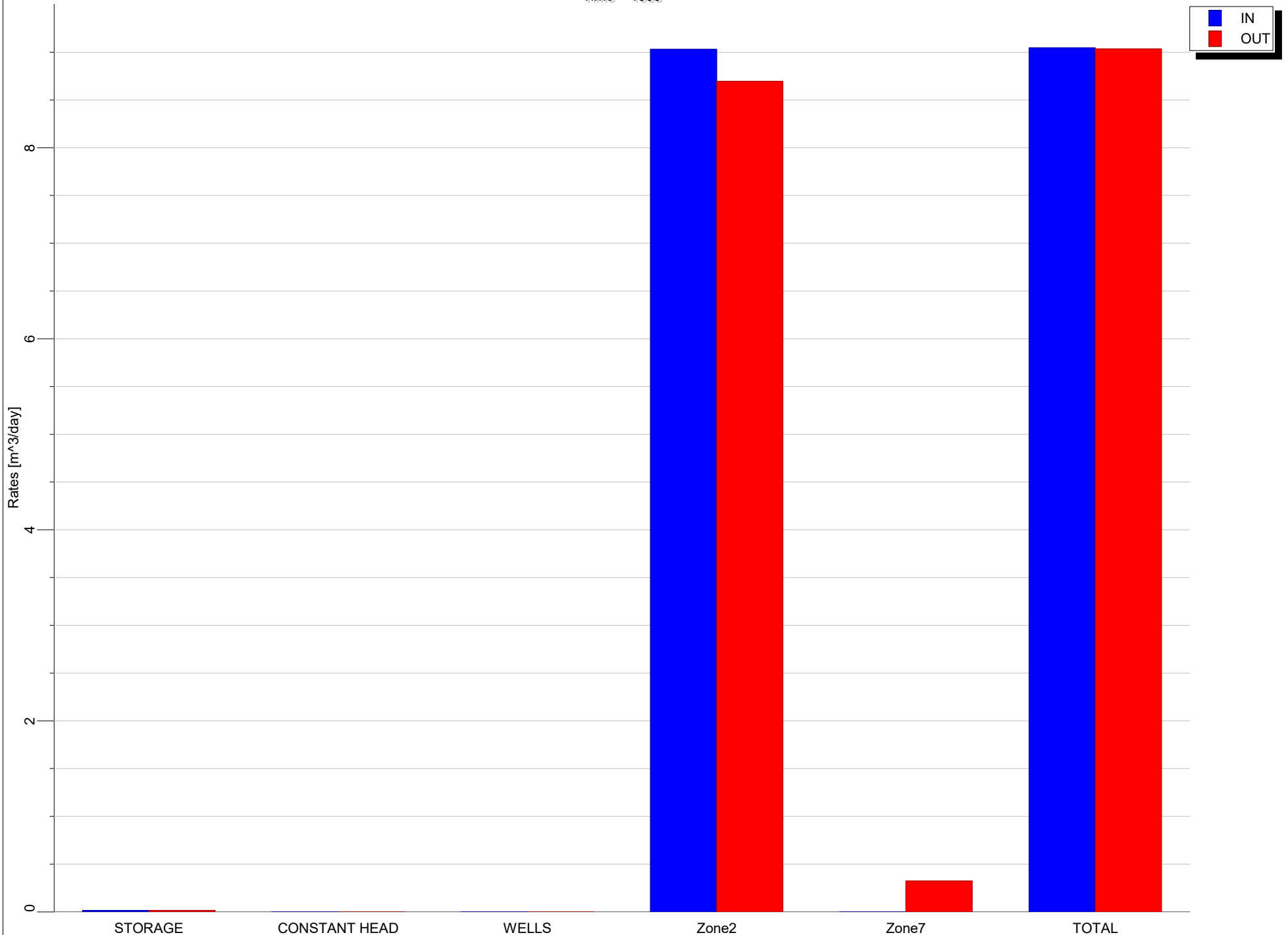
Appendix C - Zone Budget Charts

Time = 750



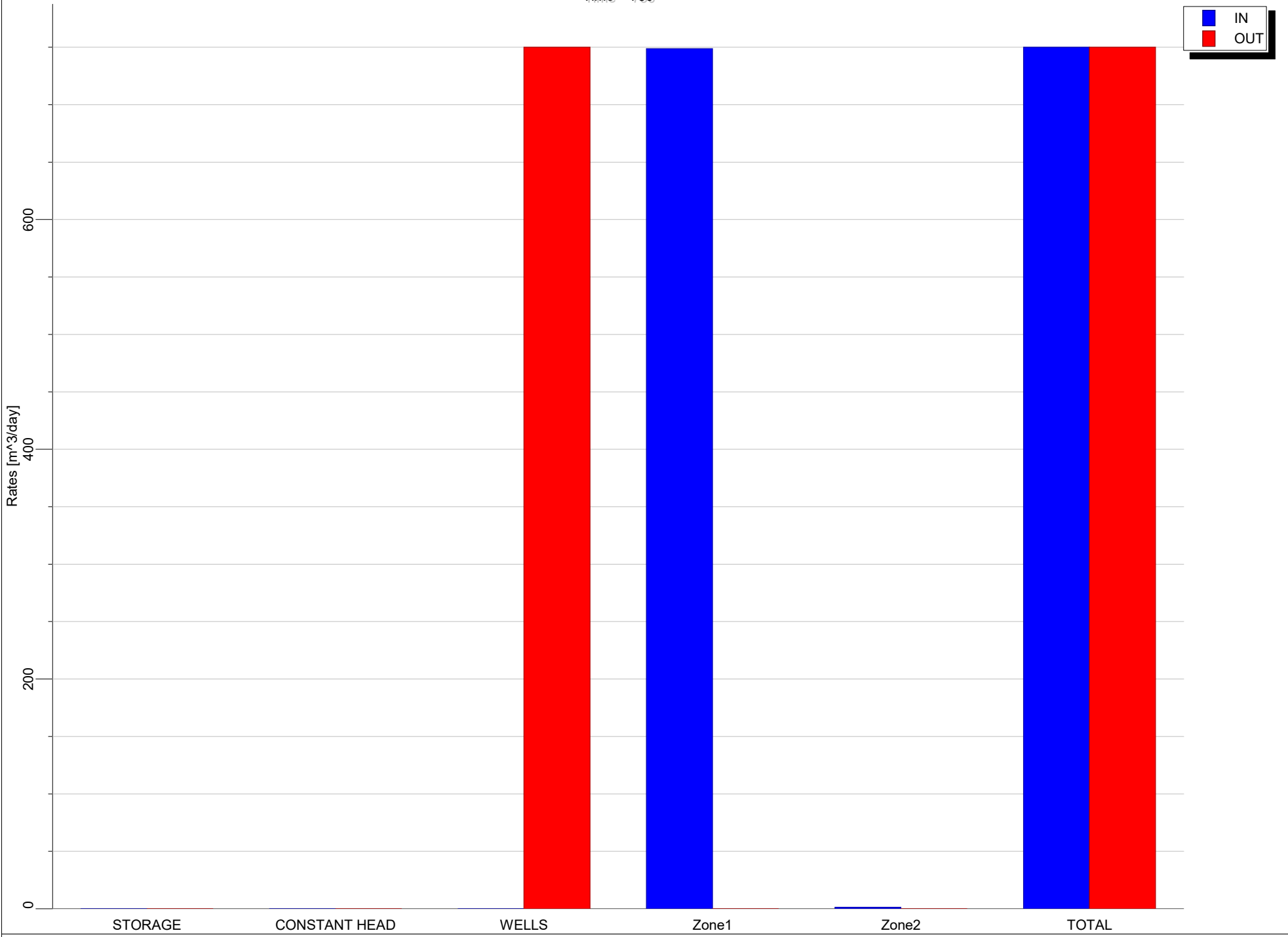
Appendix C - Zone Budget Charts

Time = 1000



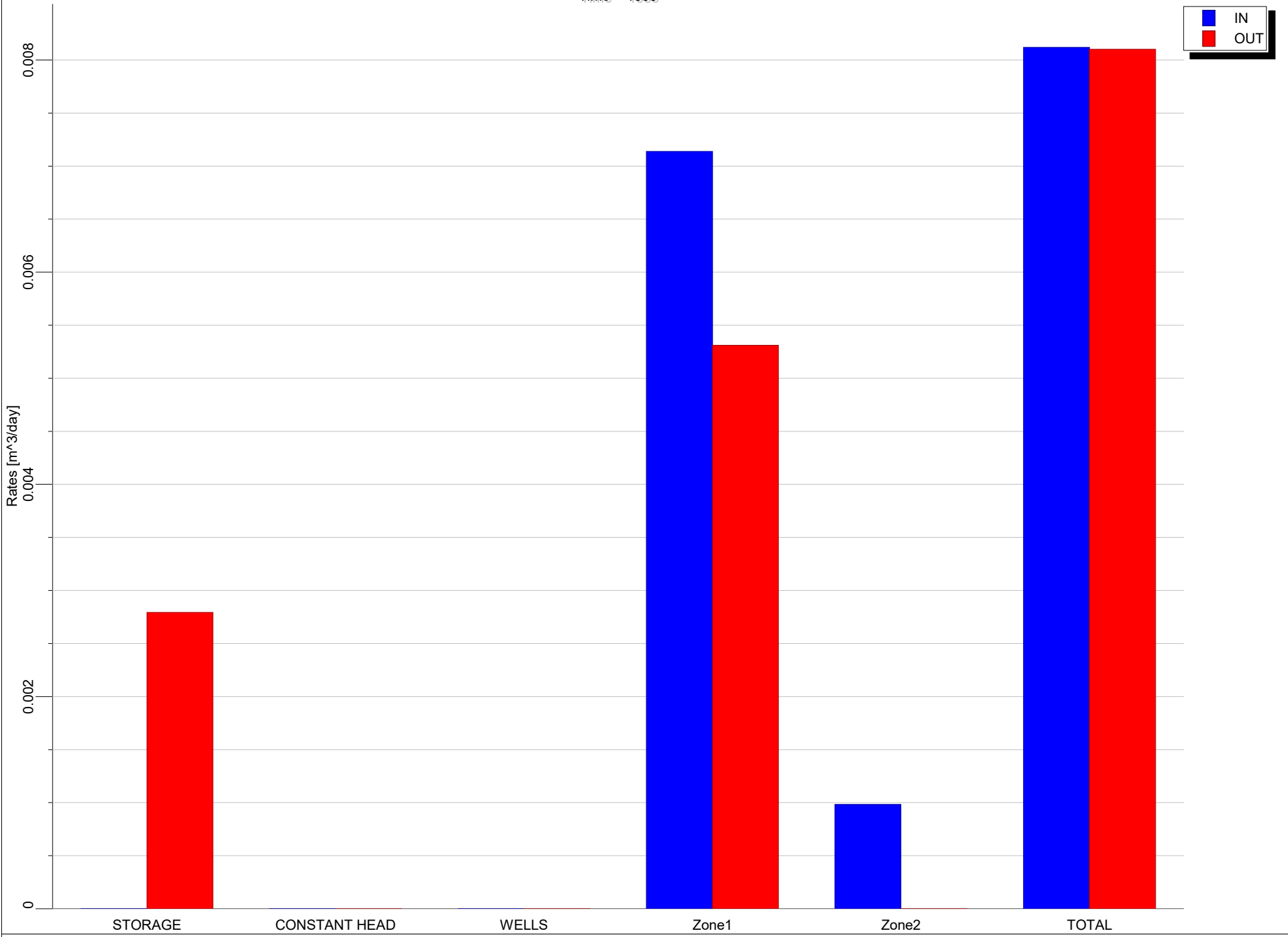
Appendix C - Zone Budget Charts

Time = 750



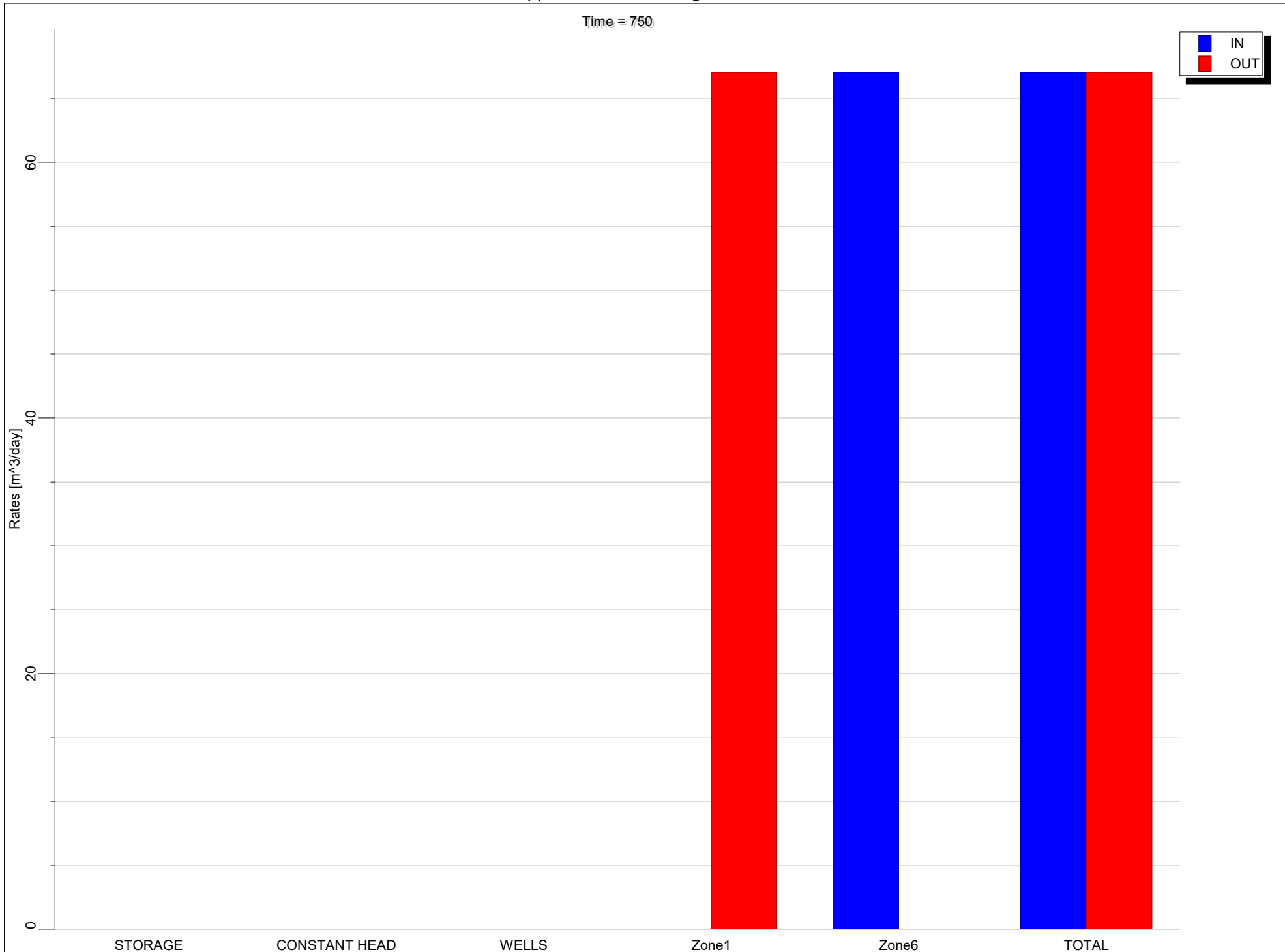
Appendix C - Zone Budget Charts

Time = 1000



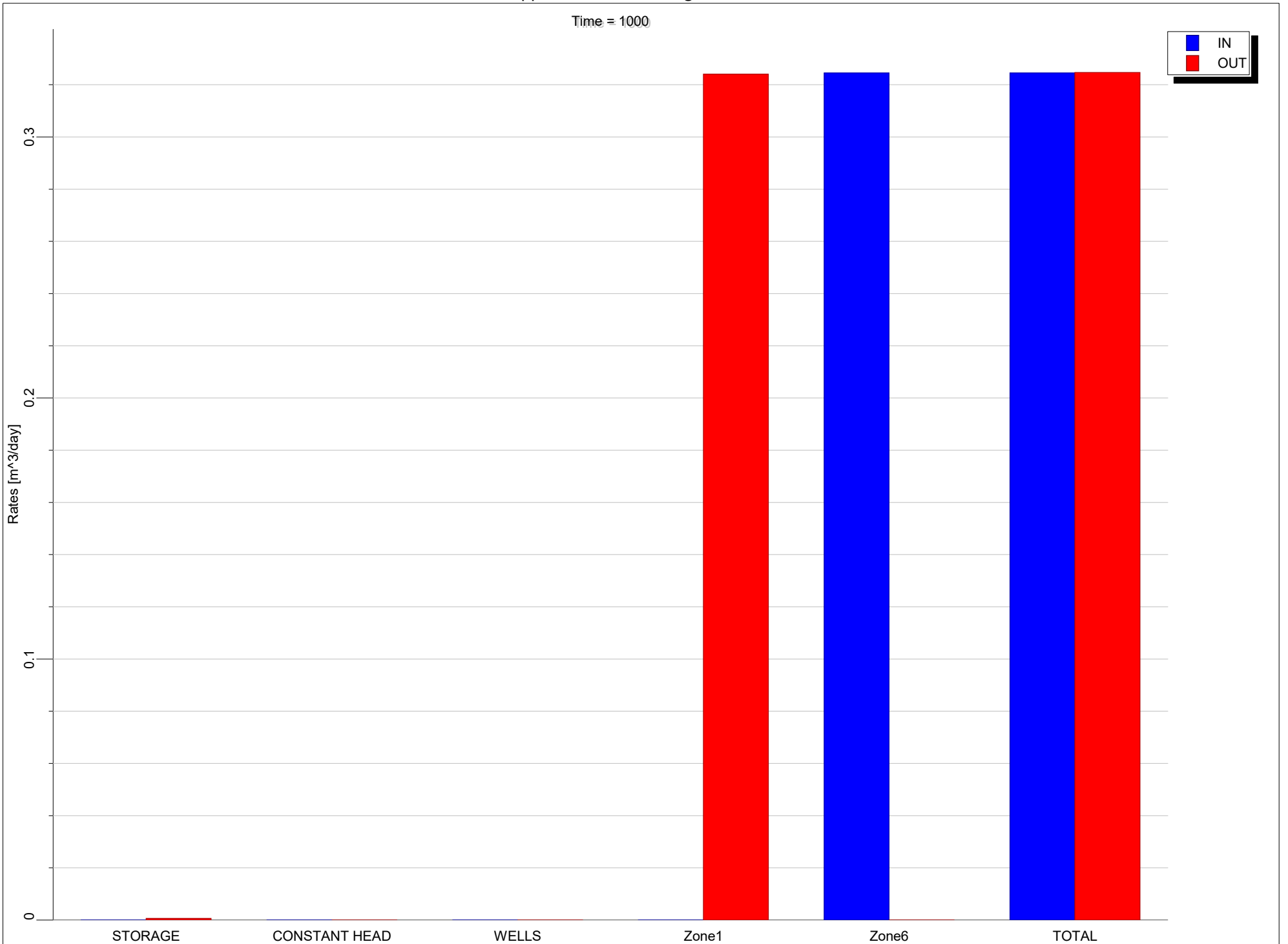
Appendix C - Zone Budget Charts

Time = 750



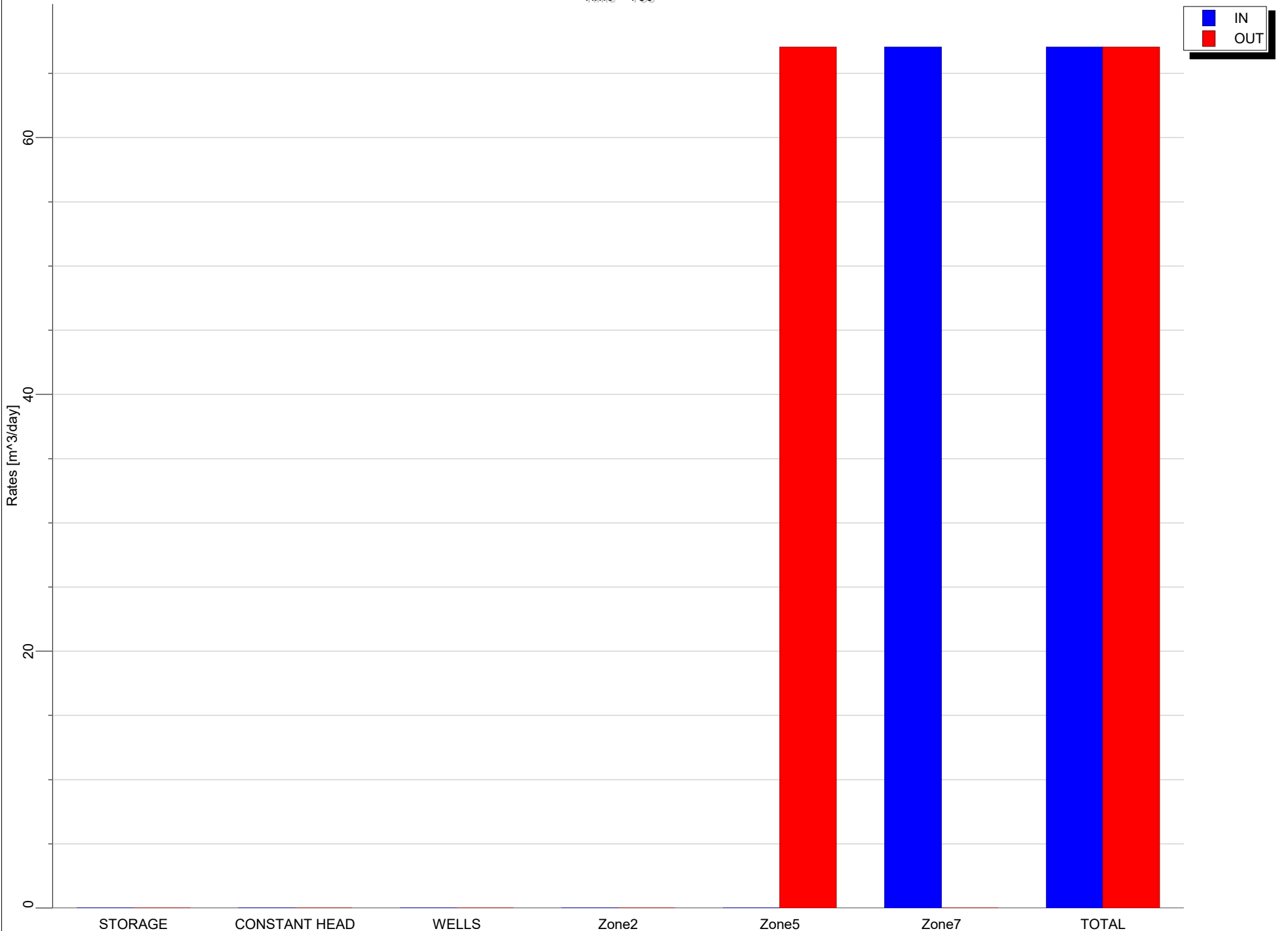
Appendix C - Zone Budget Charts

Time = 1000



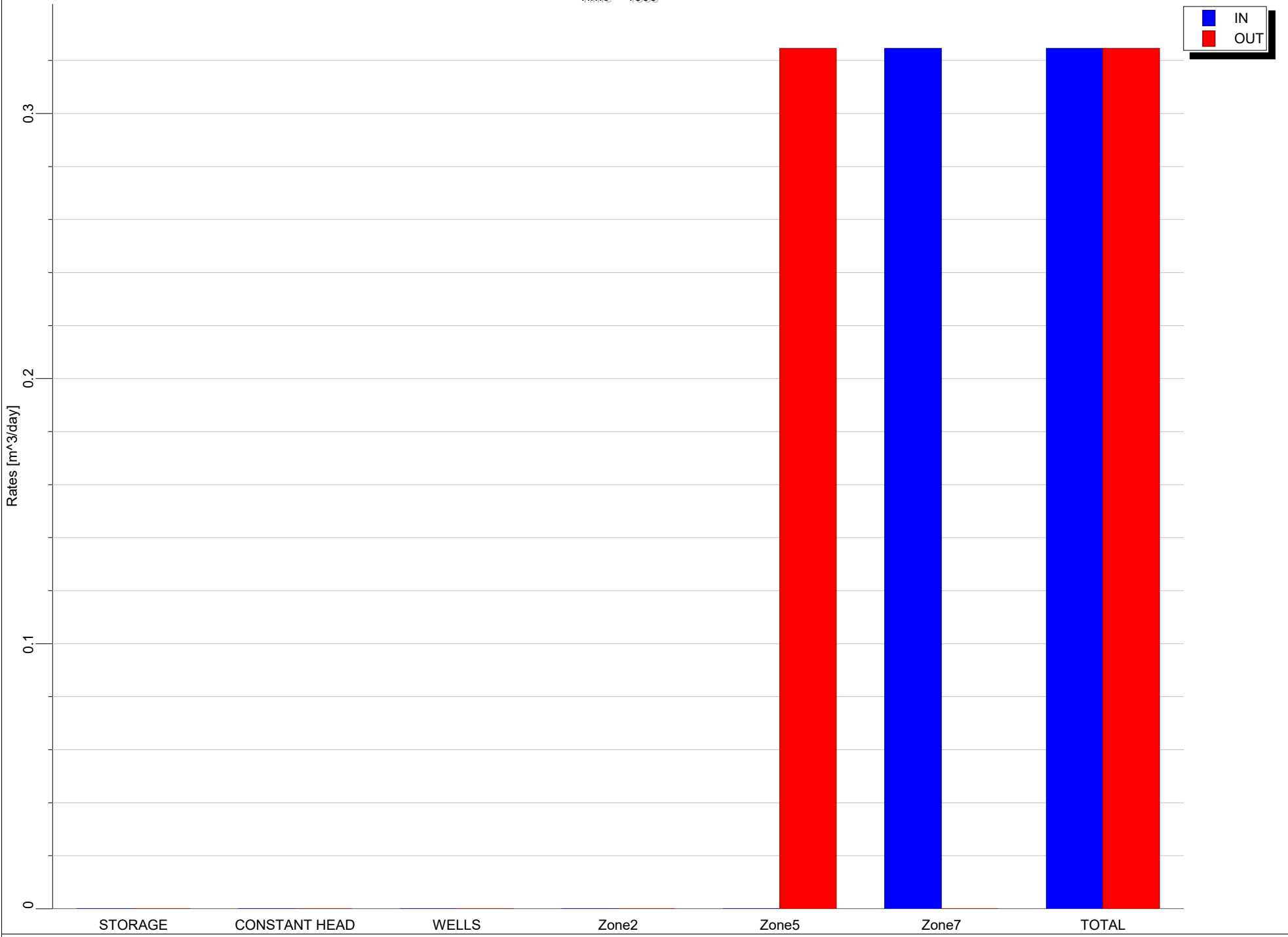
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

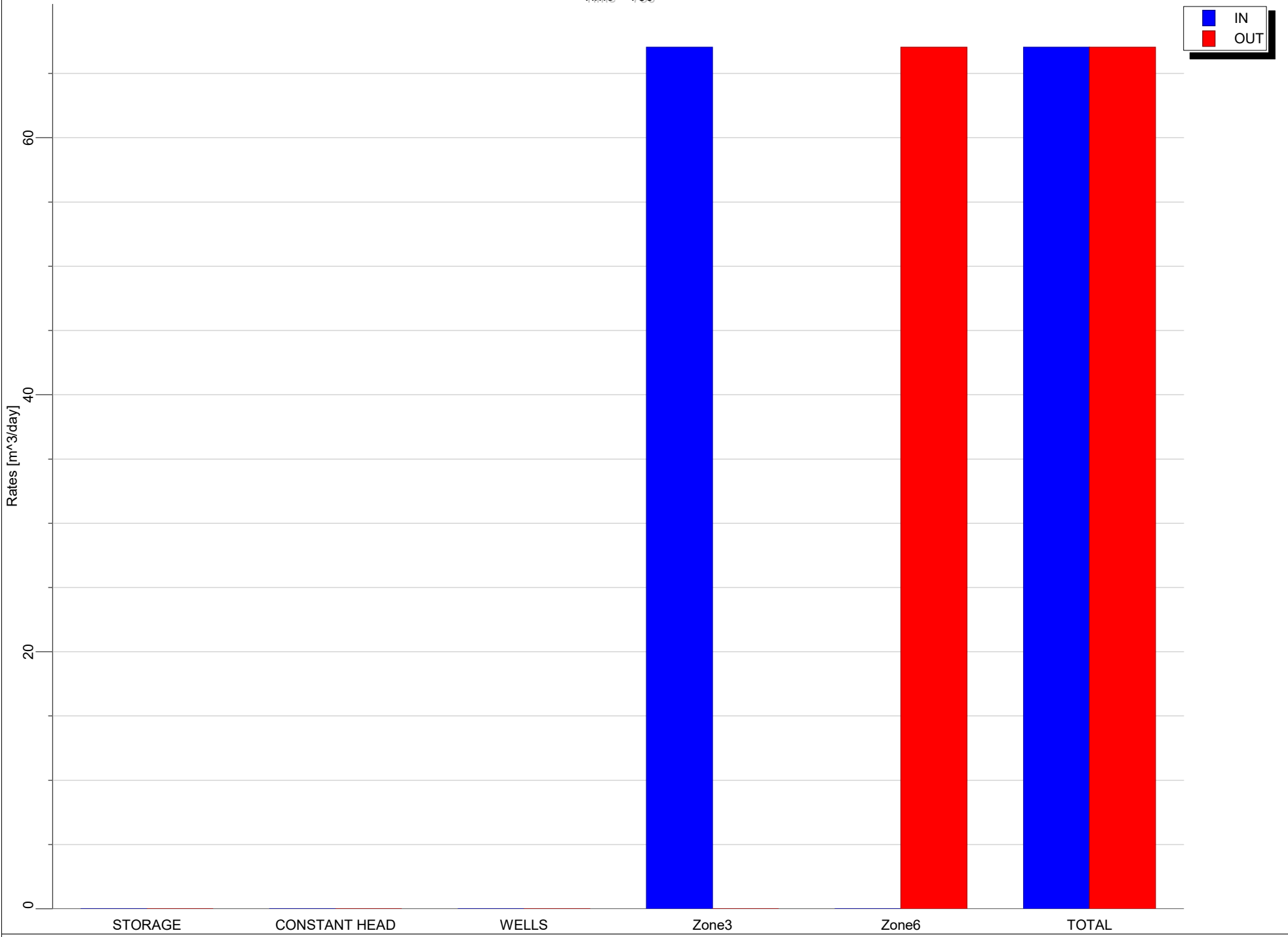
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Zone 6
Scenario 3.4
Abandoned Well 80m

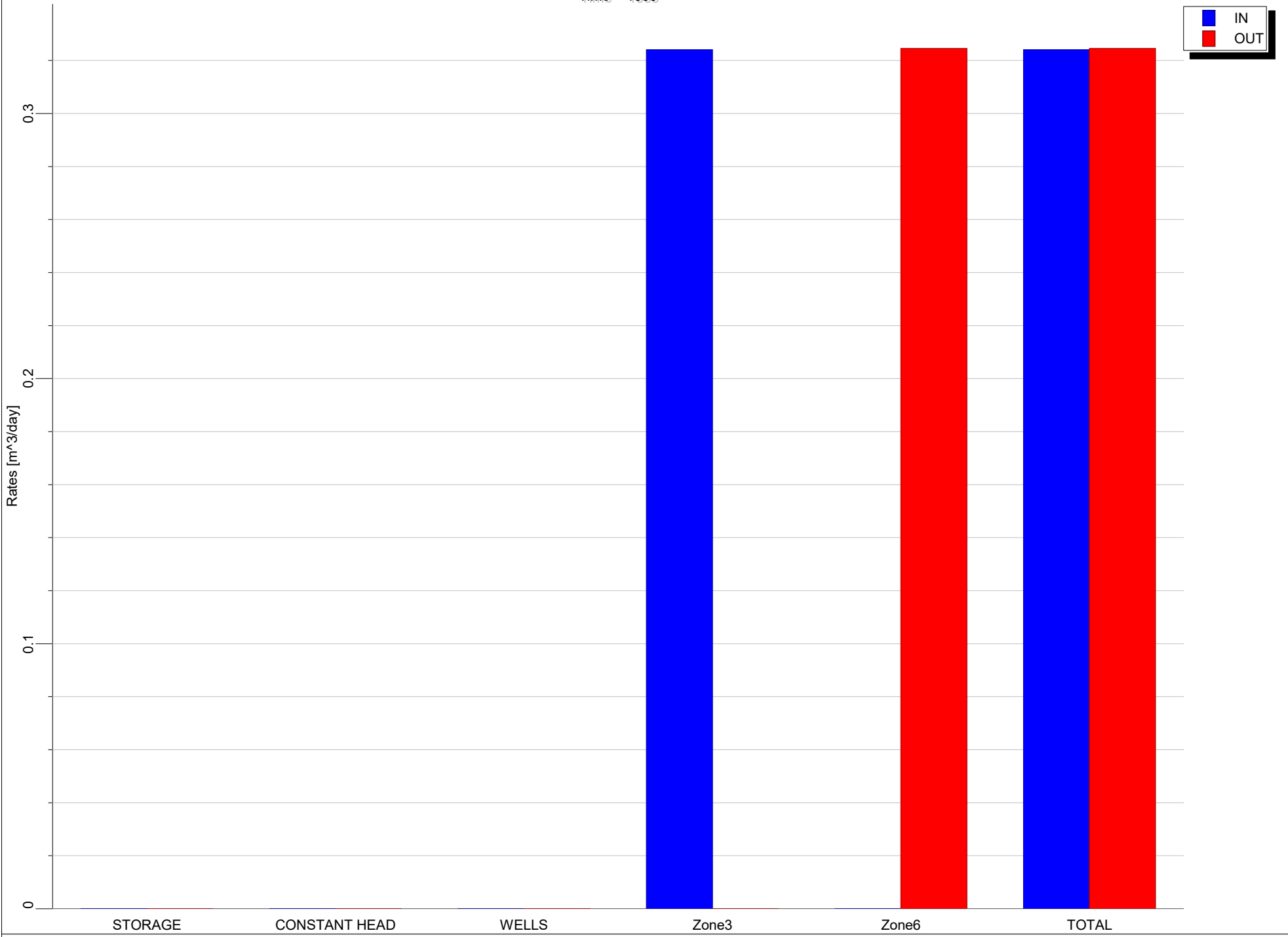
Appendix C - Zone Budget Charts

Time = 750



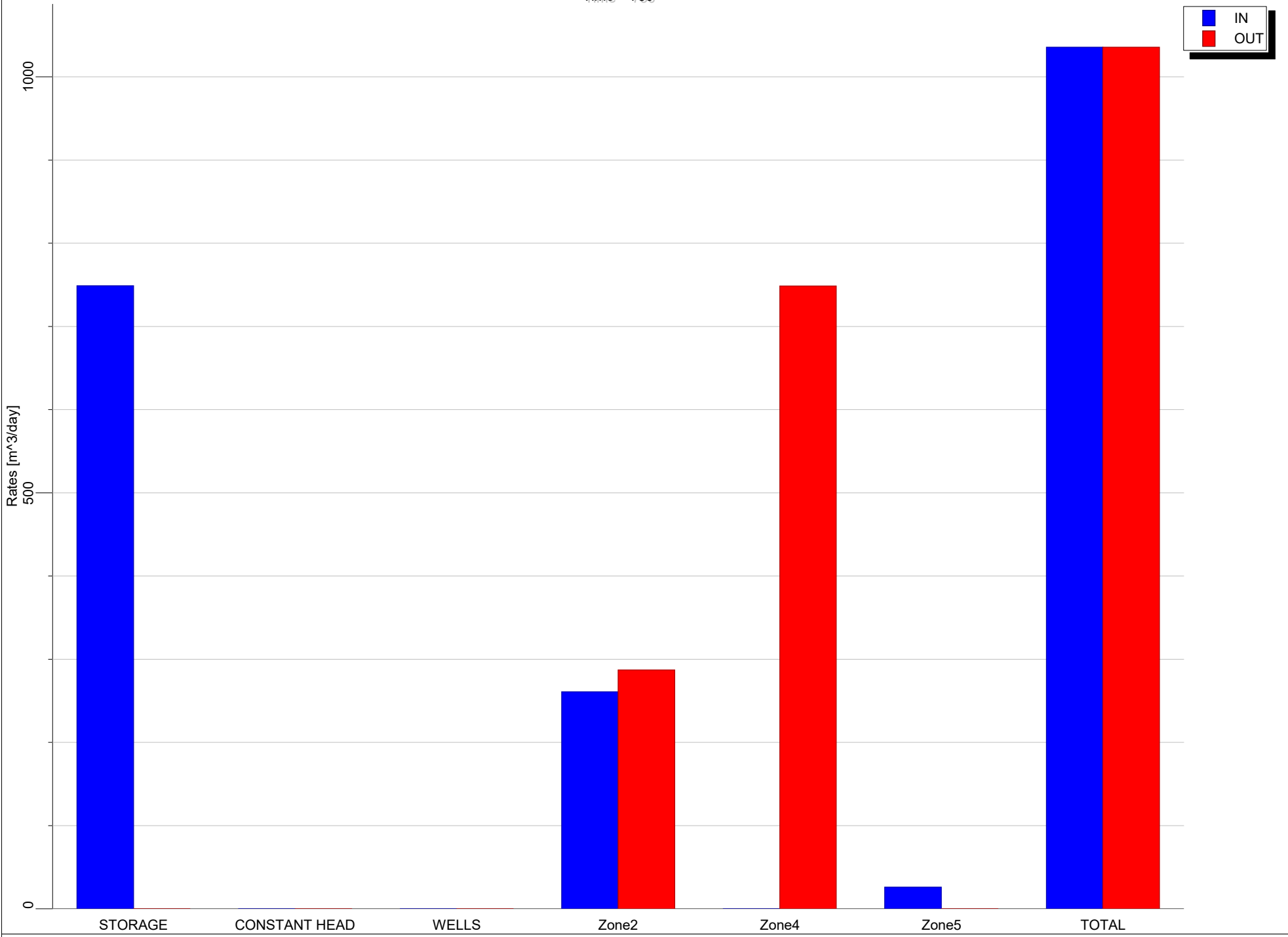
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

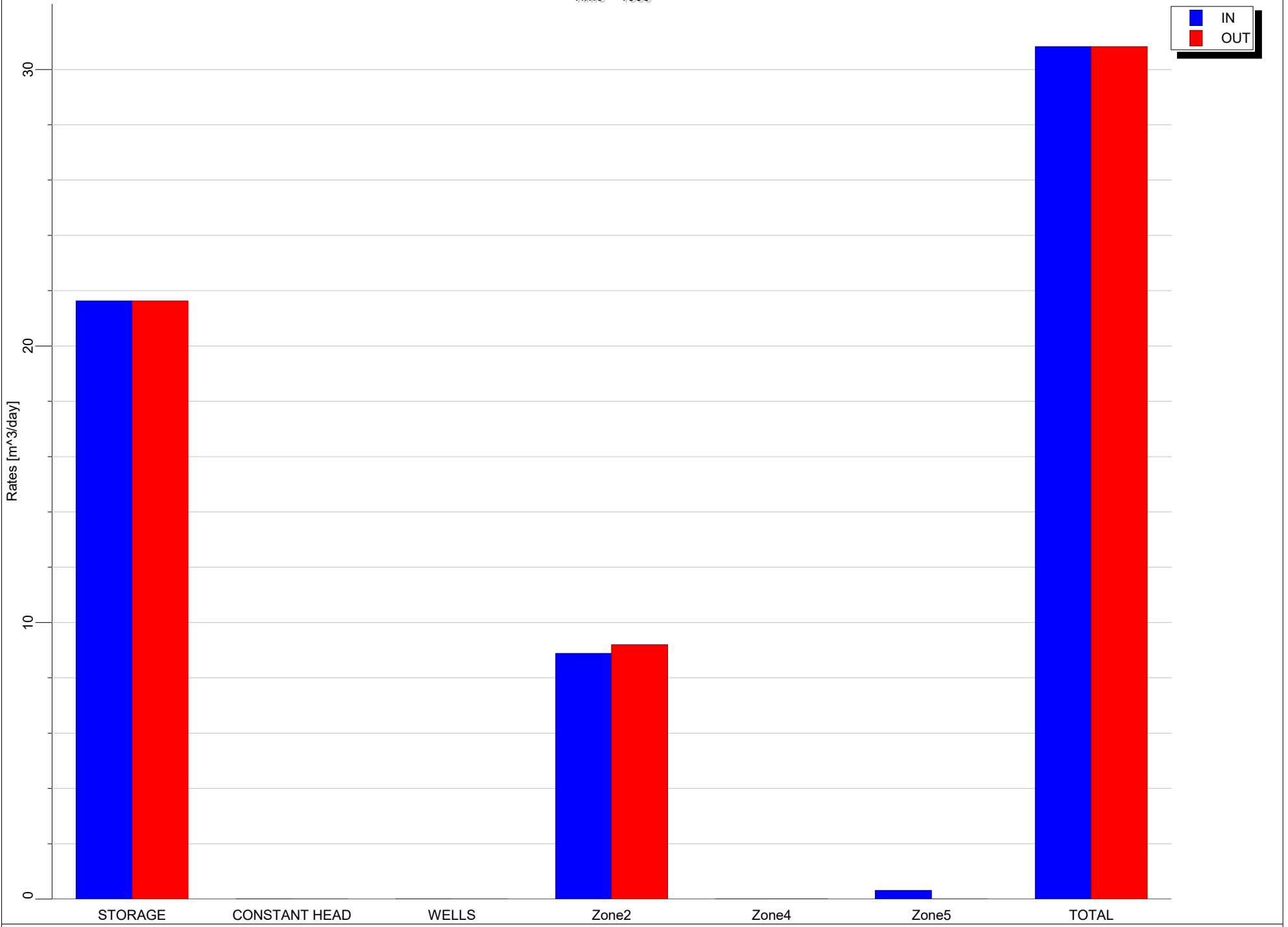
Time = 750



Zone 1
Scenario 3.5
Abandoned Well 160m

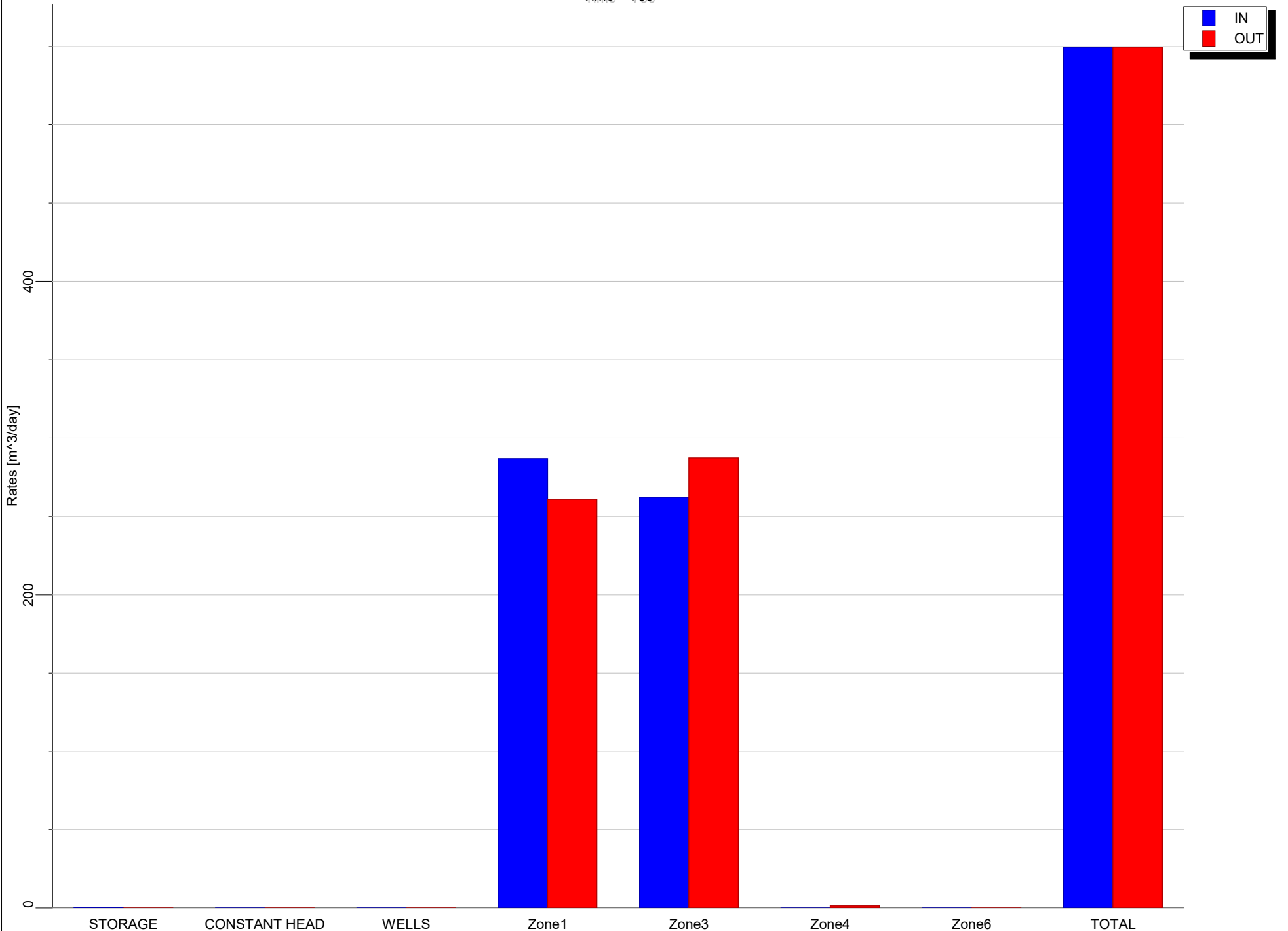
Appendix C - Zone Budget Charts

Time = 1000



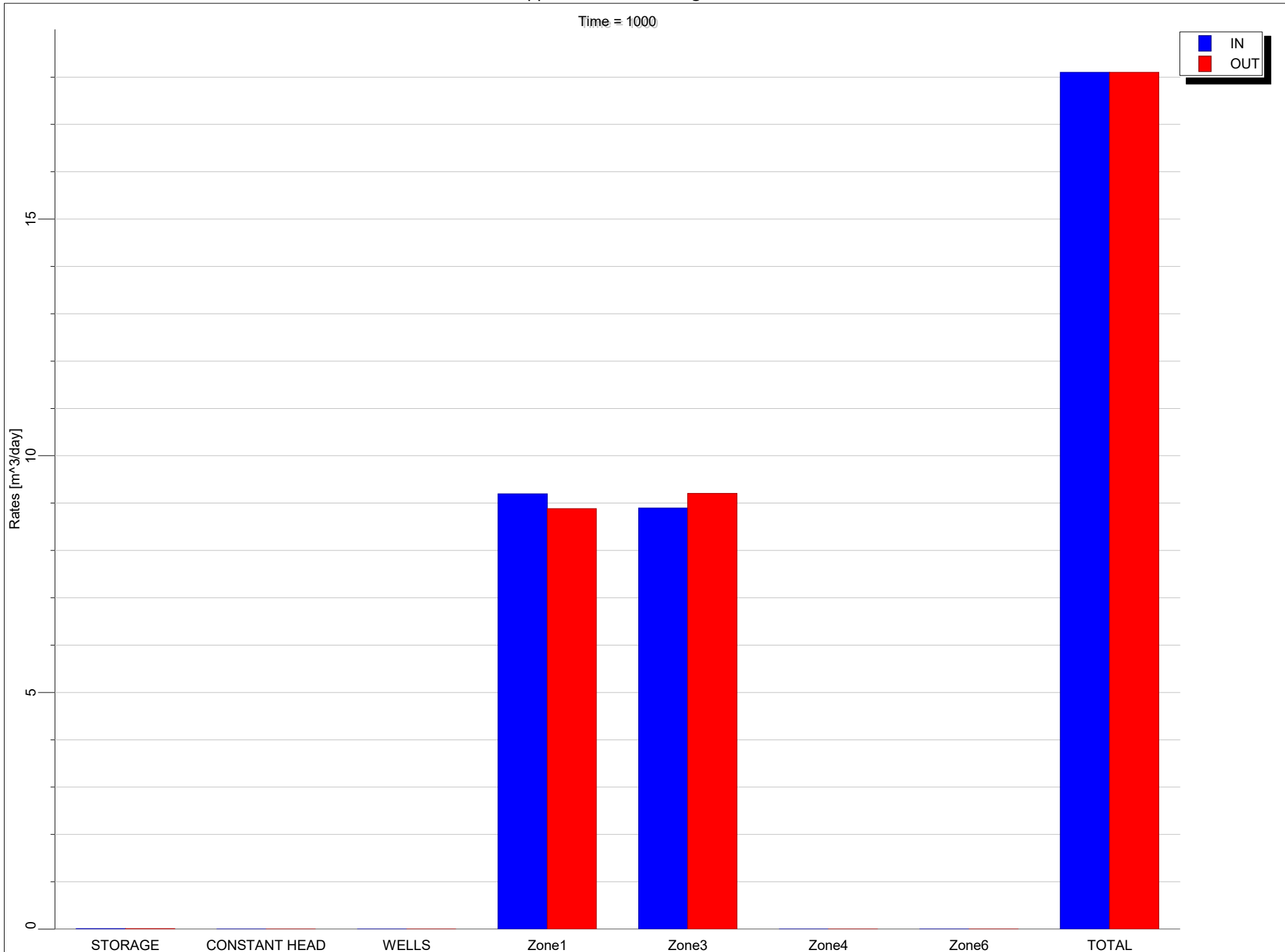
Appendix C - Zone Budget Charts

Time = 750



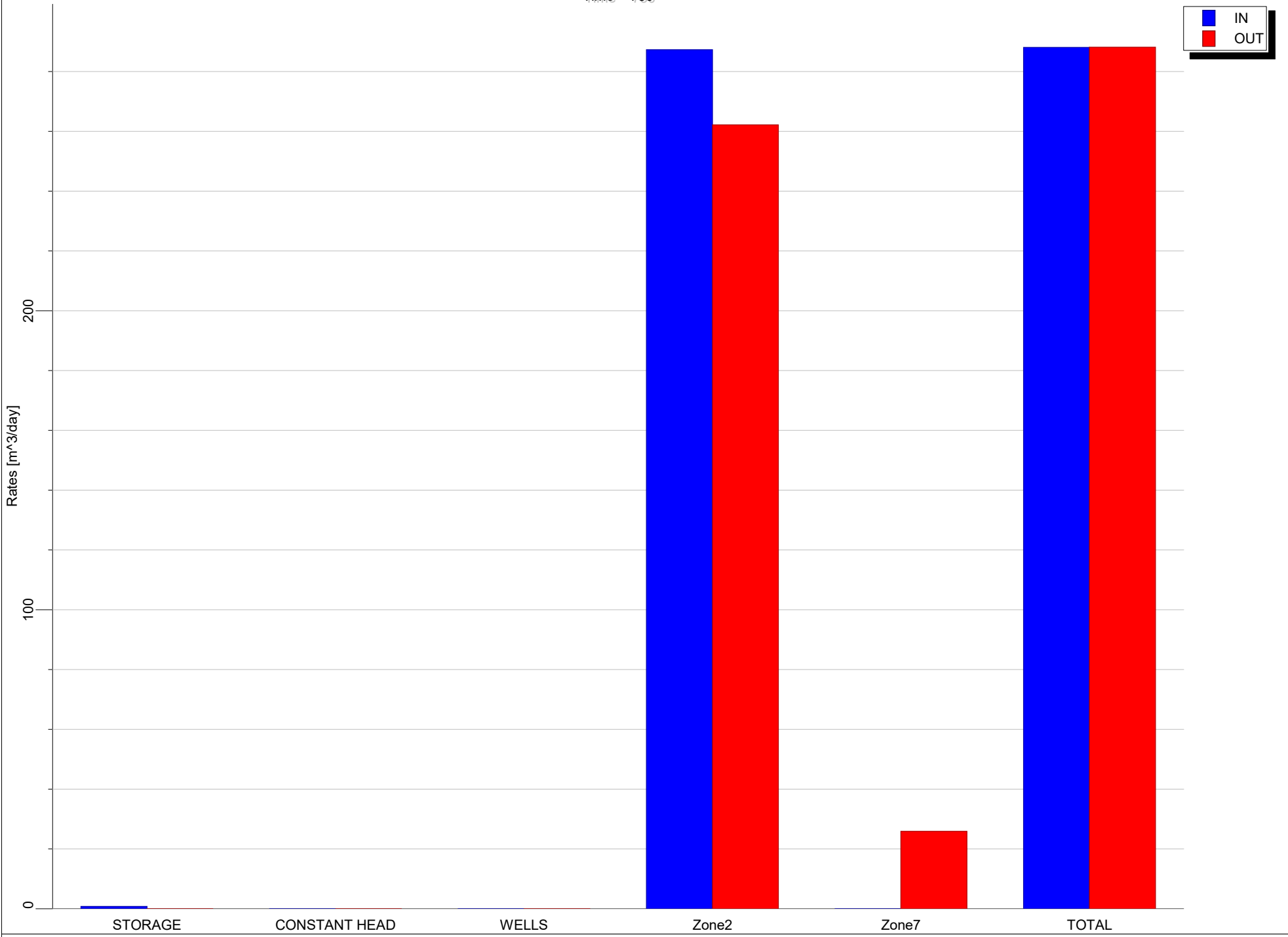
Appendix C - Zone Budget Charts

Time = 1000



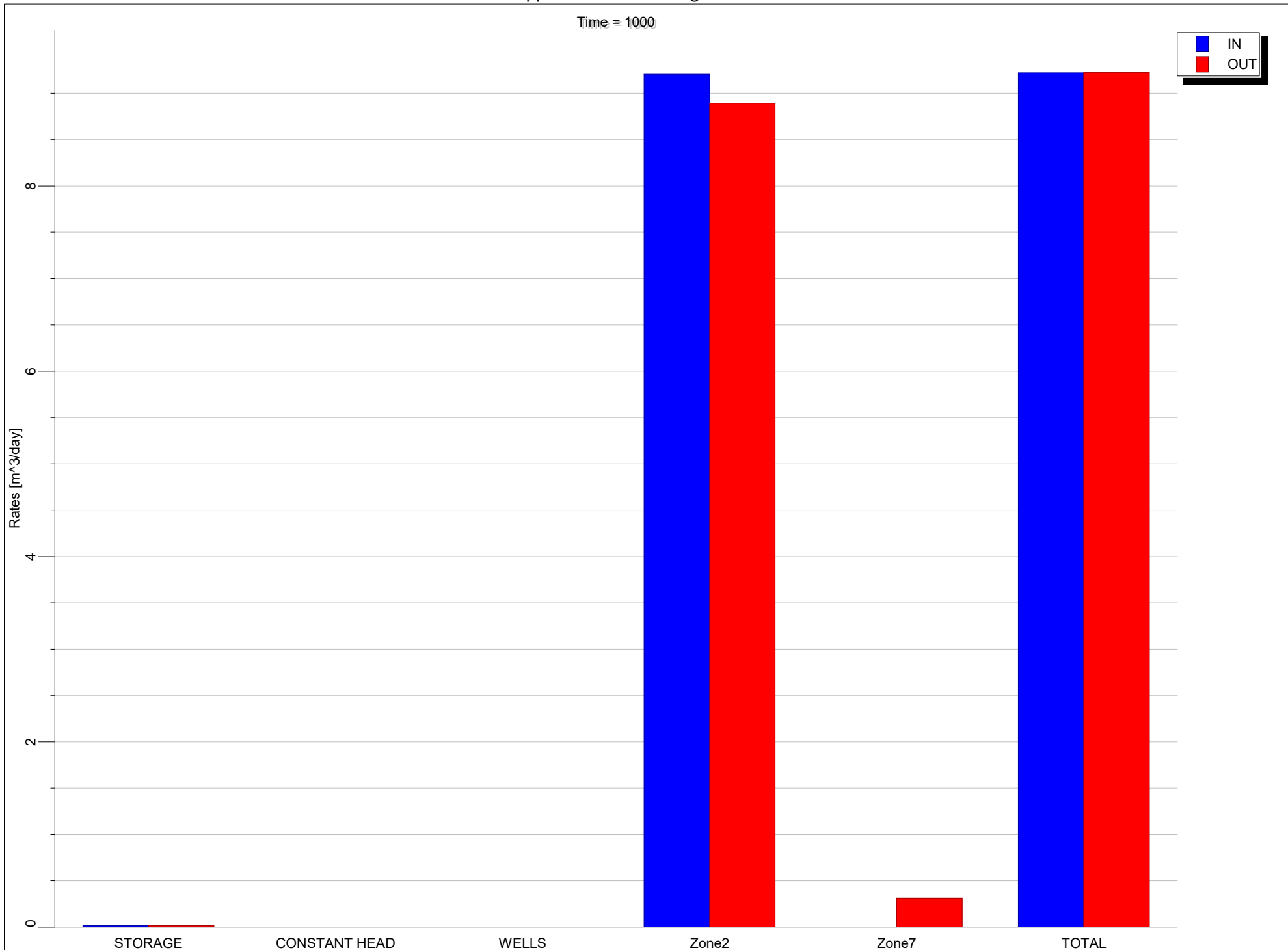
Appendix C - Zone Budget Charts

Time = 750



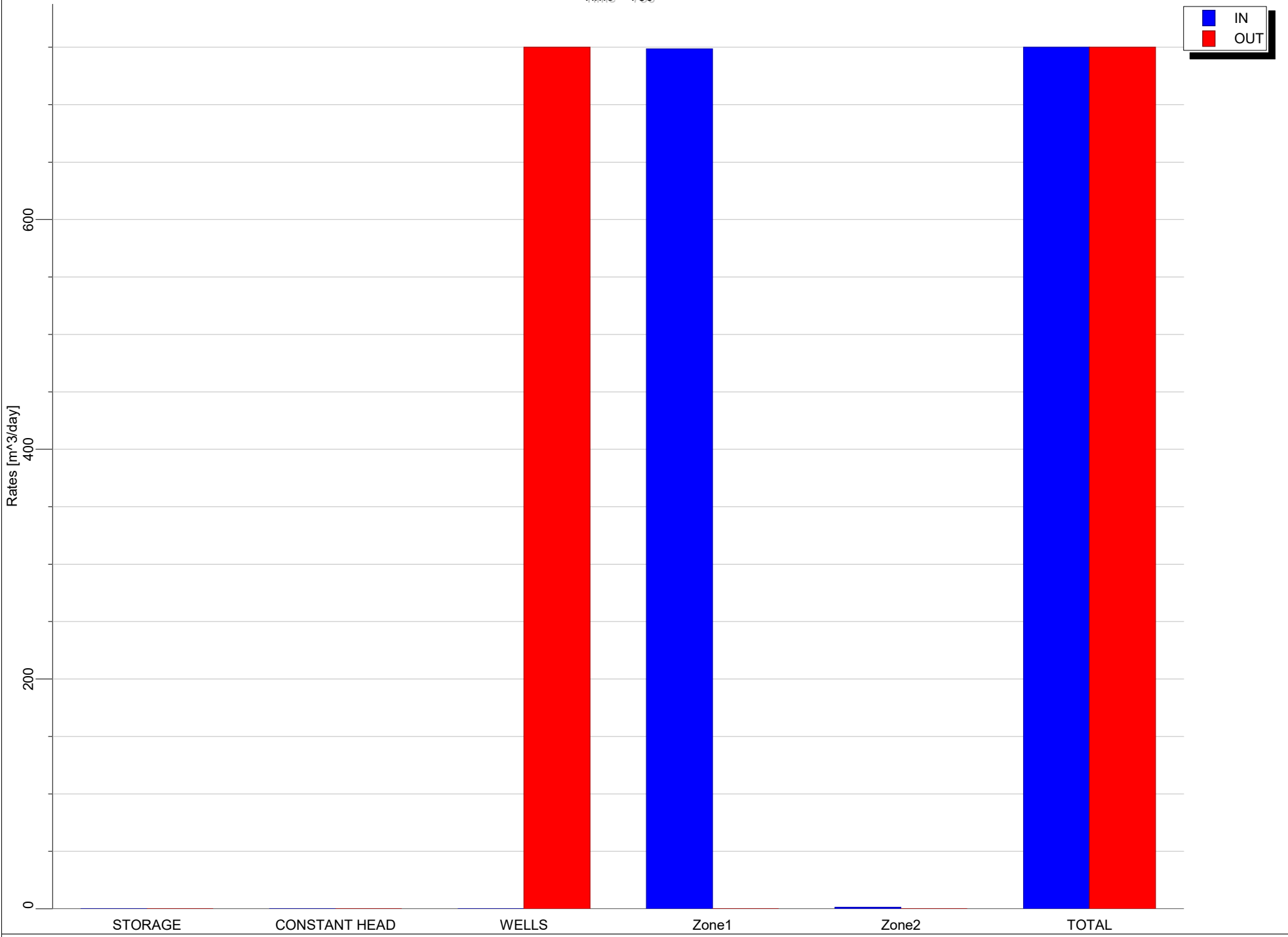
Appendix C - Zone Budget Charts

Time = 1000



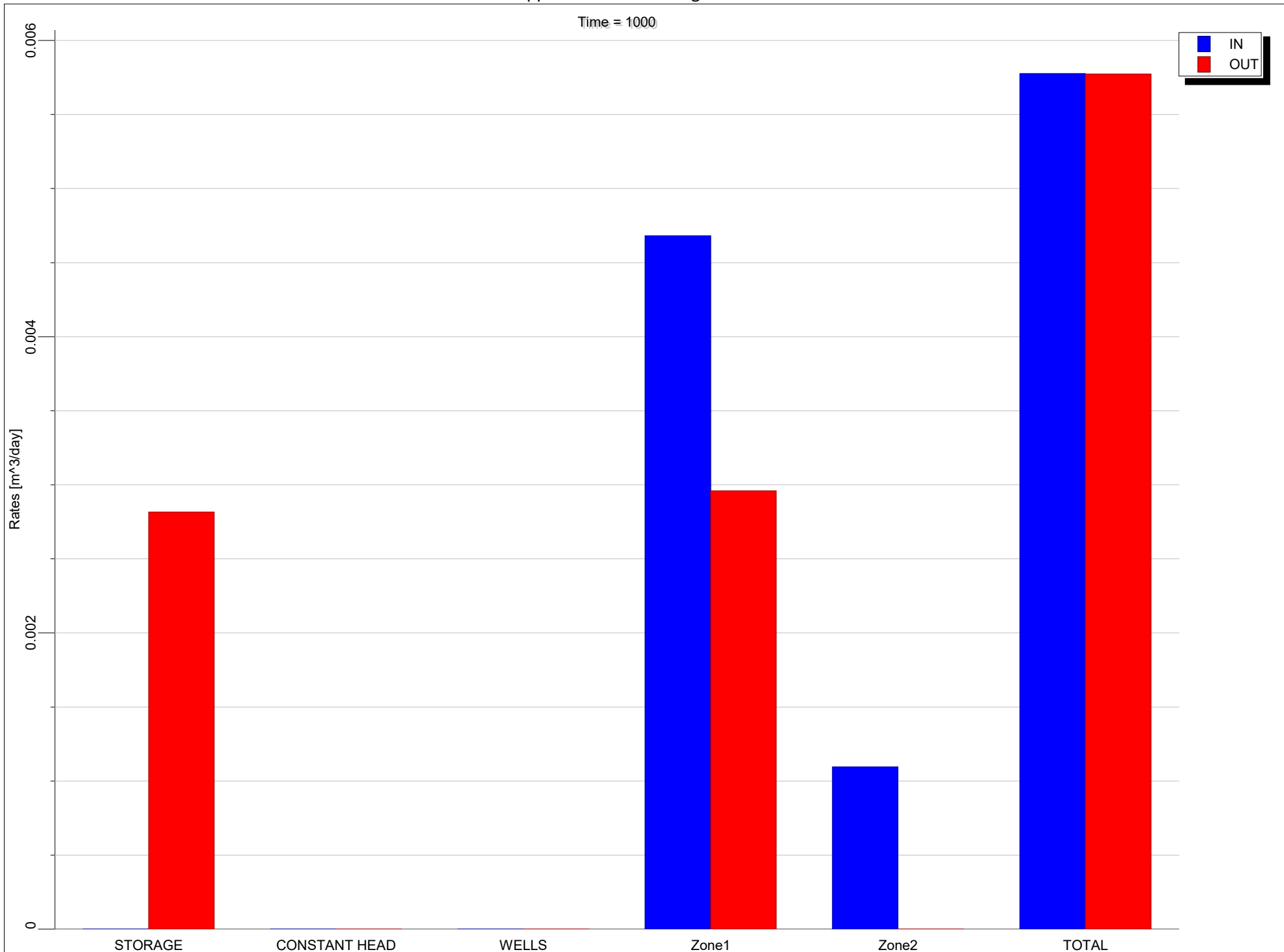
Appendix C - Zone Budget Charts

Time = 750



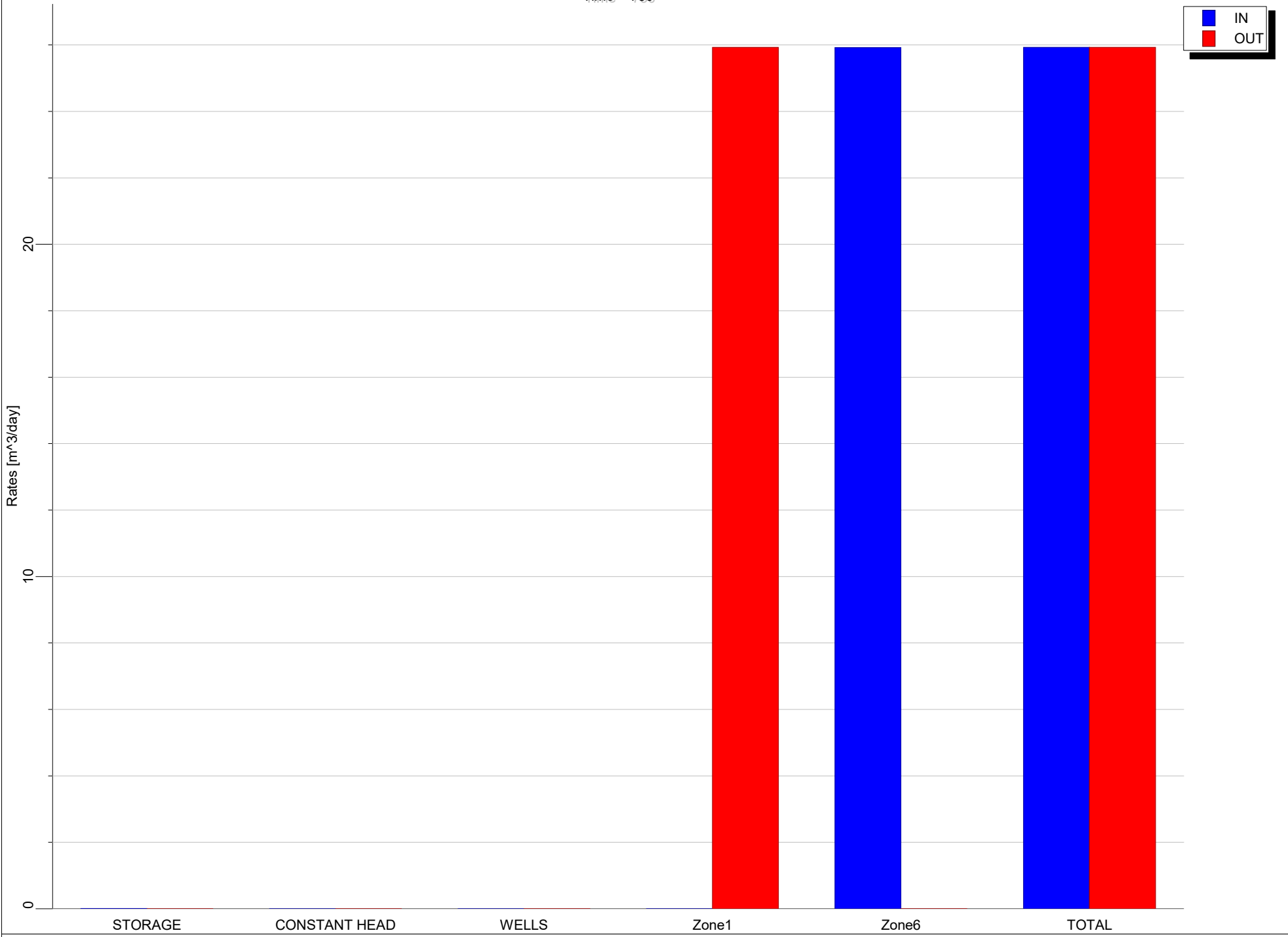
Appendix C - Zone Budget Charts

Time = 1000



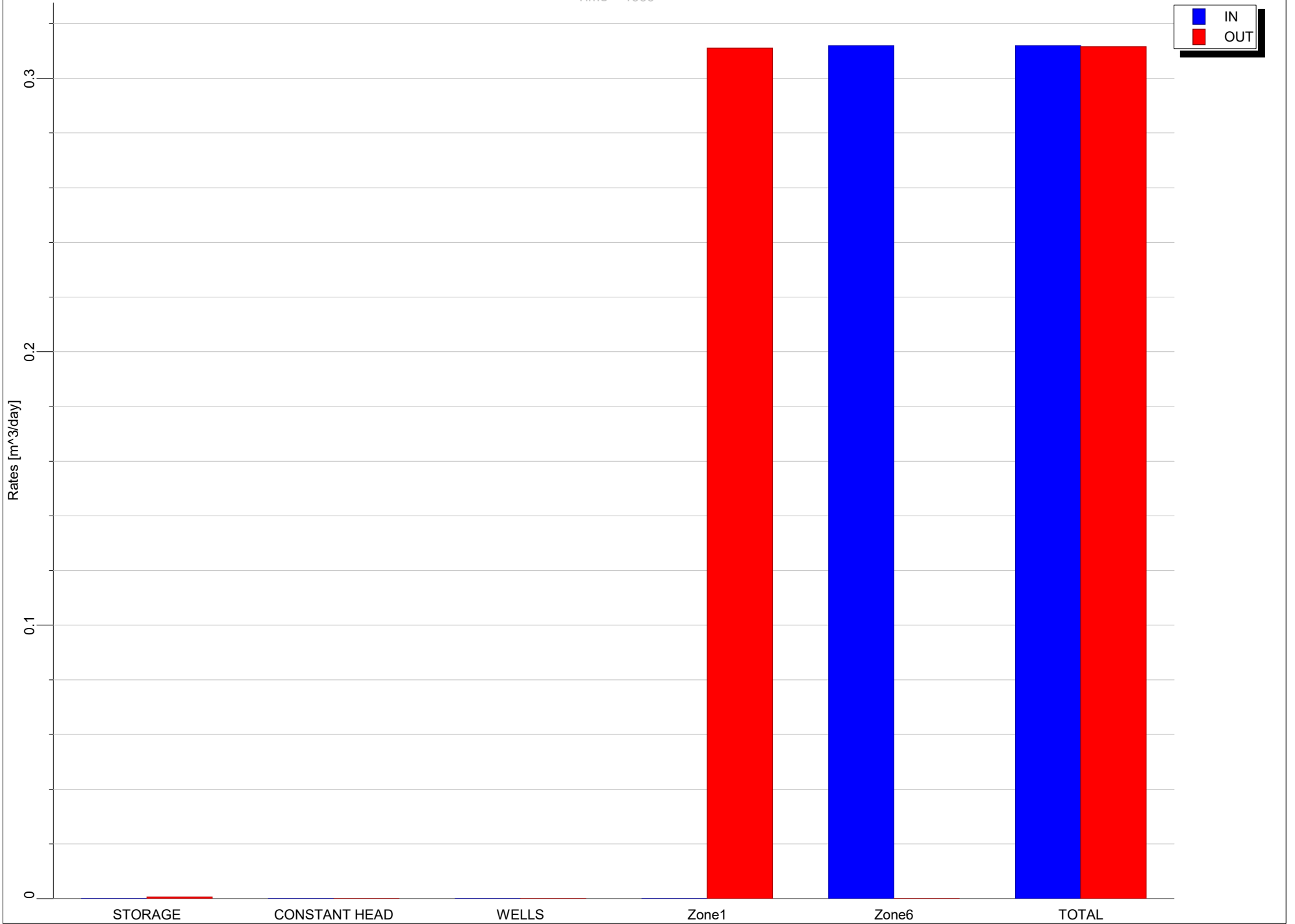
Appendix C - Zone Budget Charts

Time = 750



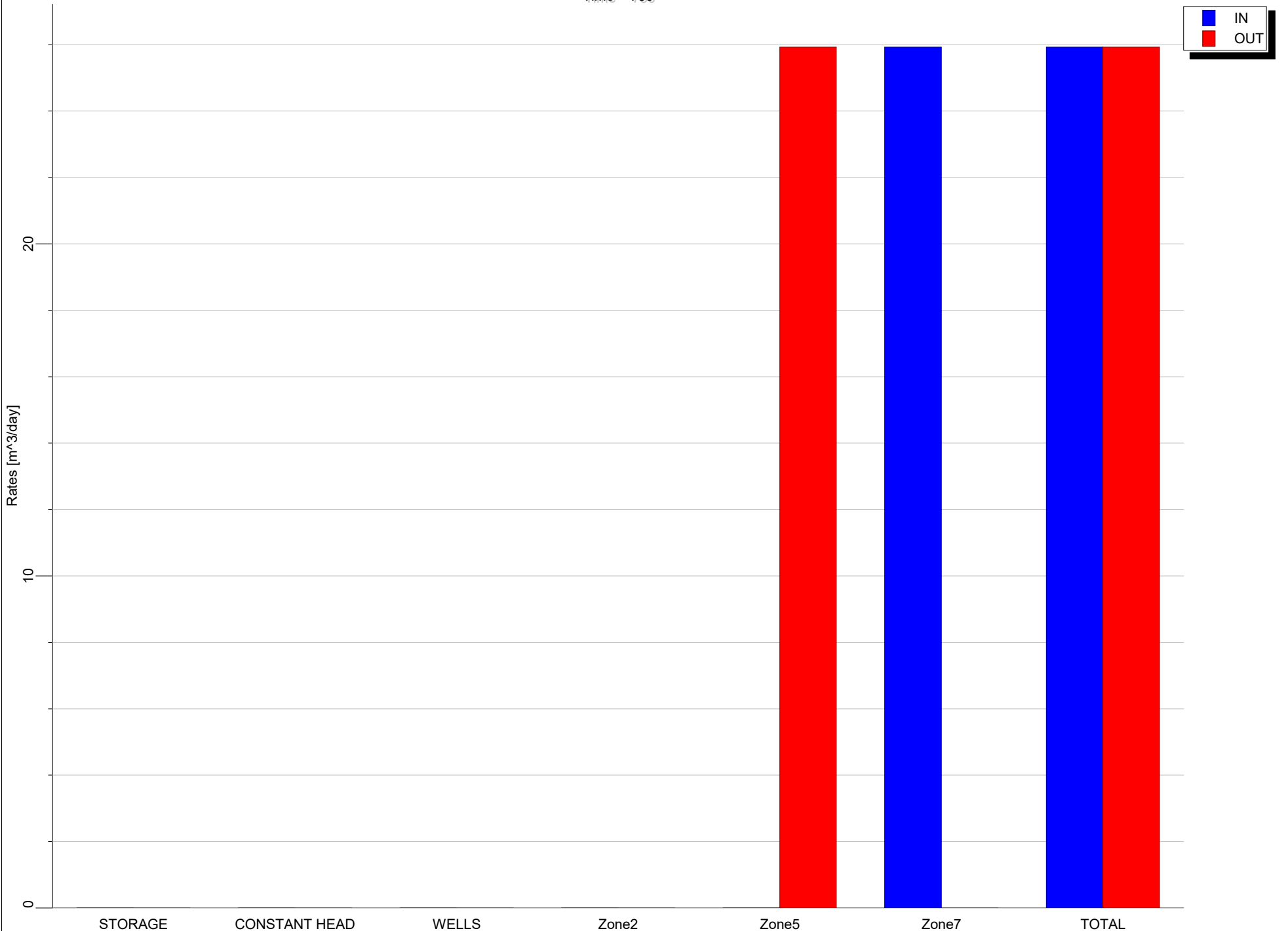
Appendix C - Zone Budget Charts

Time = 1000



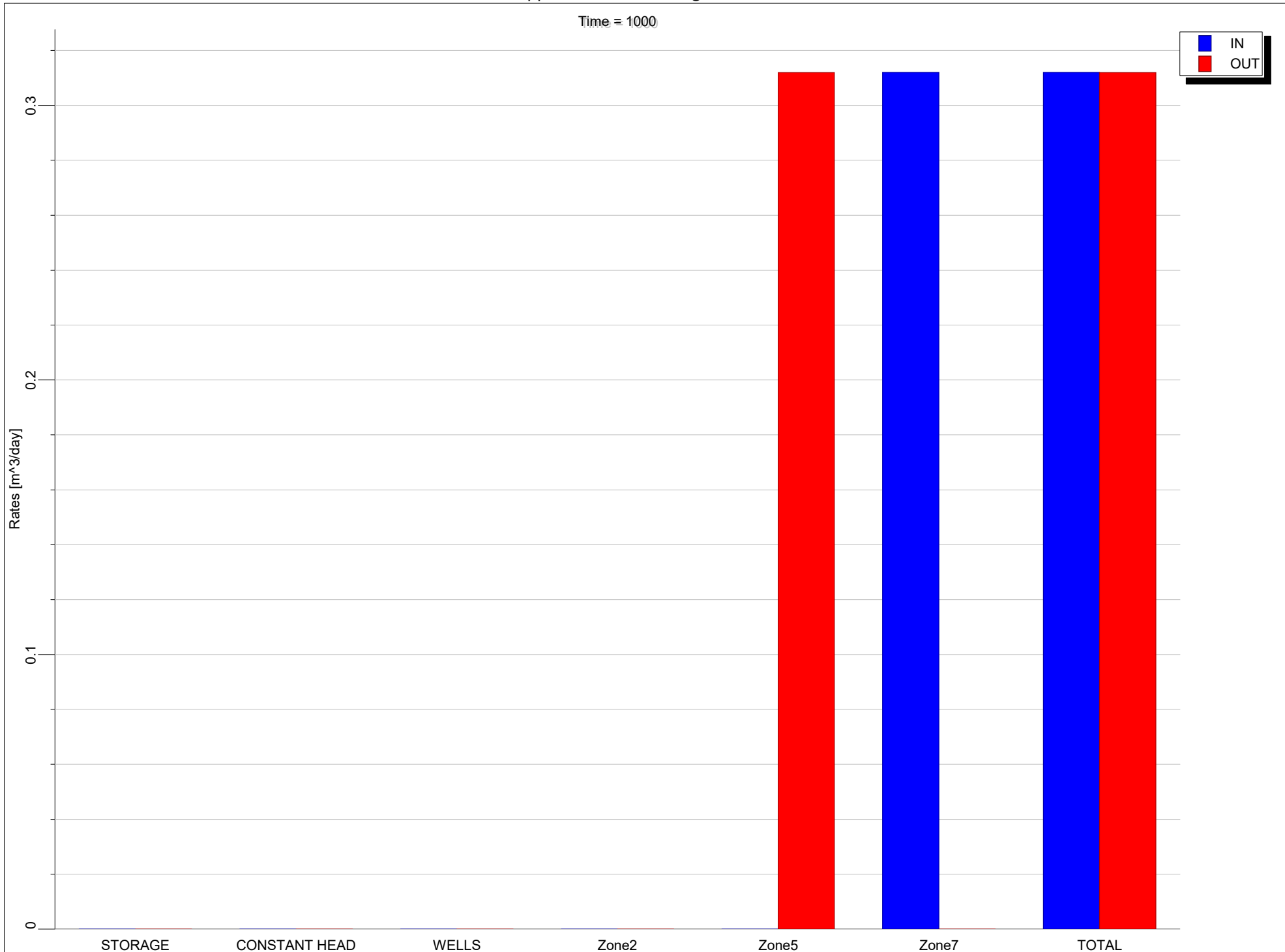
Appendix C - Zone Budget Charts

Time = 750



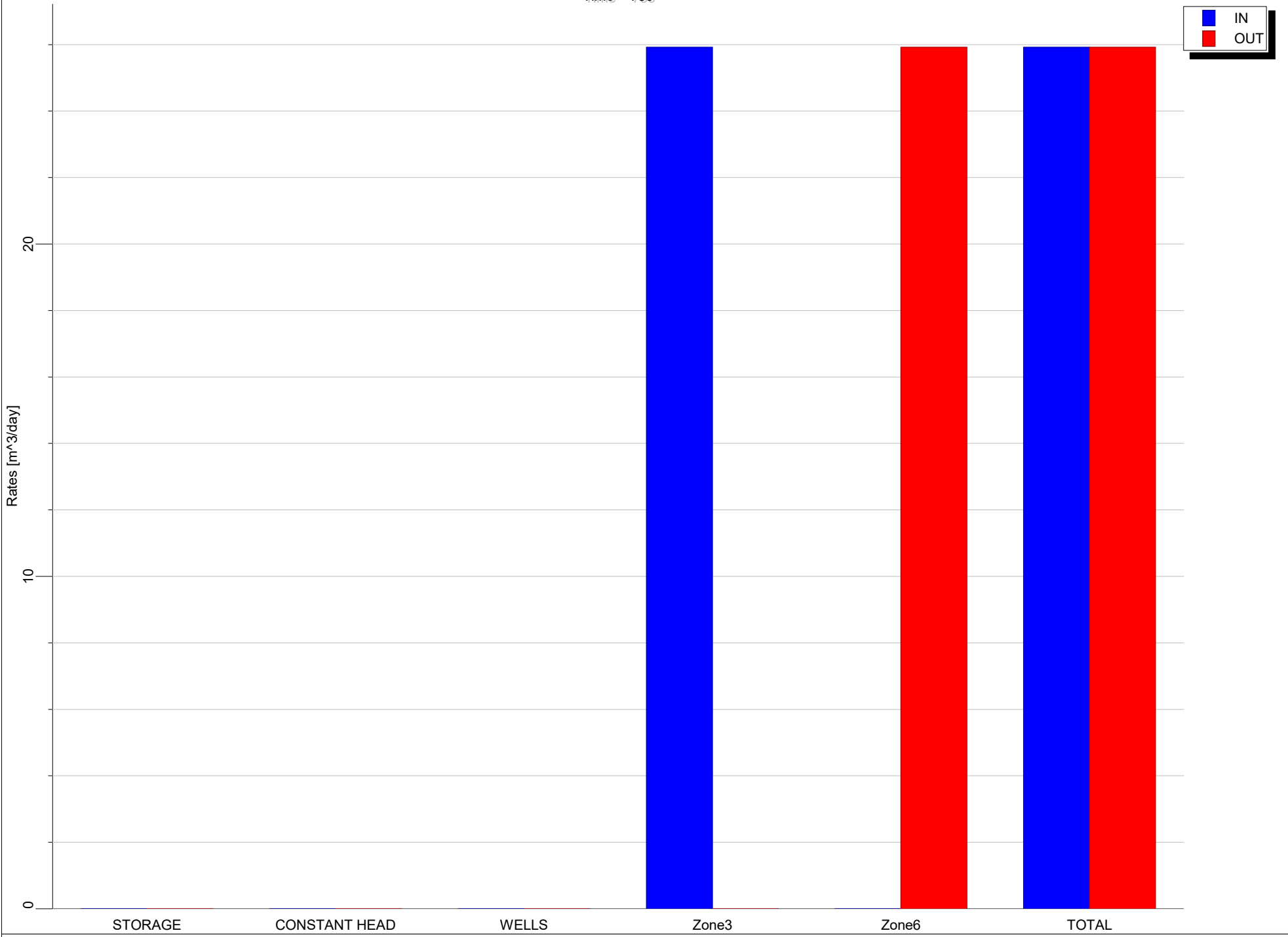
Appendix C - Zone Budget Charts

Time = 1000



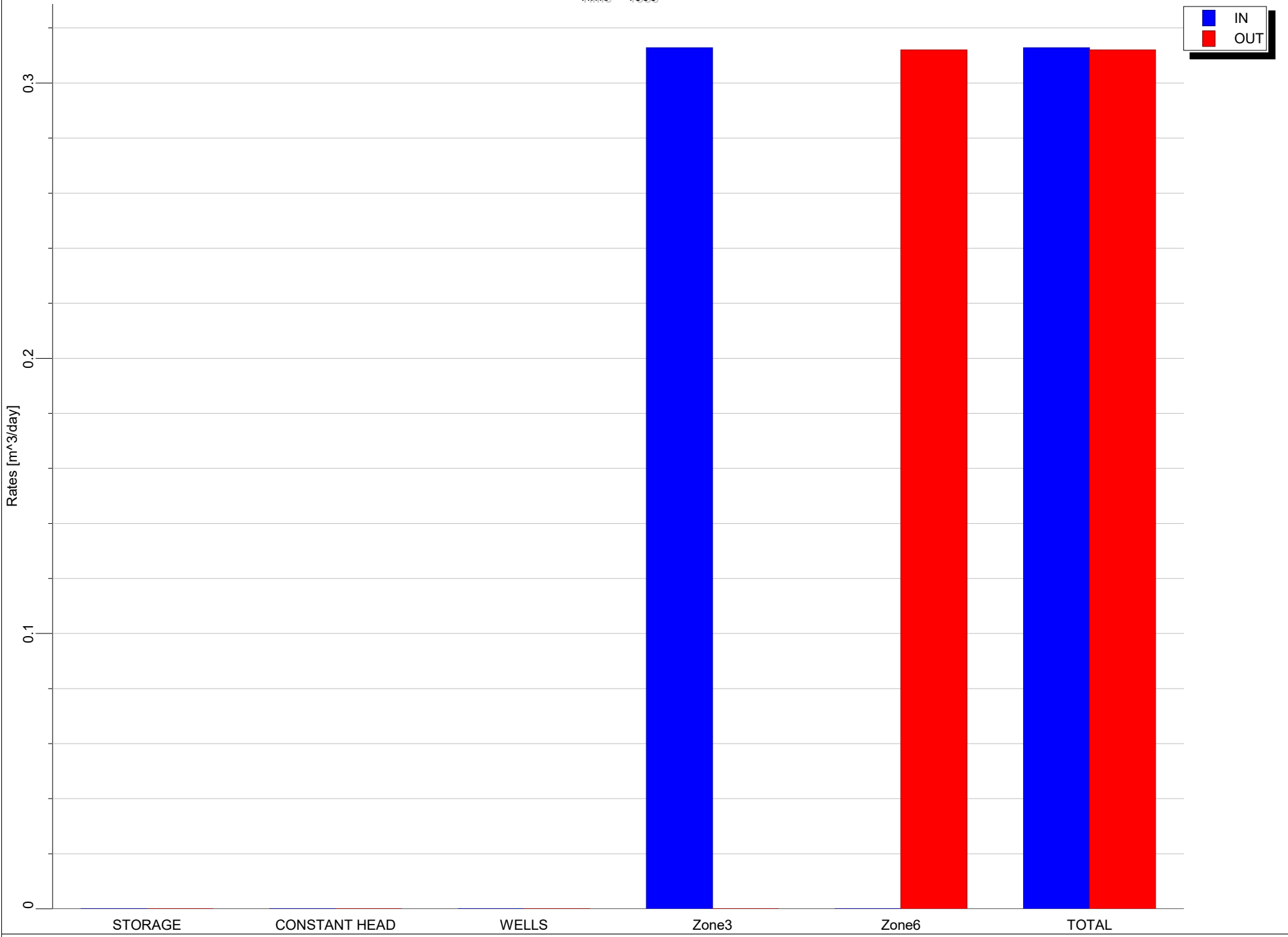
Appendix C - Zone Budget Charts

Time = 750



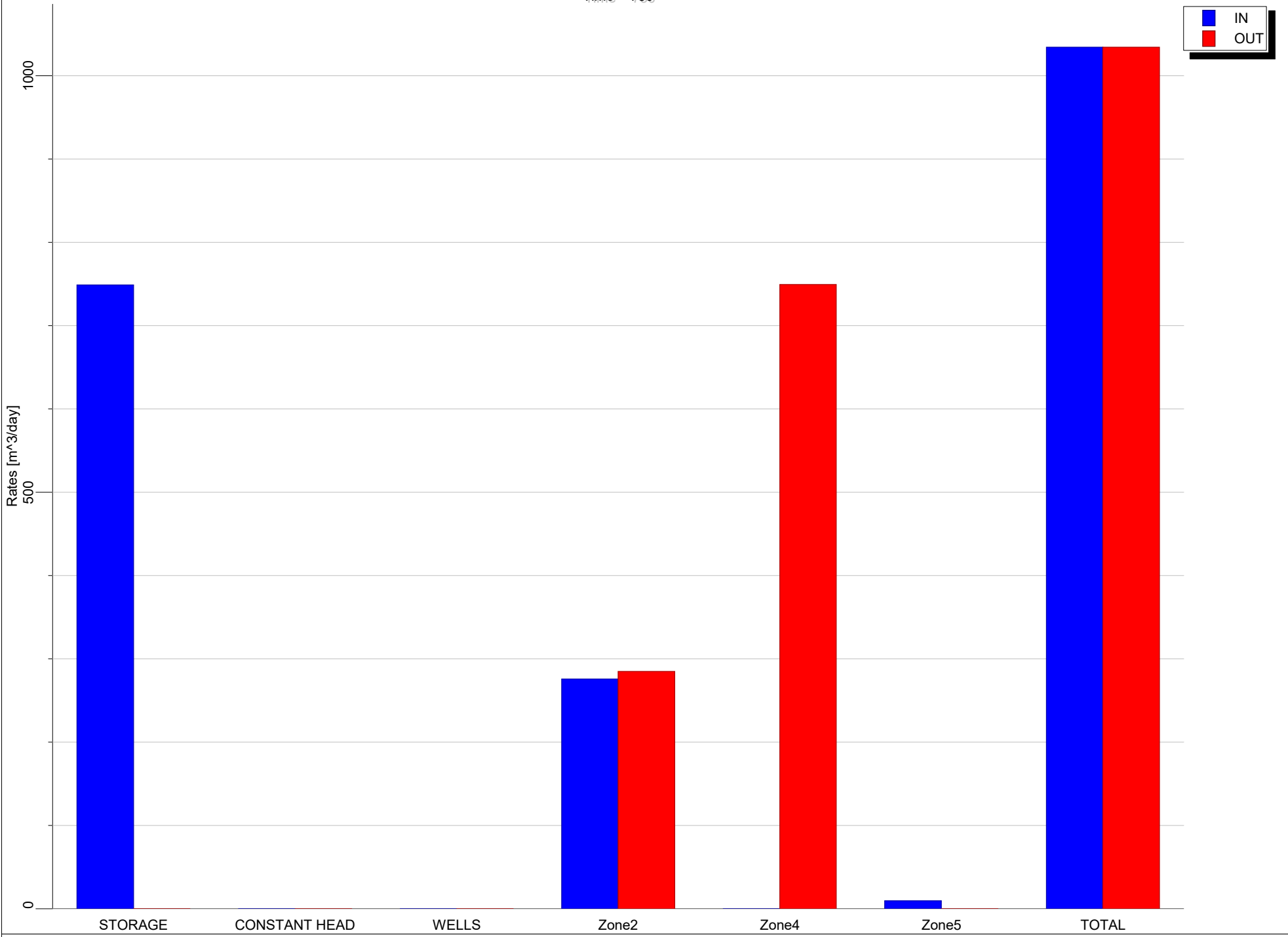
Appendix C - Zone Budget Charts

Time = 1000



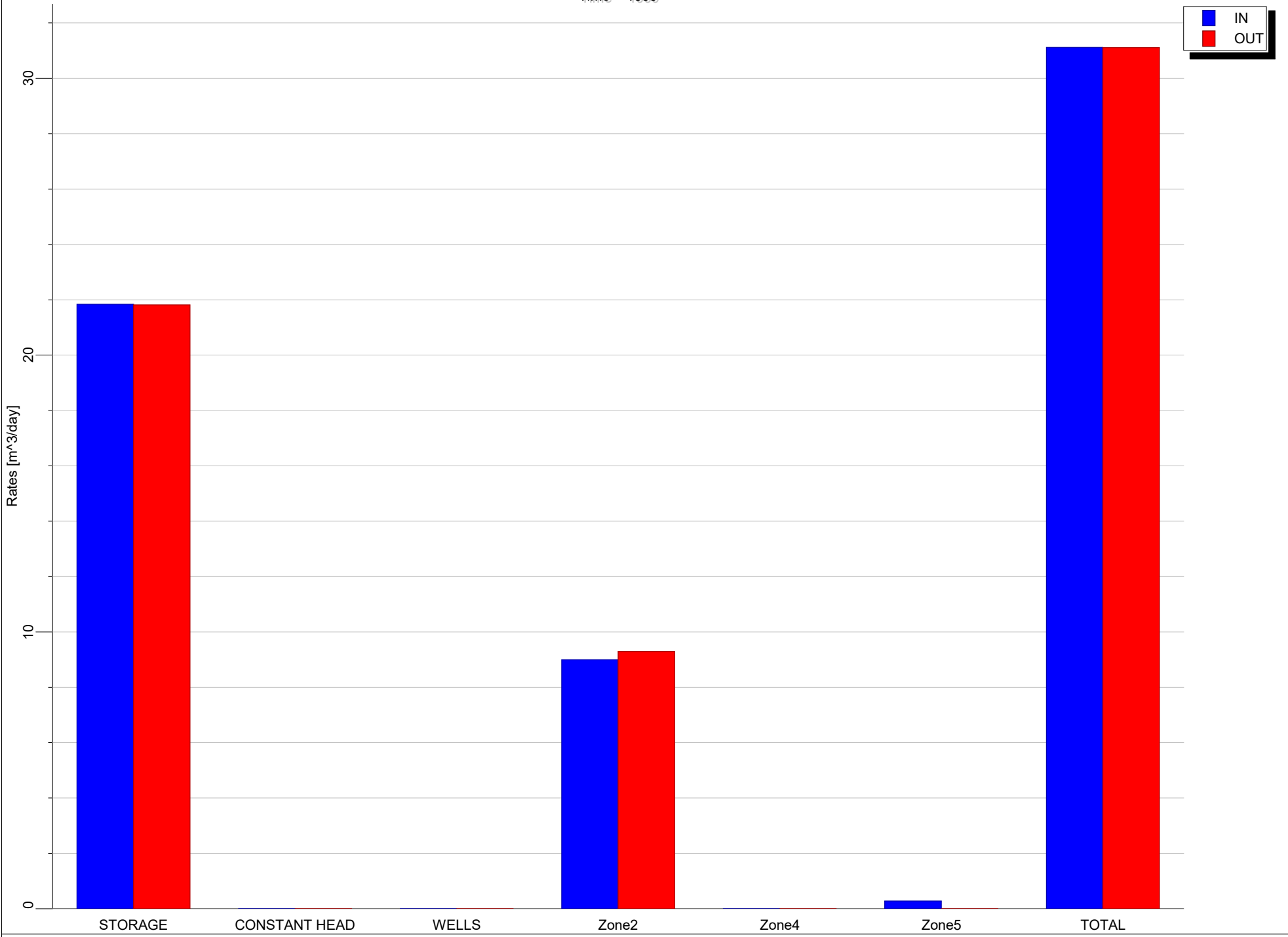
Appendix C - Zone Budget Charts

Time = 750



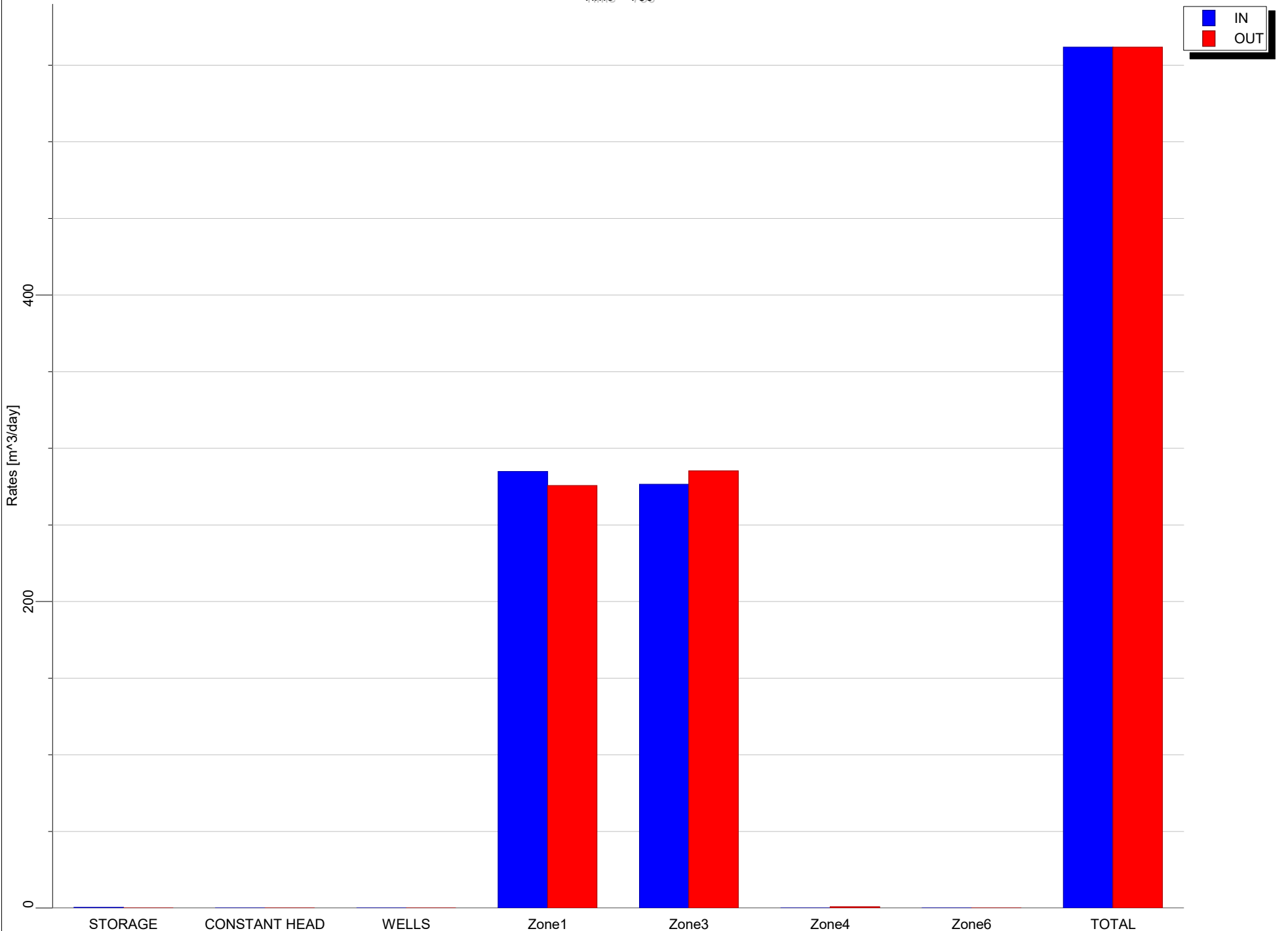
Appendix C - Zone Budget Charts

Time = 1000



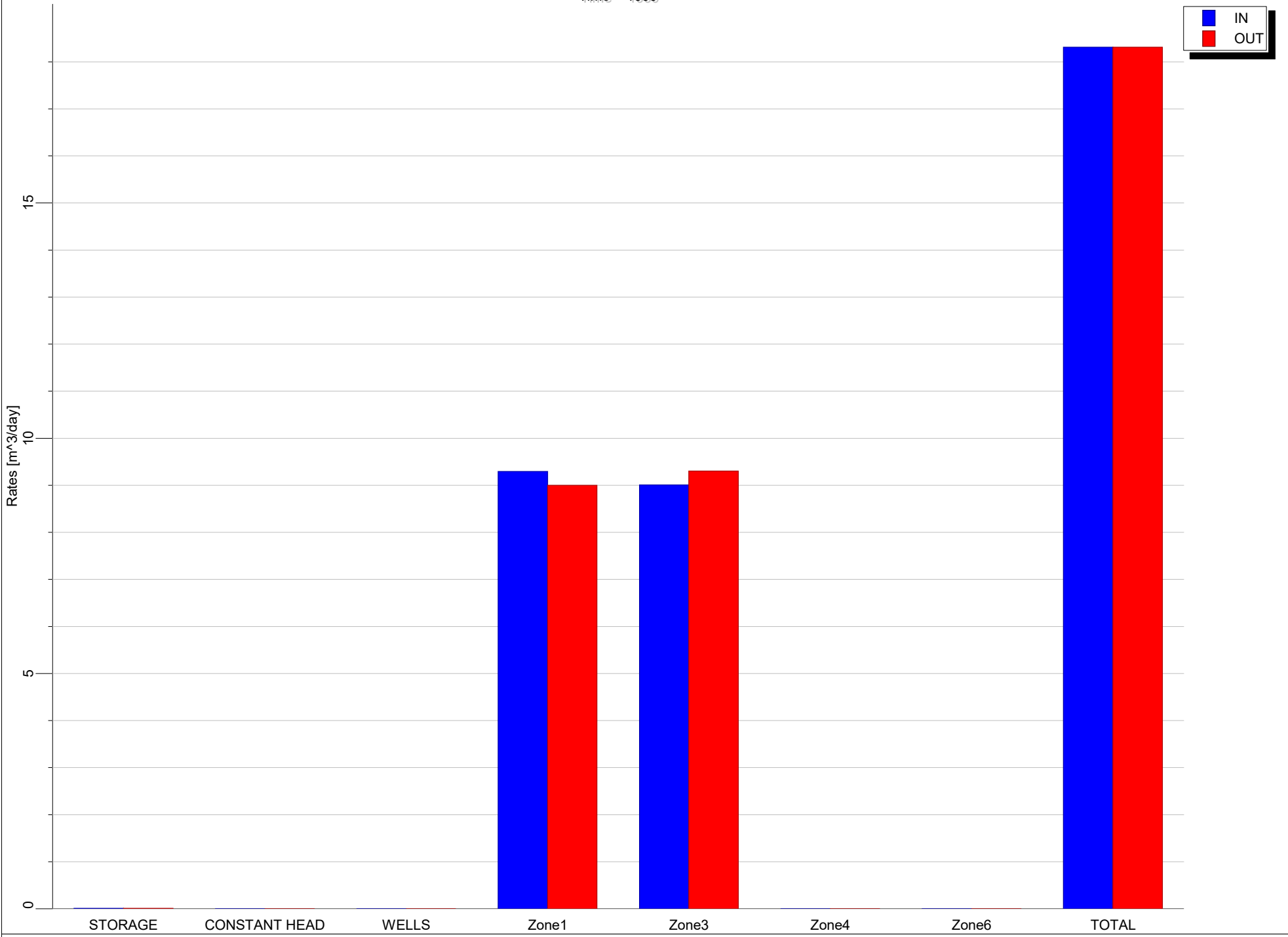
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

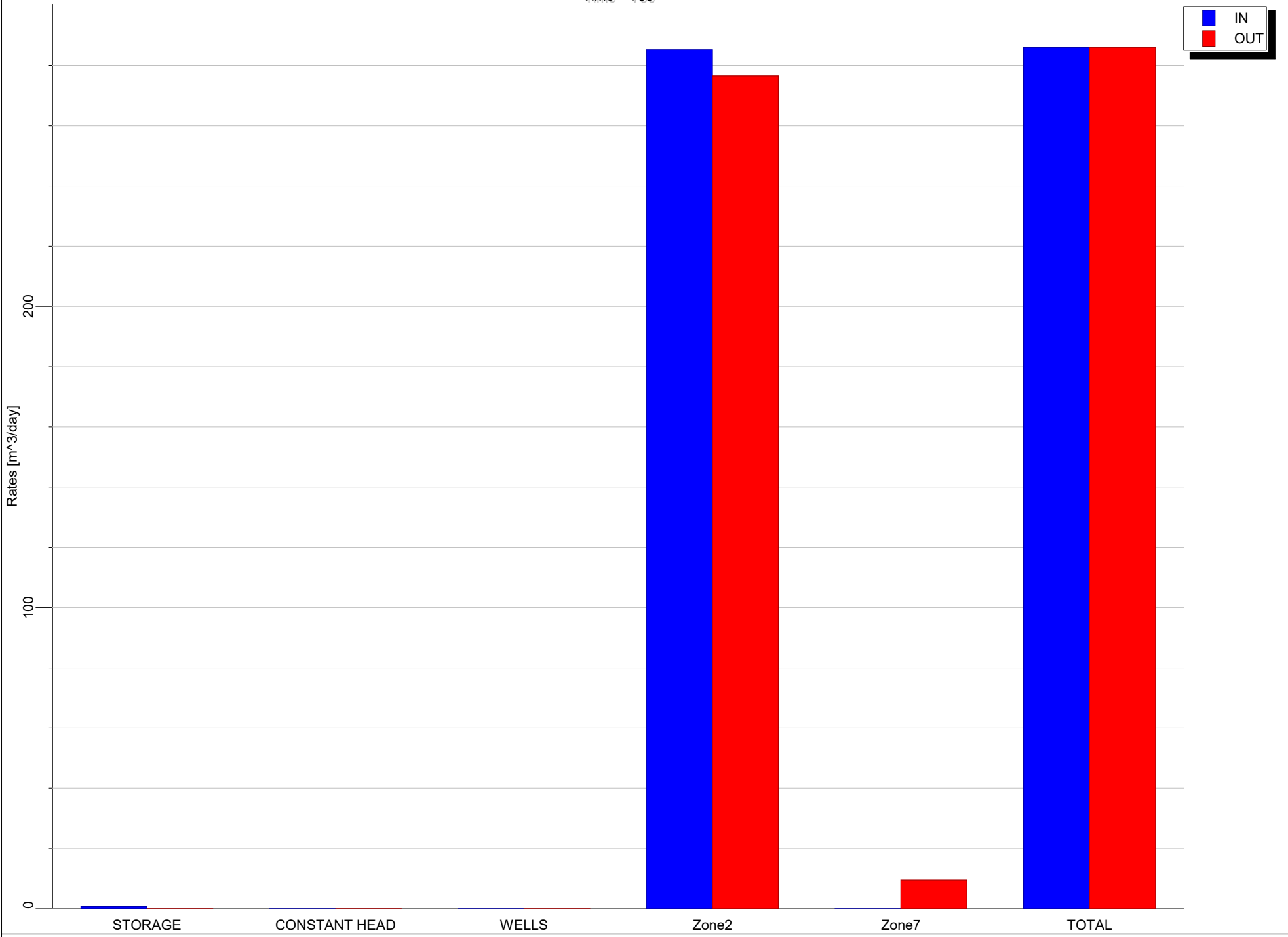
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Zone 2
Scenario 3.6
Abandoned Well 250m

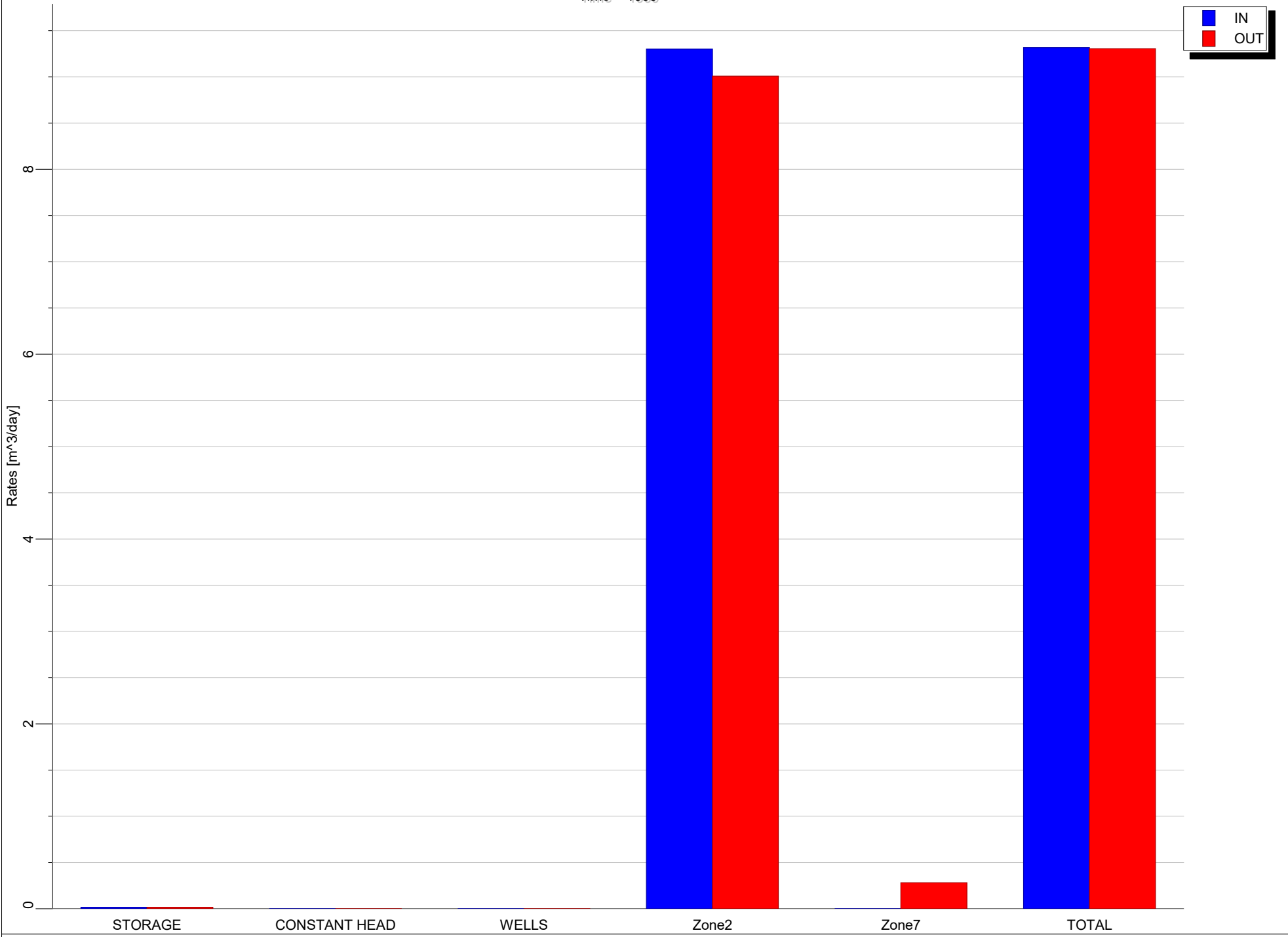
Appendix C - Zone Budget Charts

Time = 750



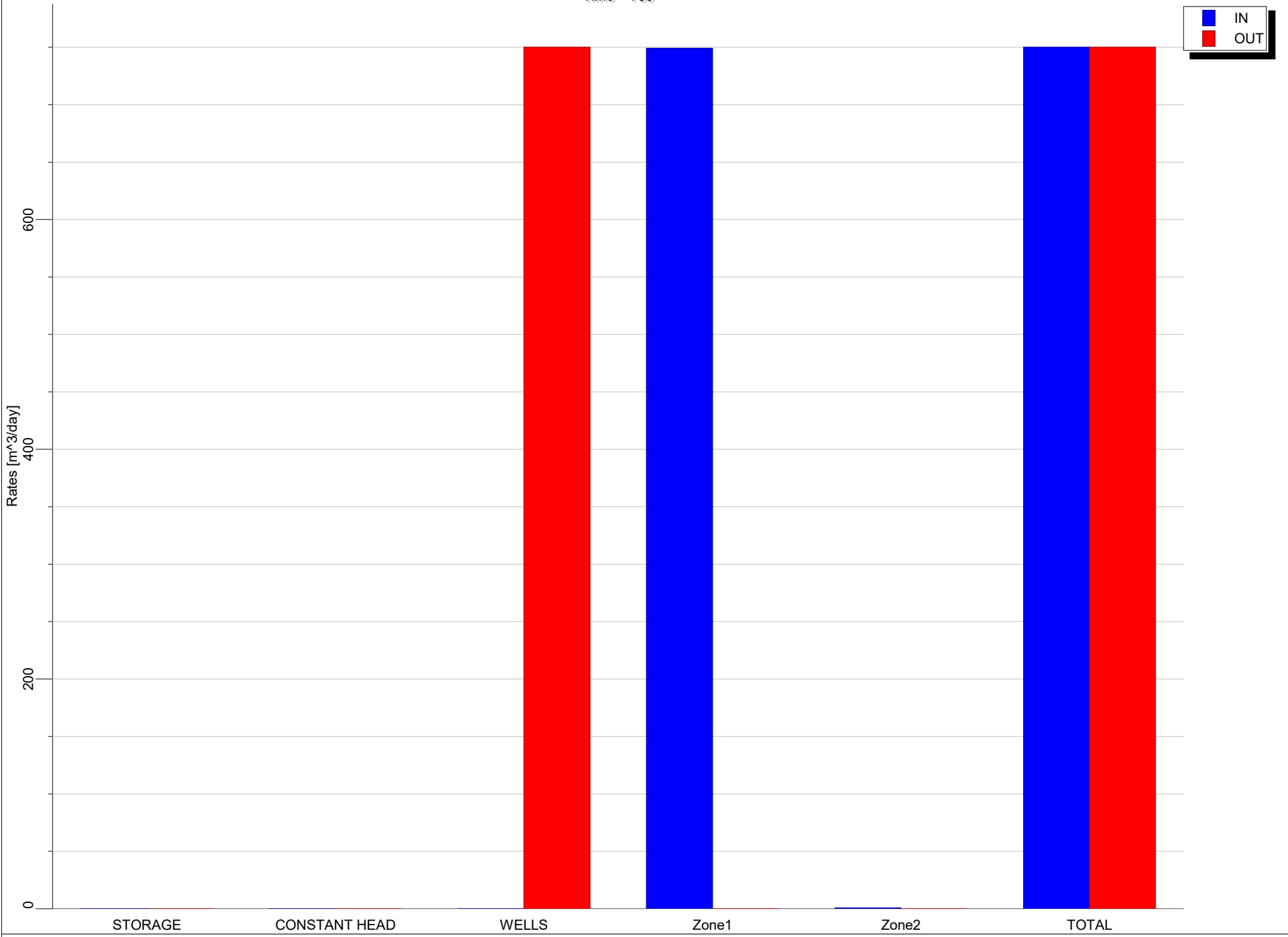
Appendix C - Zone Budget Charts

Time = 1000



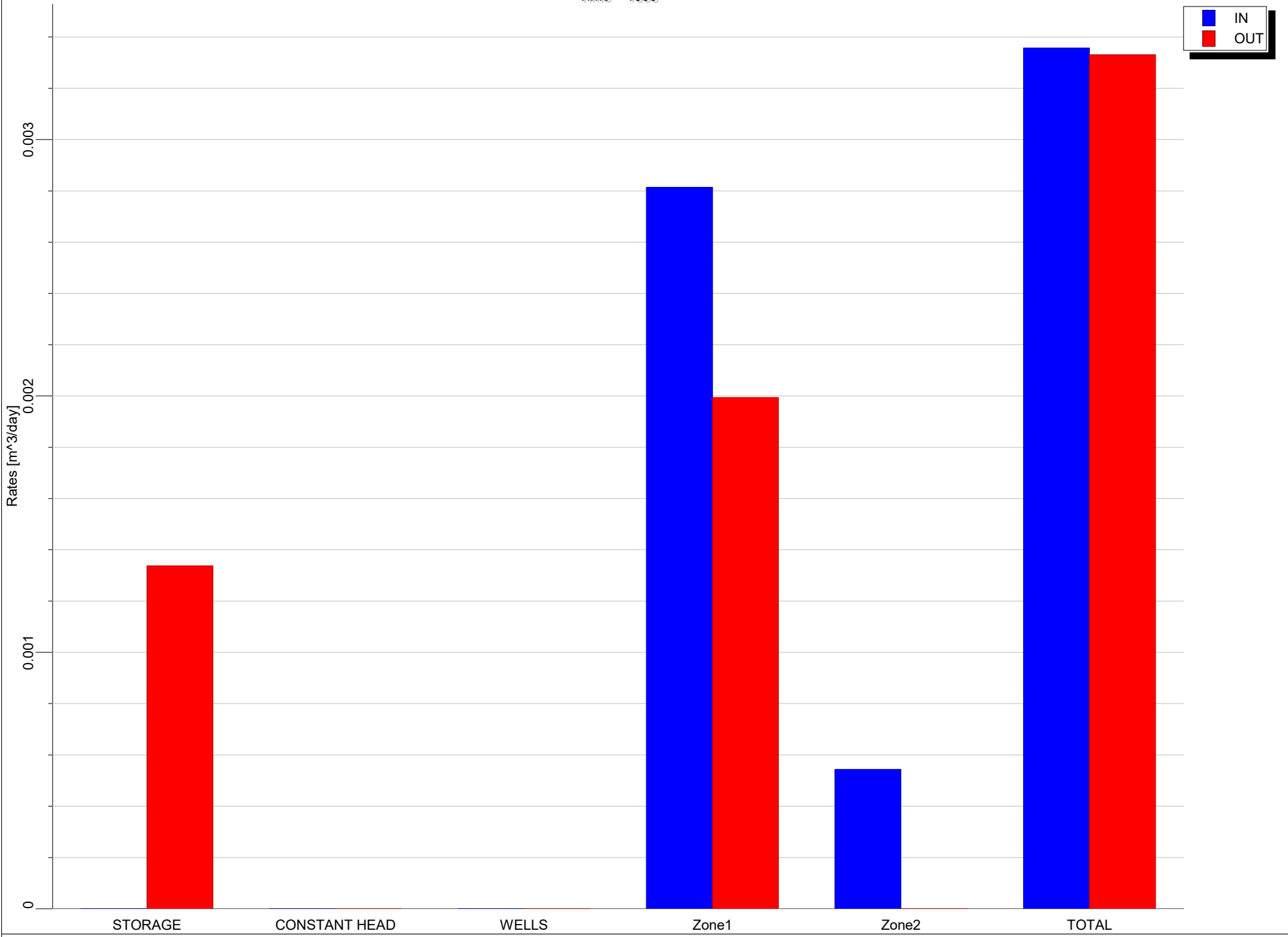
Appendix C - Zone Budget Charts

Time = 750



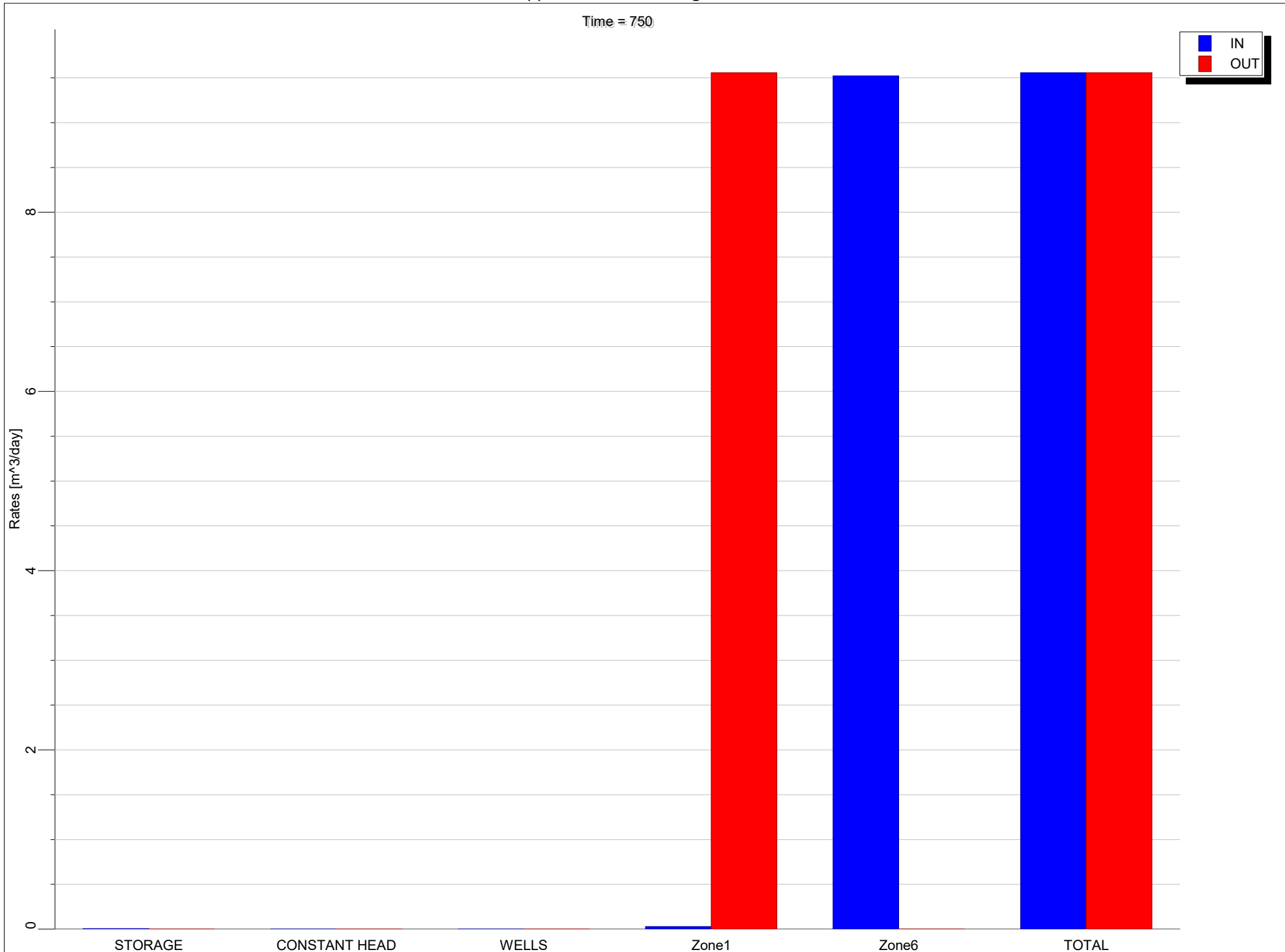
Appendix C - Zone Budget Charts

Time = 1000



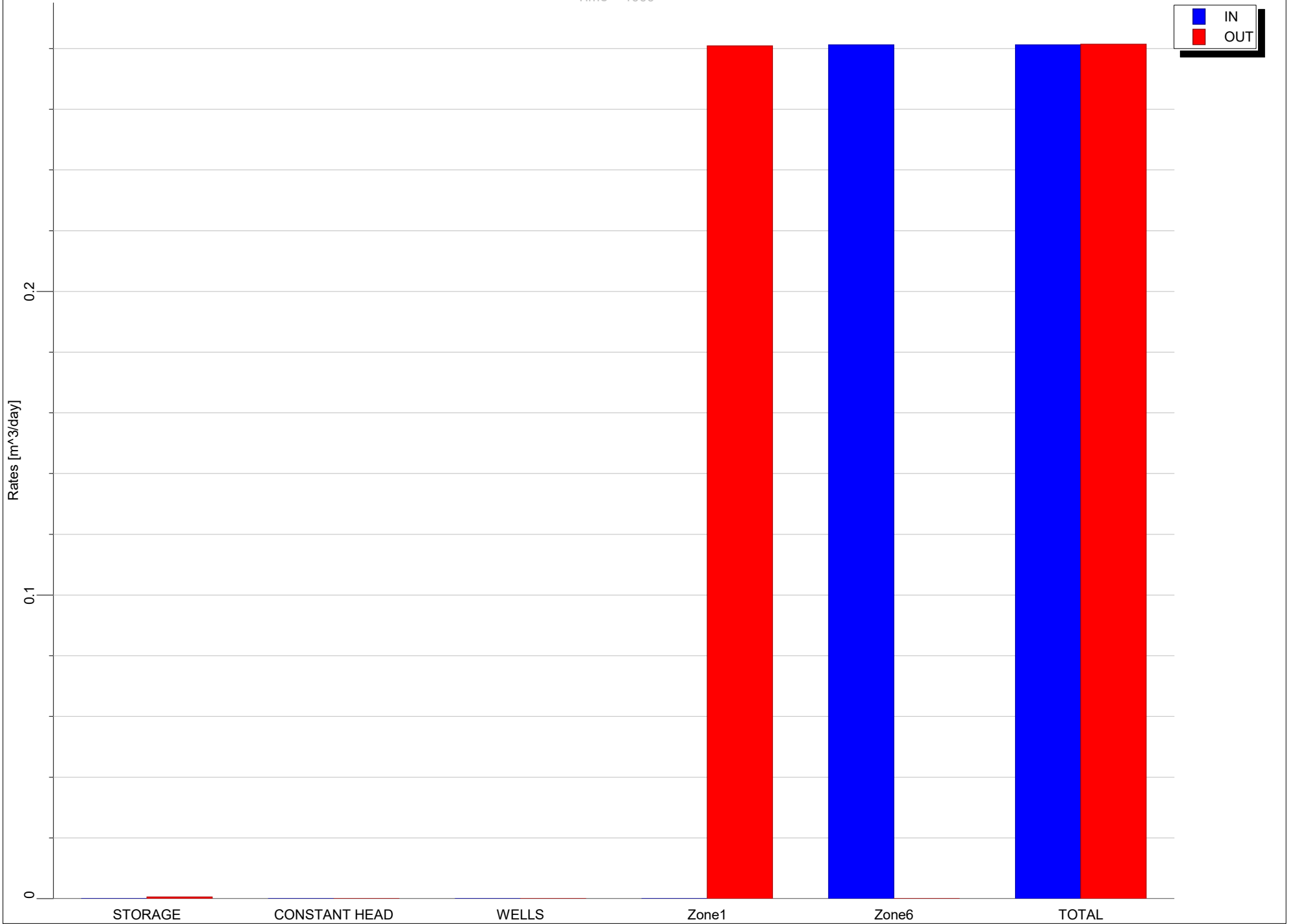
Appendix C - Zone Budget Charts

Time = 750



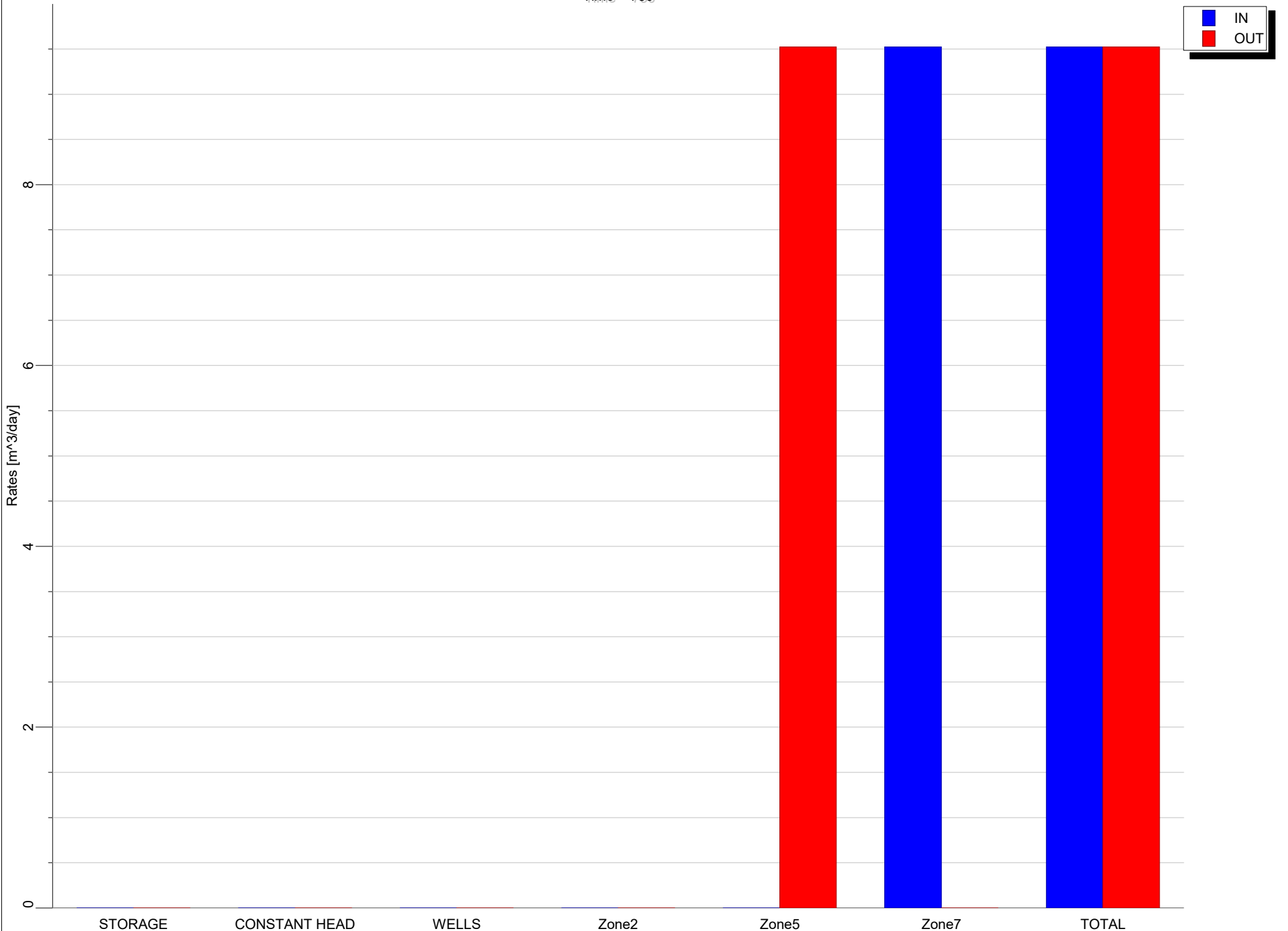
Appendix C - Zone Budget Charts

Time = 1000



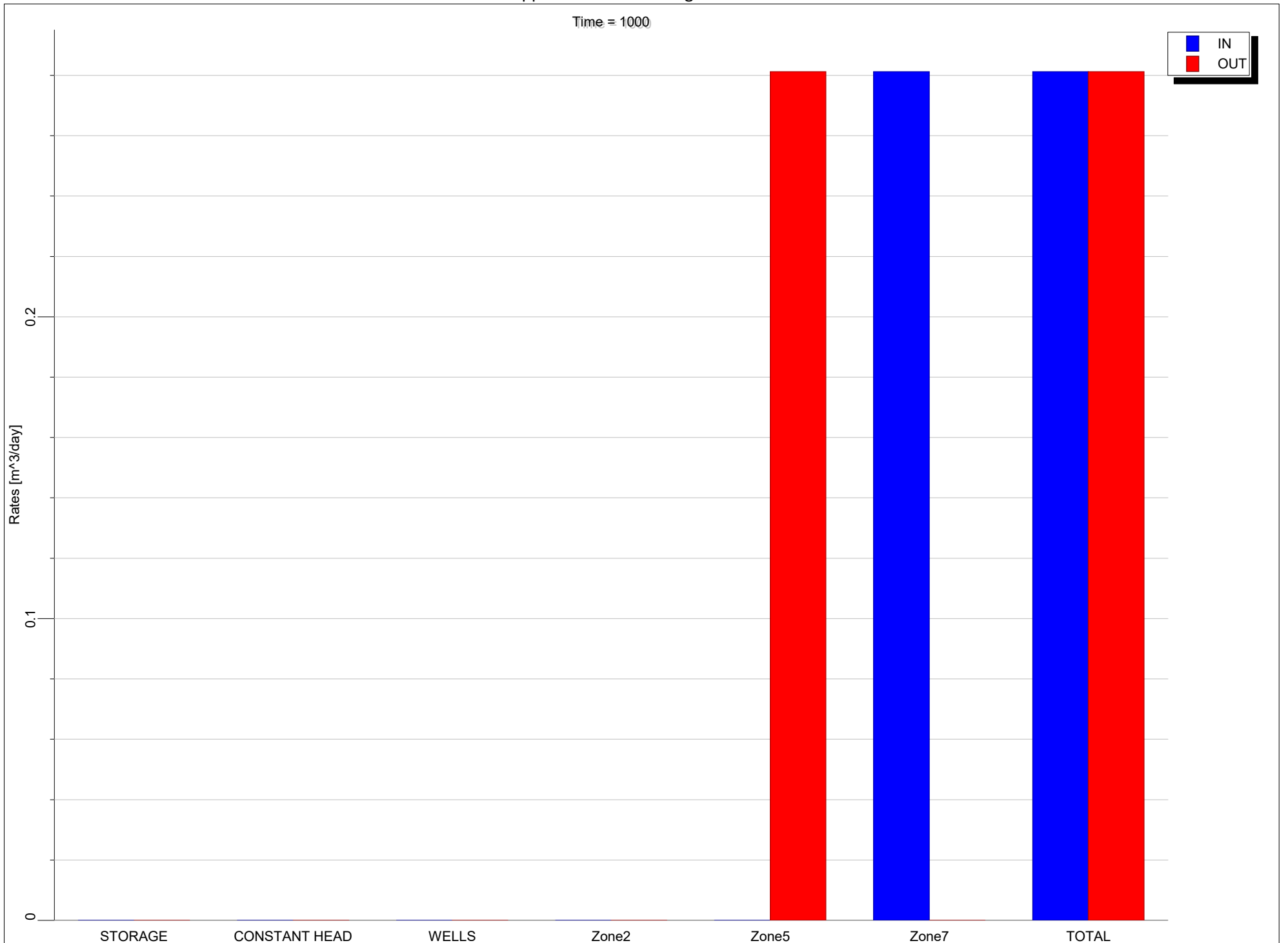
Appendix C - Zone Budget Charts

Time = 750



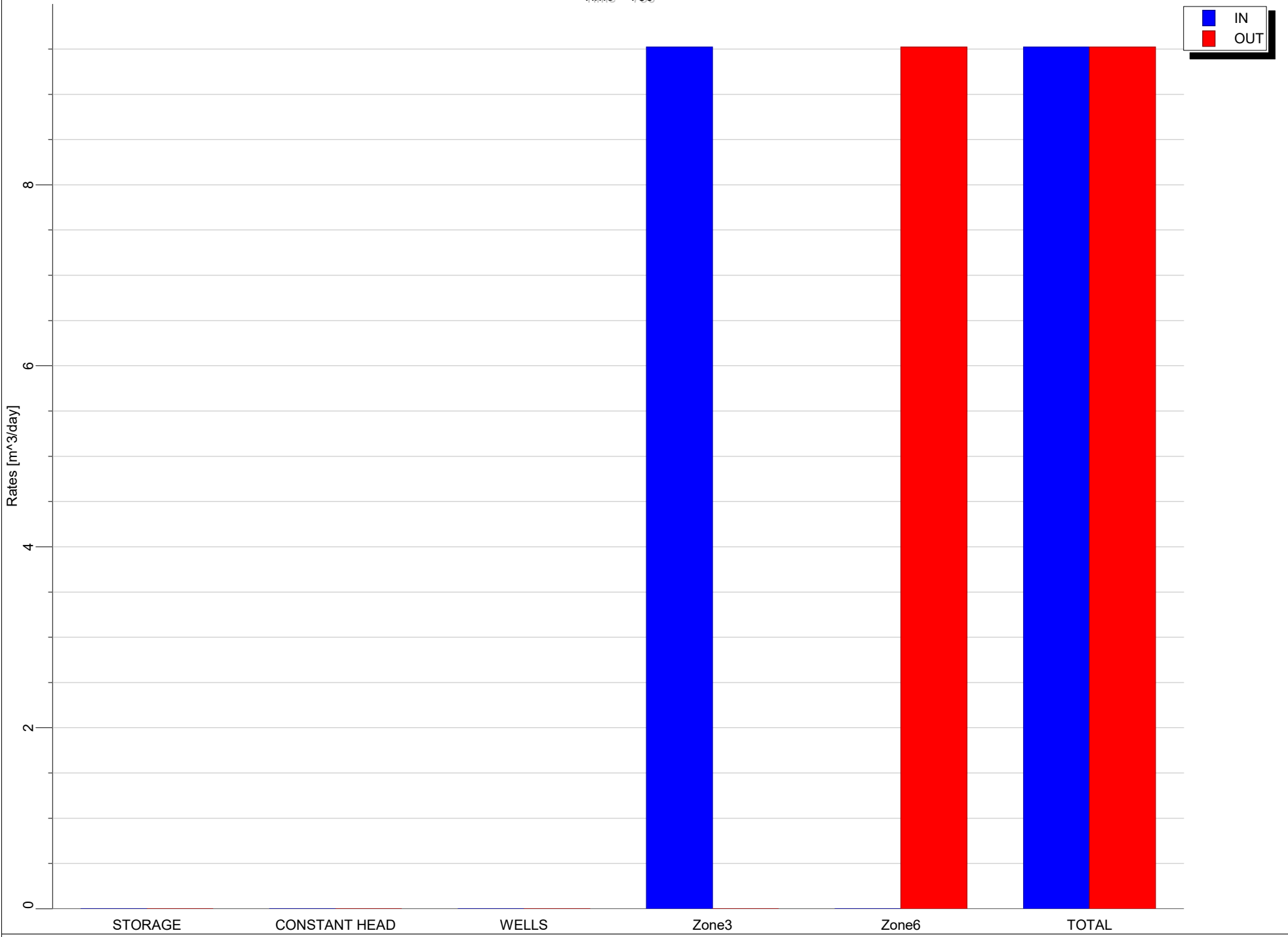
Appendix C - Zone Budget Charts

Time = 1000



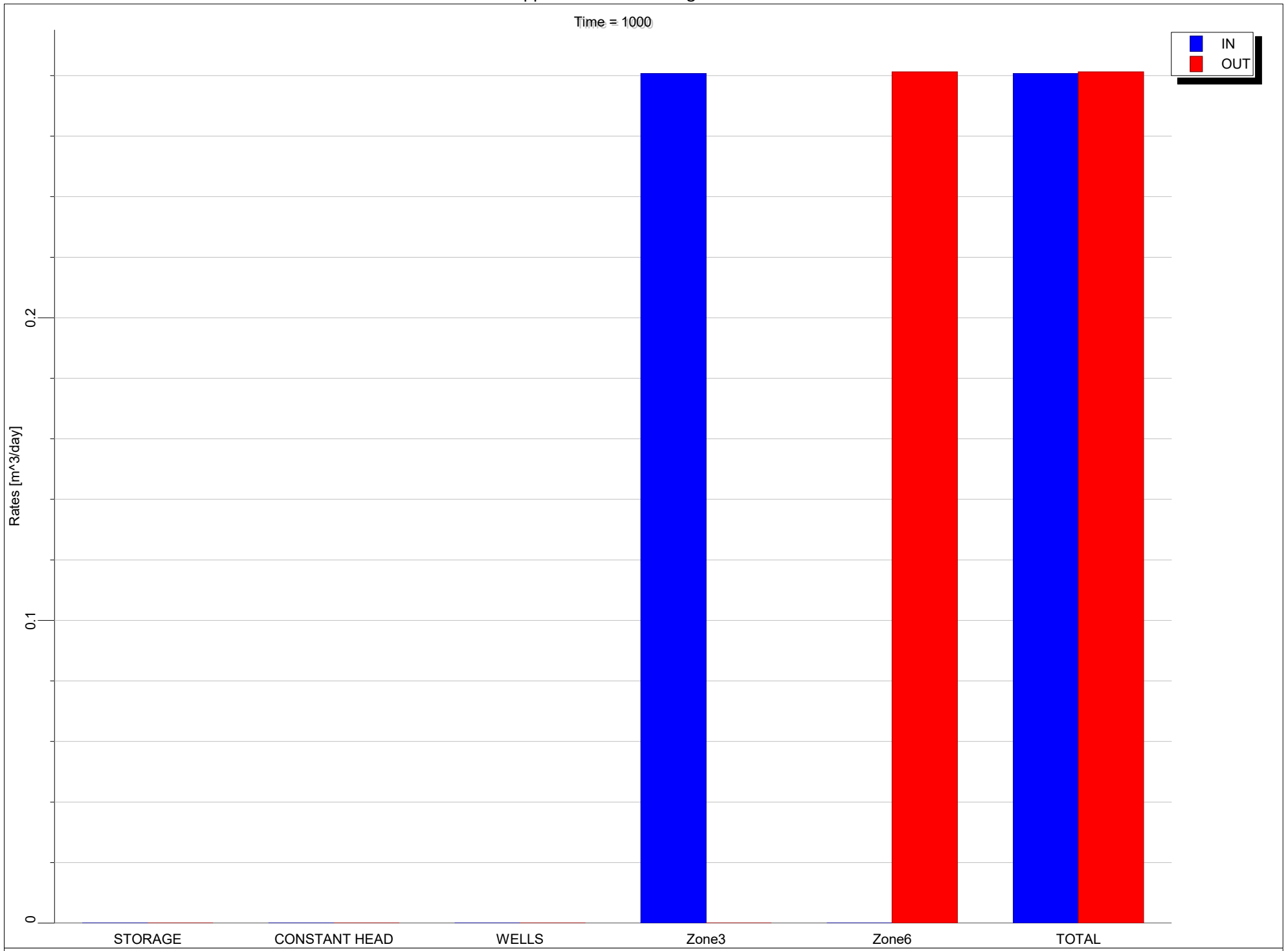
Appendix C - Zone Budget Charts

Time = 750



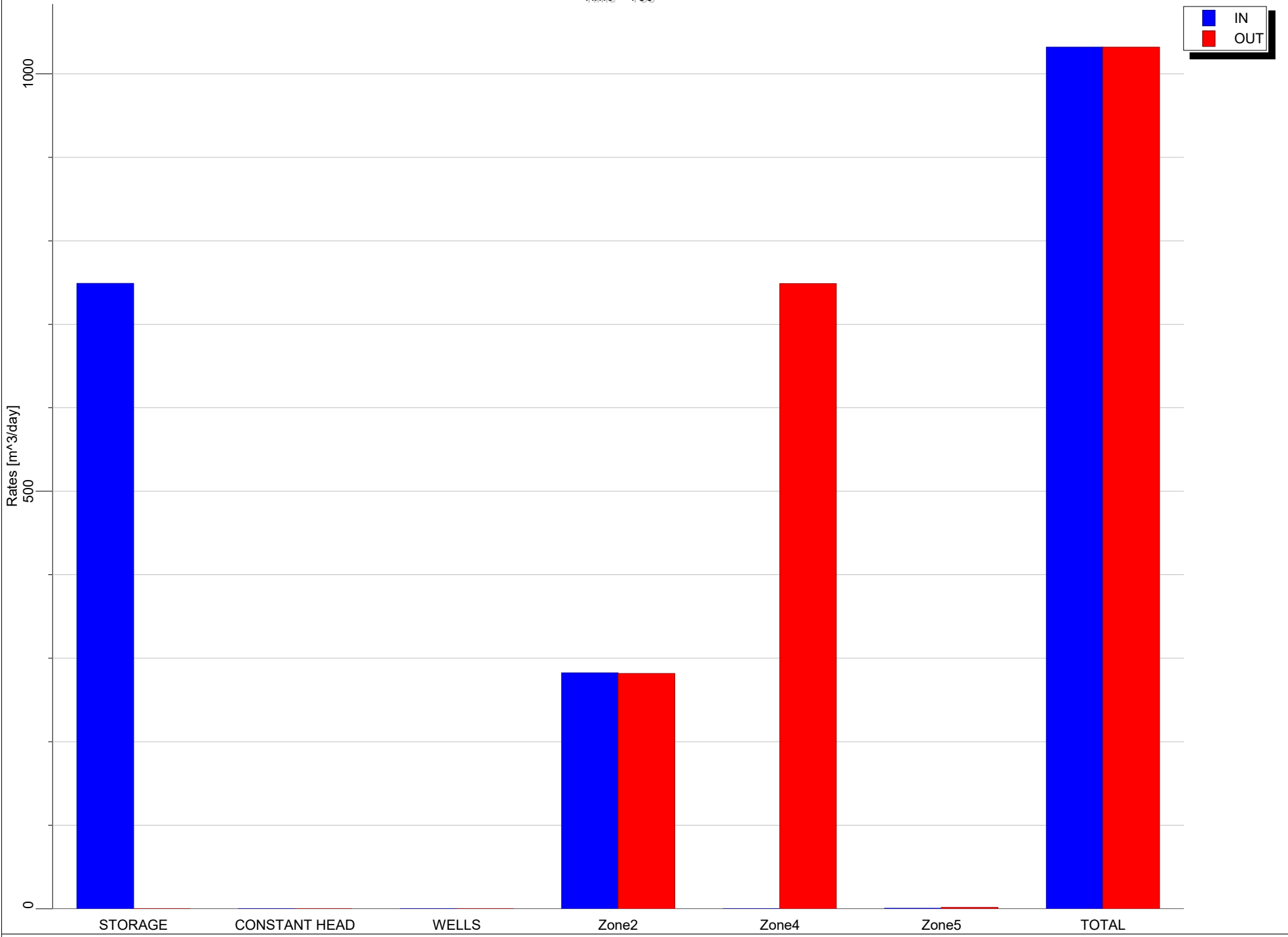
Appendix C - Zone Budget Charts

Time = 1000



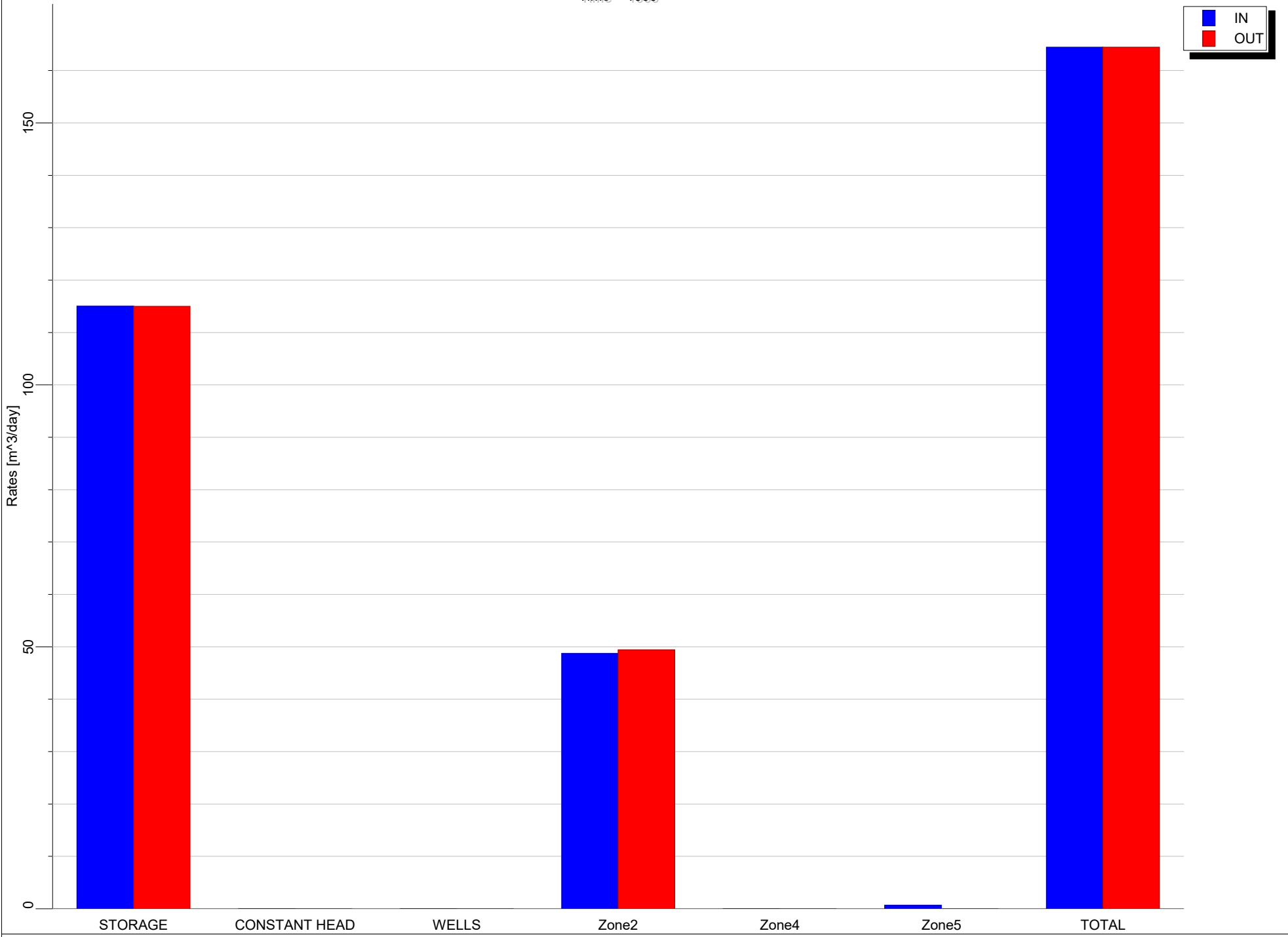
Appendix C - Zone Budget Charts

Time = 750



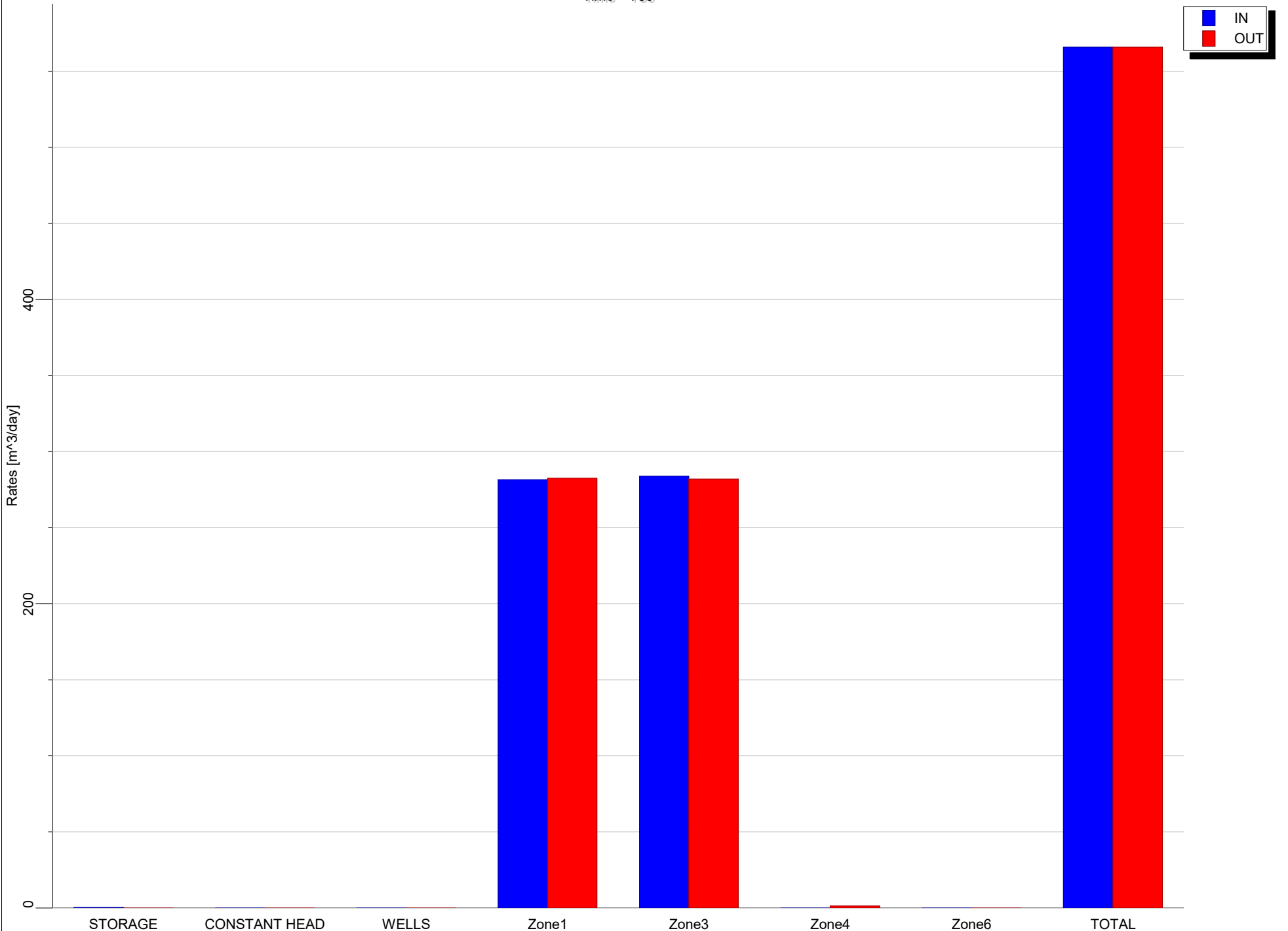
Appendix C - Zone Budget Charts

Time = 1000



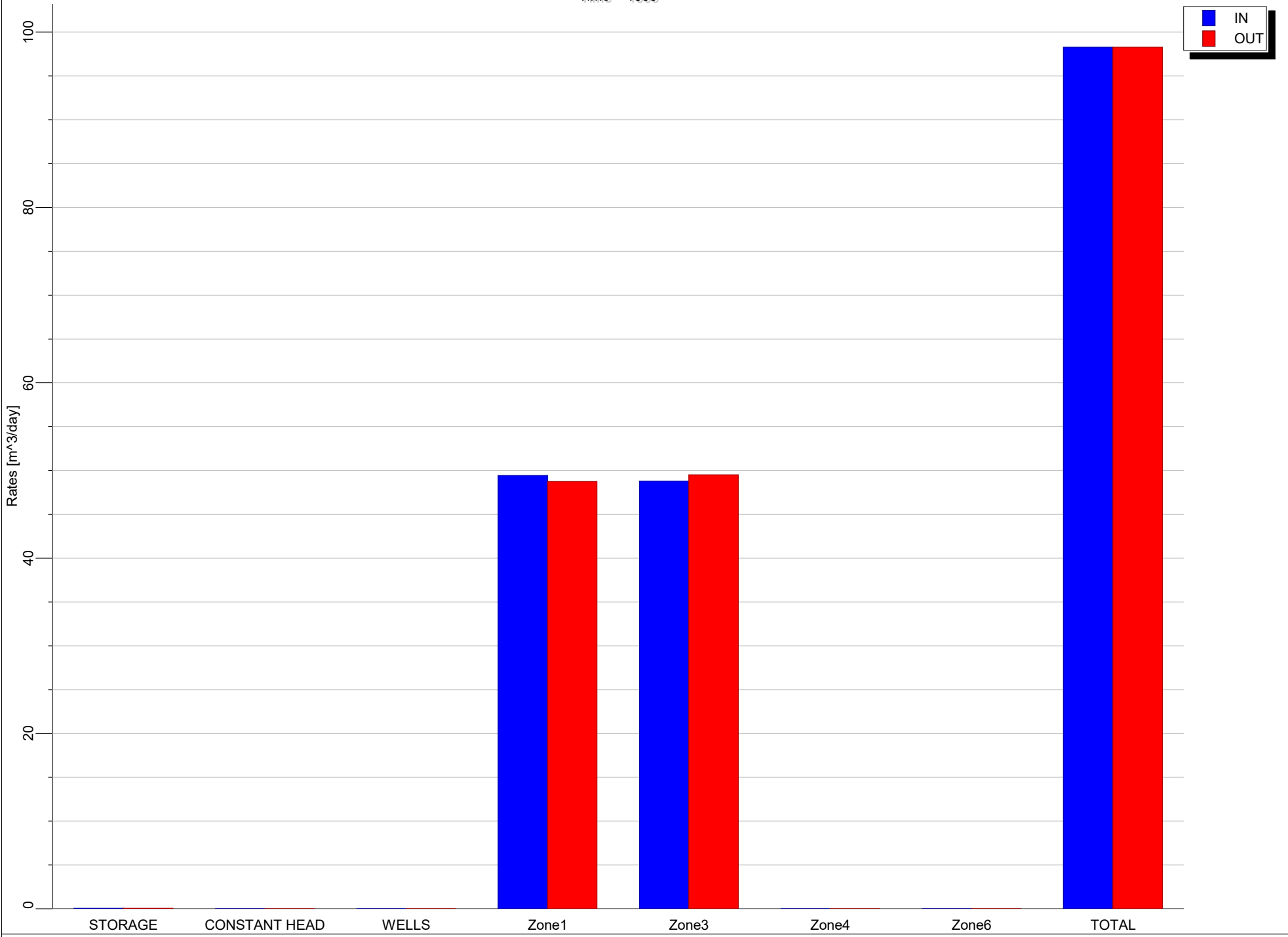
Appendix C - Zone Budget Charts

Time = 750



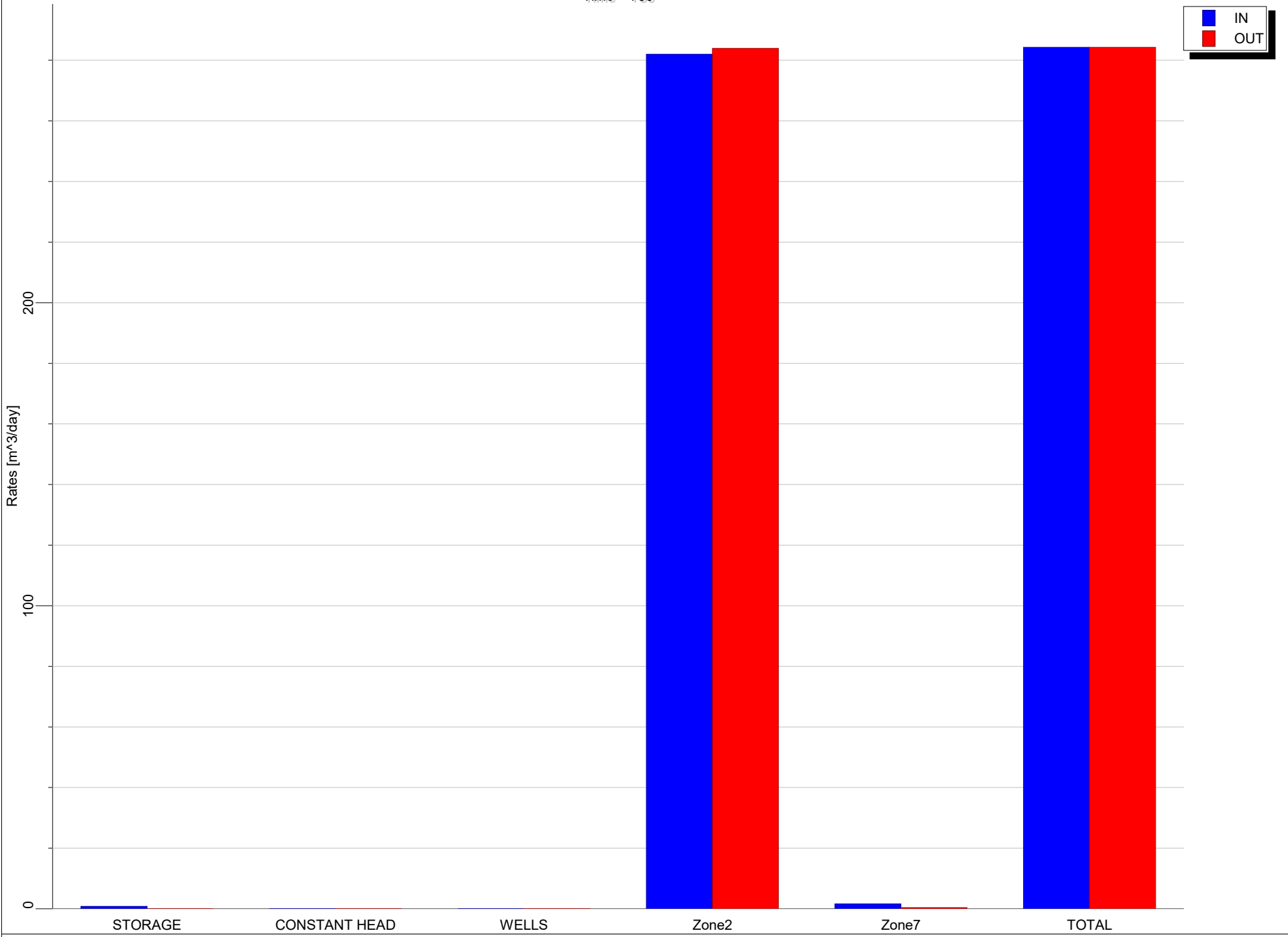
Appendix C - Zone Budget Charts

Time = 1000



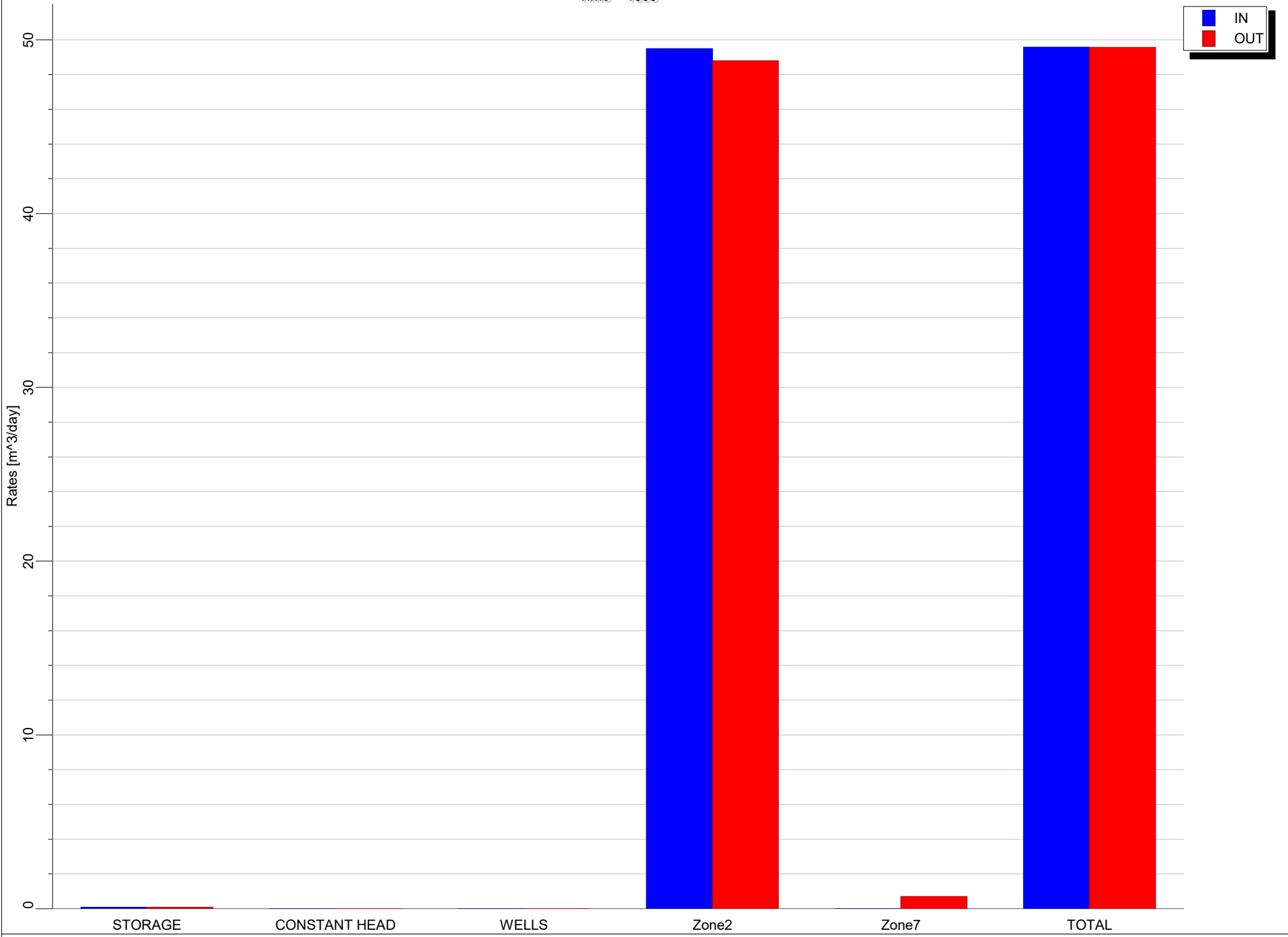
Appendix C - Zone Budget Charts

Time = 750



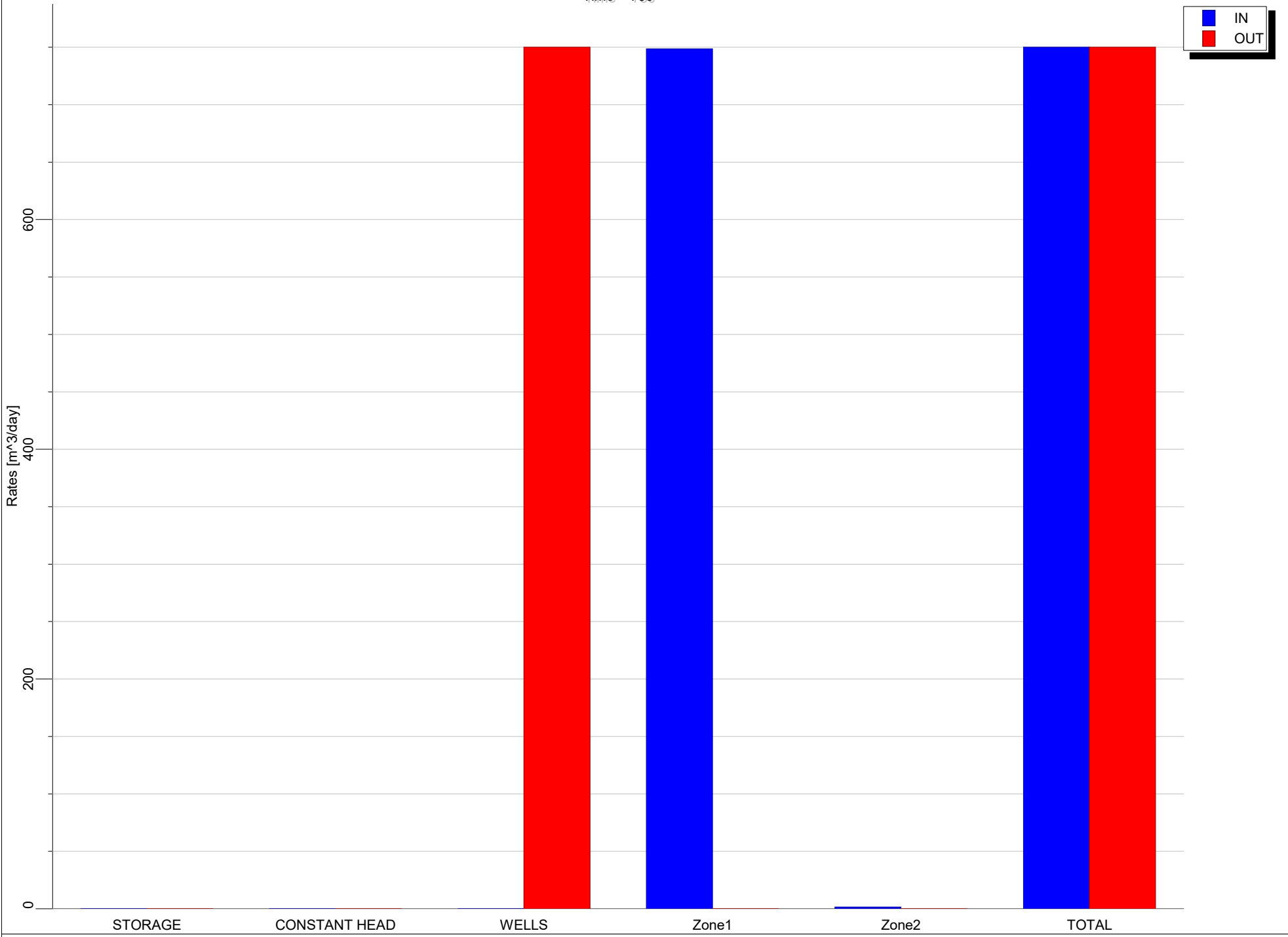
Appendix C - Zone Budget Charts

Time = 1000



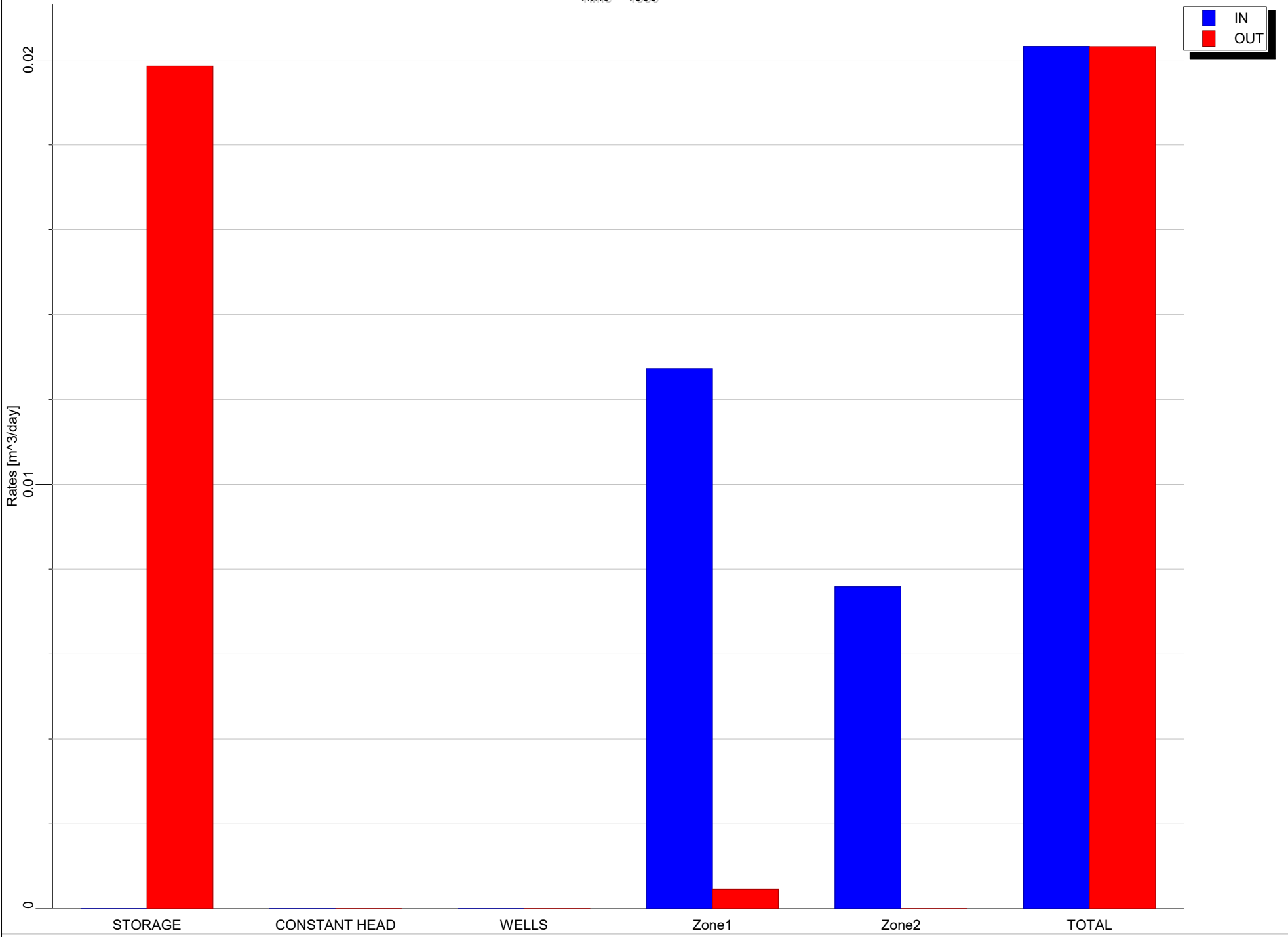
Appendix C - Zone Budget Charts

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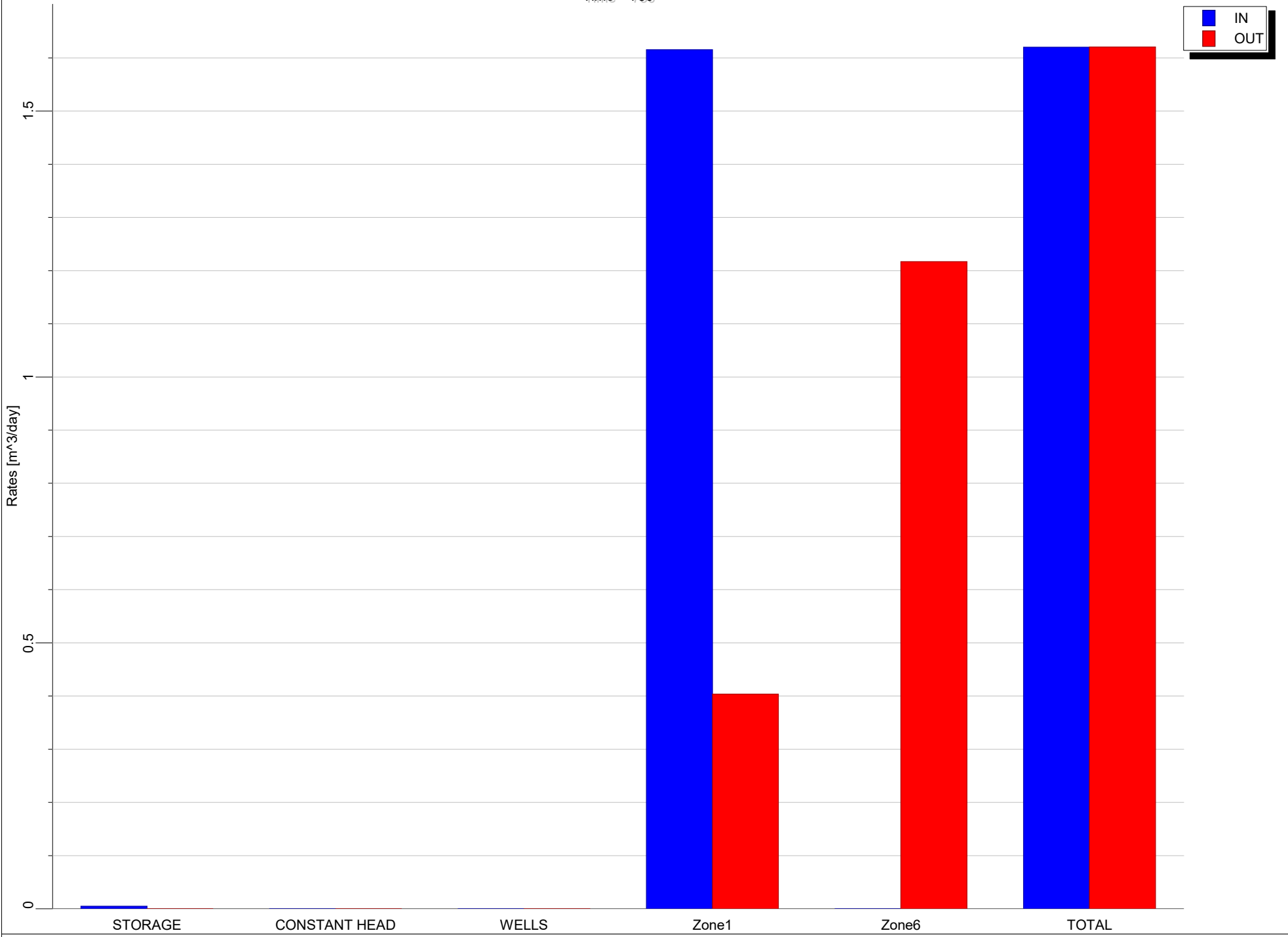
Appendix C - Zone Budget Charts

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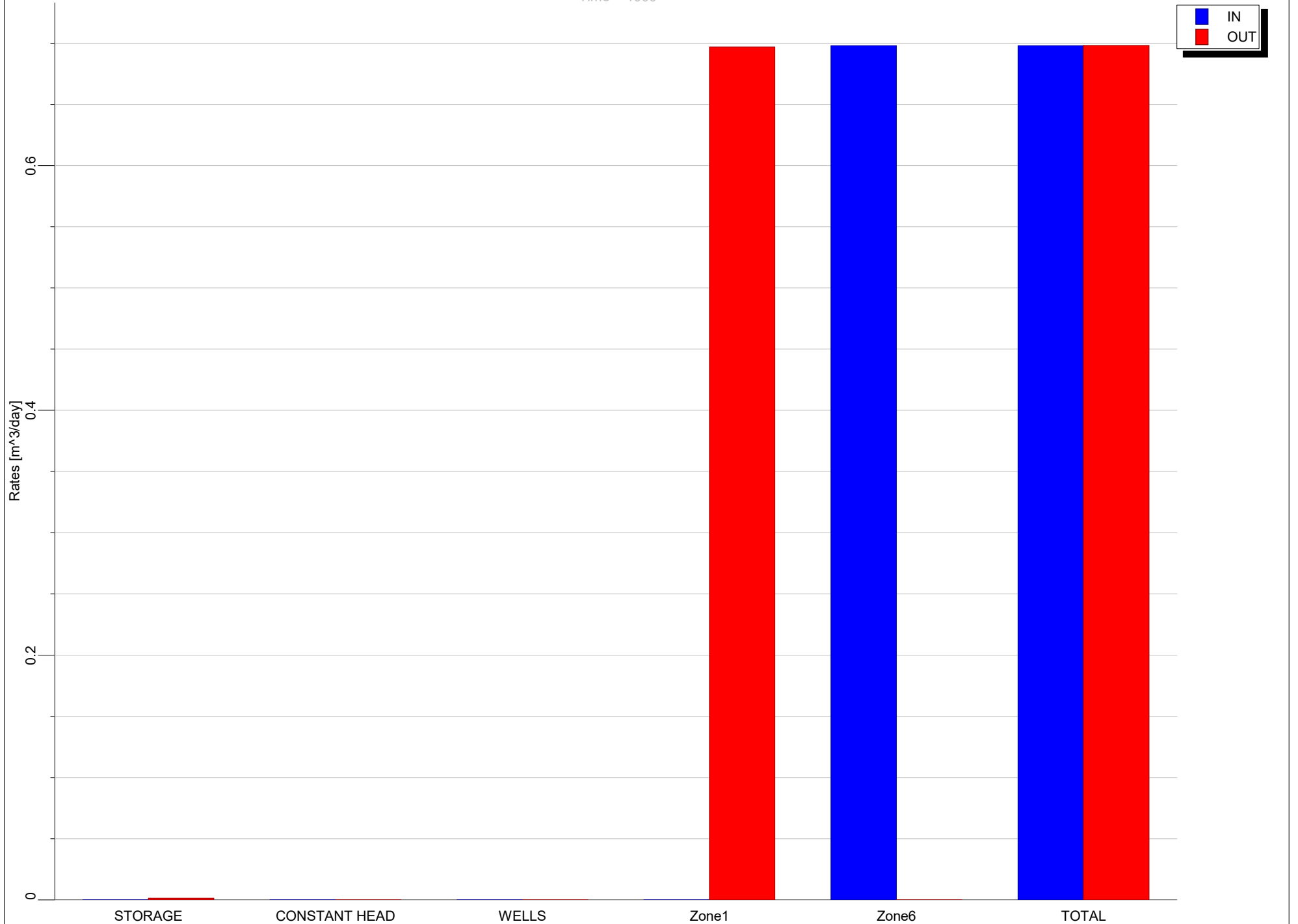
Appendix C - Zone Budget Charts

Time = 750



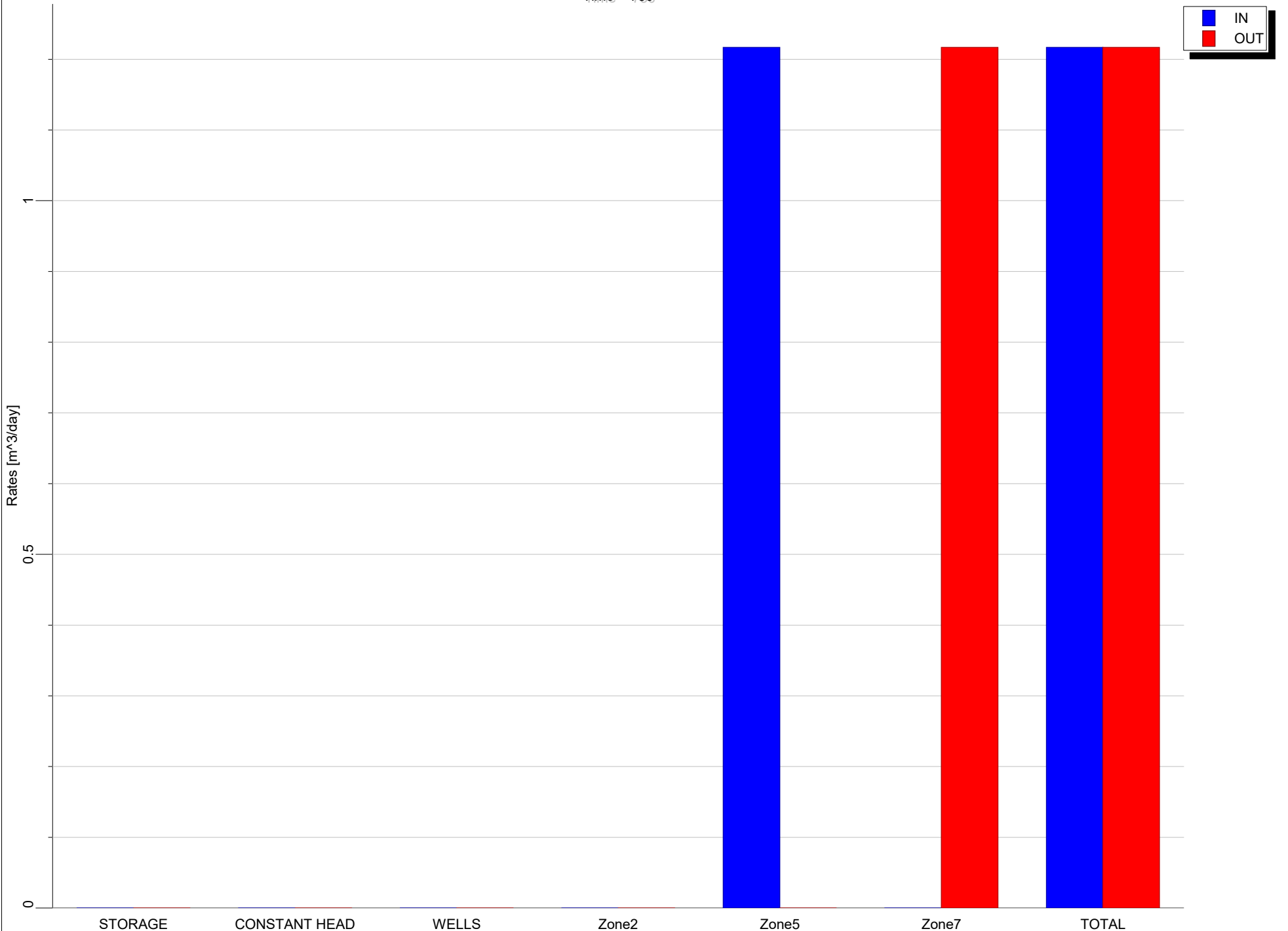
Appendix C - Zone Budget Charts

Time = 1000



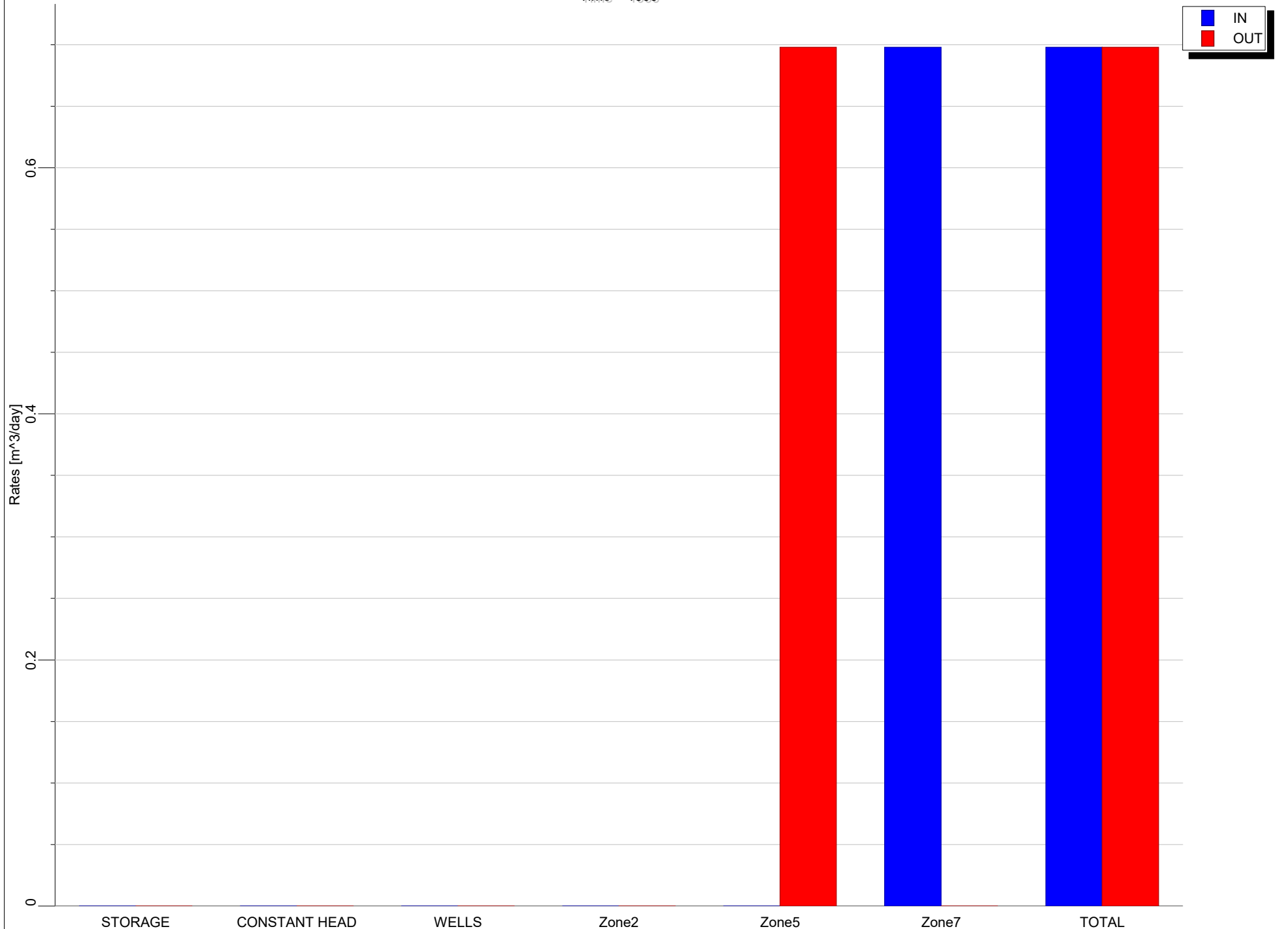
Appendix C - Zone Budget Charts

Time = 750



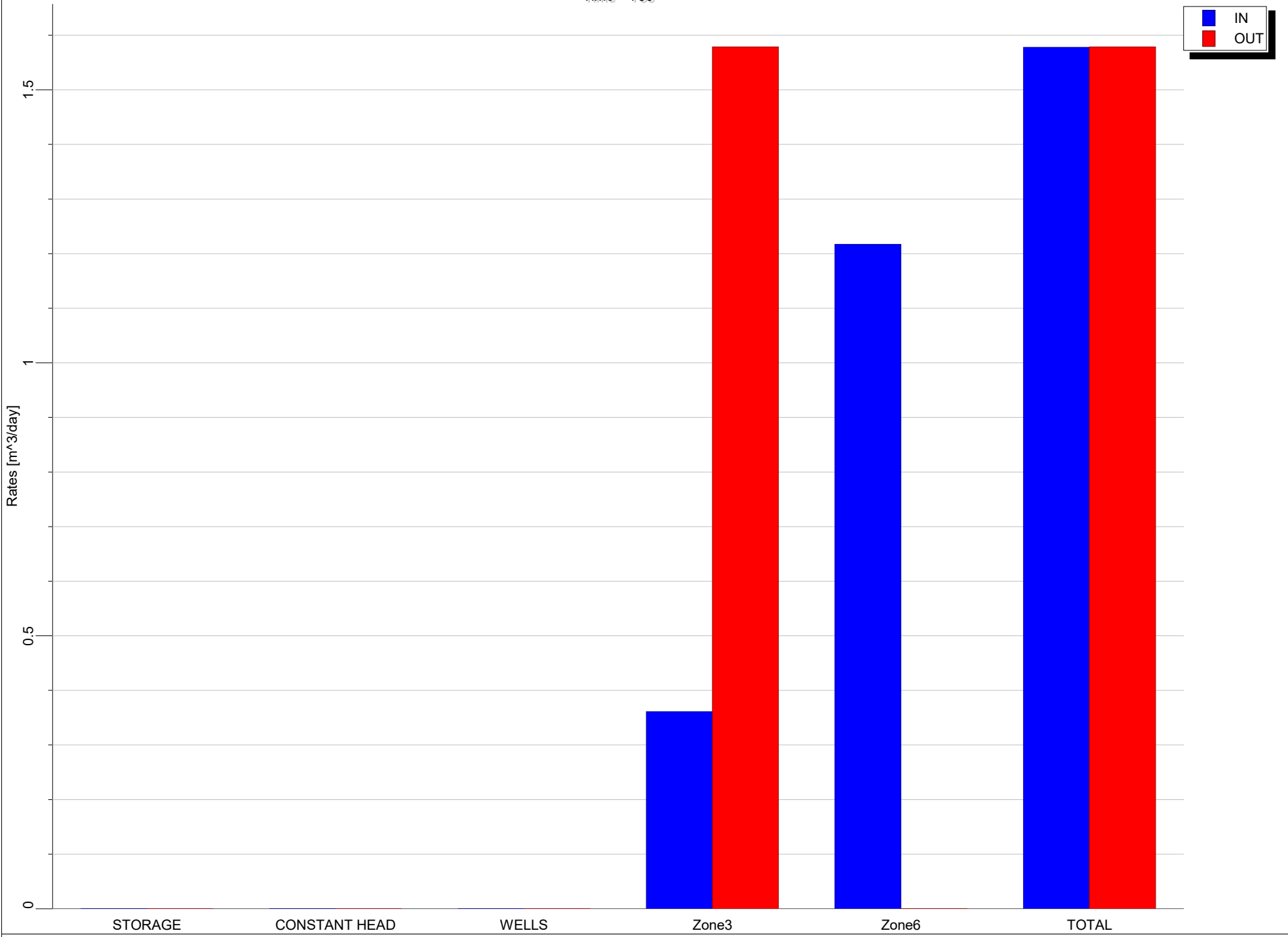
Appendix C - Zone Budget Charts

Time = 1000



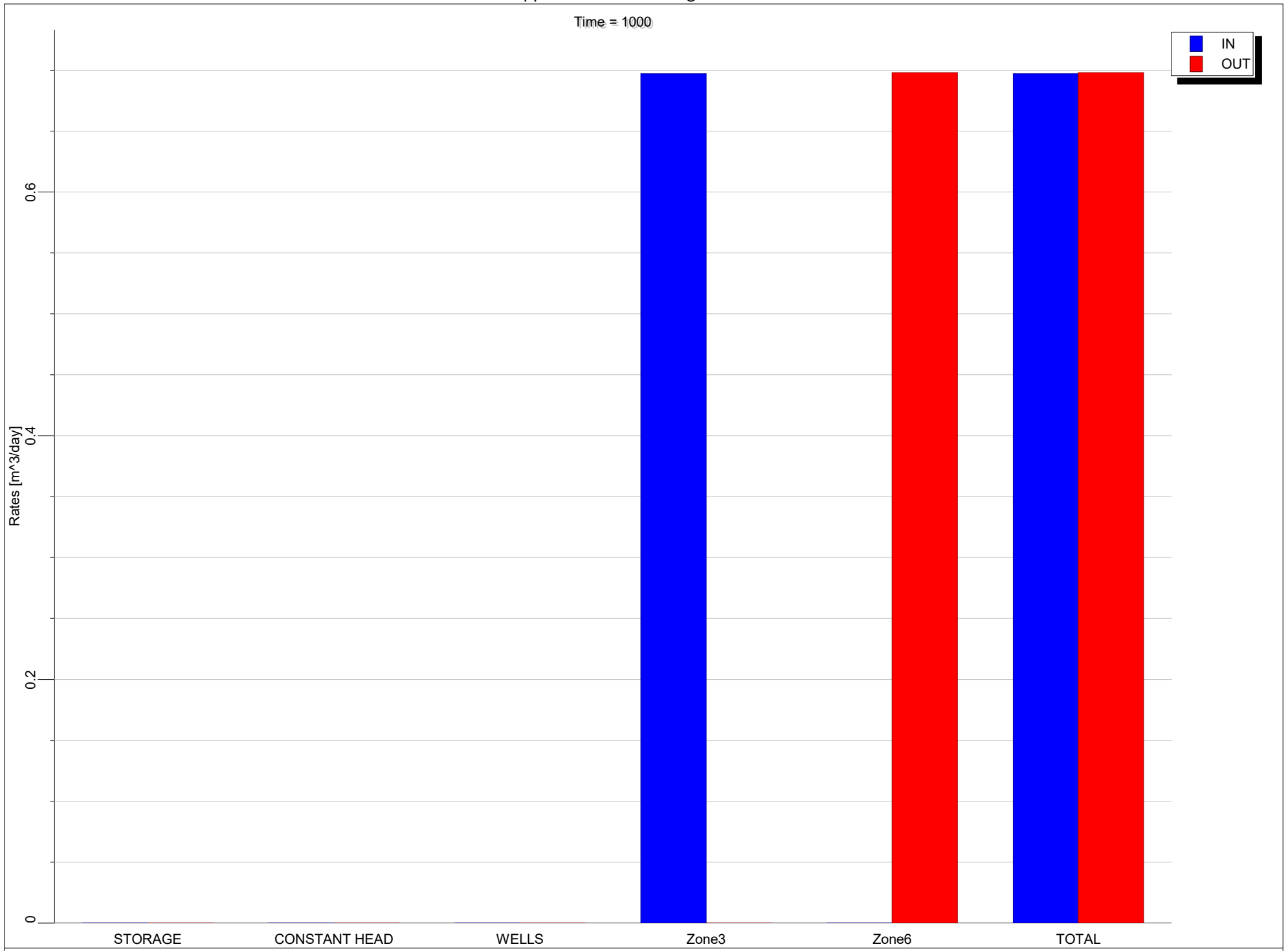
Appendix C - Zone Budget Charts

Time = 750



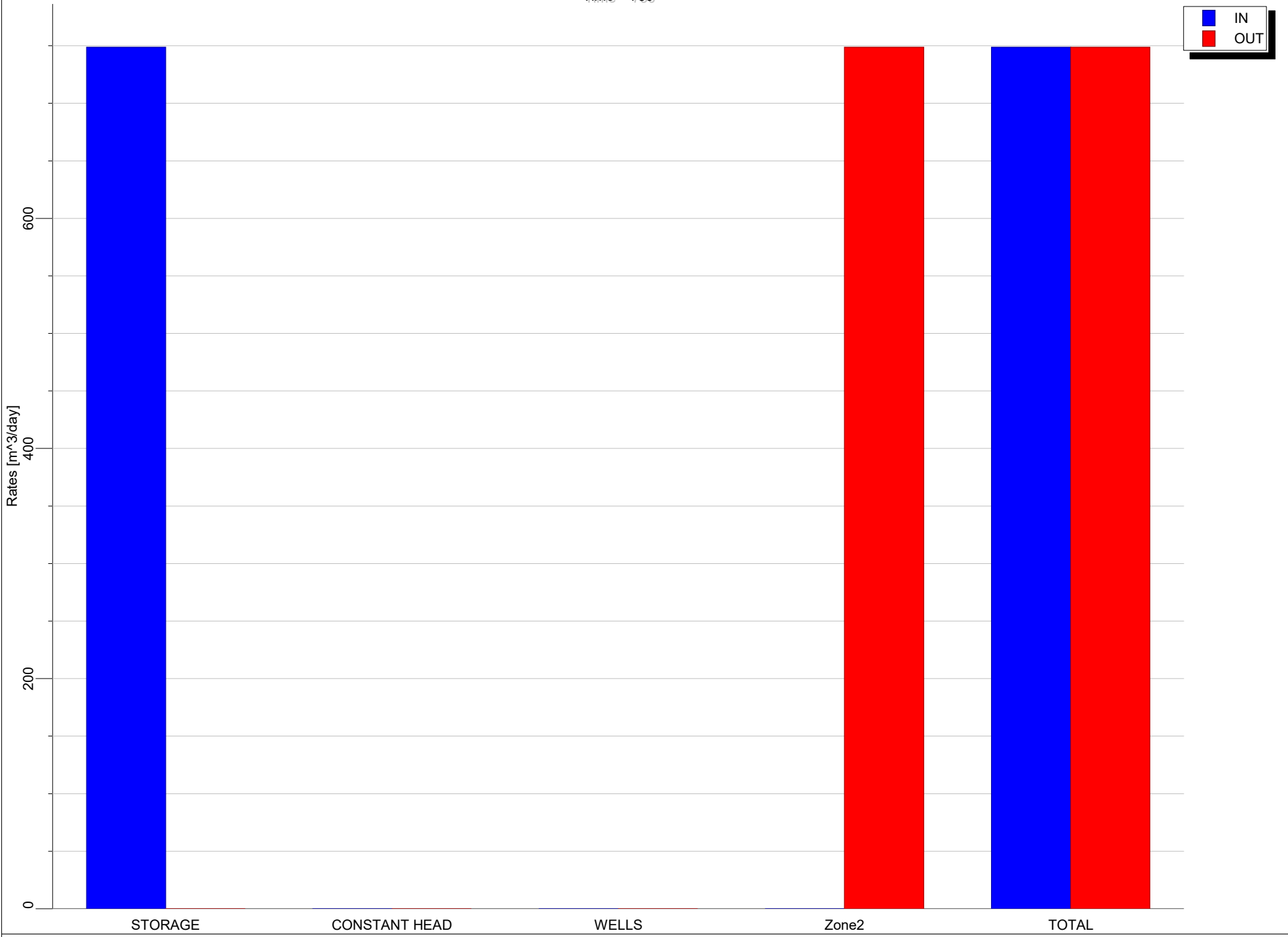
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

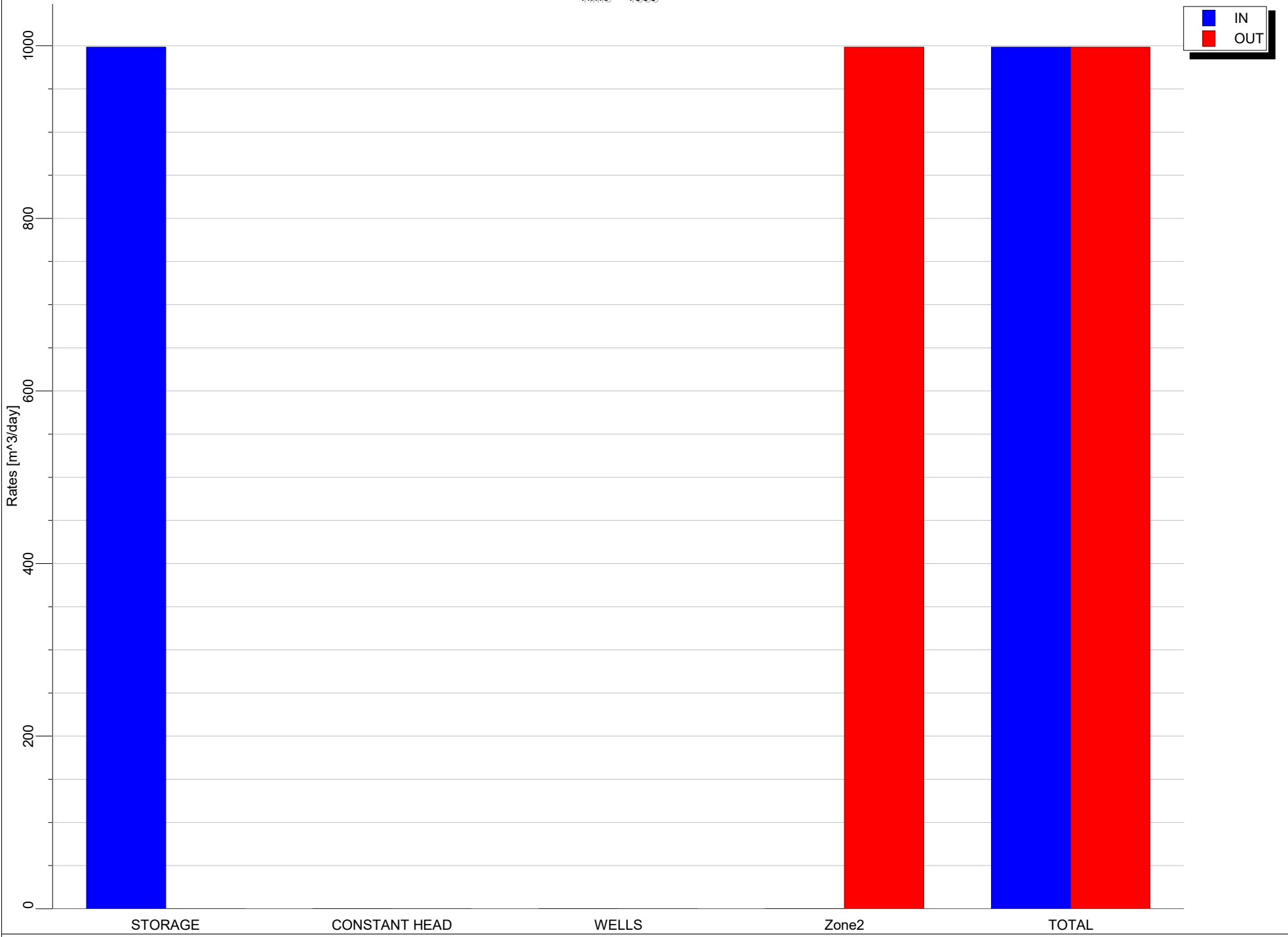
Time = 750



Zone 1
Scenario 4.1
No Abandoned Well

Appendix C - Zone Budget Charts

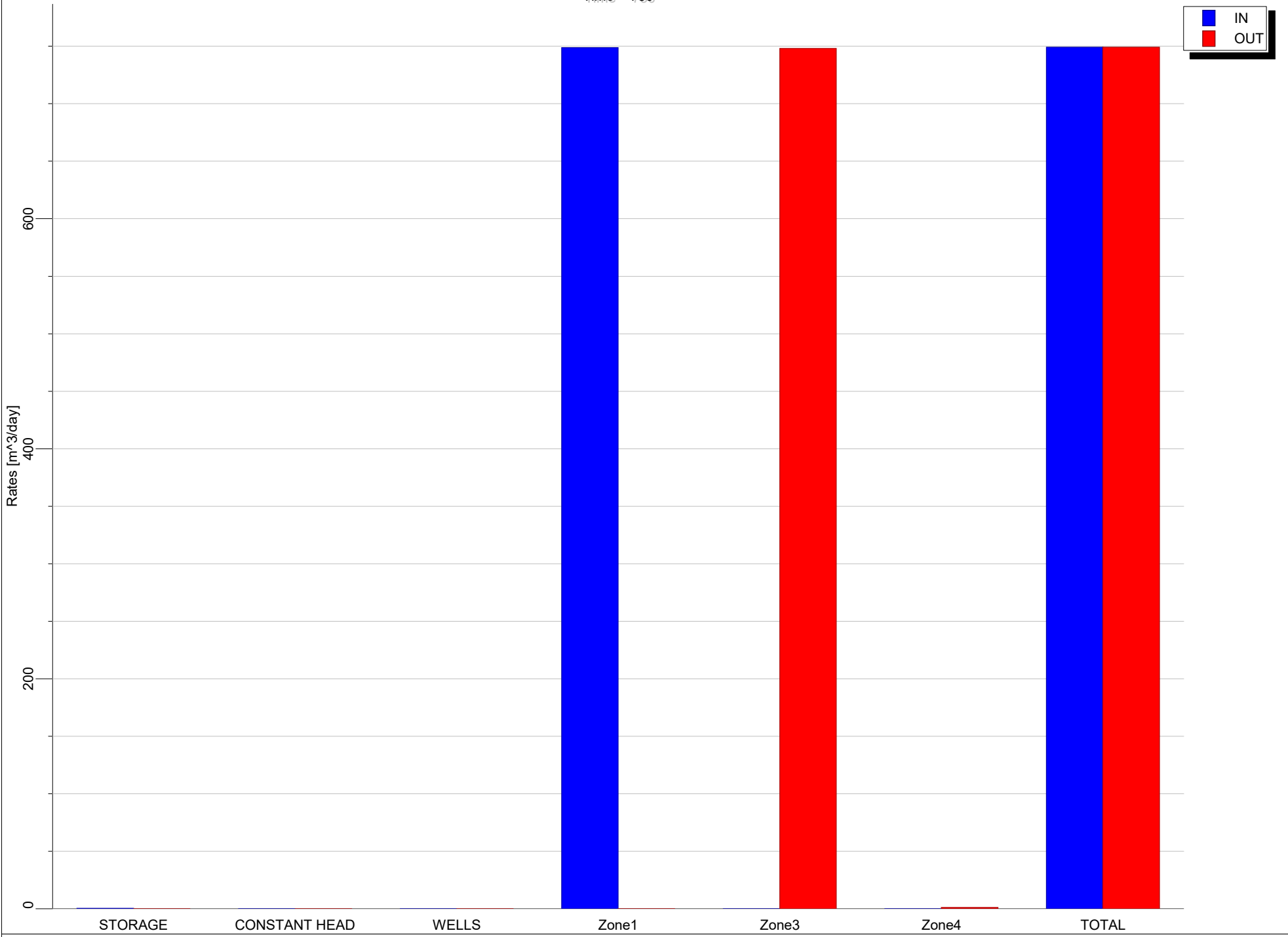
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Zone 1
Scenario 4.1
No Abandoned Well

Appendix C - Zone Budget Charts

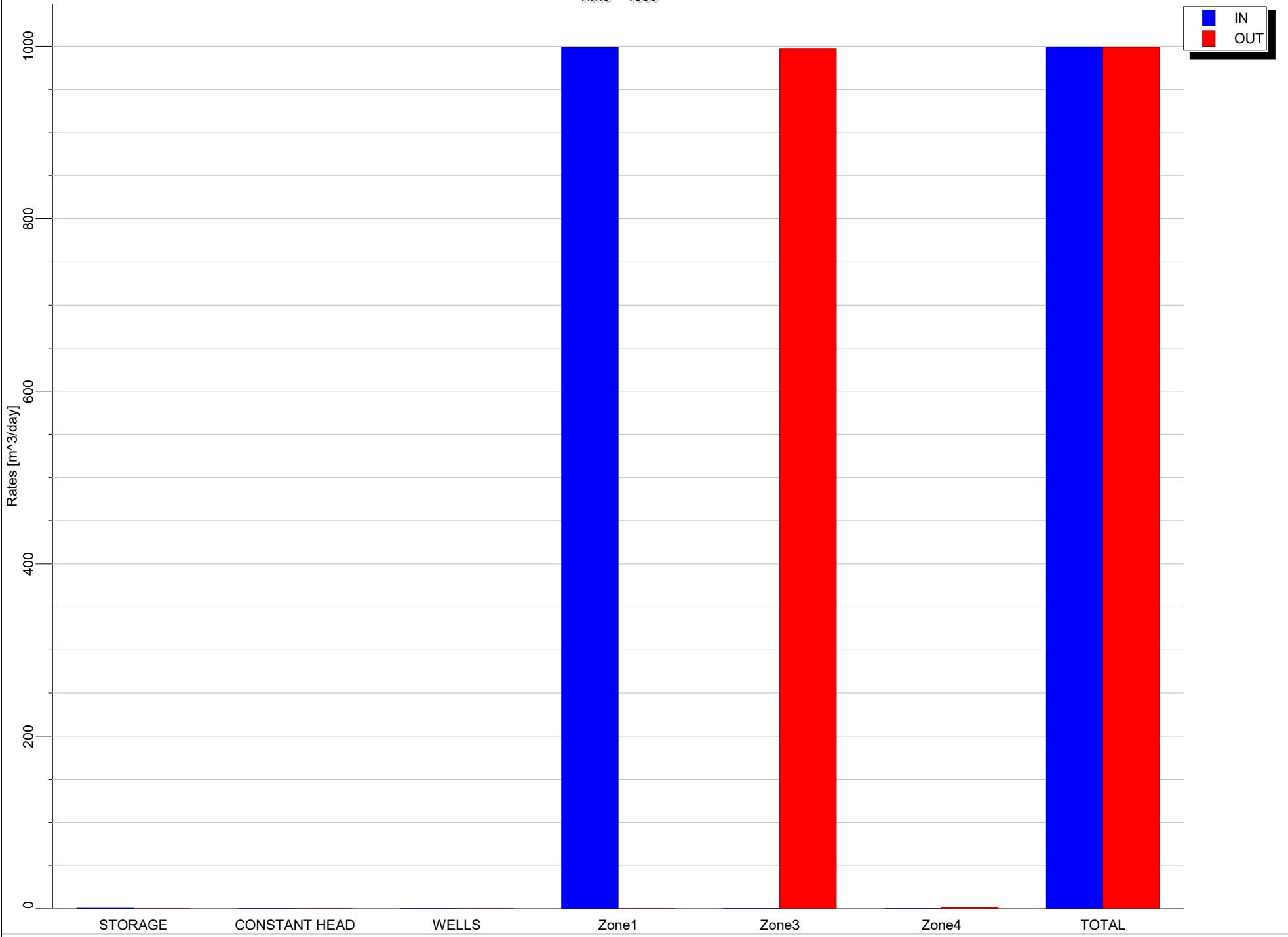
Time = 750



Zone 2
Scenario 4.1
No Abandoned Well

Appendix C - Zone Budget Charts

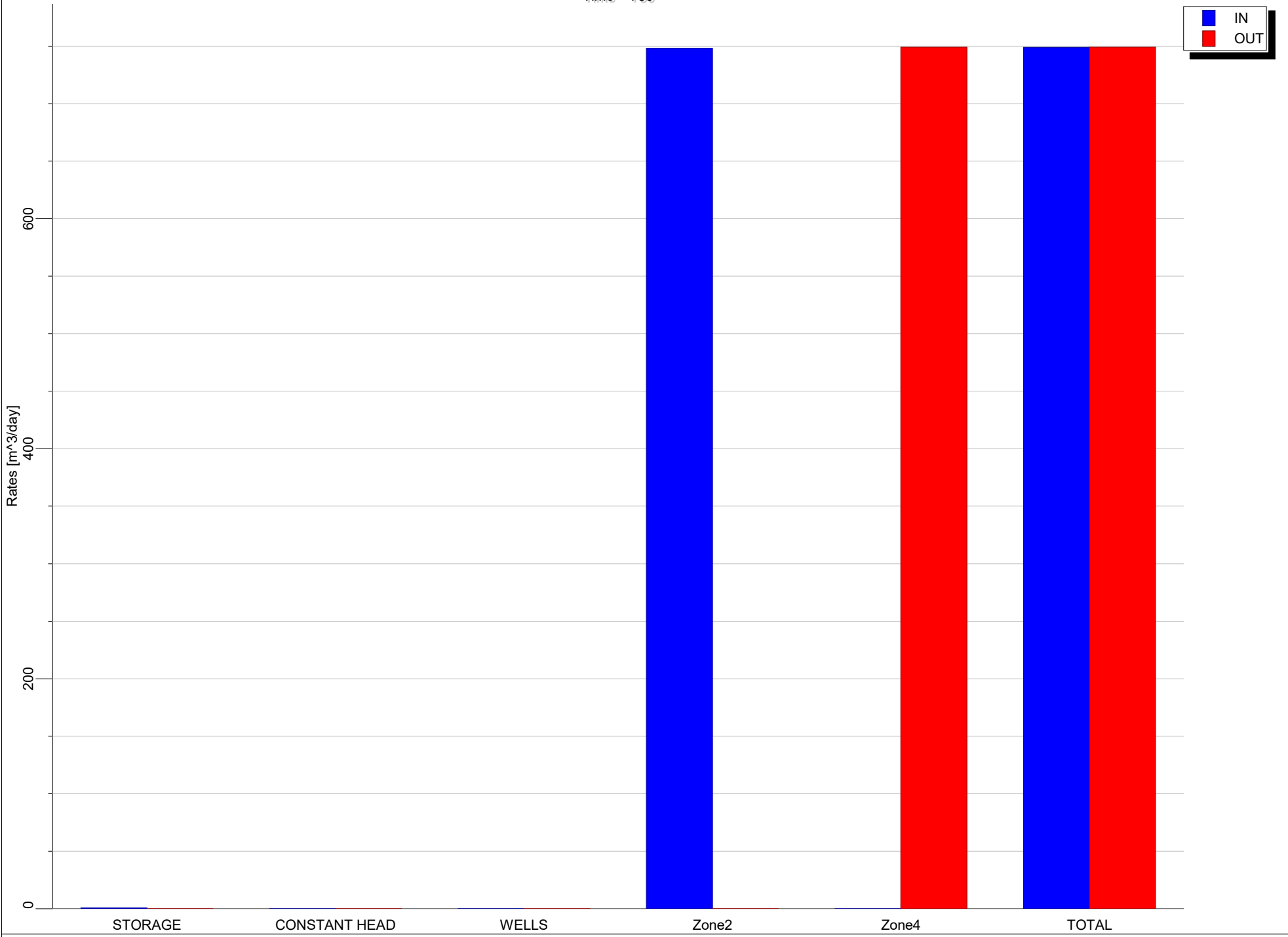
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Zone 2
Scenario 4.1
No Abandoned Well

Appendix C - Zone Budget Charts

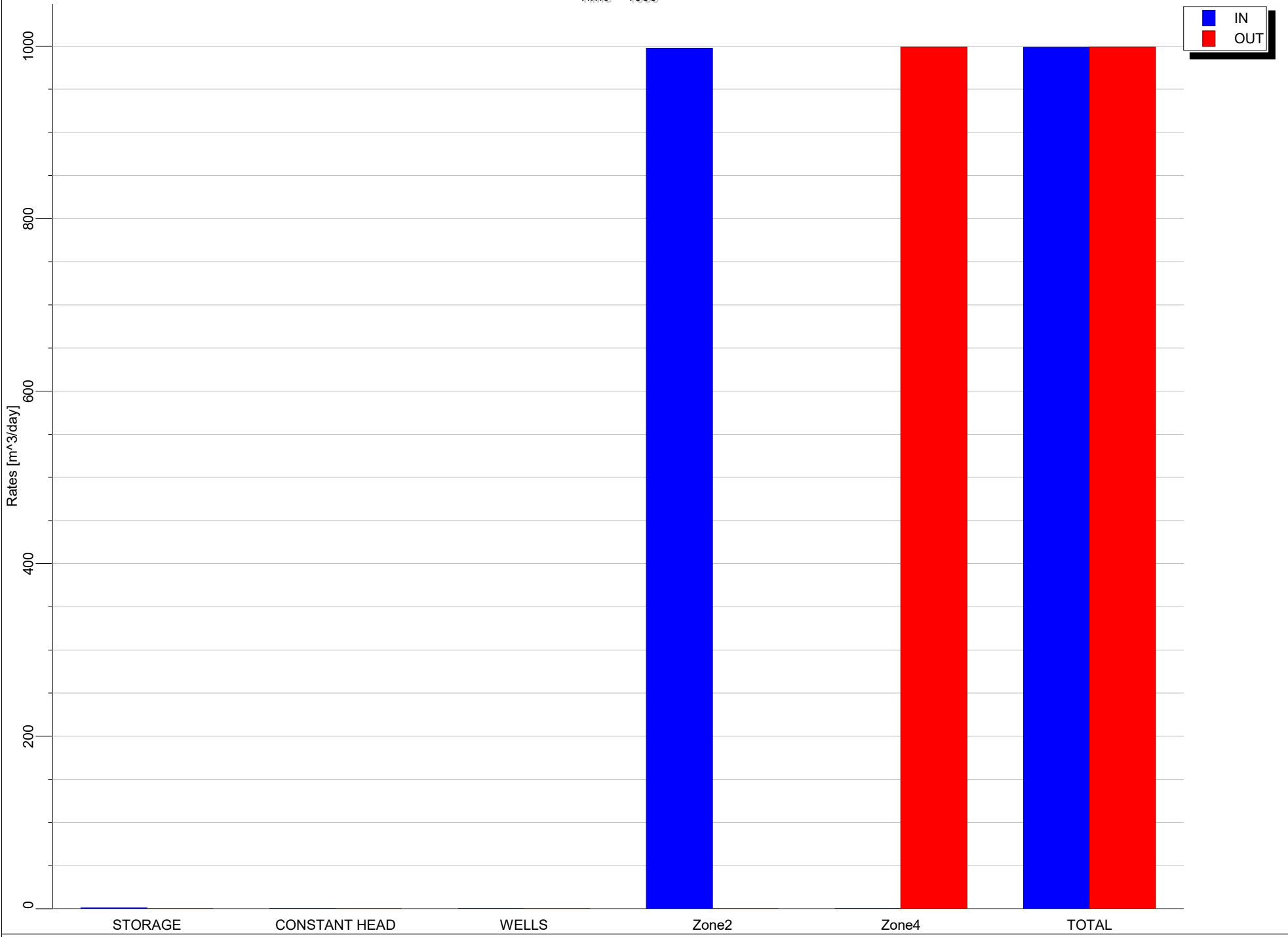
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Zone 3
Scenario 4.1
No Abandoned Well

Appendix C - Zone Budget Charts

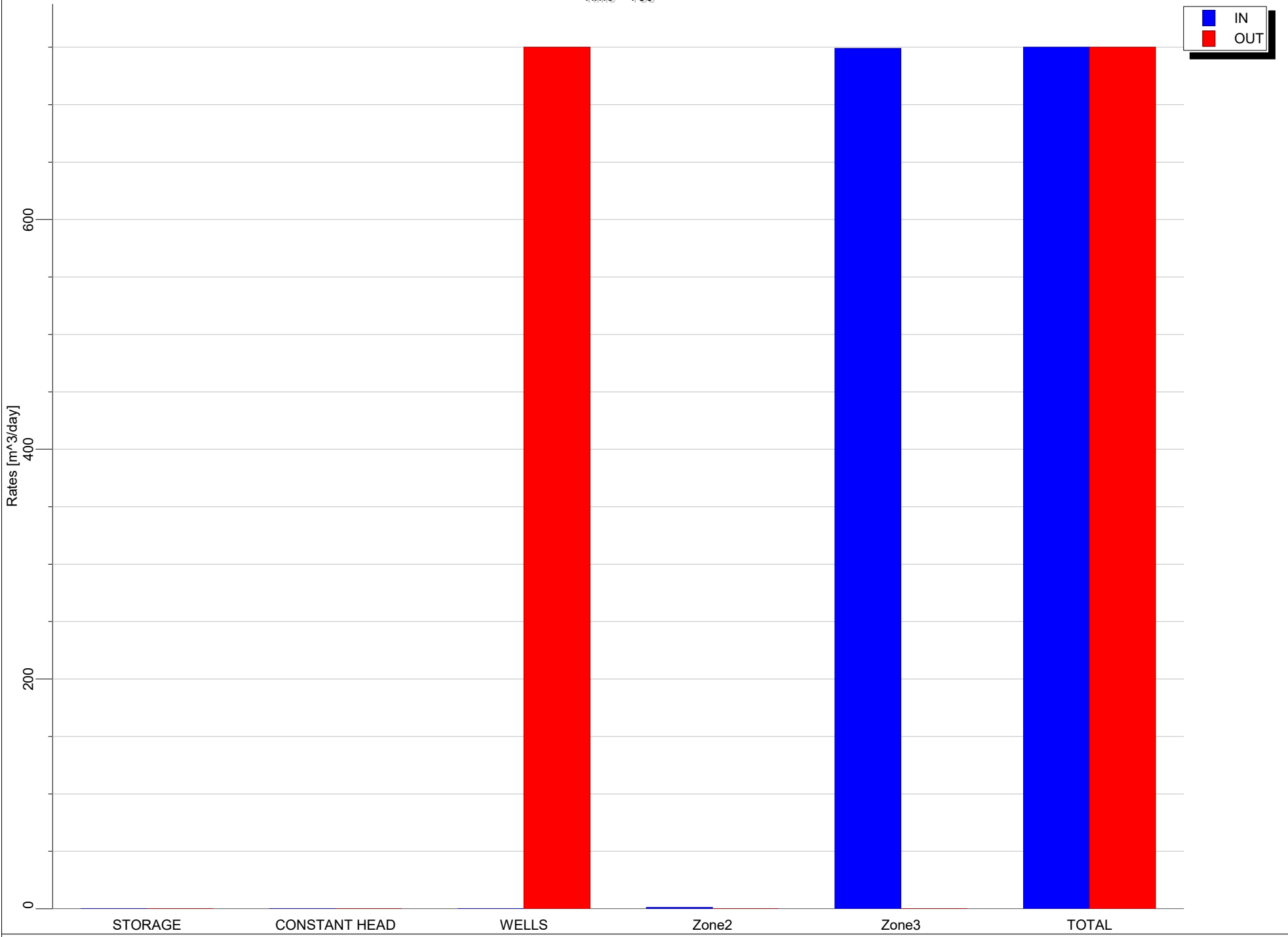
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Zone 3
Scenario 4.1
No Abandoned Well

Appendix C - Zone Budget Charts

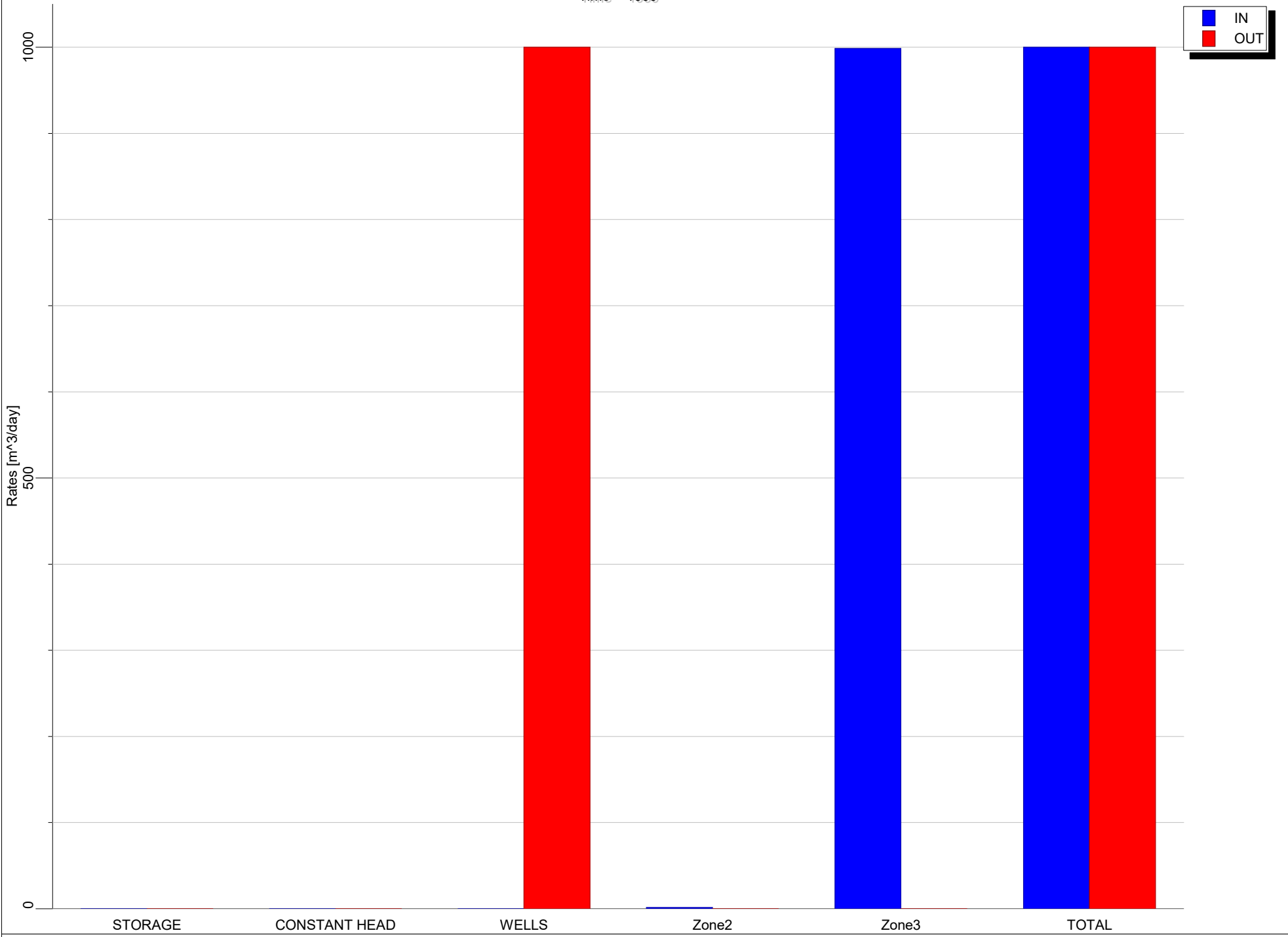
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Zone 4
Scenario 4.1
No Abandoned Well

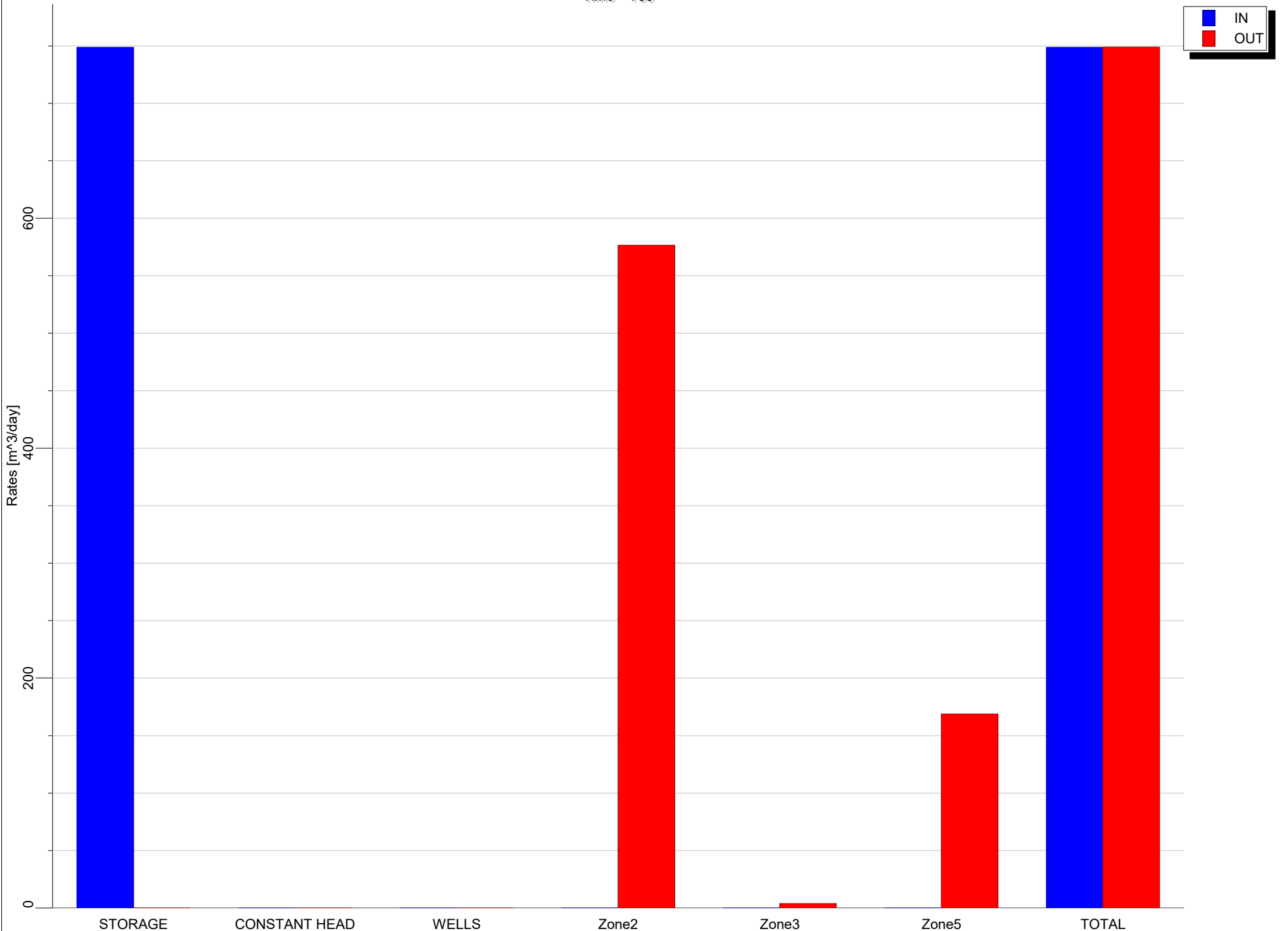
Appendix C - Zone Budget Charts

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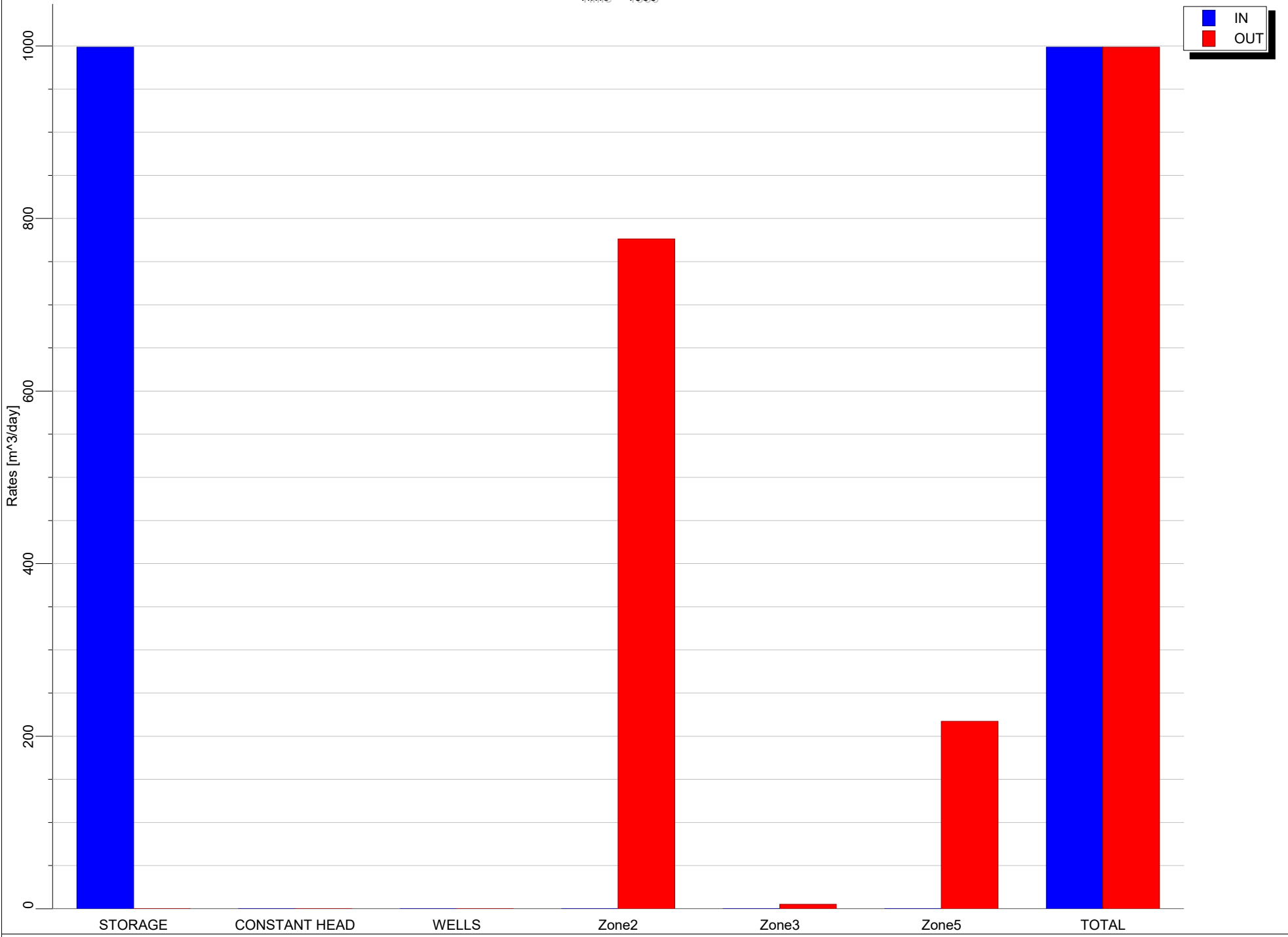
Zone 4
Scenario 4.1
No Abandoned Well

Time = 750



Appendix C - Zone Budget Charts

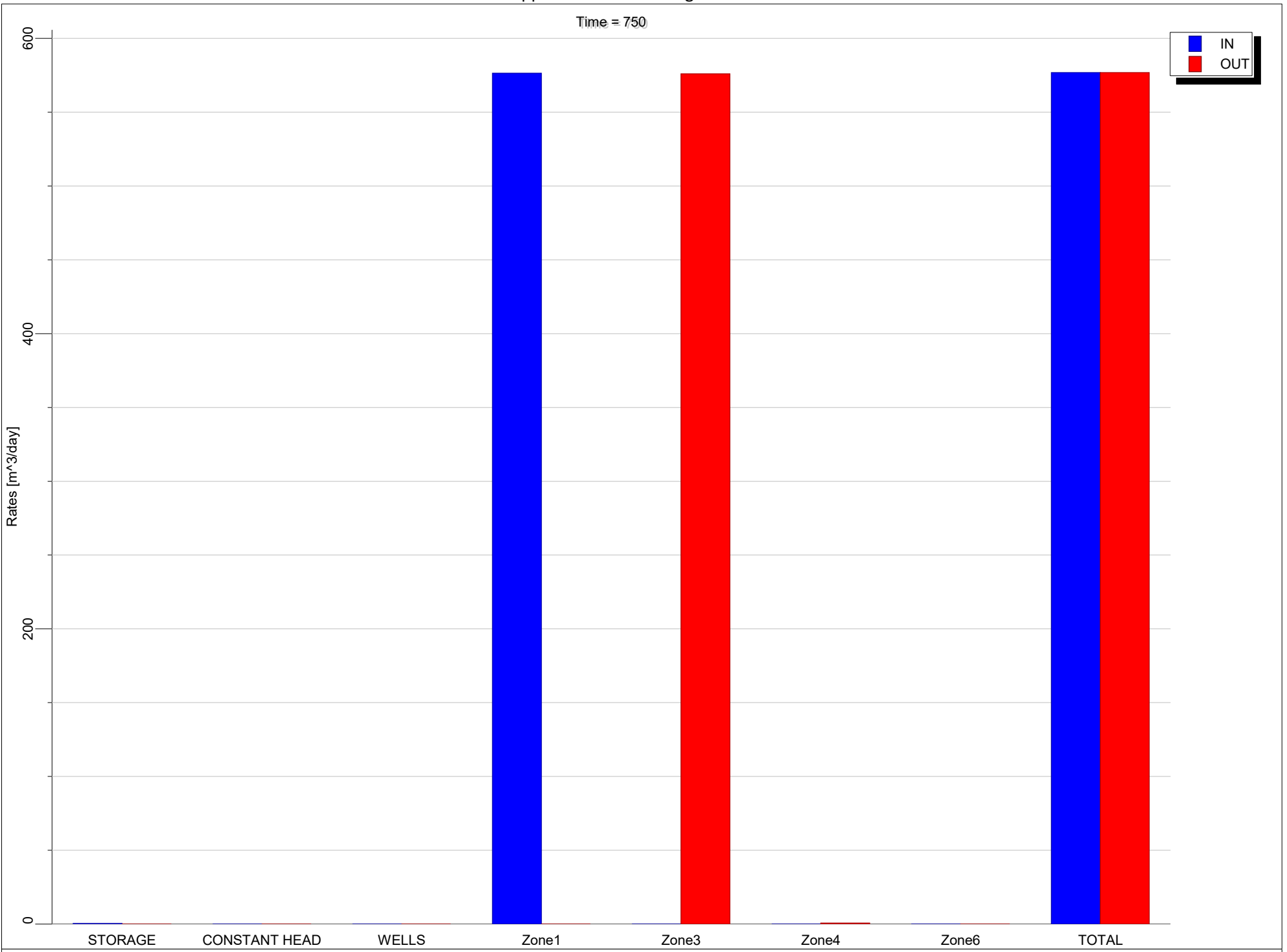
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Zone 1
Scenario 4.2
Abandoned Well 20m

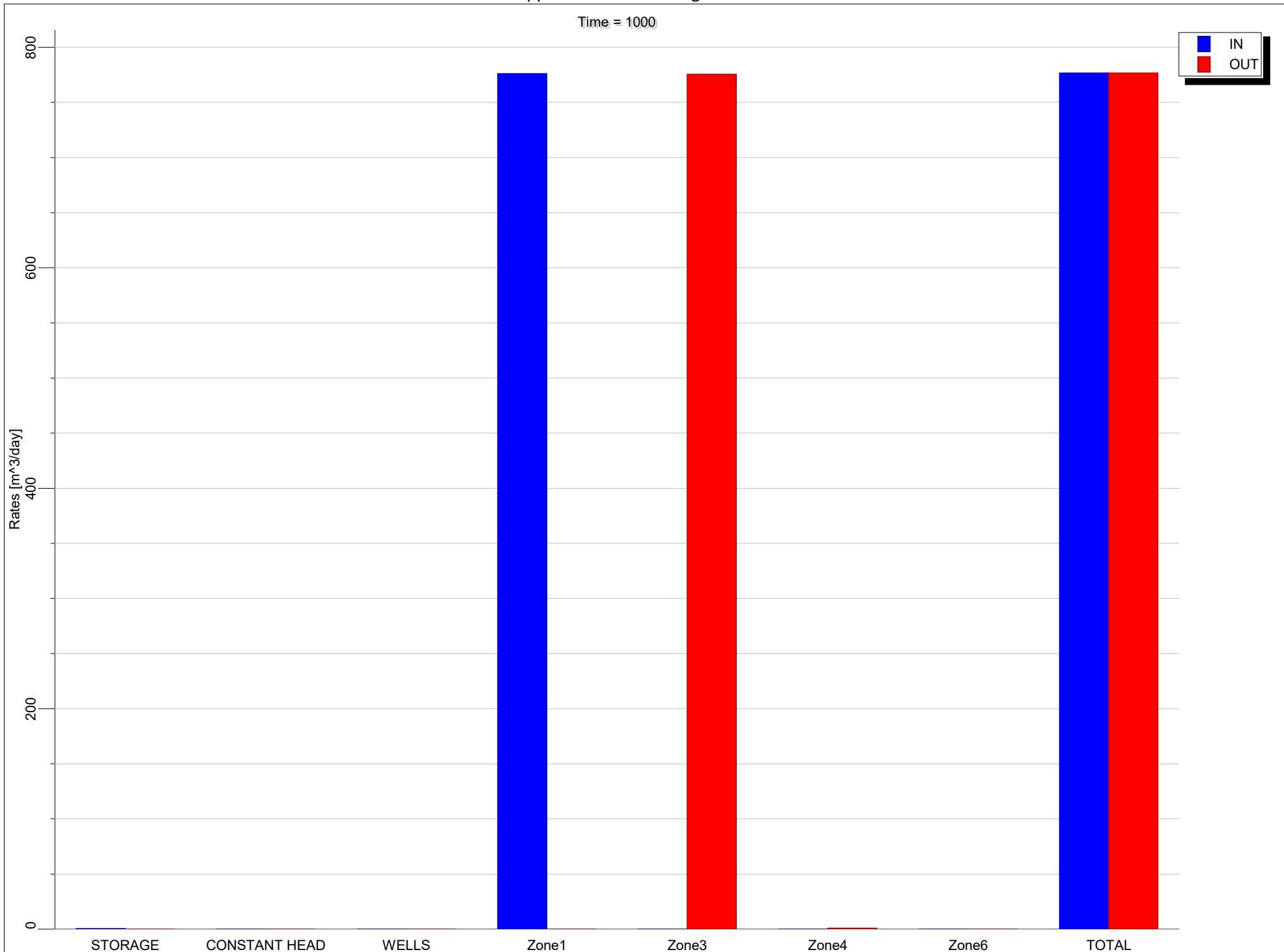
Appendix C - Zone Budget Charts

Time = 750



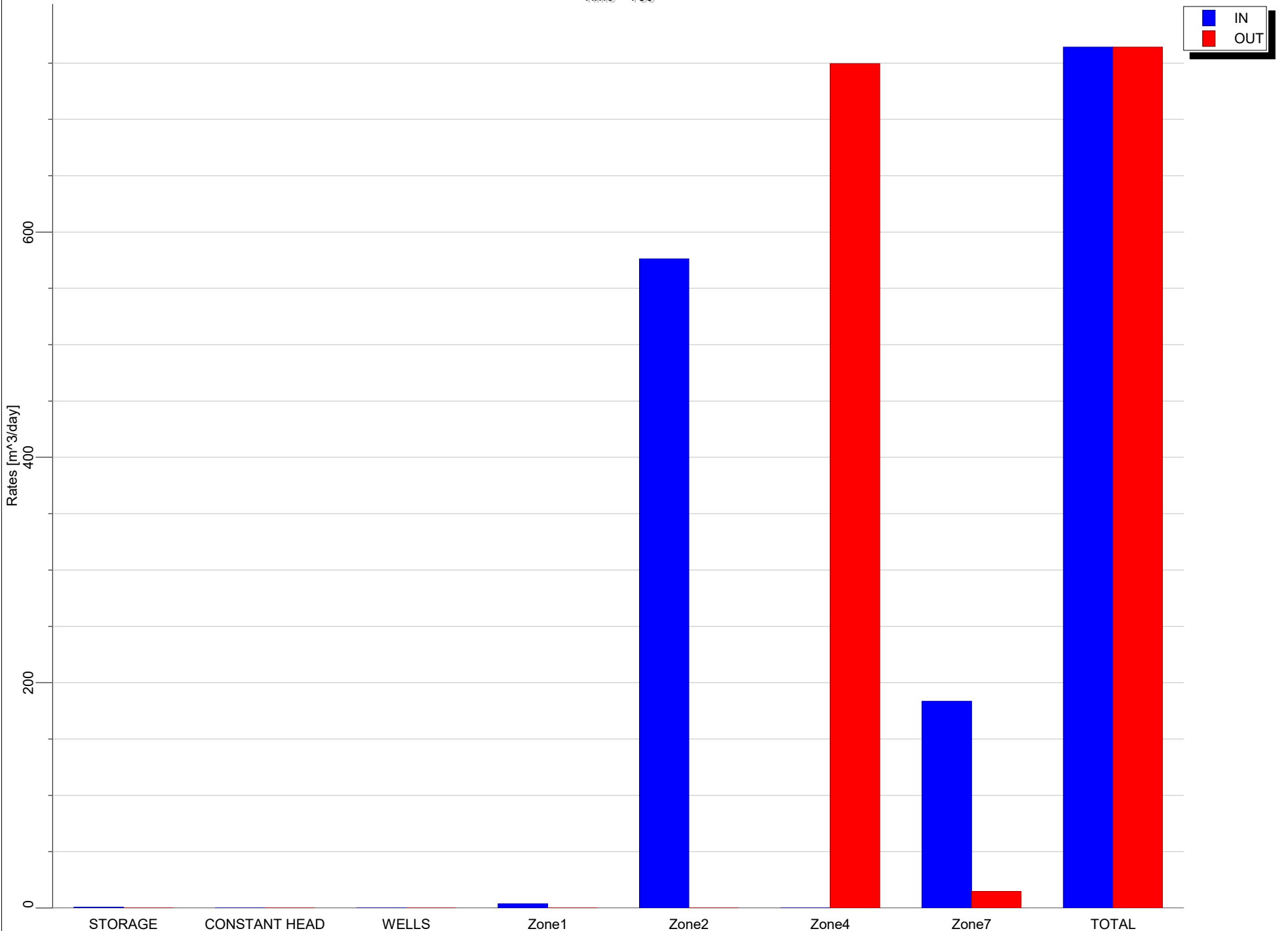
Appendix C - Zone Budget Charts

Time = 1000



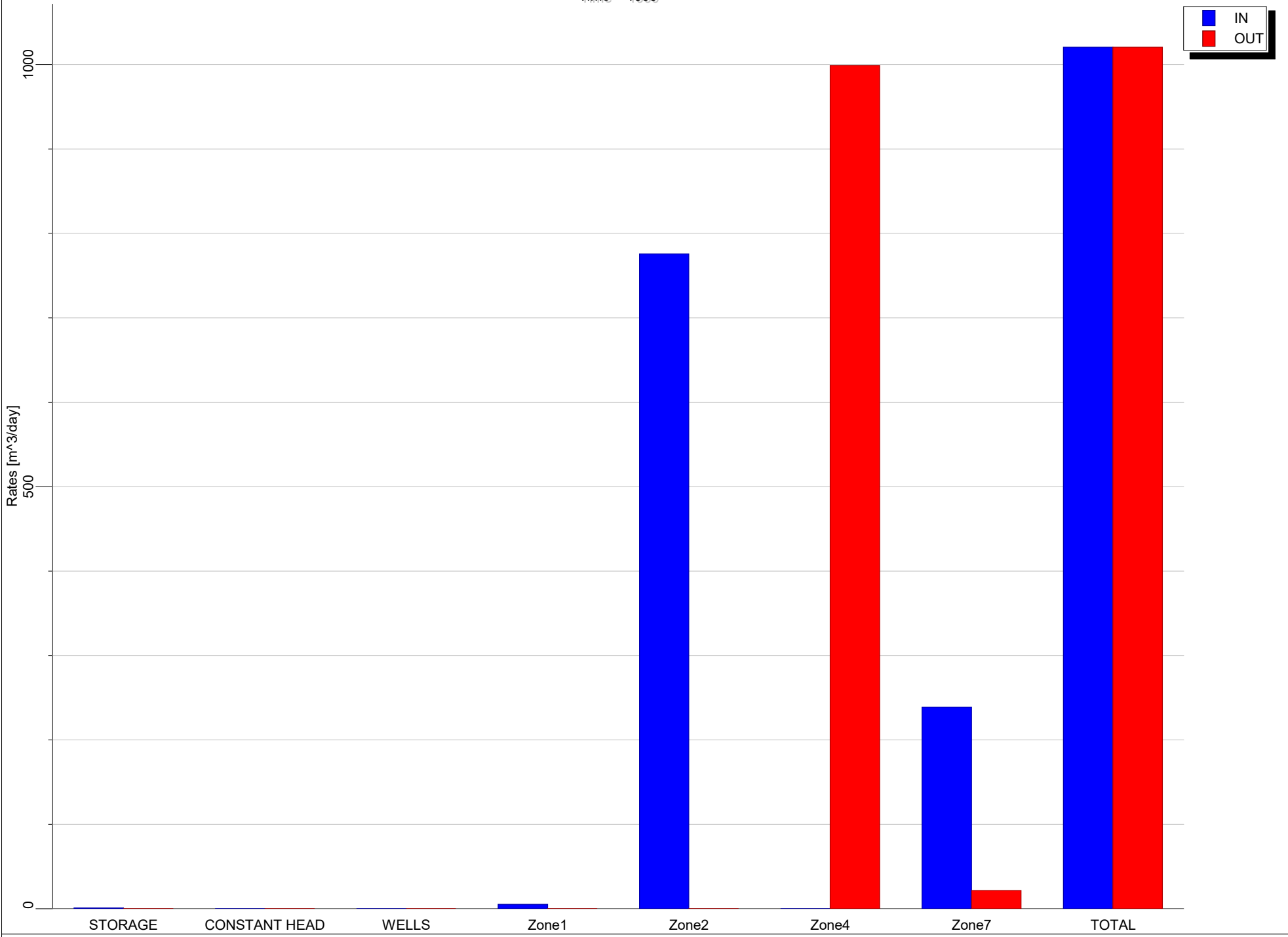
Appendix C - Zone Budget Charts

Time = 750



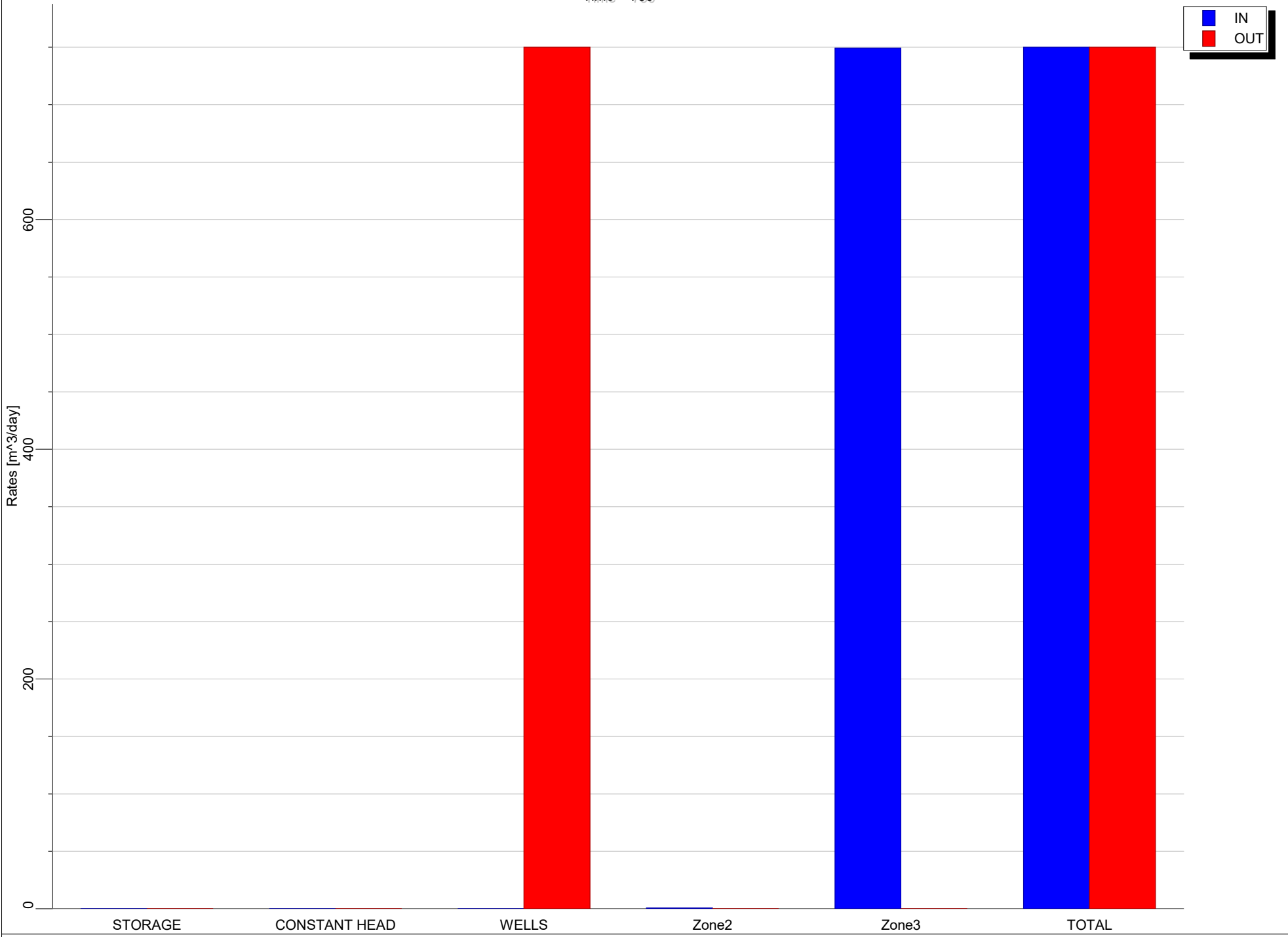
Appendix C - Zone Budget Charts

Time = 1000



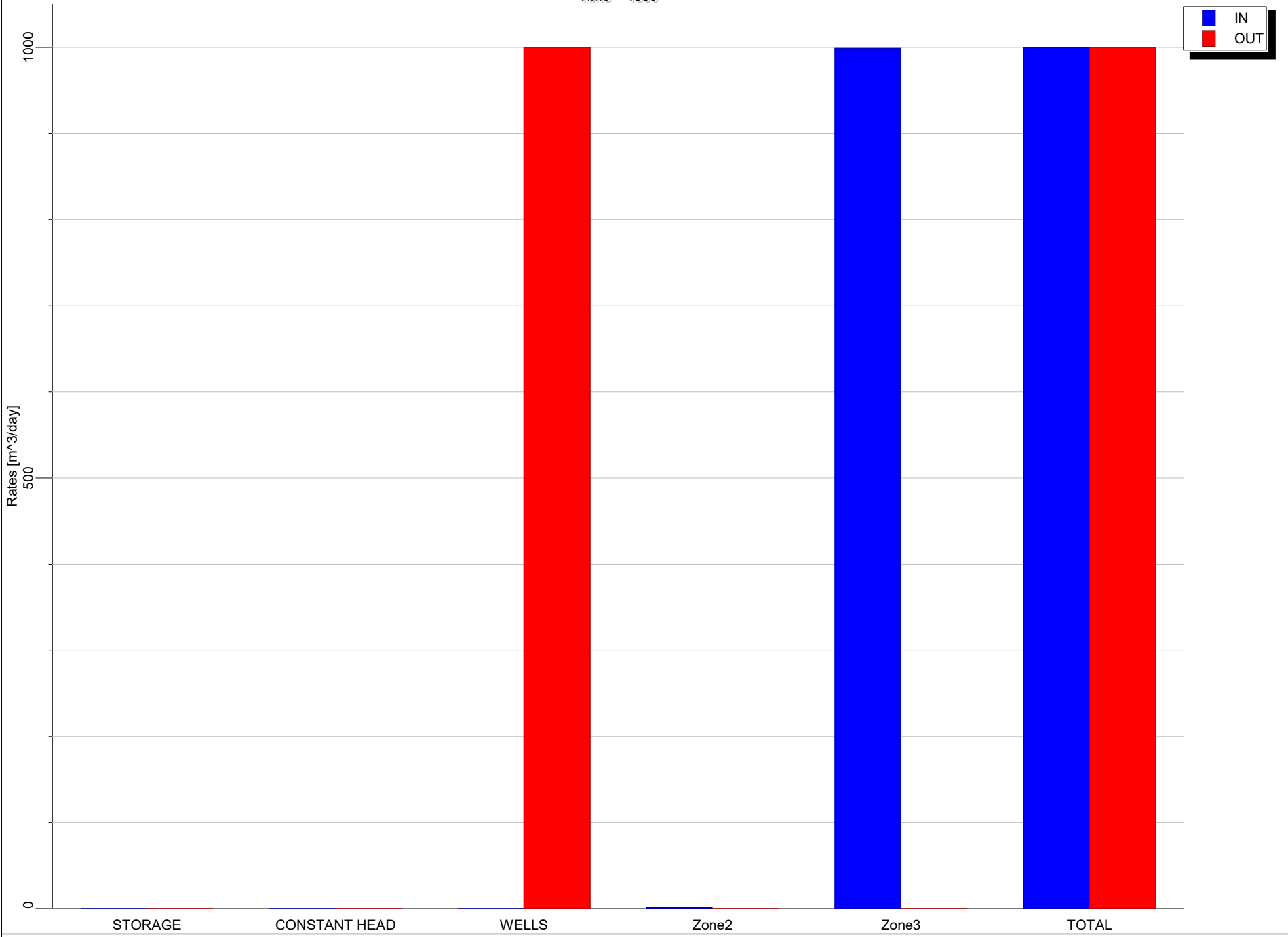
Appendix C - Zone Budget Charts

Time = 750



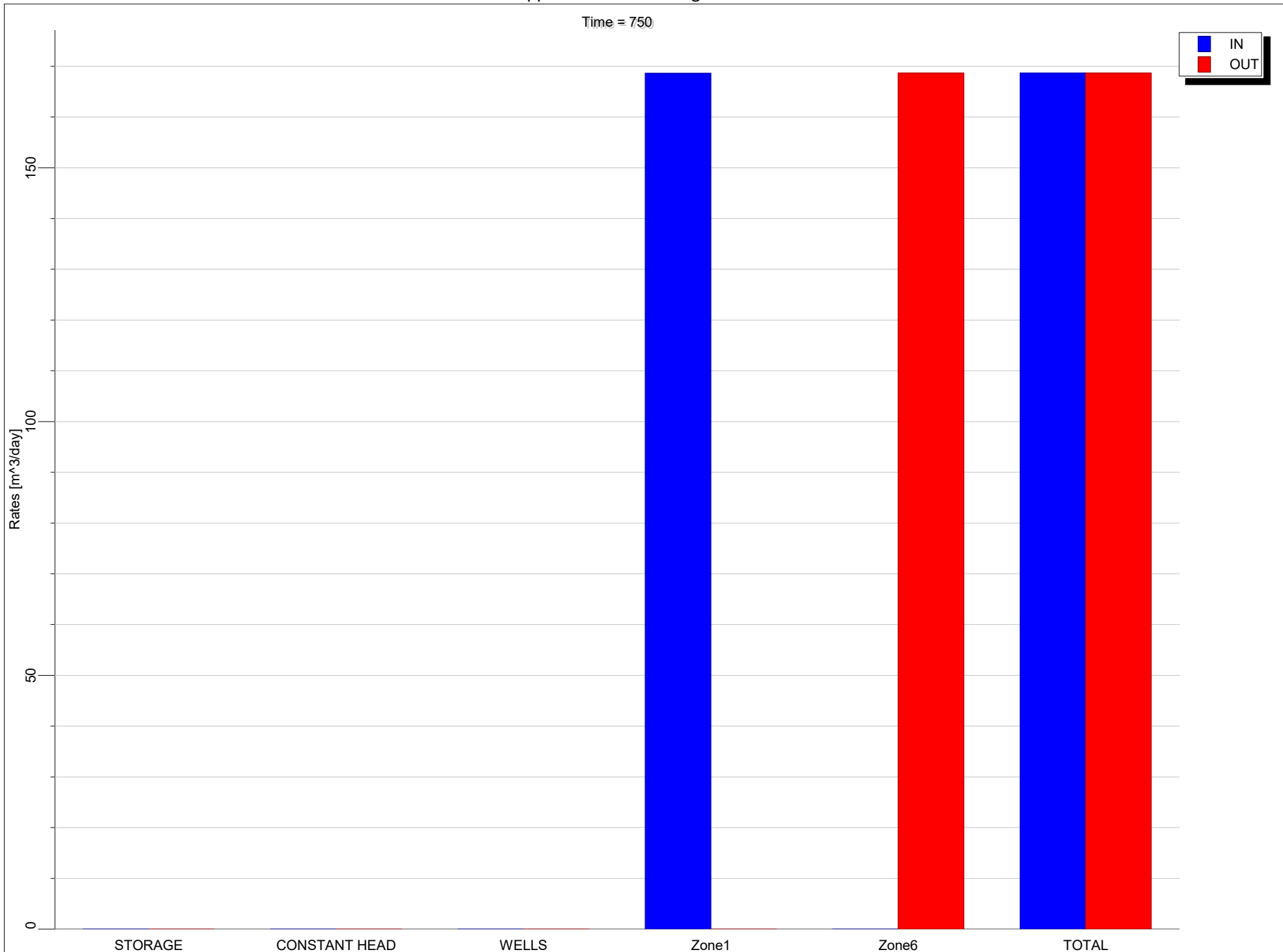
Appendix C - Zone Budget Charts

Time = 1000



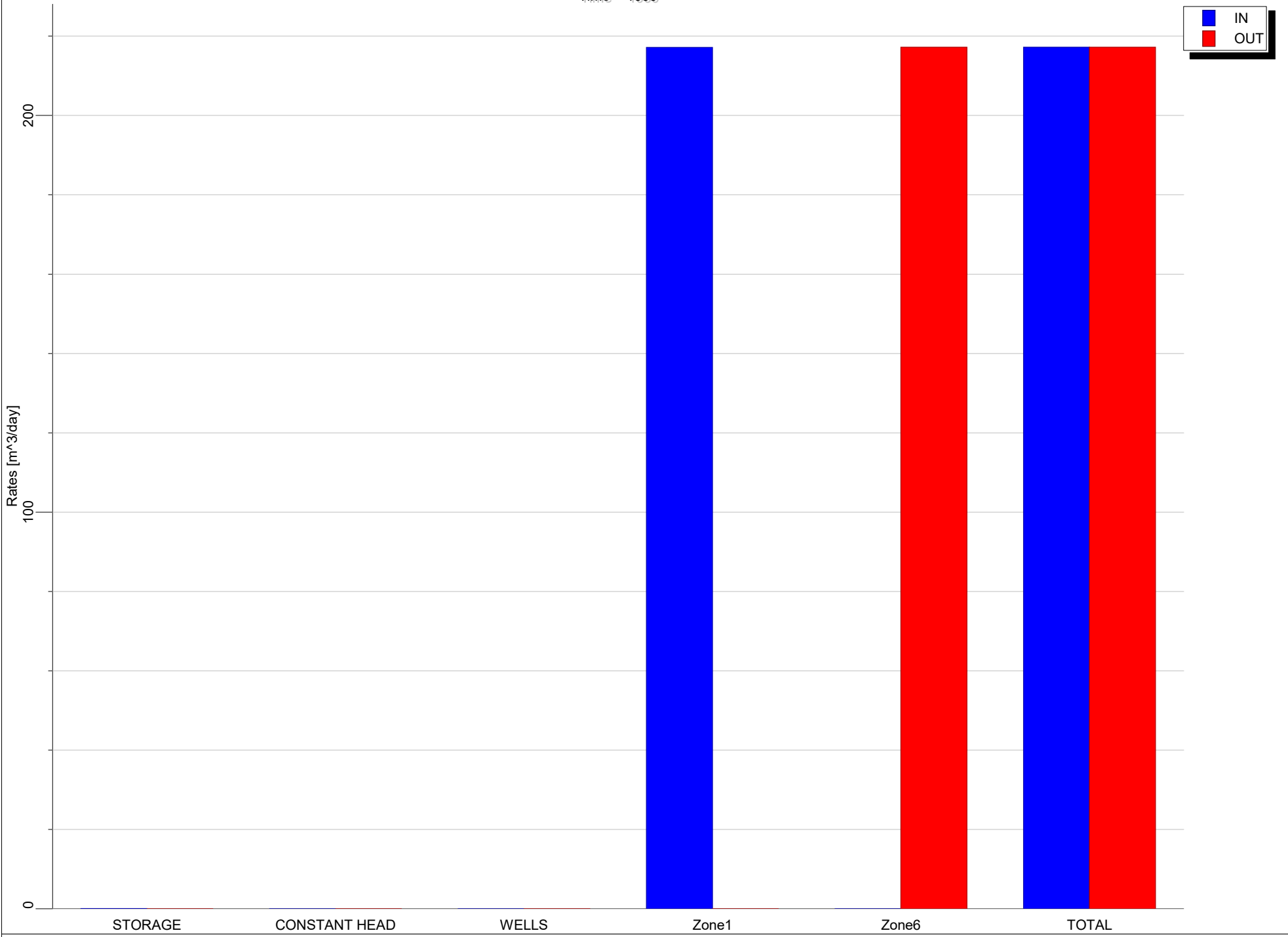
Appendix C - Zone Budget Charts

Time = 750



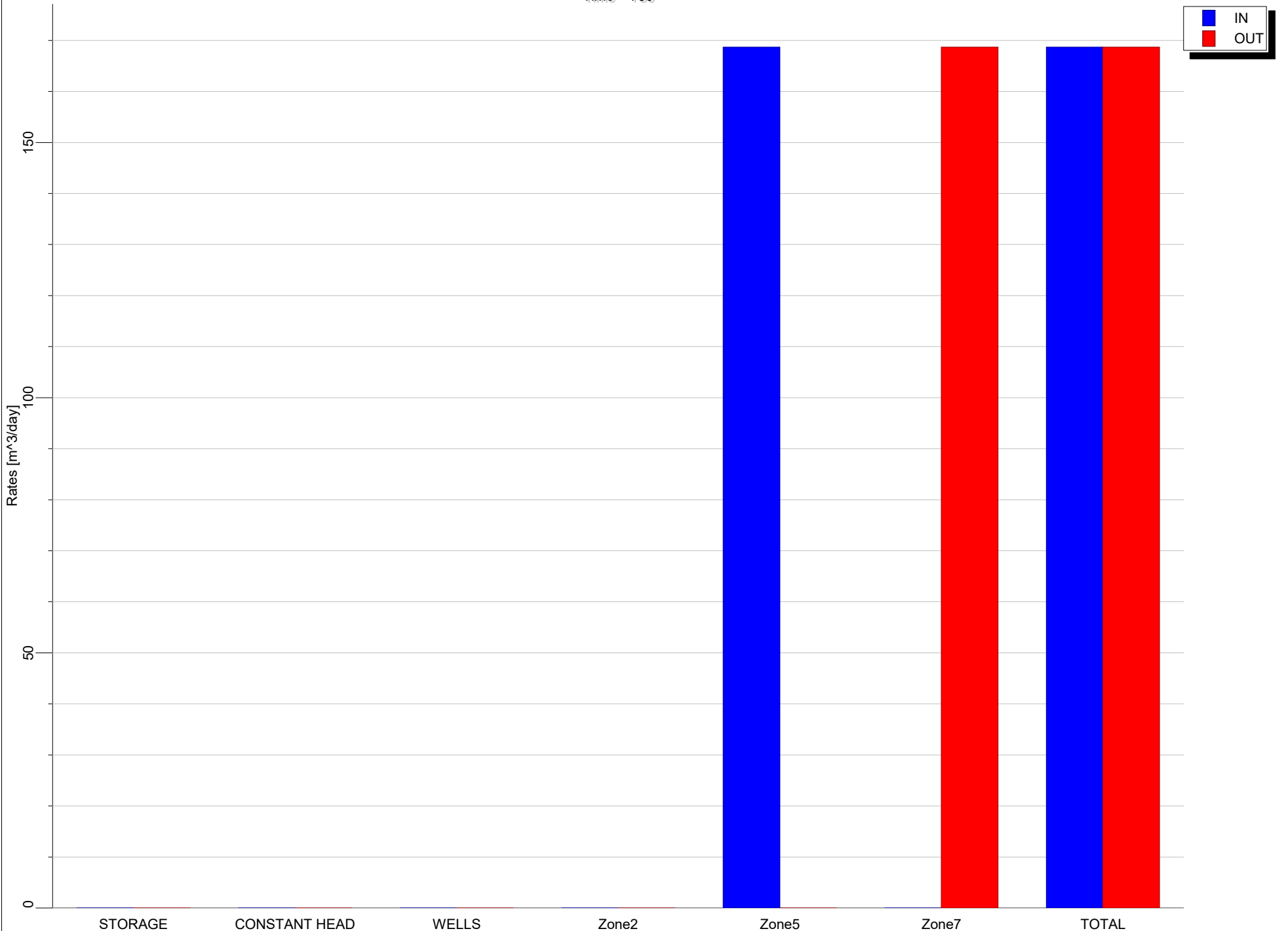
Appendix C - Zone Budget Charts

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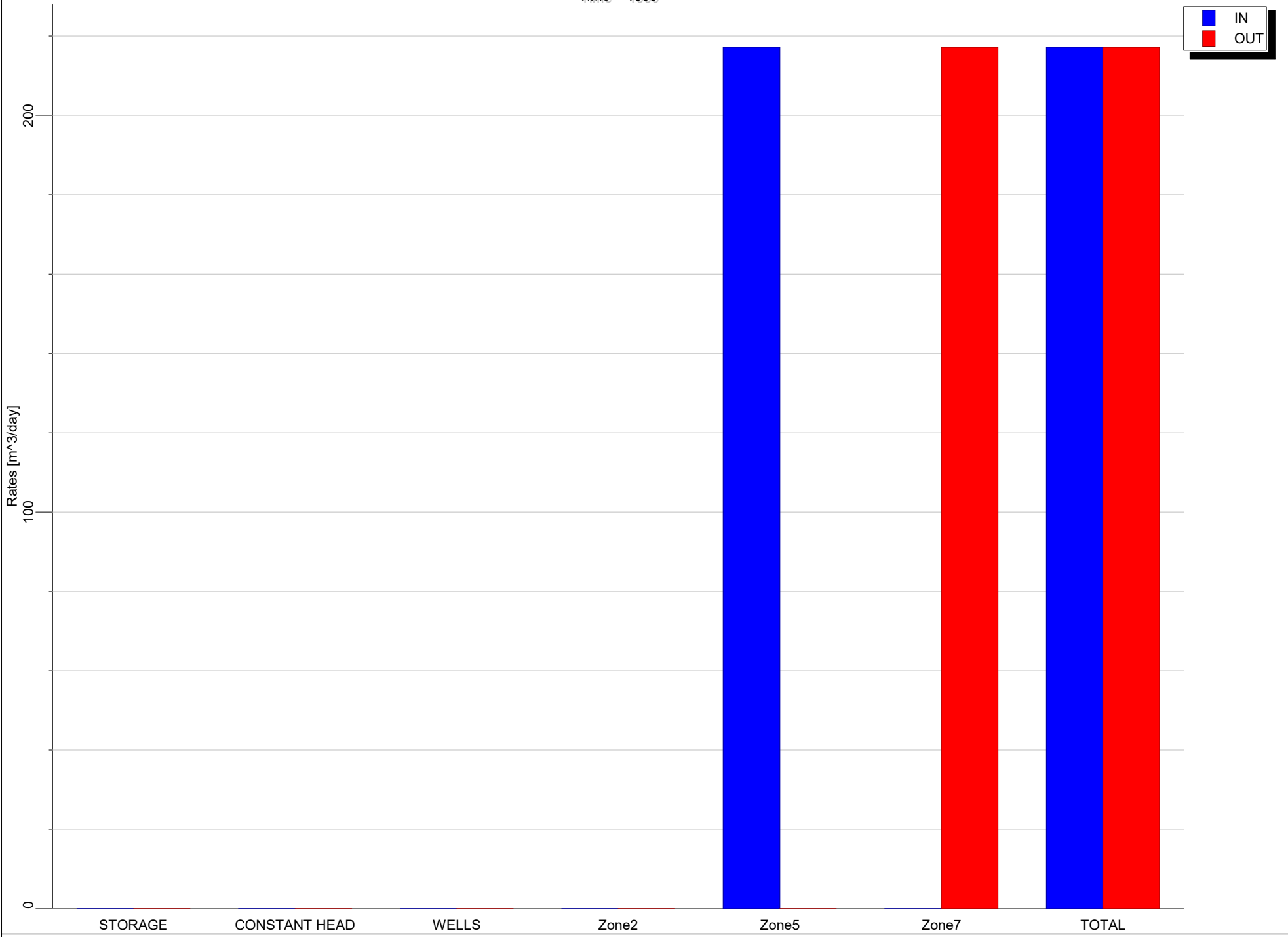
Appendix C - Zone Budget Charts

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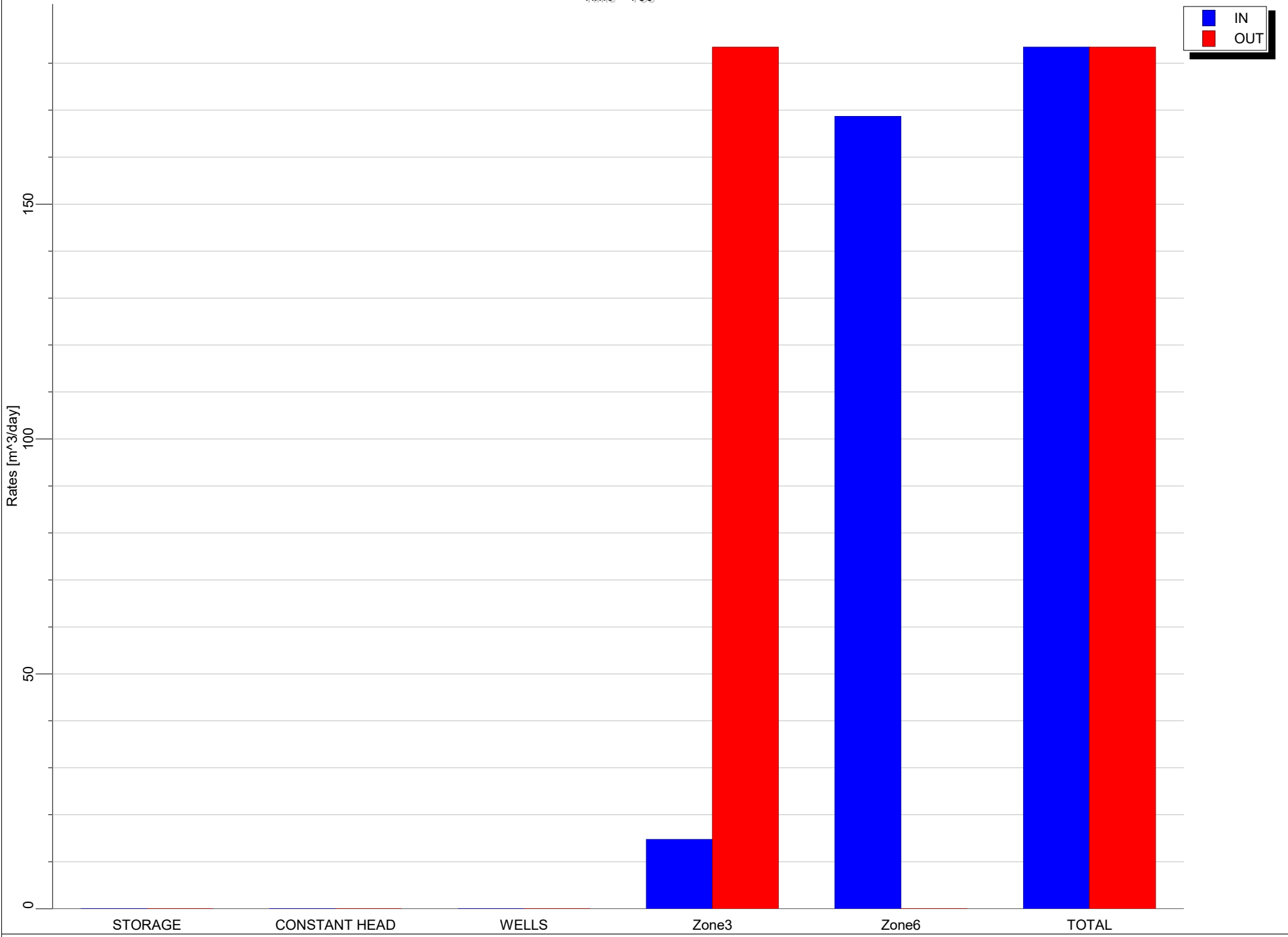
Appendix C - Zone Budget Charts

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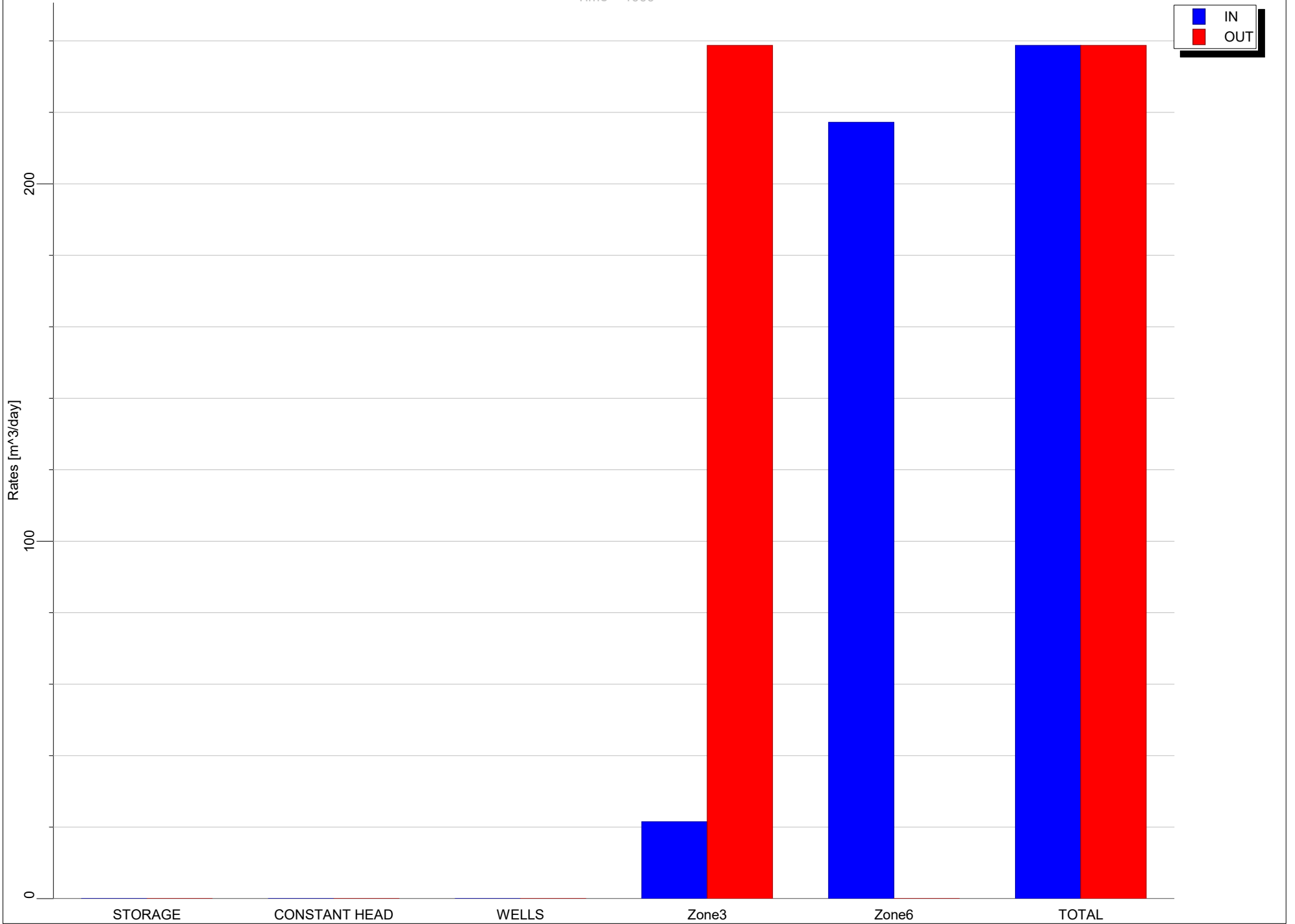
Appendix C - Zone Budget Charts

Time = 750

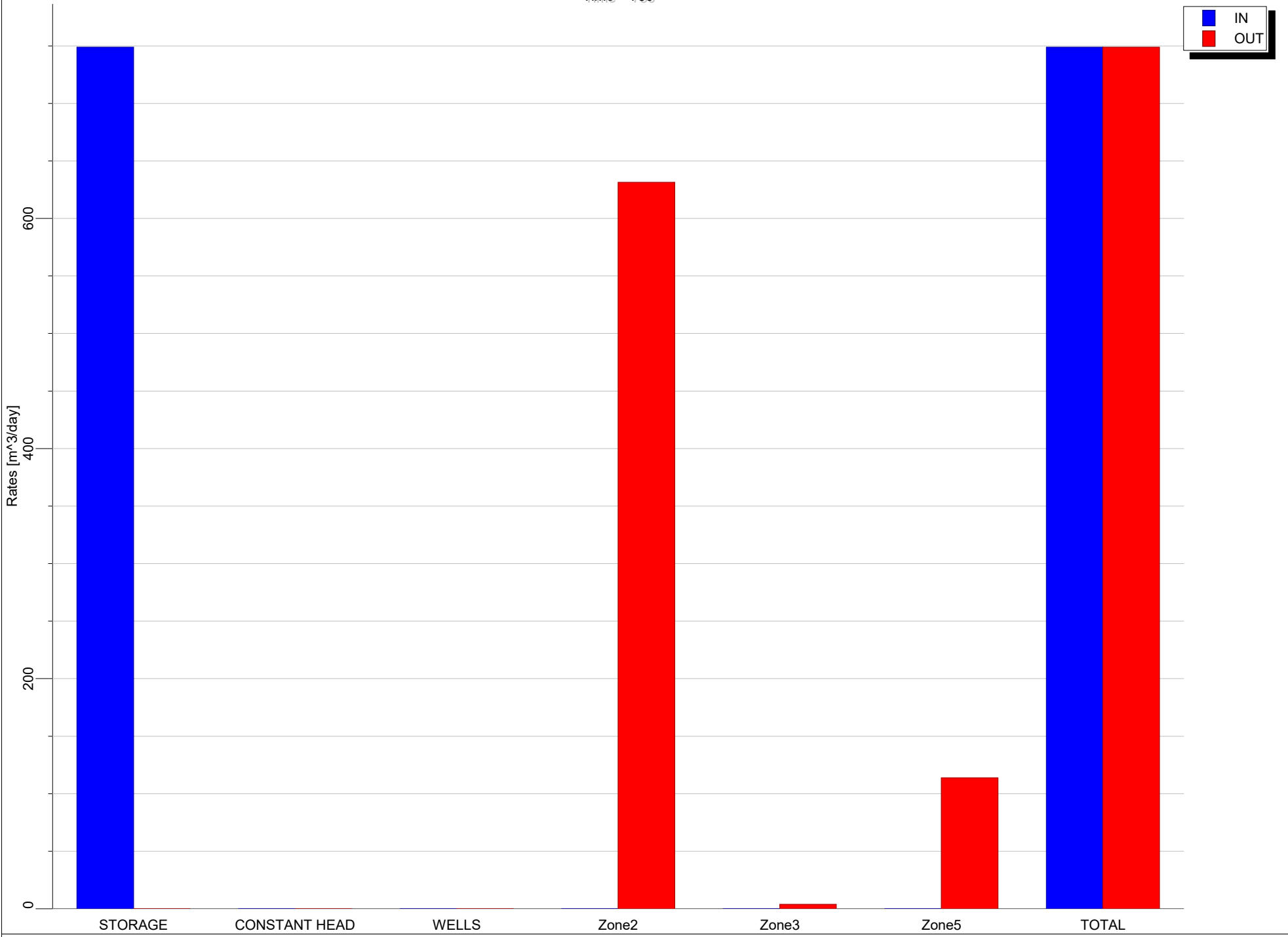


Appendix C - Zone Budget Charts

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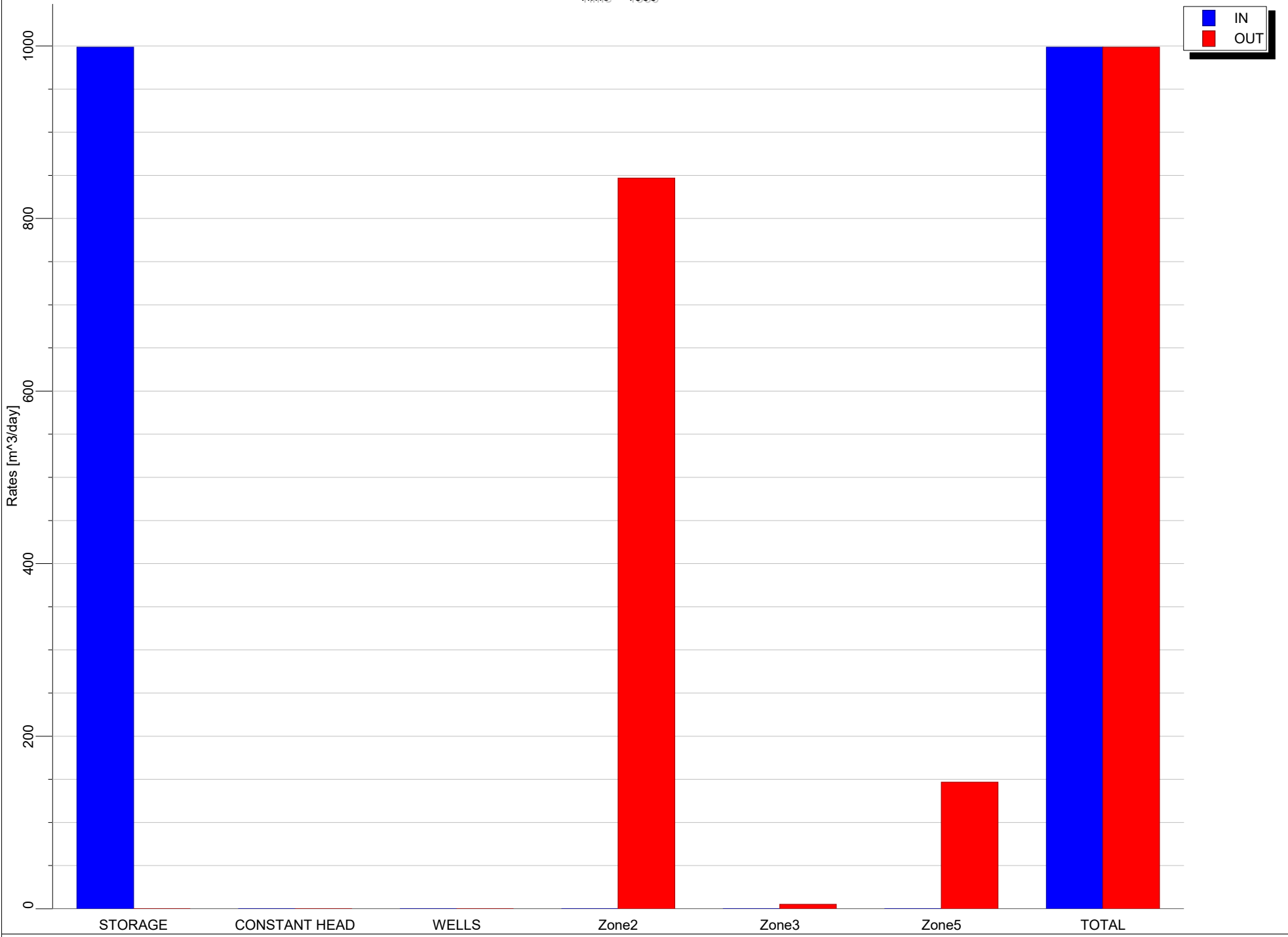


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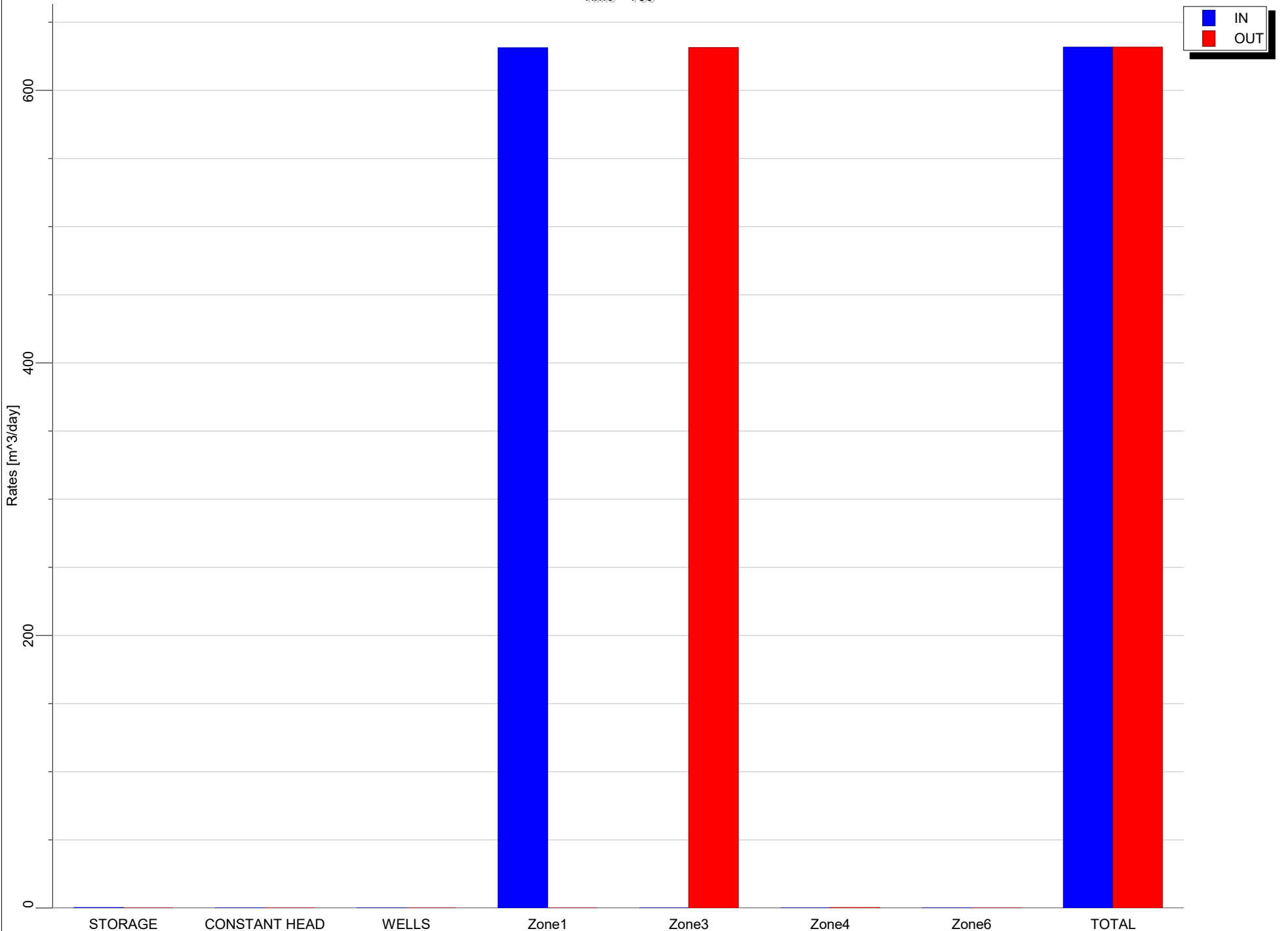
Appendix C - Zone Budget Charts

Time = 1000



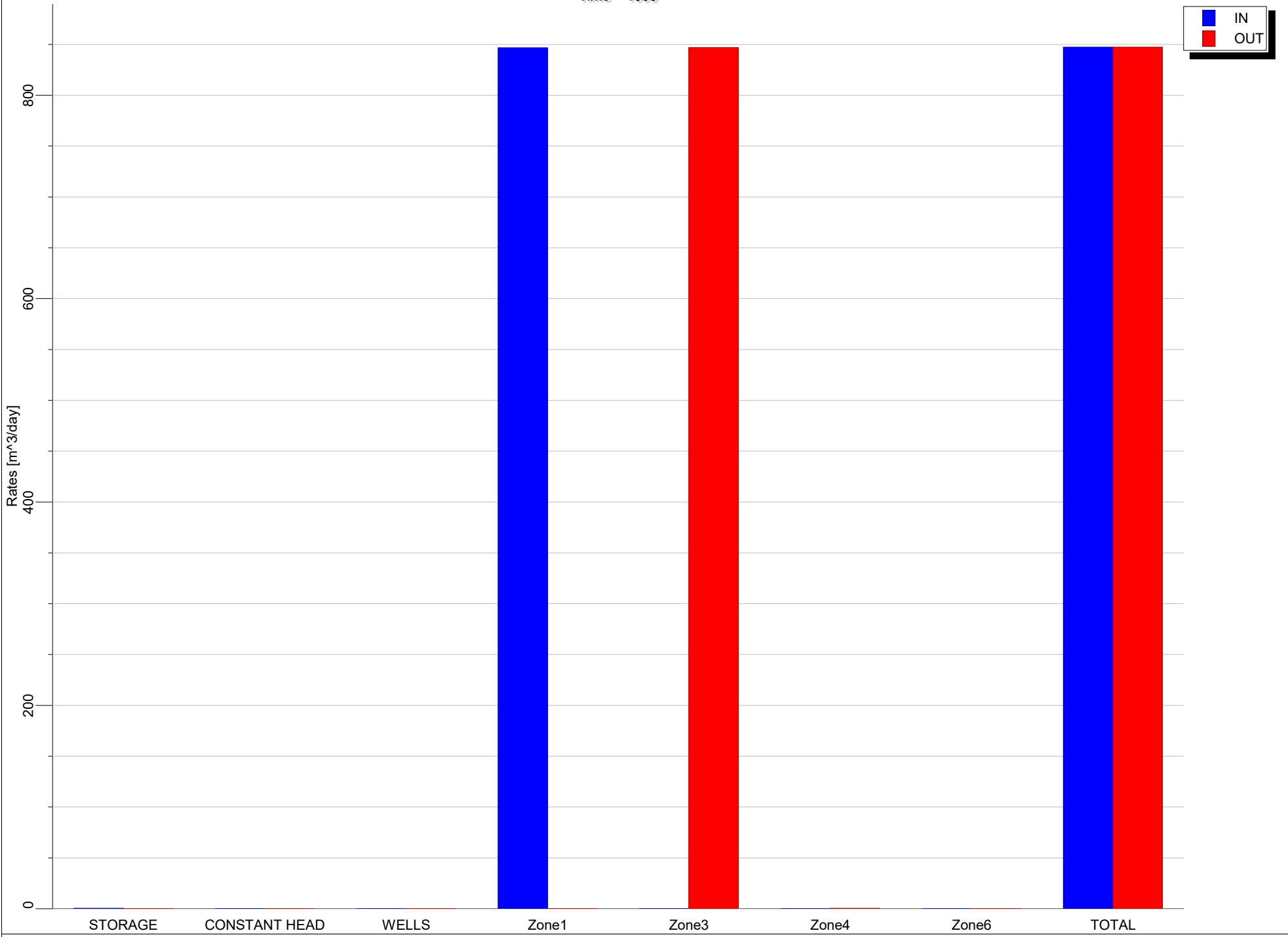
Appendix C - Zone Budget Charts

Time = 750



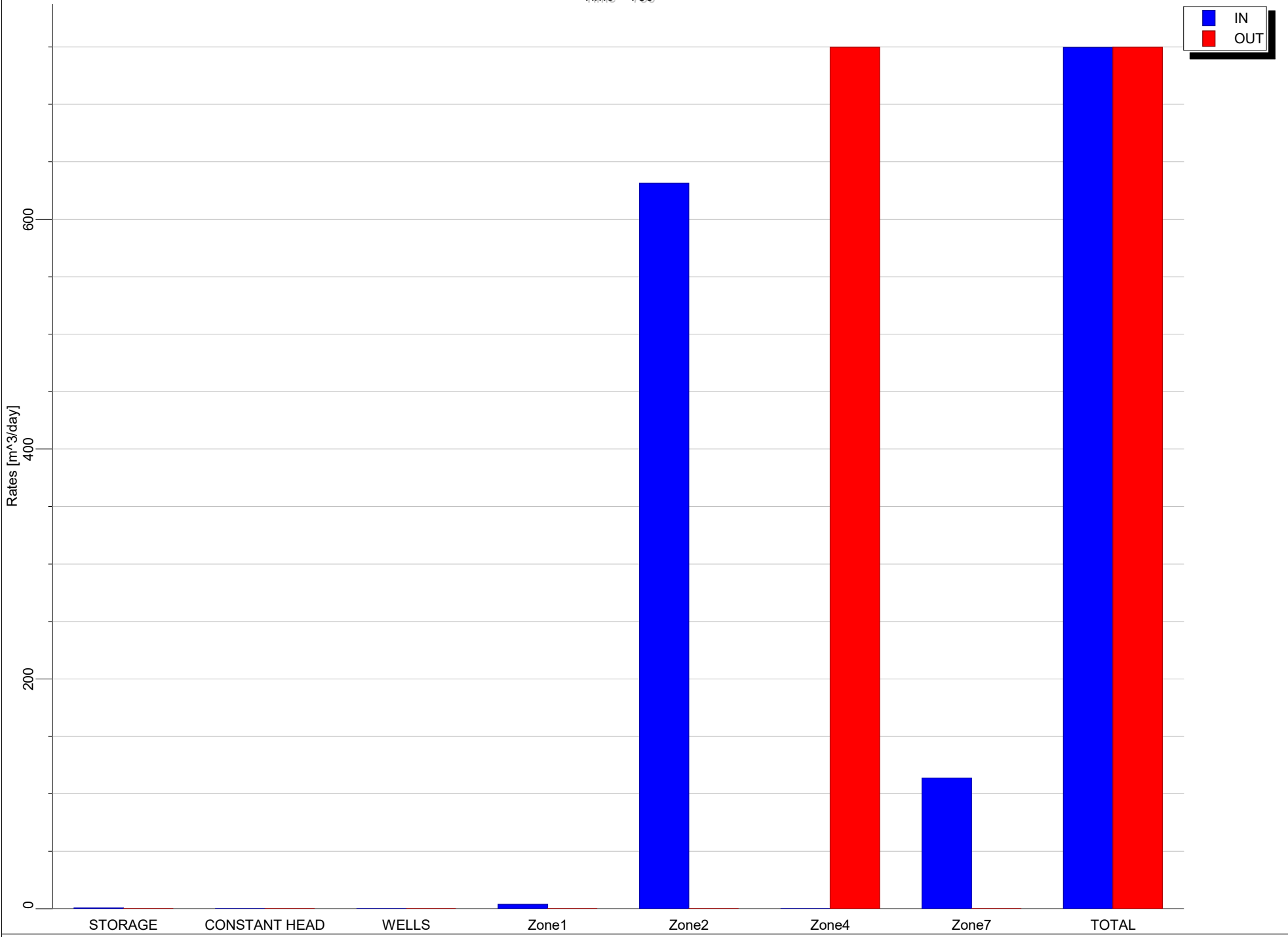
Appendix C - Zone Budget Charts

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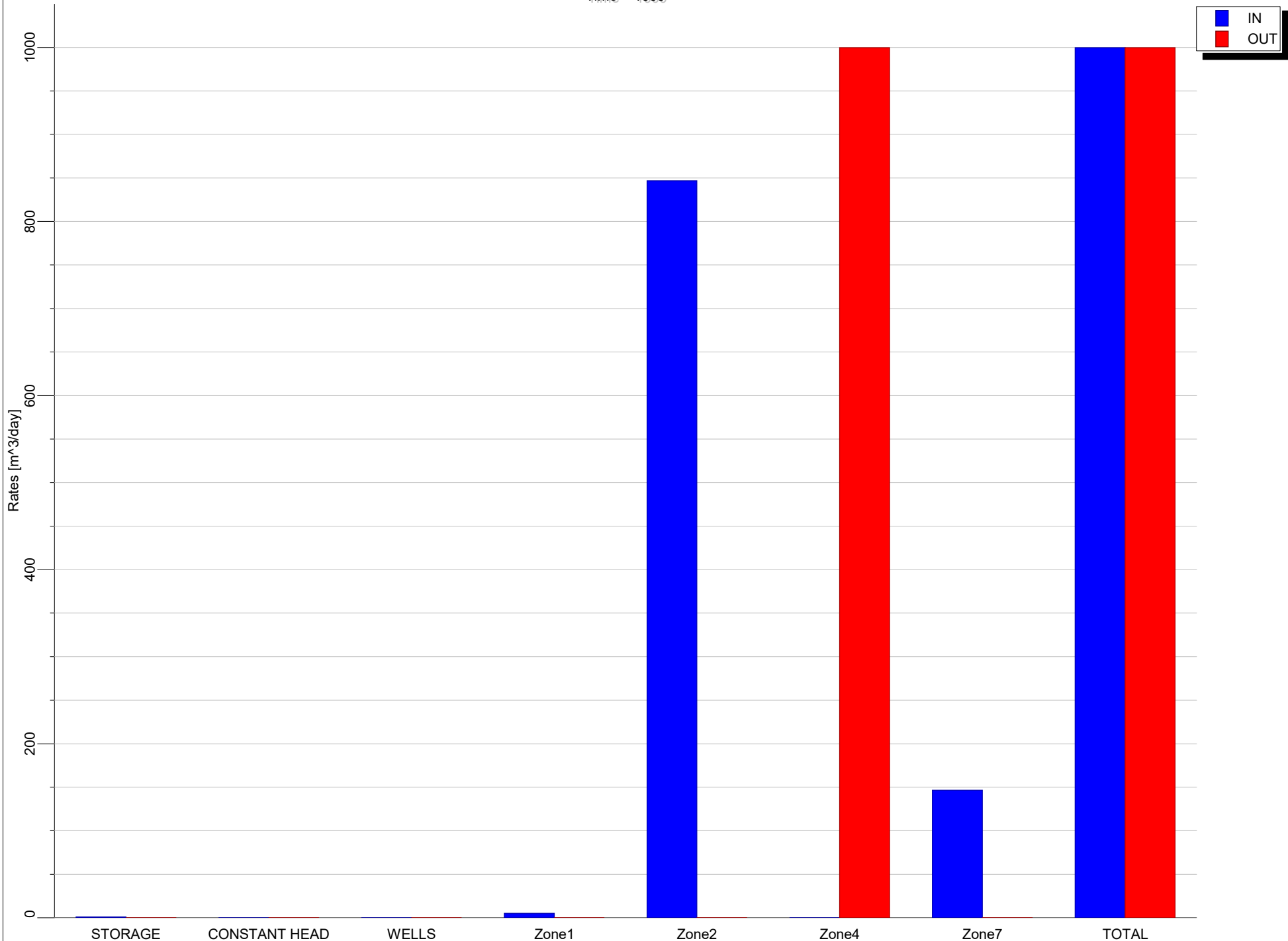
Appendix C - Zone Budget Charts

Time = 750



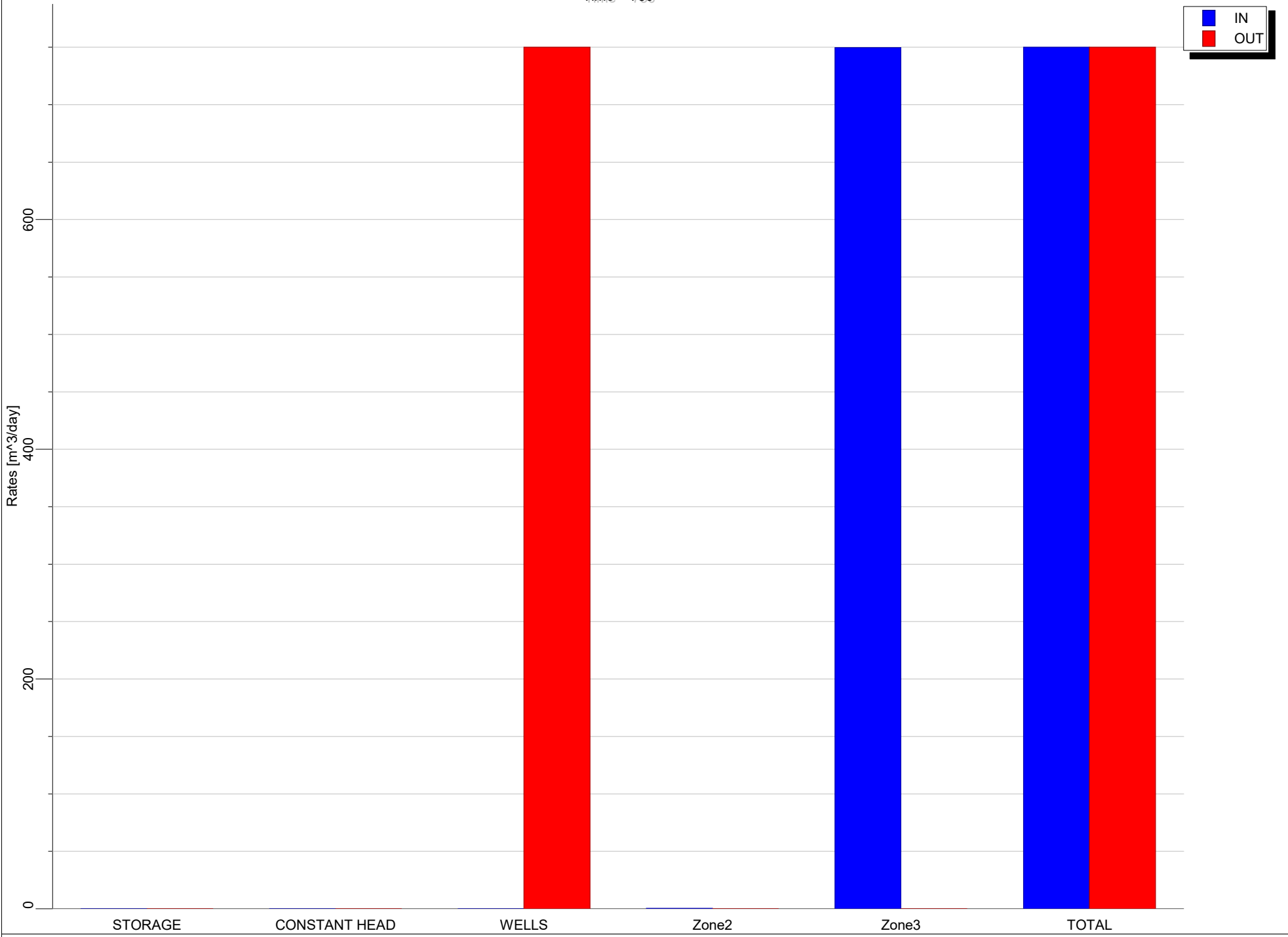
Appendix C - Zone Budget Charts

Time = 1000



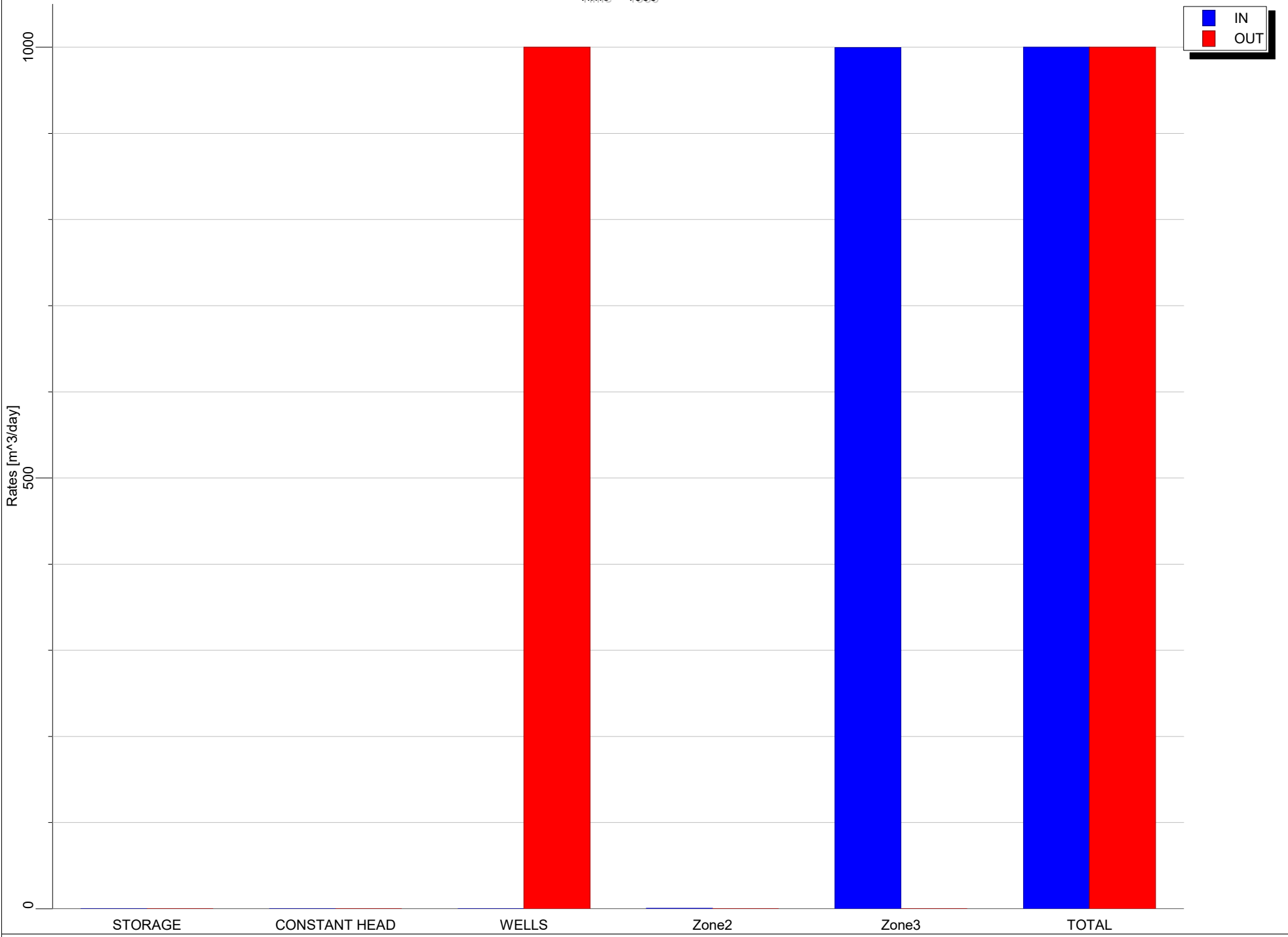
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

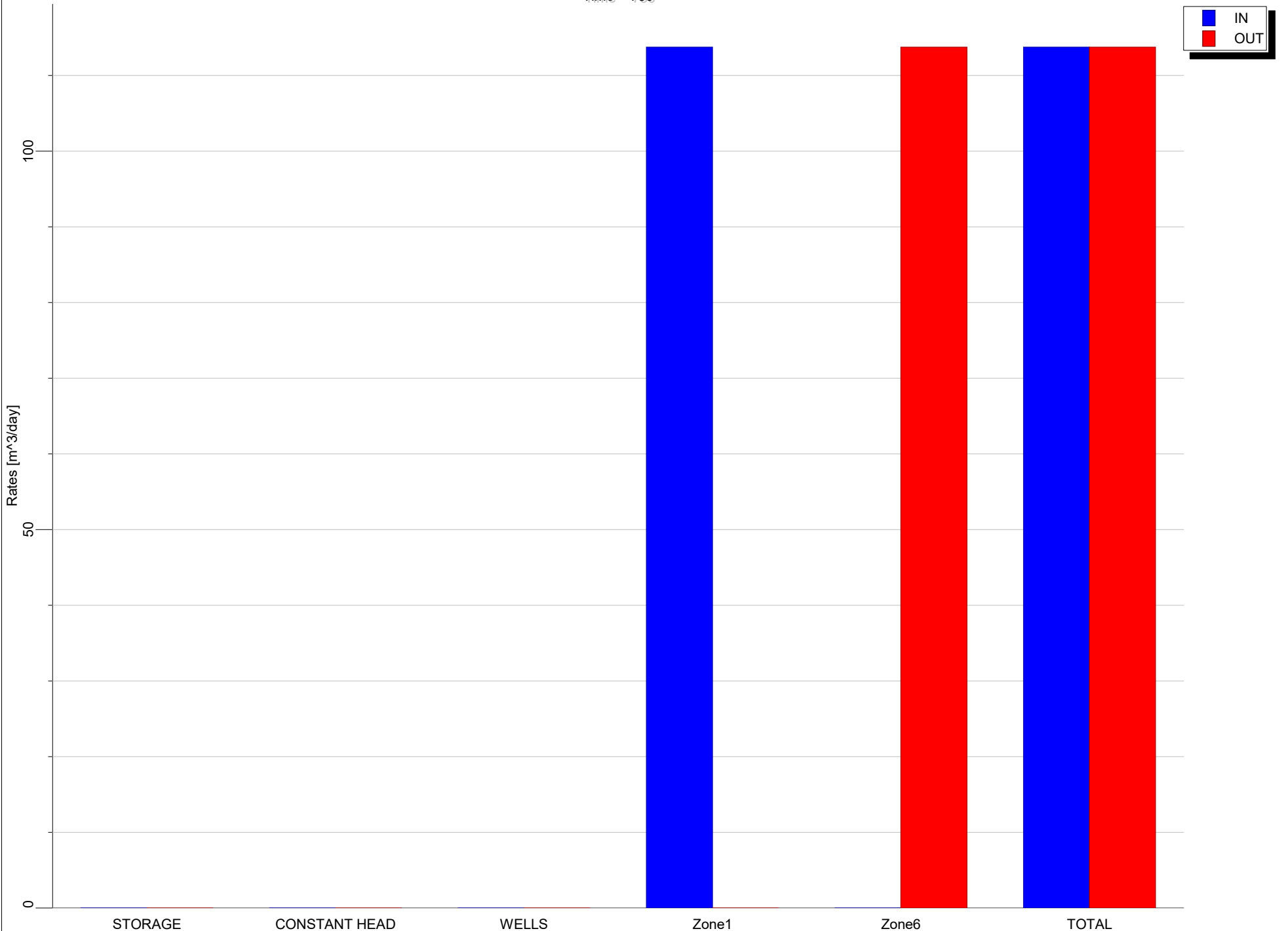
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Zone 4
Scenario 4.3
Abandoned Well 40m

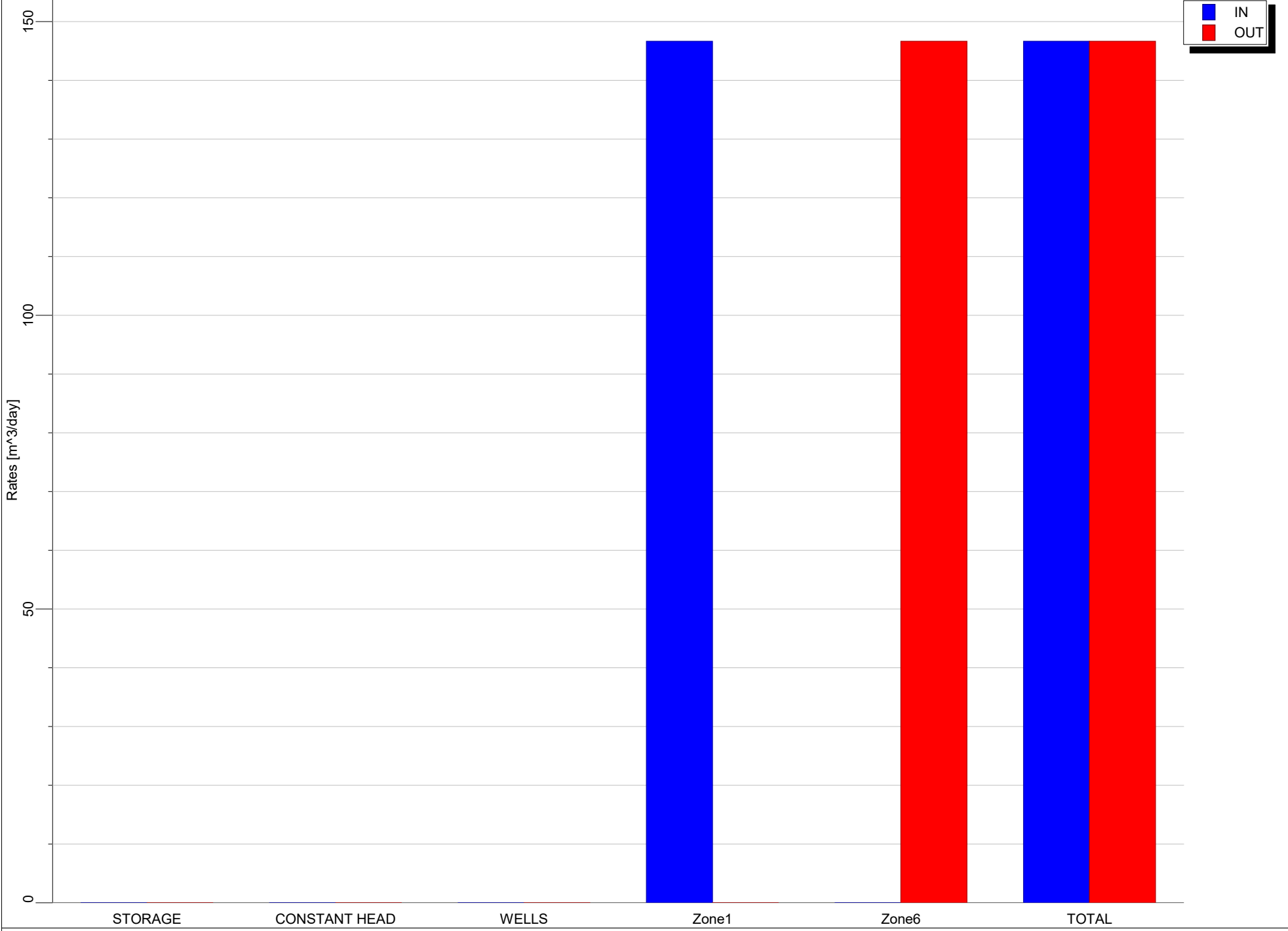
Appendix C - Zone Budget Charts

Time = 750



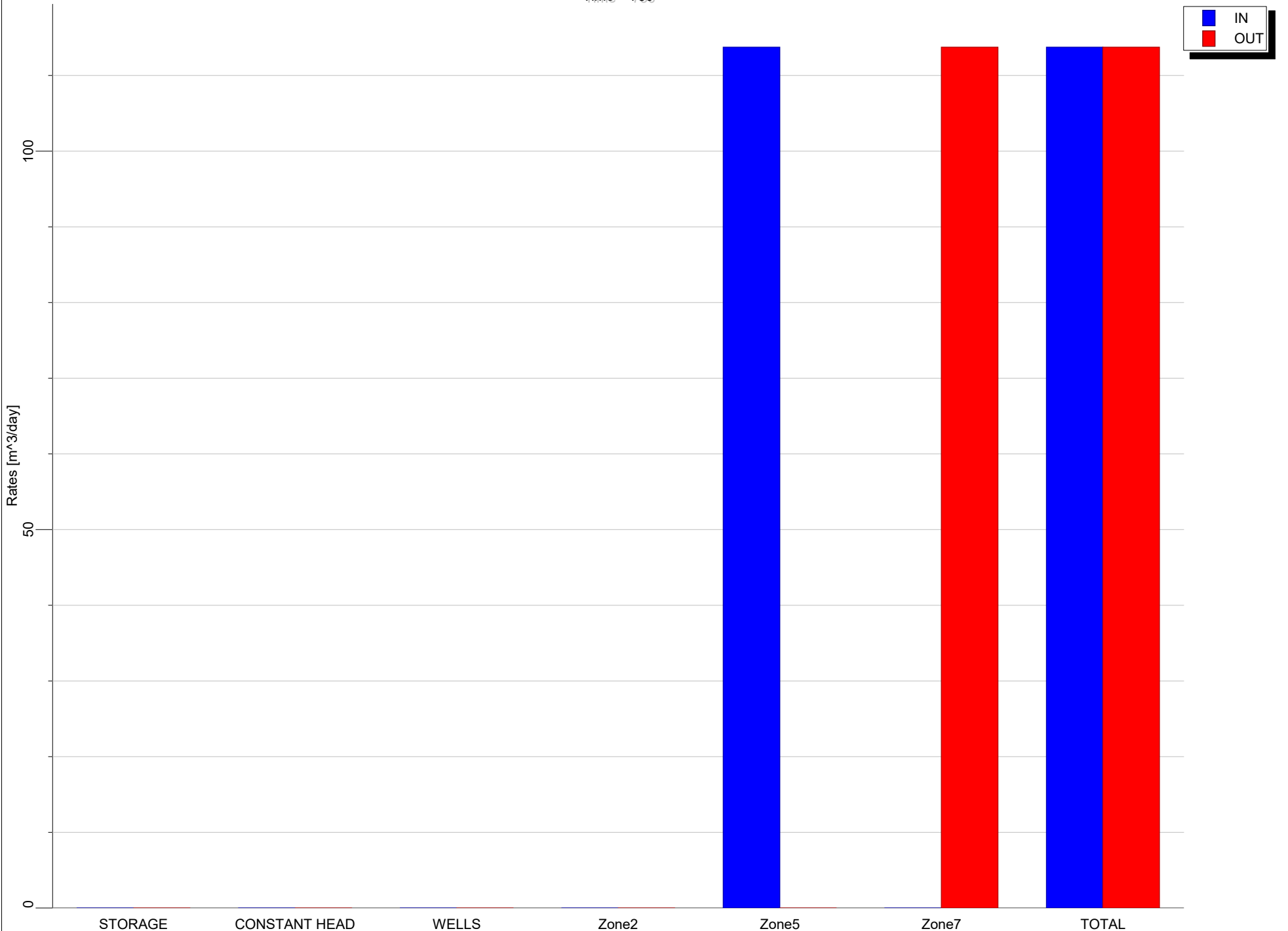
Appendix C - Zone Budget Charts

Time = 1000



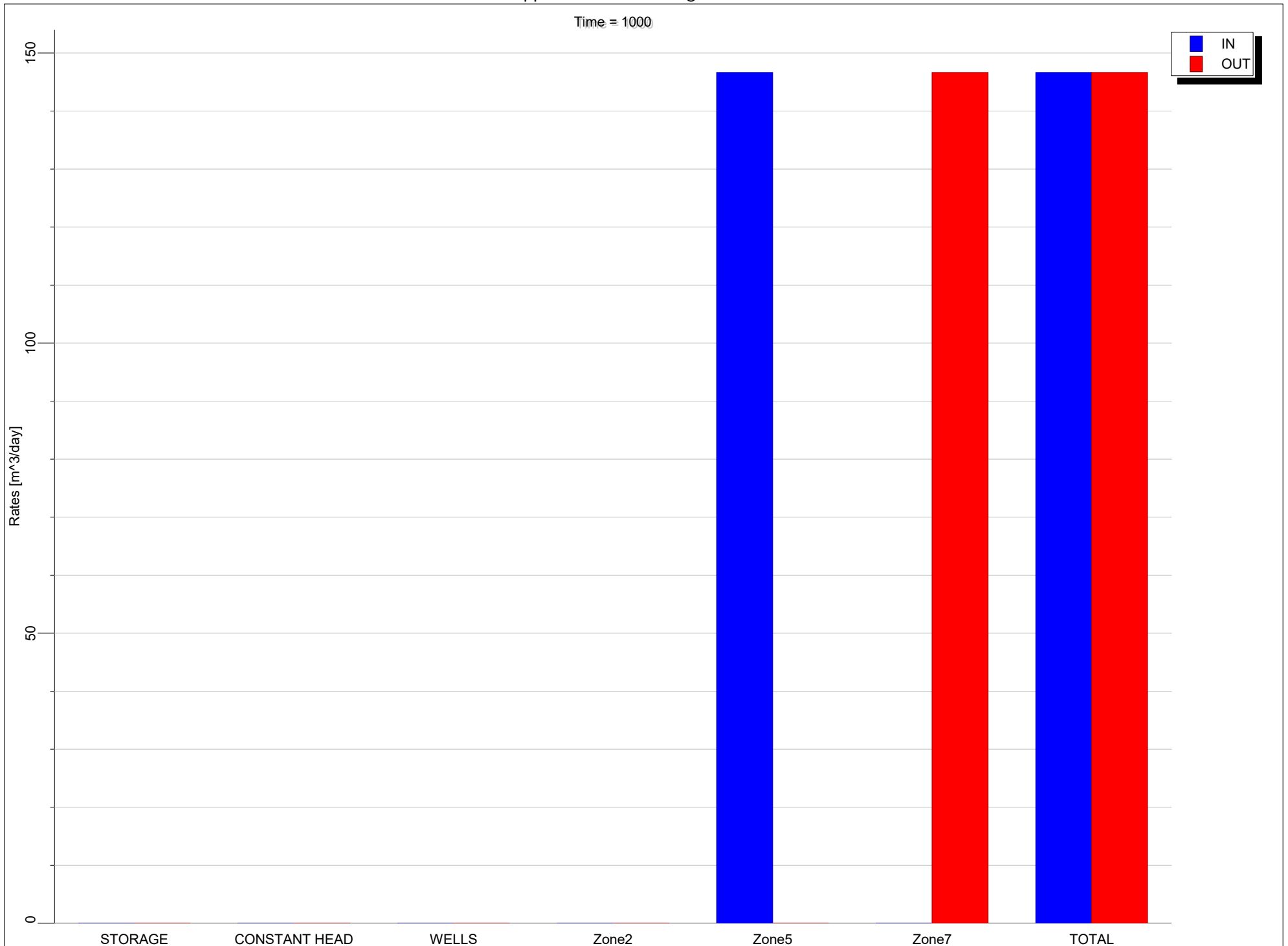
Appendix C - Zone Budget Charts

Time = 750



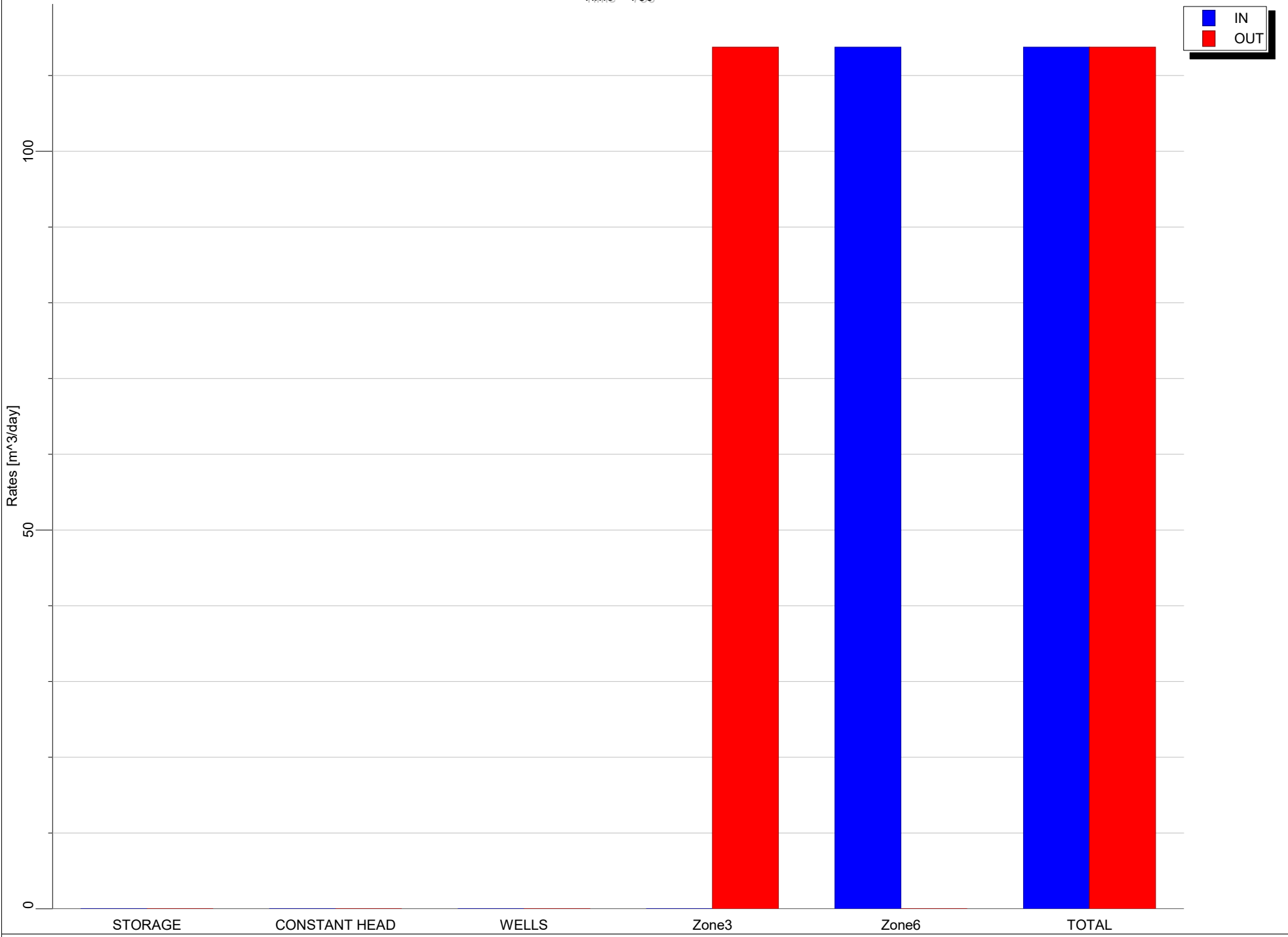
Appendix C - Zone Budget Charts

Time = 1000



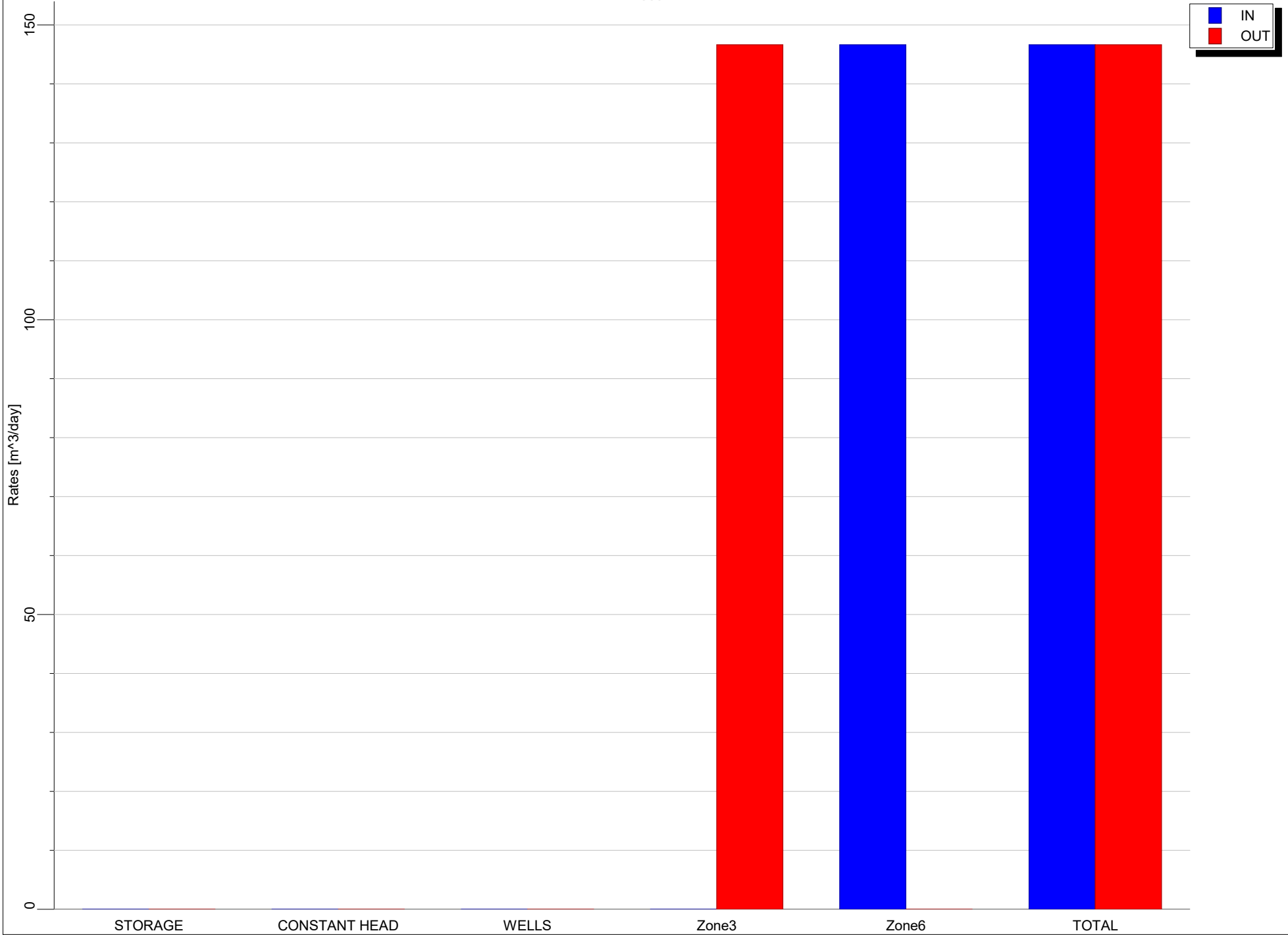
Appendix C - Zone Budget Charts

Time = 750



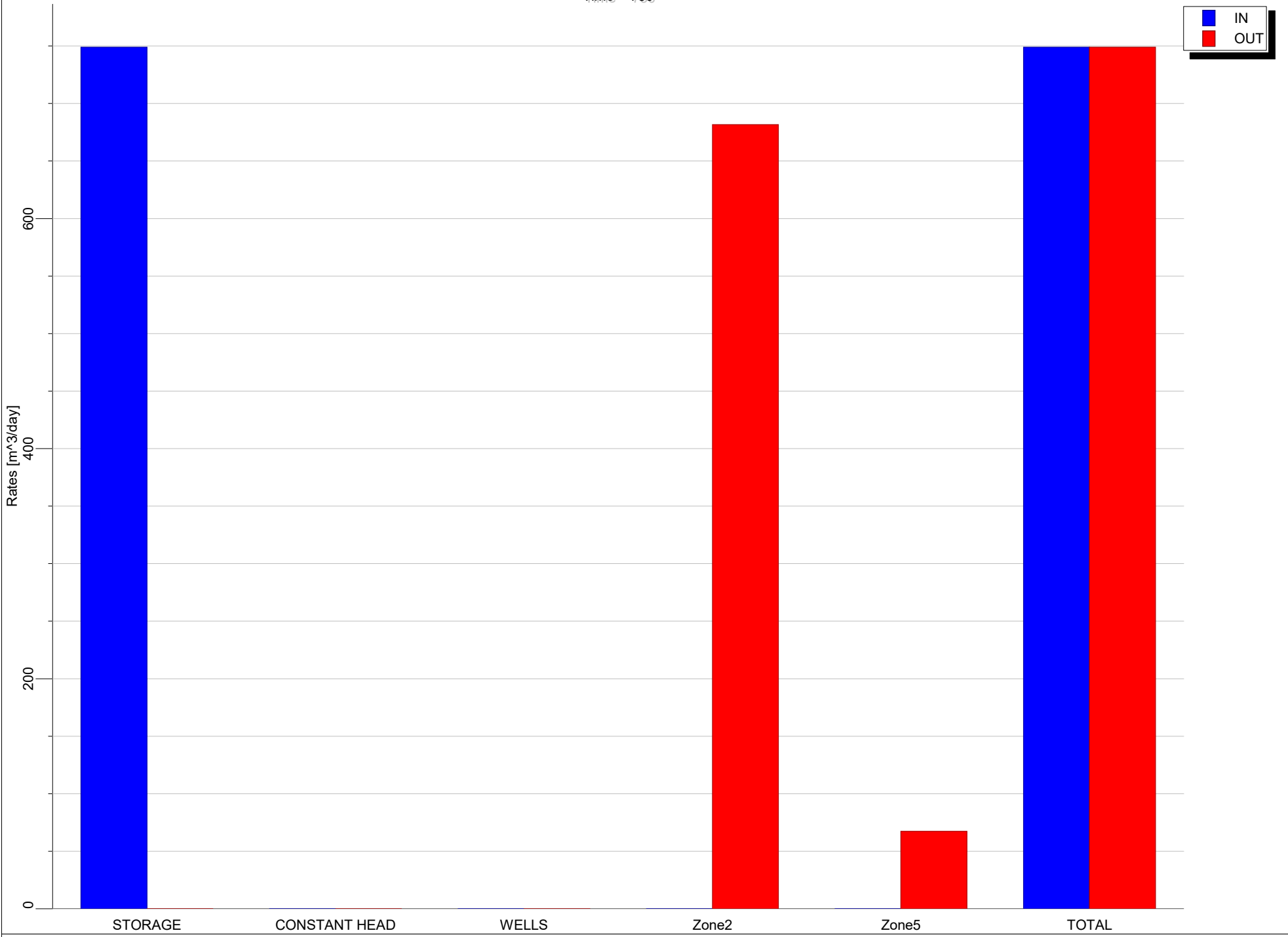
Appendix C - Zone Budget Charts

Time = 1000



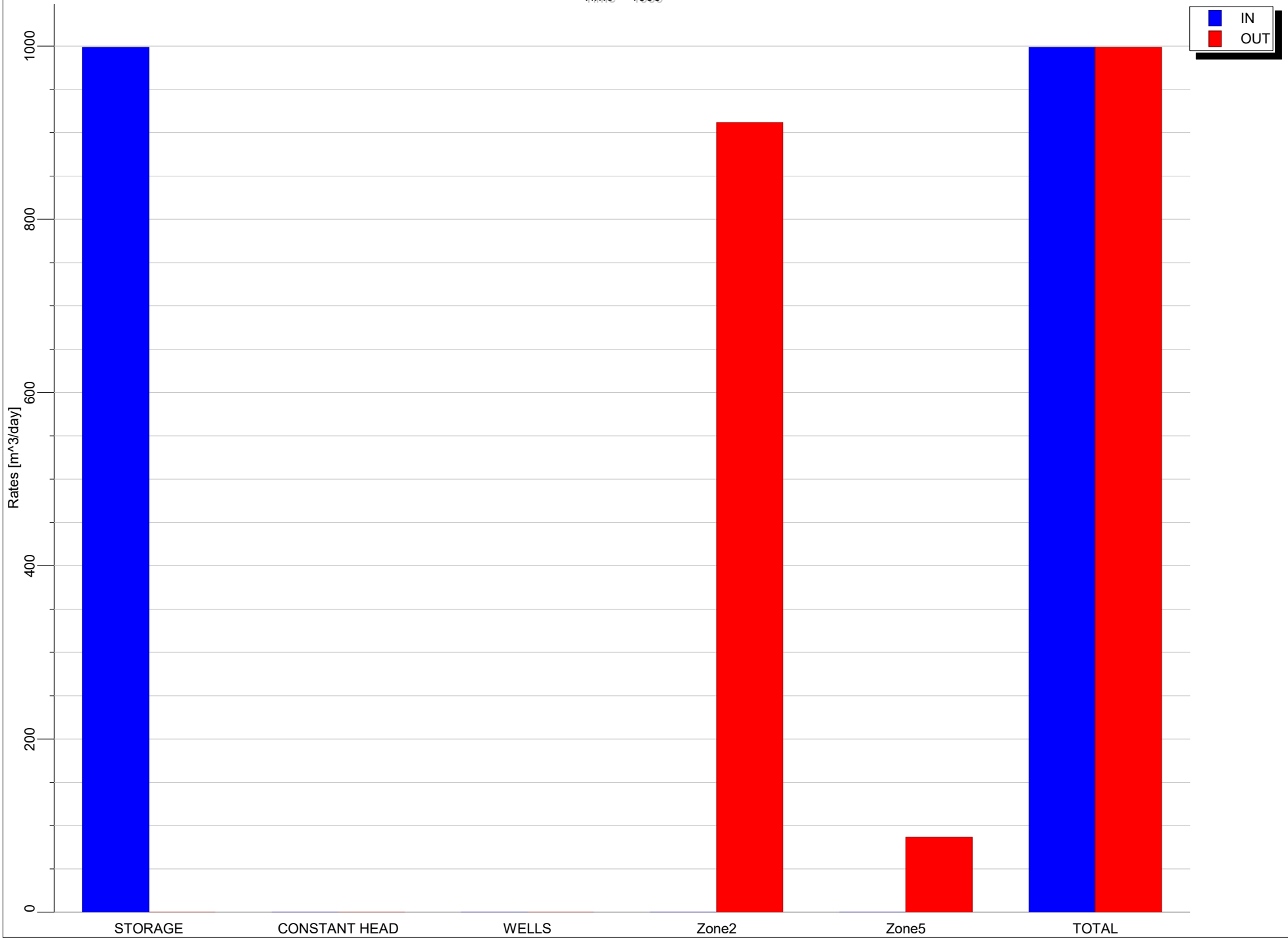
Appendix C - Zone Budget Charts

Time = 750



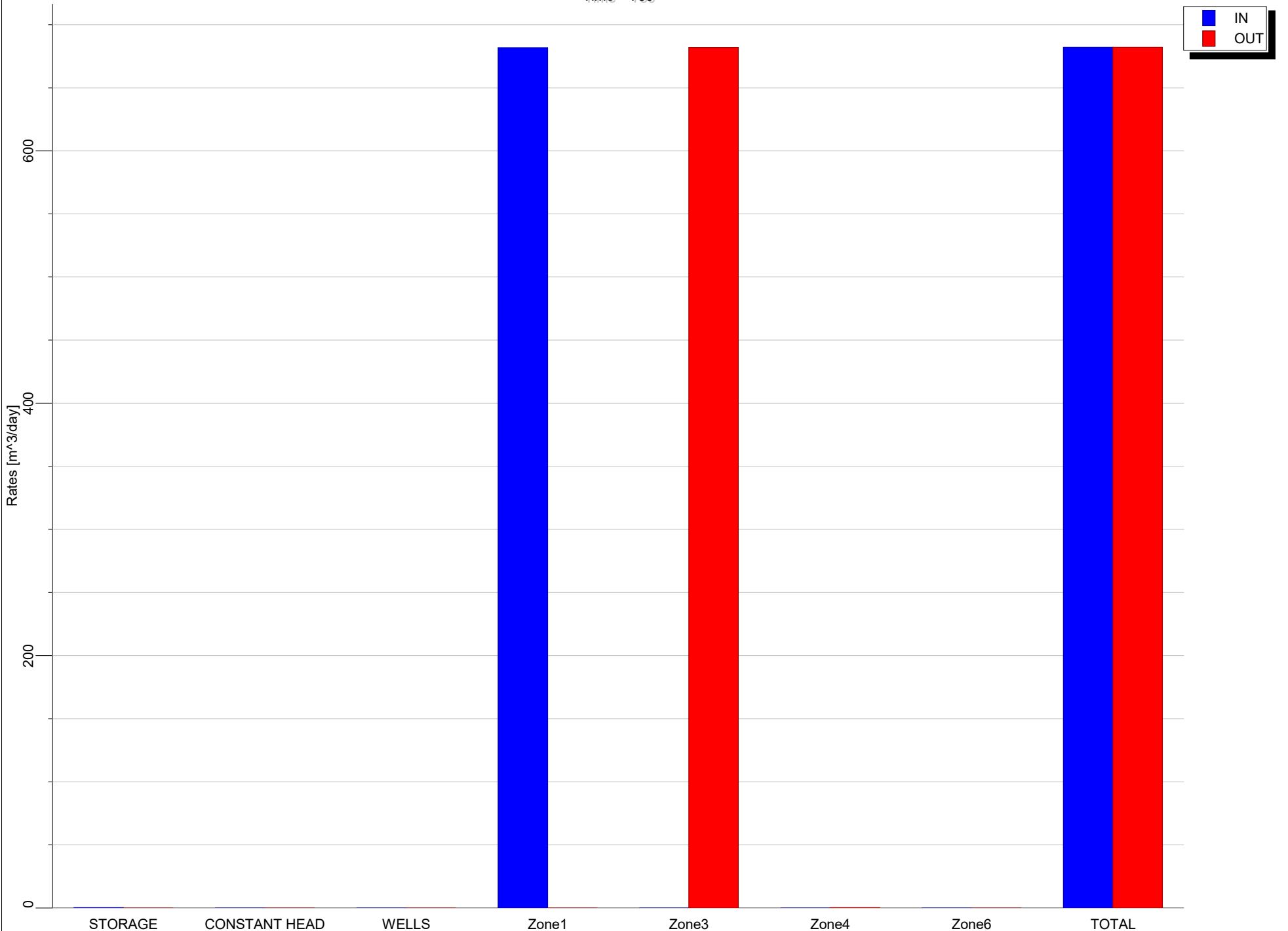
Appendix C - Zone Budget Charts

Time = 1000



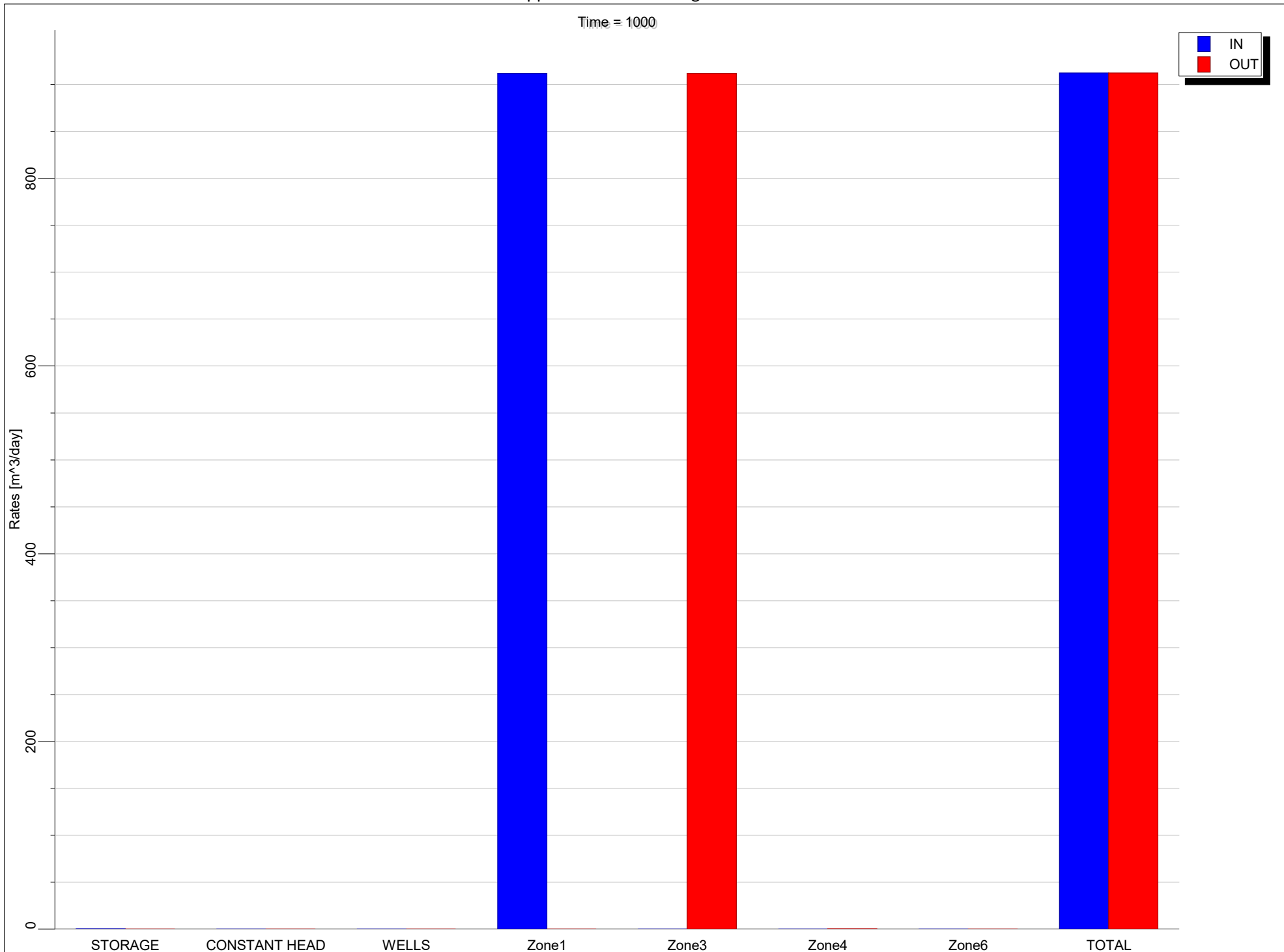
Appendix C - Zone Budget Charts

Time = 750



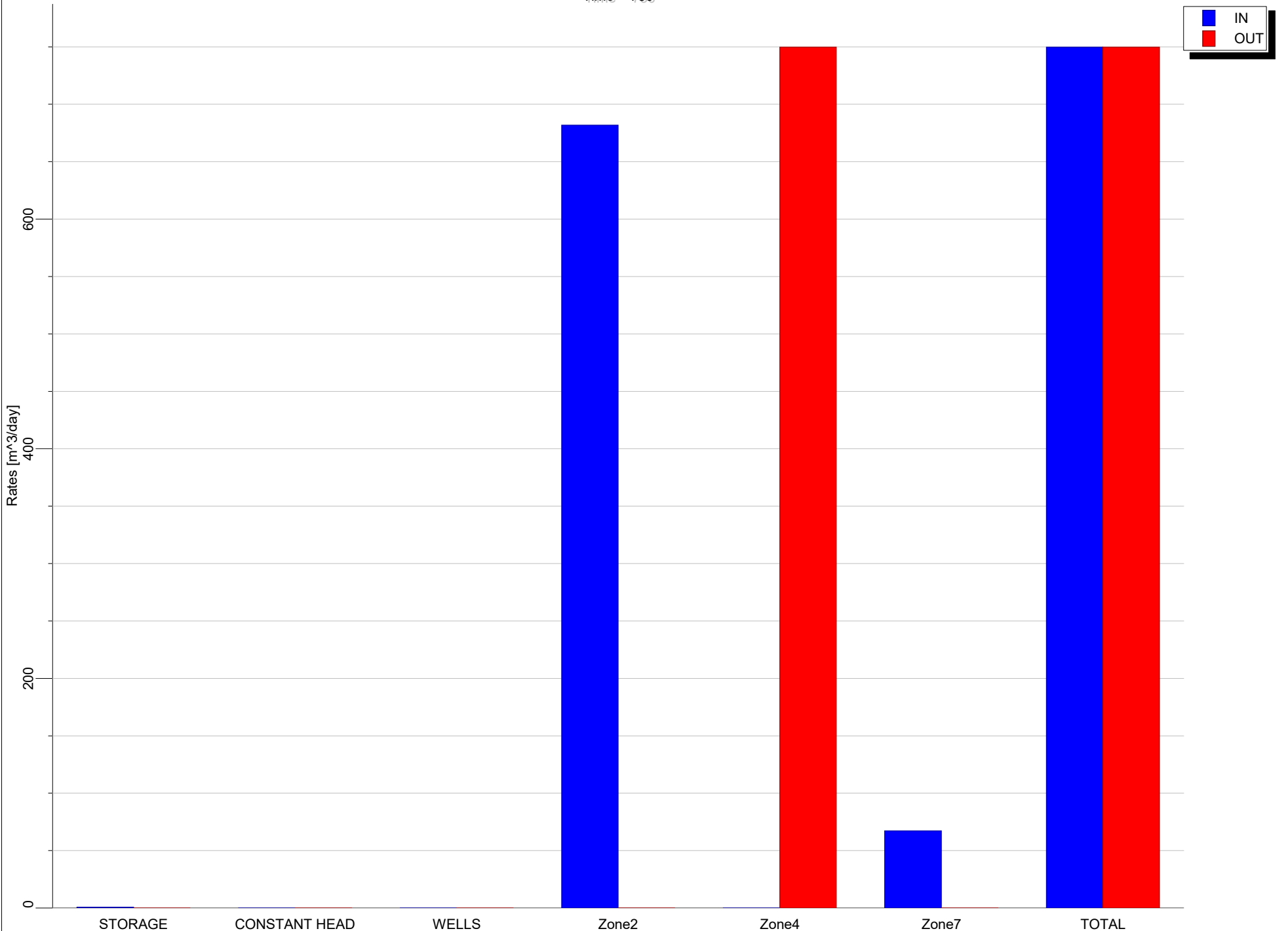
Appendix C - Zone Budget Charts

Time = 1000



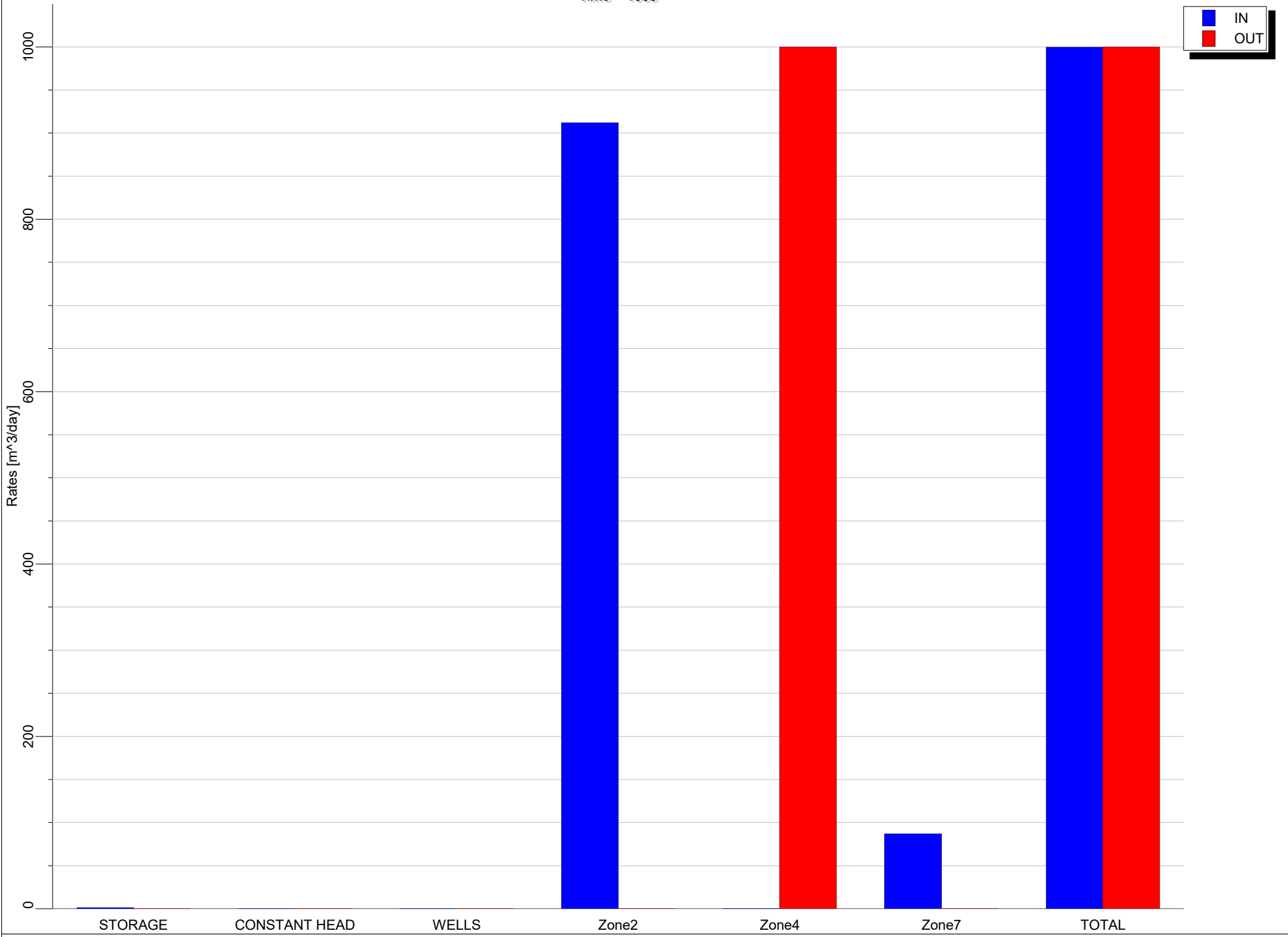
Appendix C - Zone Budget Charts

Time = 750



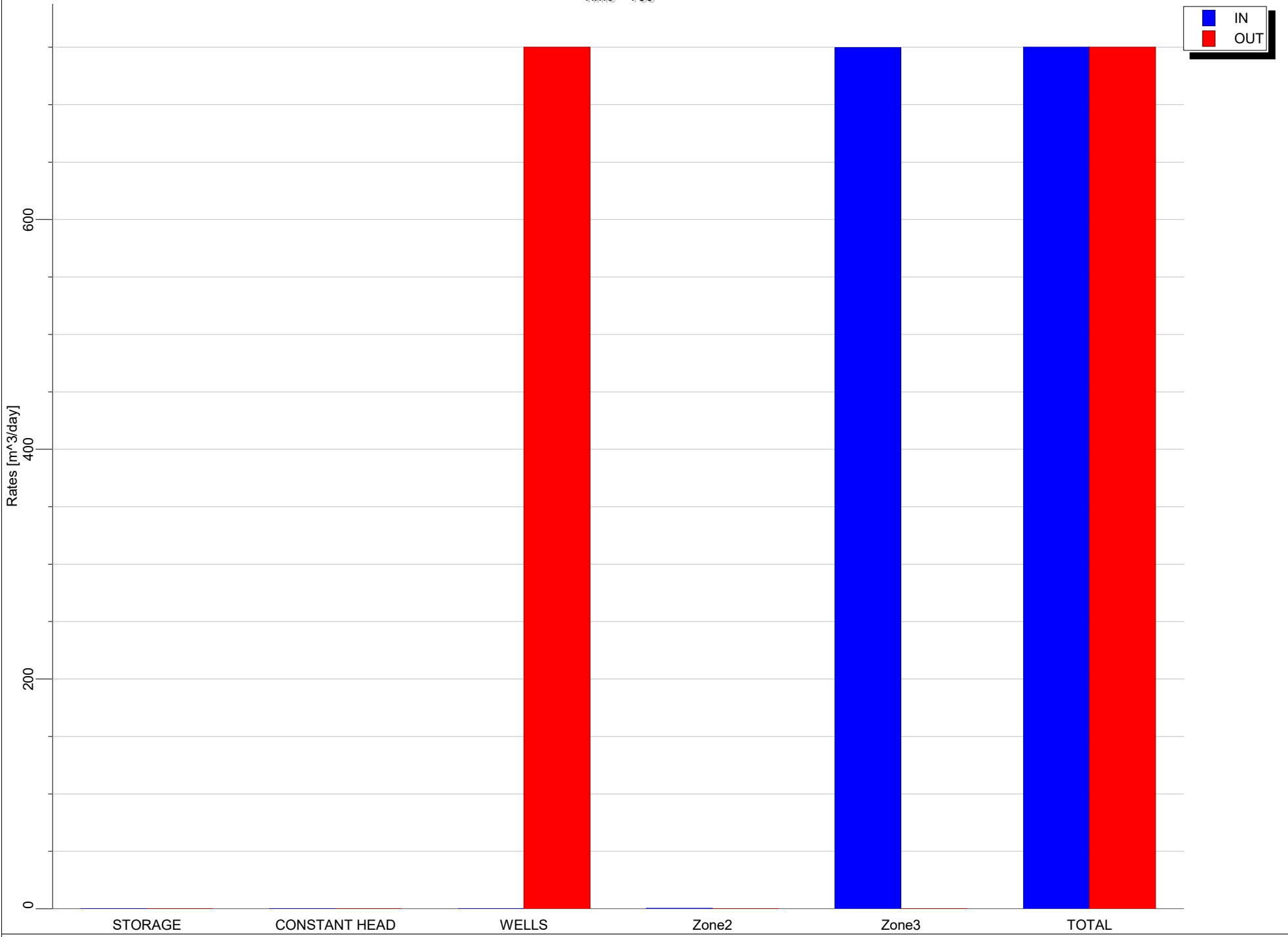
Appendix C - Zone Budget Charts

Time = 1000



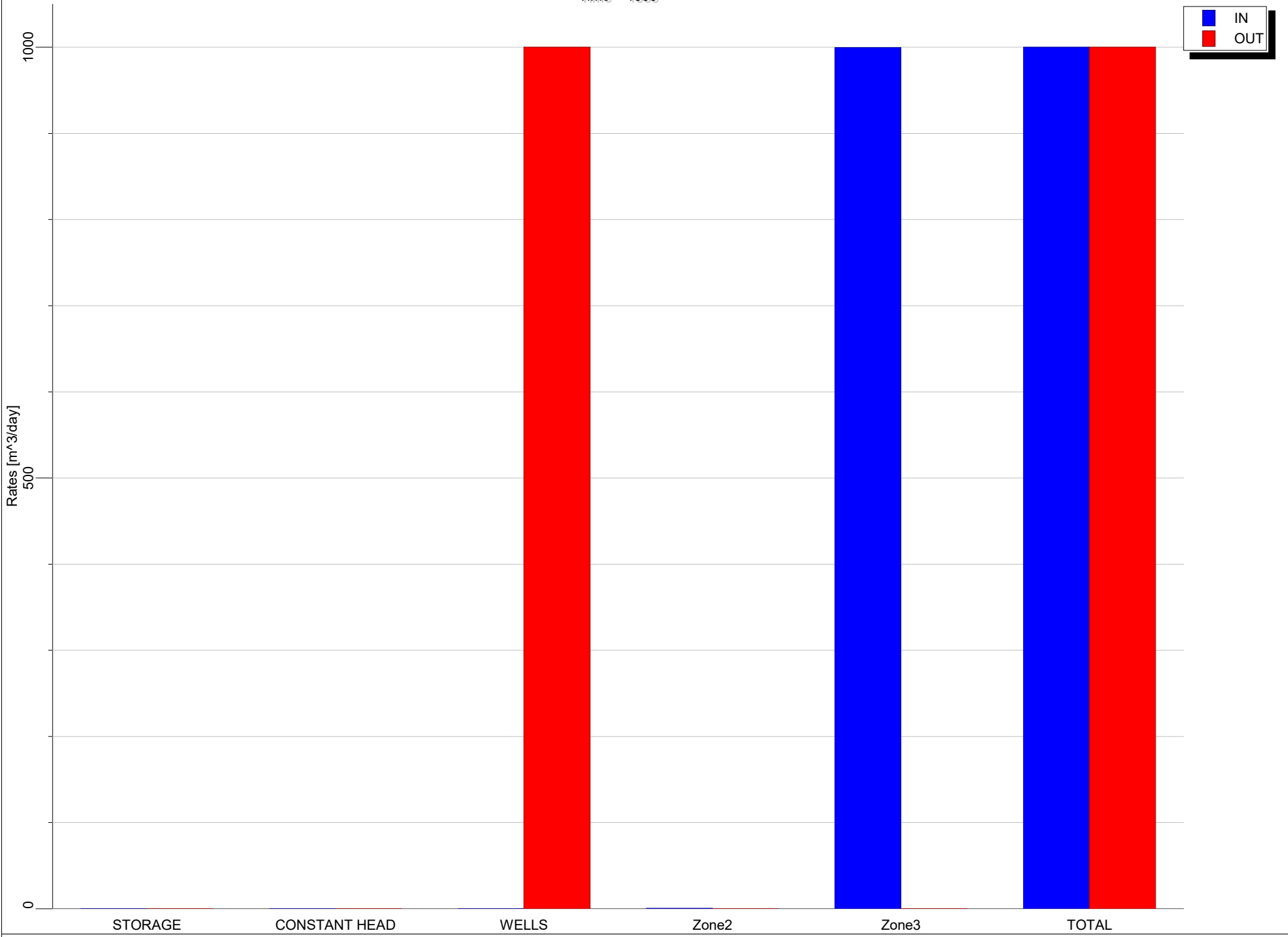
Appendix C - Zone Budget Charts

Time = 750



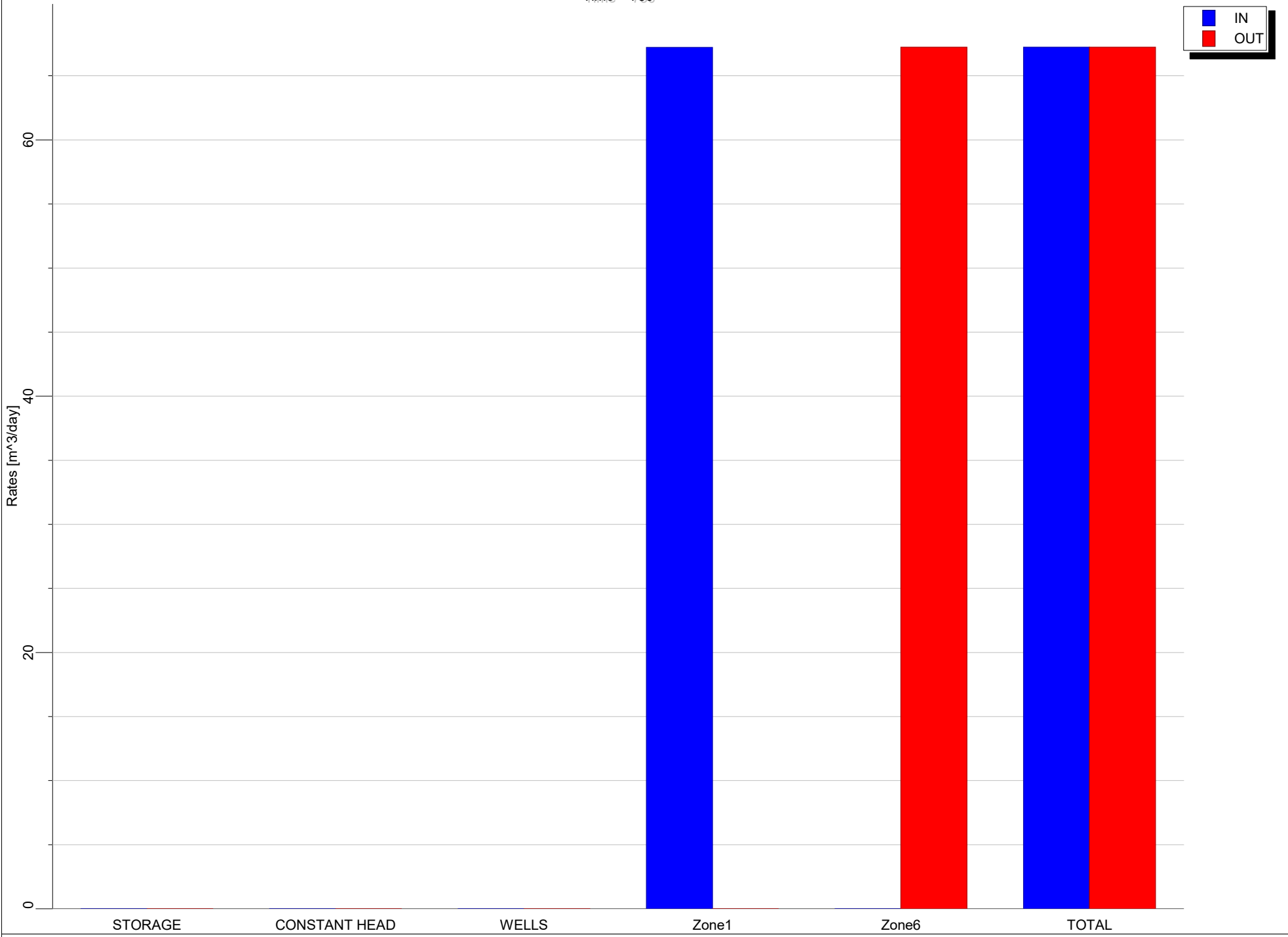
Appendix C - Zone Budget Charts

Time = 1000



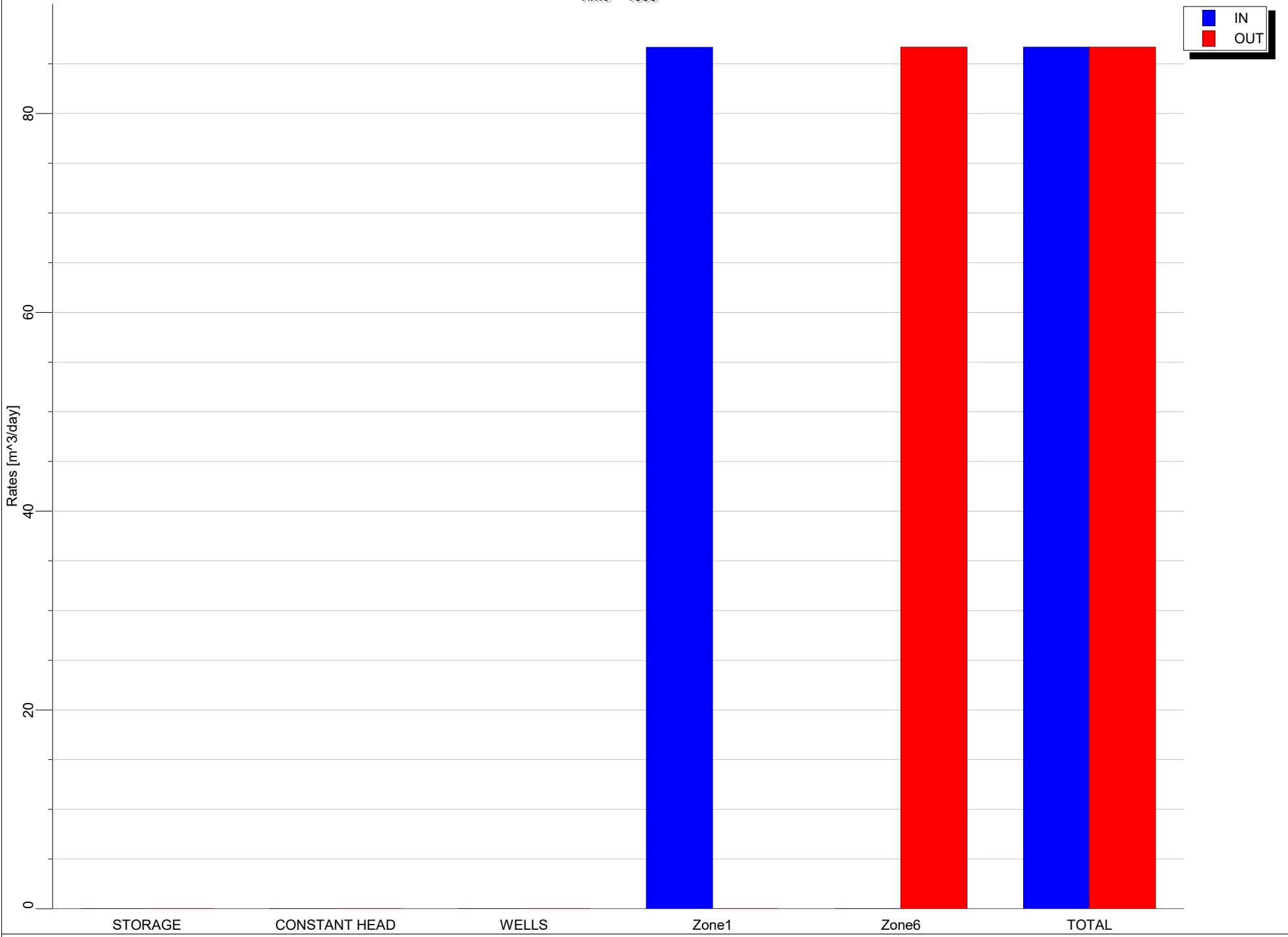
Appendix C - Zone Budget Charts

Time = 750



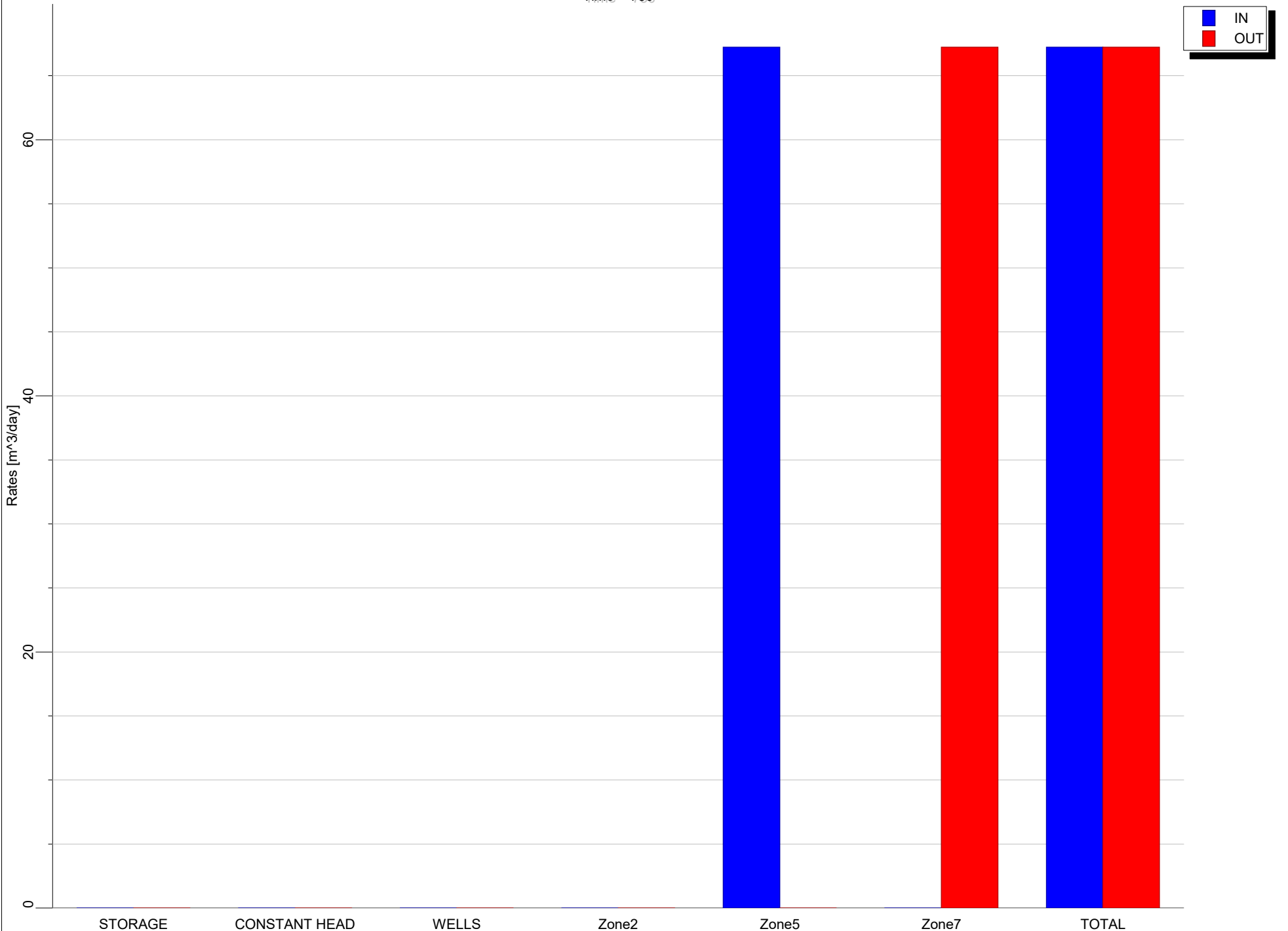
Appendix C - Zone Budget Charts

Time = 1000



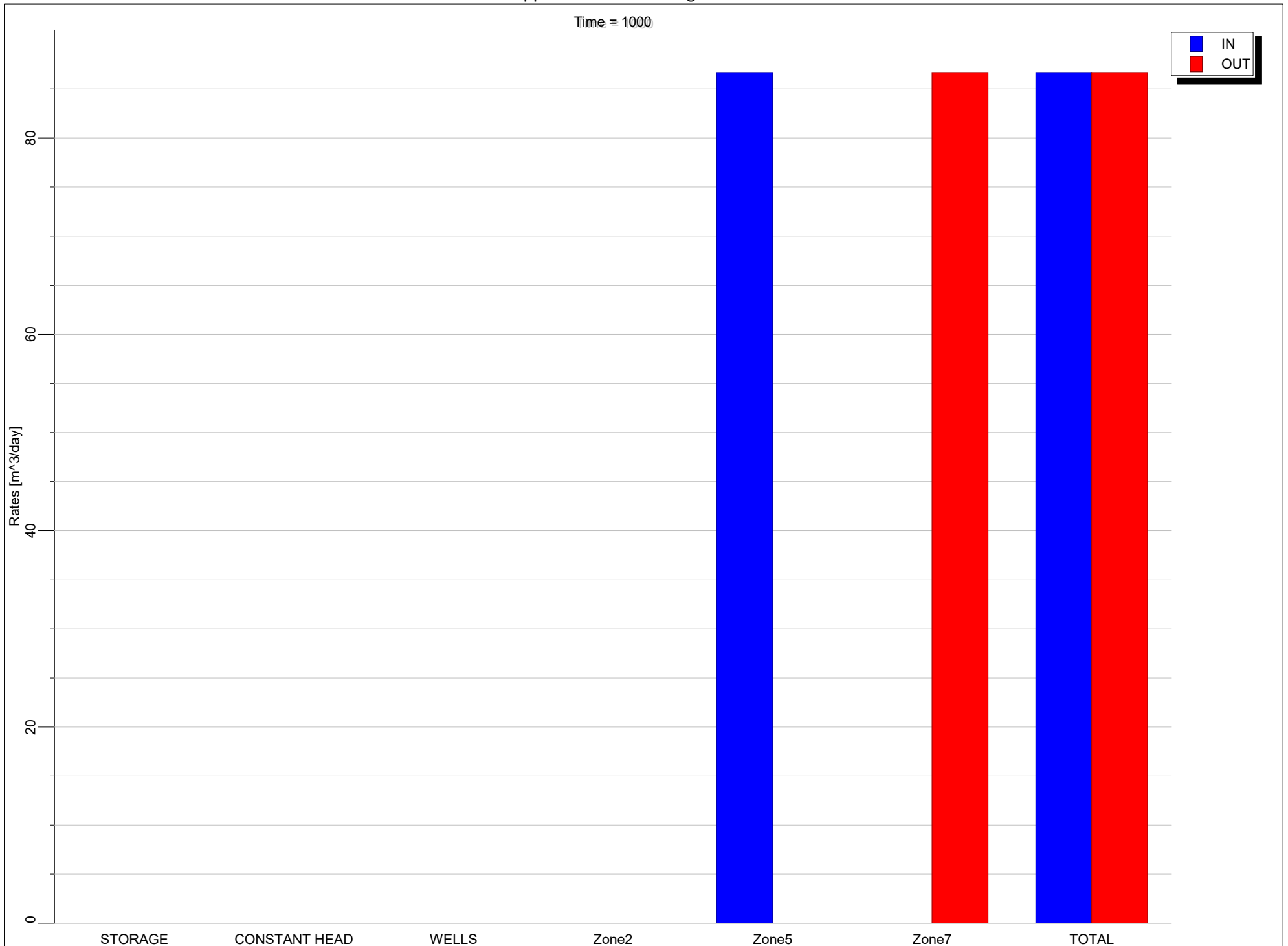
Appendix C - Zone Budget Charts

Time = 750



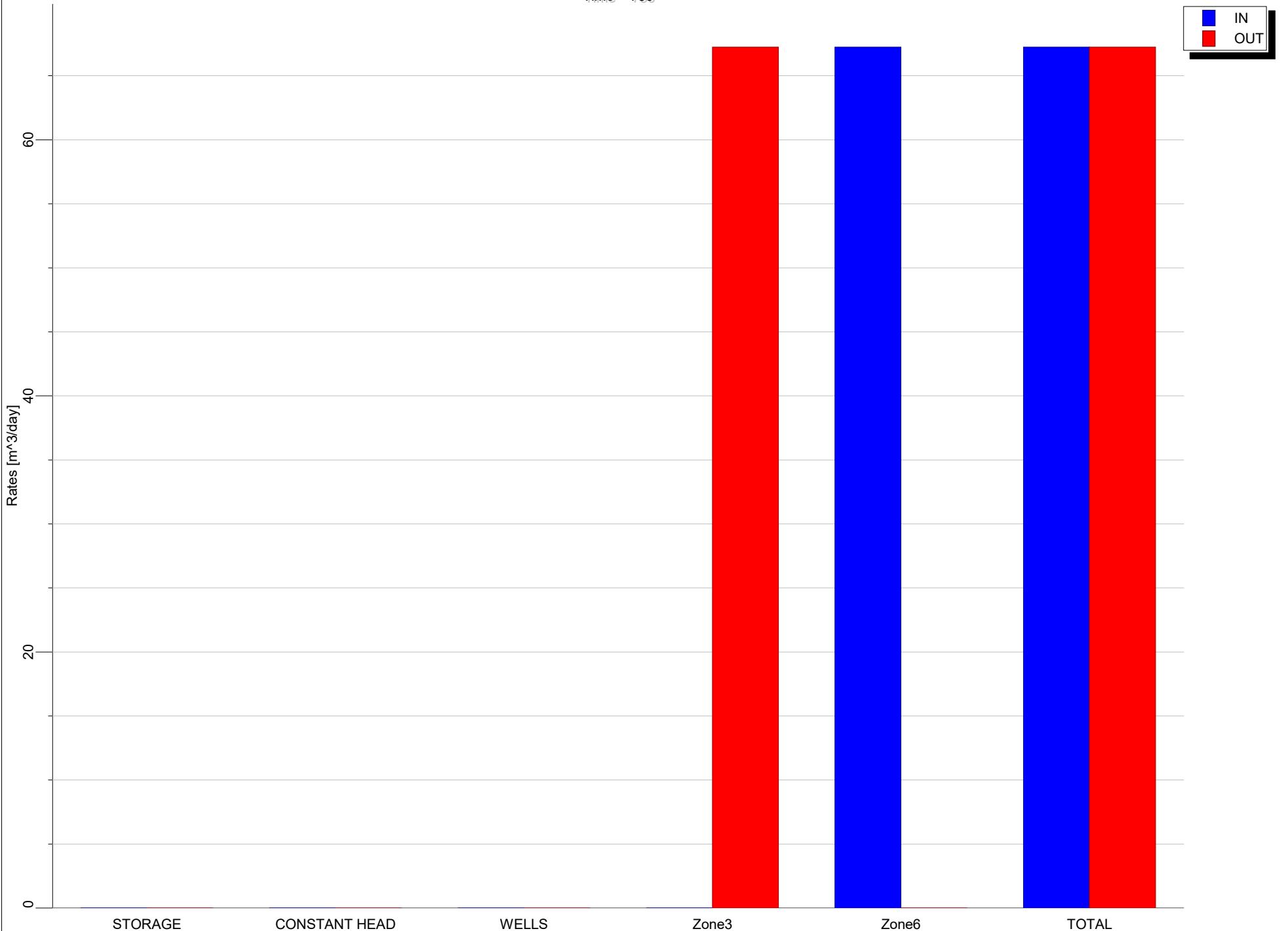
Appendix C - Zone Budget Charts

Time = 1000



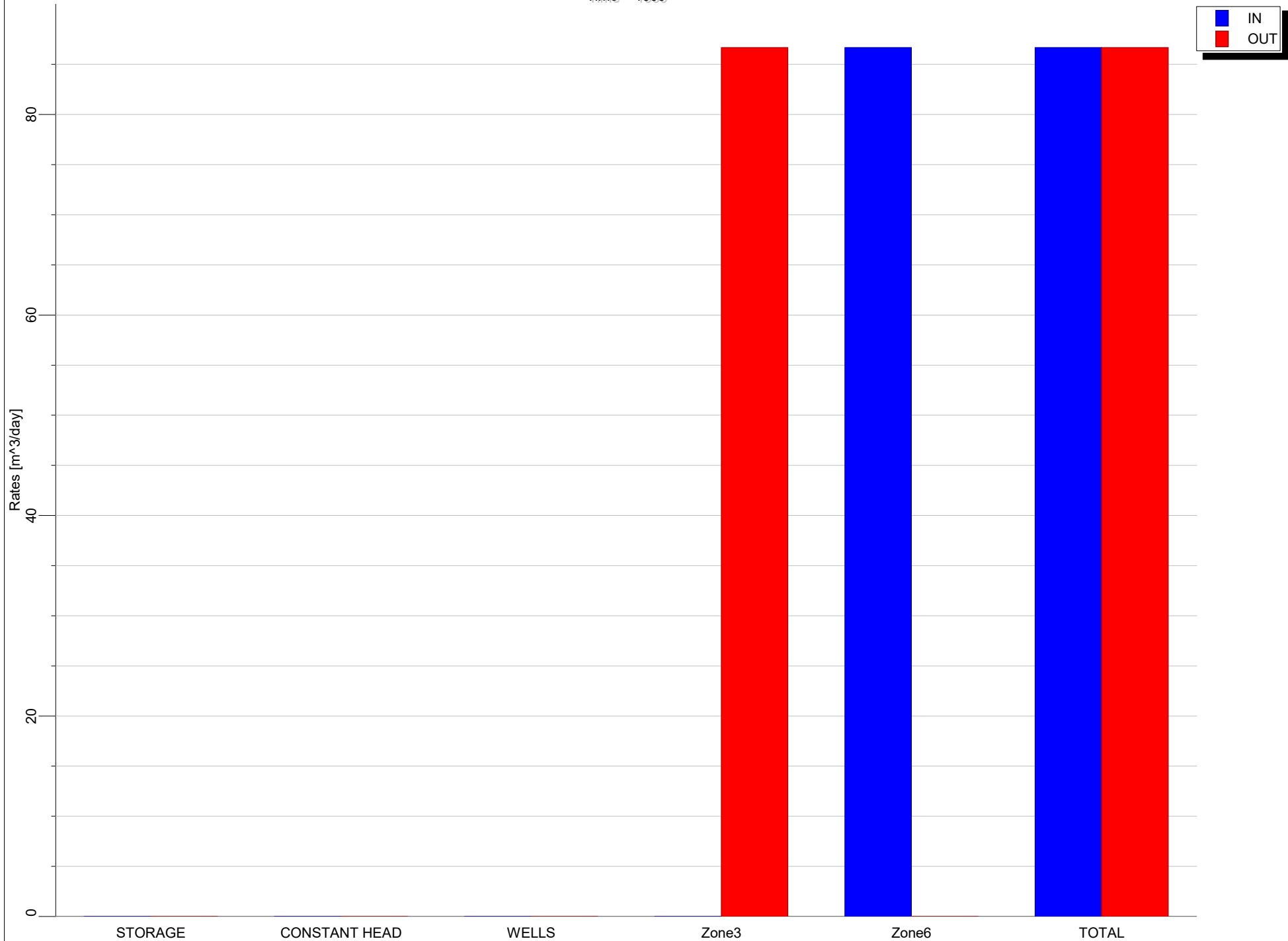
Appendix C - Zone Budget Charts

Time = 750



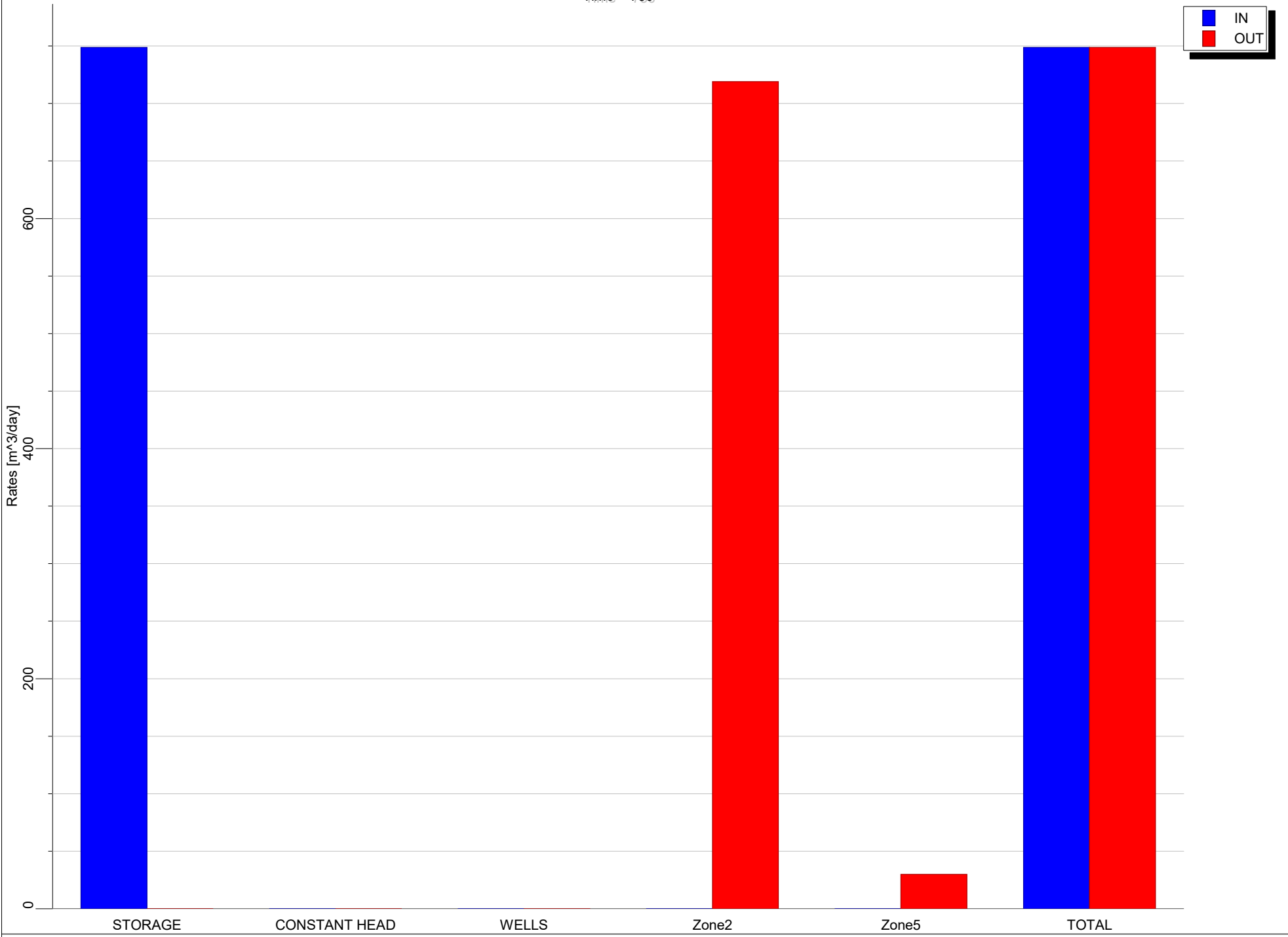
Appendix C - Zone Budget Charts

Time = 1000



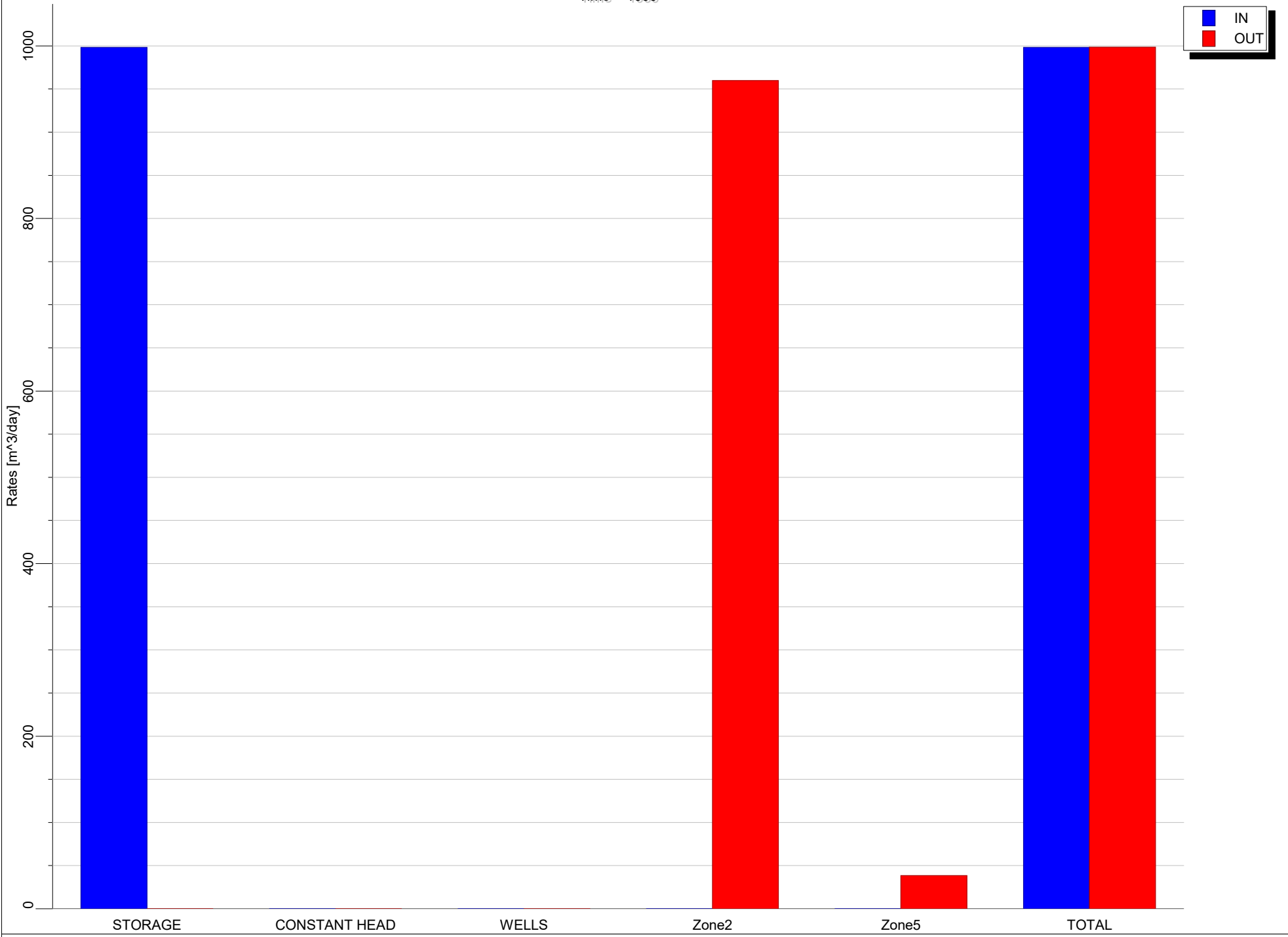
Appendix C - Zone Budget Charts

Time = 750



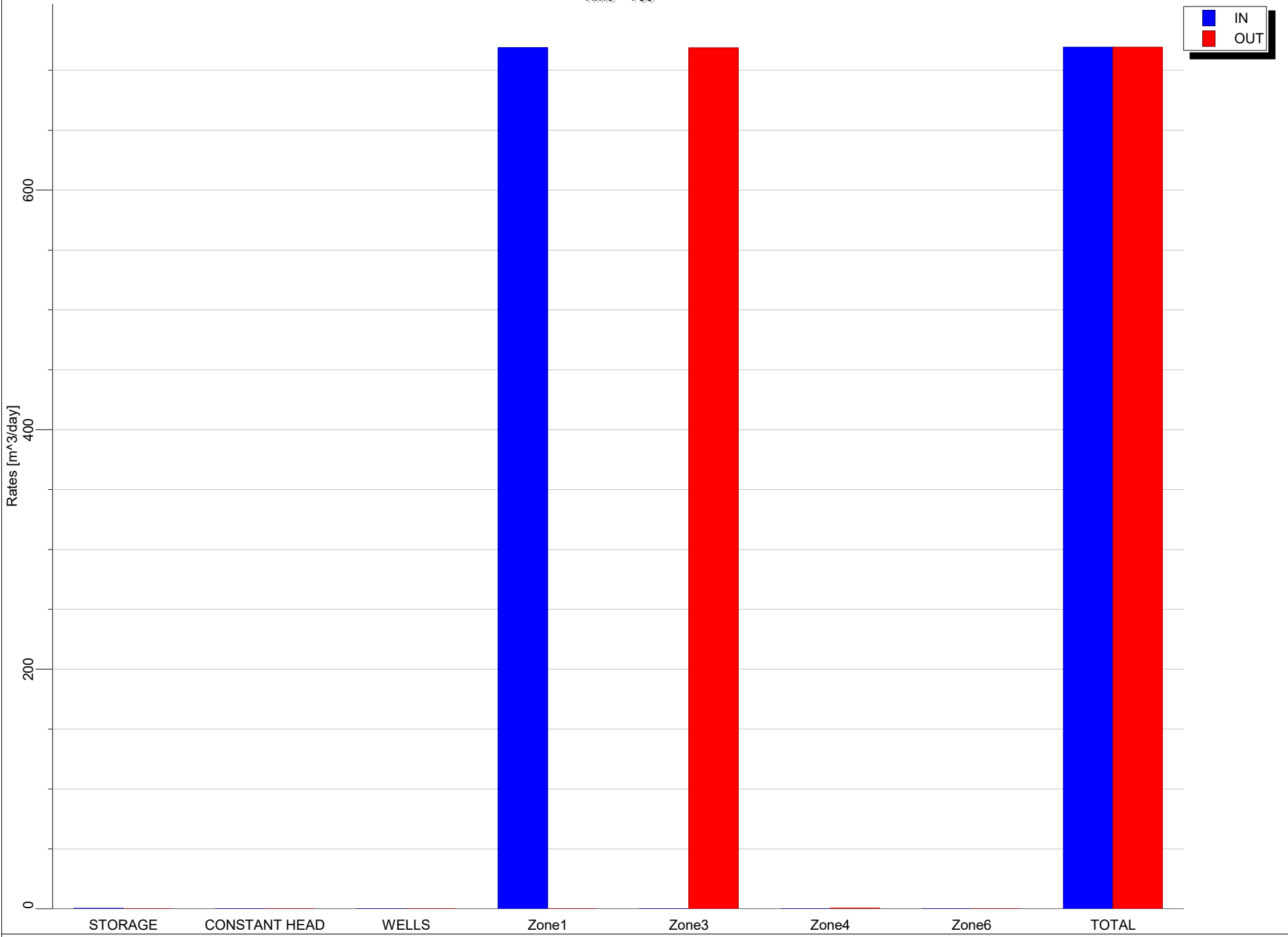
Appendix C - Zone Budget Charts

Time = 1000



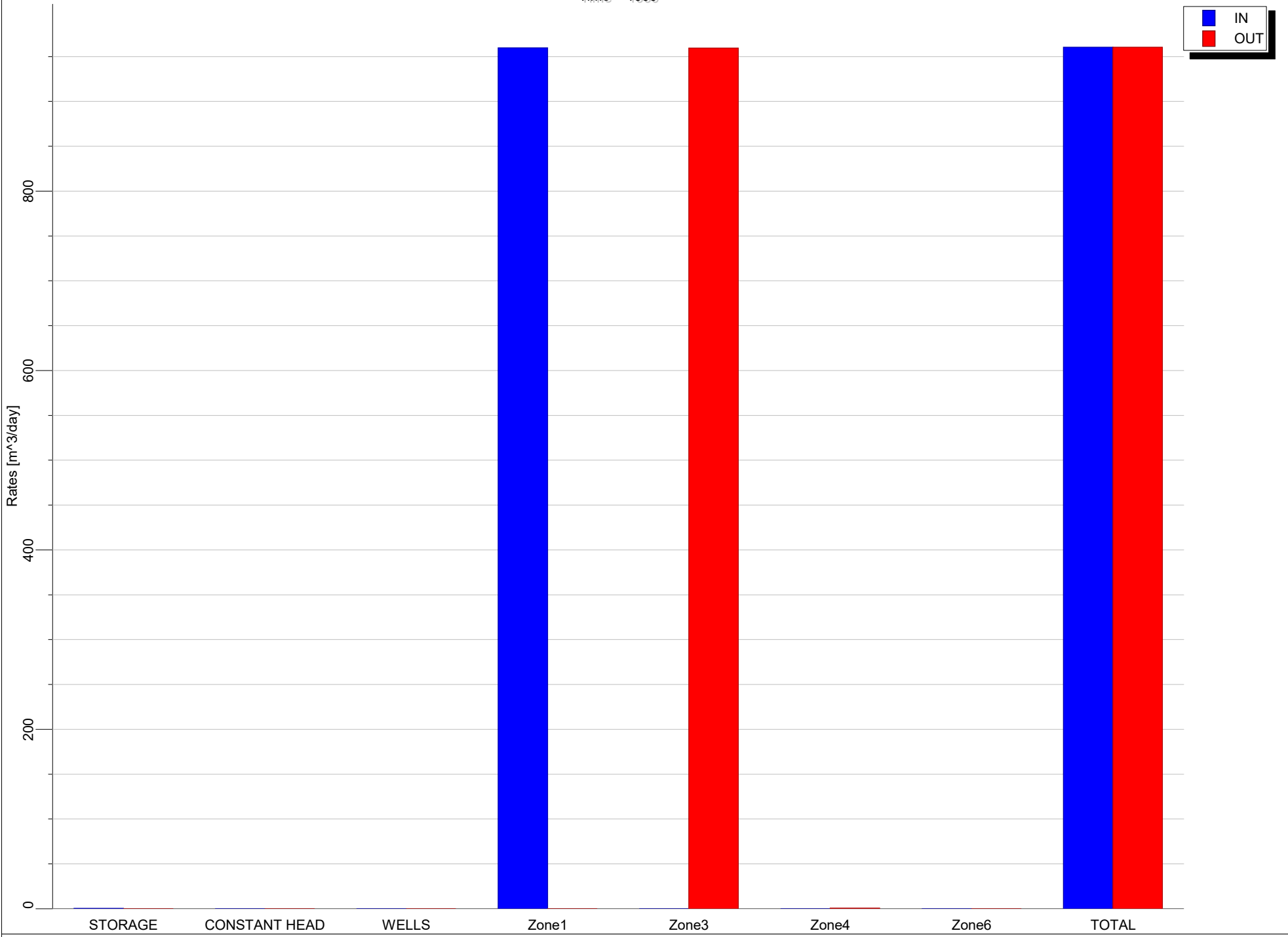
Appendix C - Zone Budget Charts

Time = 750



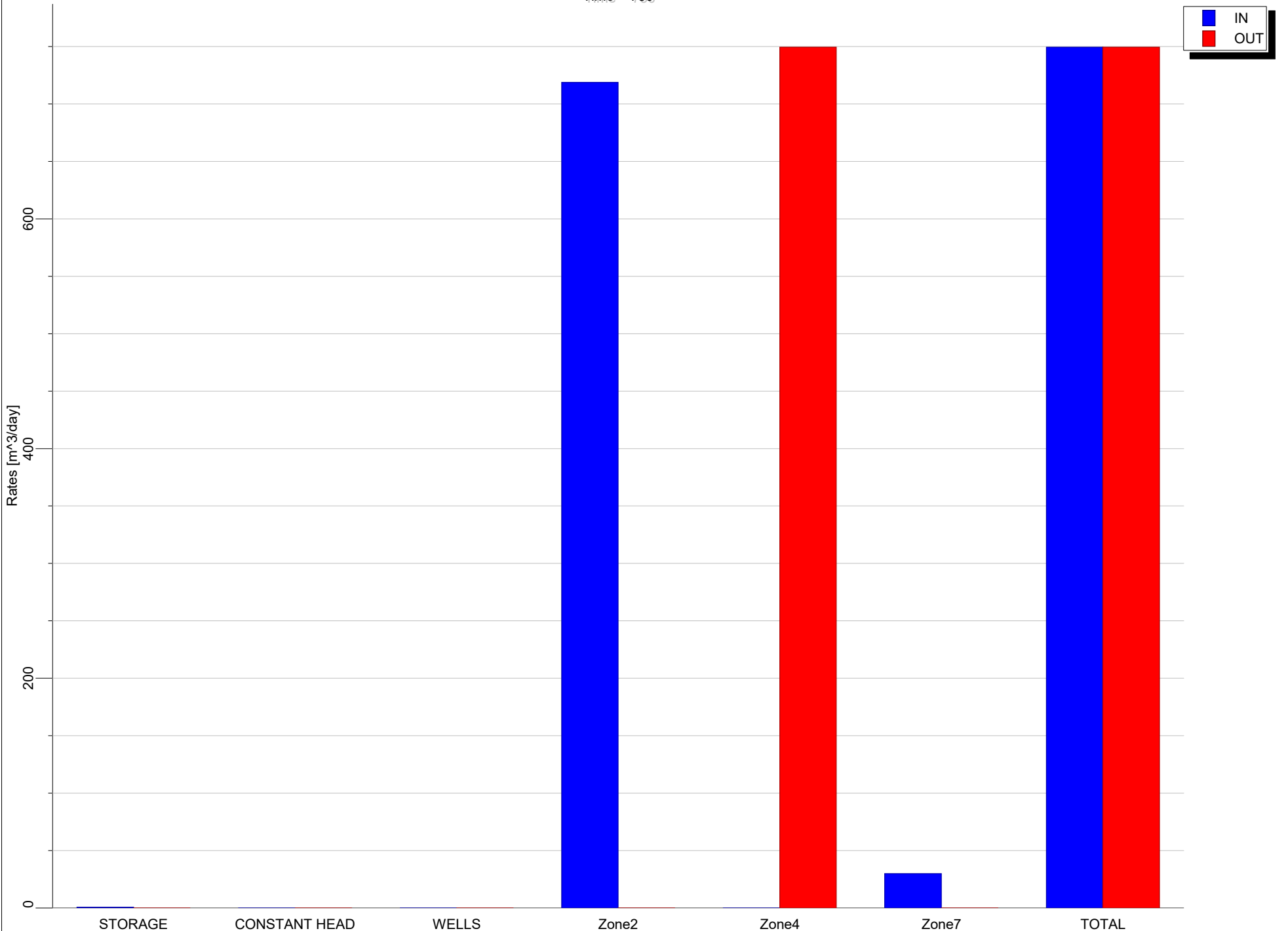
Appendix C - Zone Budget Charts

Time = 1000



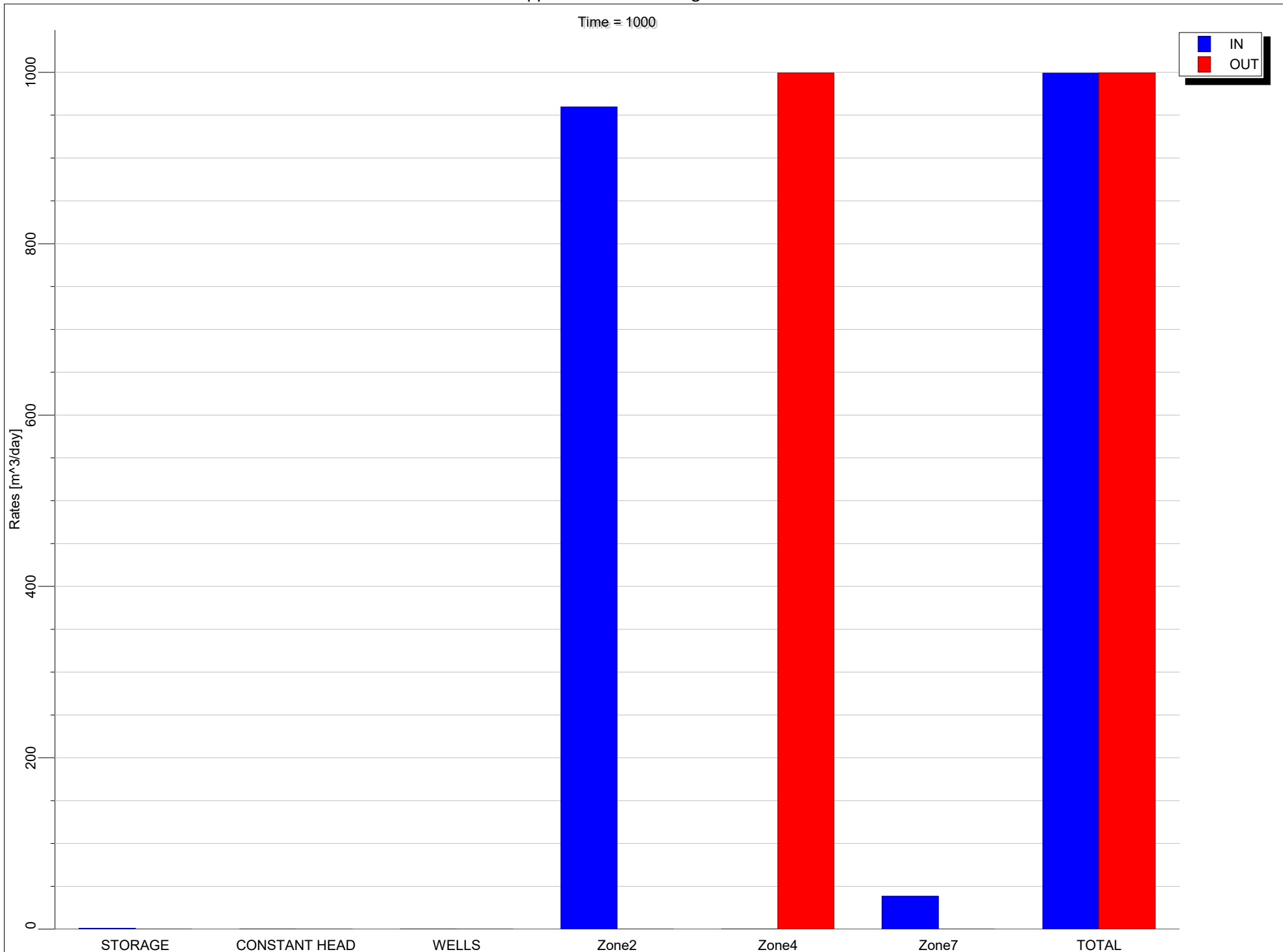
Appendix C - Zone Budget Charts

Time = 750



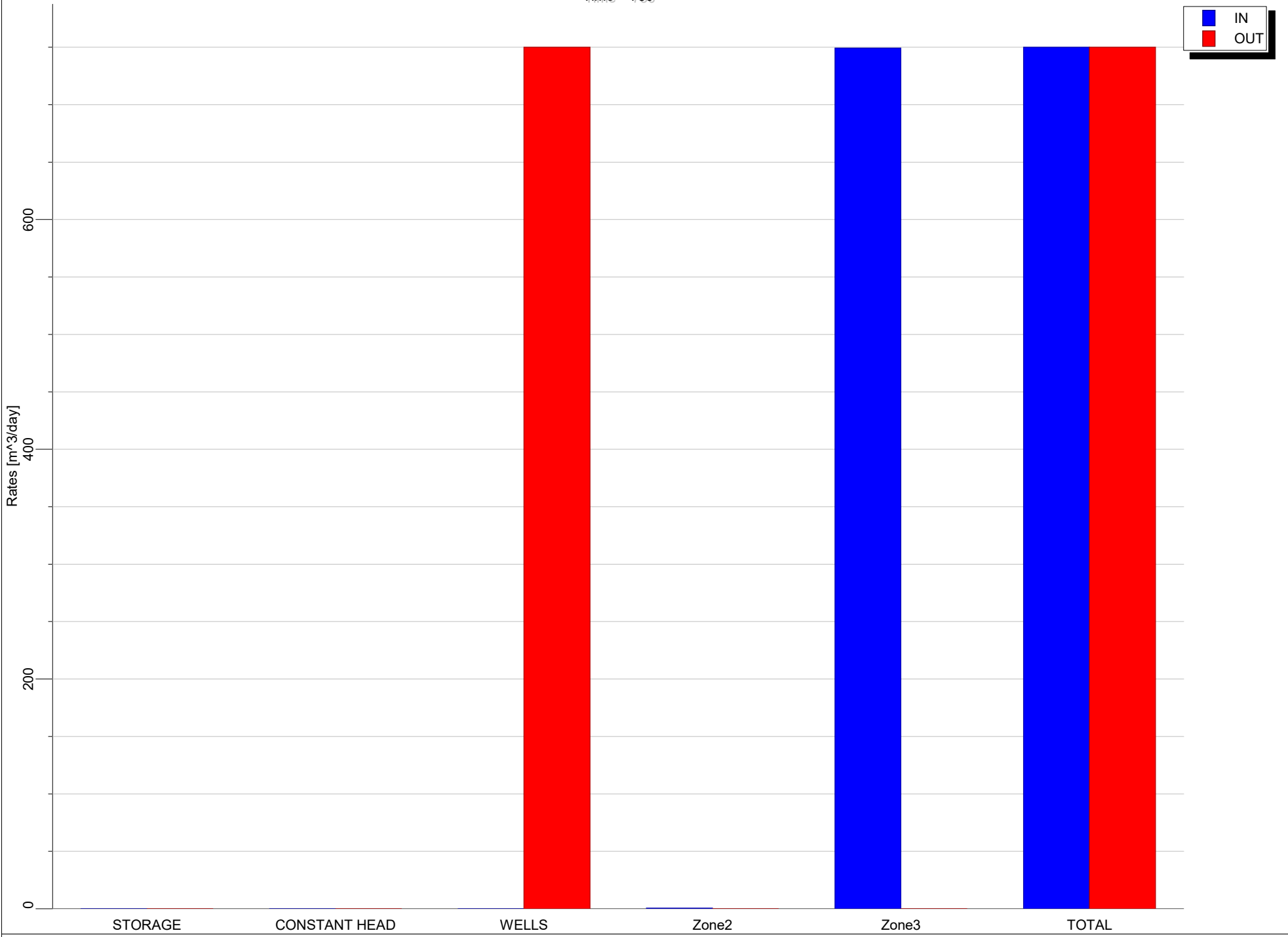
Appendix C - Zone Budget Charts

Time = 1000



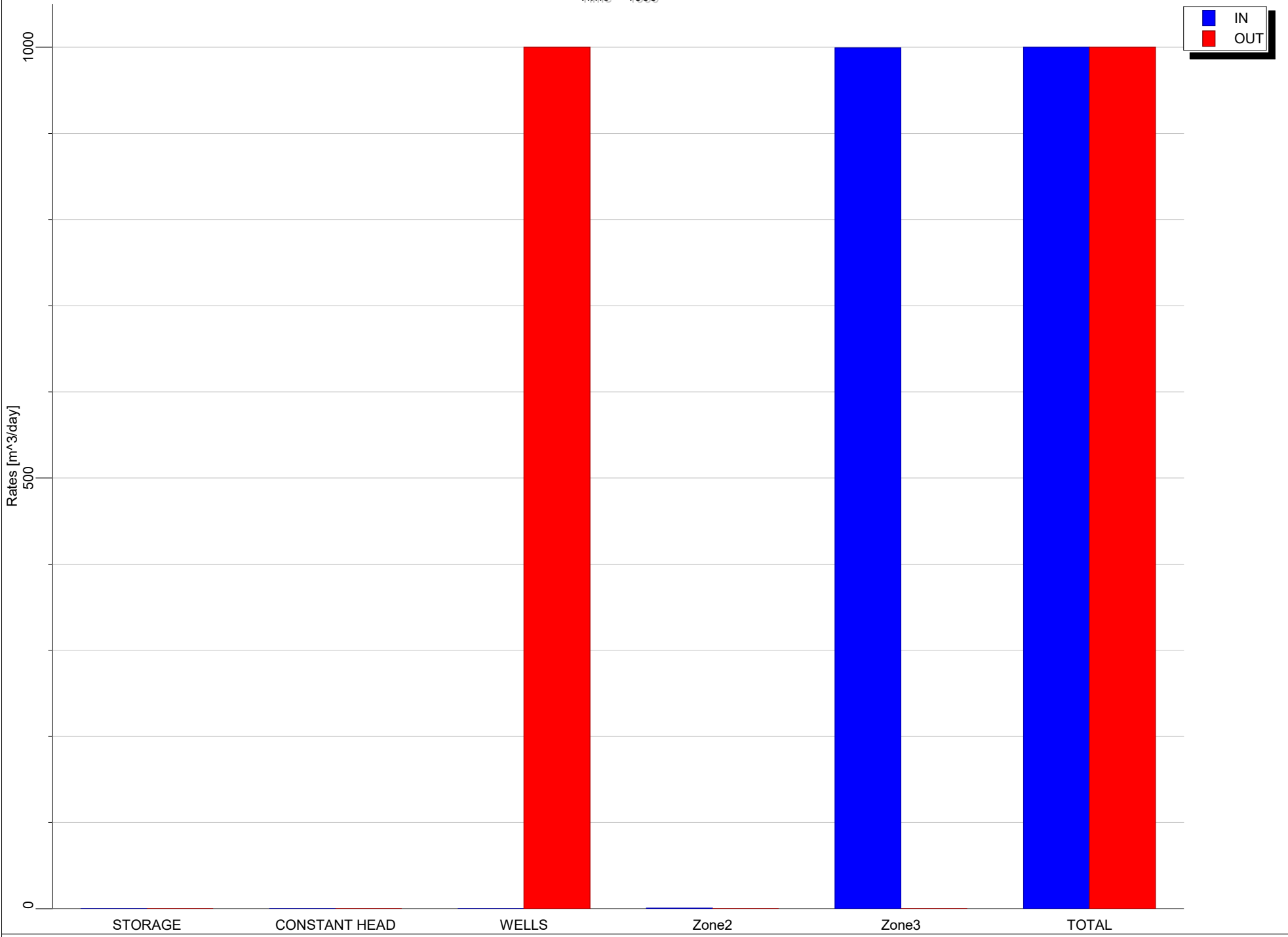
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

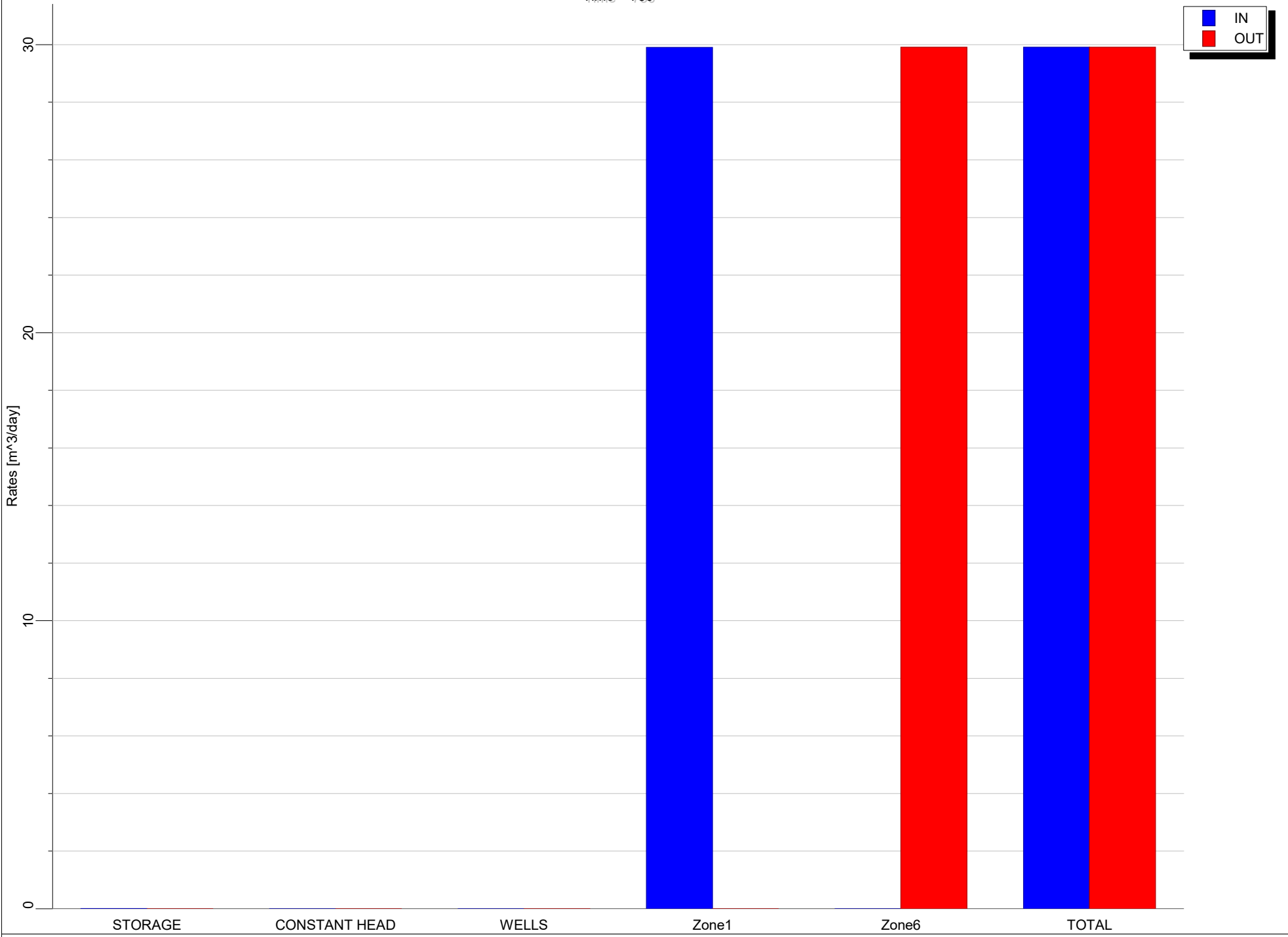
Time = 1000



Zone 4
Scenario 4.5
Abandoned Well 160m

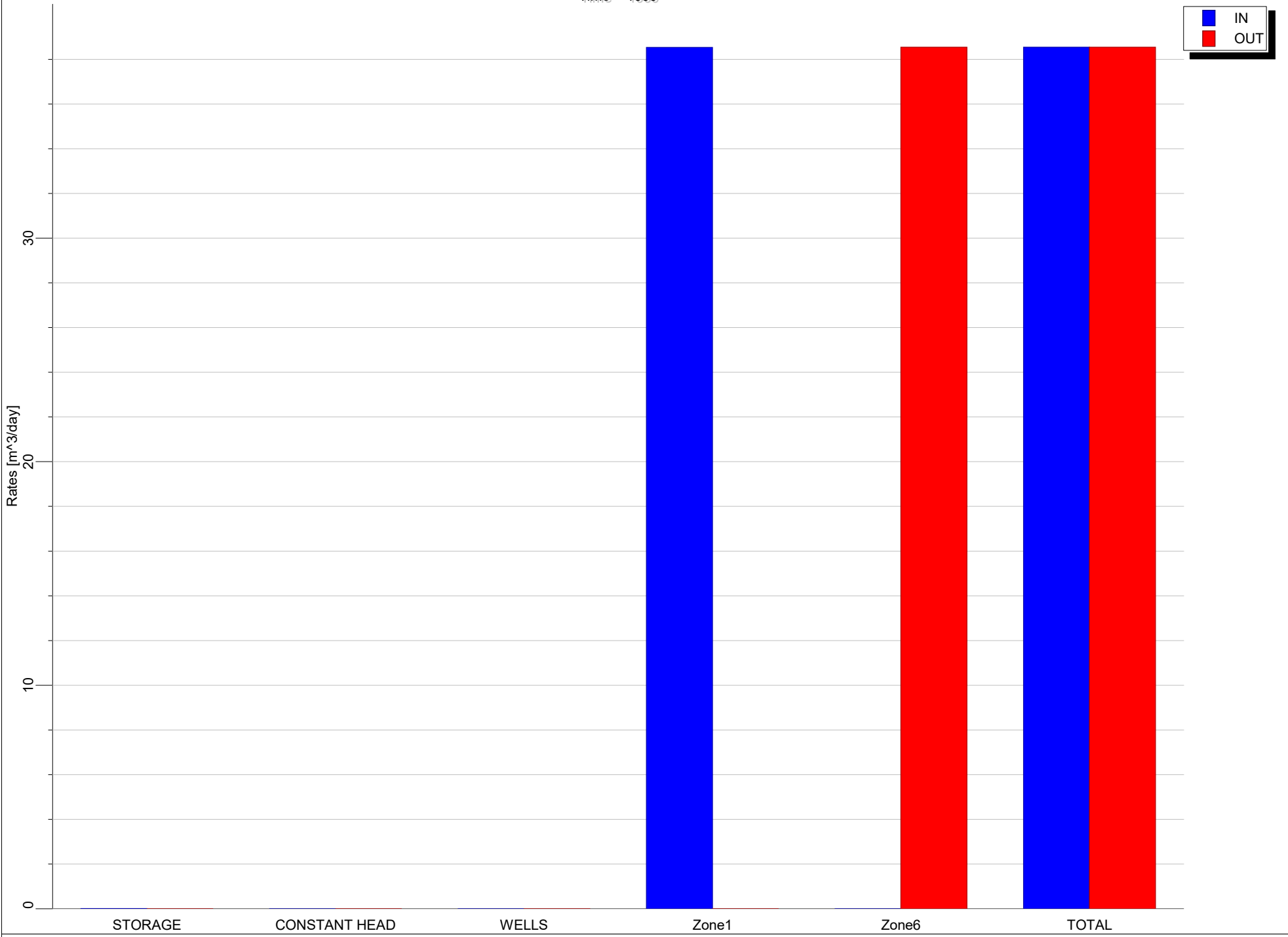
Appendix C - Zone Budget Charts

Time = 750



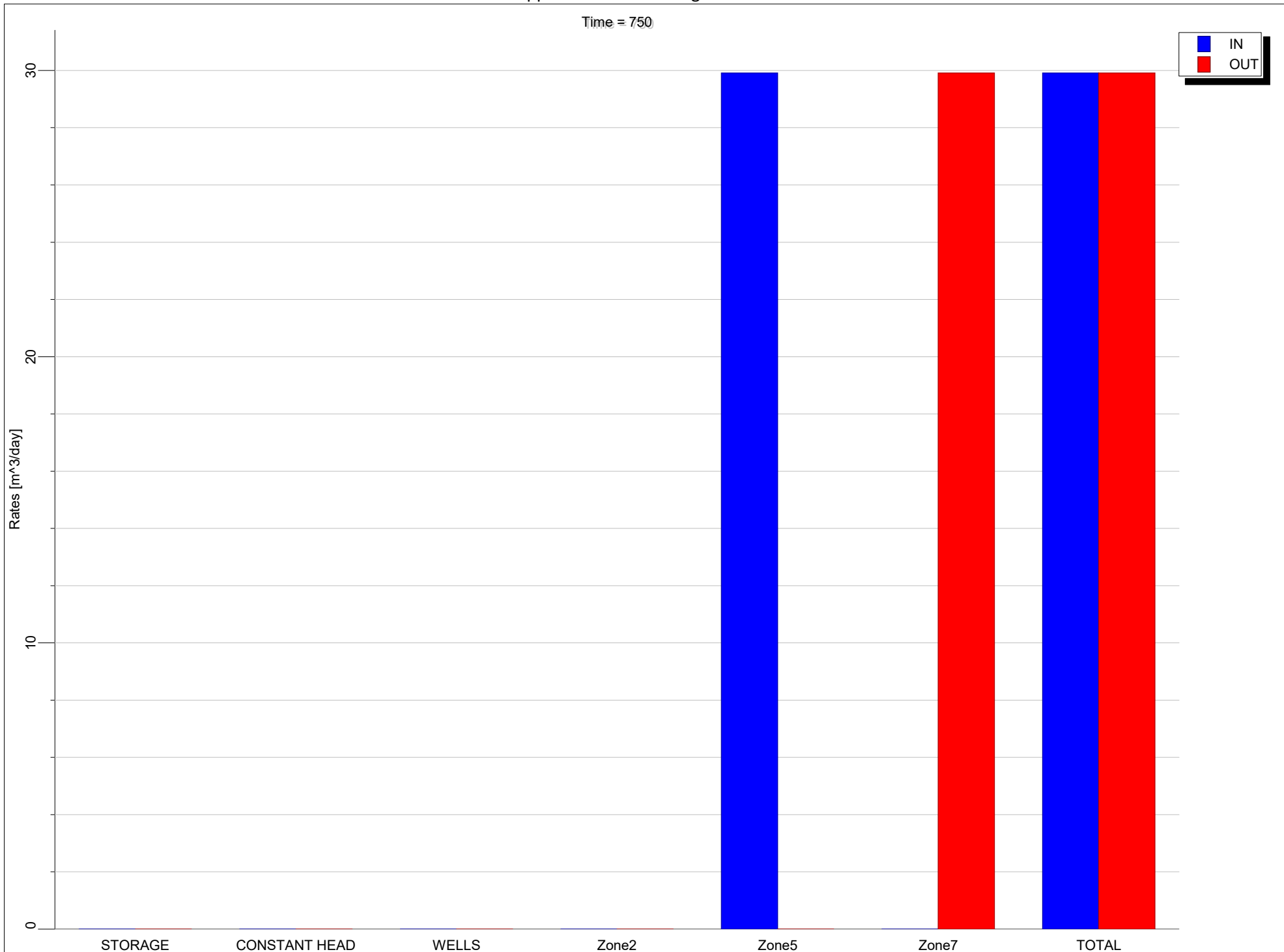
Appendix C - Zone Budget Charts

Time = 1000



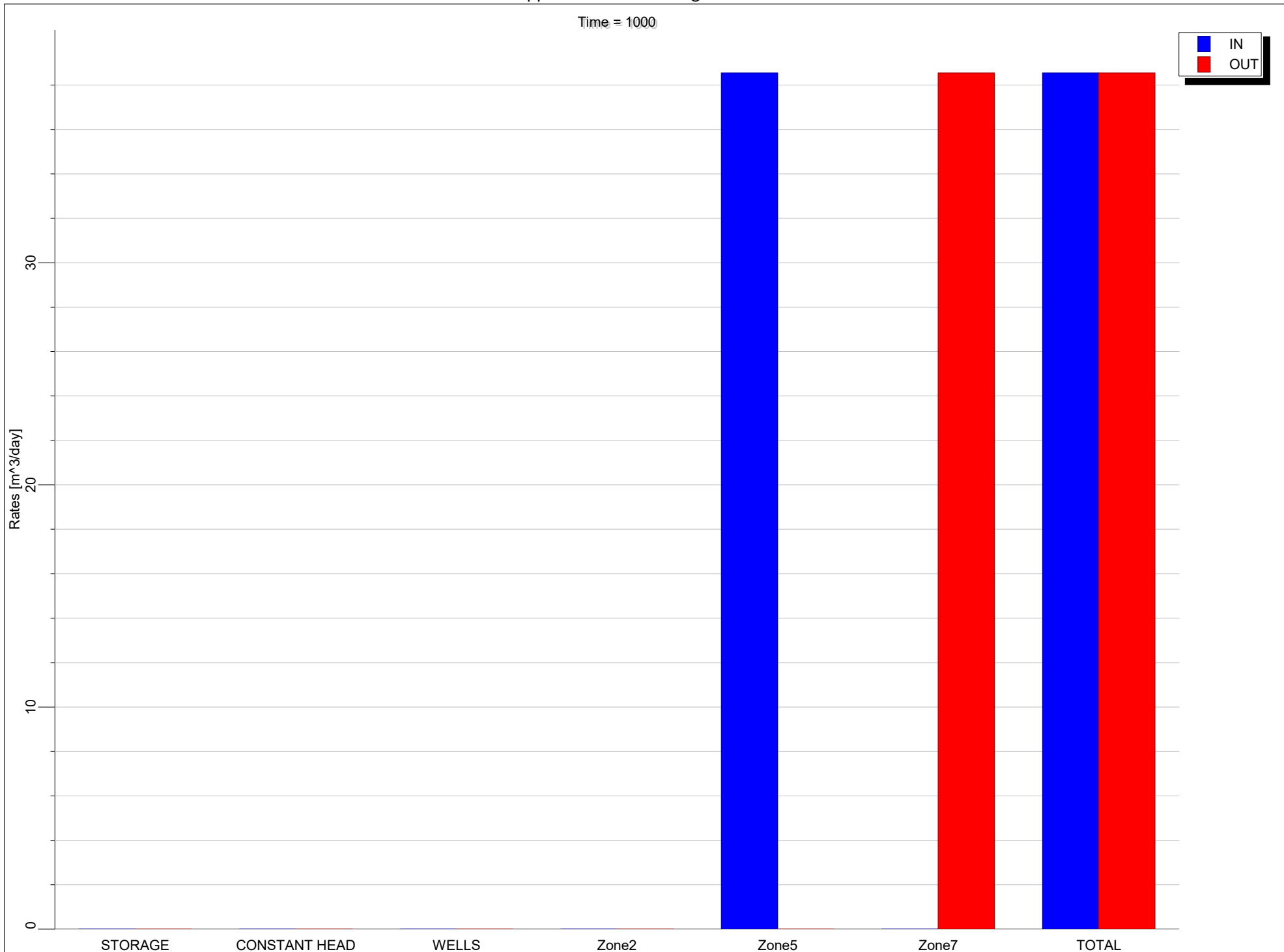
Appendix C - Zone Budget Charts

Time = 750



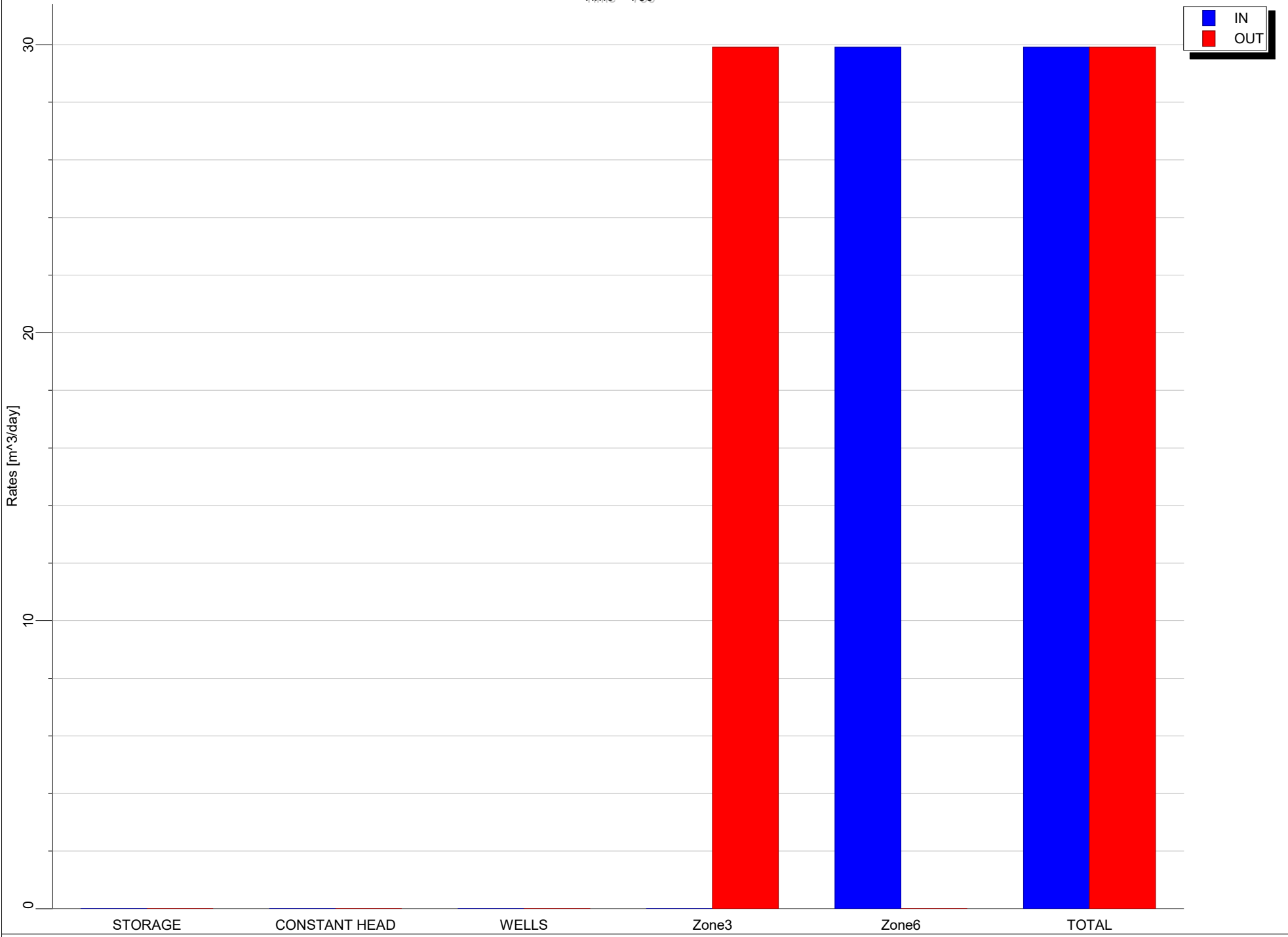
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

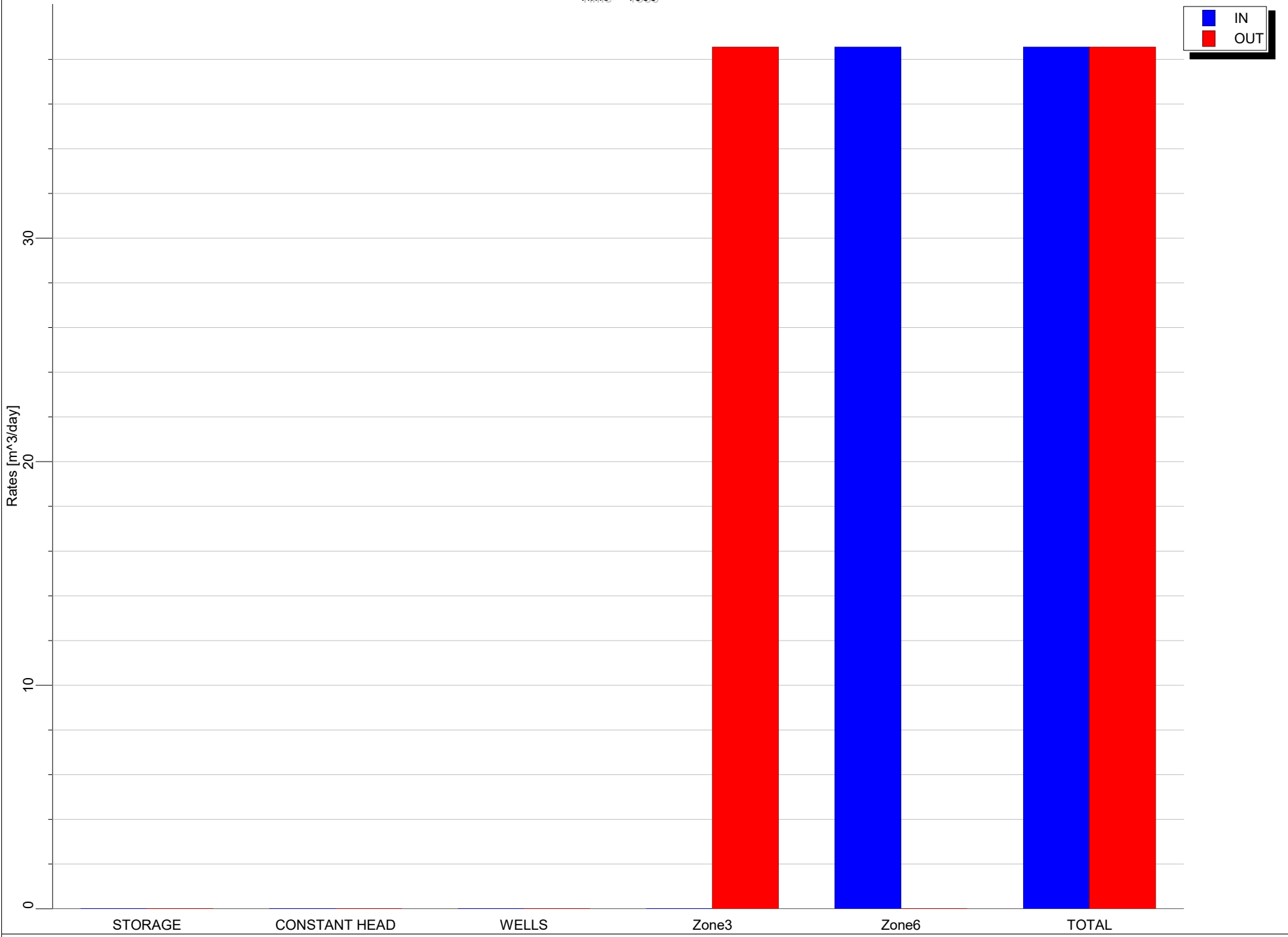
Time = 750



Zone 7
Scenario 4.5
Abandoned Well 160m

Appendix C - Zone Budget Charts

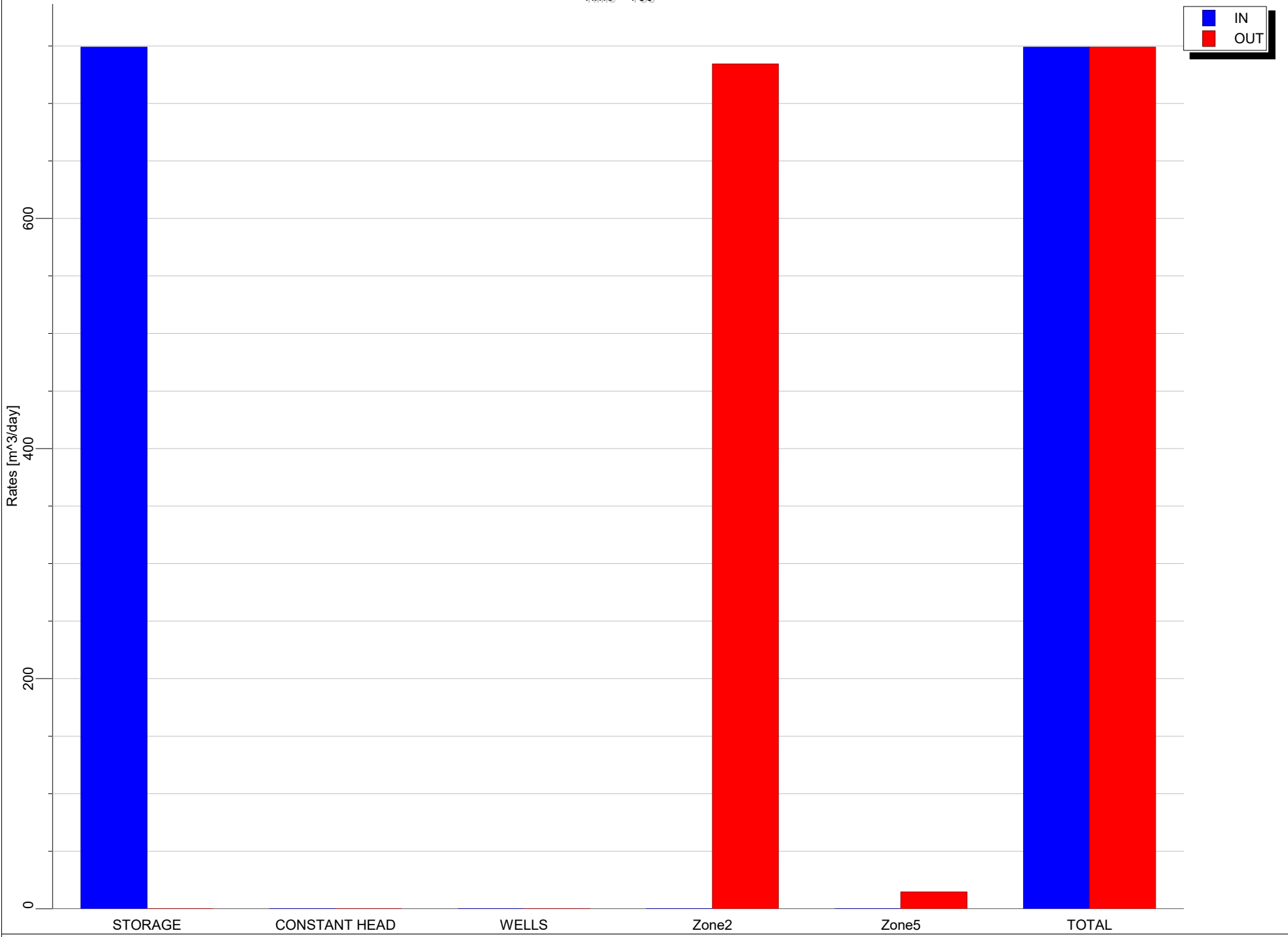
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Zone 7
Scenario 4.5
Abandoned Well 160m

Appendix C - Zone Budget Charts

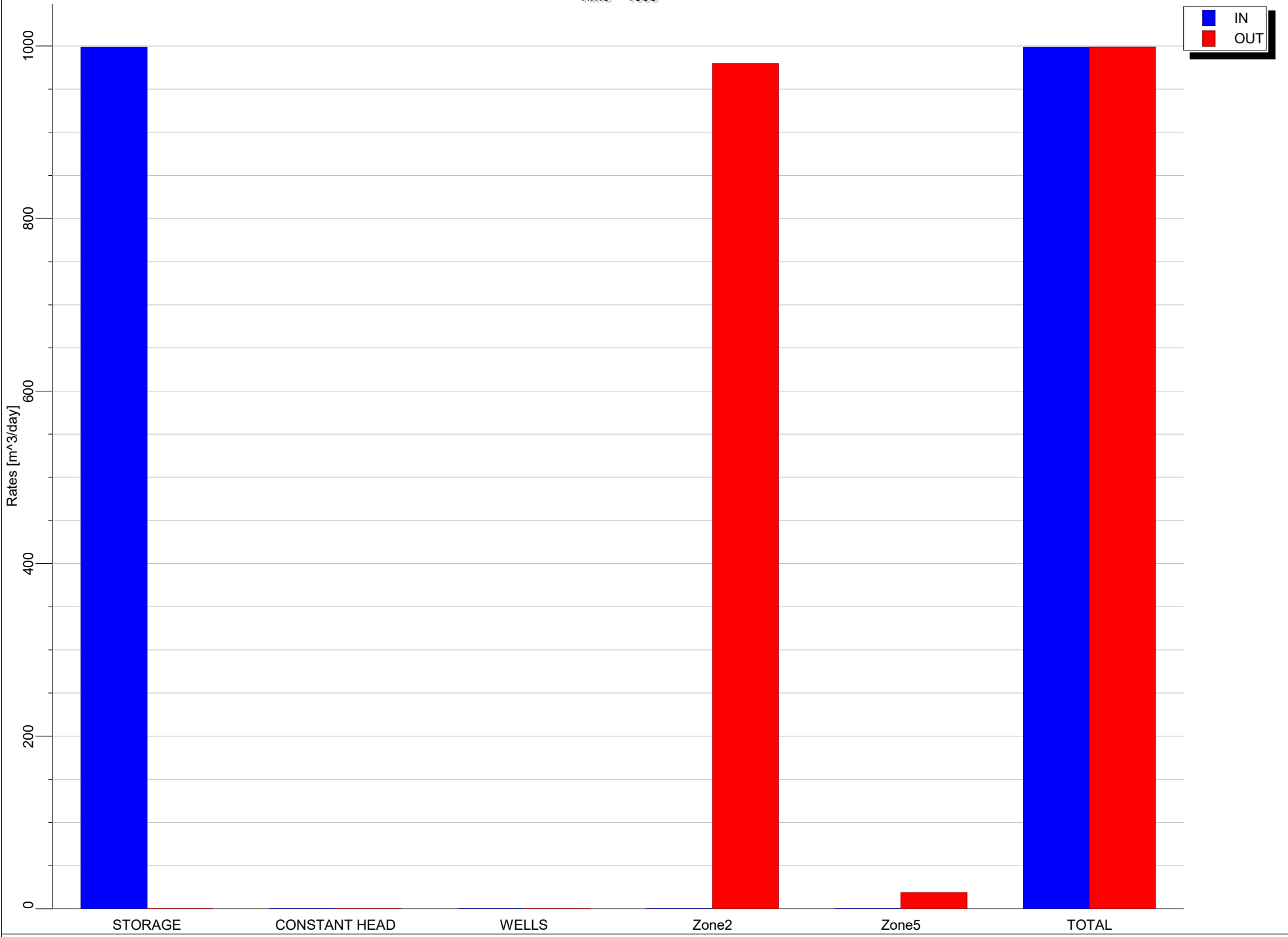
Time = 750



Zone 1
Scenario 4.6
Abandoned Well 250m

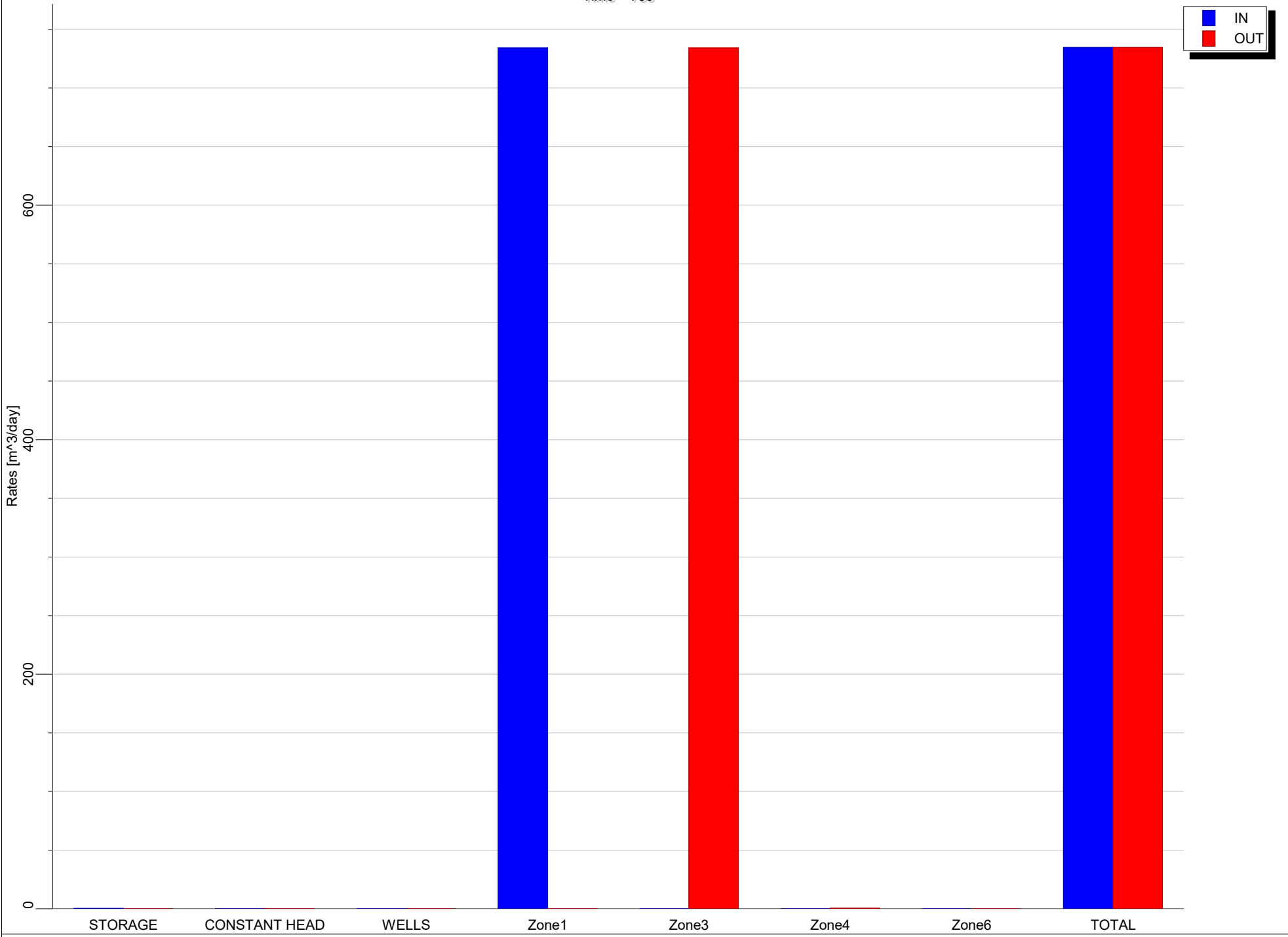
Appendix C - Zone Budget Charts

Time = 1000



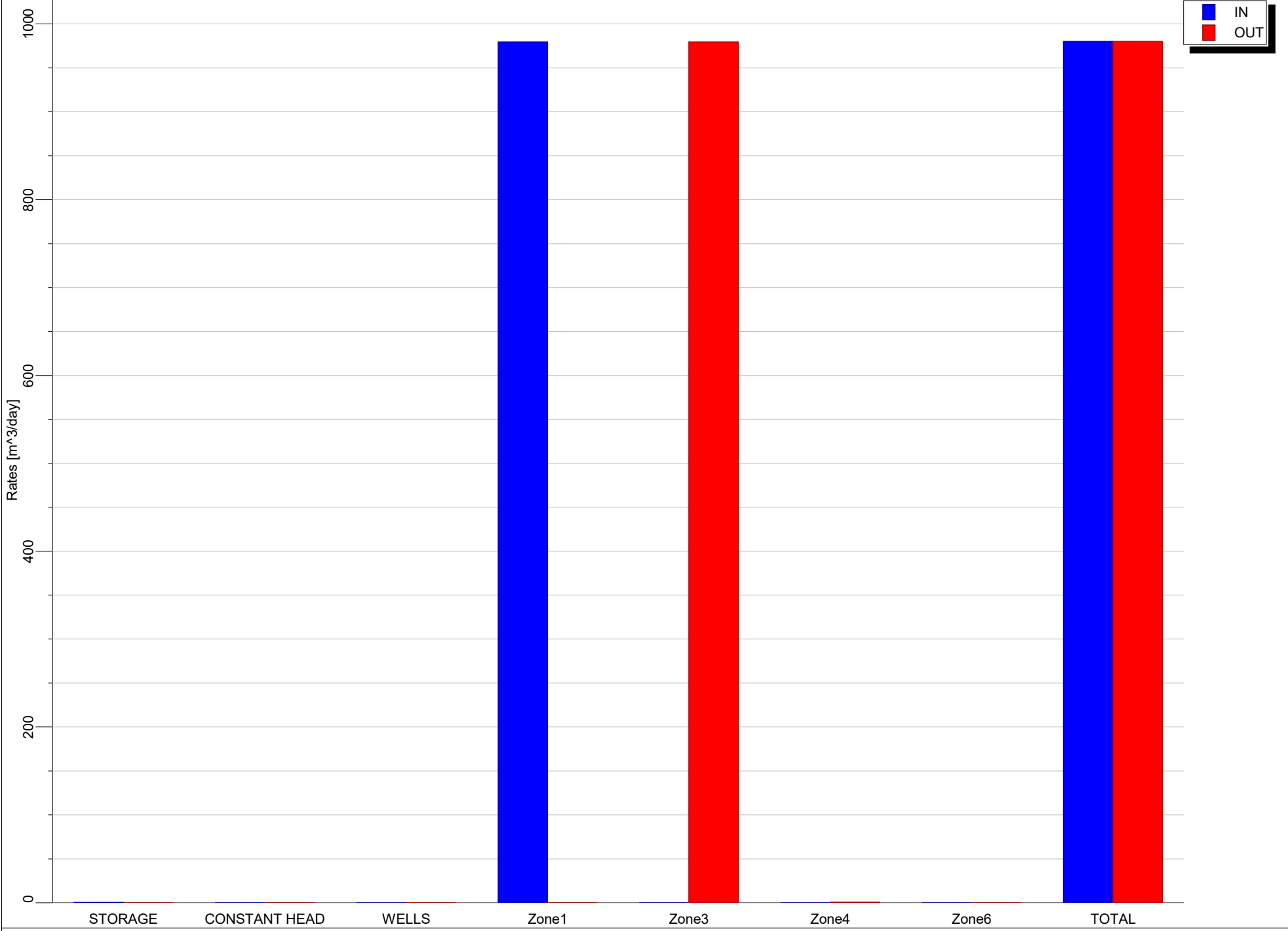
Appendix C - Zone Budget Charts

Time = 750



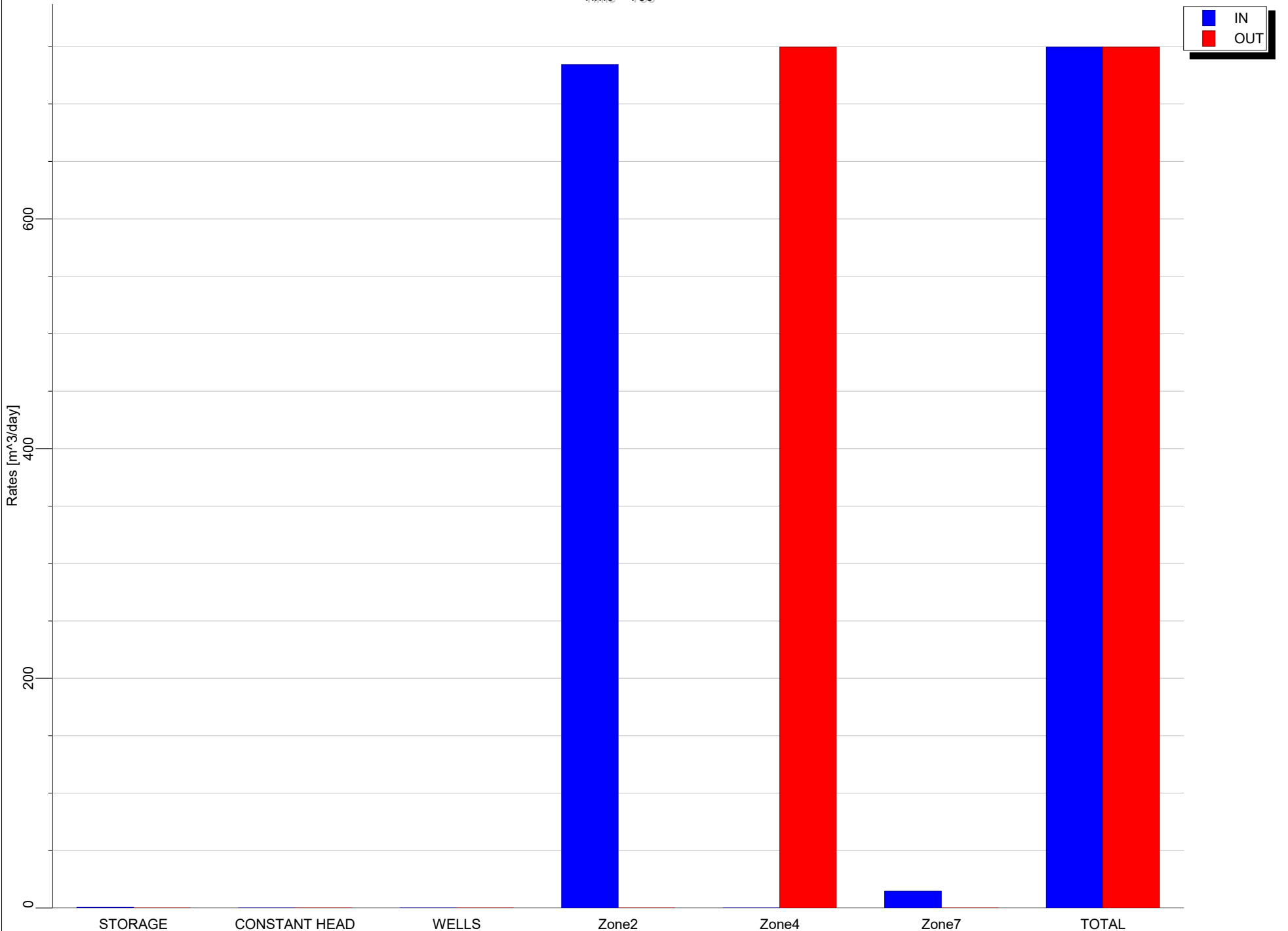
Appendix C - Zone Budget Charts

Time = 1000



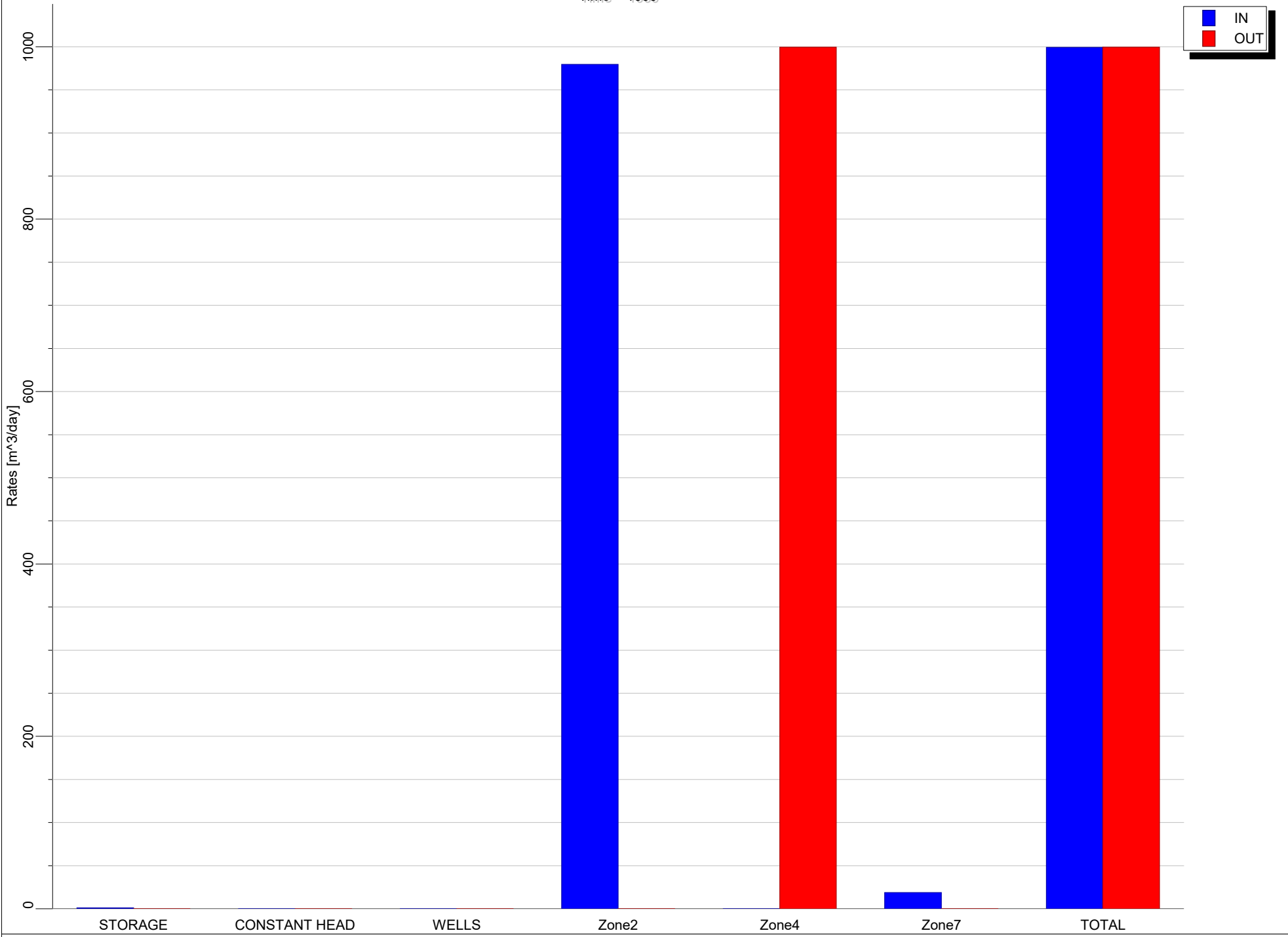
Appendix C - Zone Budget Charts

Time = 750



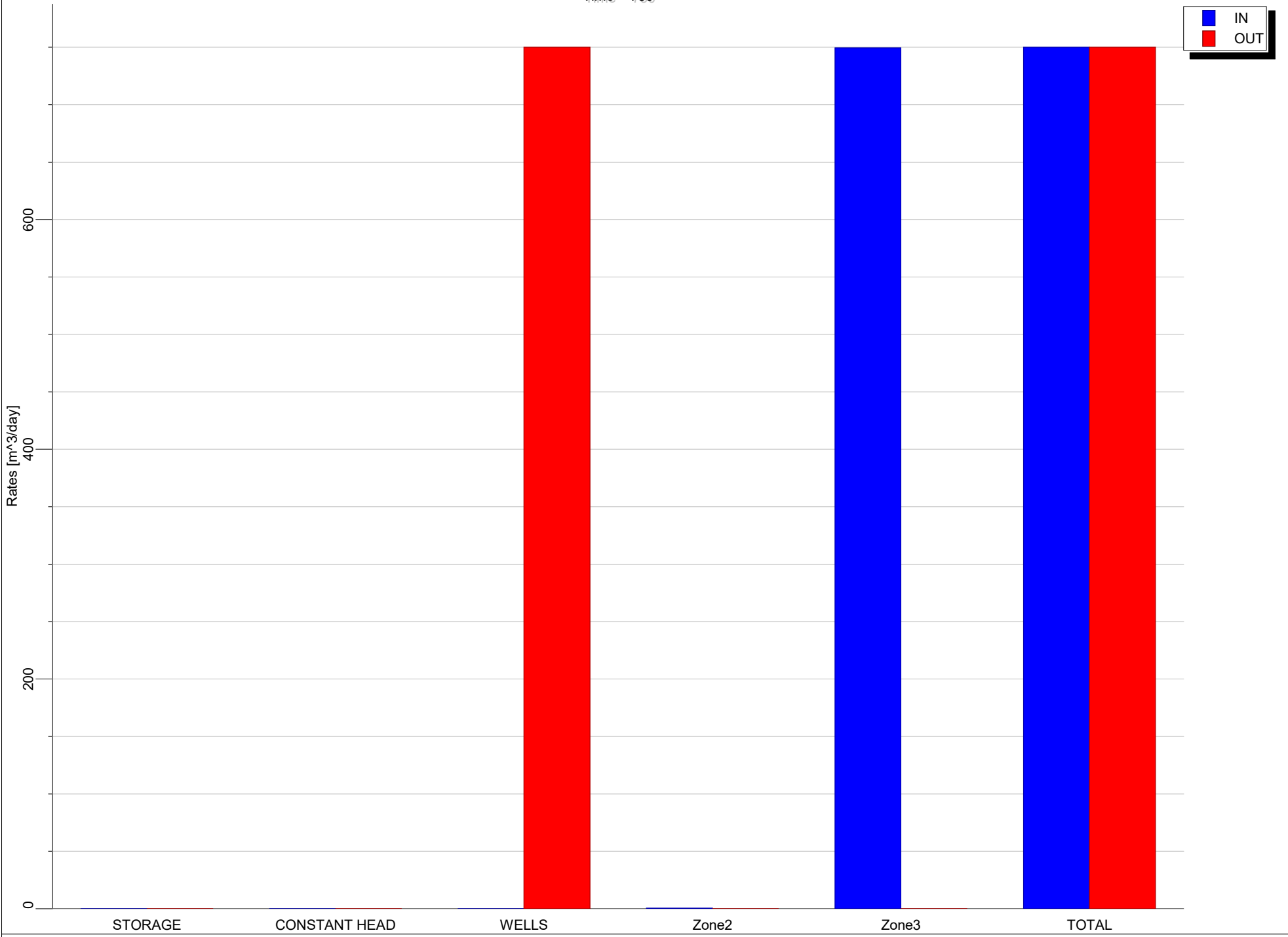
Appendix C - Zone Budget Charts

Time = 1000



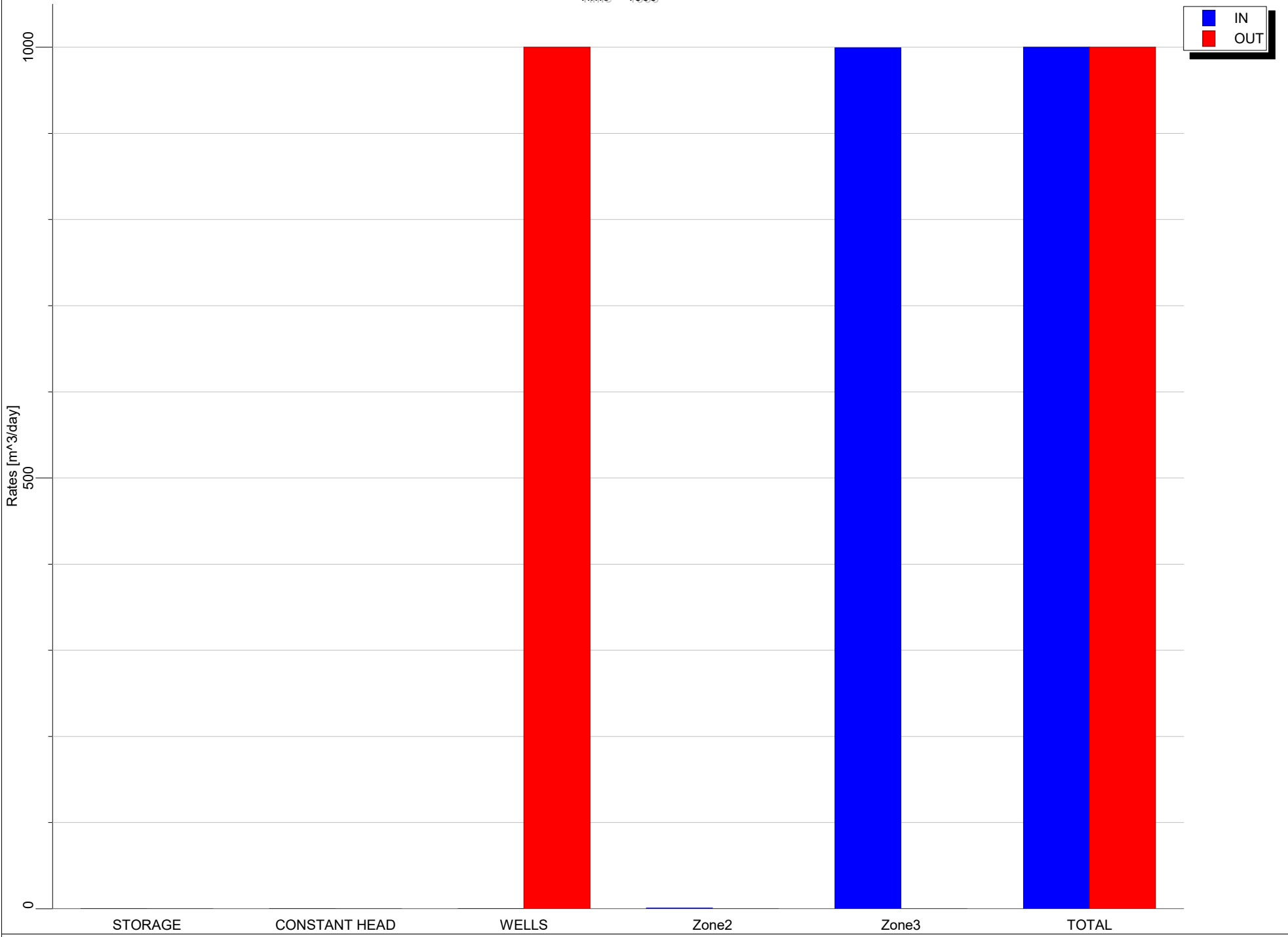
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

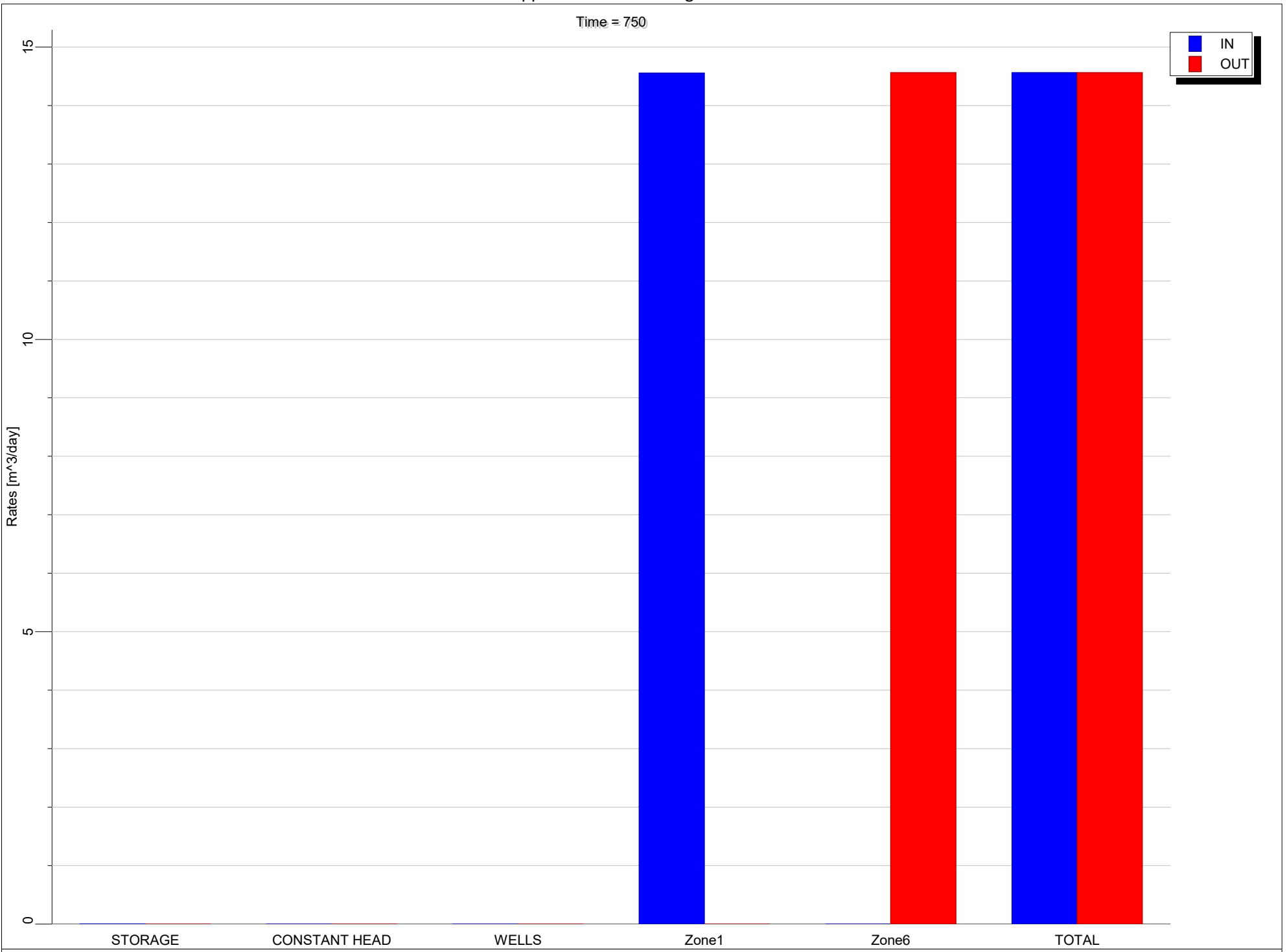
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Zone 4
Scenario 4.6
Abandoned Well 250m

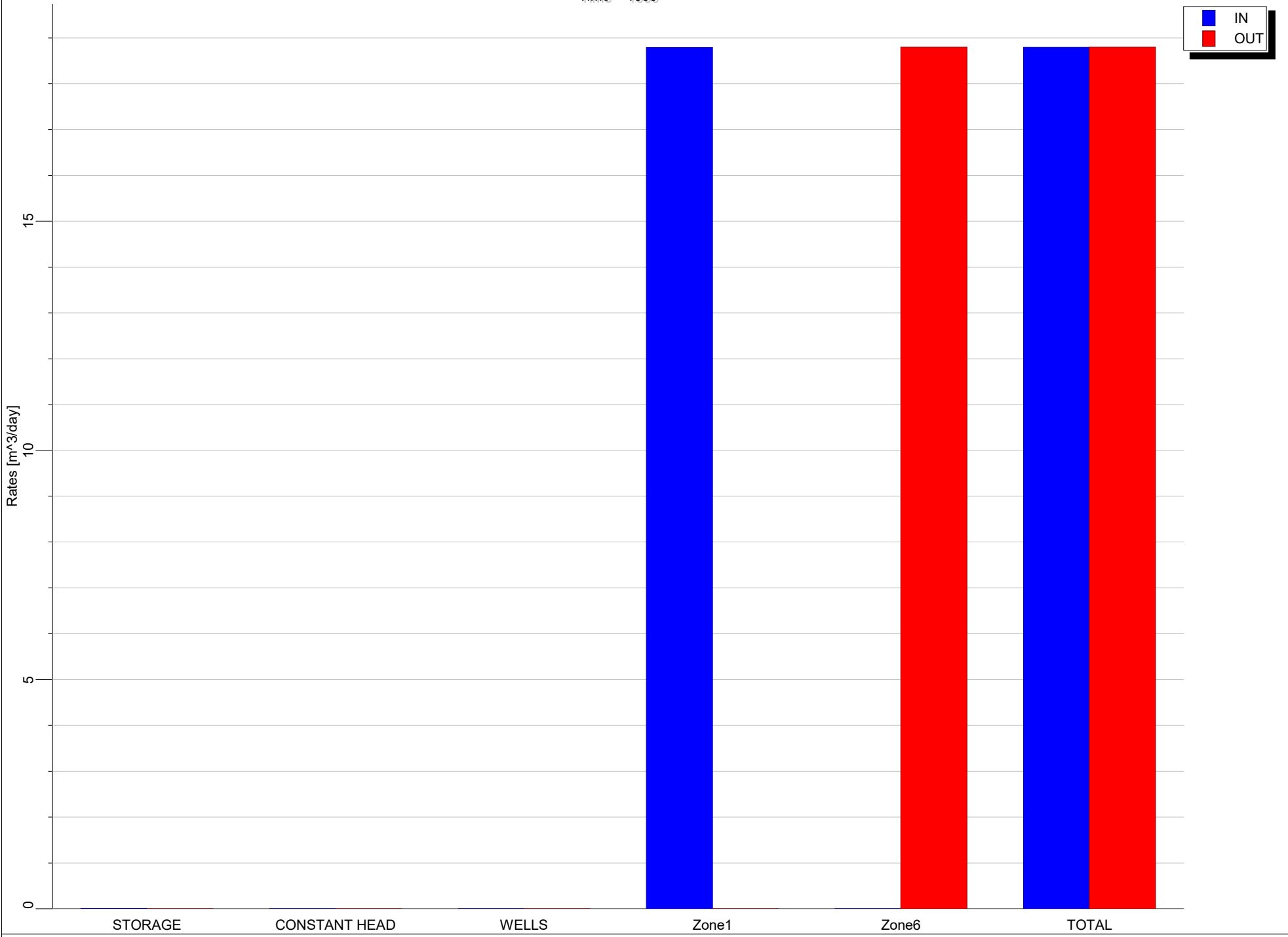
Appendix C - Zone Budget Charts

Time = 750



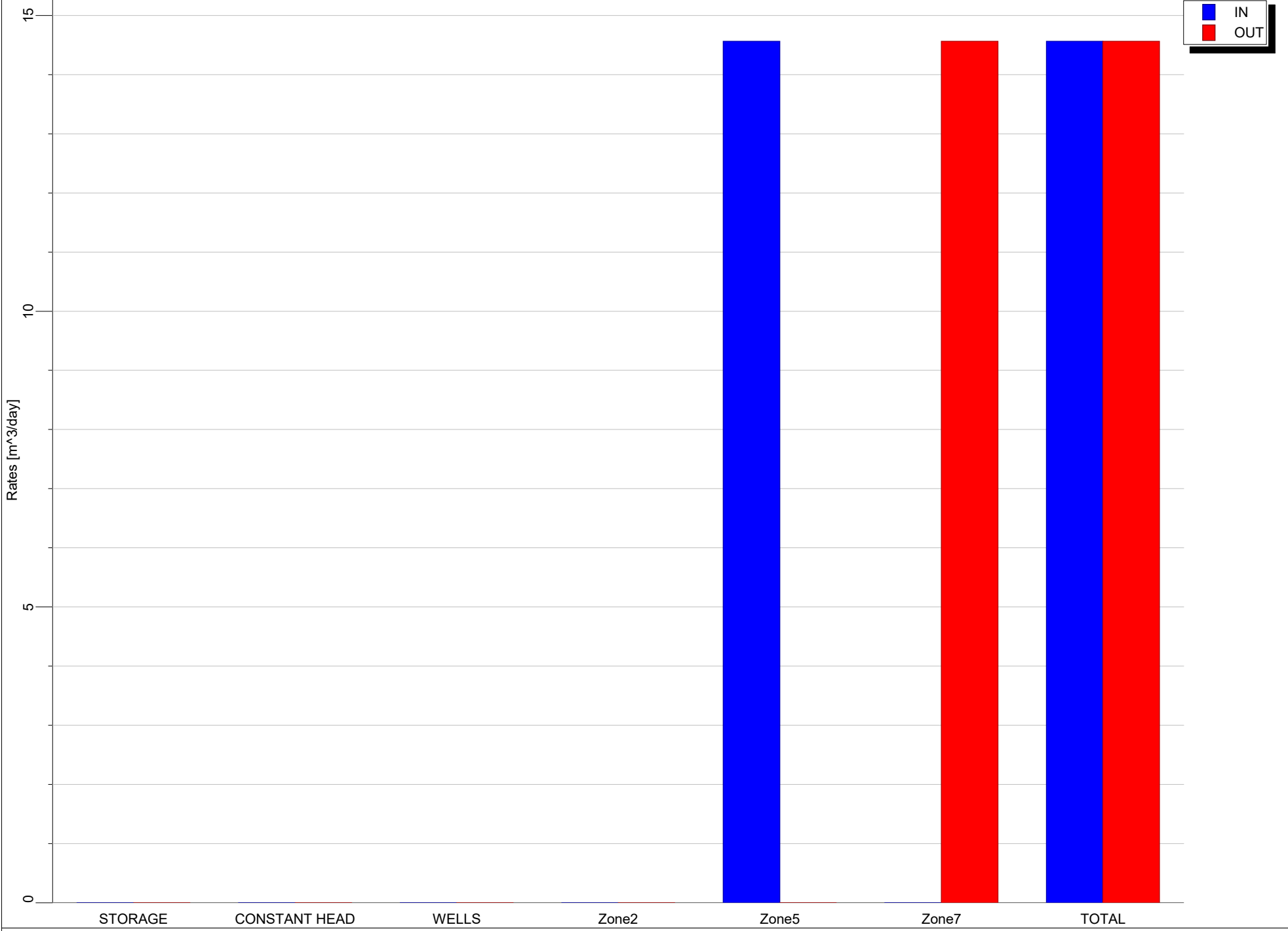
Appendix C - Zone Budget Charts

Time = 1000



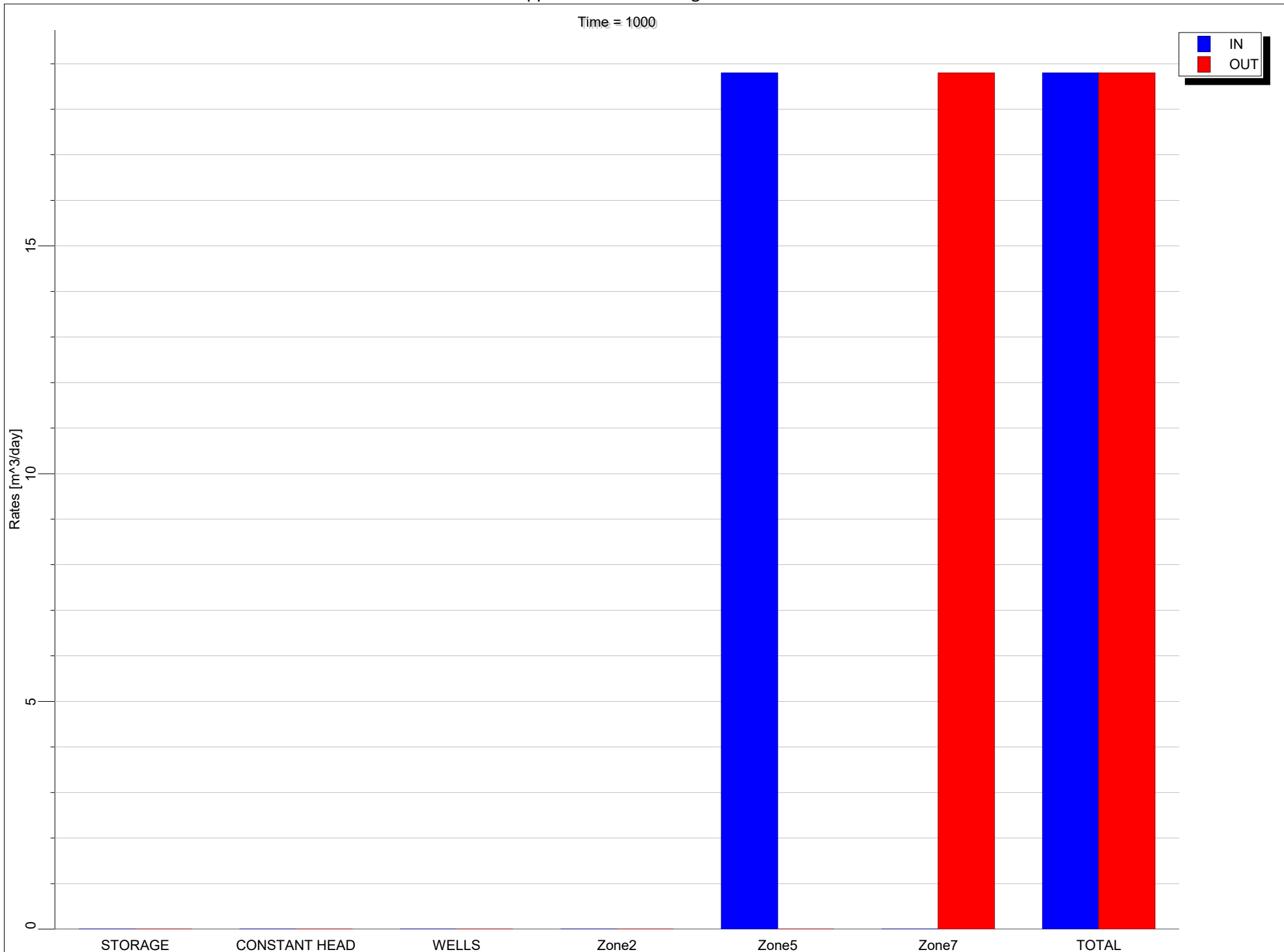
Appendix C - Zone Budget Charts

Time = 750



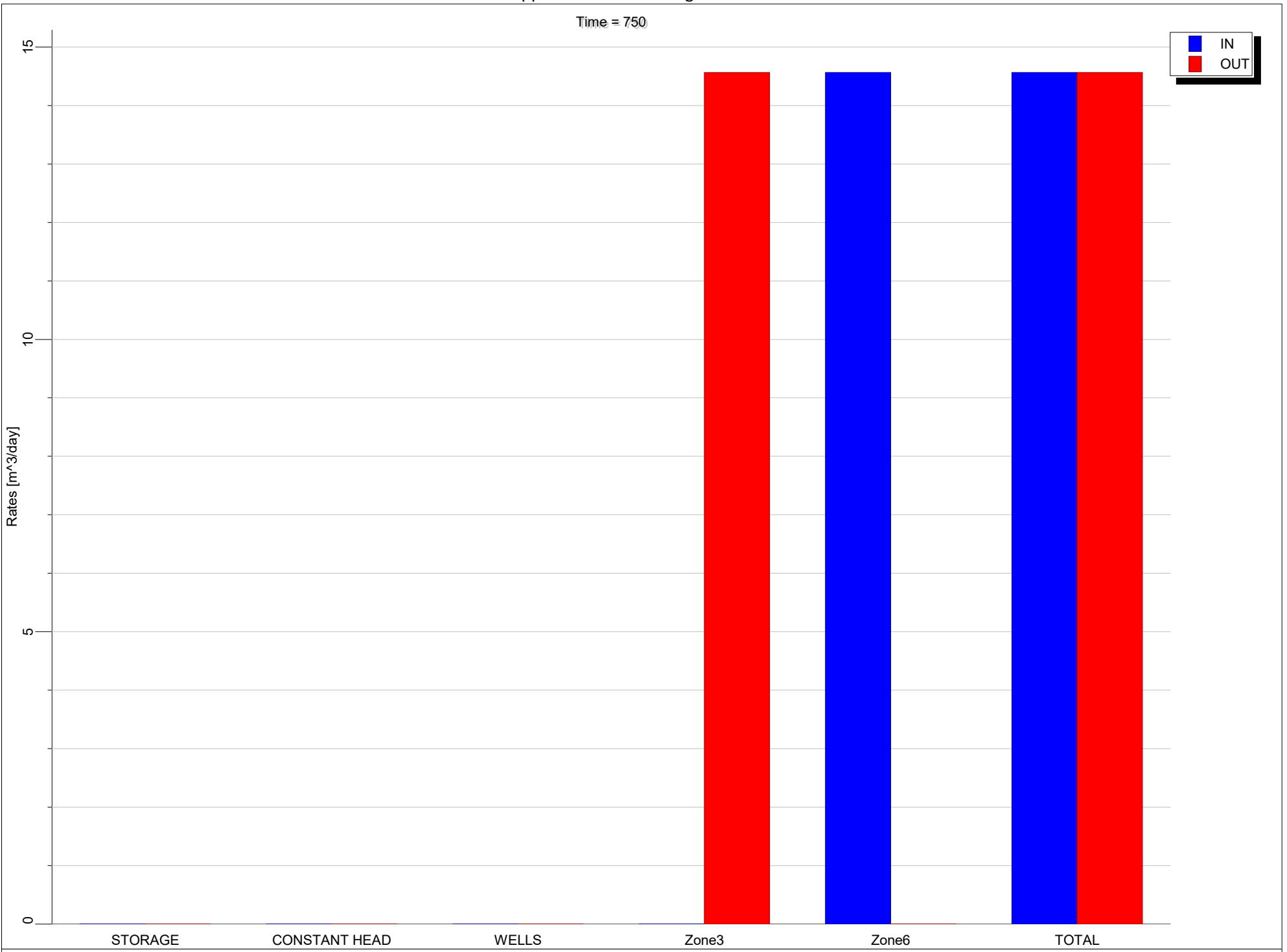
Appendix C - Zone Budget Charts

Time = 1000



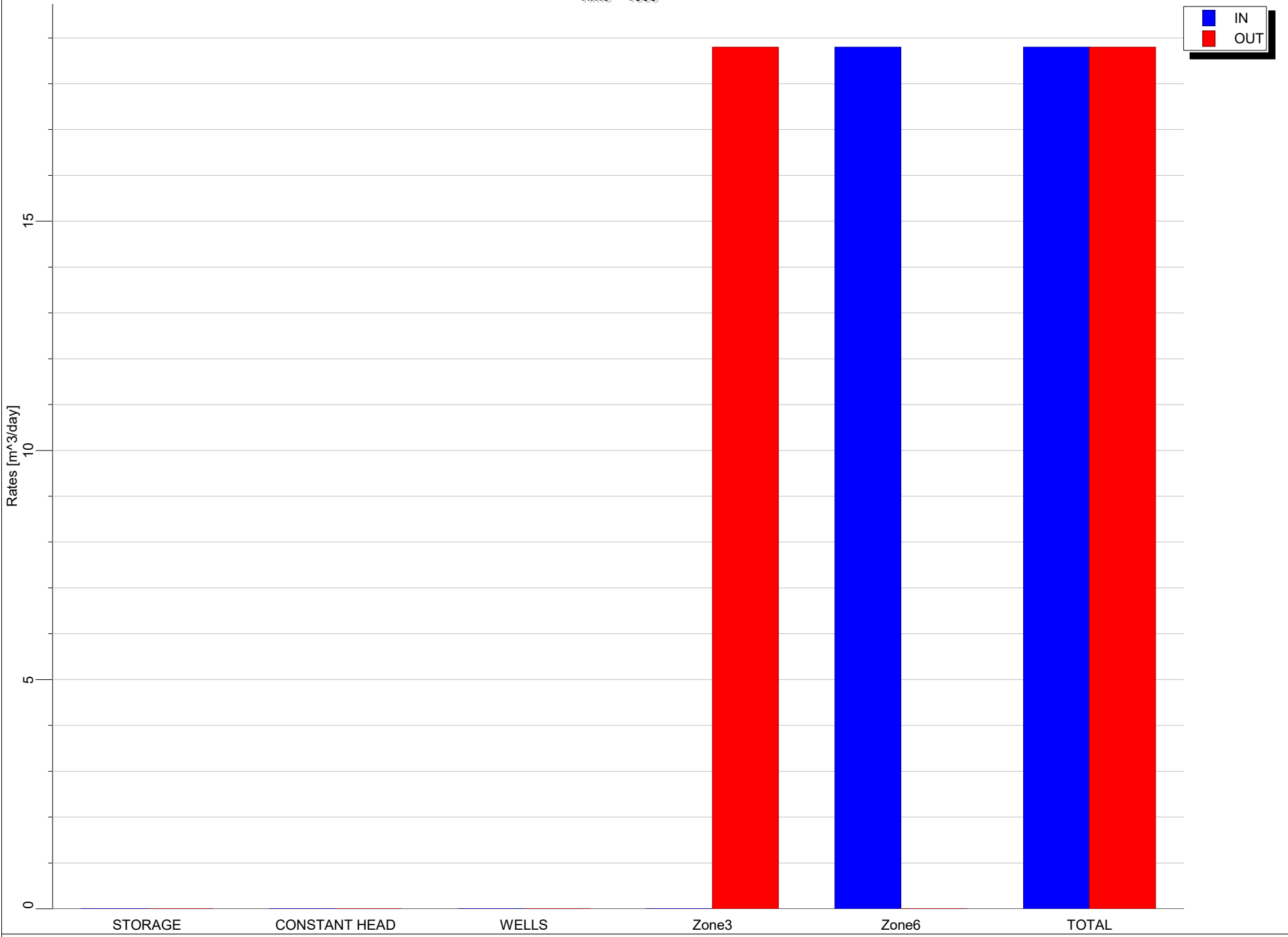
Appendix C - Zone Budget Charts

Time = 750



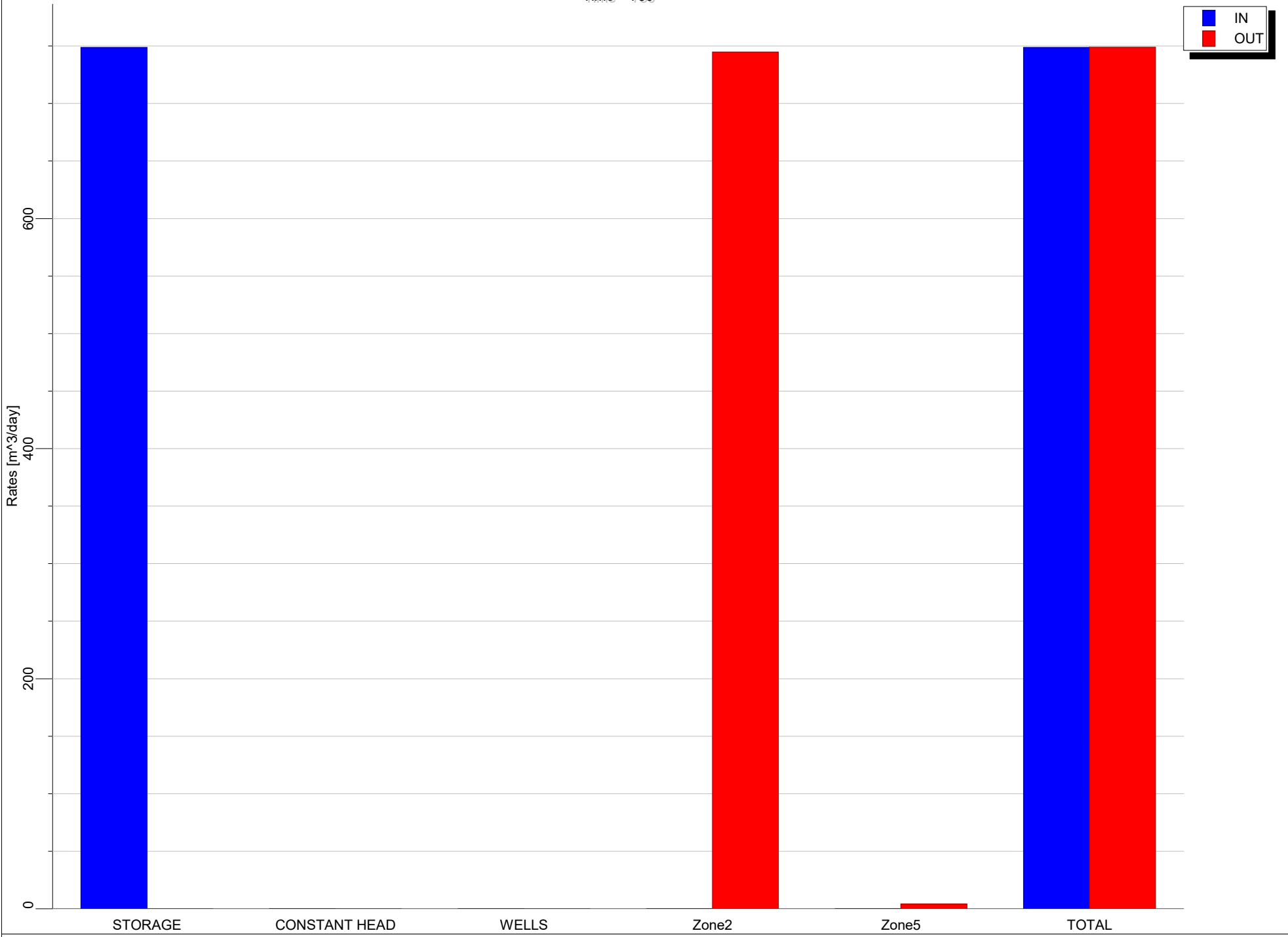
Appendix C - Zone Budget Charts

Time = 1000



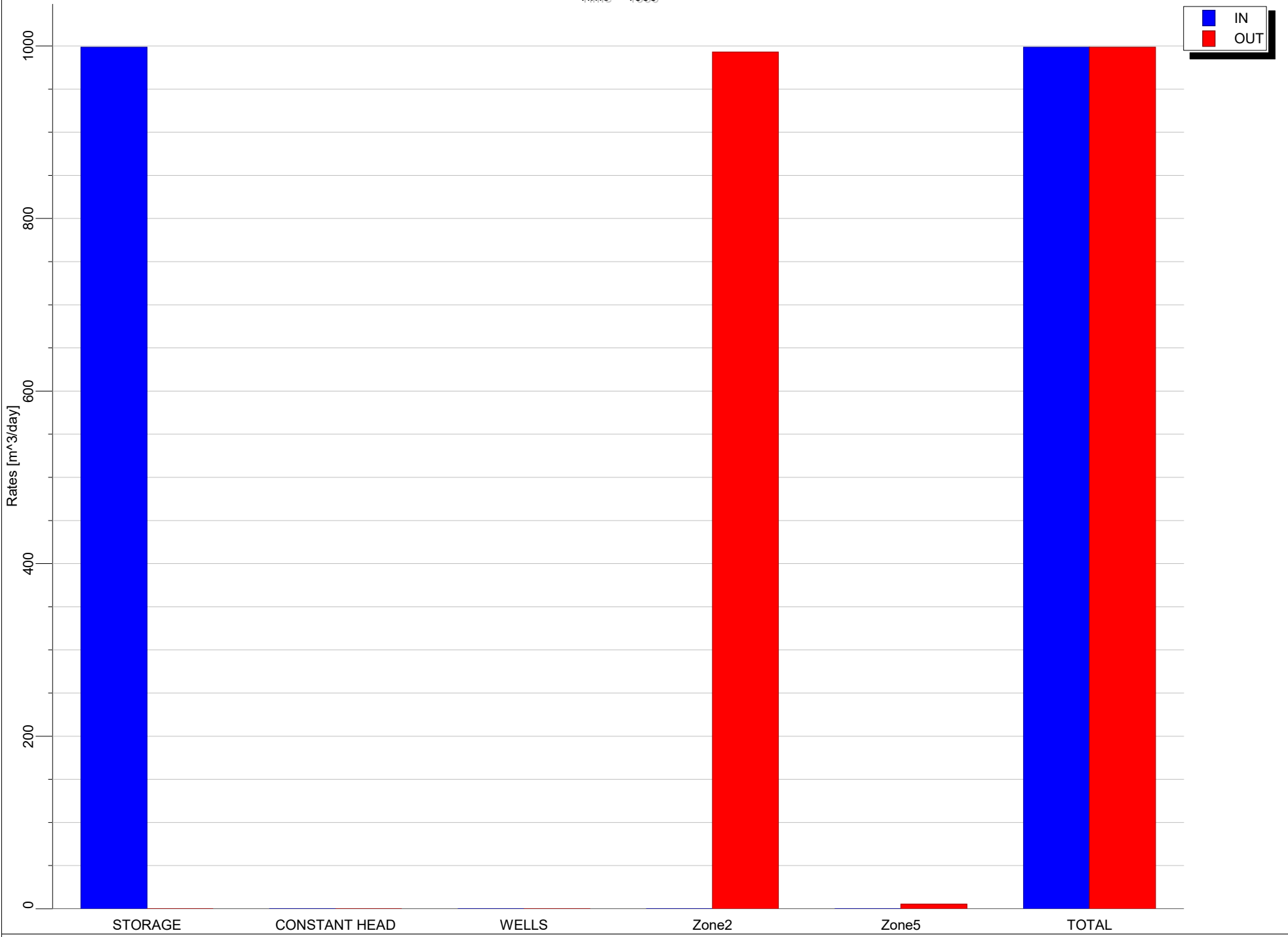
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

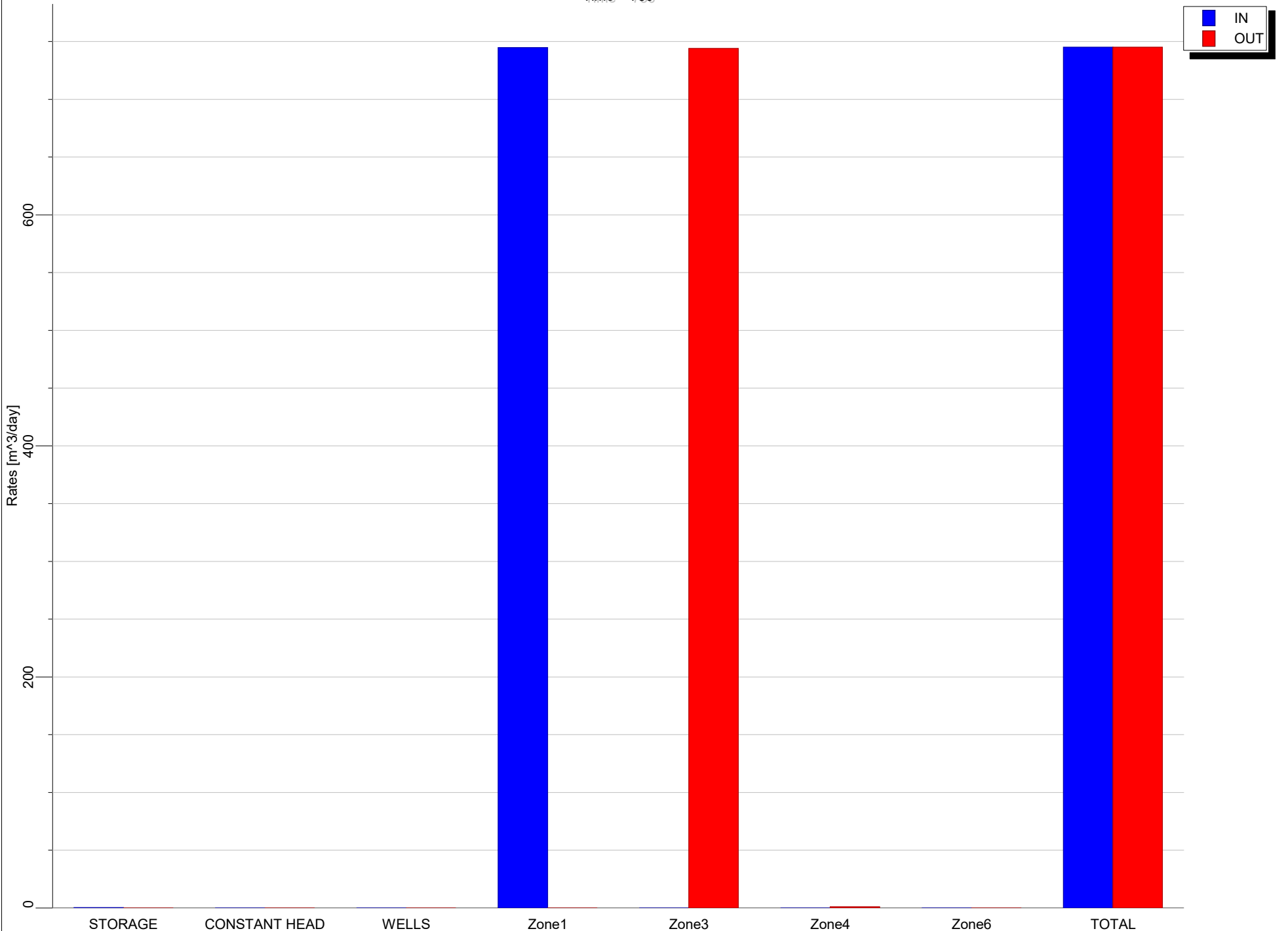
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Zone 1
Scenario 4.7
Abandoned Well 500m

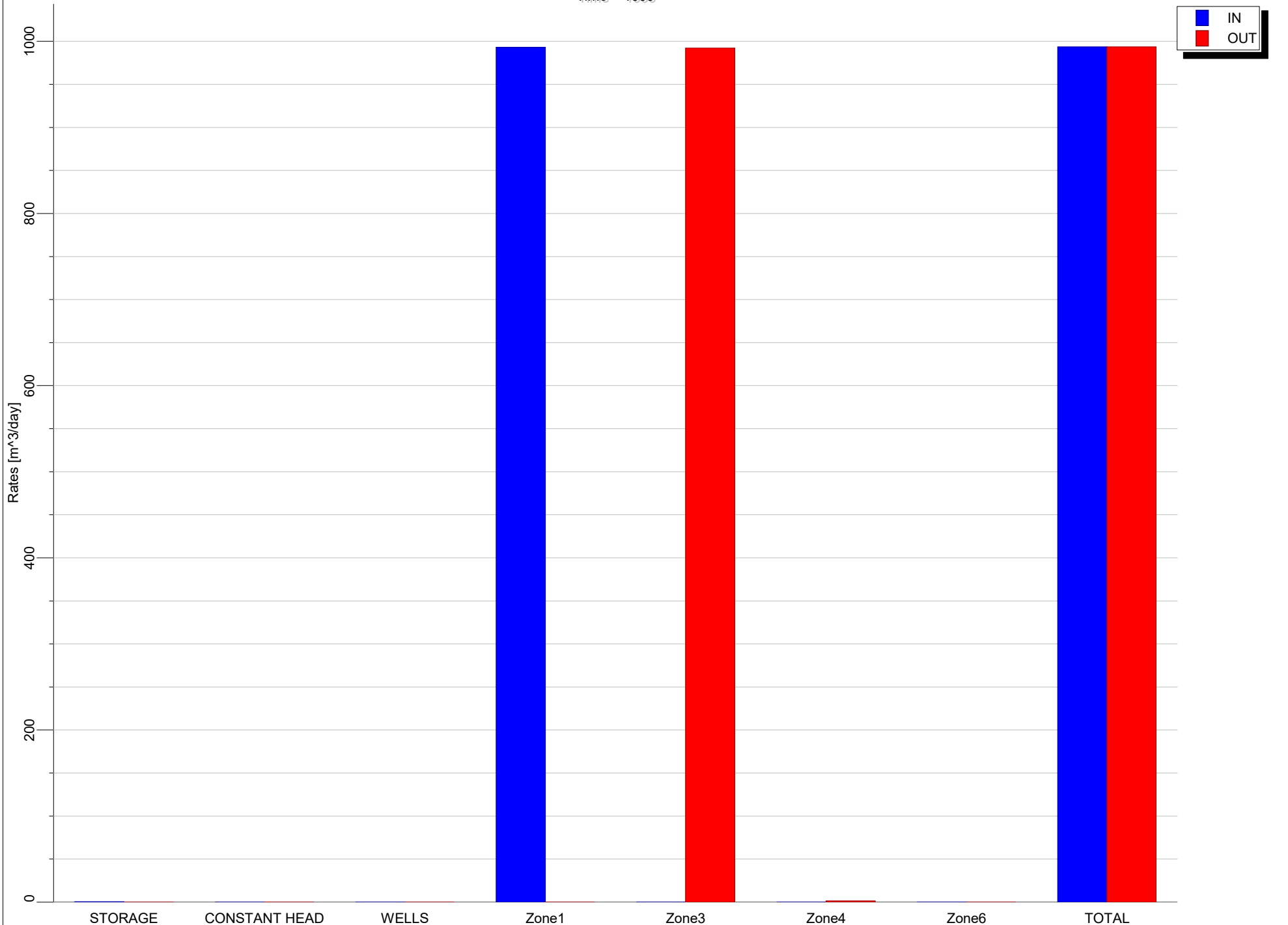
Appendix C - Zone Budget Charts

Time = 750



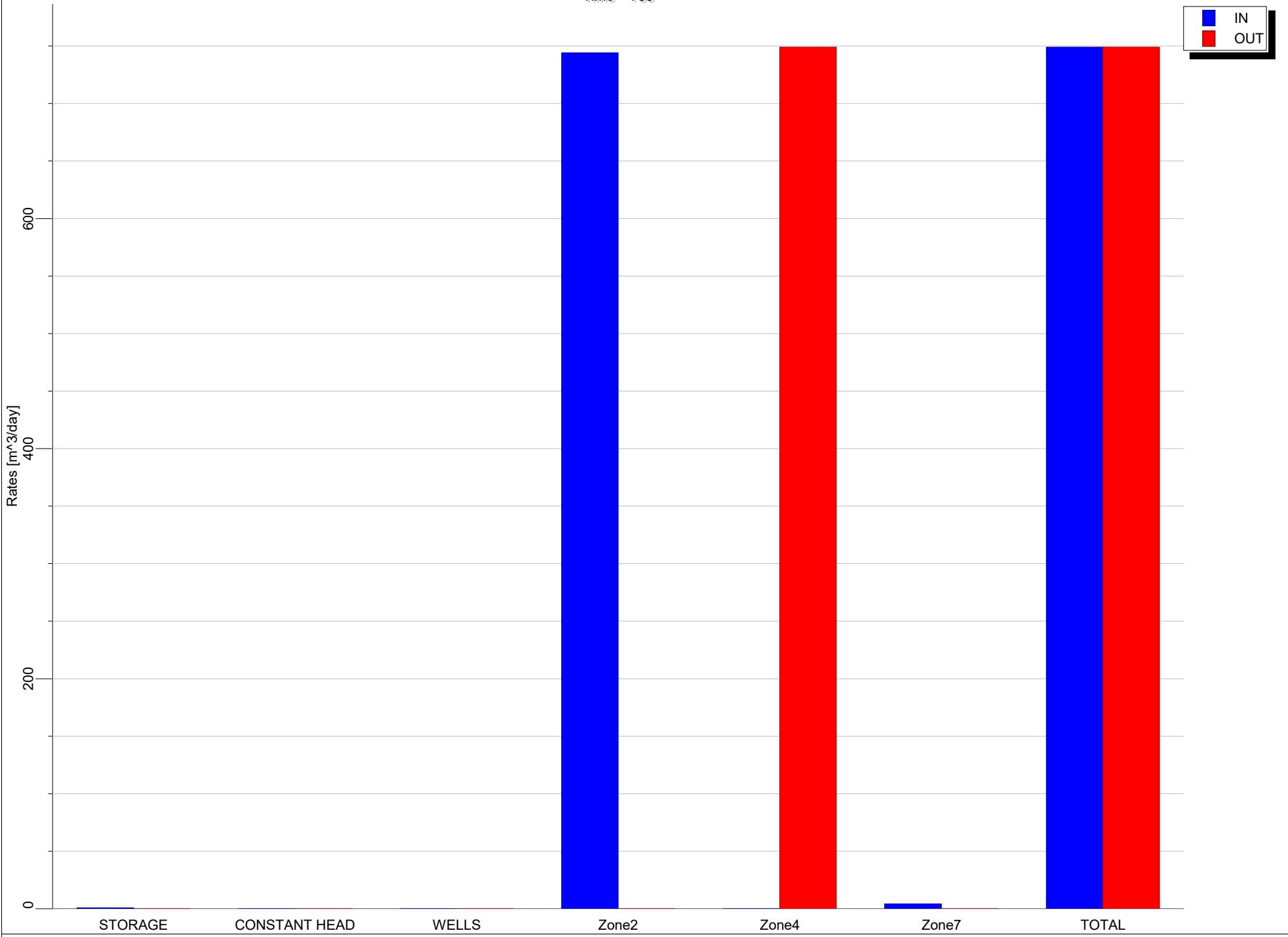
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

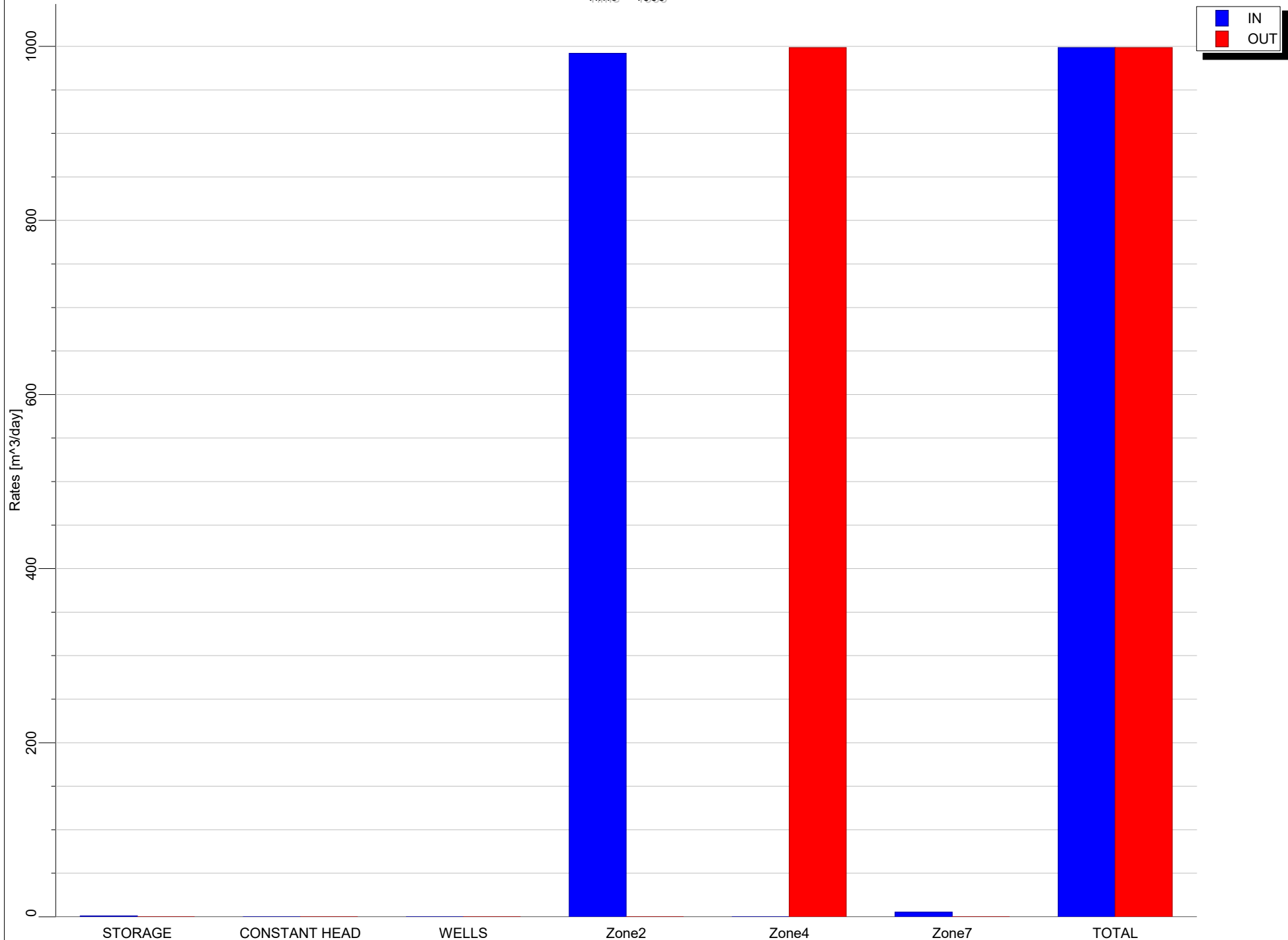
Time = 750



Zone 3
Scenario 4.7
Abandoned Well 500m

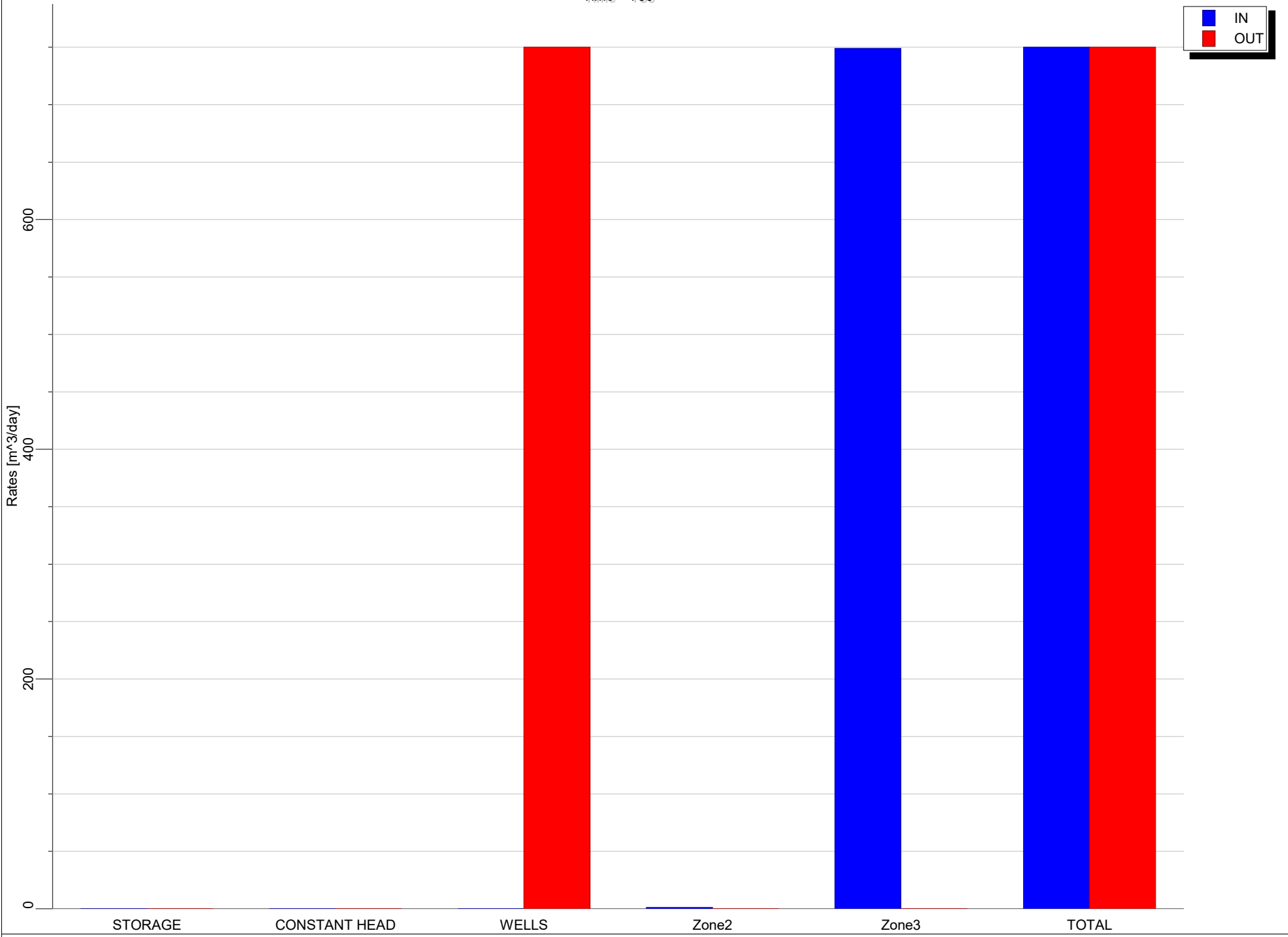
Appendix C - Zone Budget Charts

Time = 1000



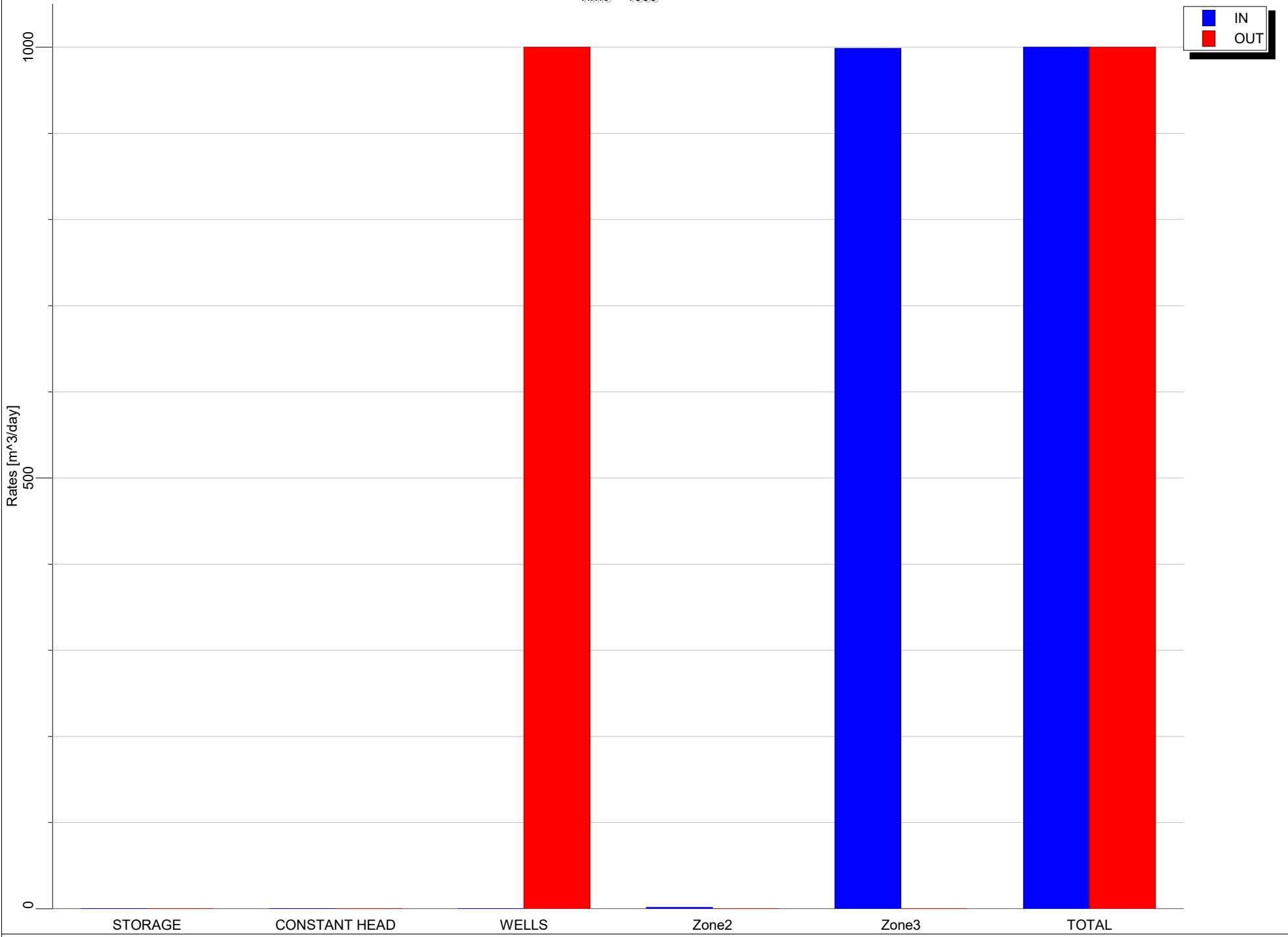
Appendix C - Zone Budget Charts

Time = 750



Appendix C - Zone Budget Charts

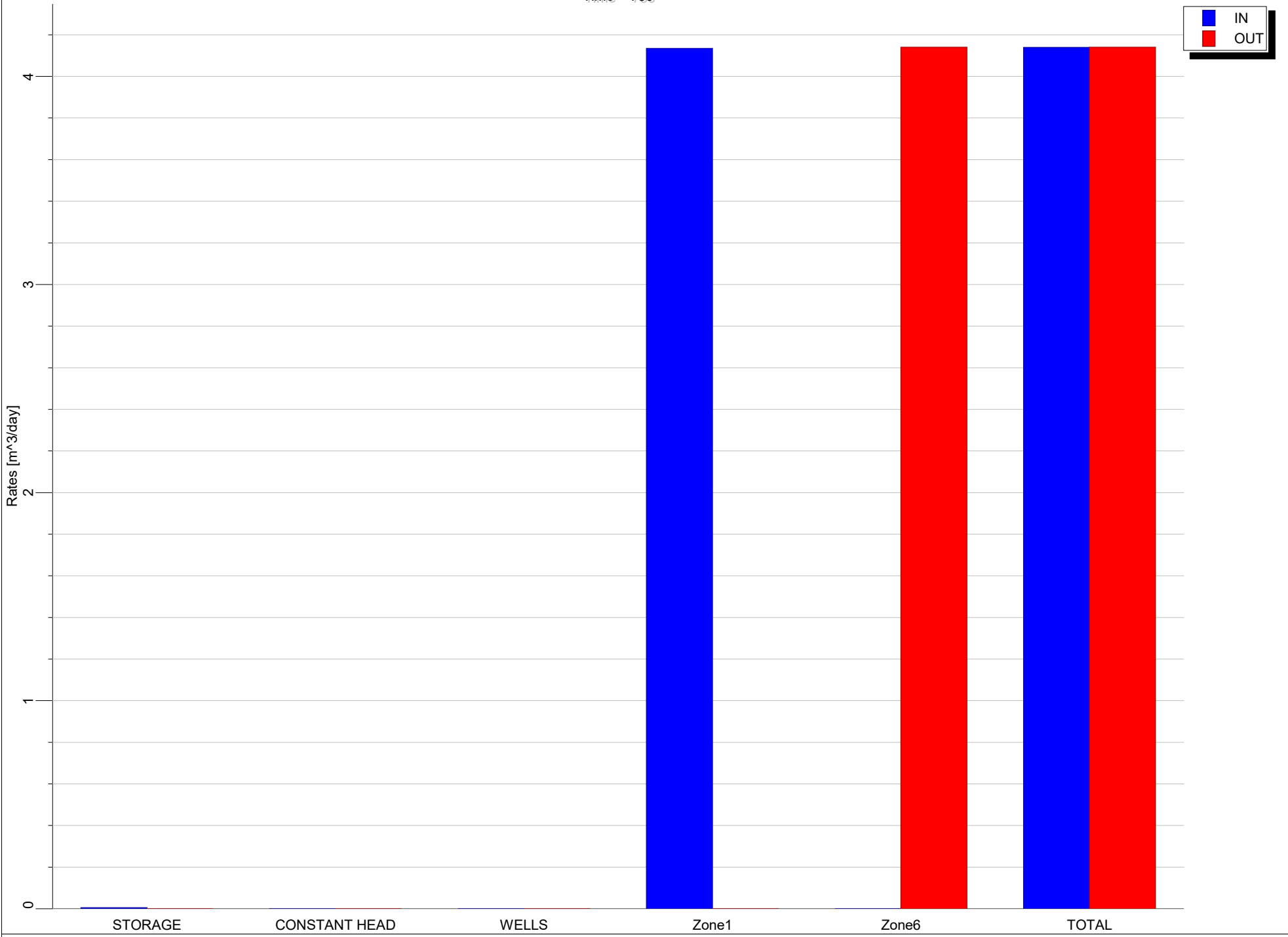
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Zone 4
Scenario 4.7
Abandoned Well 500m

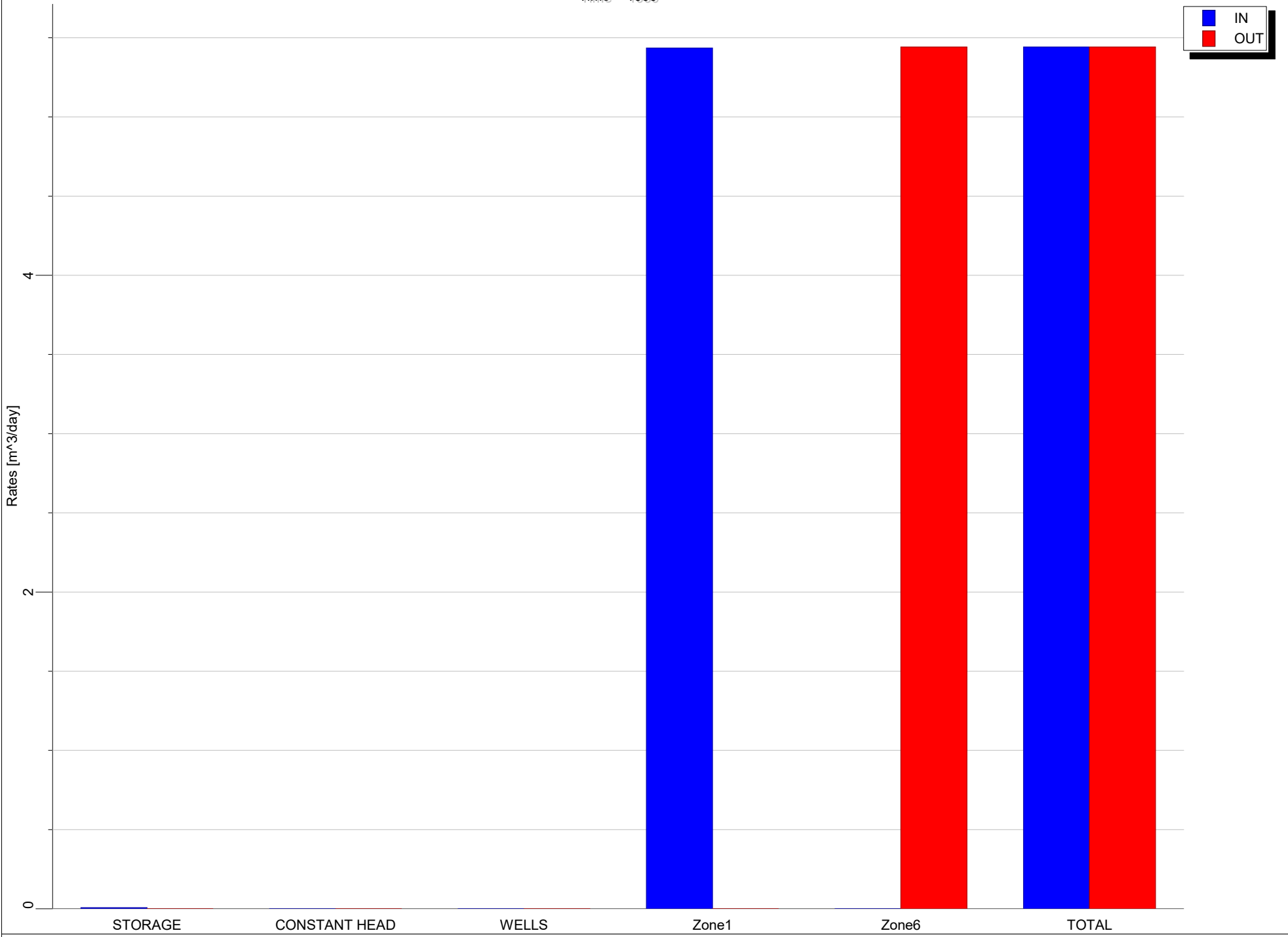
Appendix C - Zone Budget Charts

Time = 750



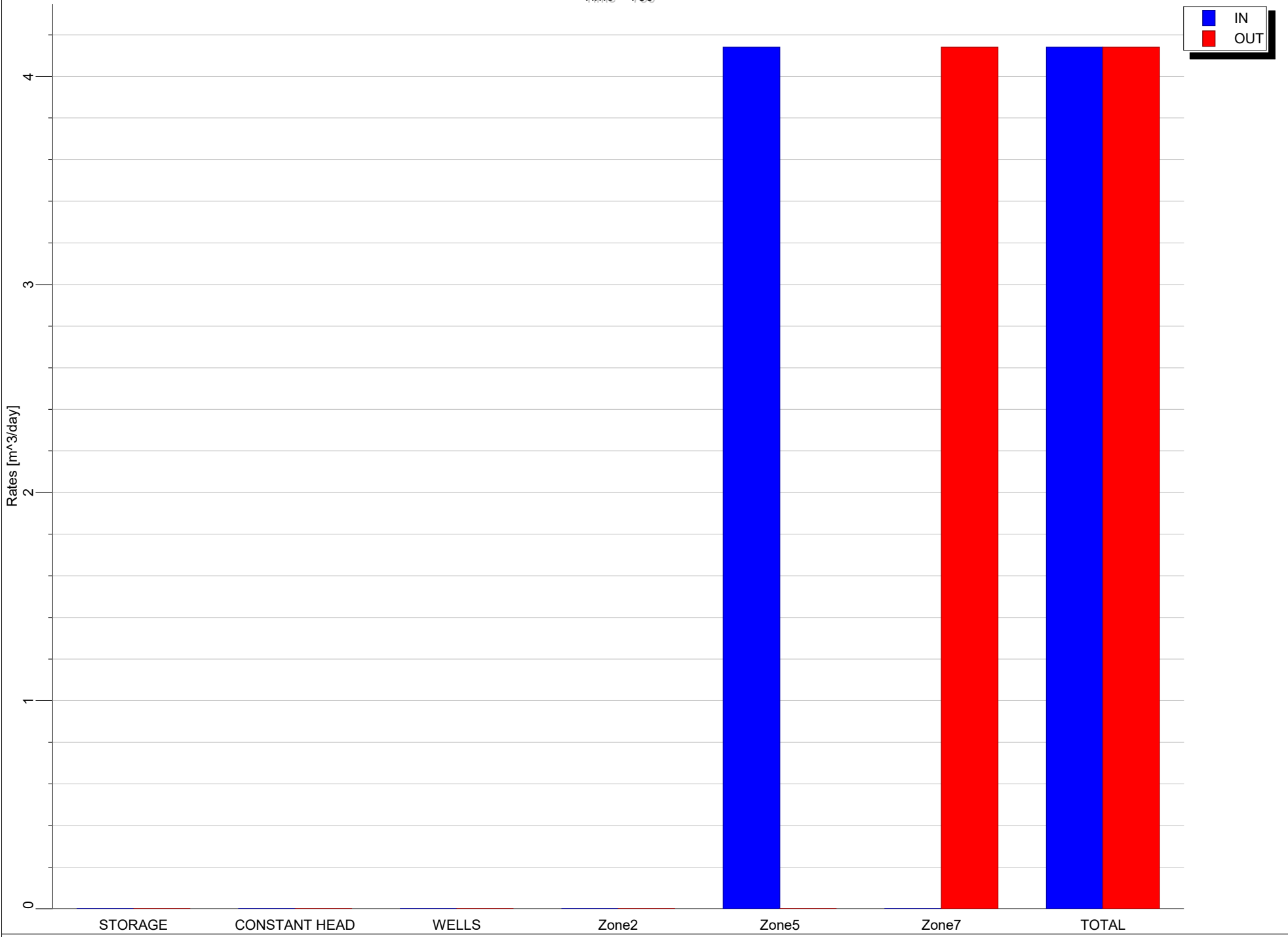
Appendix C - Zone Budget Charts

Time = 1000



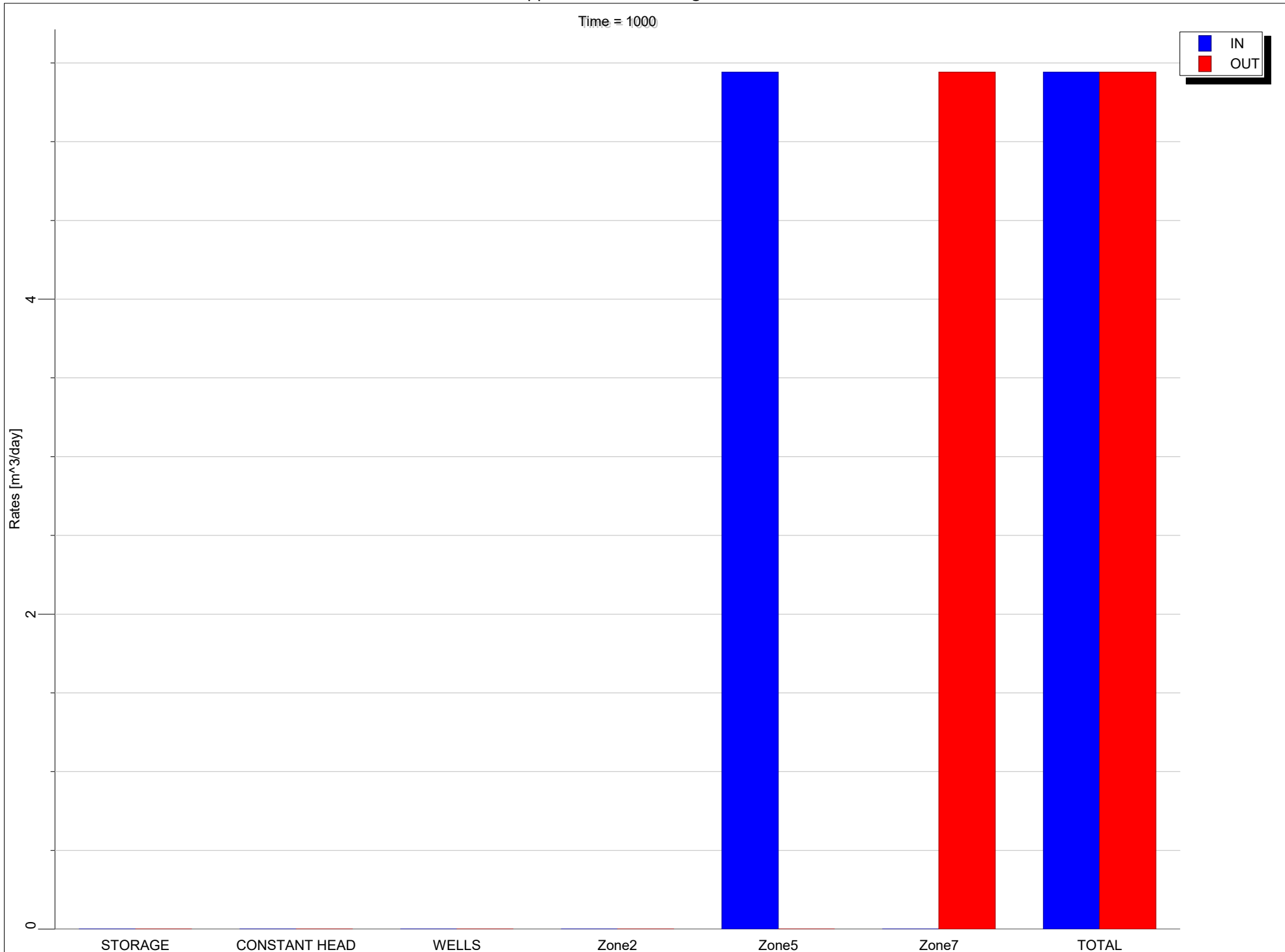
Appendix C - Zone Budget Charts

Time = 750



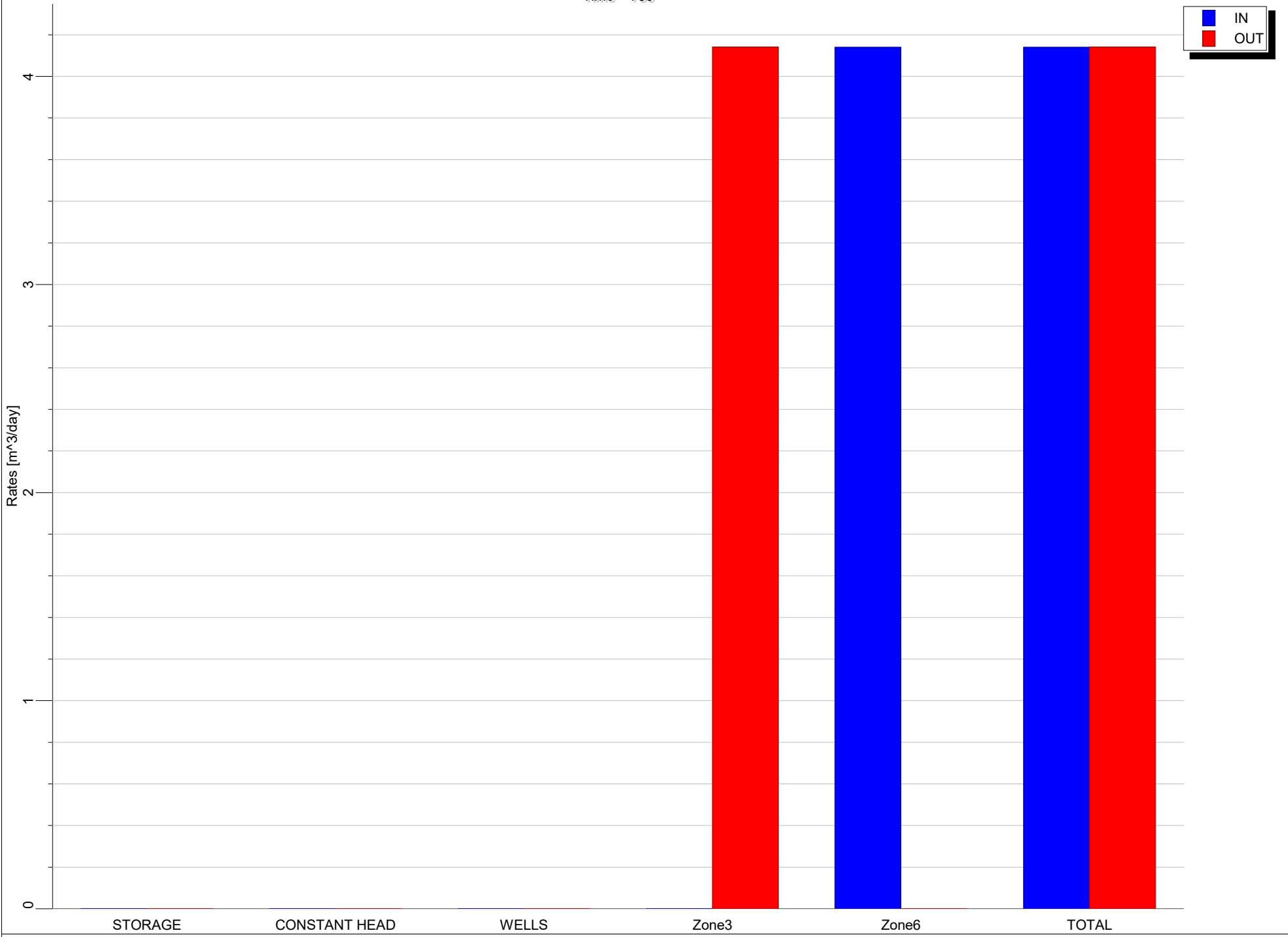
Appendix C - Zone Budget Charts

Time = 1000



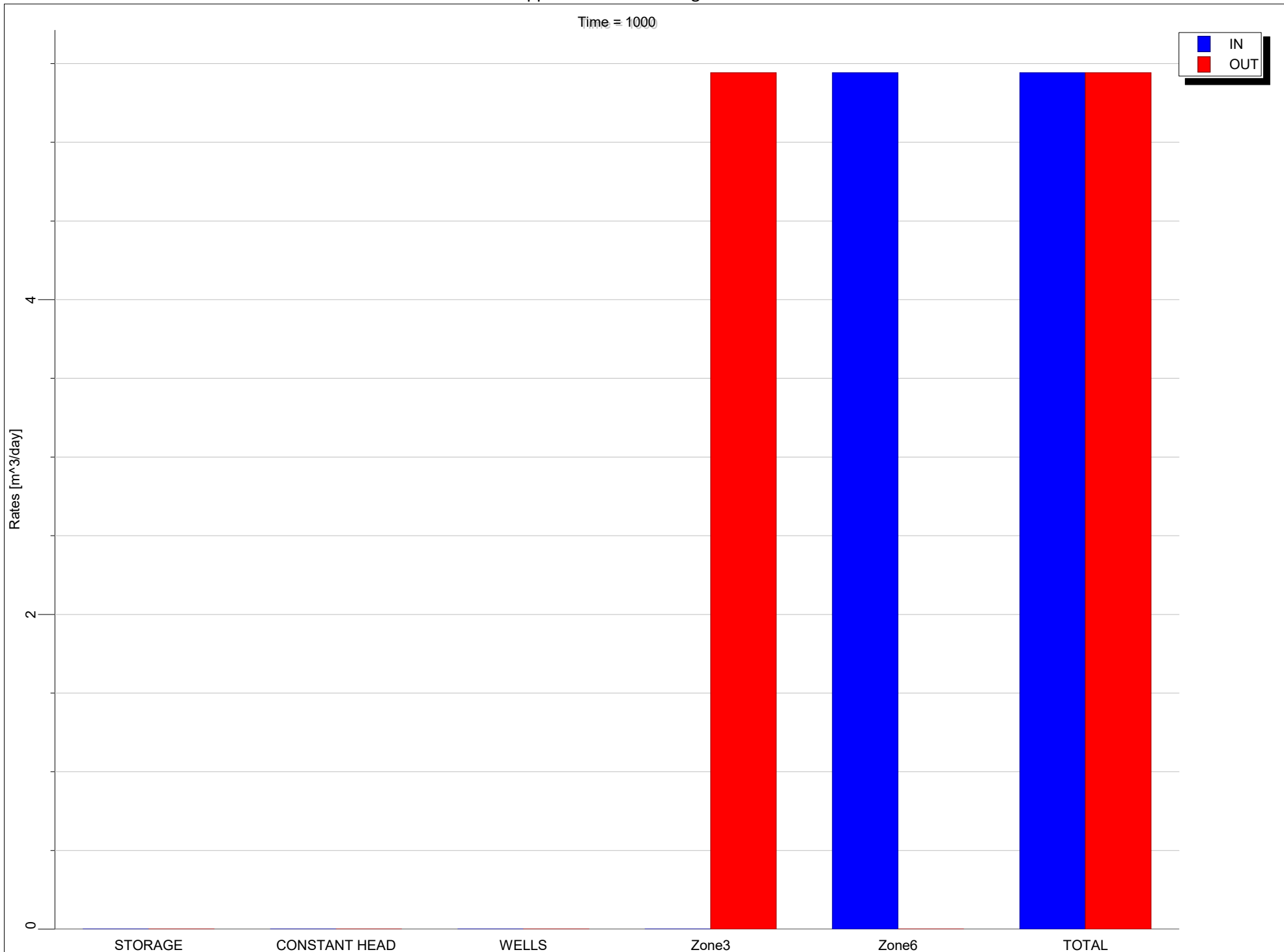
Appendix C - Zone Budget Charts

Time = 750



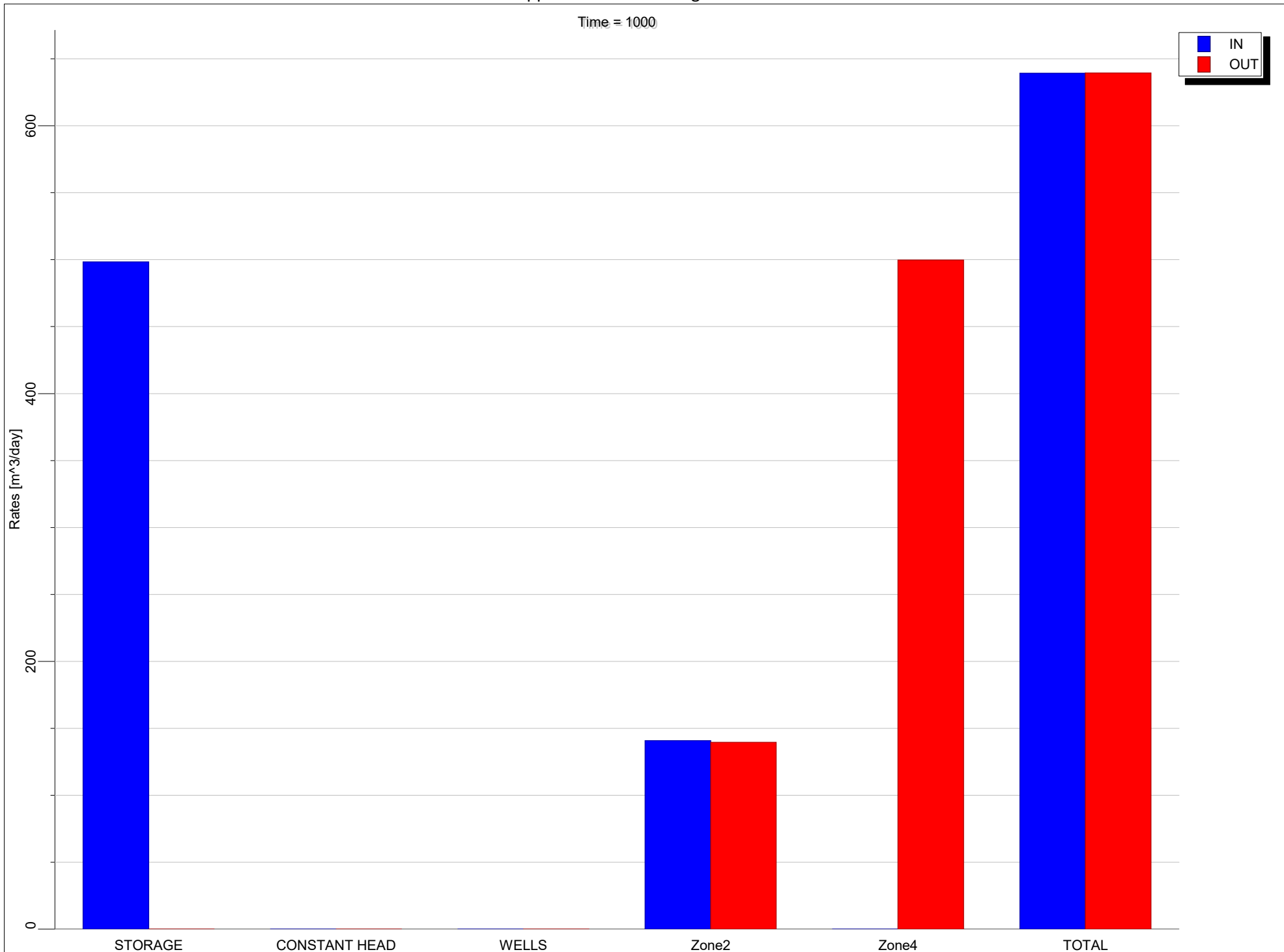
Appendix C - Zone Budget Charts

Time = 1000



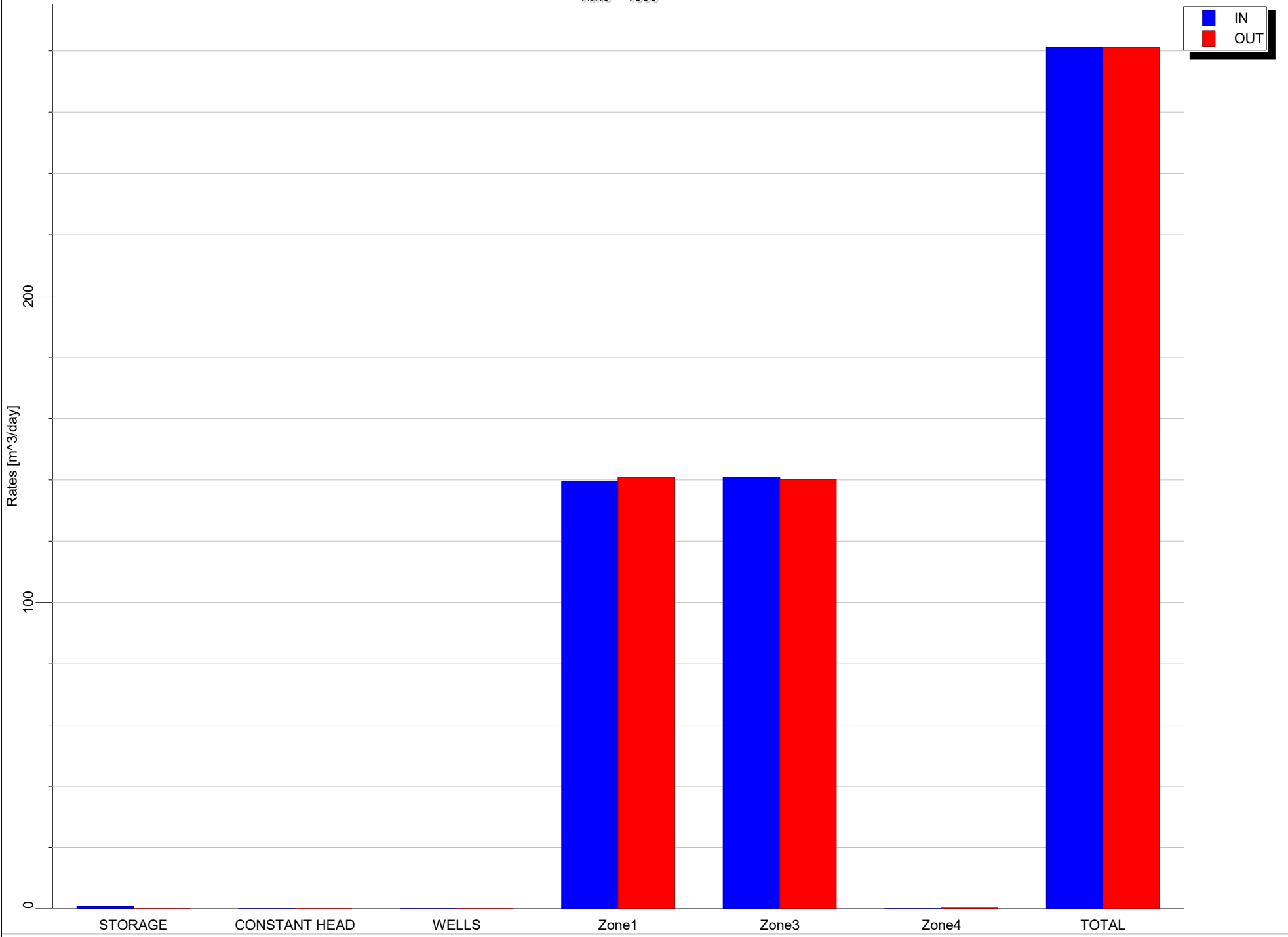
Appendix C - Zone Budget Charts

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Appendix C - Zone Budget Charts

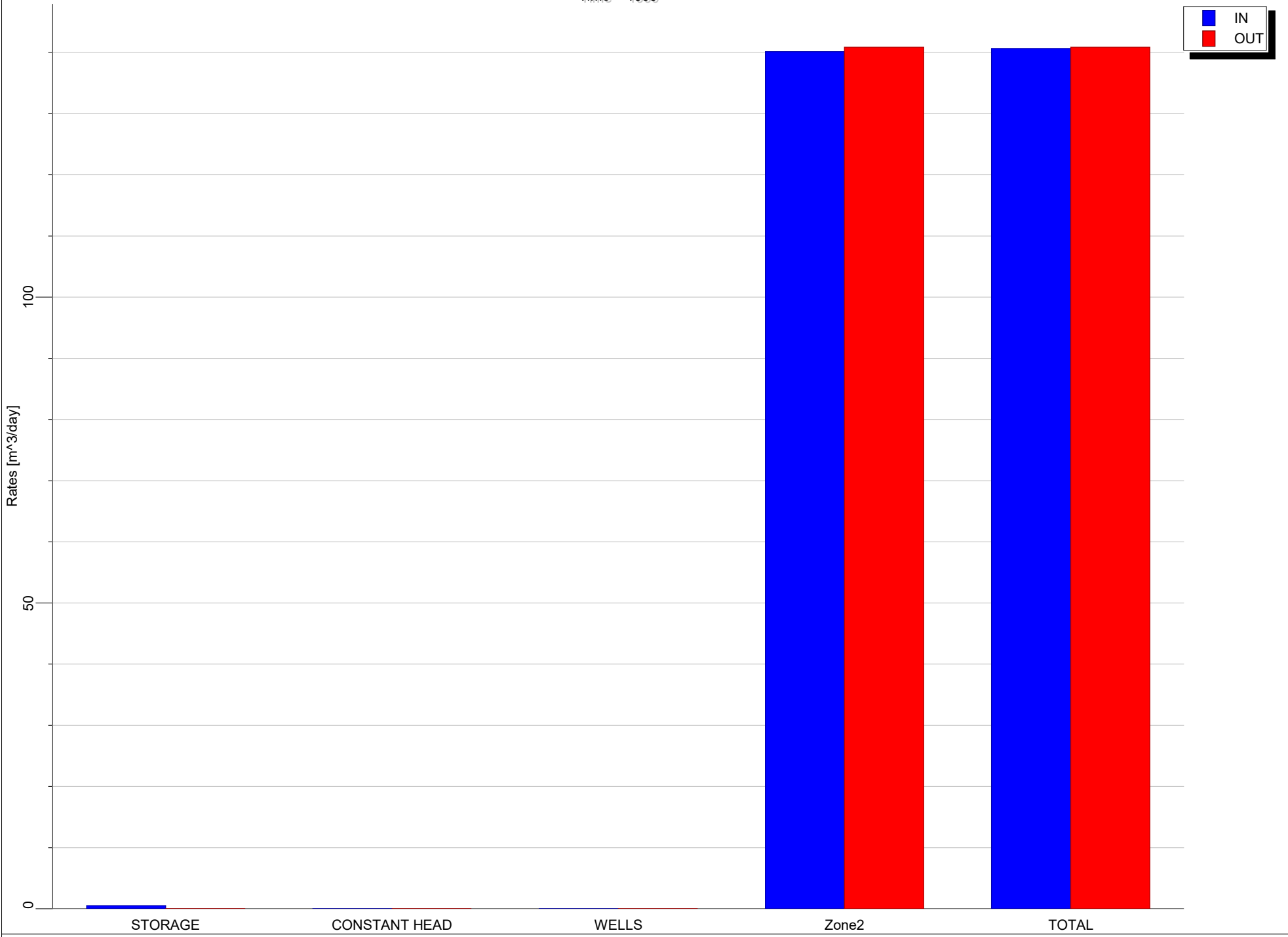
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Zone 2
Scenario 5.1
No Abandoned Well

Appendix C - Zone Budget Charts

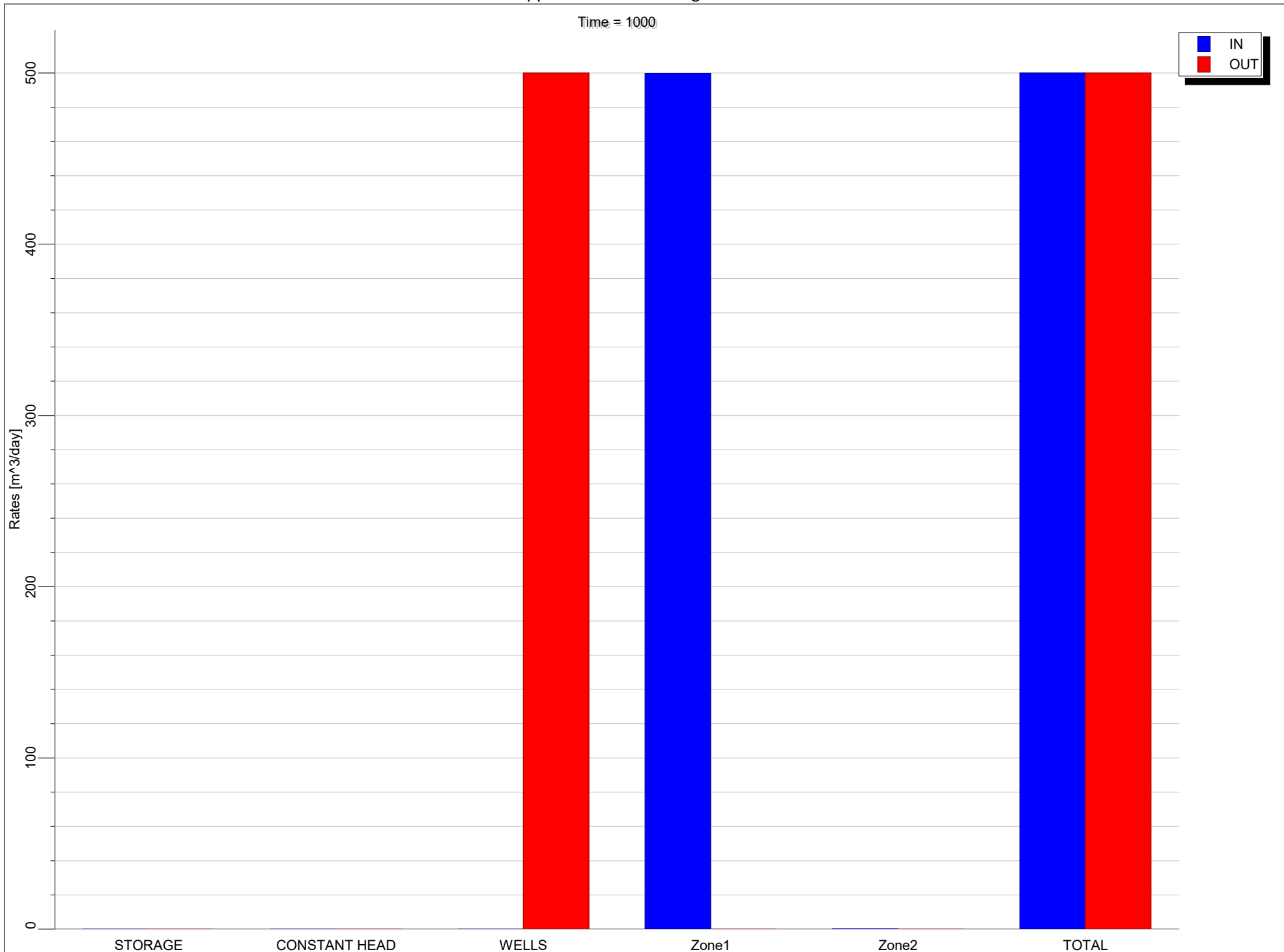
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Zone 3
Scenario 5.1
No Abandoned Well

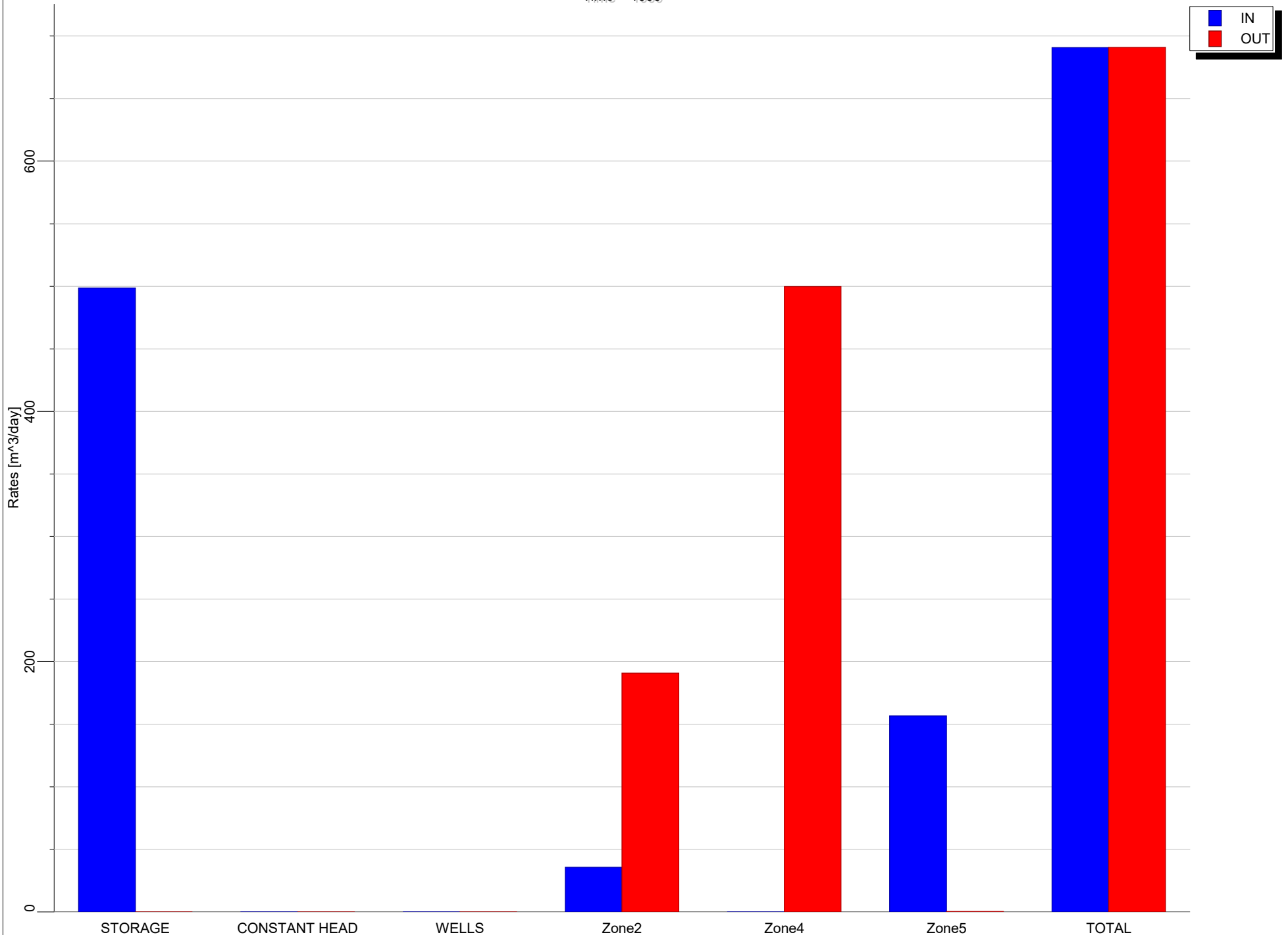
Appendix C - Zone Budget Charts

Time = 1000



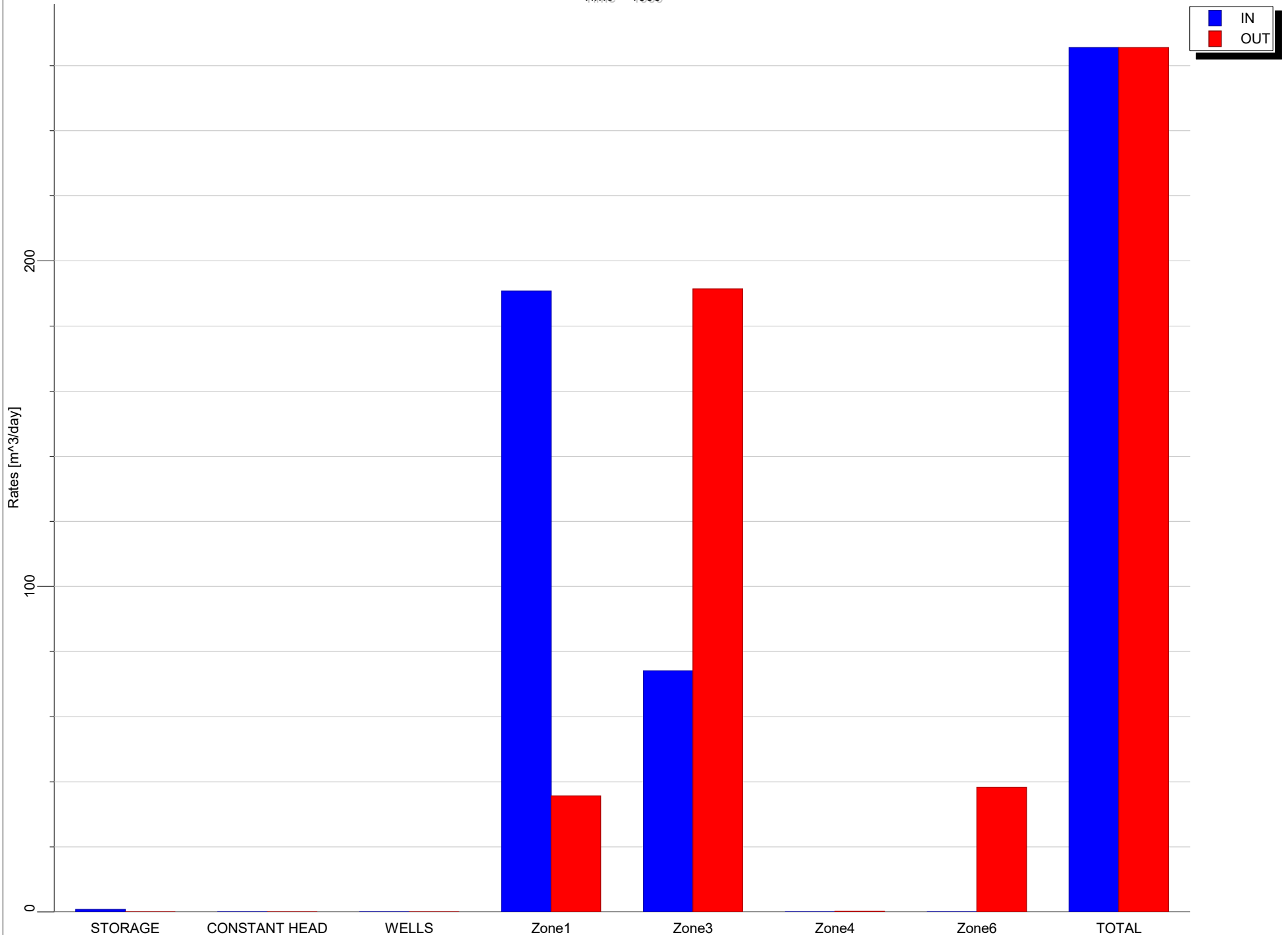
Appendix C - Zone Budget Charts

Time = 1000



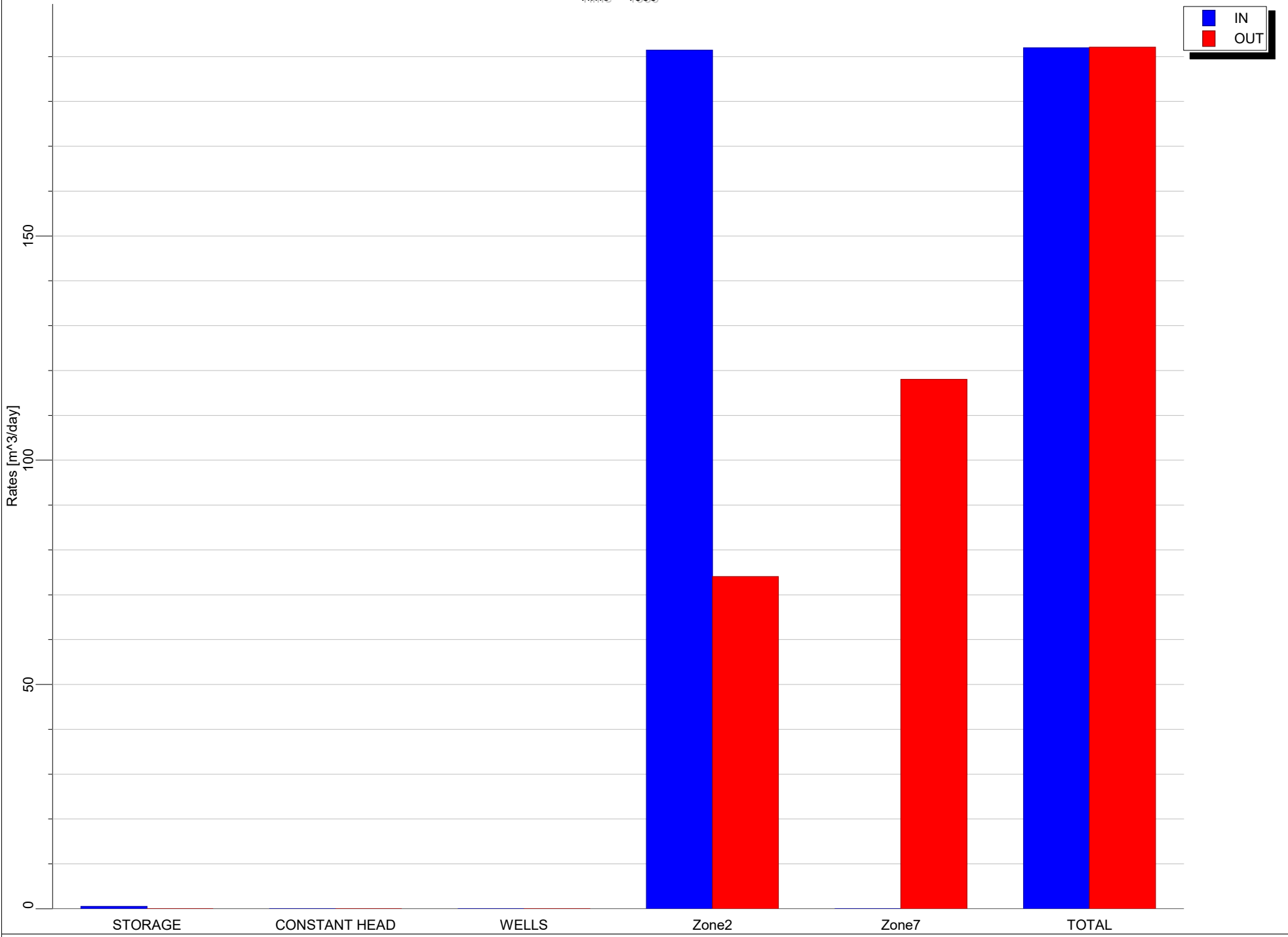
Appendix C - Zone Budget Charts

Time = 1000



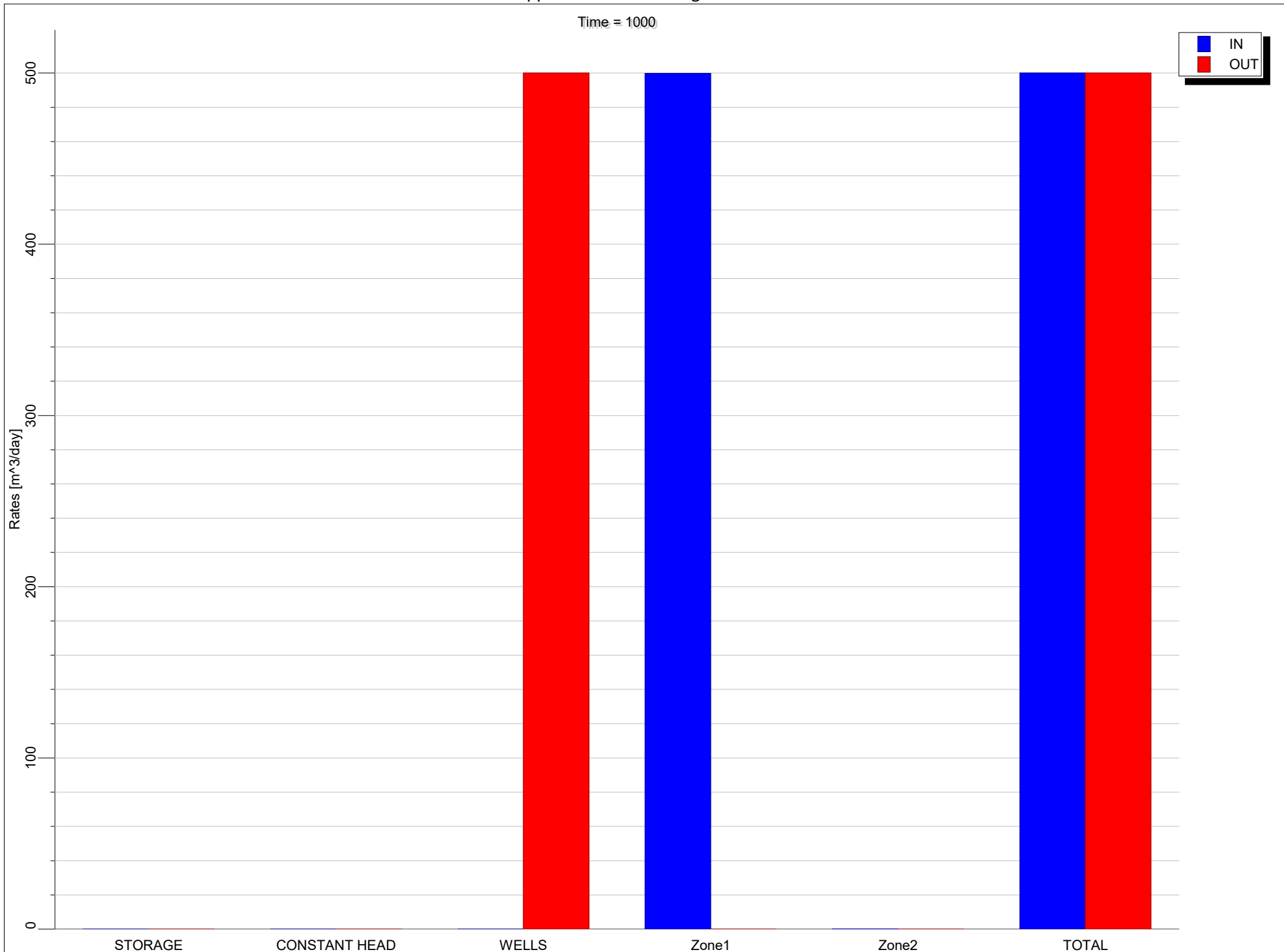
Appendix C - Zone Budget Charts

Time = 1000



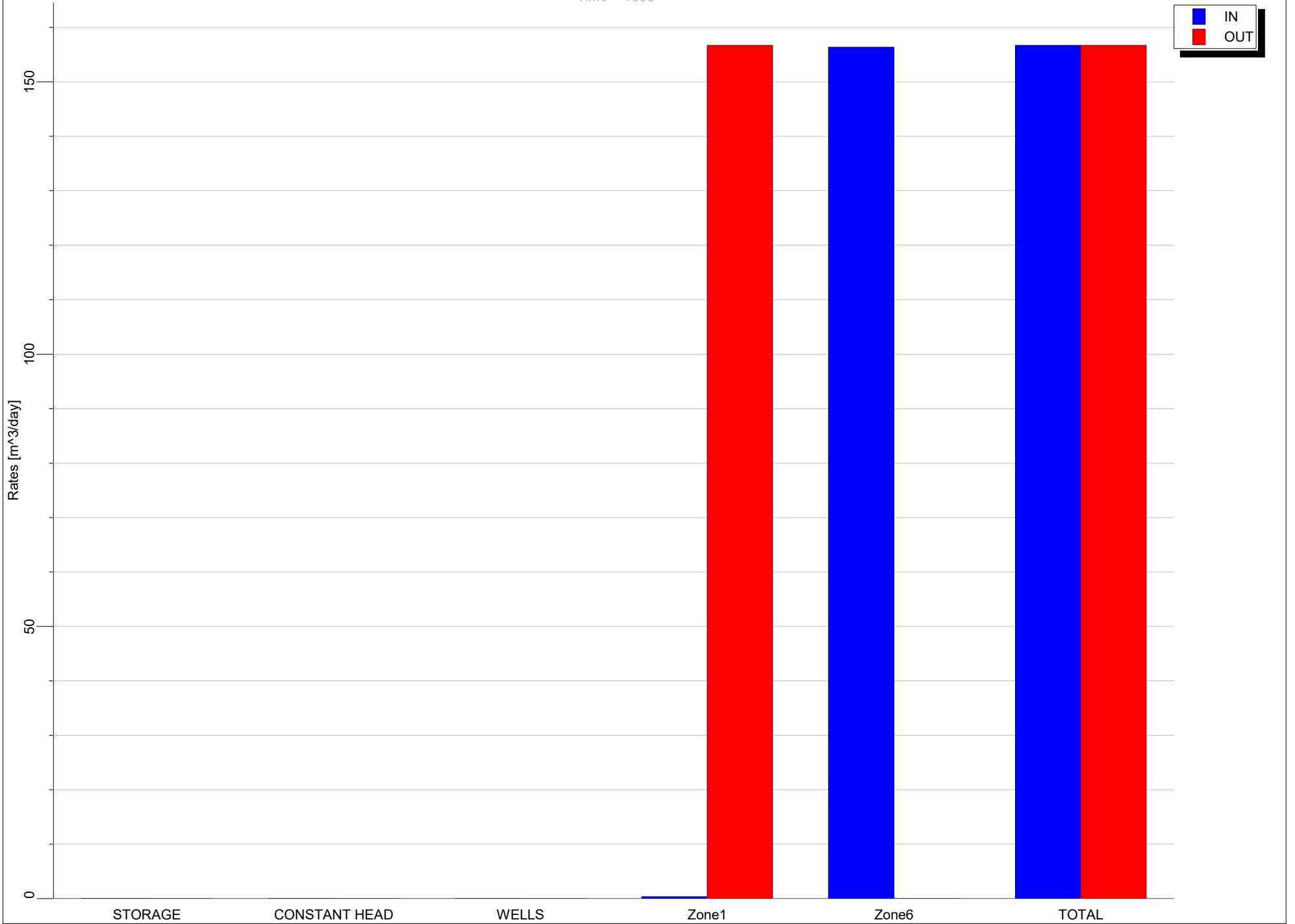
Appendix C - Zone Budget Charts

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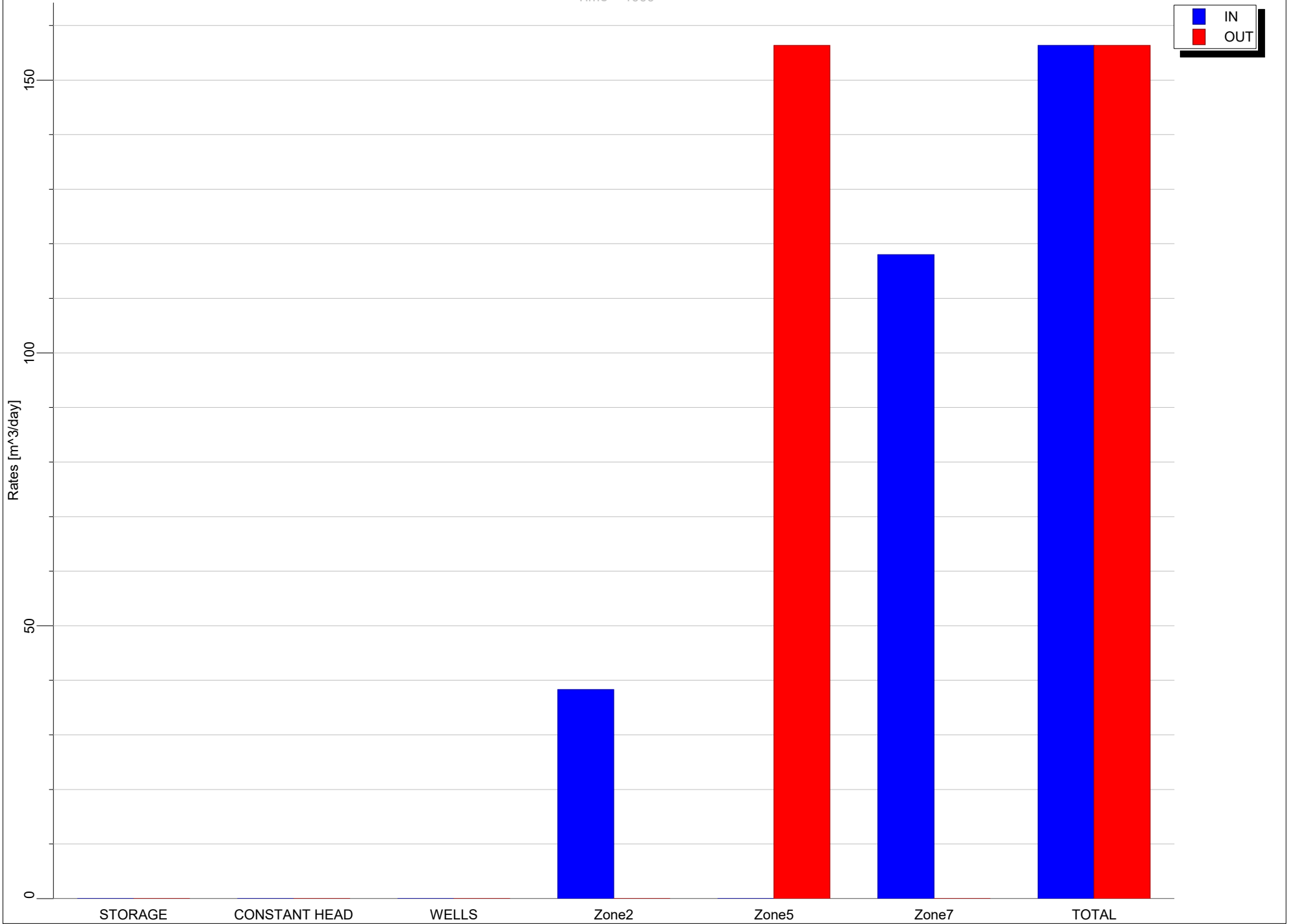
Appendix C - Zone Budget Charts

Time = 1000



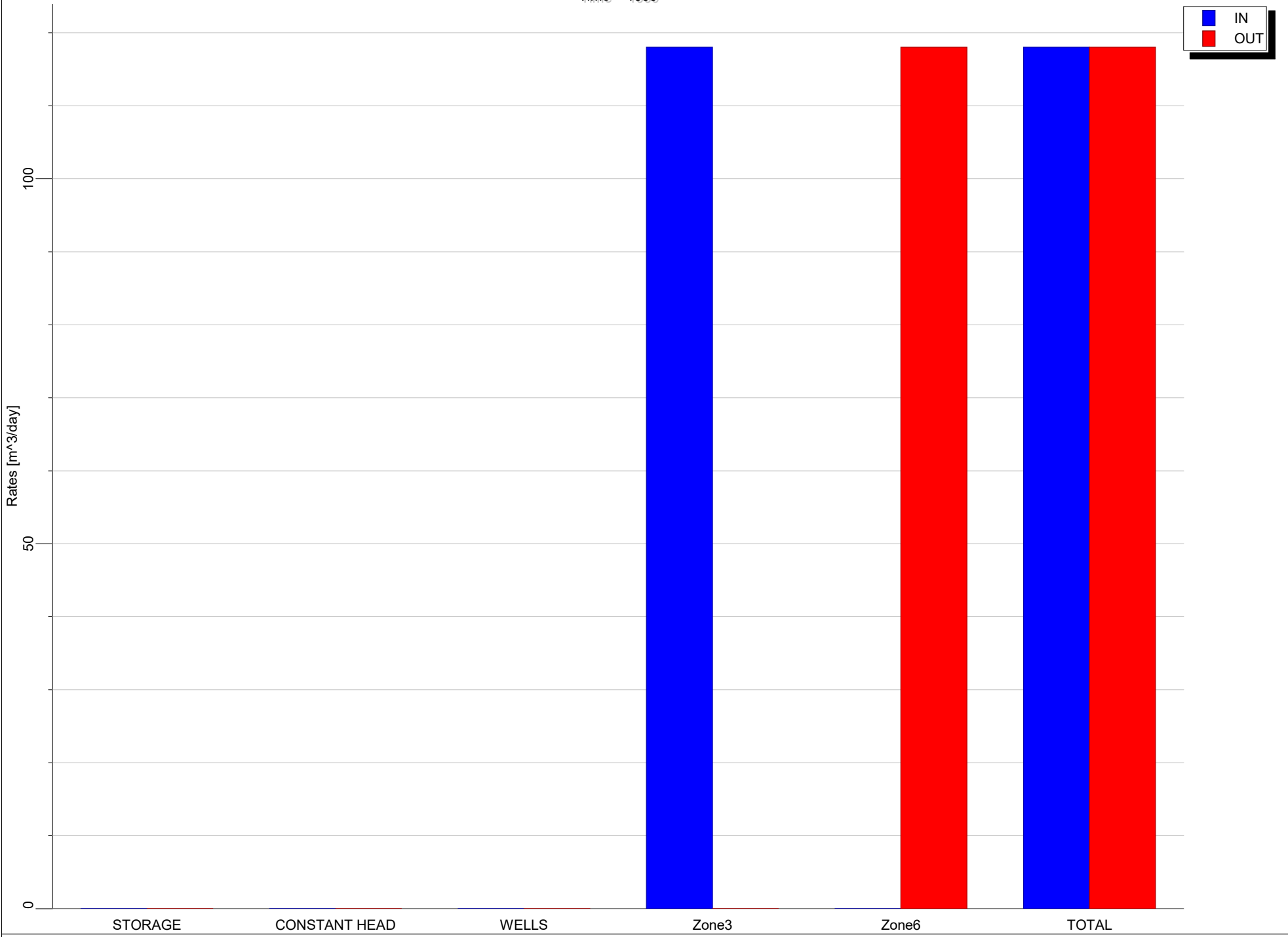
Appendix C - Zone Budget Charts

Time = 1000



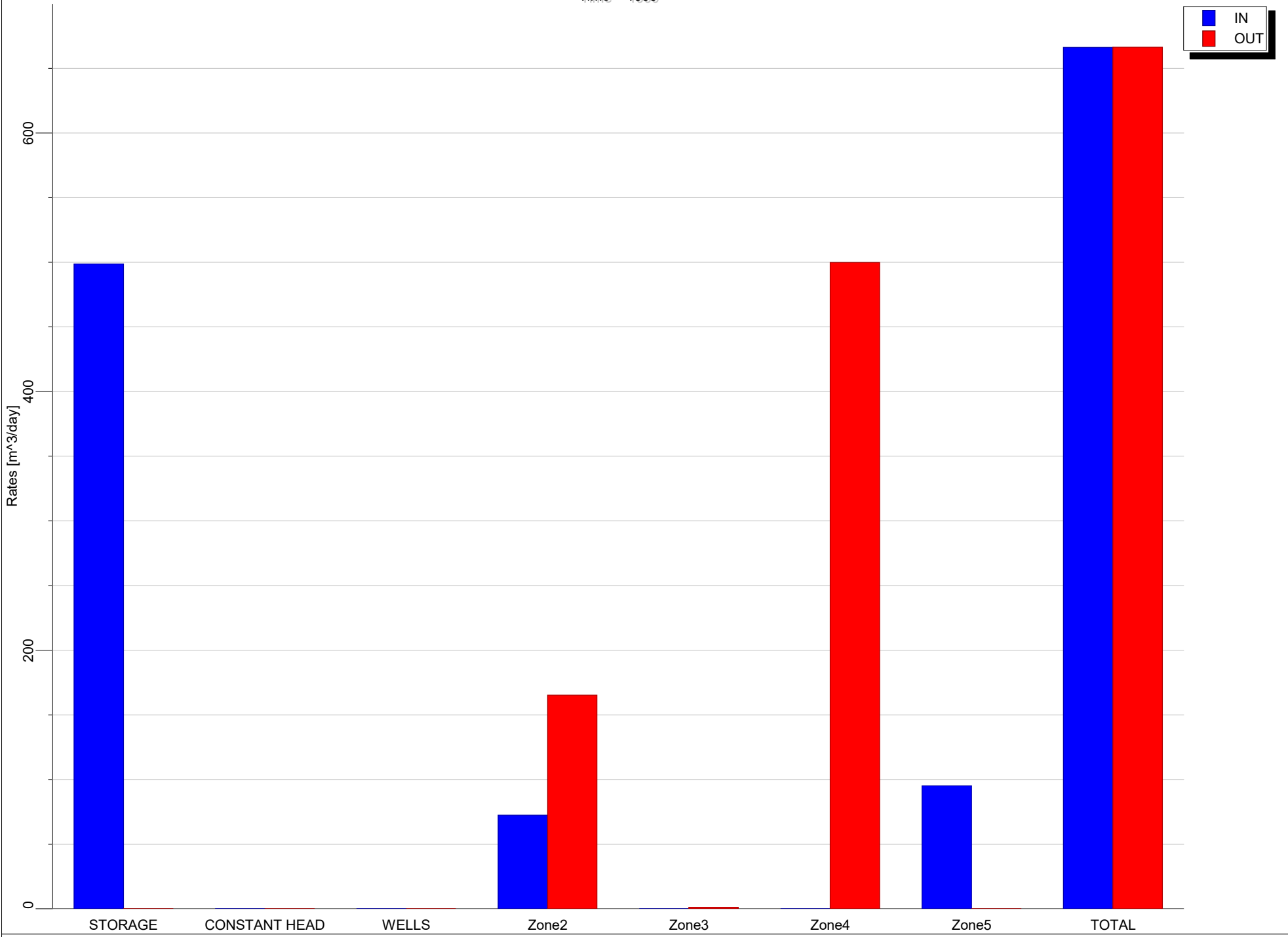
Appendix C - Zone Budget Charts

Time = 1000



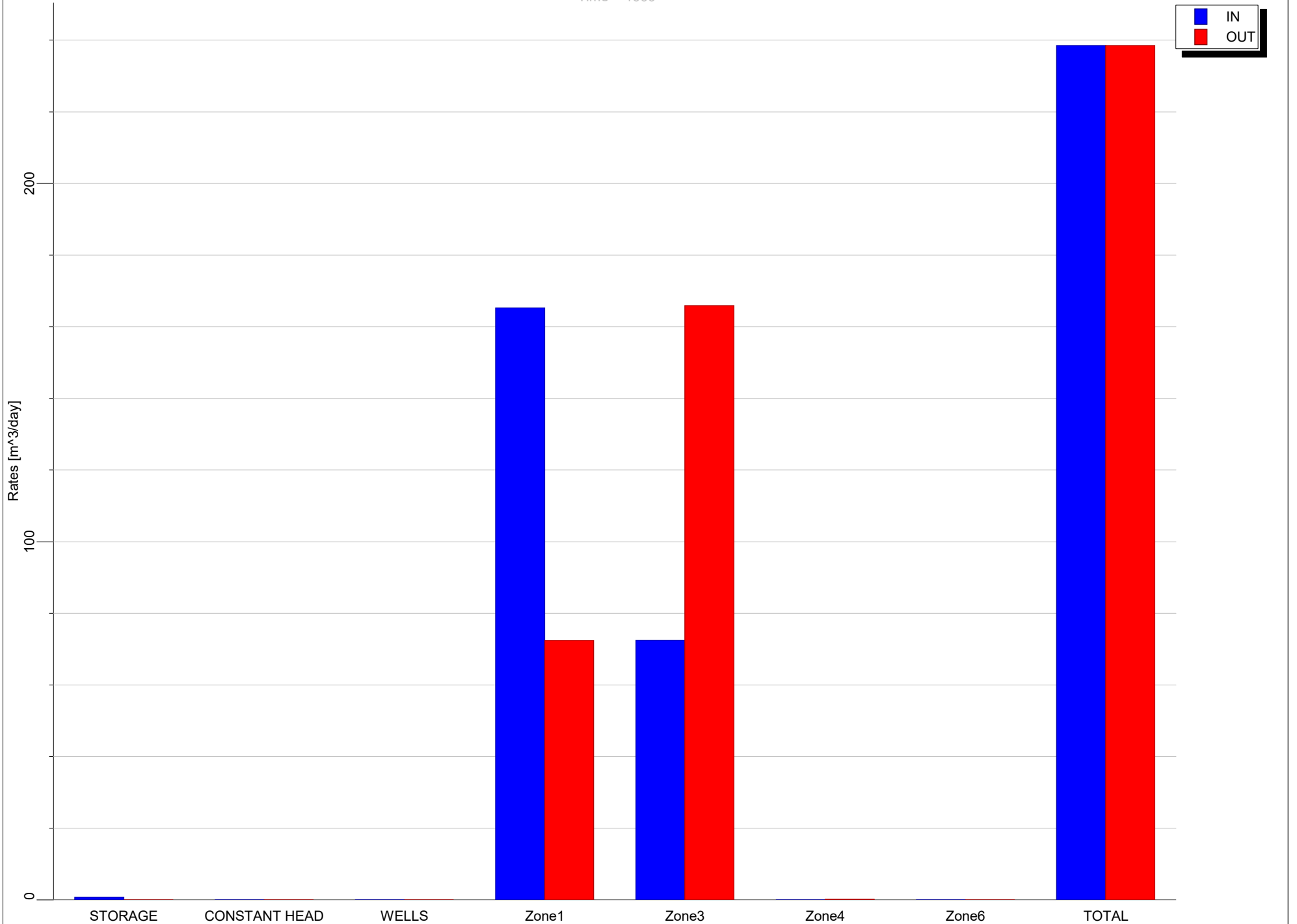
Appendix C - Zone Budget Charts

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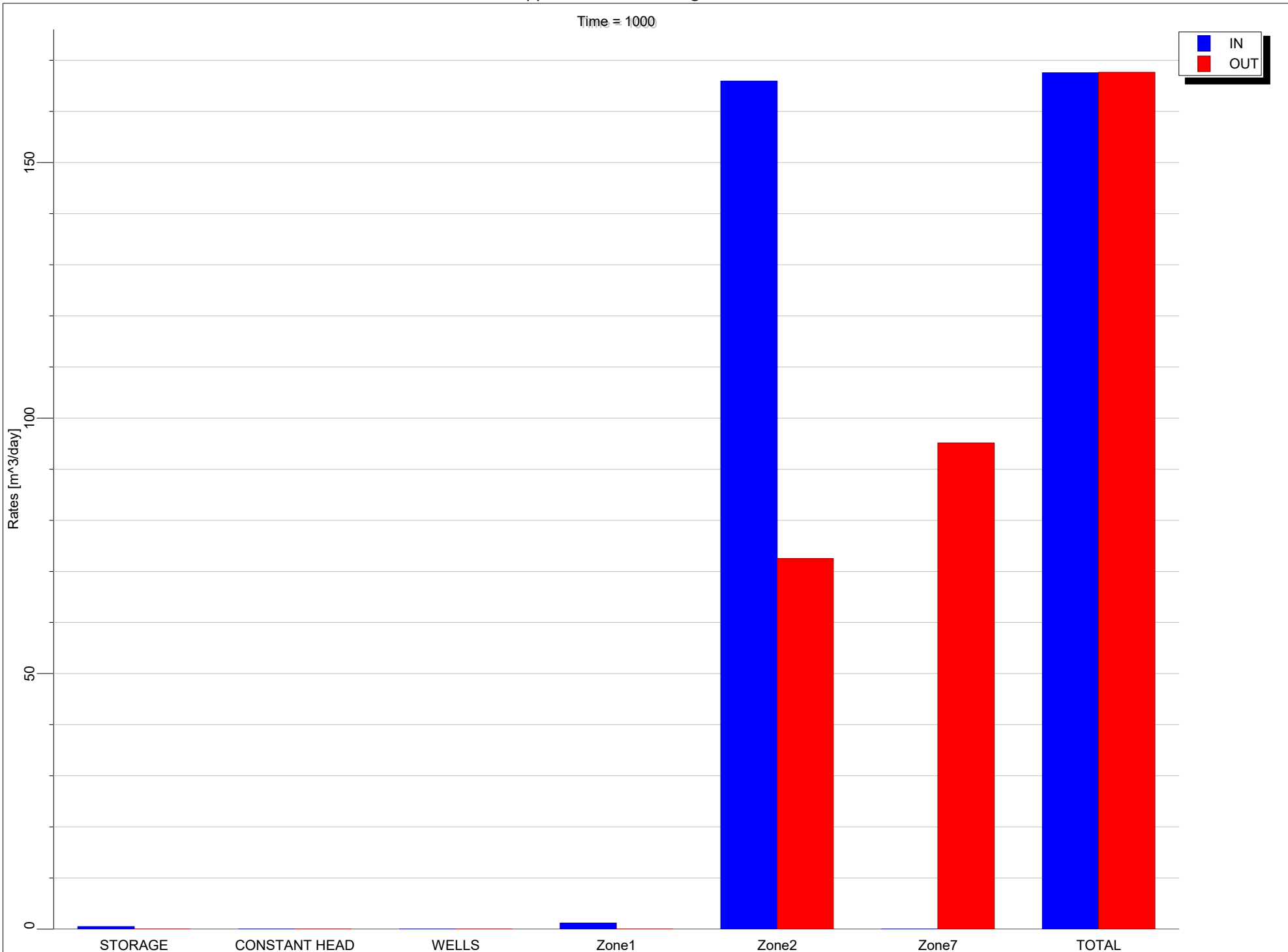
Appendix C - Zone Budget Charts

Time = 1000



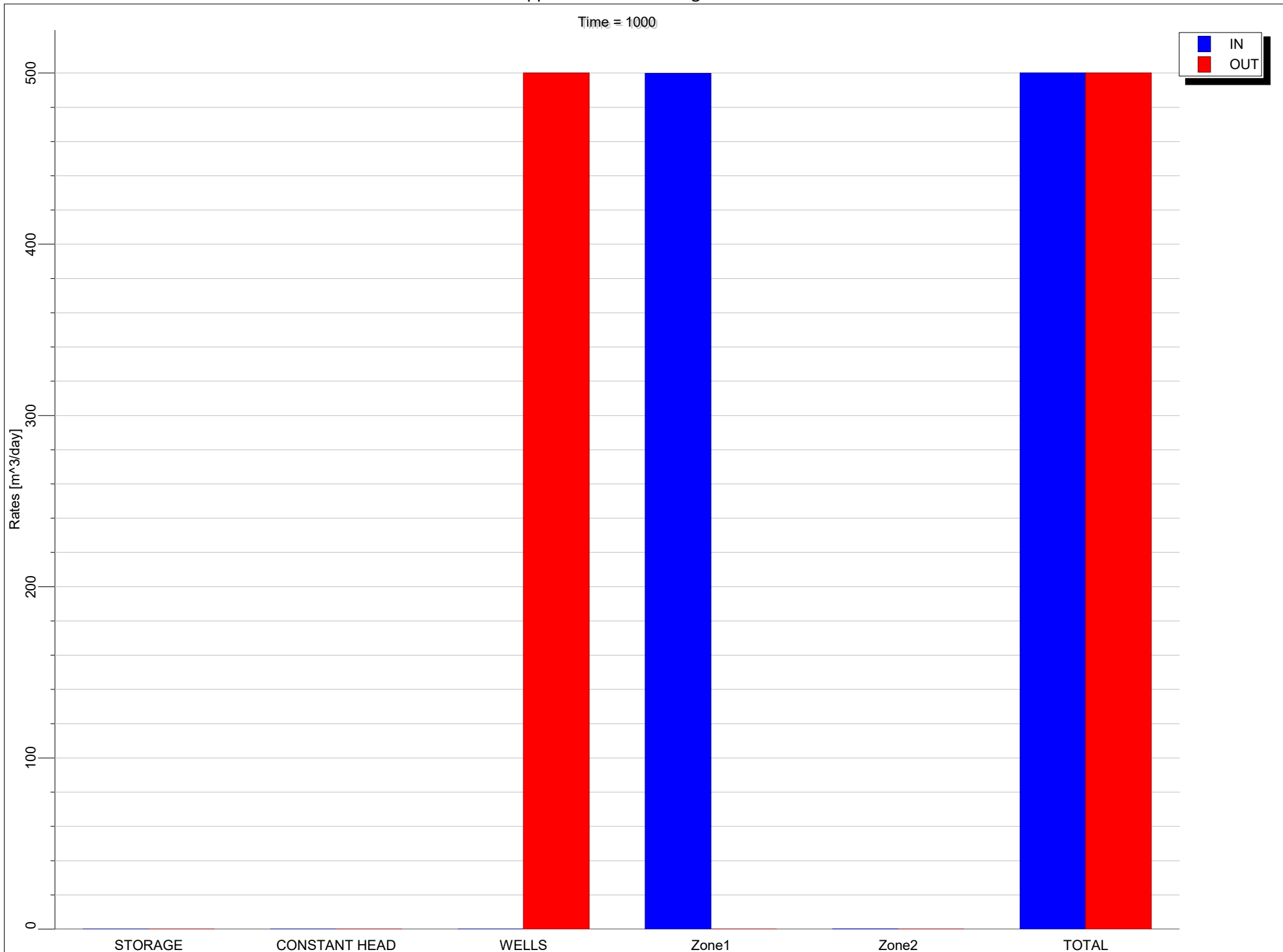
Appendix C - Zone Budget Charts

Time = 1000



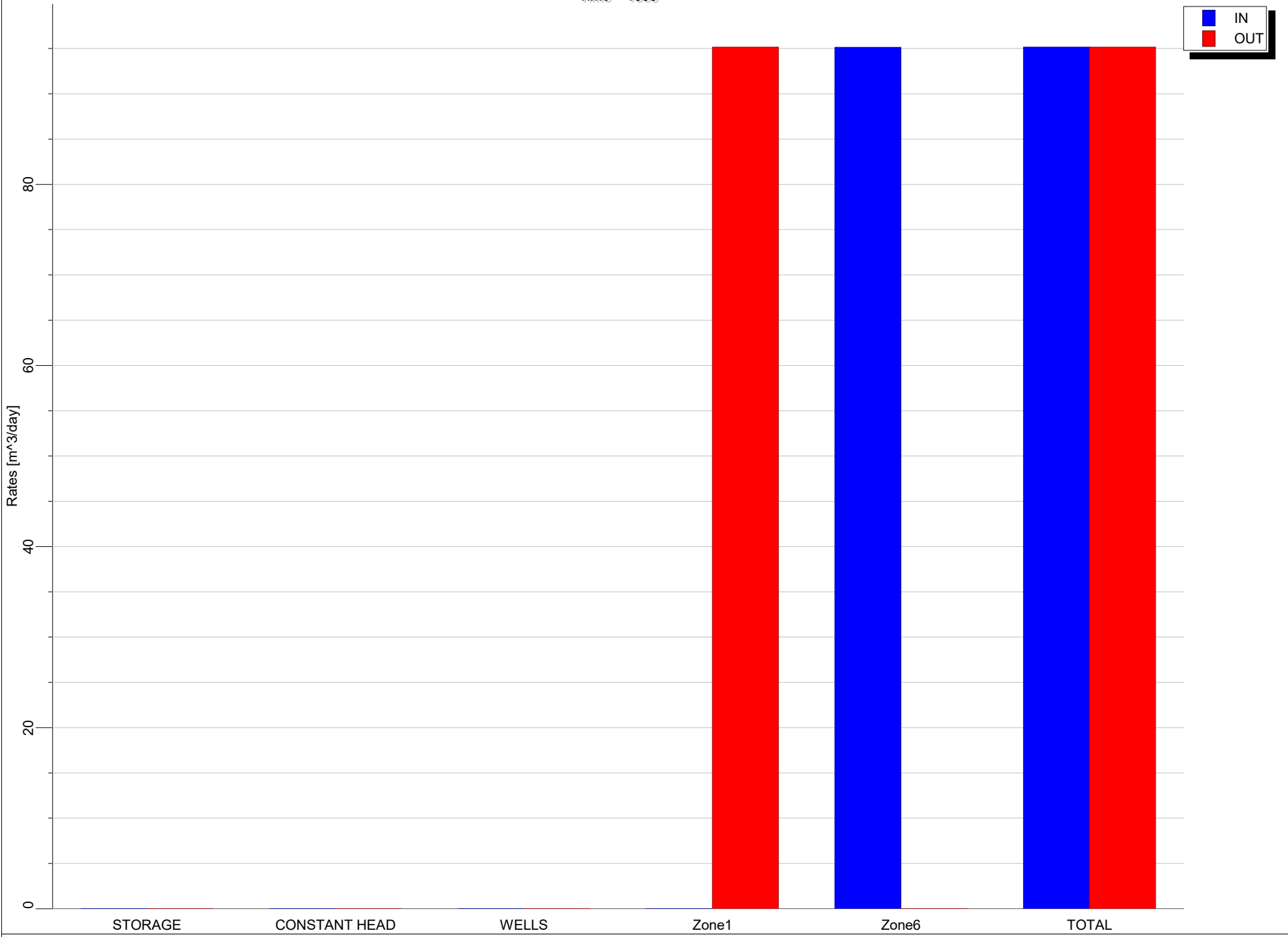
Appendix C - Zone Budget Charts

Time = 1000



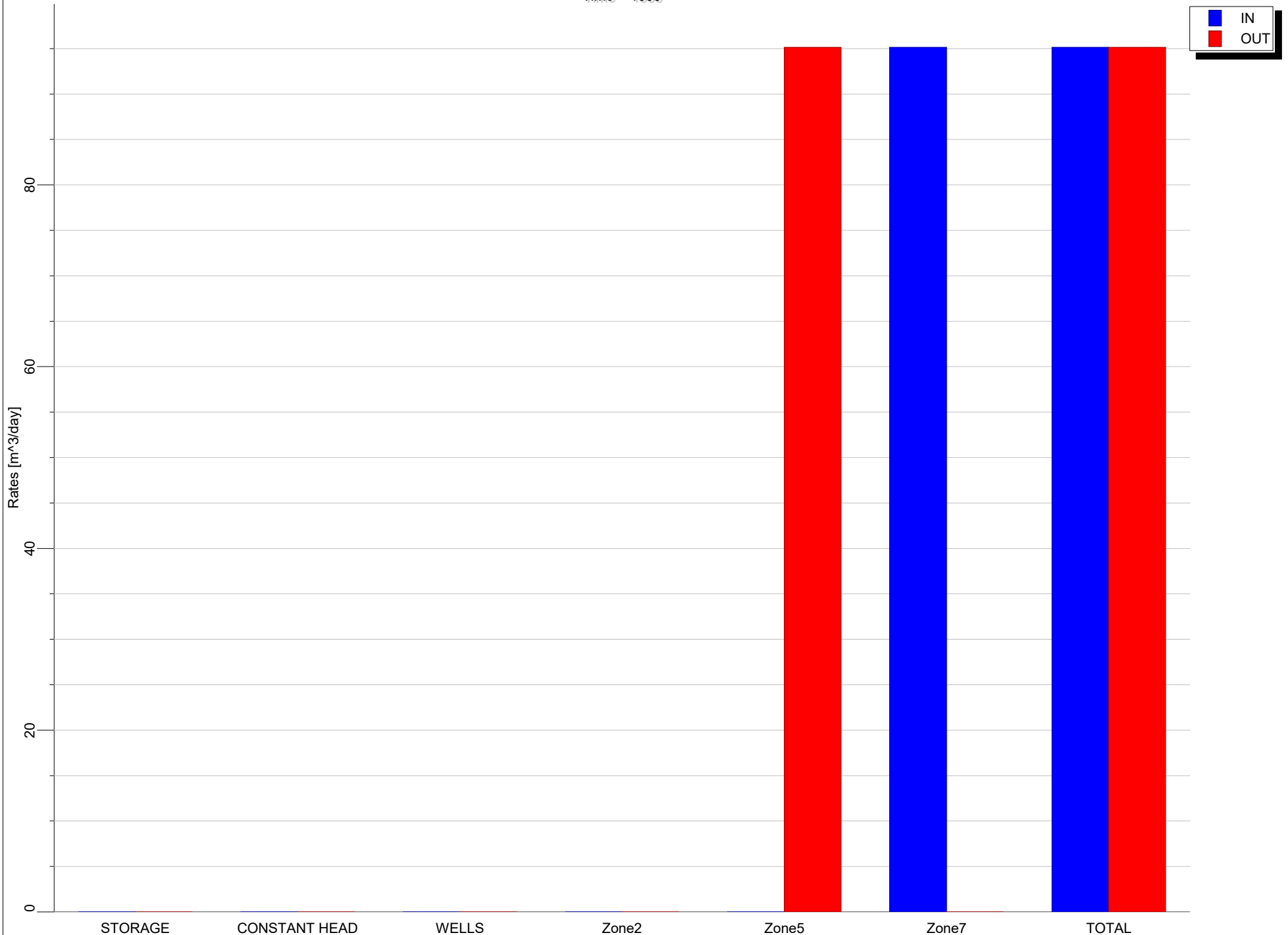
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

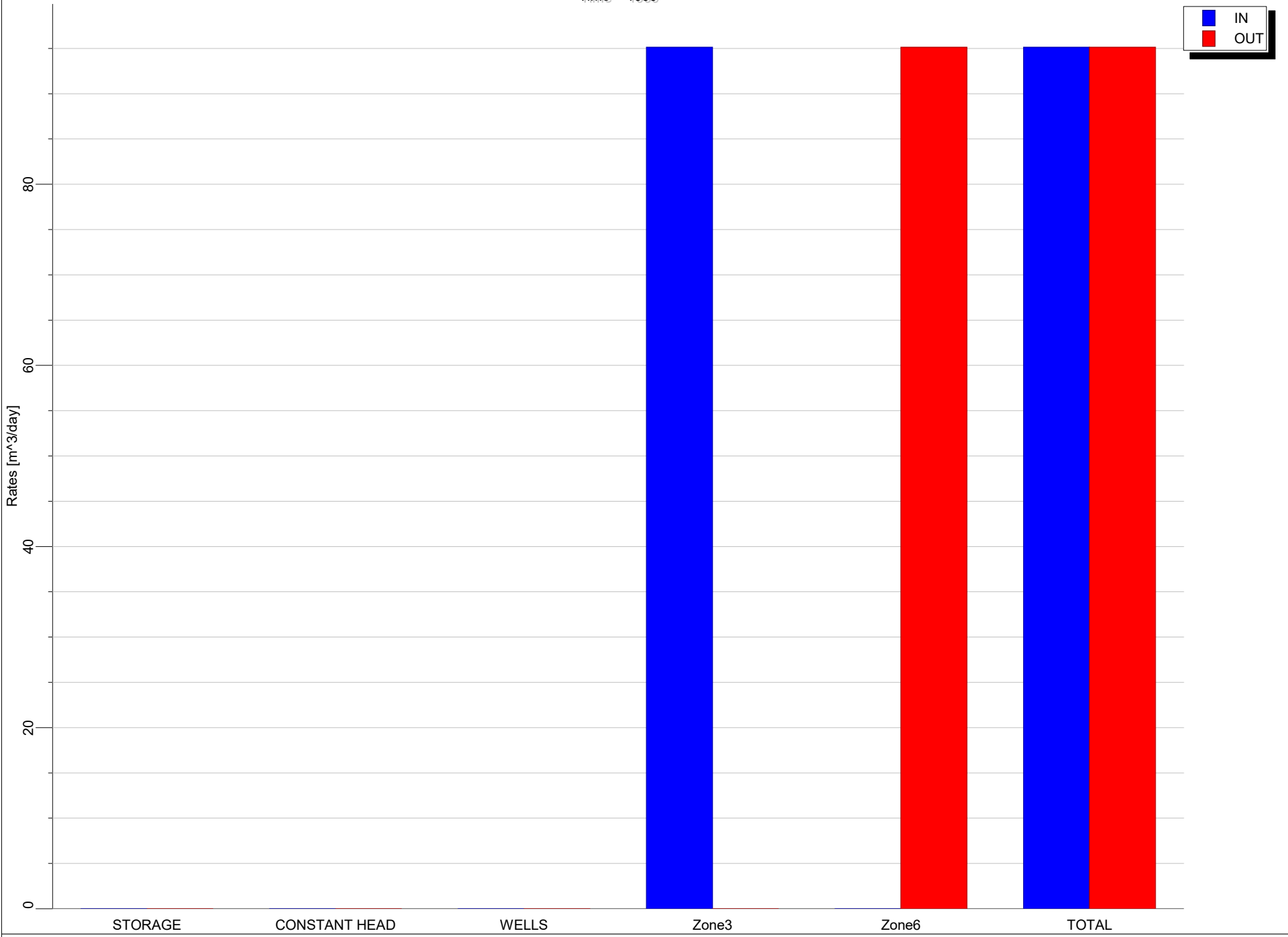
Time = 1000



Zone 6
Scenario 5.3
Abandoned Well 40m

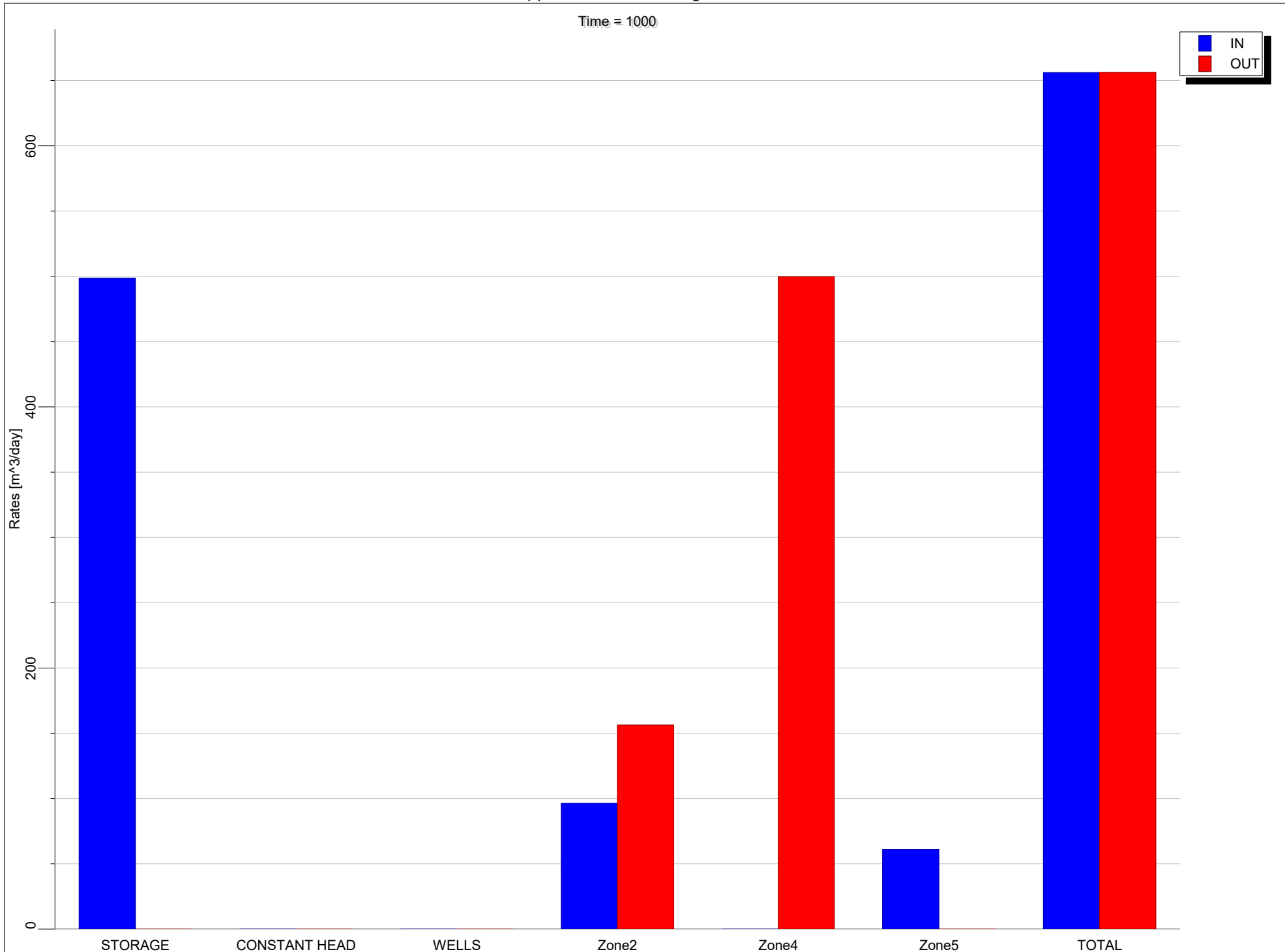
Appendix C - Zone Budget Charts

Time = 1000



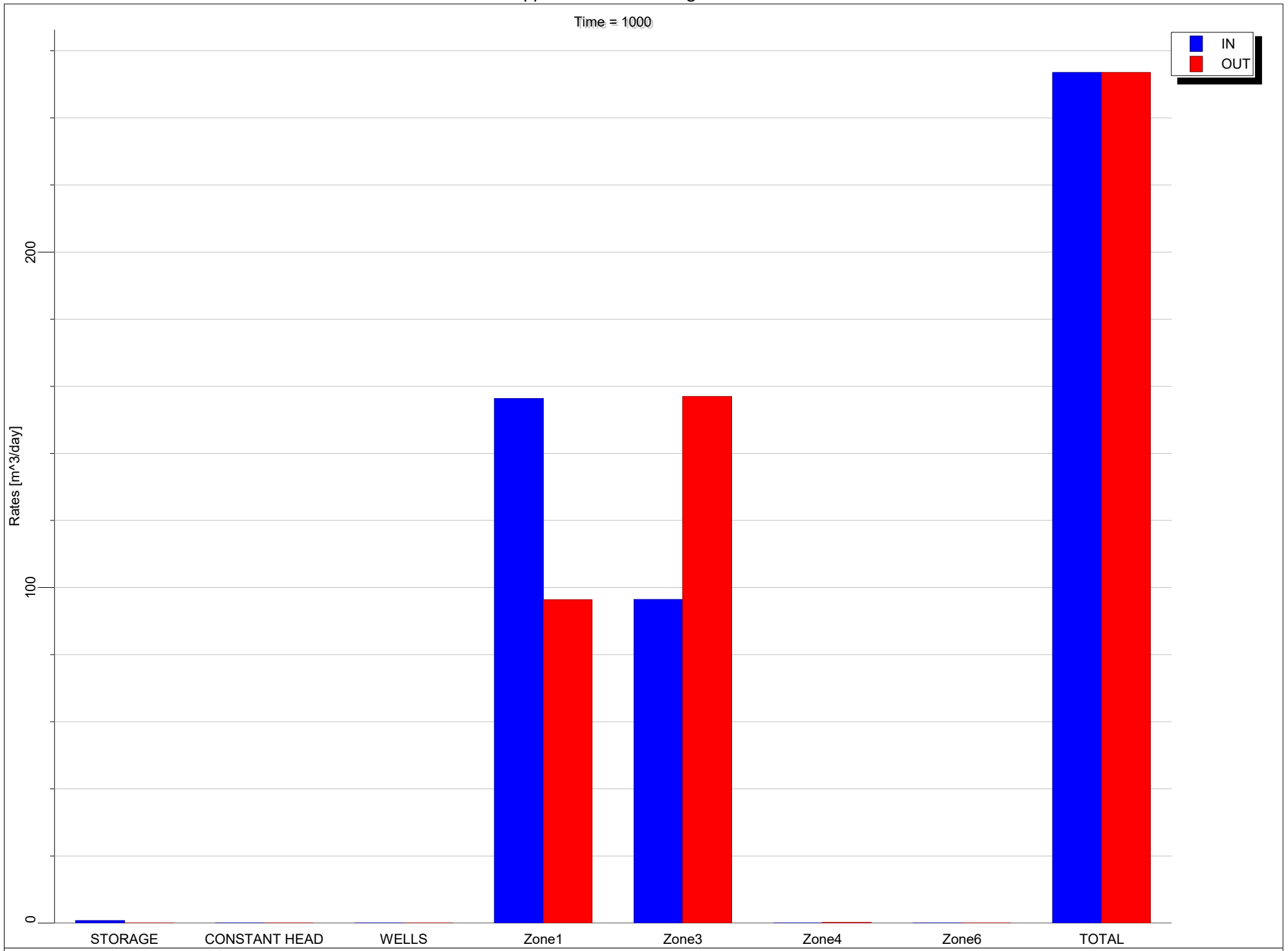
Appendix C - Zone Budget Charts

Time = 1000



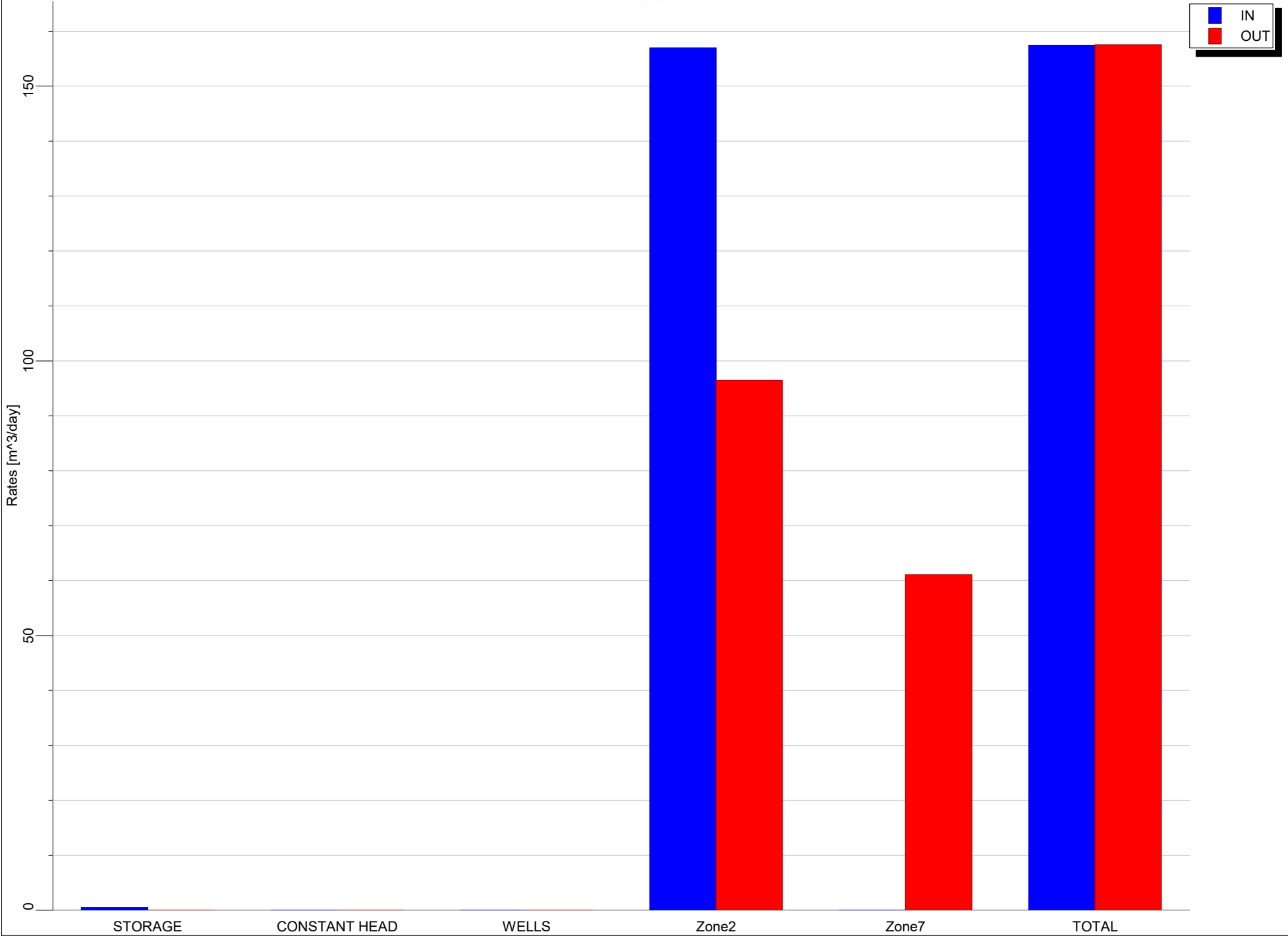
Appendix C - Zone Budget Charts

Time = 1000



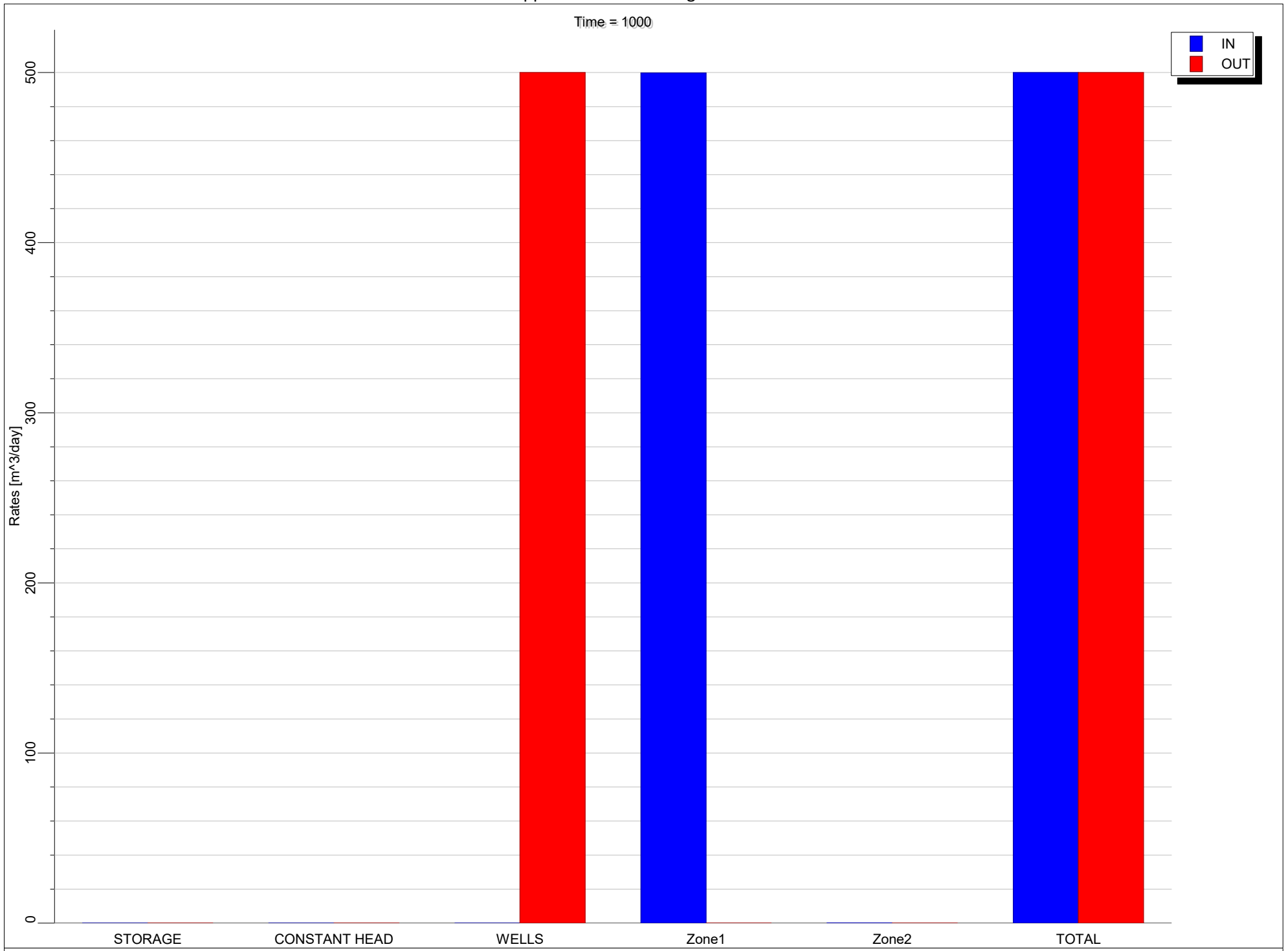
Appendix C - Zone Budget Charts

Time = 1000



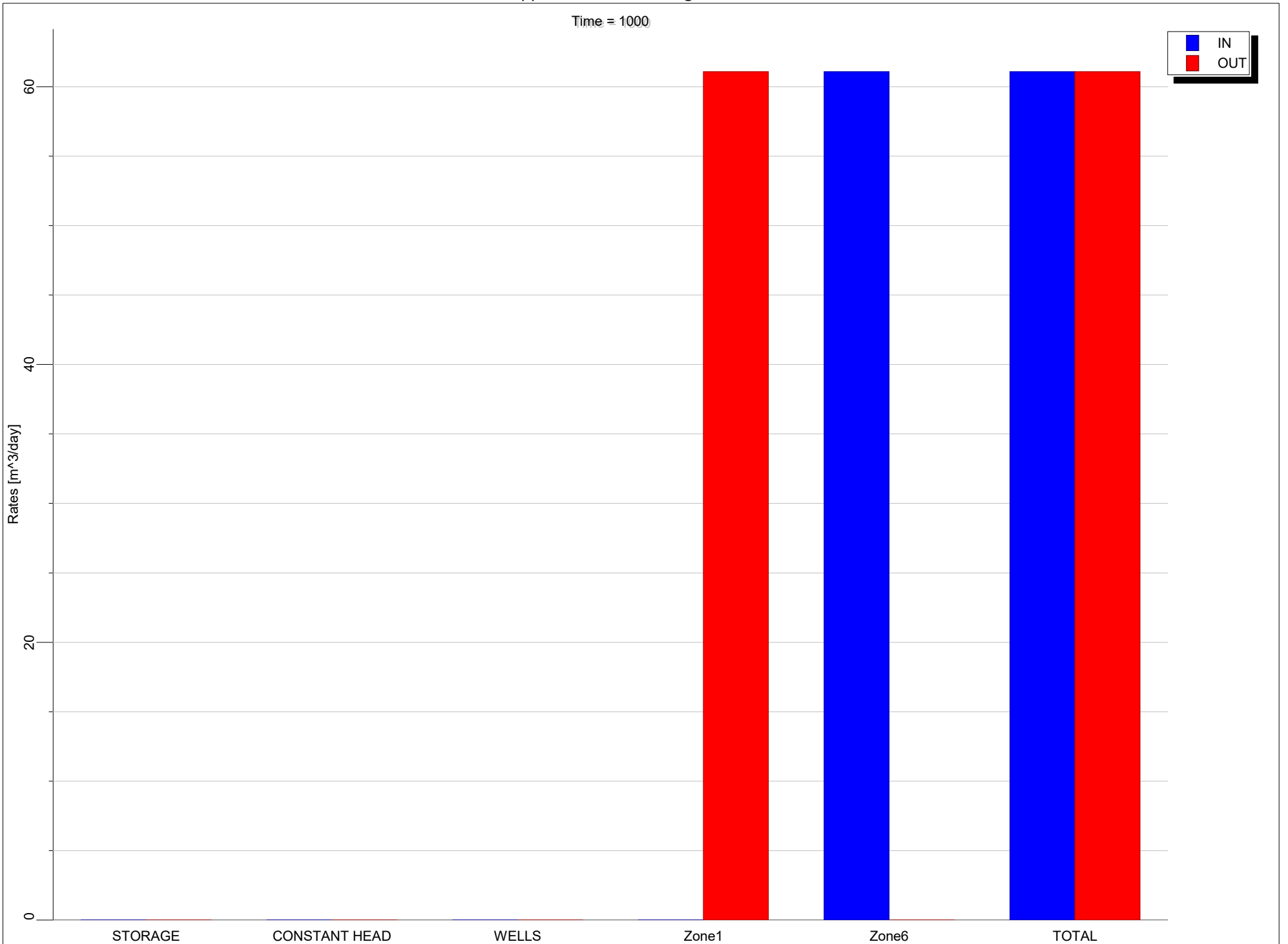
Appendix C - Zone Budget Charts

Time = 1000



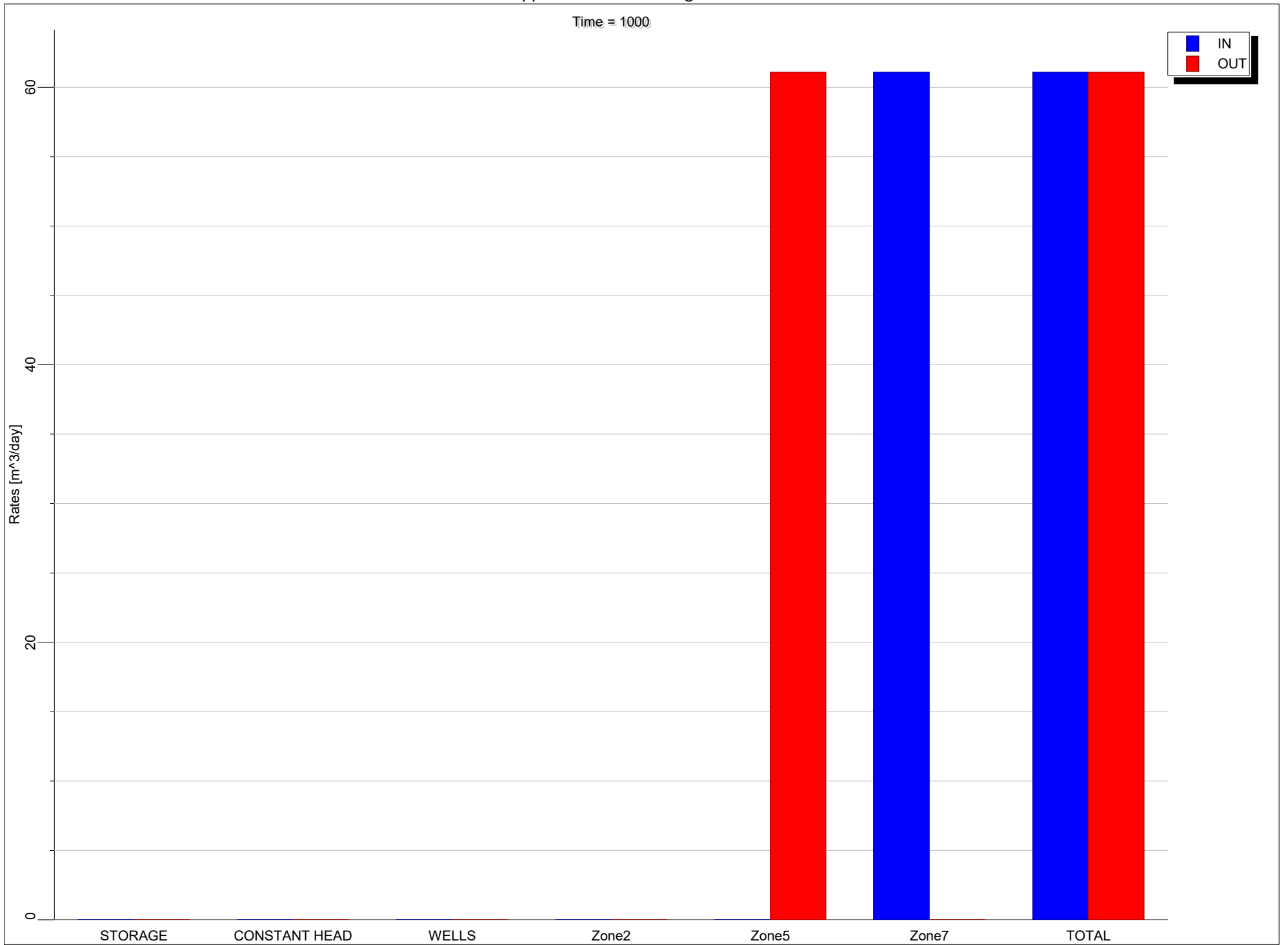
Appendix C - Zone Budget Charts

Time = 1000



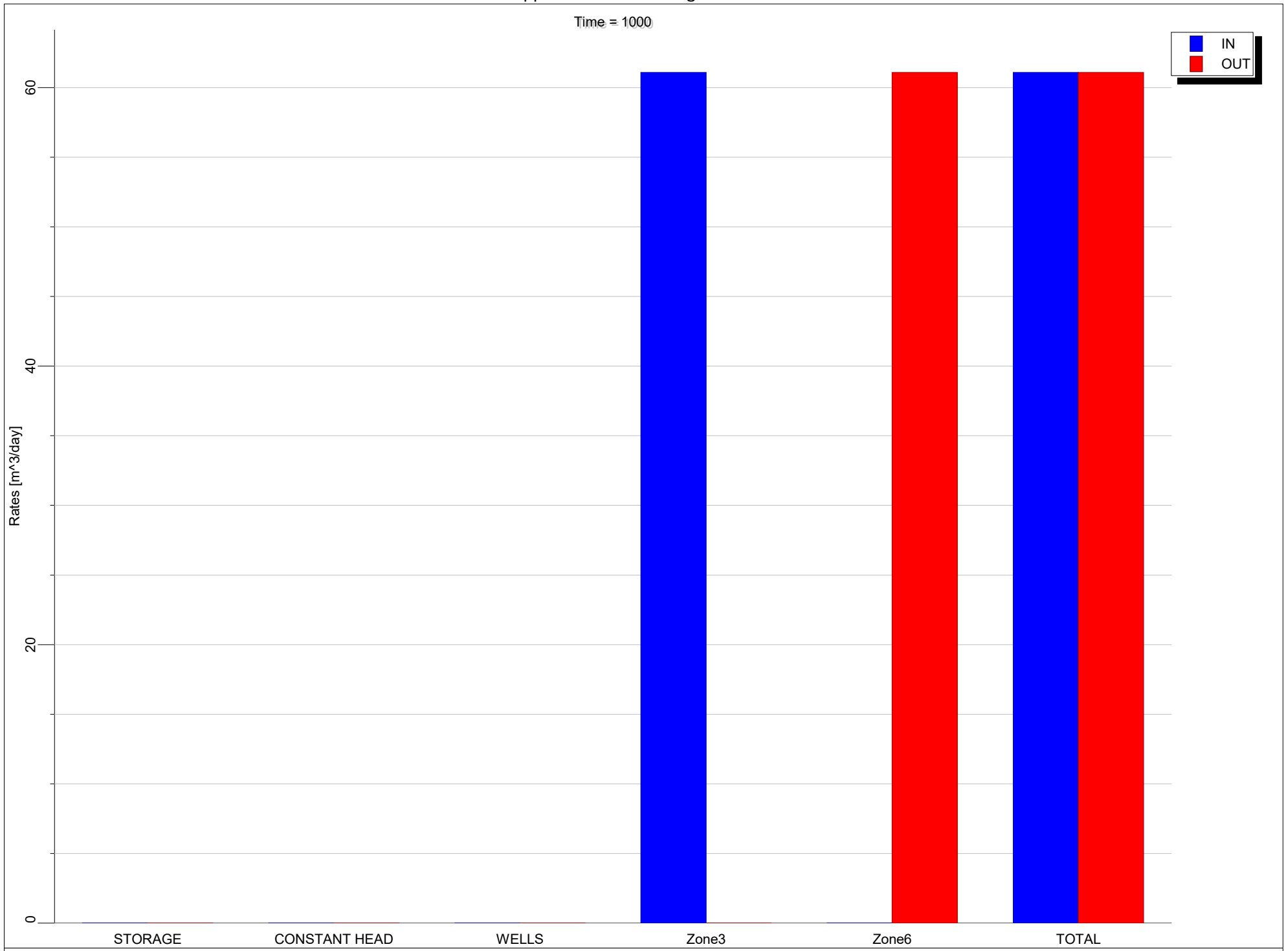
Appendix C - Zone Budget Charts

Time = 1000



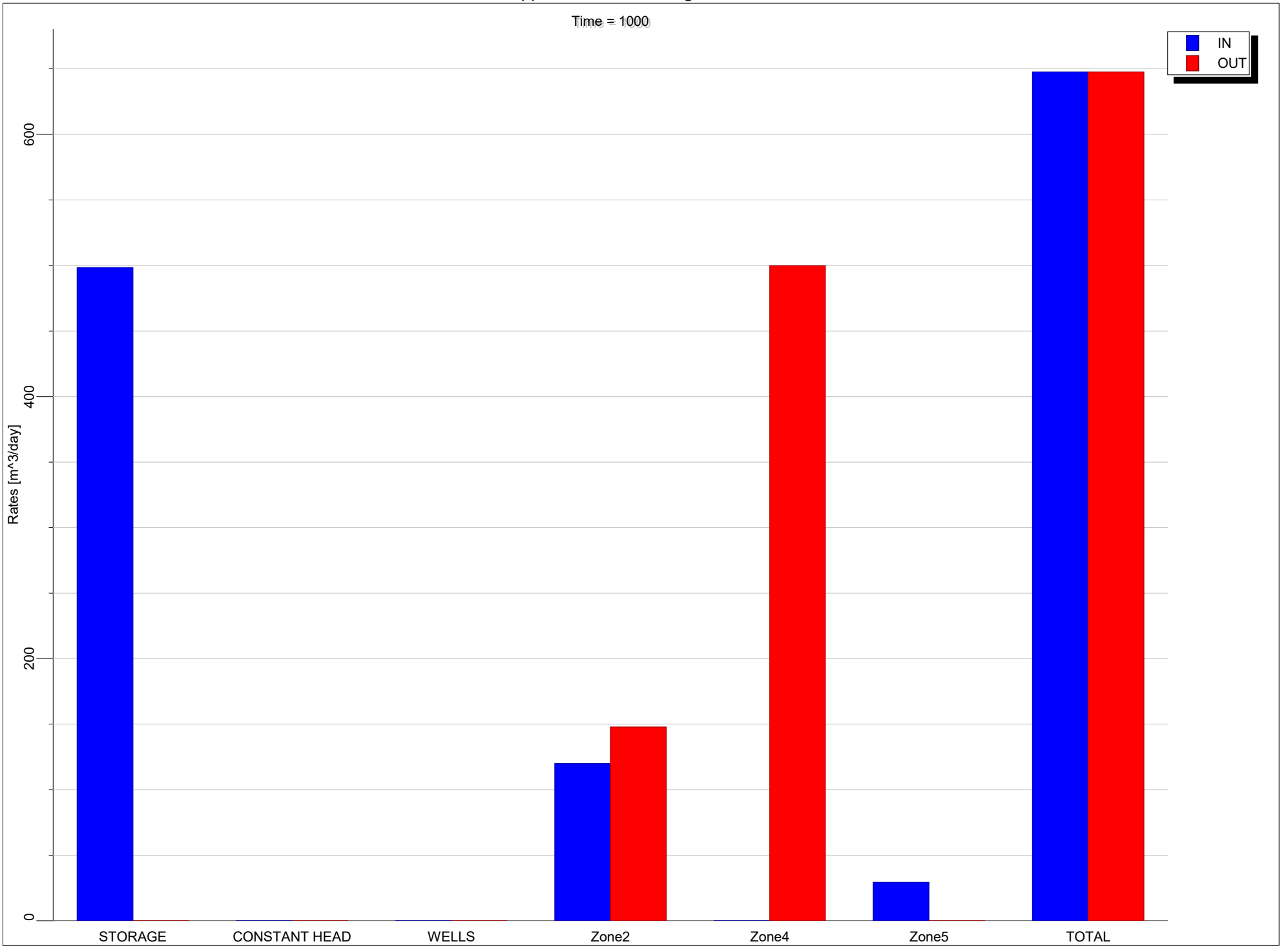
Appendix C - Zone Budget Charts

Time = 1000



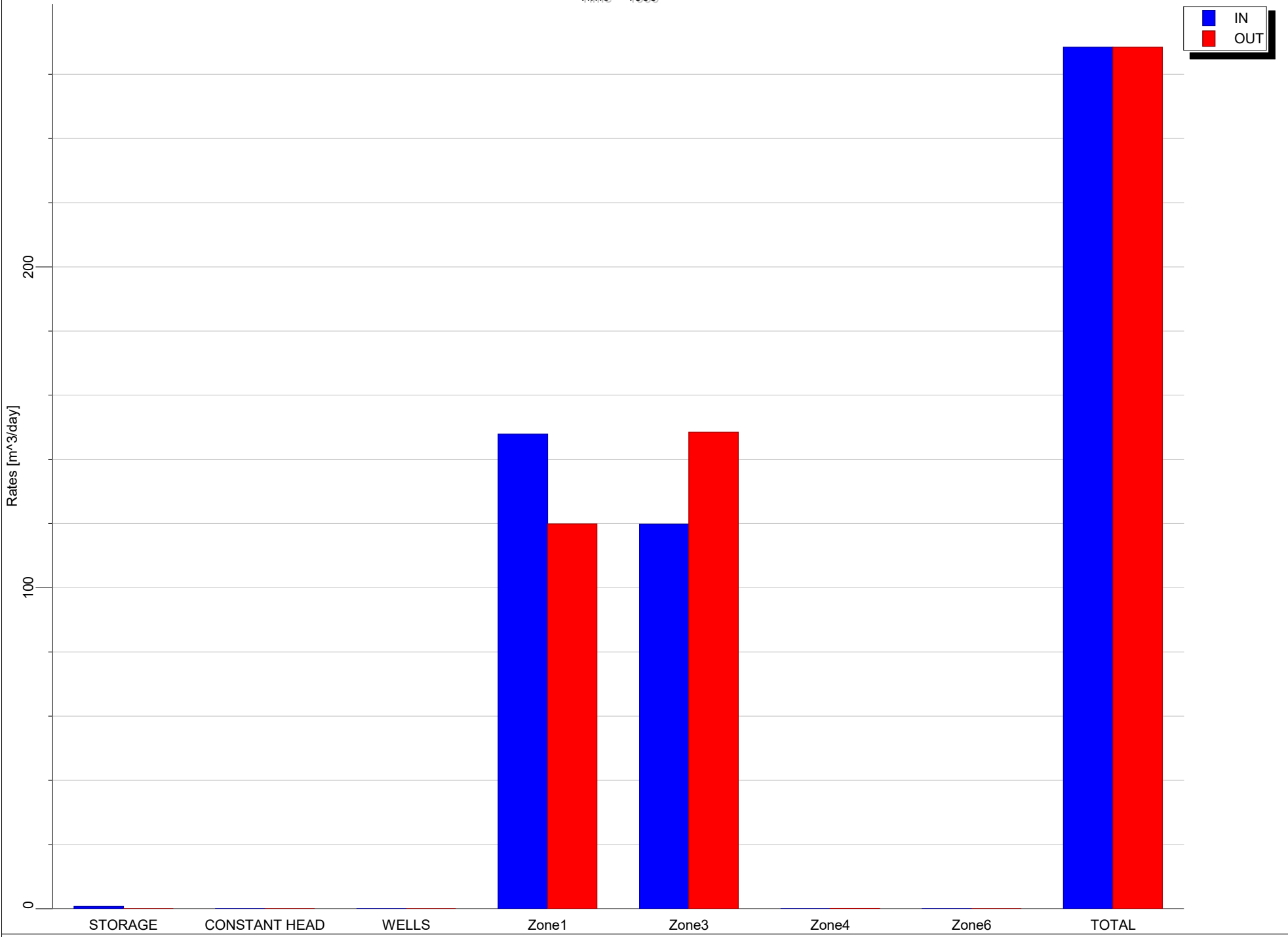
Appendix C - Zone Budget Charts

Time = 1000



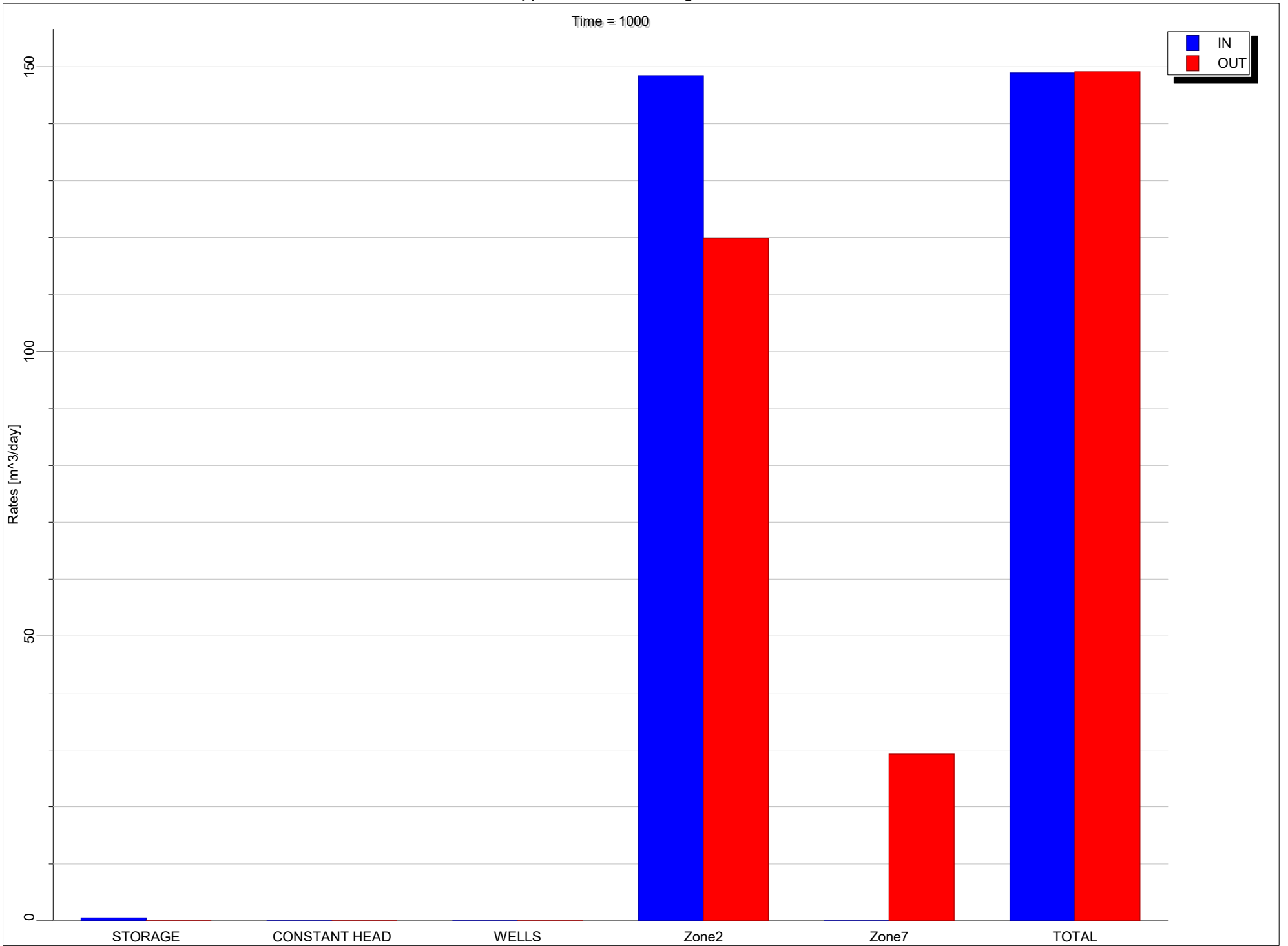
Appendix C - Zone Budget Charts

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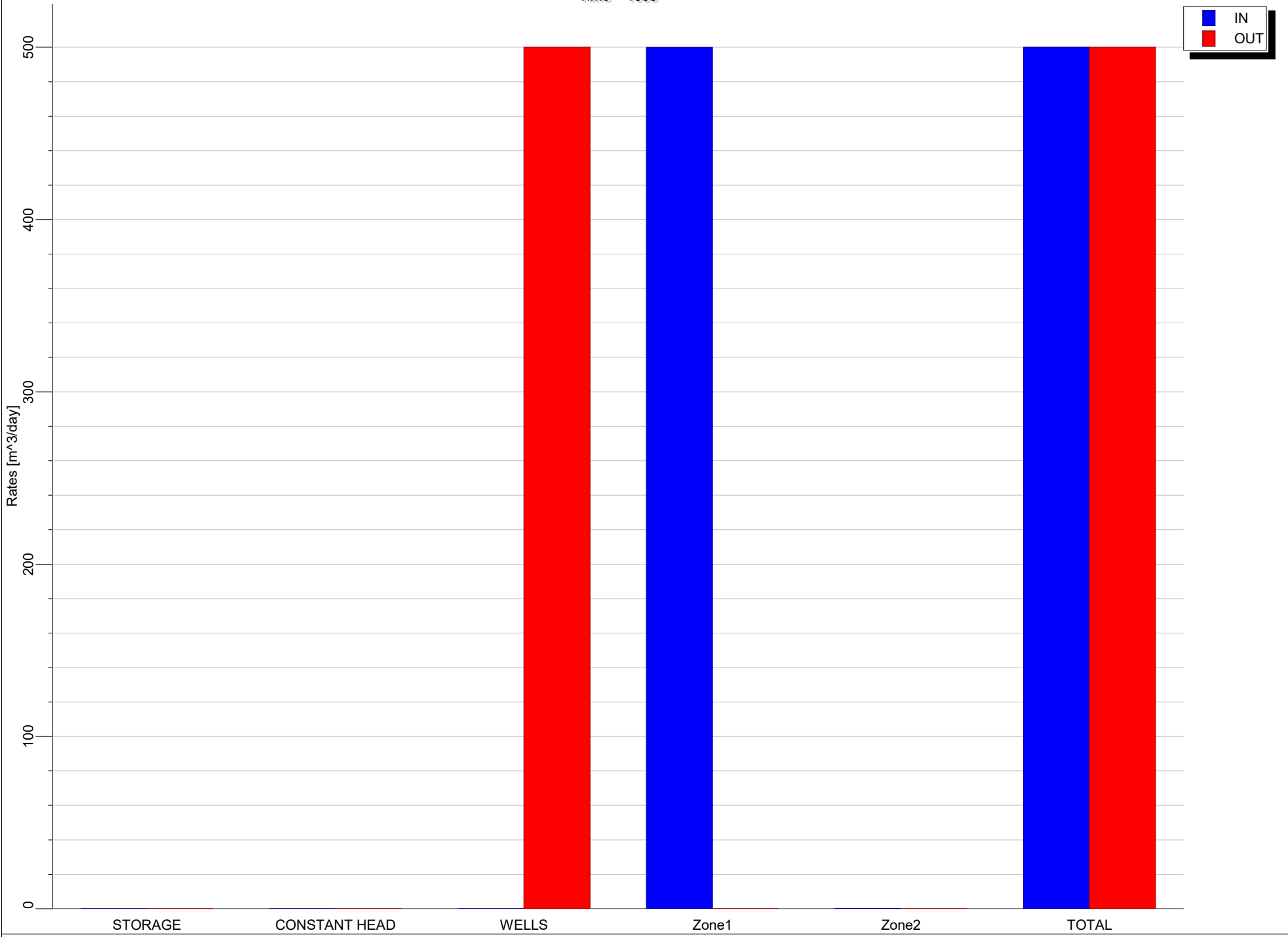
Appendix C - Zone Budget Charts

Time = 1000



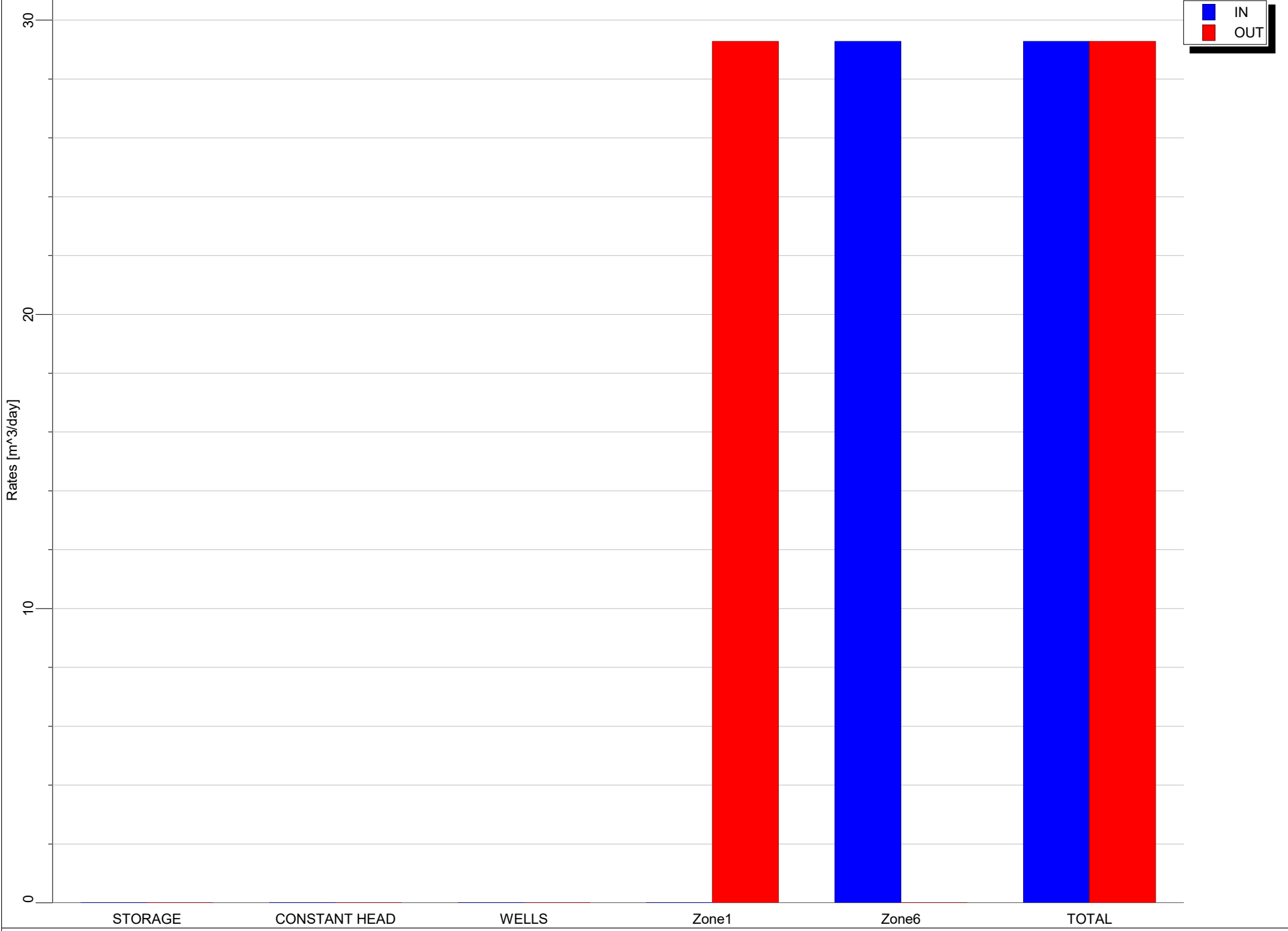
Appendix C - Zone Budget Charts

Time = 1000



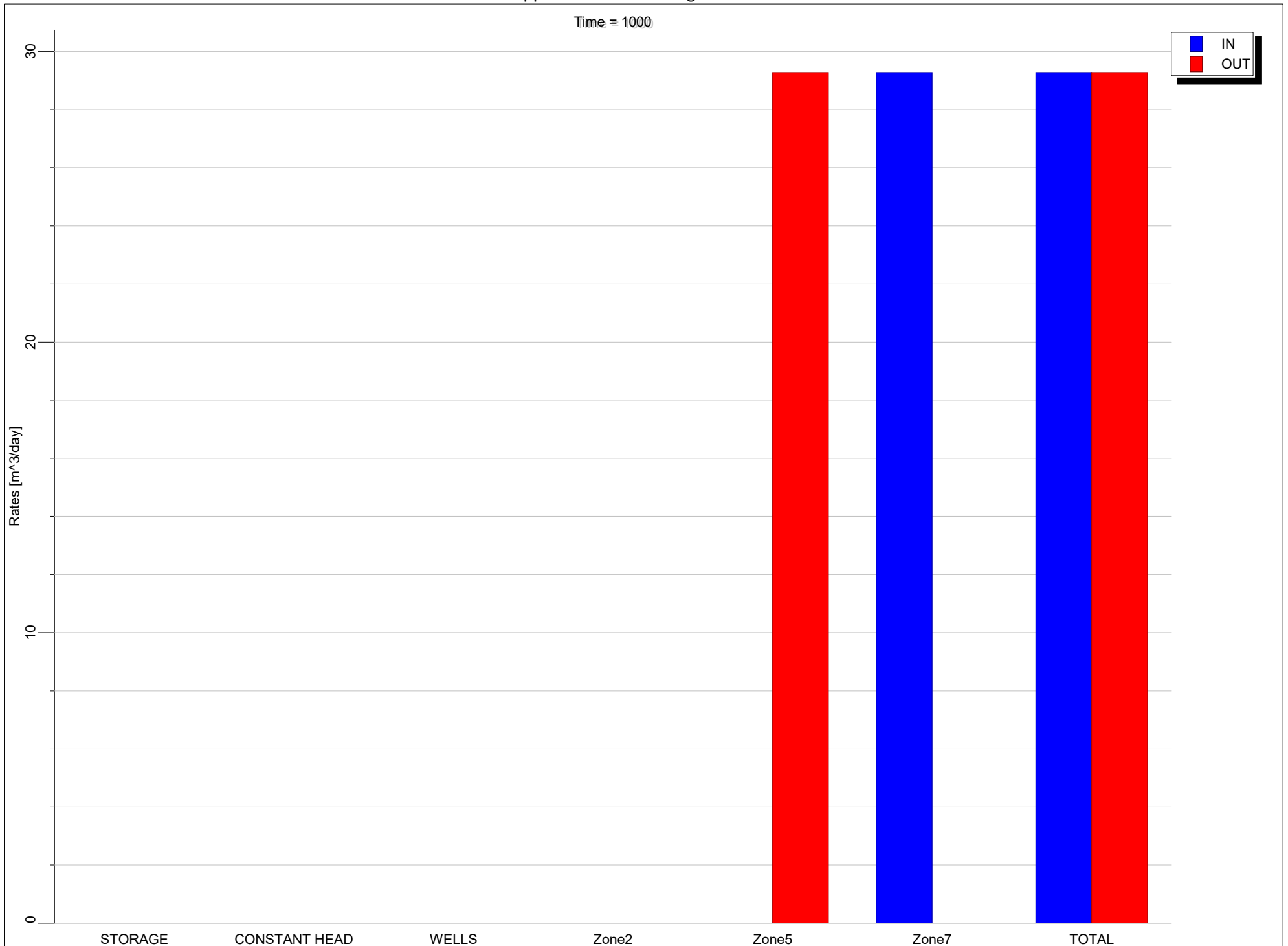
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

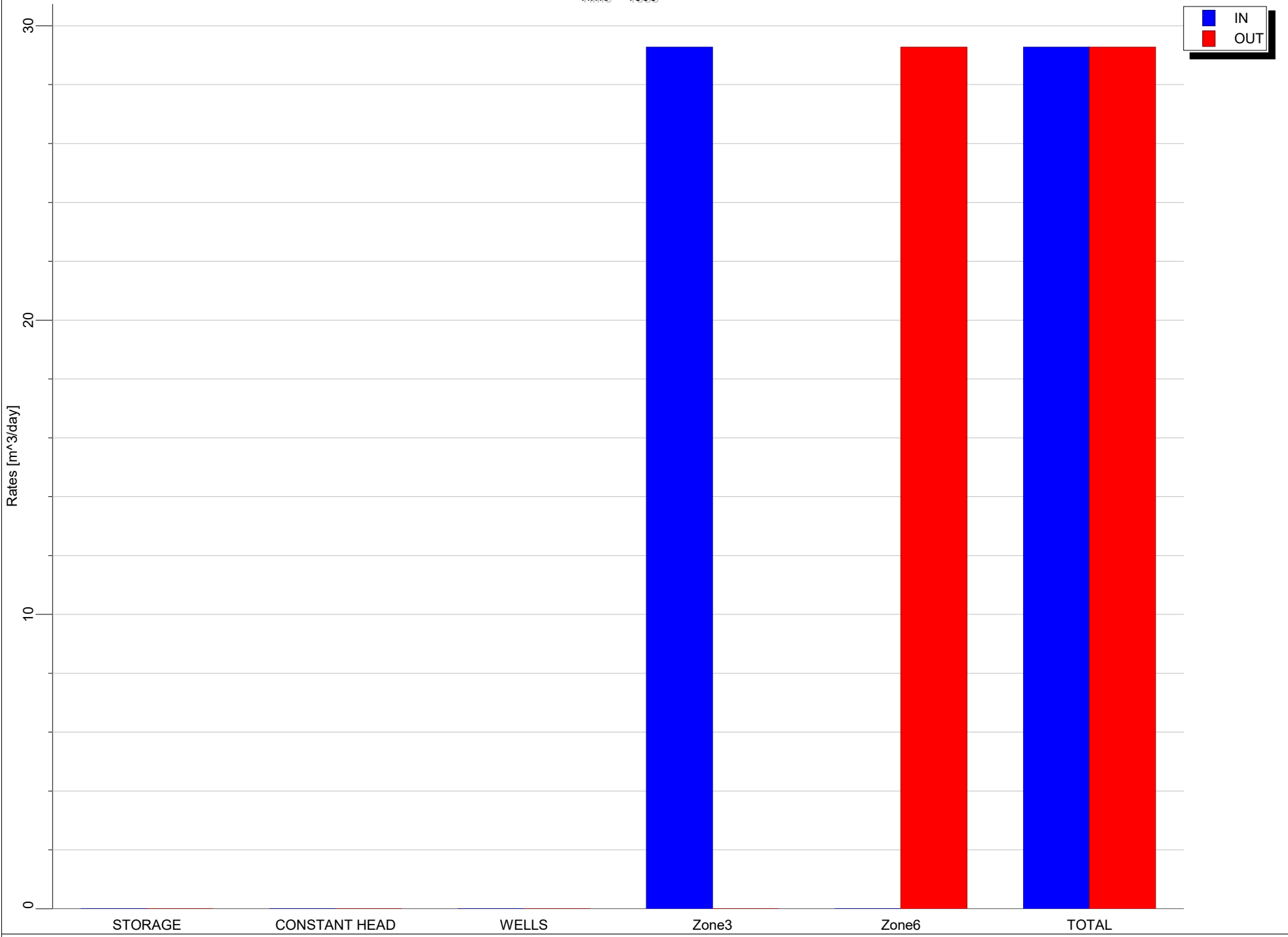
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Zone 6
Scenario 5.5
Abandoned Well 160m

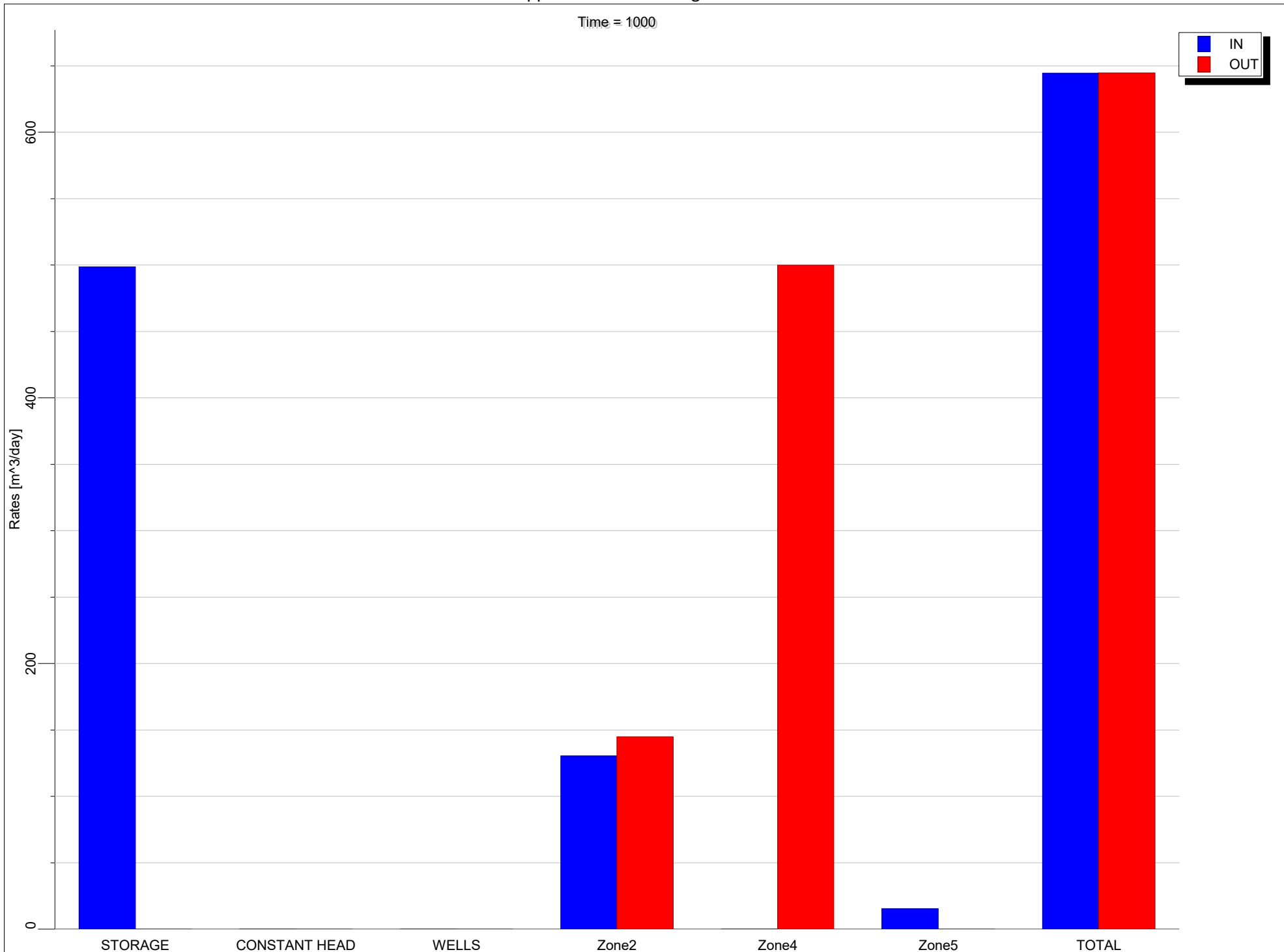
Appendix C - Zone Budget Charts

Time = 1000



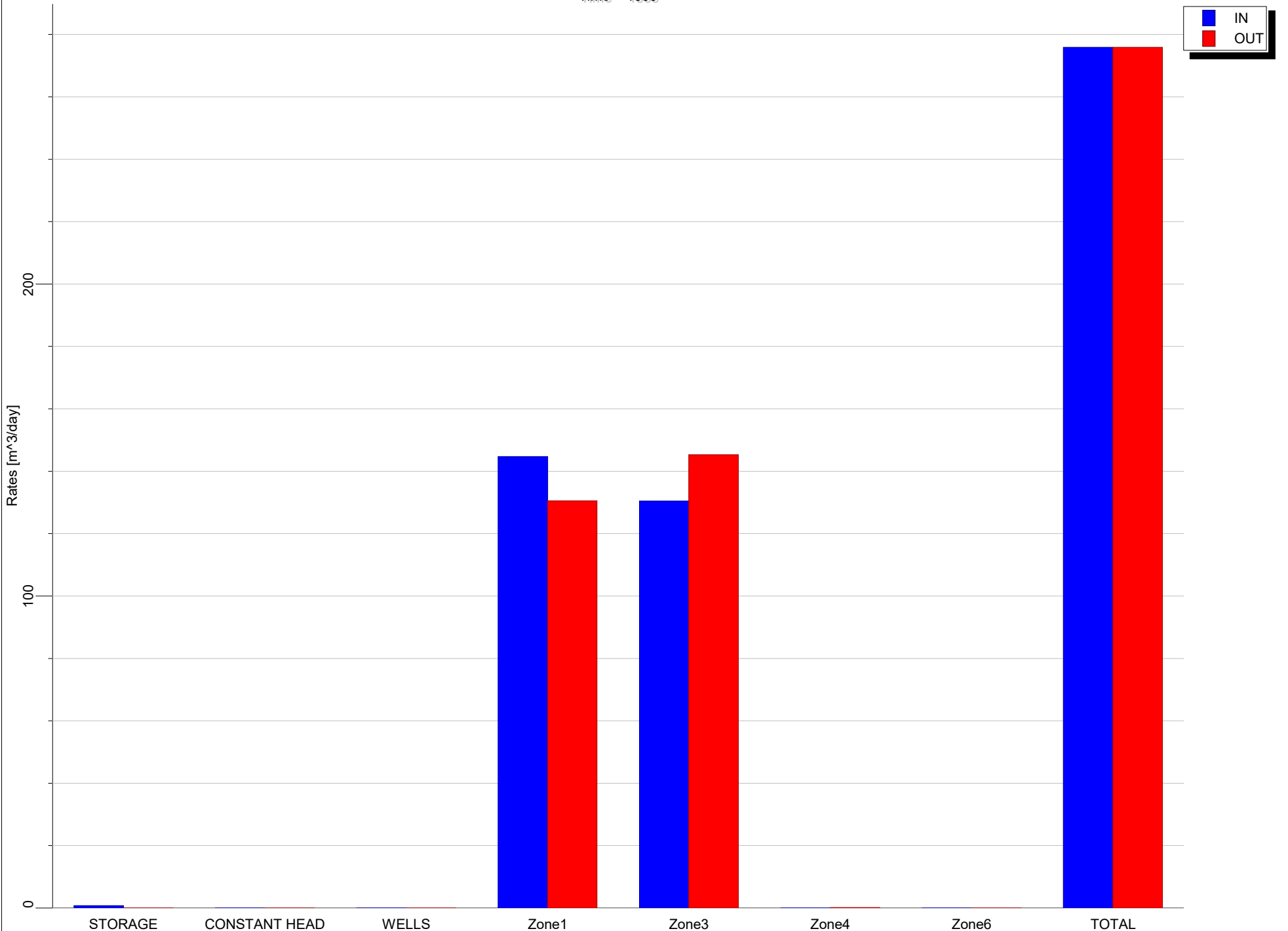
Appendix C - Zone Budget Charts

Time = 1000



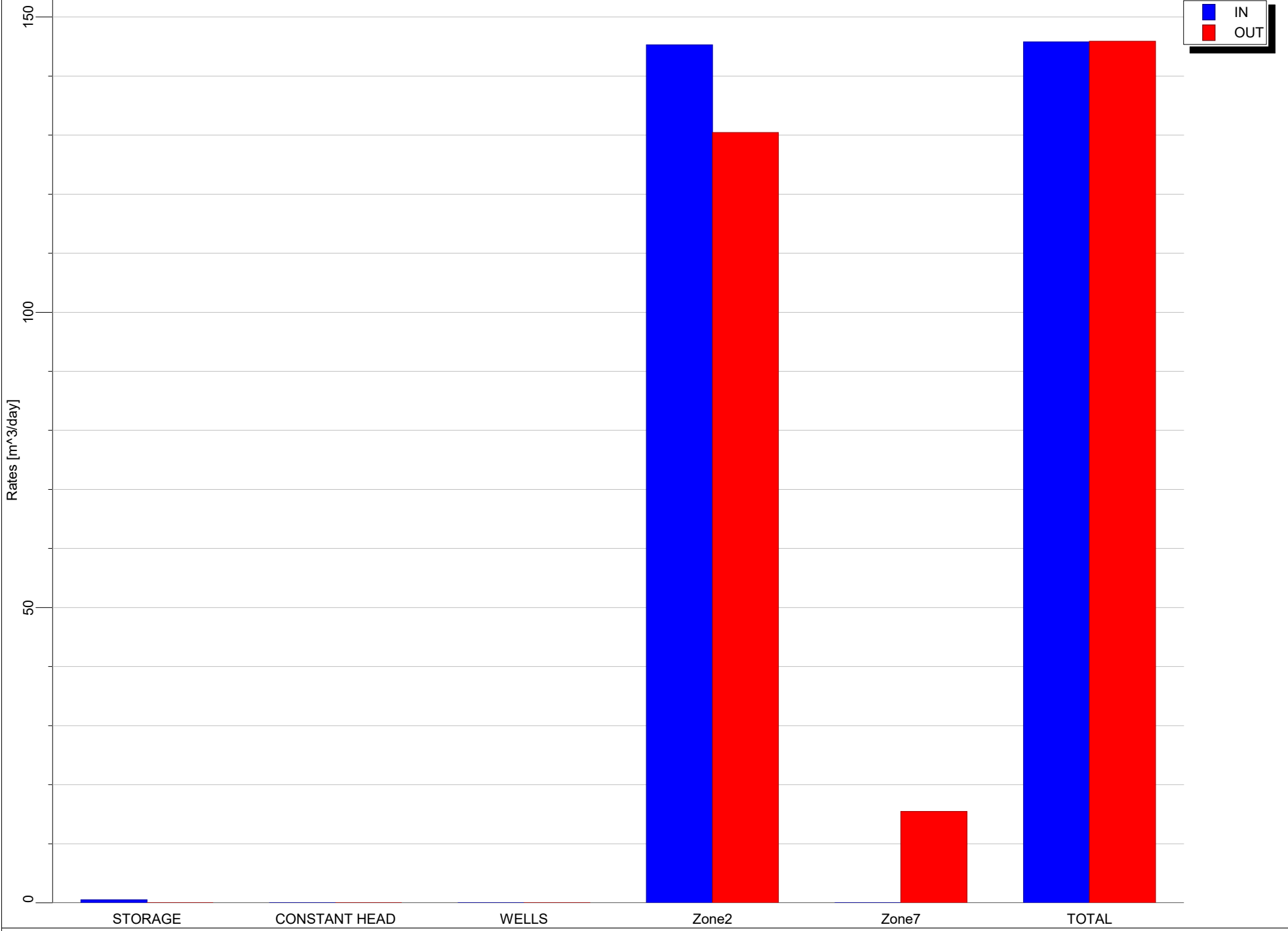
Appendix C - Zone Budget Charts

Time = 1000



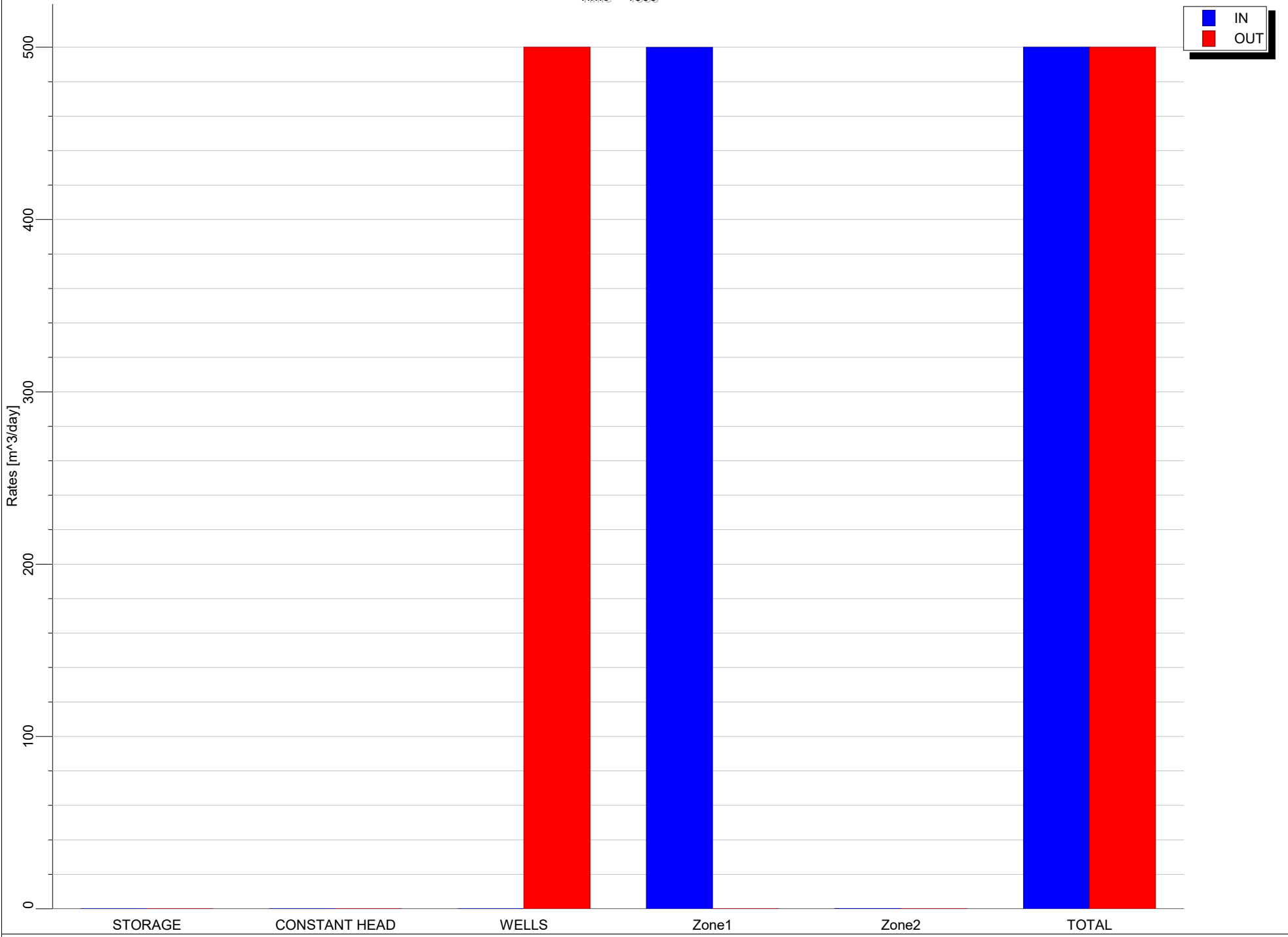
Appendix C - Zone Budget Charts

Time = 1000



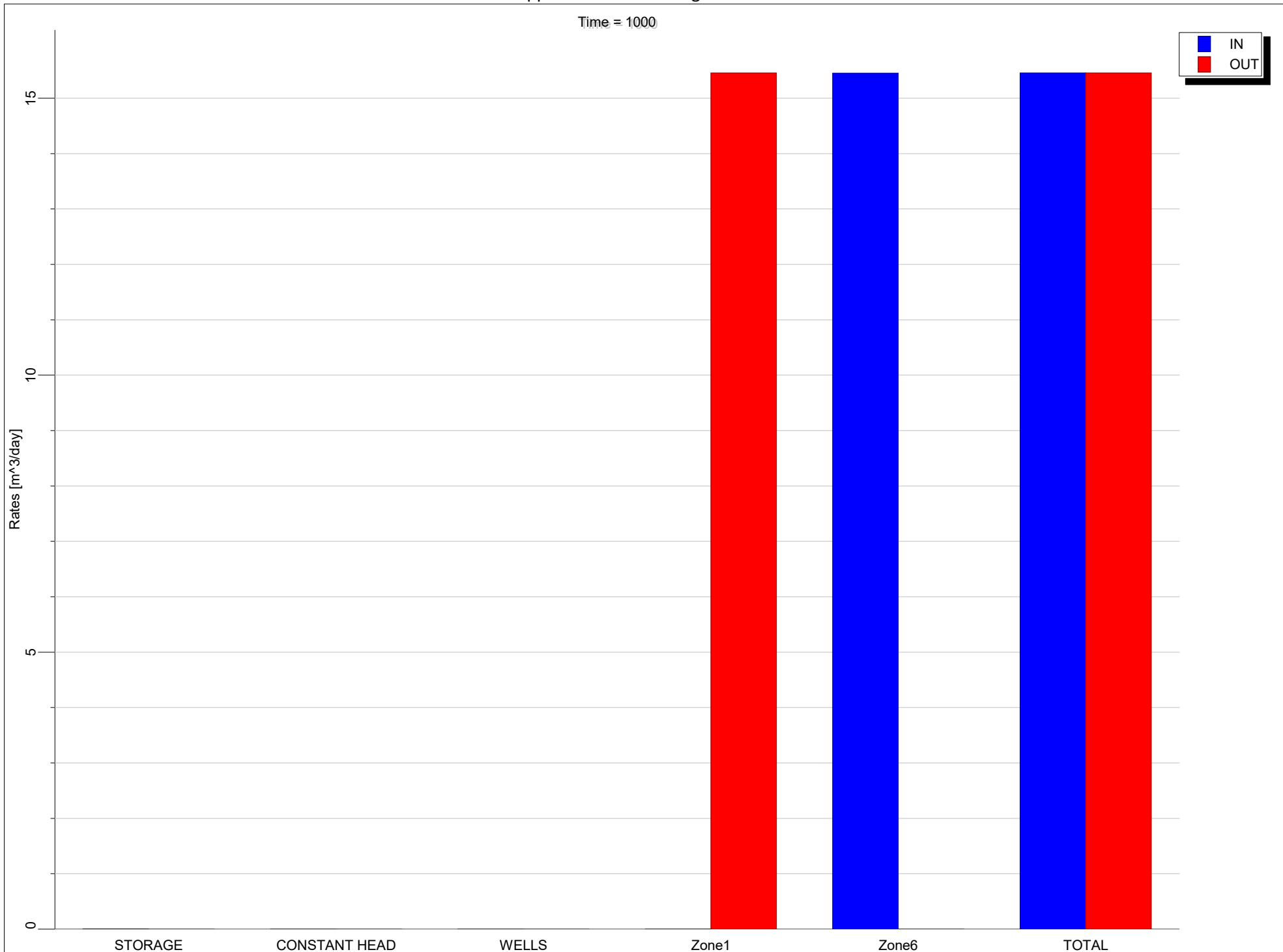
Appendix C - Zone Budget Charts

Time = 1000



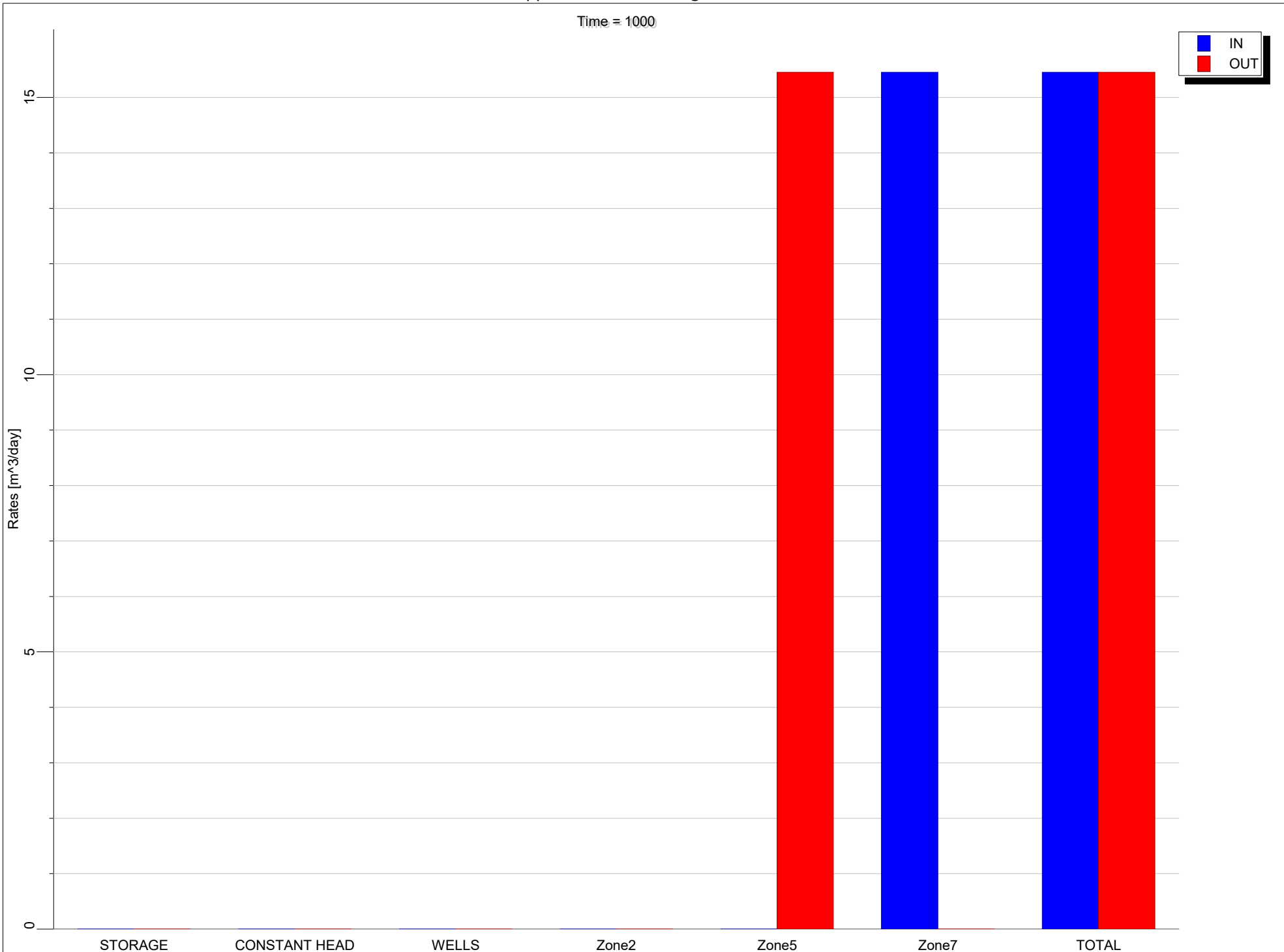
Appendix C - Zone Budget Charts

Time = 1000



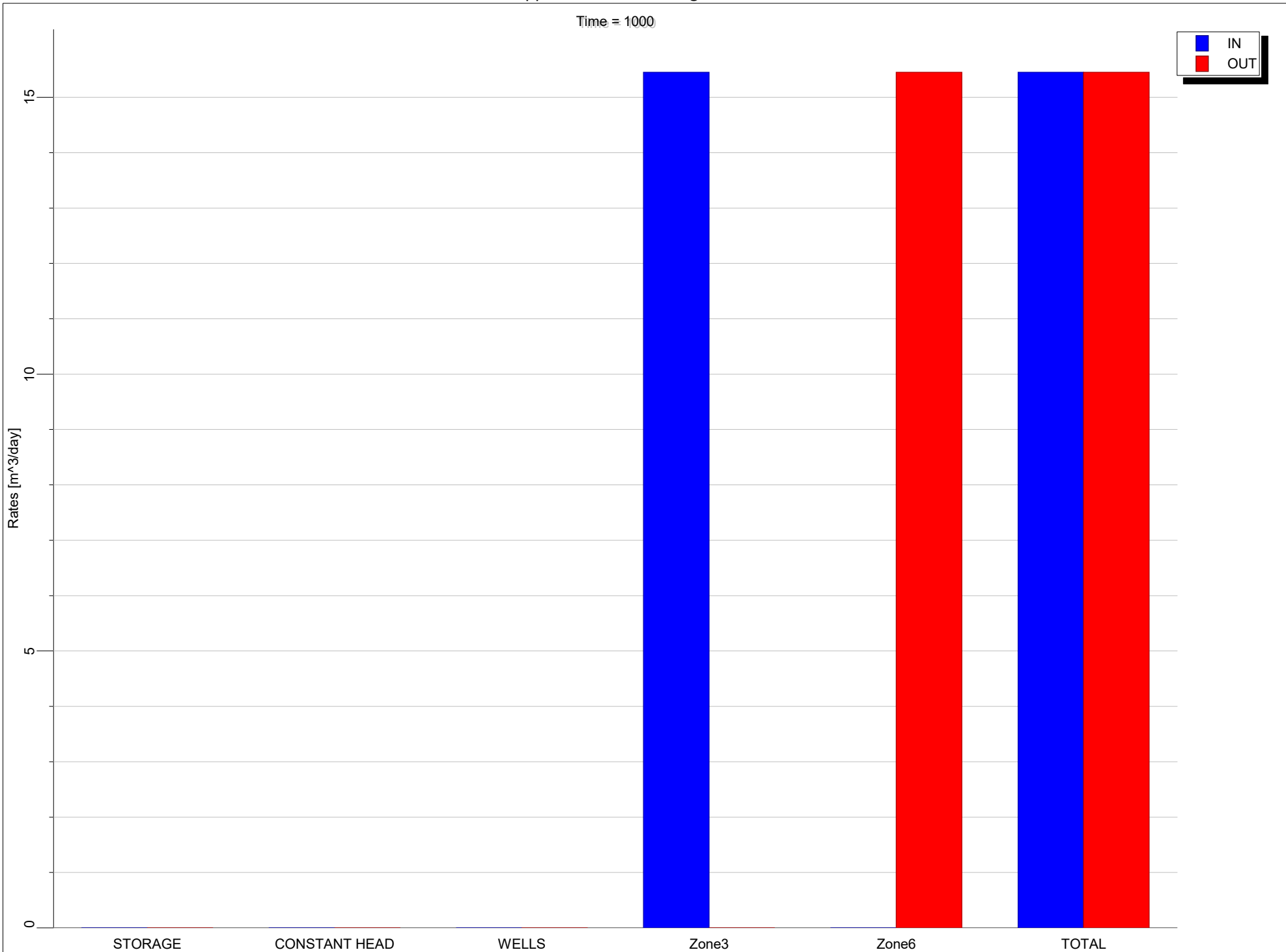
Appendix C - Zone Budget Charts

Time = 1000



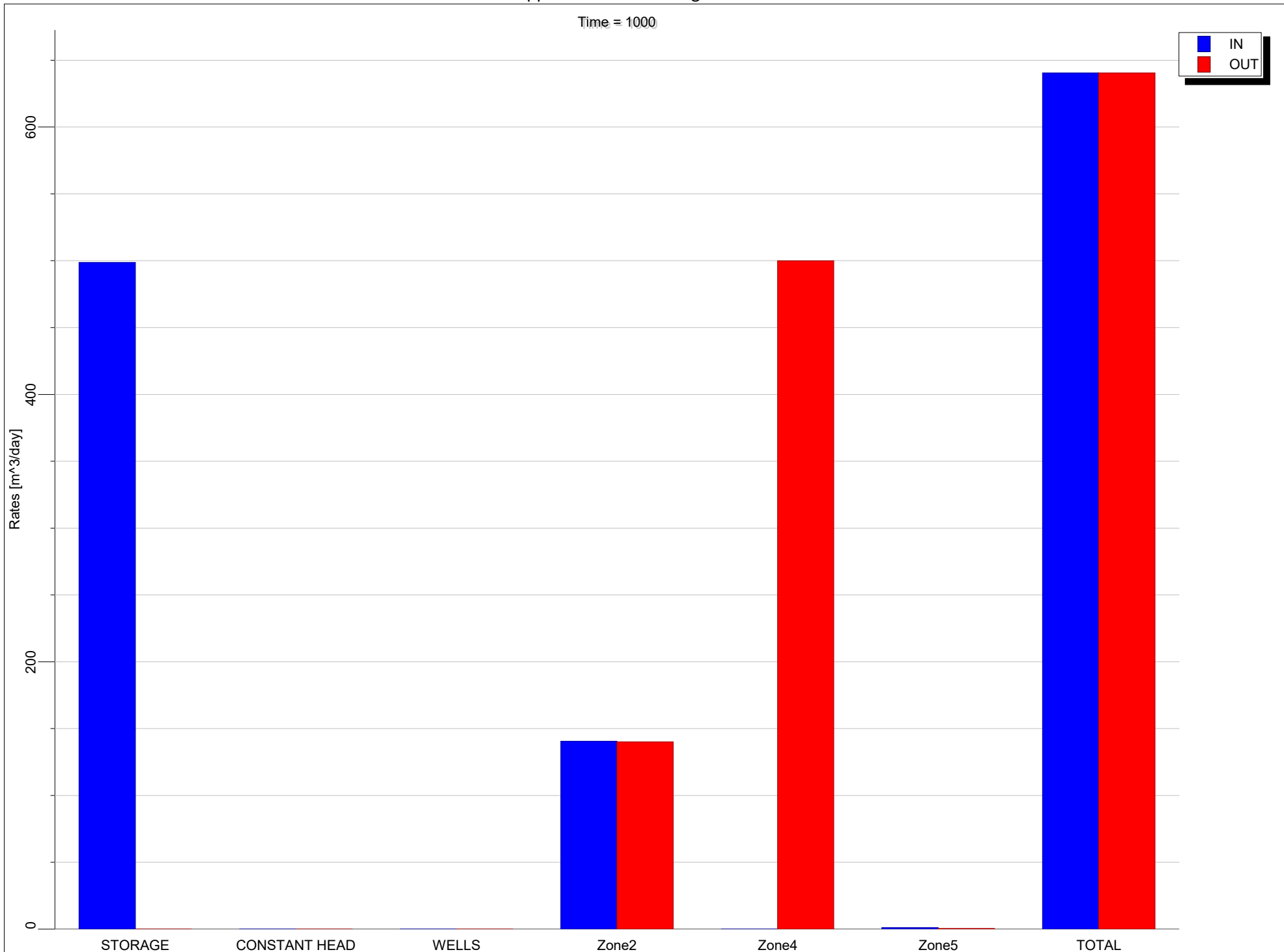
Appendix C - Zone Budget Charts

Time = 1000



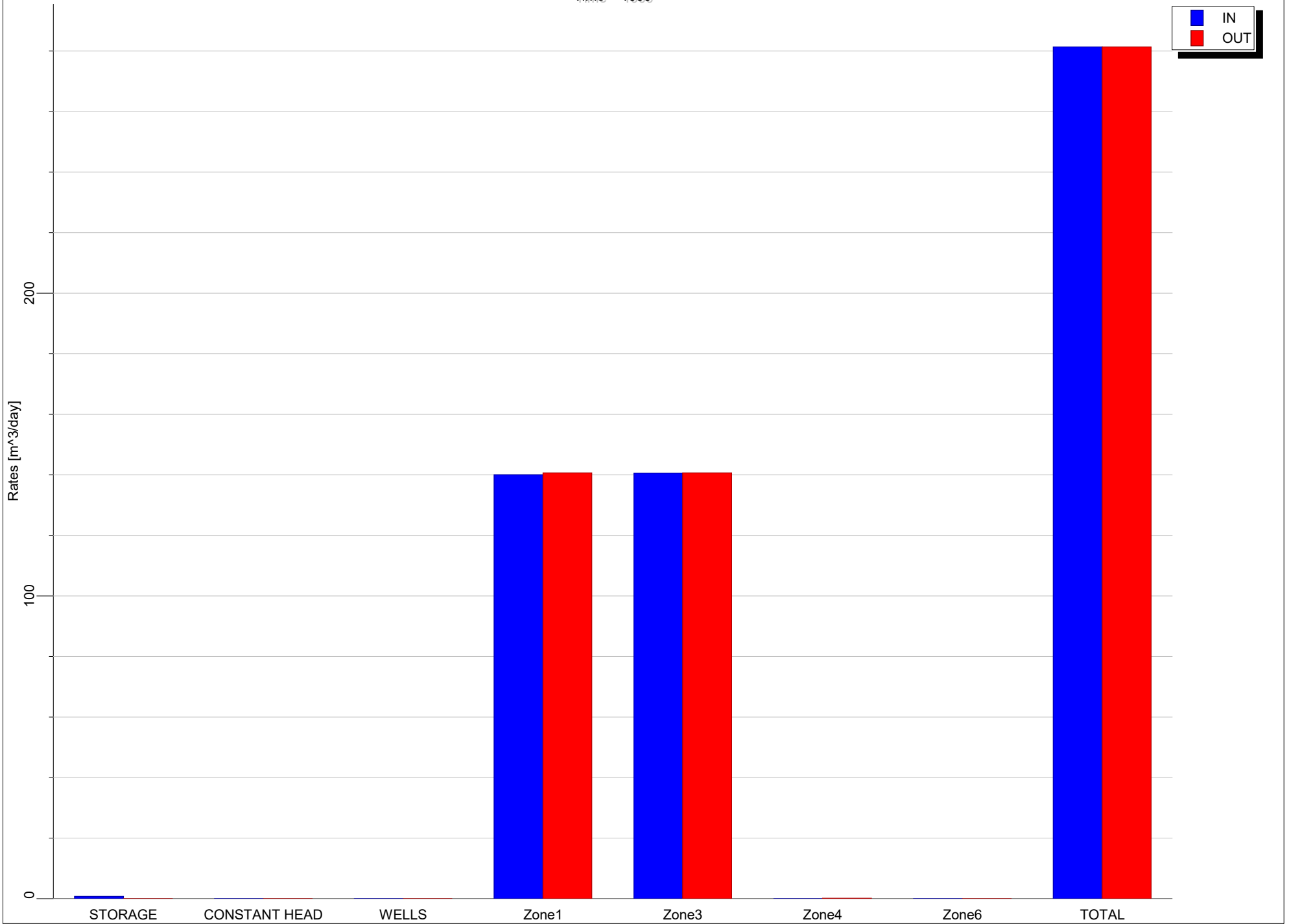
Appendix C - Zone Budget Charts

Time = 1000



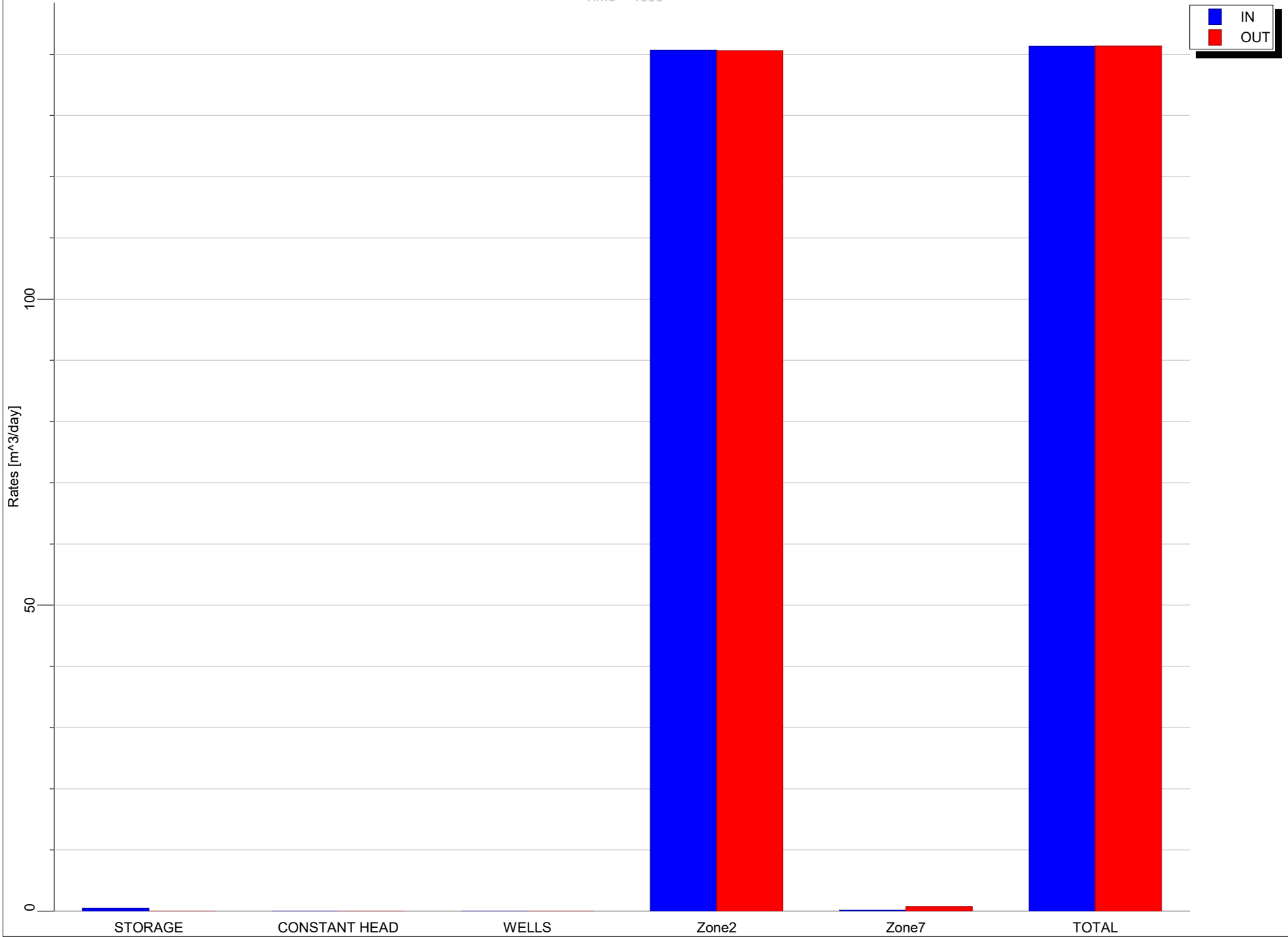
Appendix C - Zone Budget Charts

Time = 1000



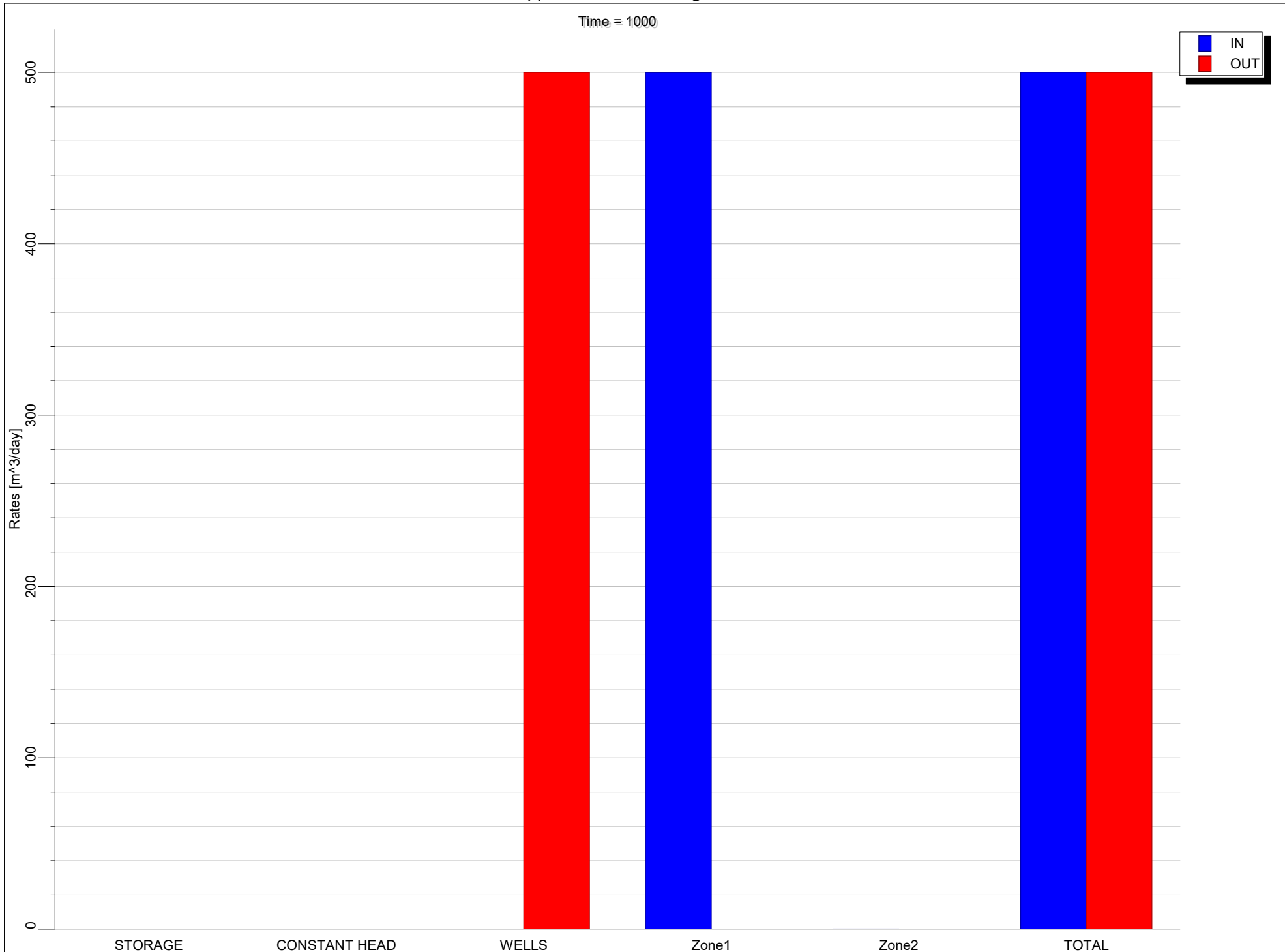
Appendix C - Zone Budget Charts

Time = 1000



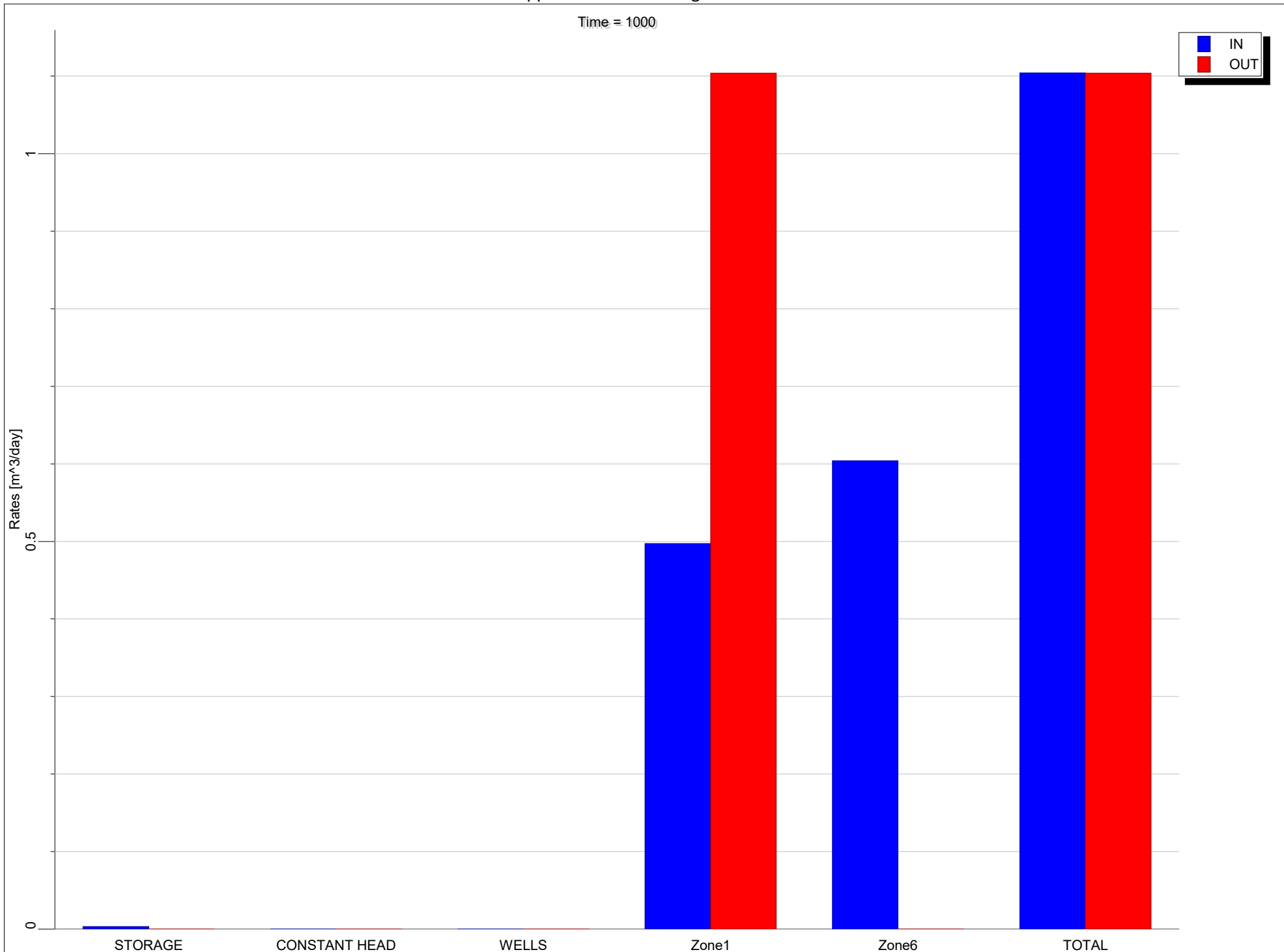
Appendix C - Zone Budget Charts

Time = 1000



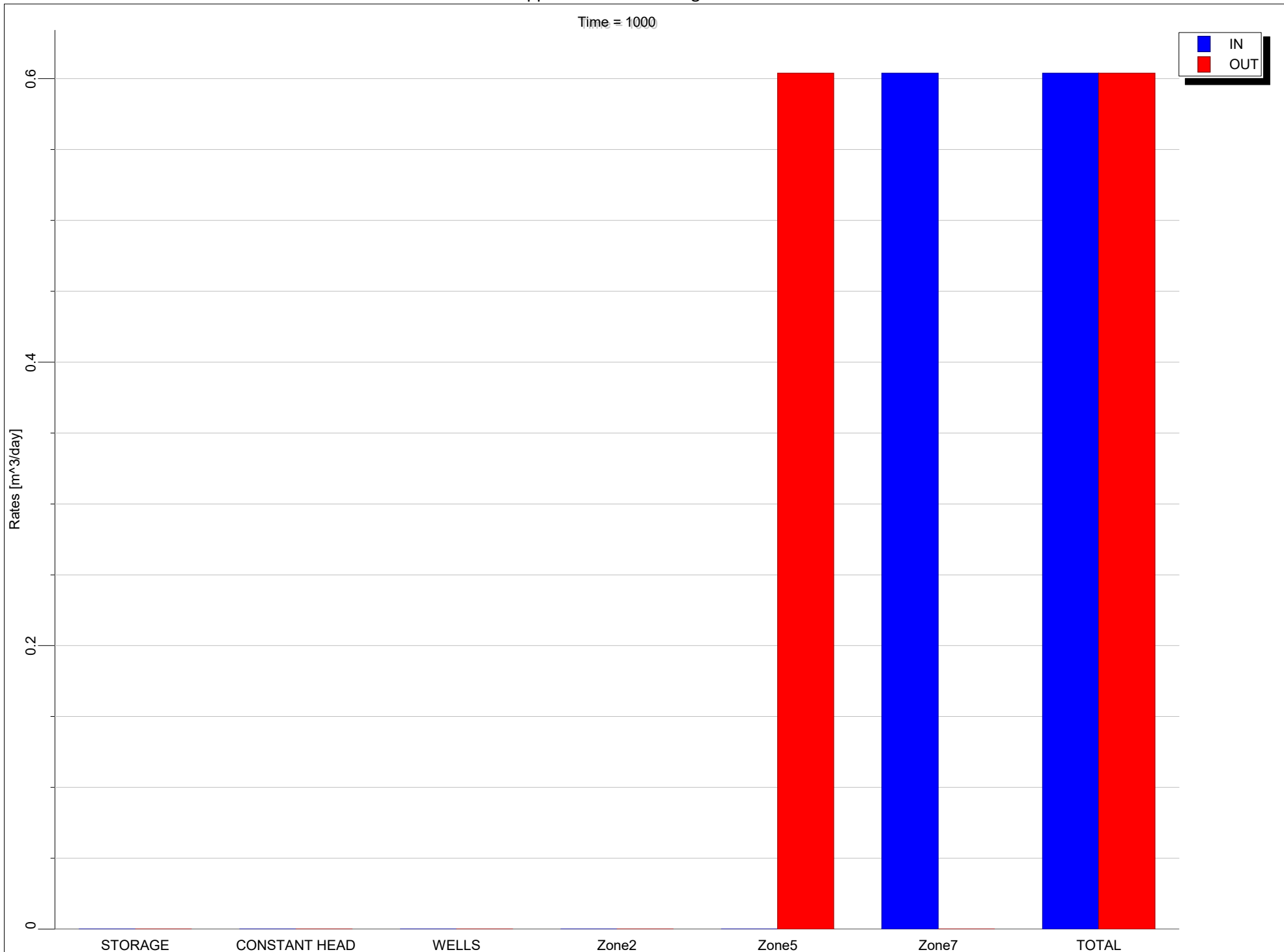
Appendix C - Zone Budget Charts

Time = 1000



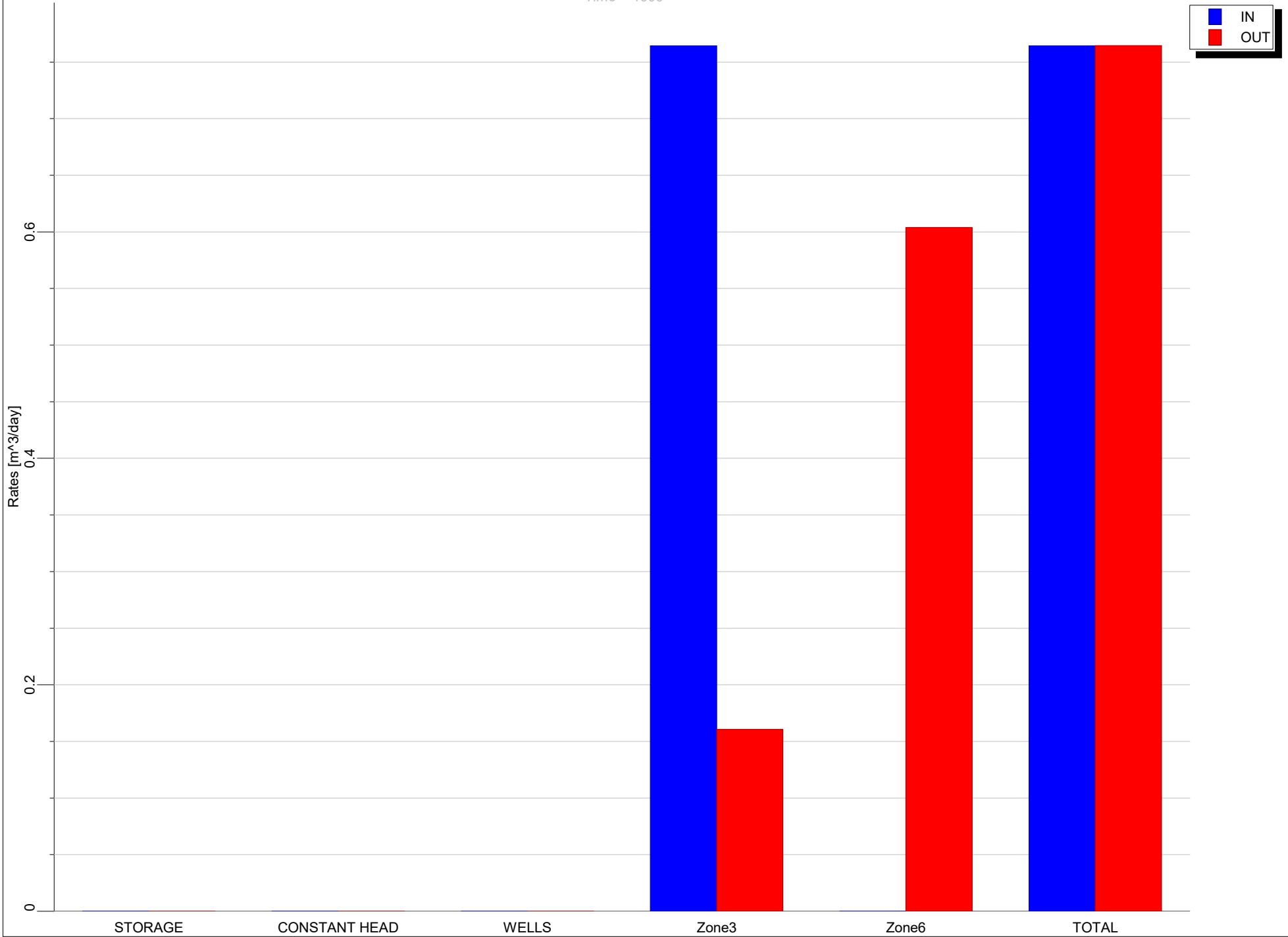
Appendix C - Zone Budget Charts

Time = 1000



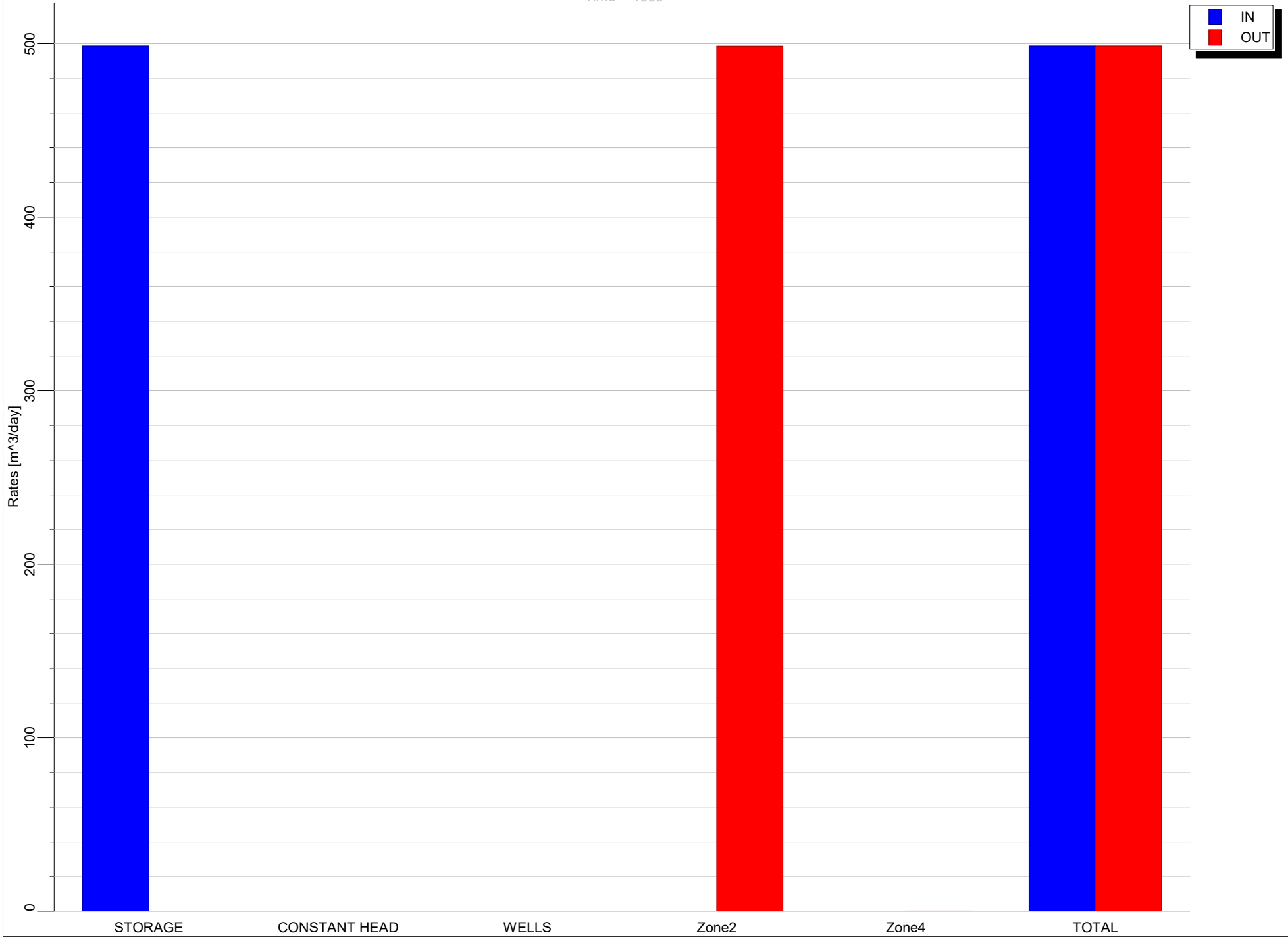
Appendix C - Zone Budget Charts

Time = 1000



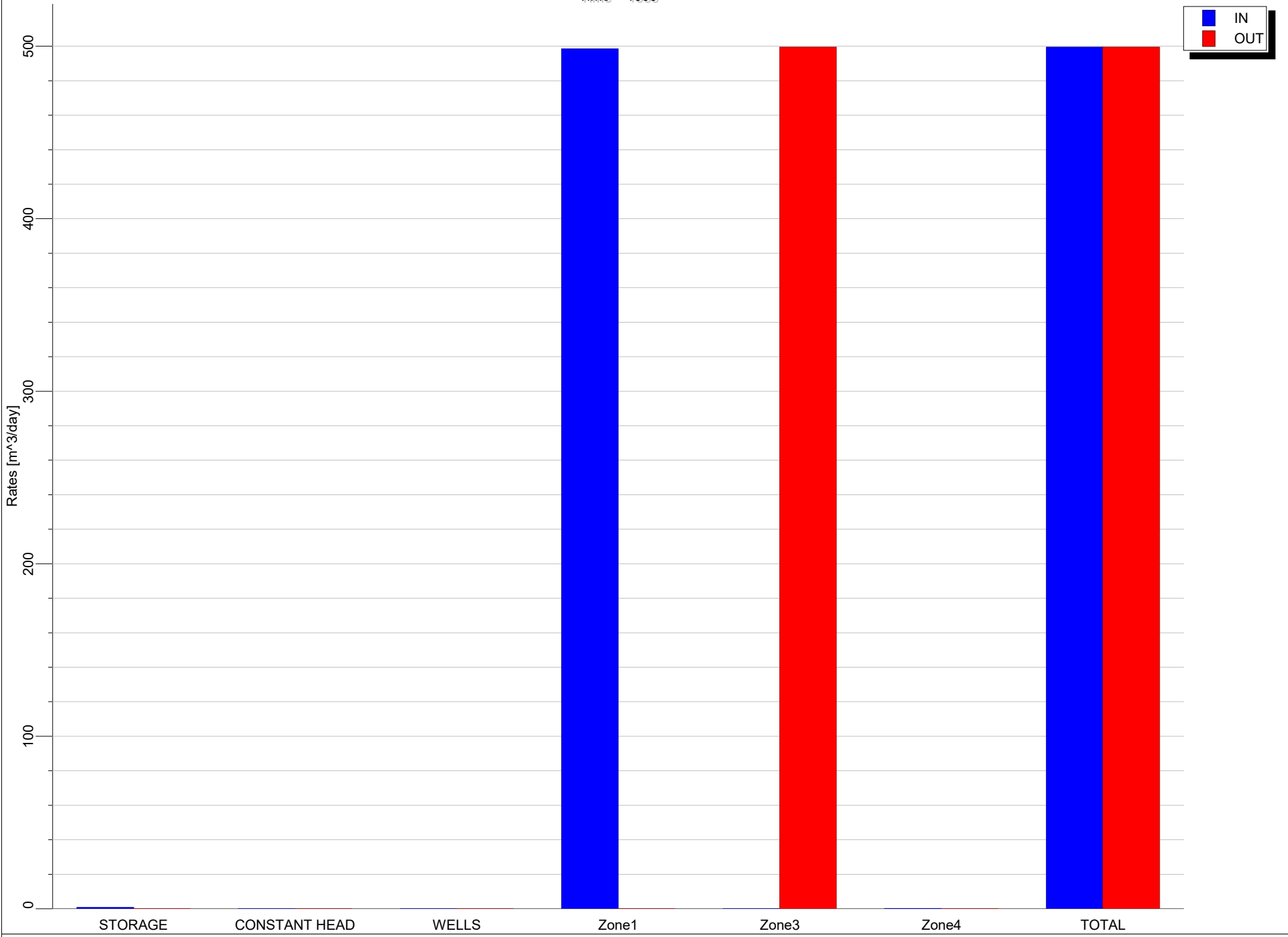
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

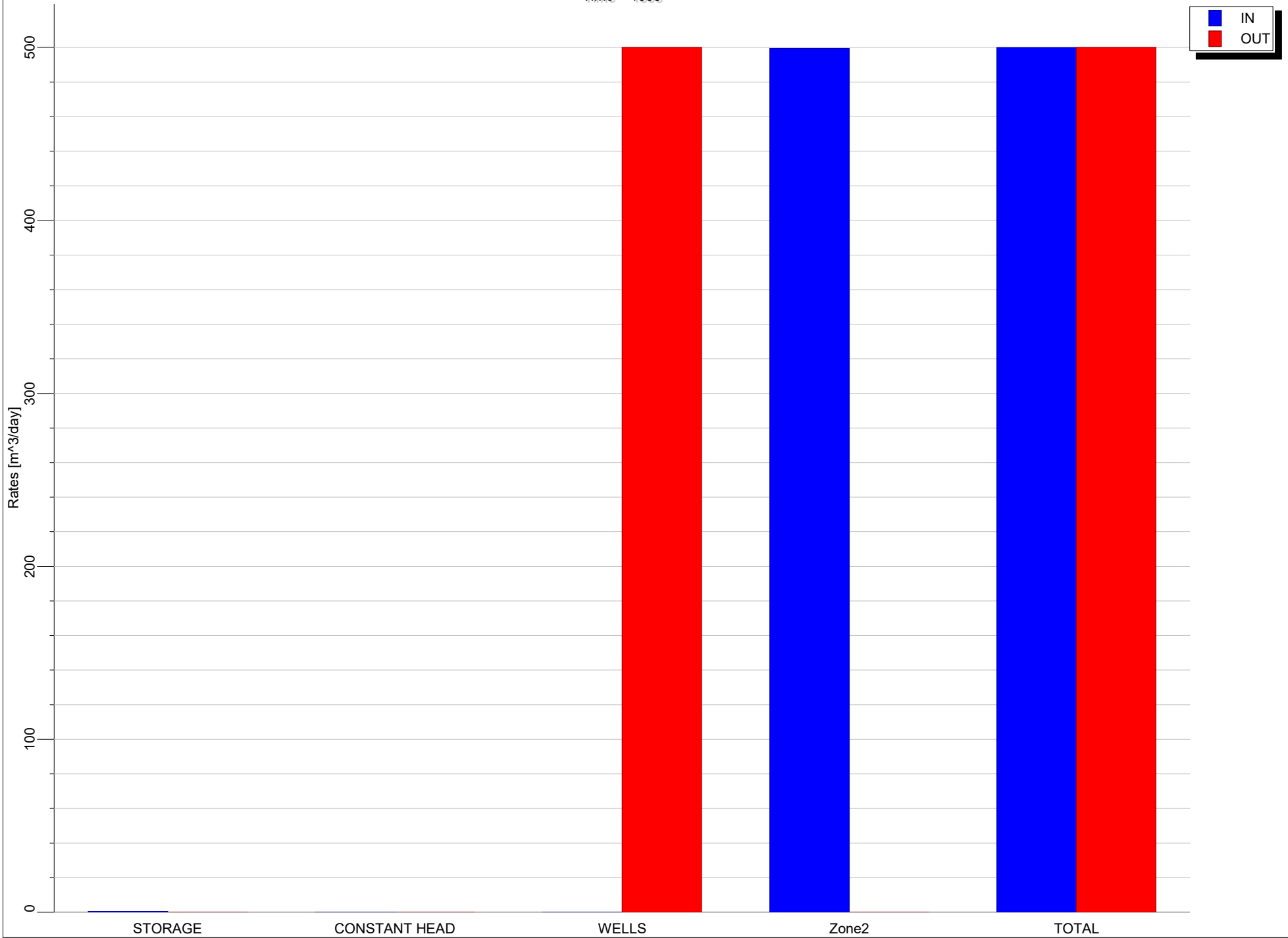
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Zone 2
Scenario 6.1
No Abandoned Well

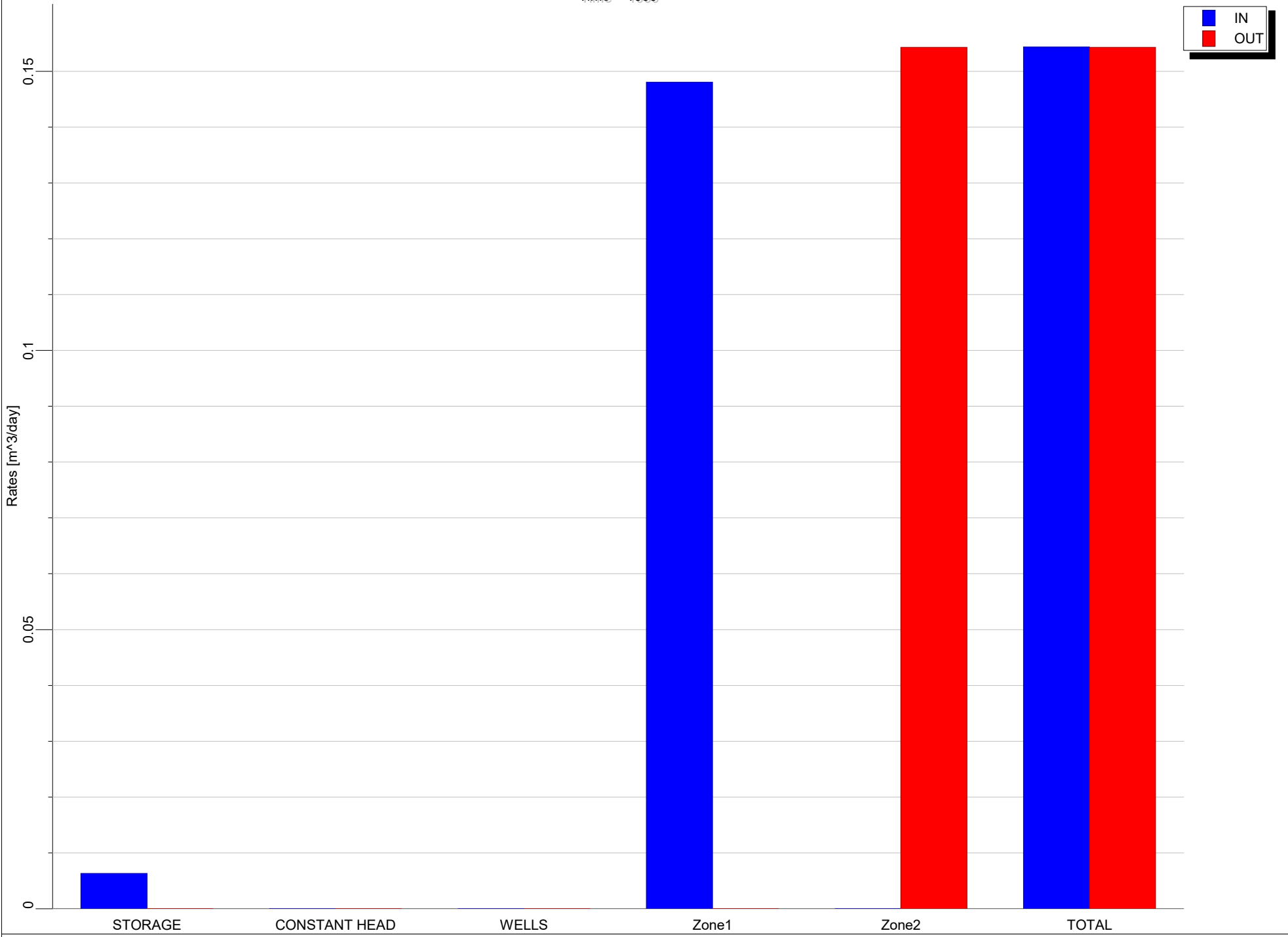
Appendix C - Zone Budget Charts

Time = 1000



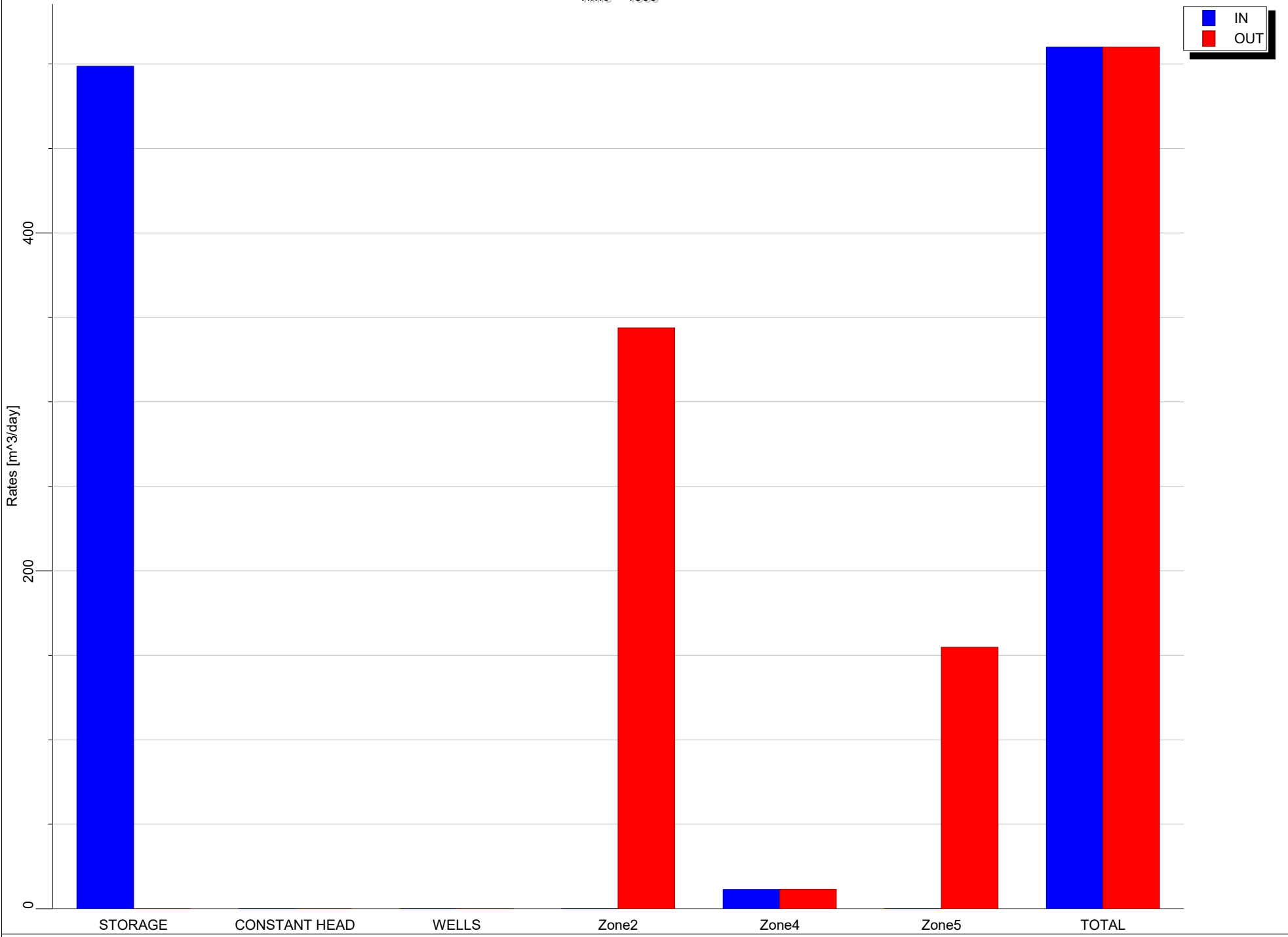
Appendix C - Zone Budget Charts

Time = 1000



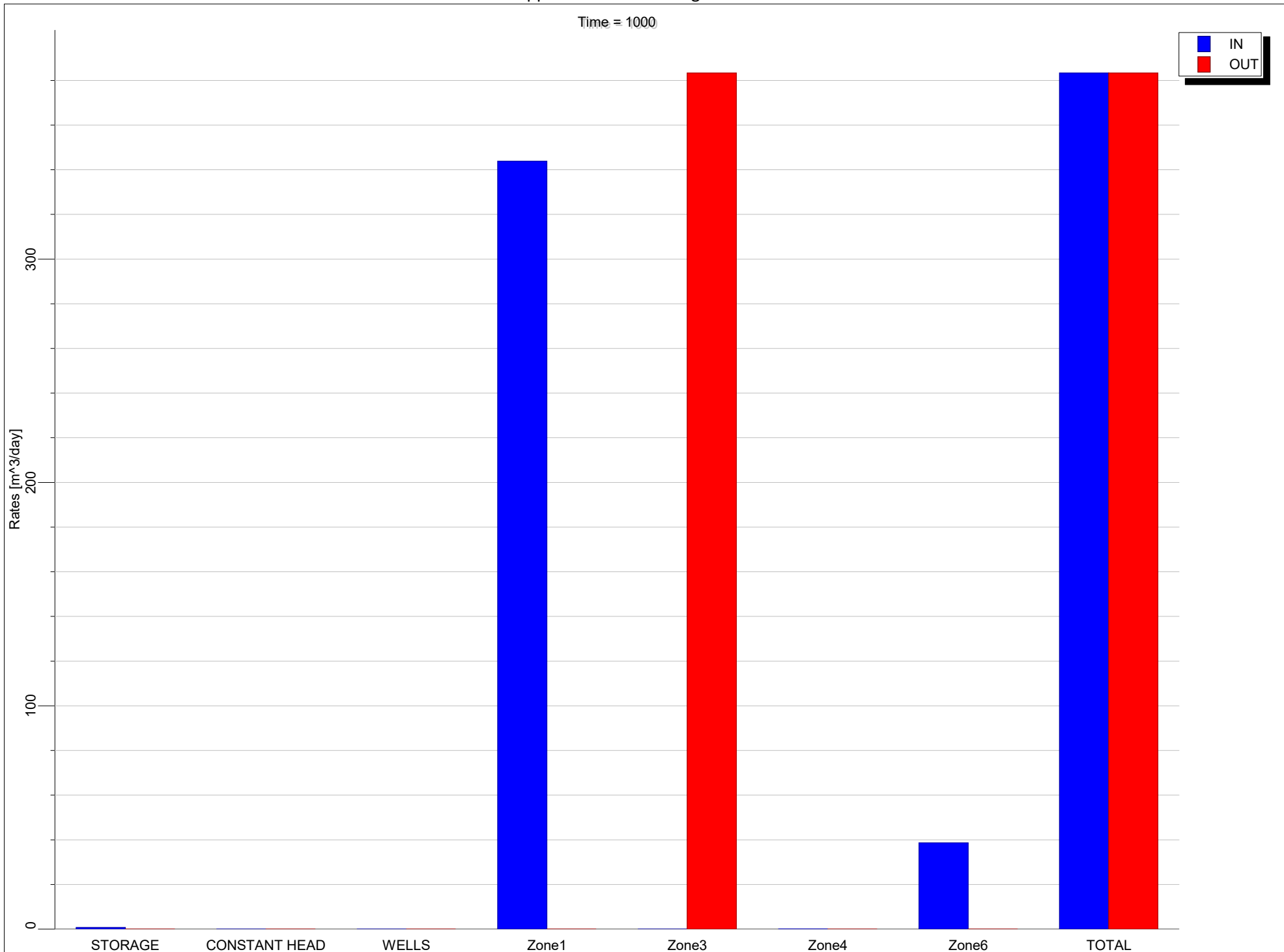
Appendix C - Zone Budget Charts

Time = 1000



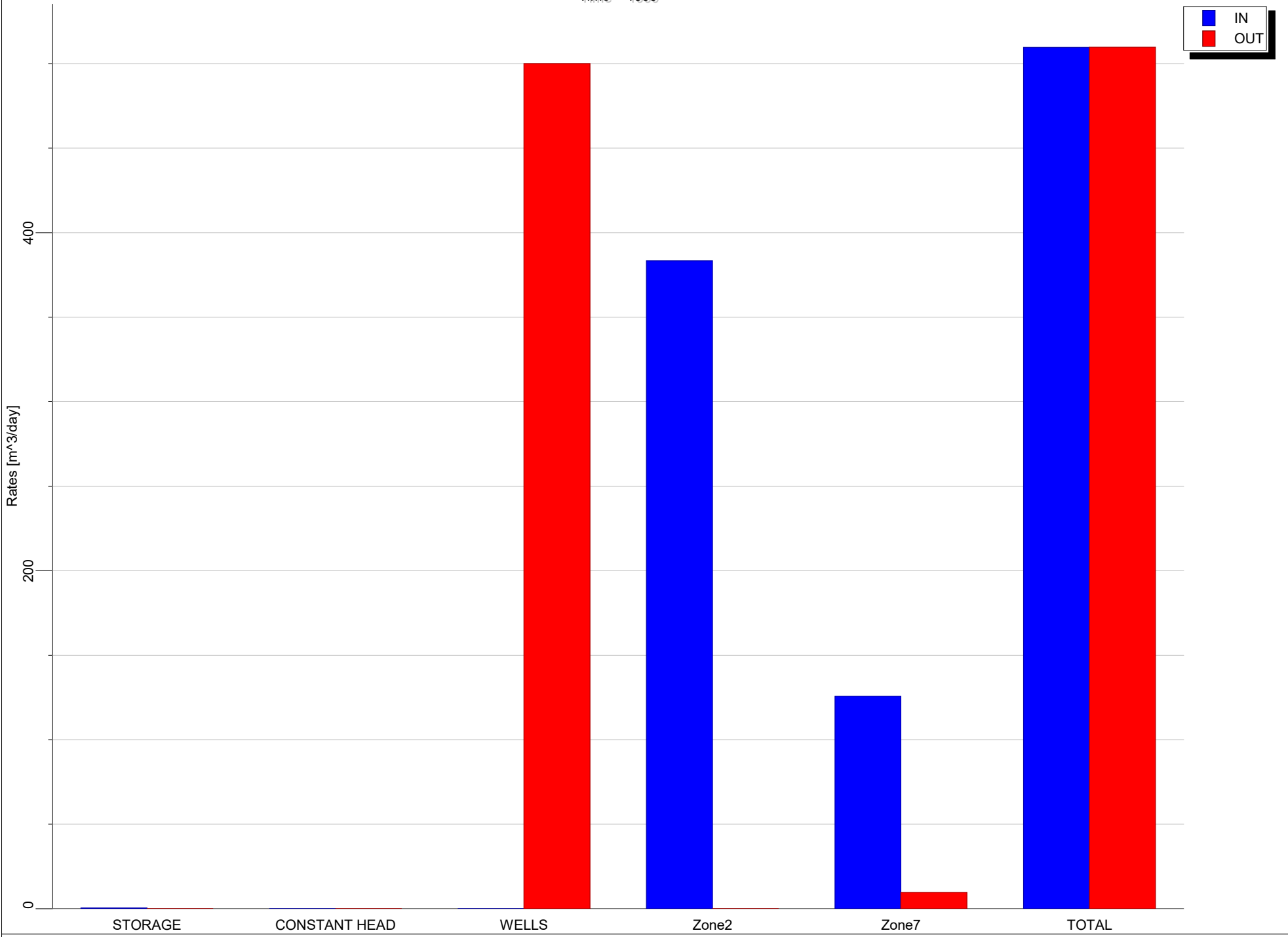
Appendix C - Zone Budget Charts

Time = 1000



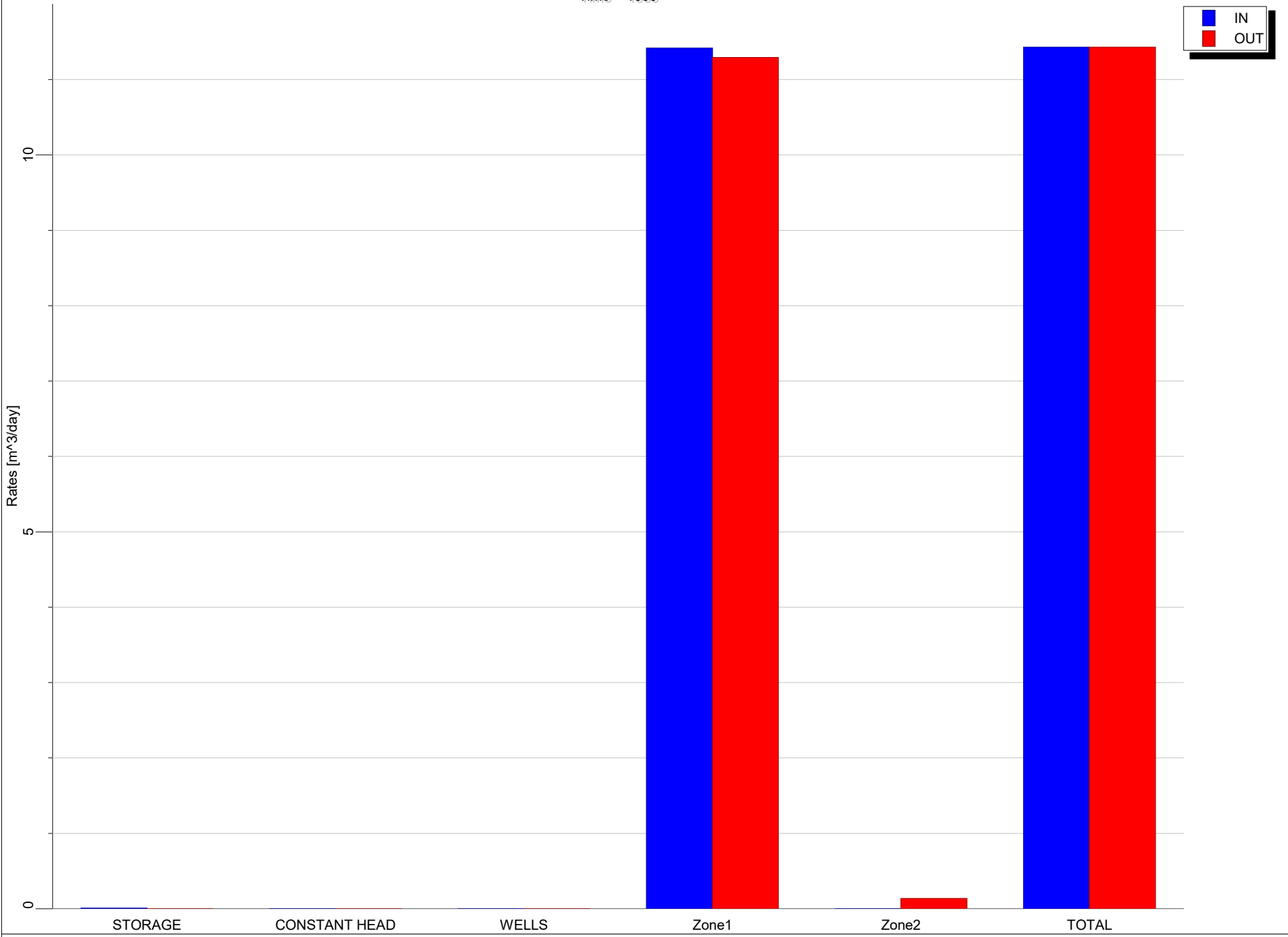
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

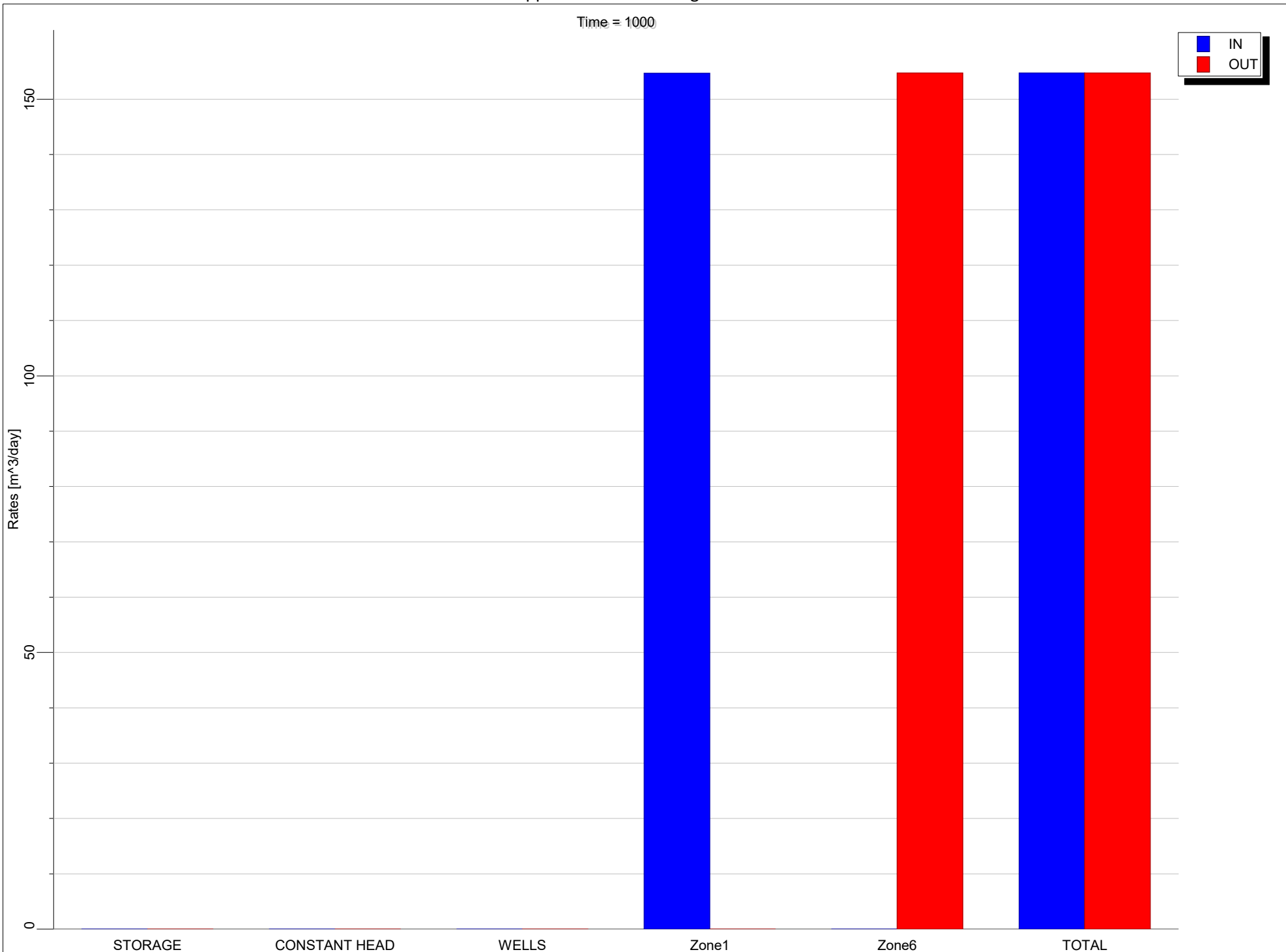
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Zone 4
Scenario 6.2
Abandoned Well 20m

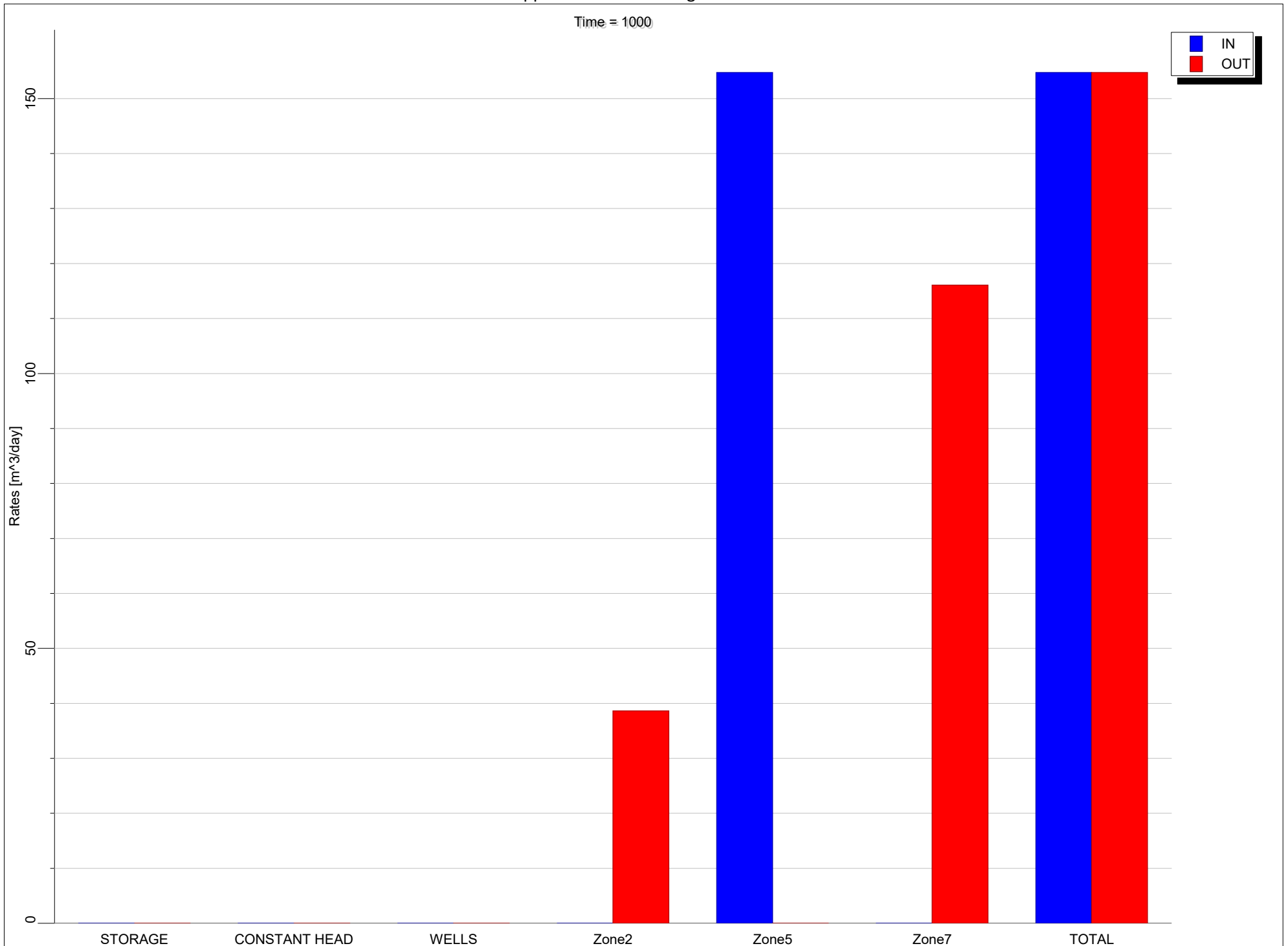
Appendix C - Zone Budget Charts

Time = 1000



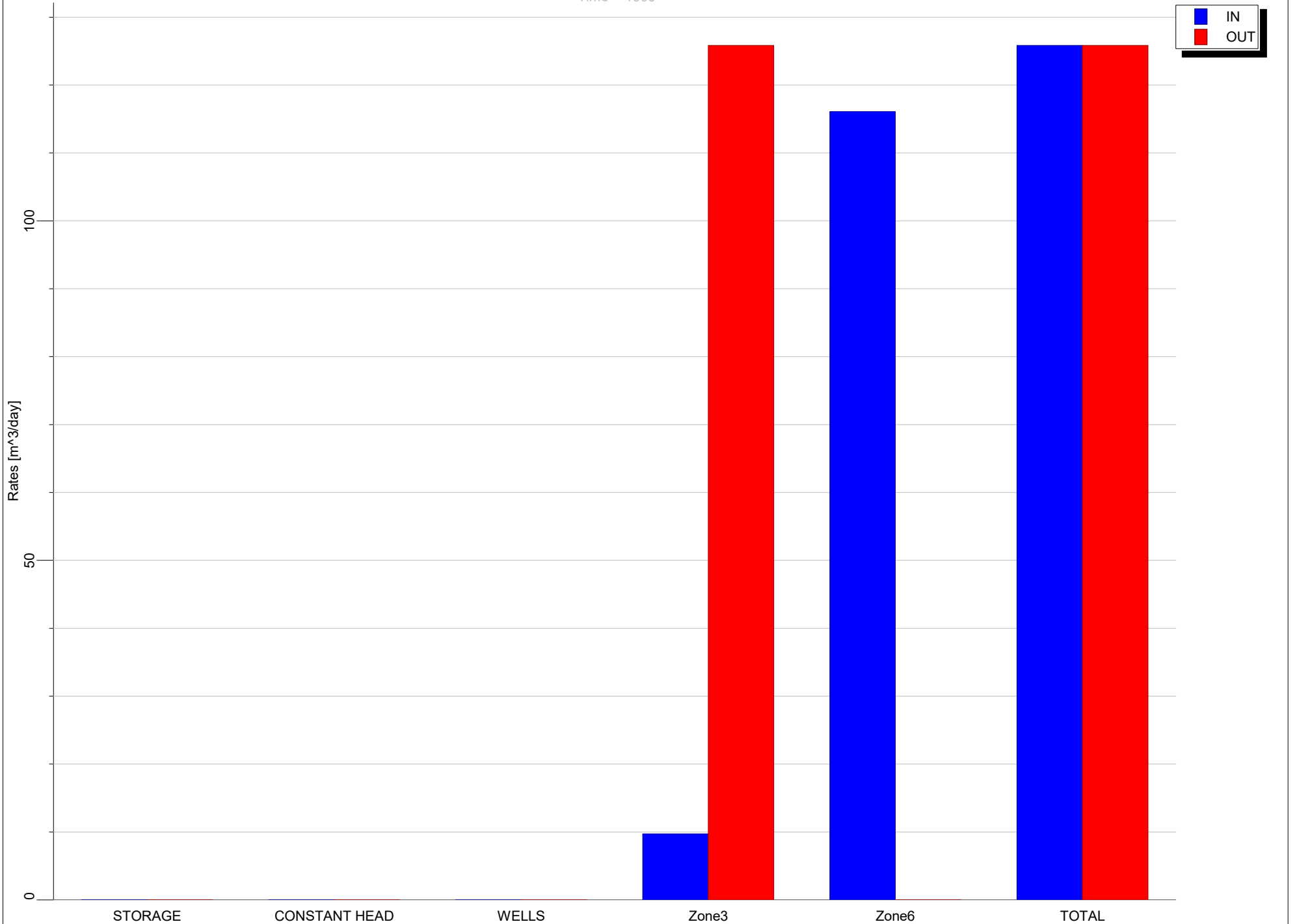
Appendix C - Zone Budget Charts

Time = 1000



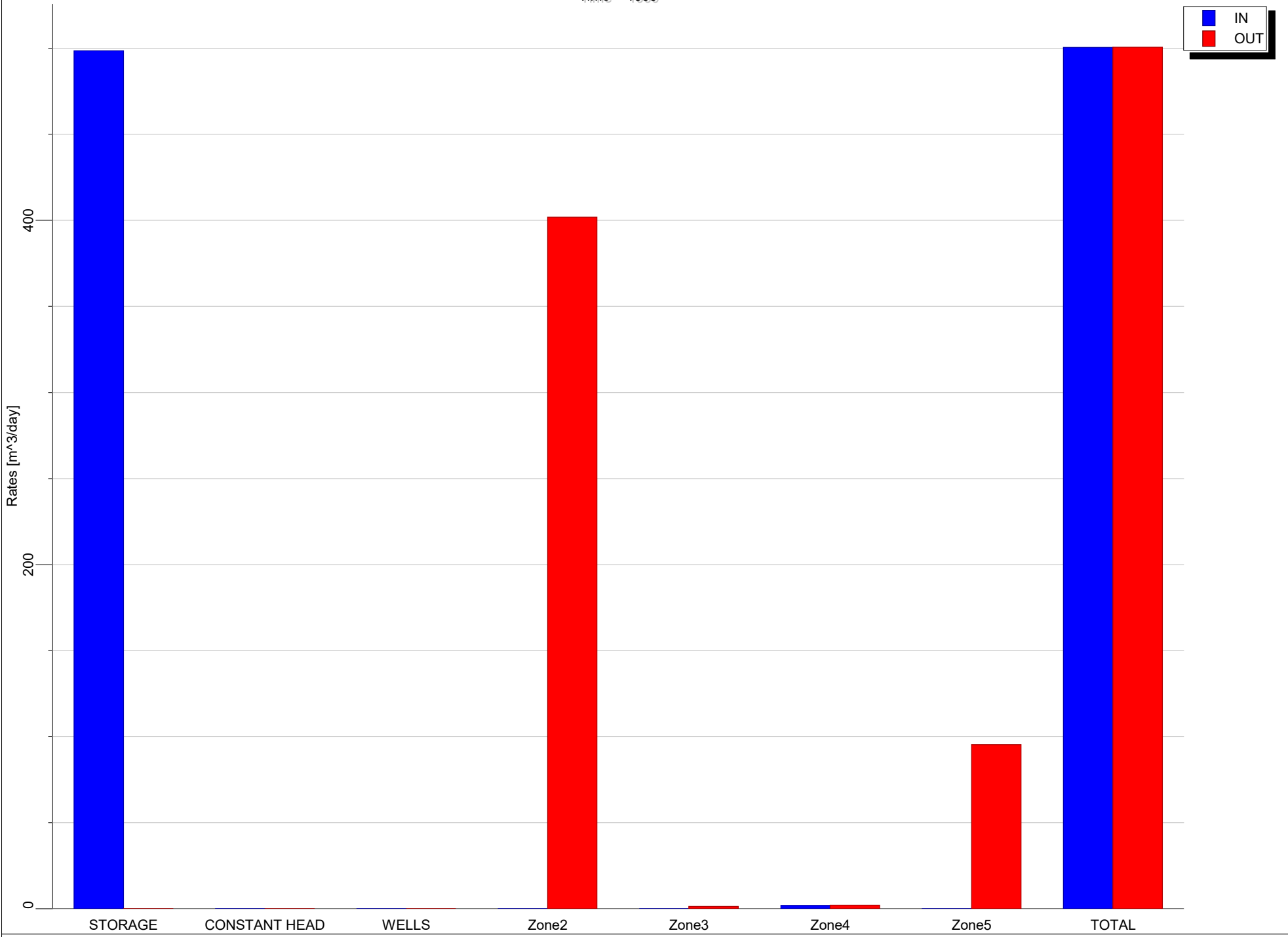
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

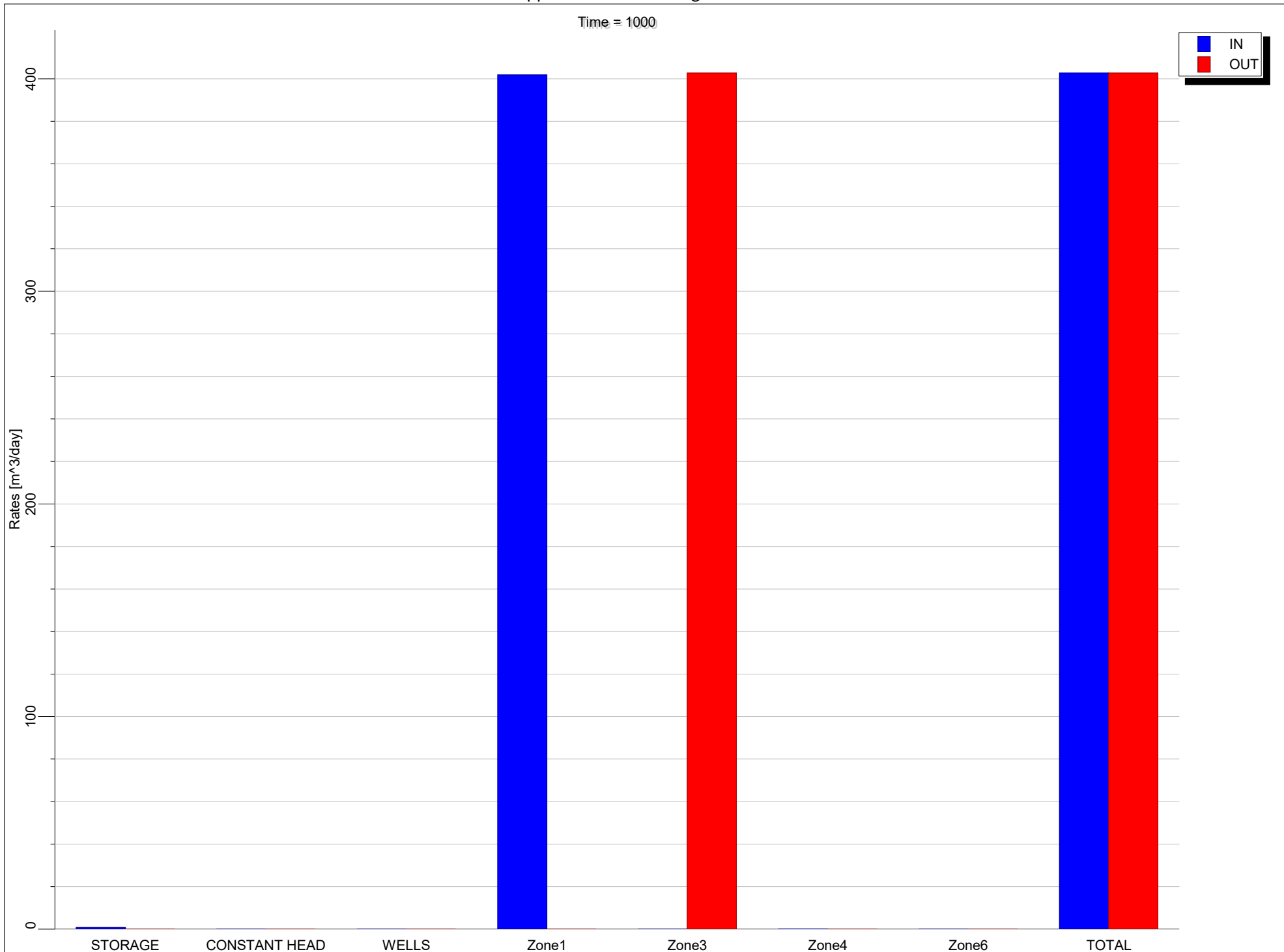
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Zone 1
Scenario 6.3
Abandoned Well 40m

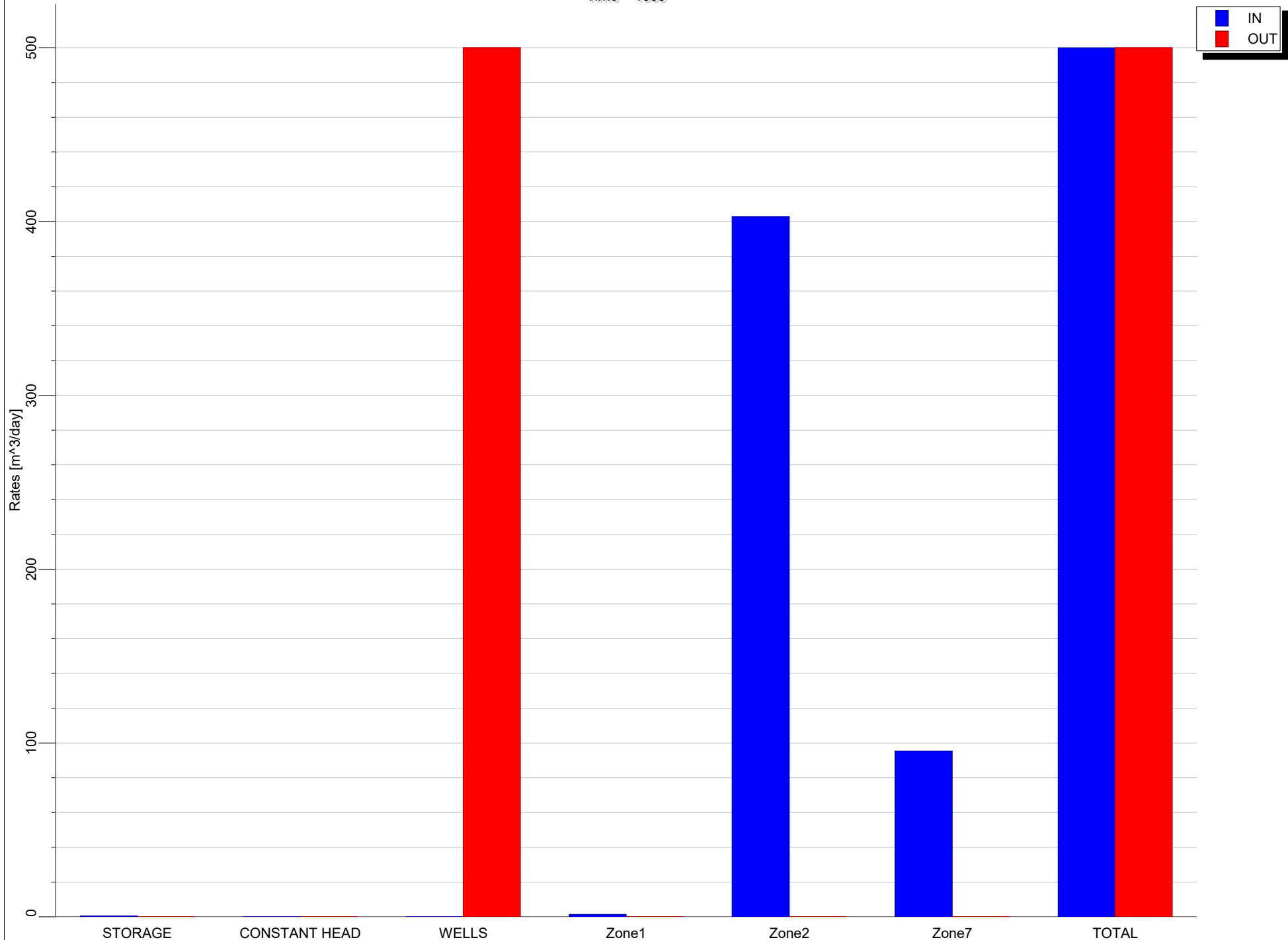
Appendix C - Zone Budget Charts

Time = 1000



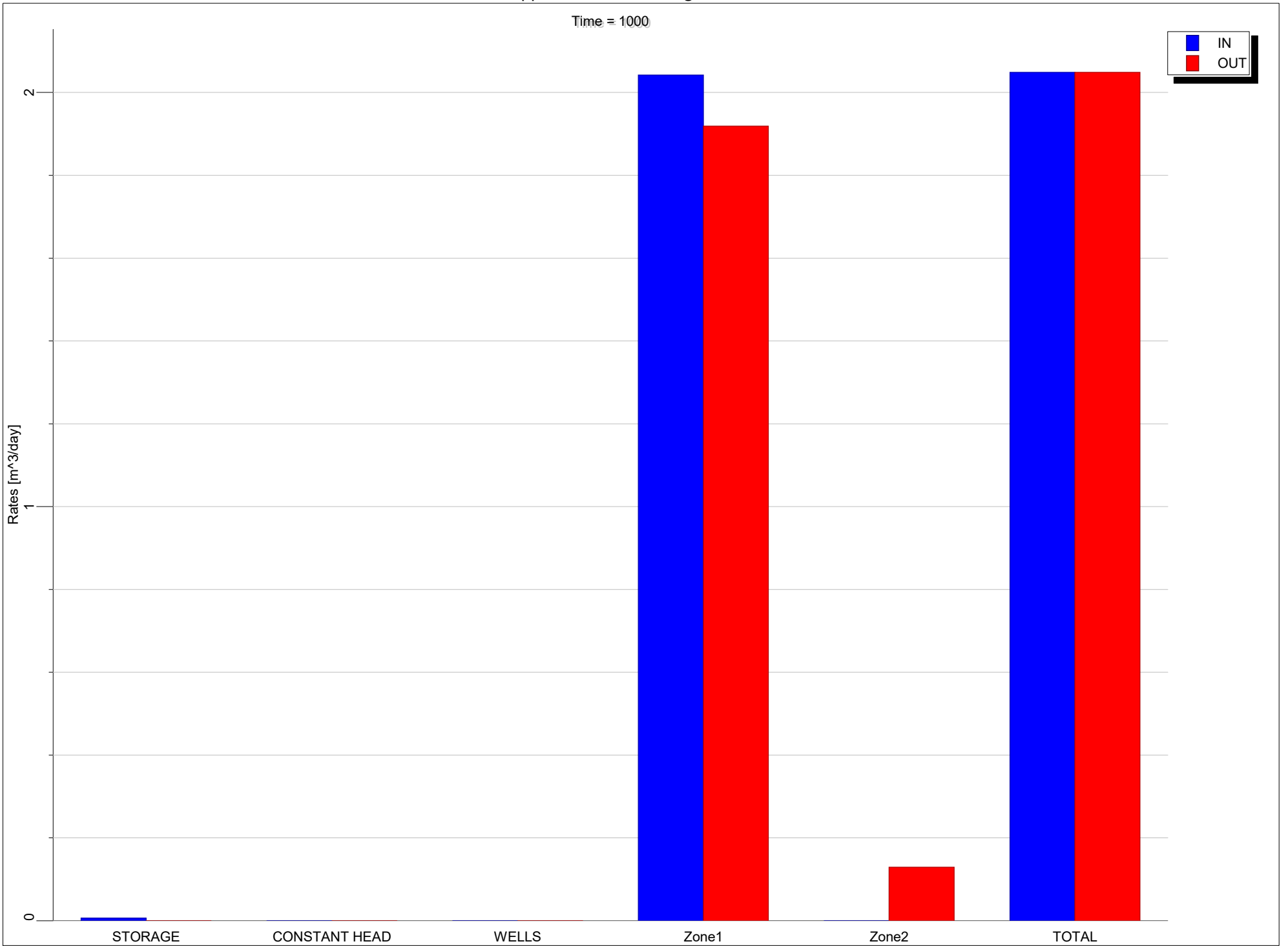
Appendix C - Zone Budget Charts

Time = 1000



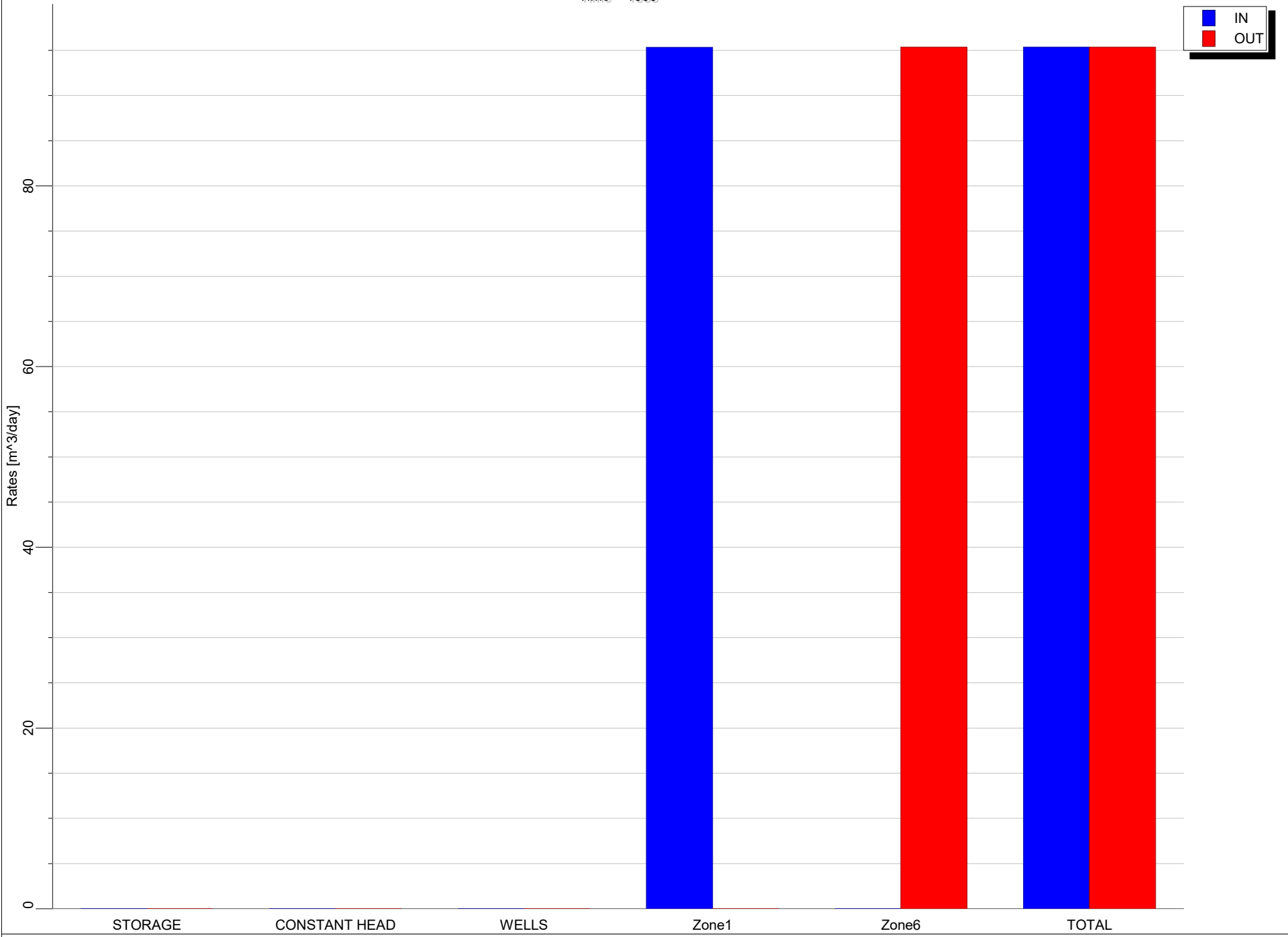
Appendix C - Zone Budget Charts

Time = 1000



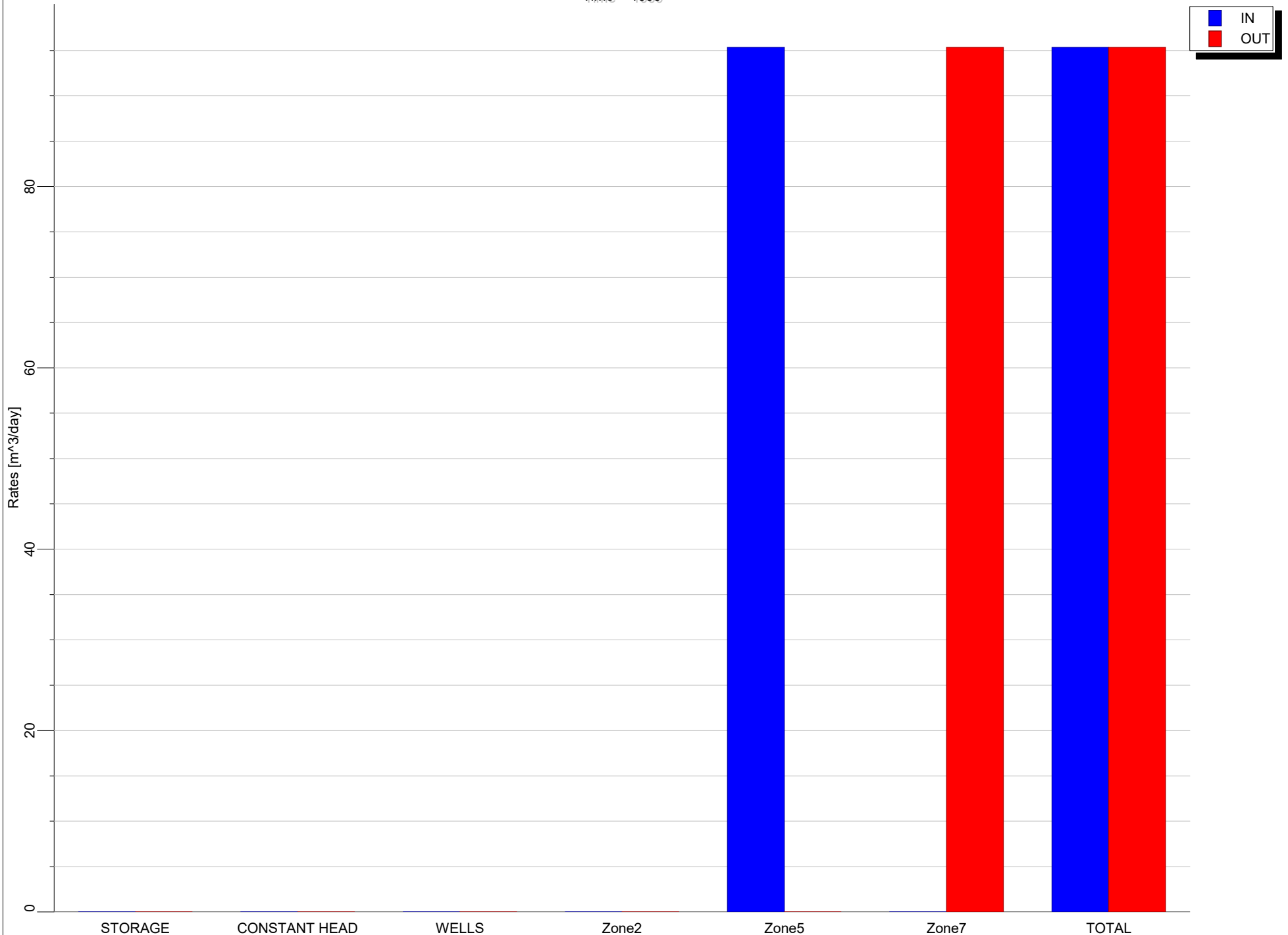
Appendix C - Zone Budget Charts

Time = 1000



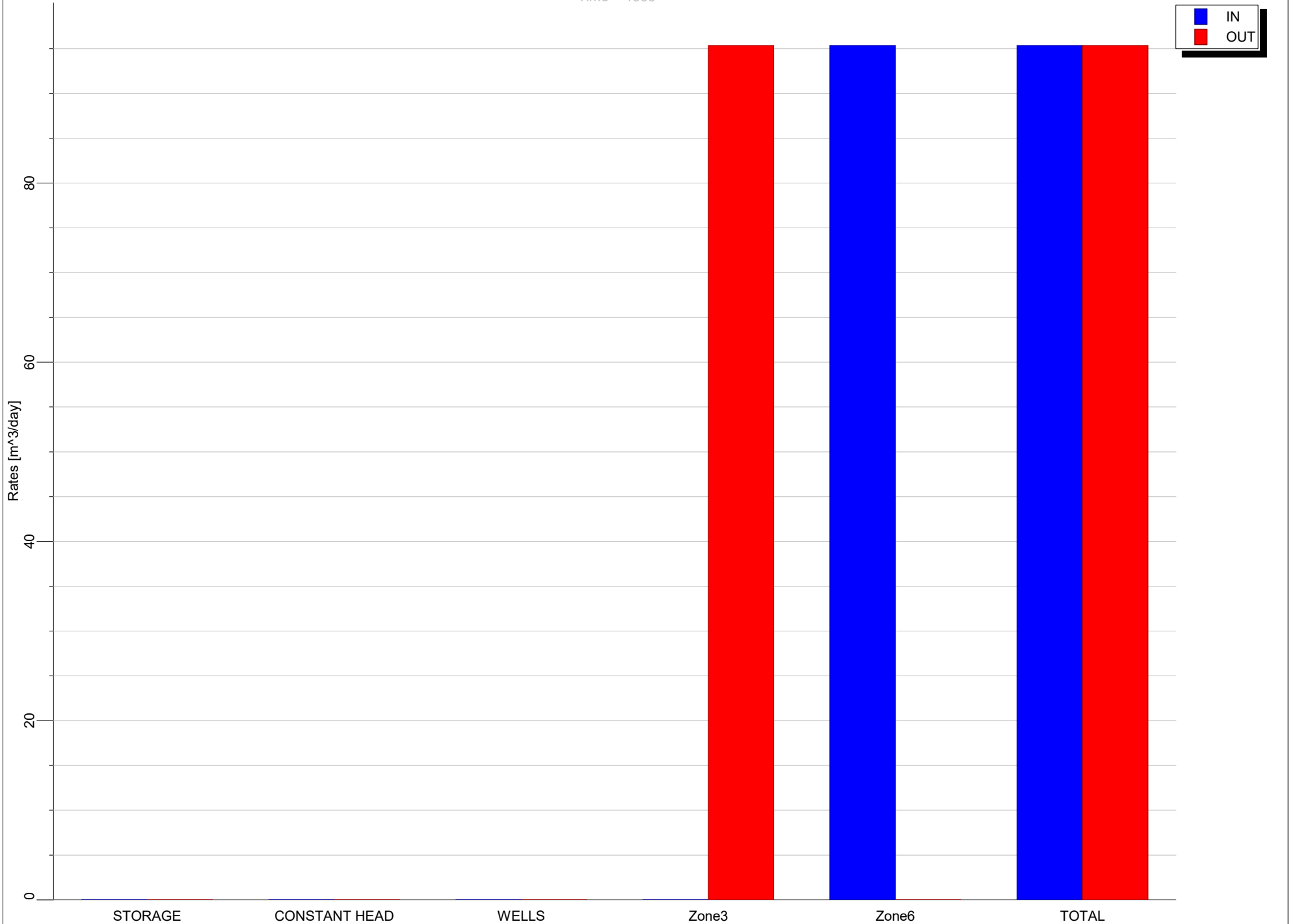
Appendix C - Zone Budget Charts

Time = 1000



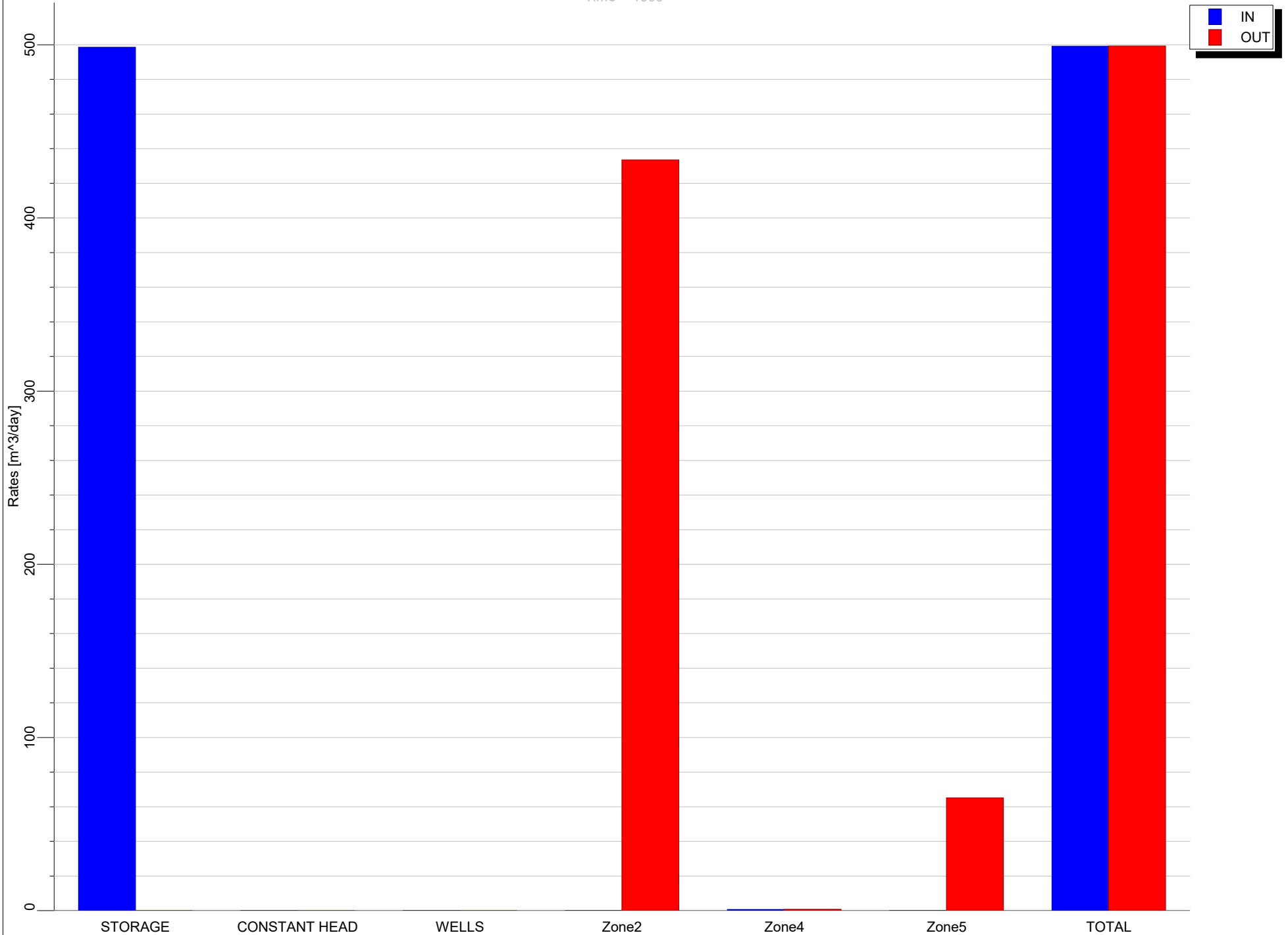
Appendix C - Zone Budget Charts

Time = 1000



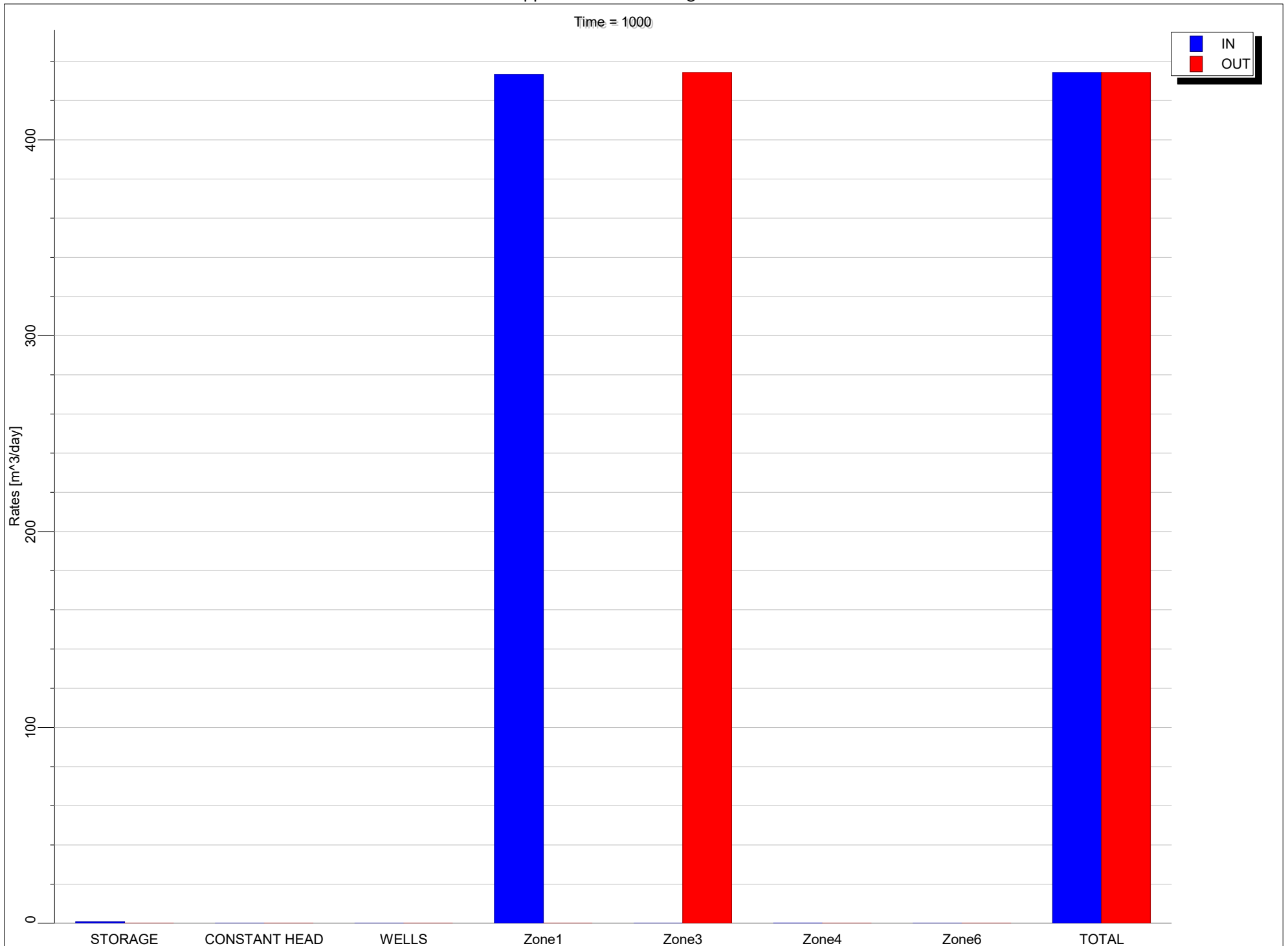
Appendix C - Zone Budget Charts

Time = 1000

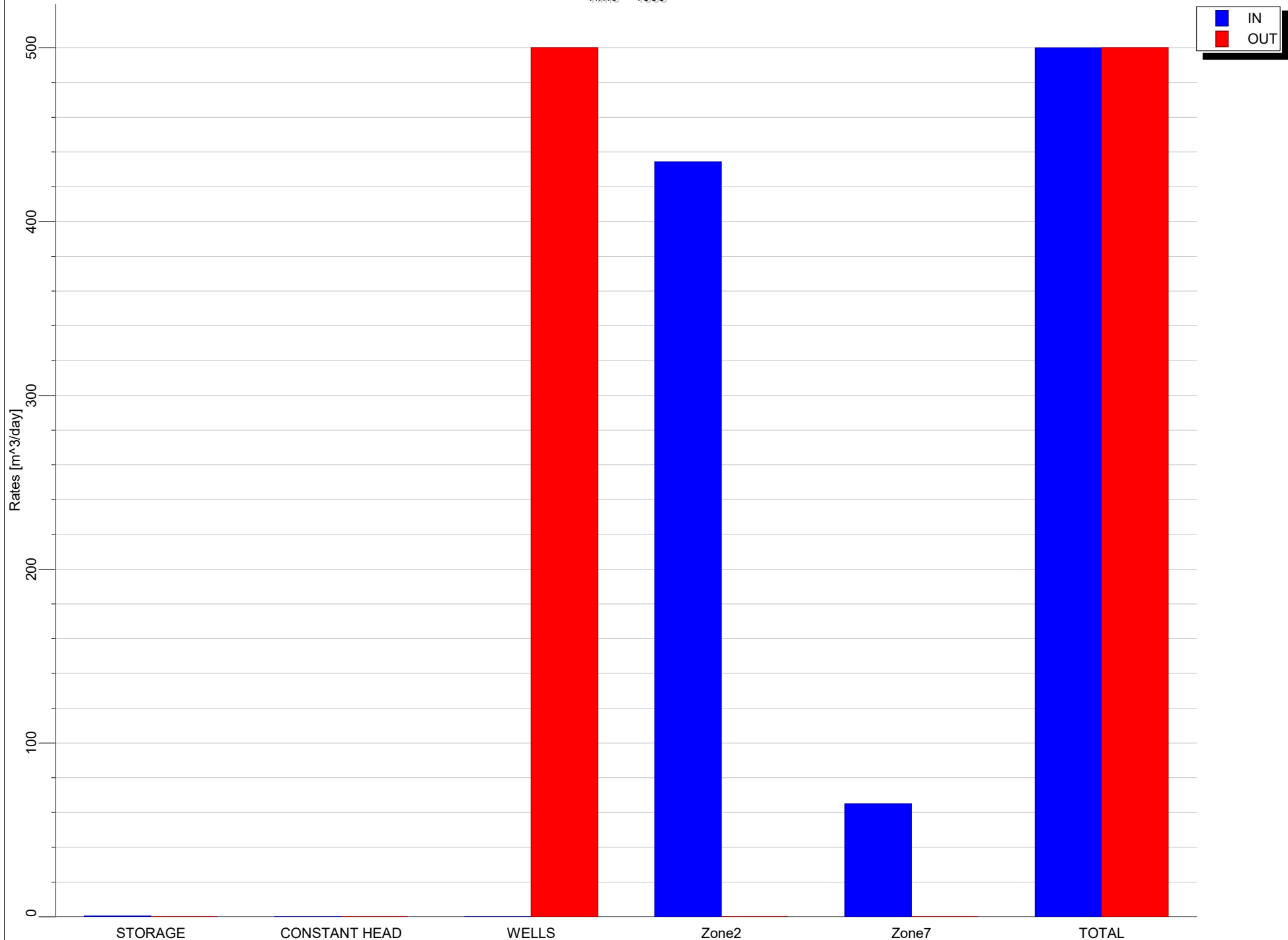


Appendix C - Zone Budget Charts

Time = 1000

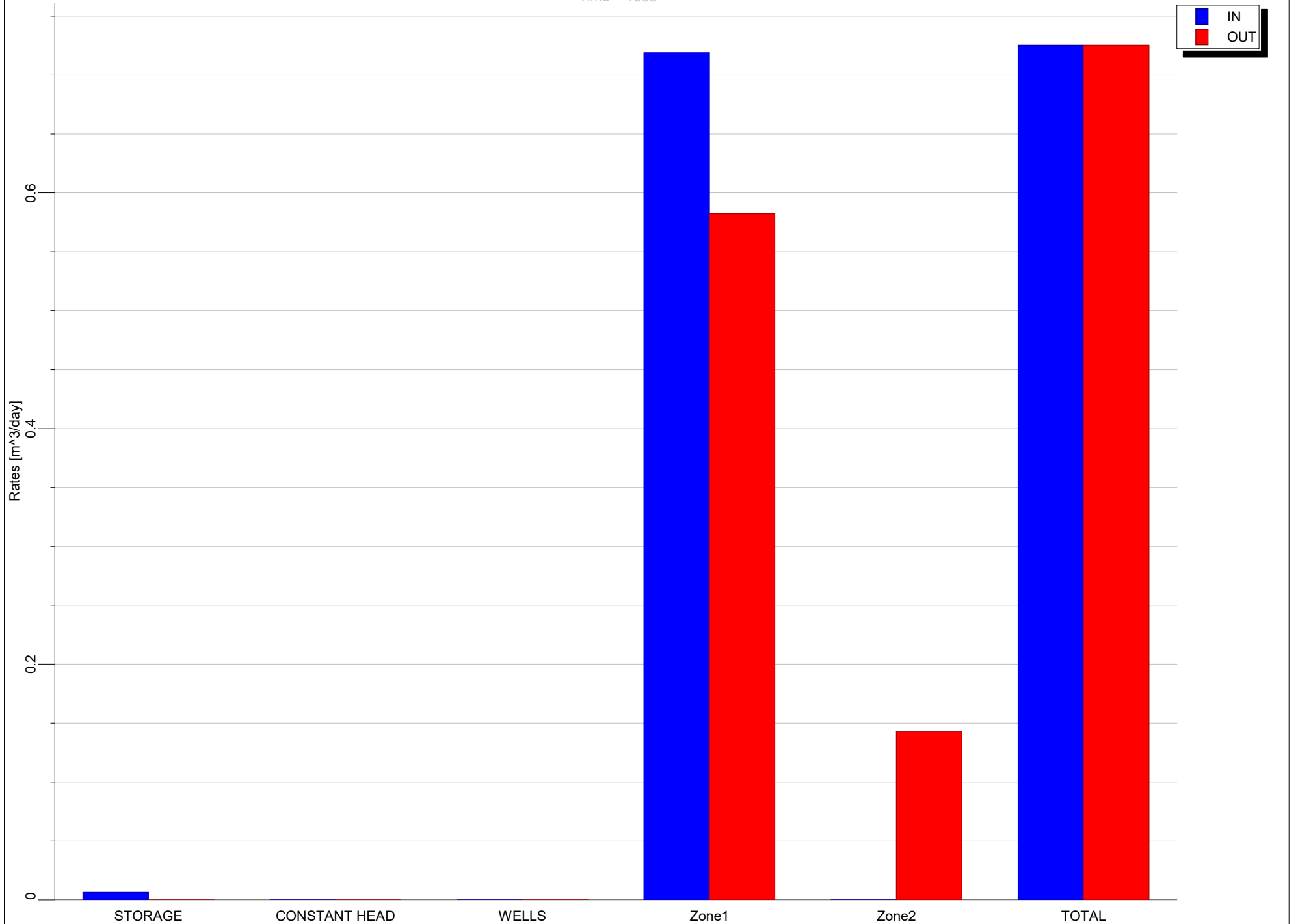


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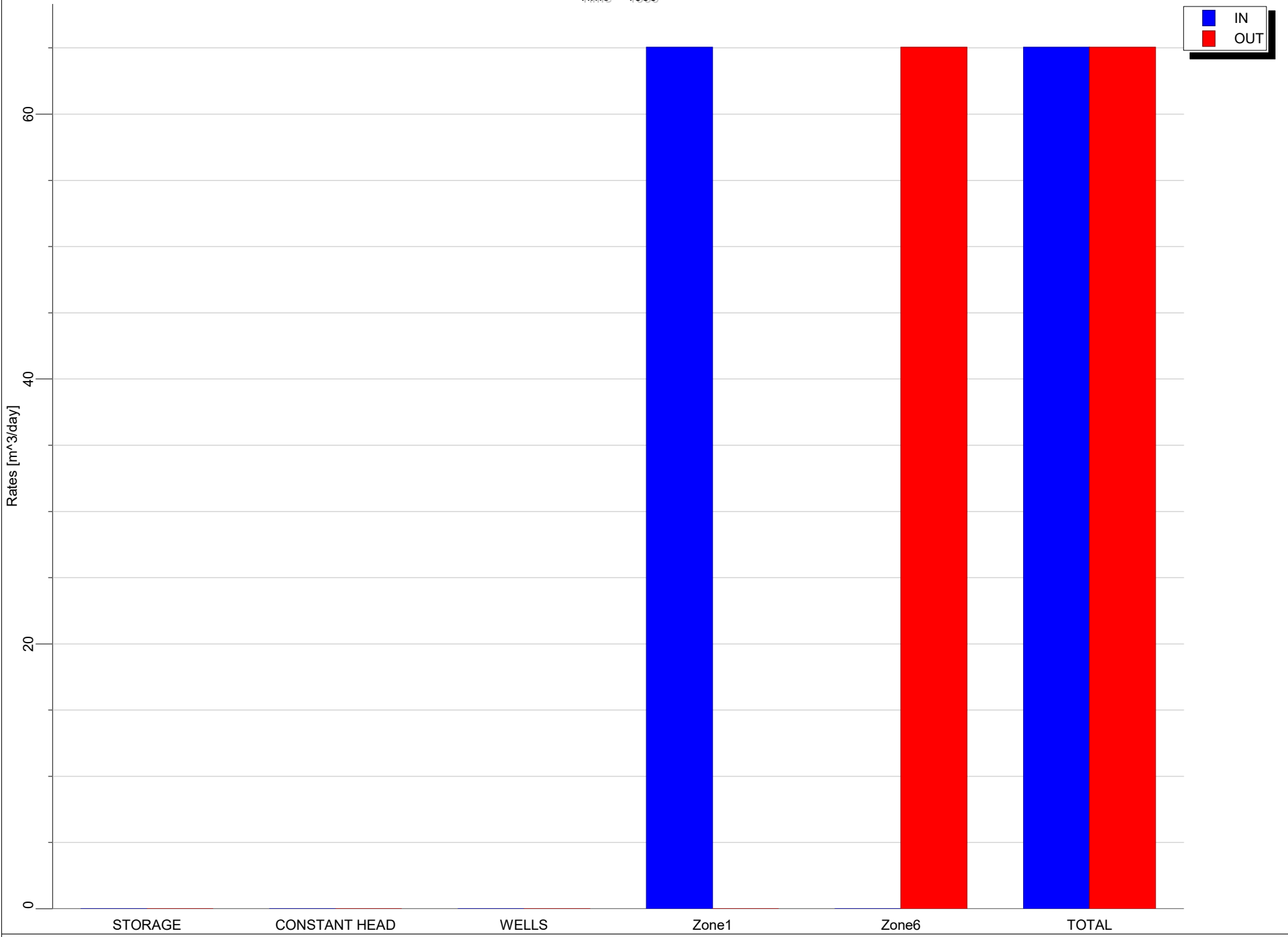
Appendix C - Zone Budget Charts

Time = 1000



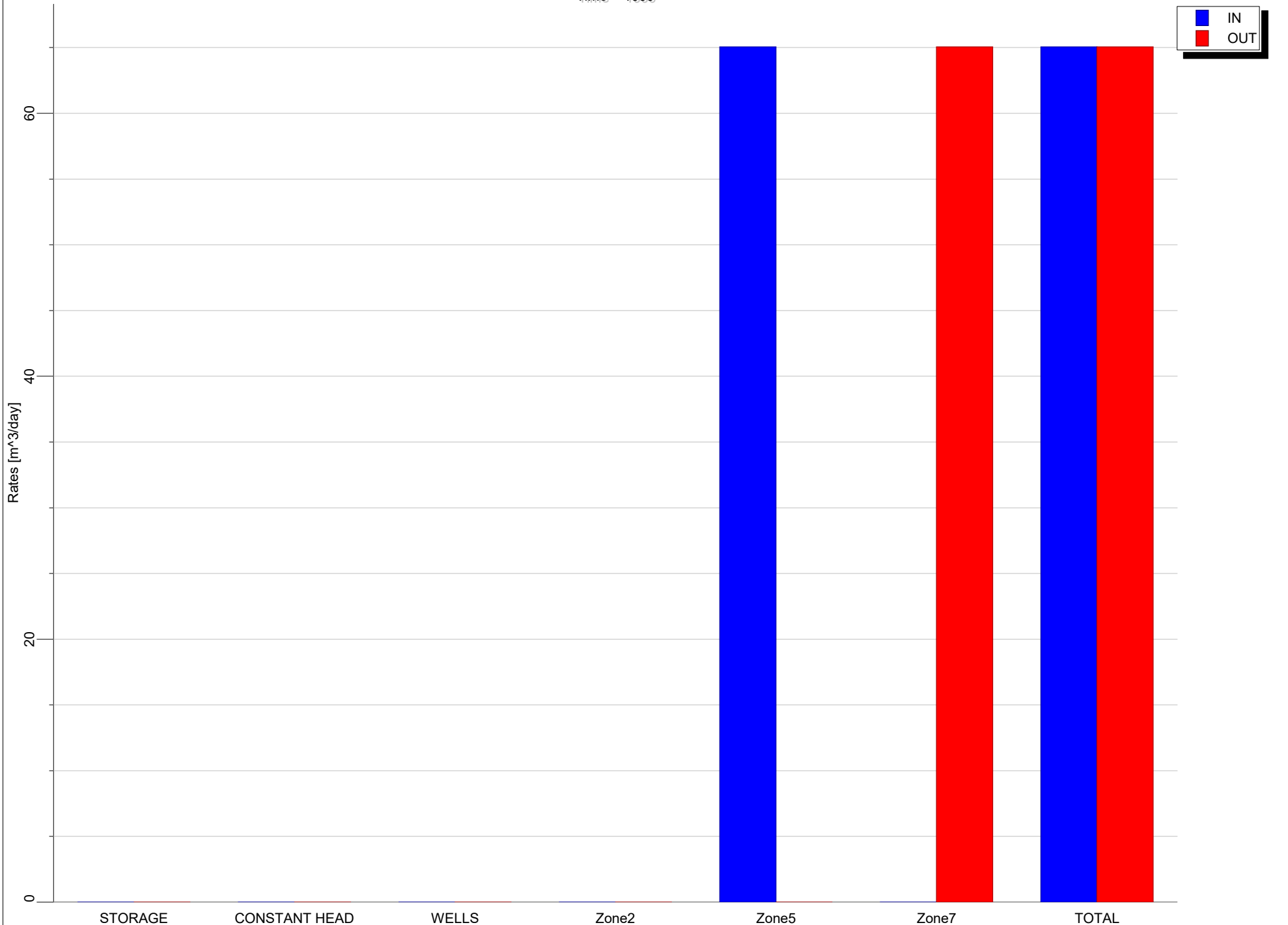
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

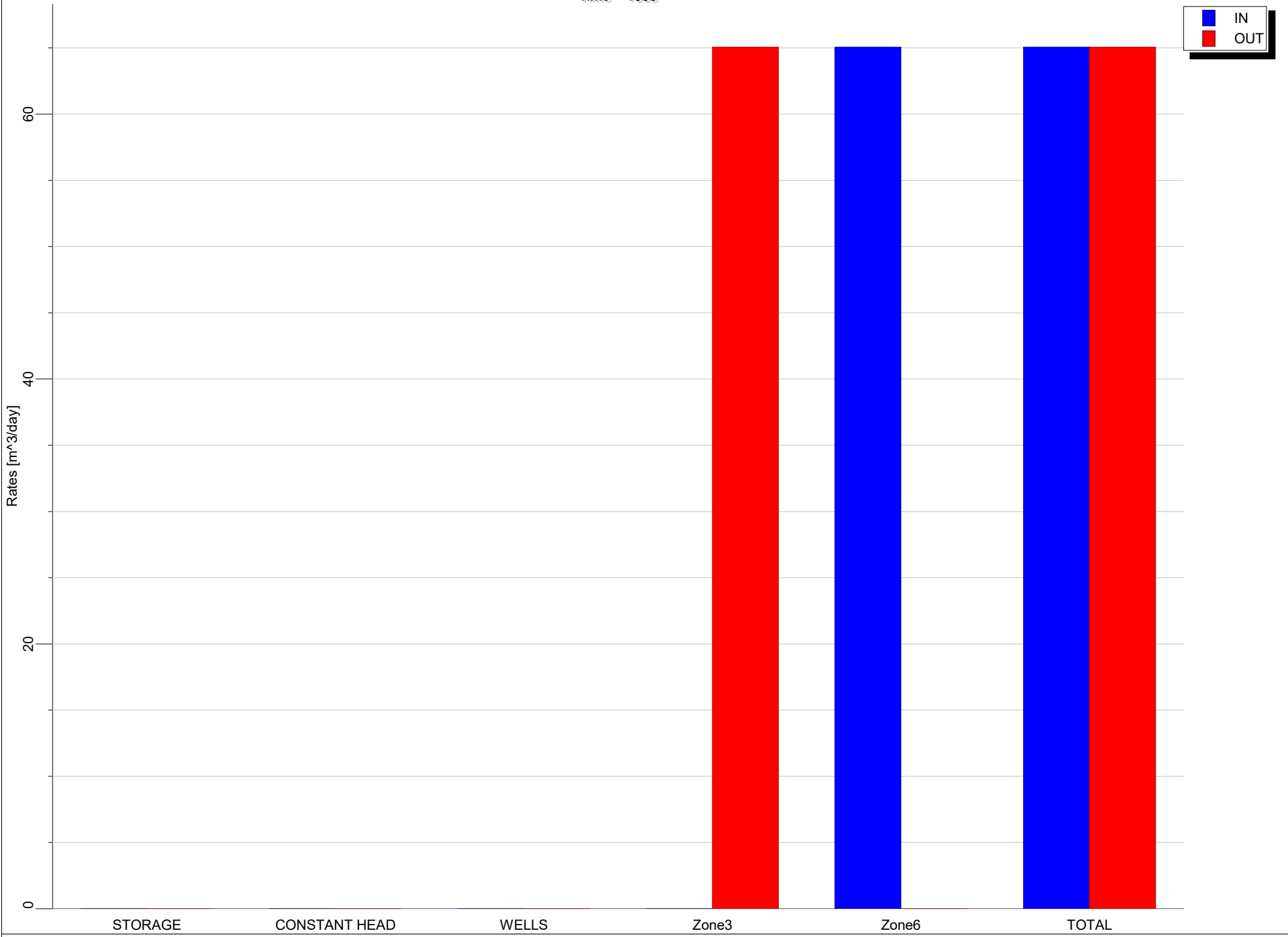
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Zone 6
Scenario 6.4
Abandoned Well 80m

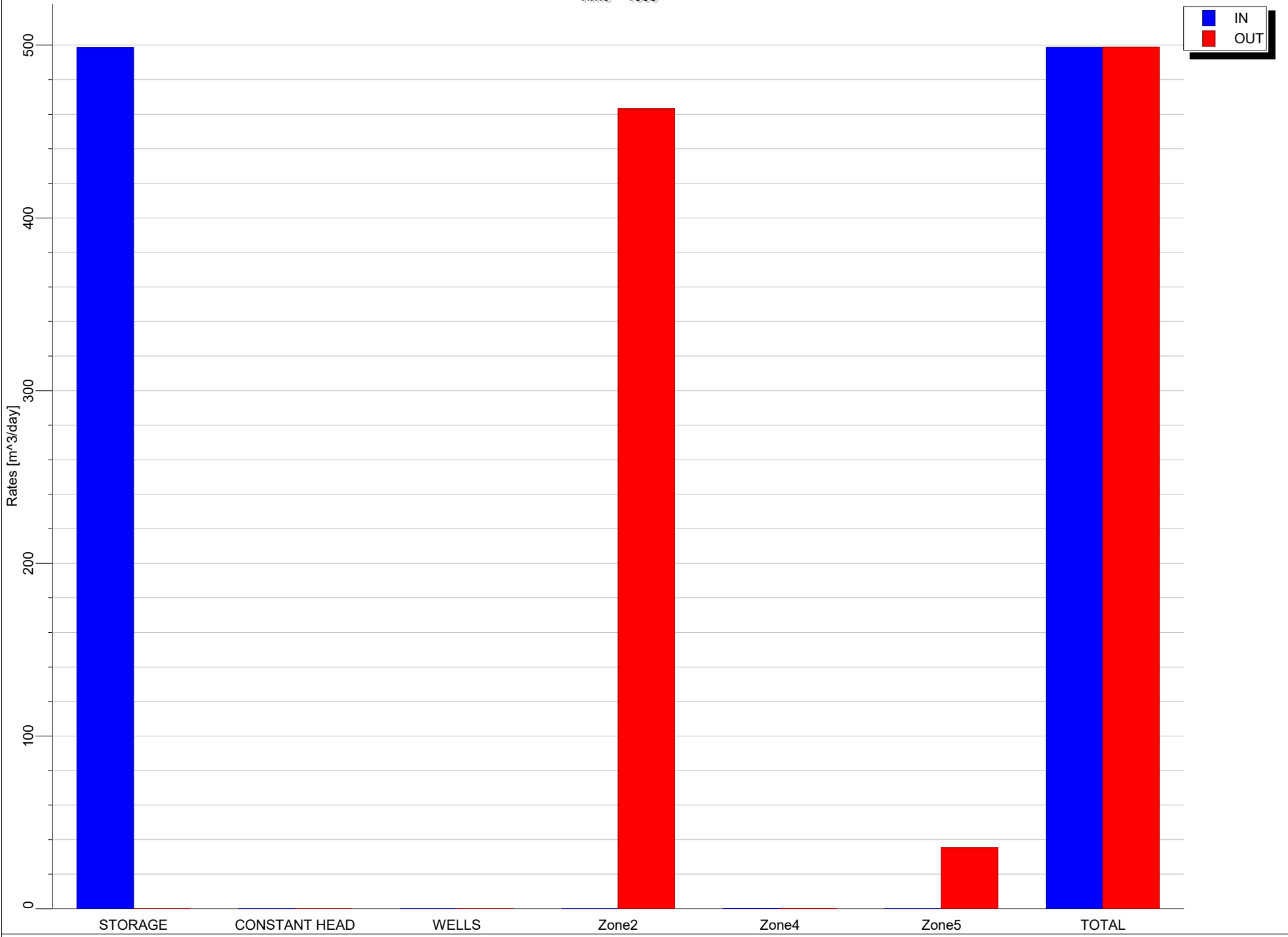
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

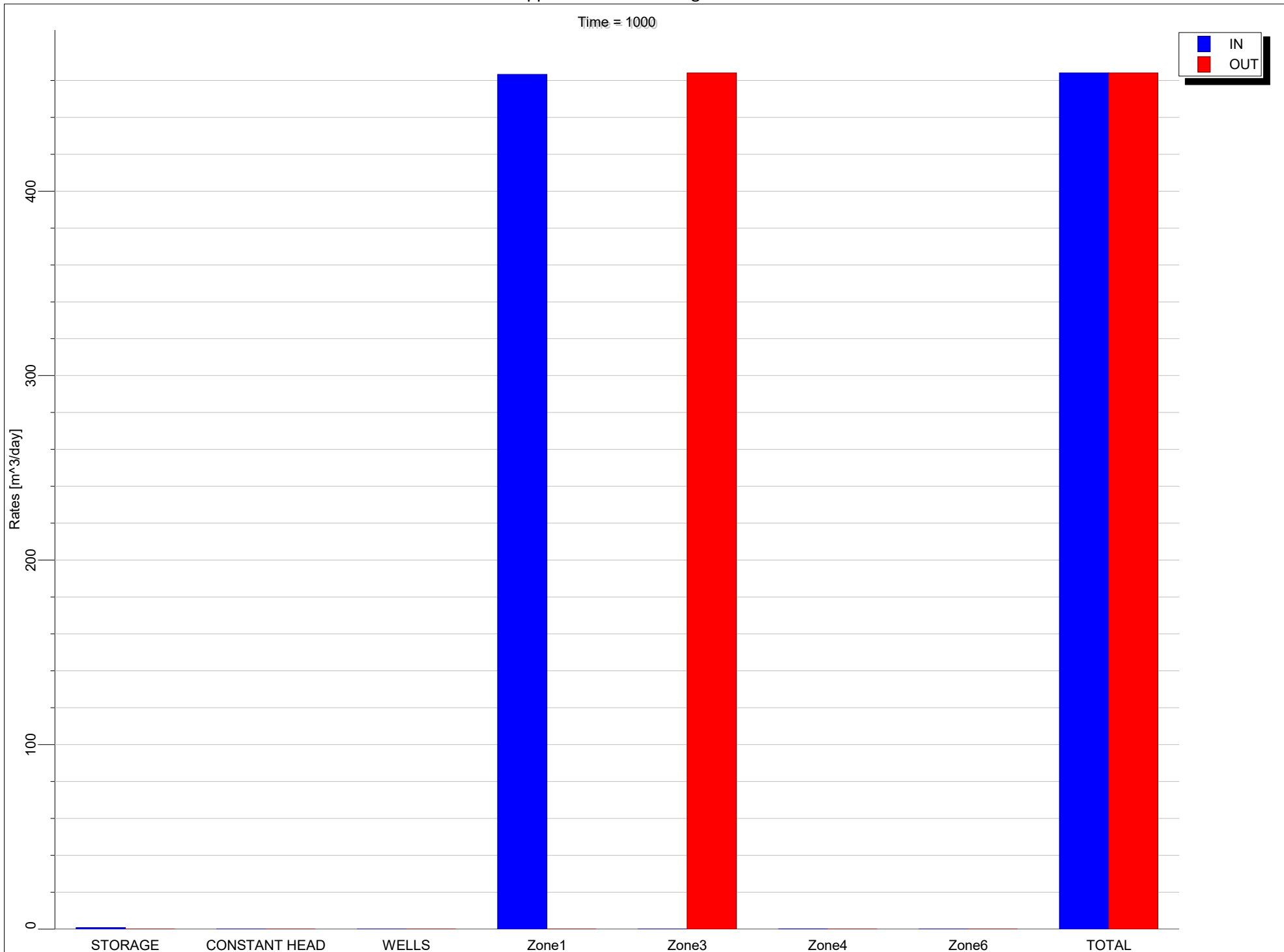
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Zone 1
Scenario 6.5
Abandoned Well 160m

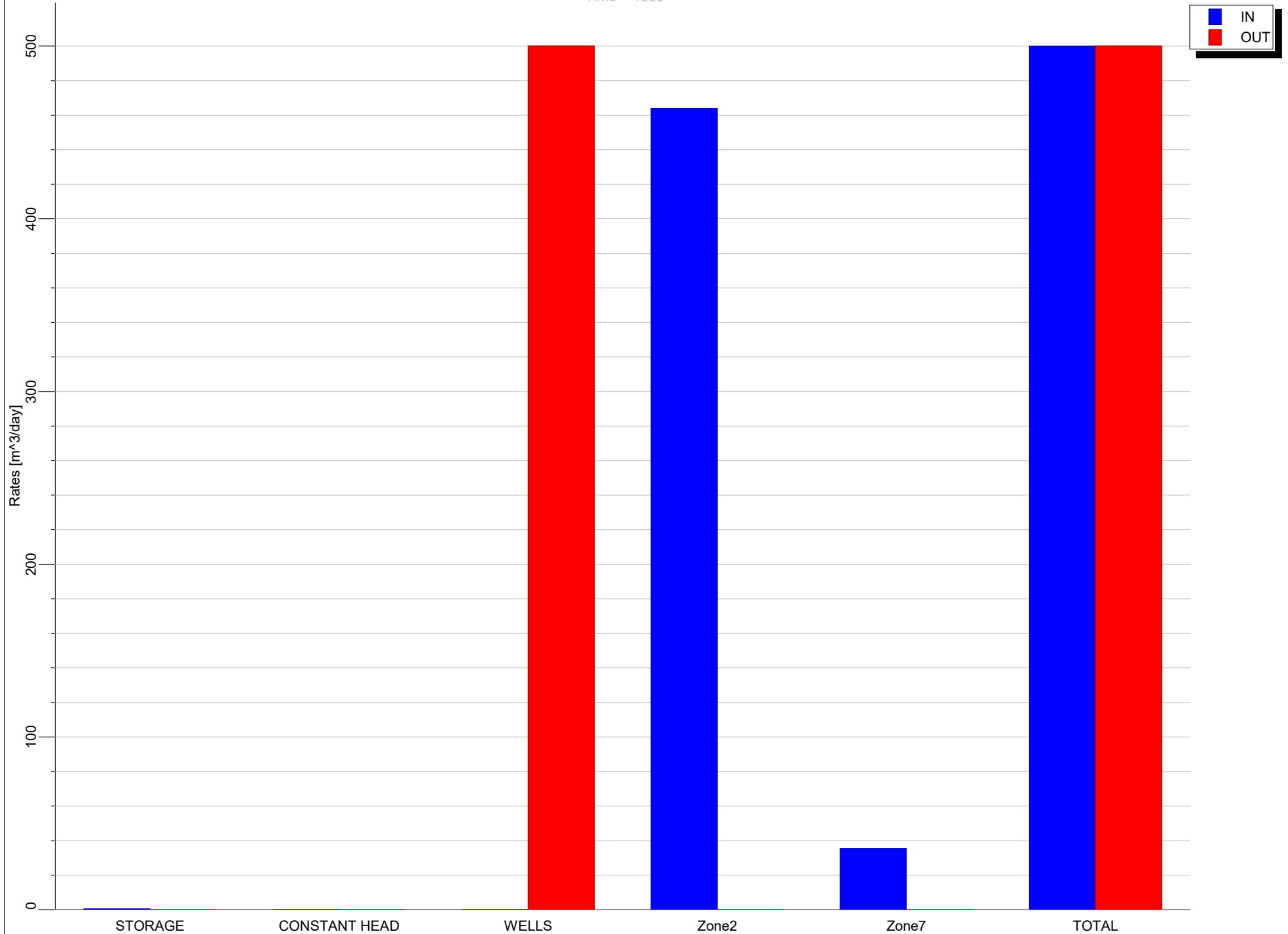
Appendix C - Zone Budget Charts

Time = 1000



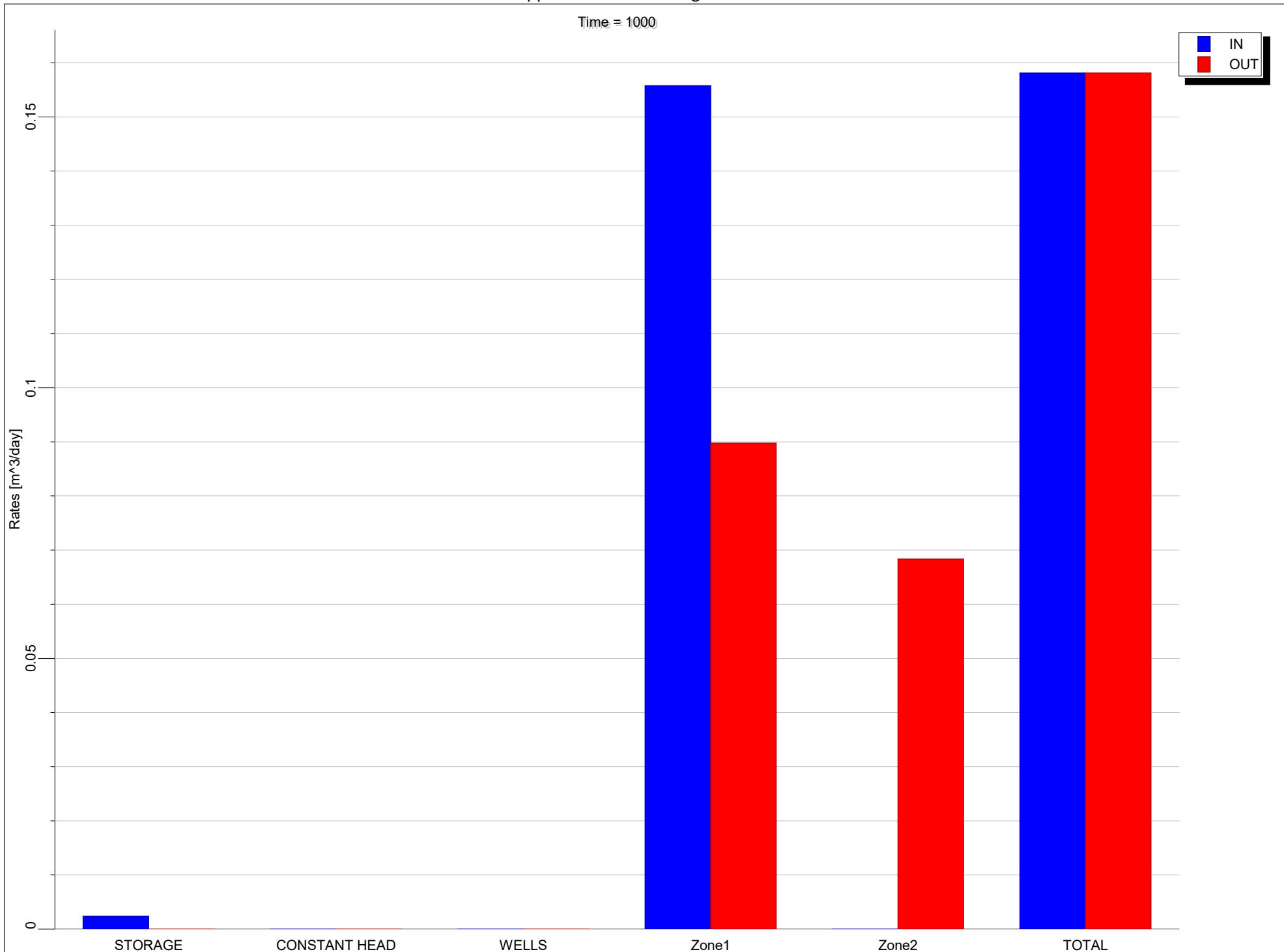
Appendix C - Zone Budget Charts

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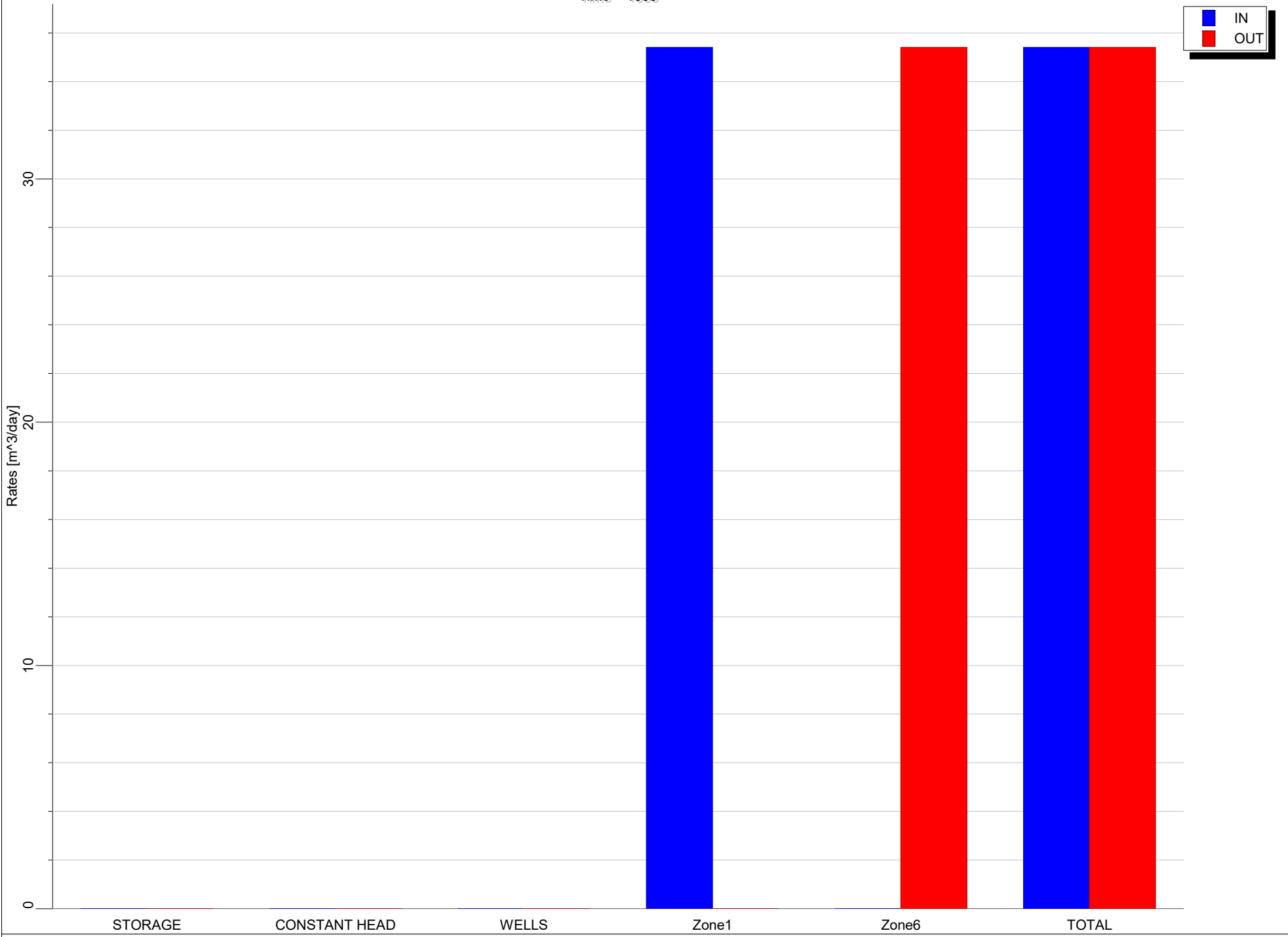
Appendix C - Zone Budget Charts

Time = 1000



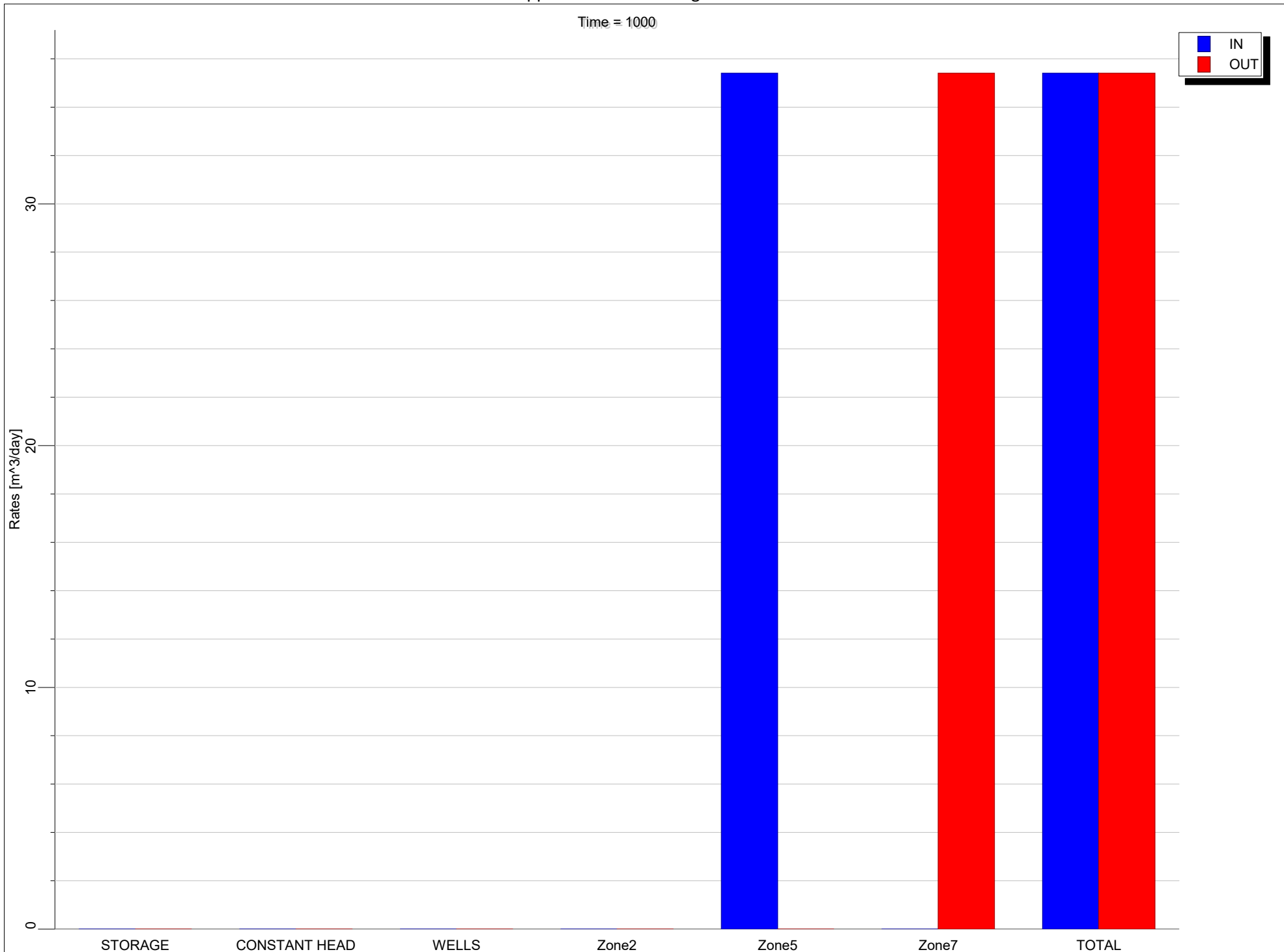
Appendix C - Zone Budget Charts

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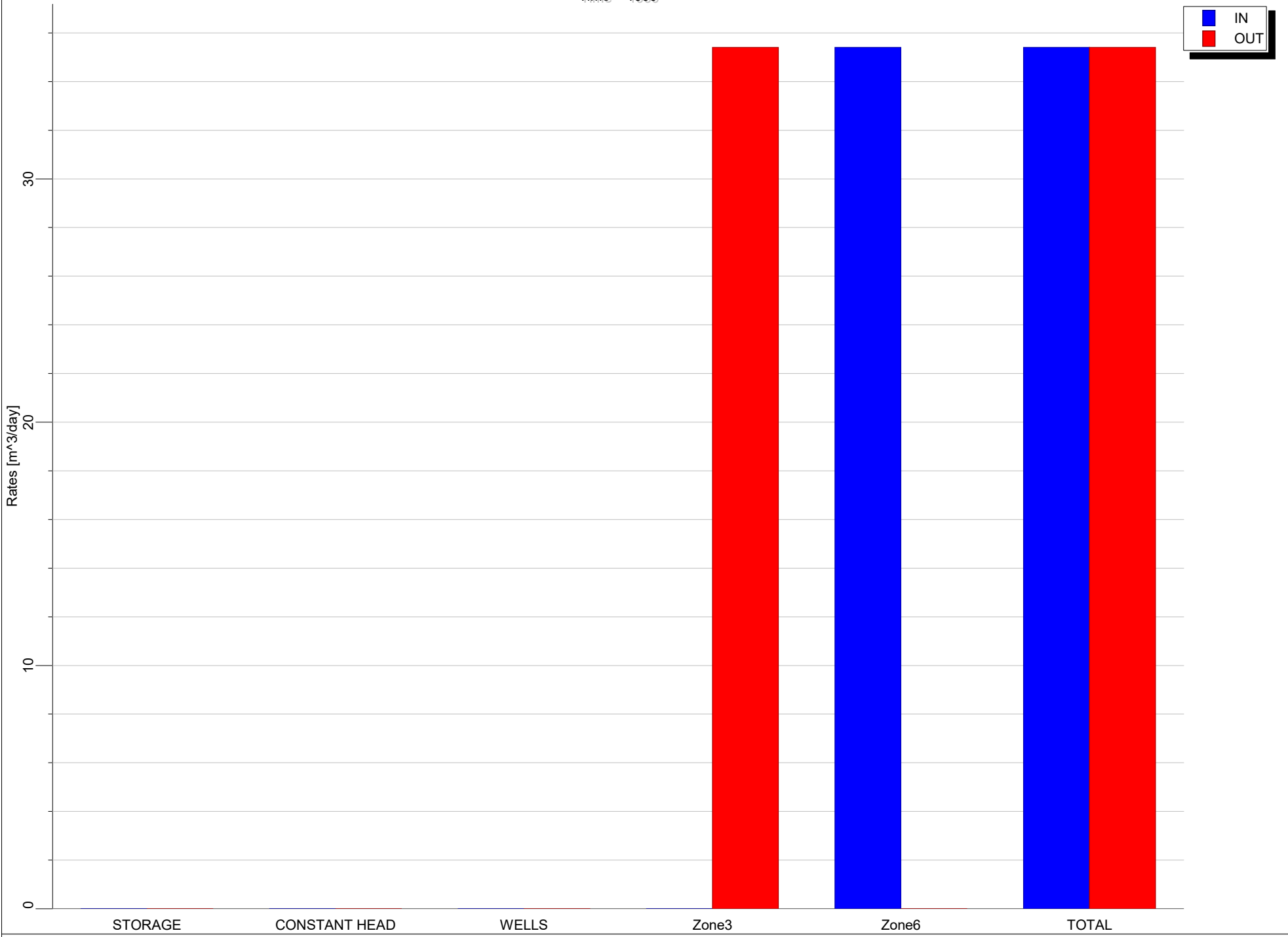
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

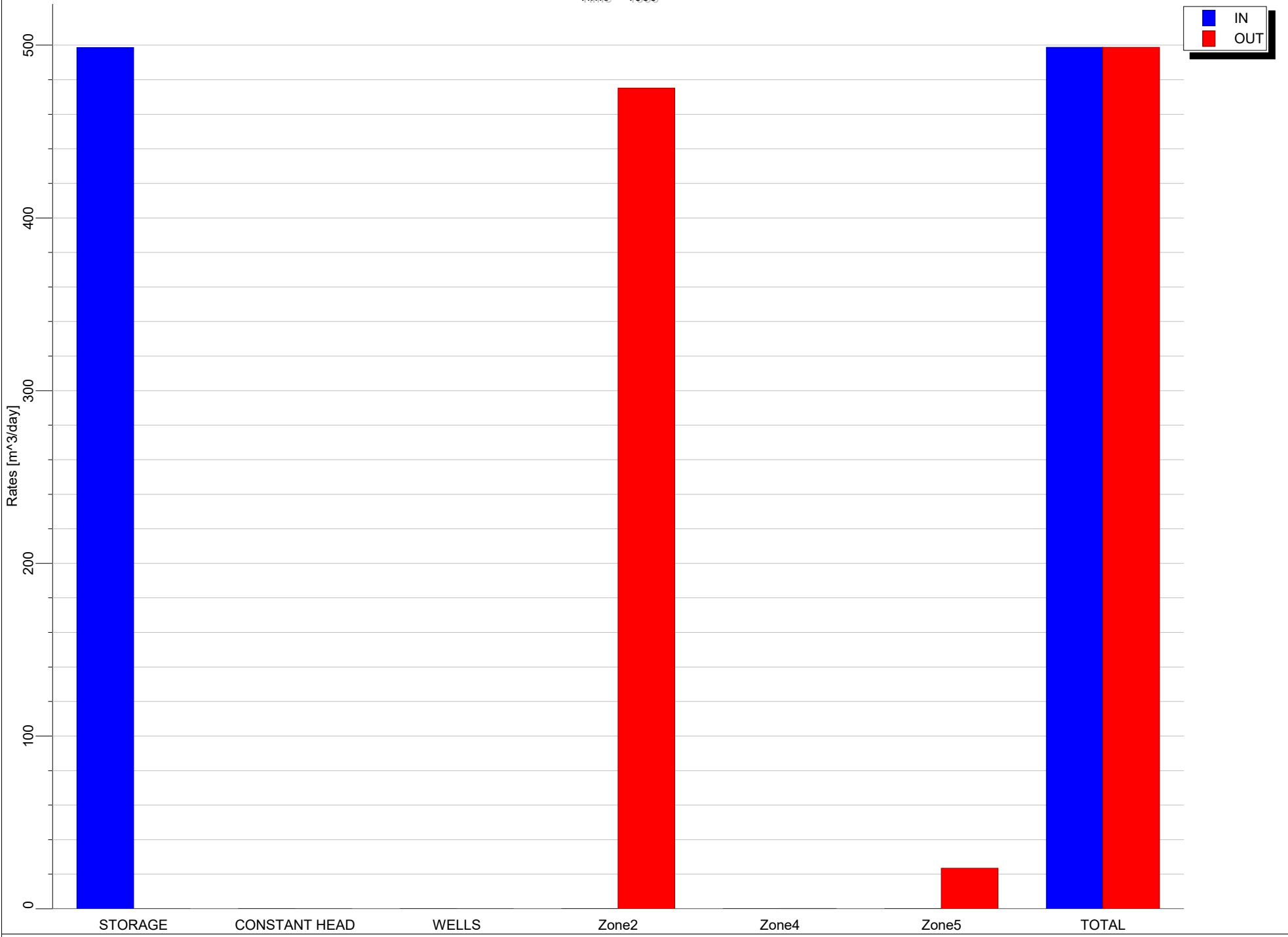
Time = 1000



Zone 7
Scenario 6.5
Abandoned Well 160m

Appendix C - Zone Budget Charts

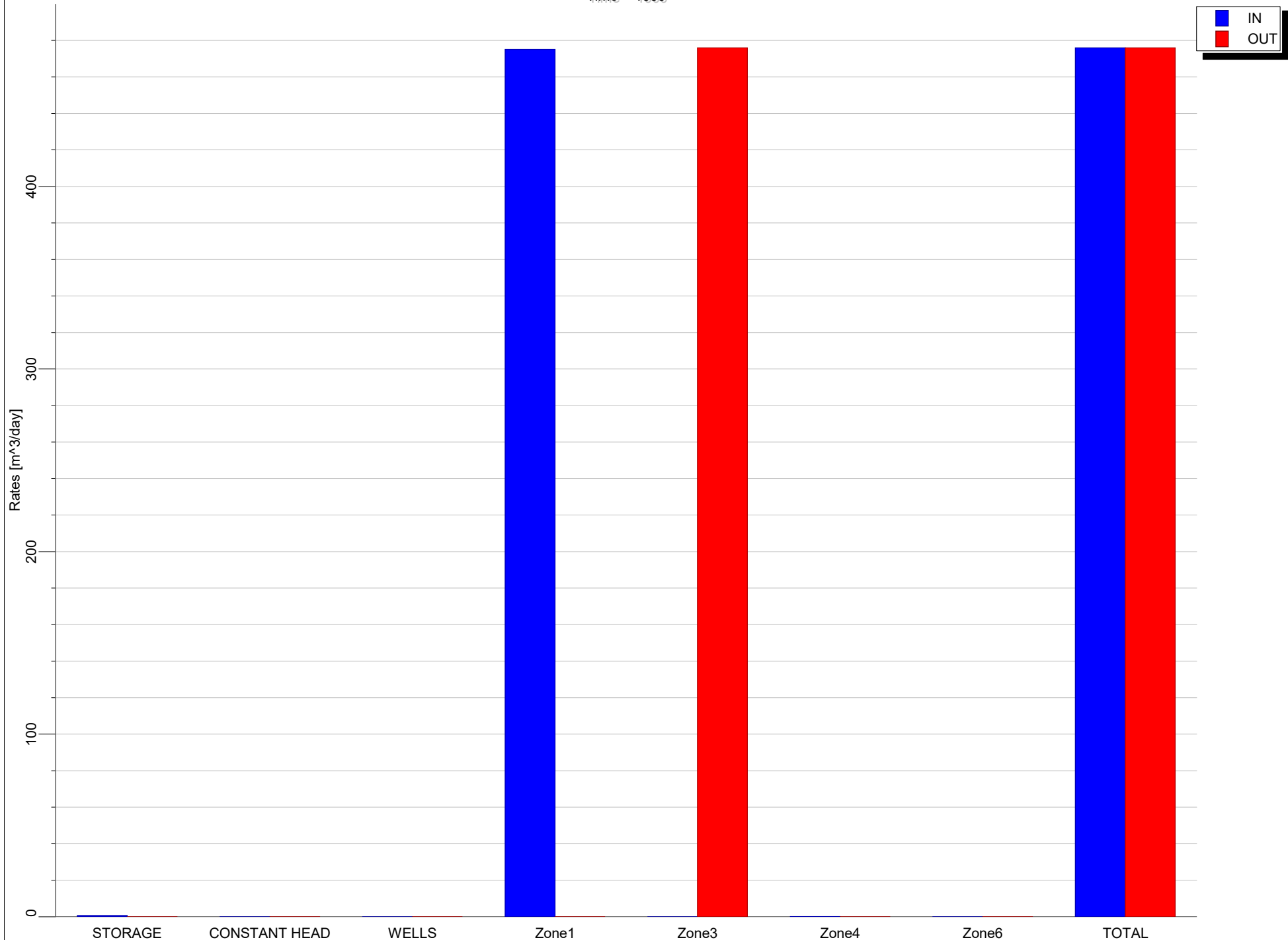
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Zone 1
Scenario 6.6
Abandoned Well 250m

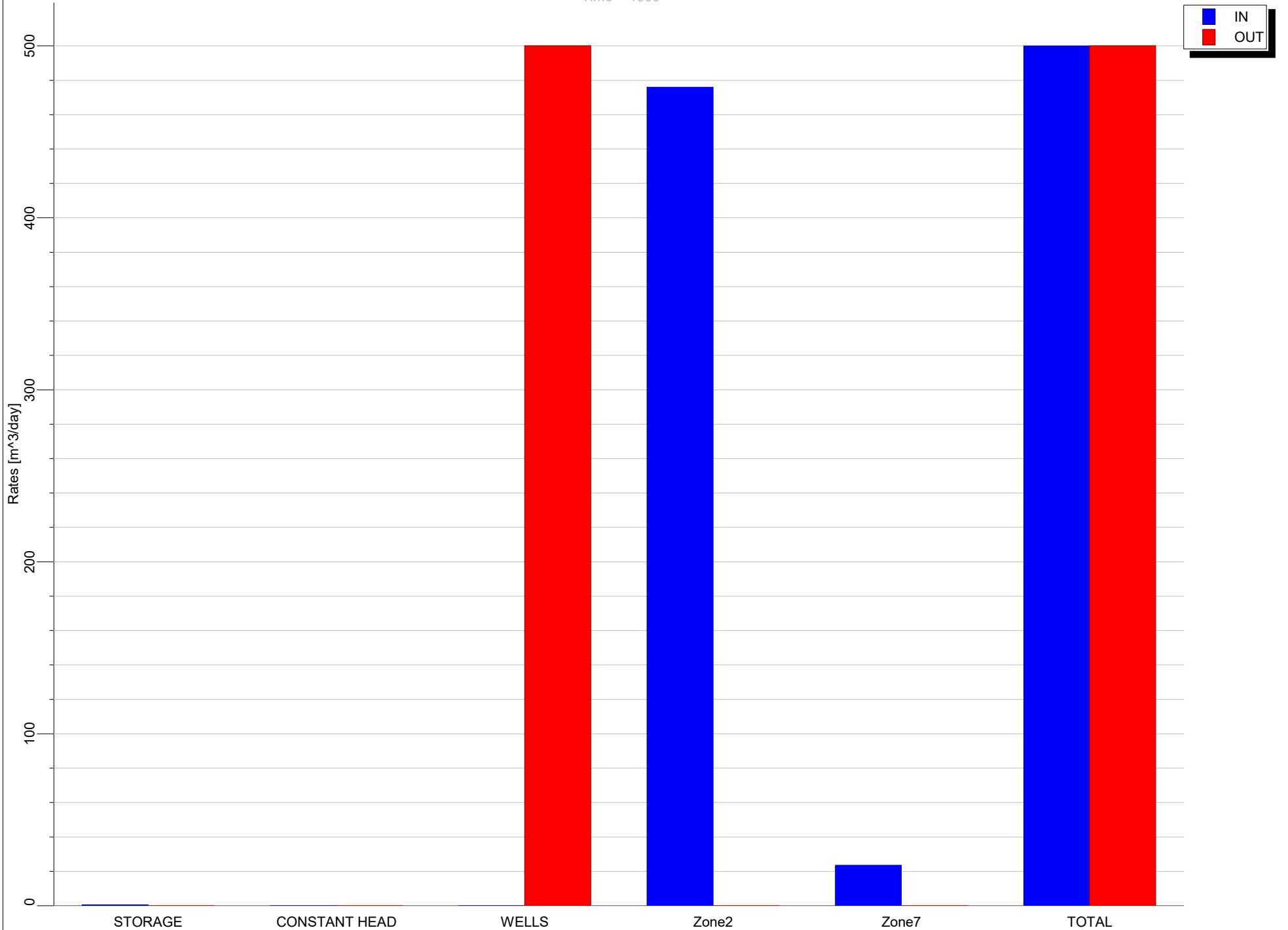
Appendix C - Zone Budget Charts

Time = 1000



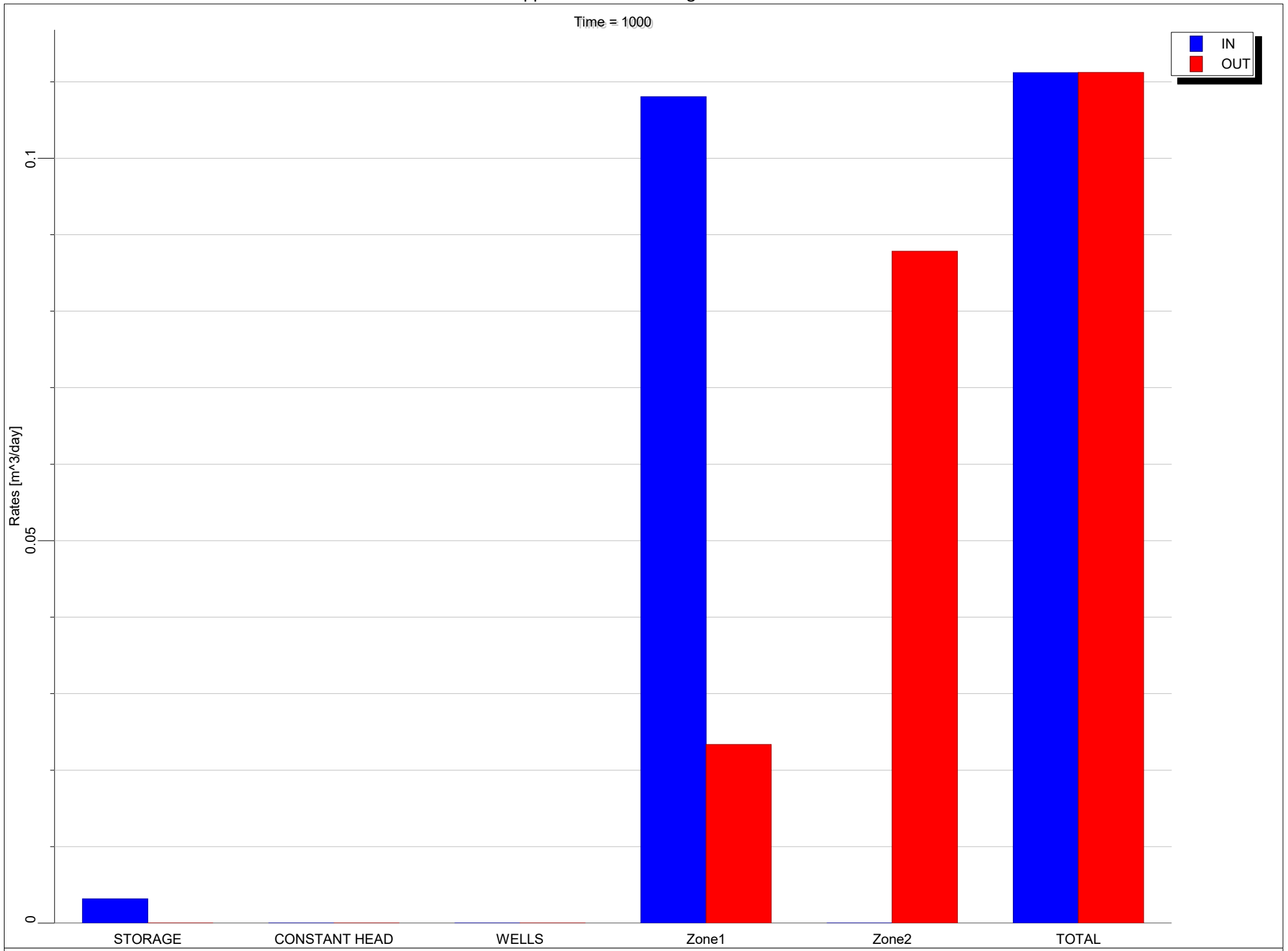
Appendix C - Zone Budget Charts

Time = 1000



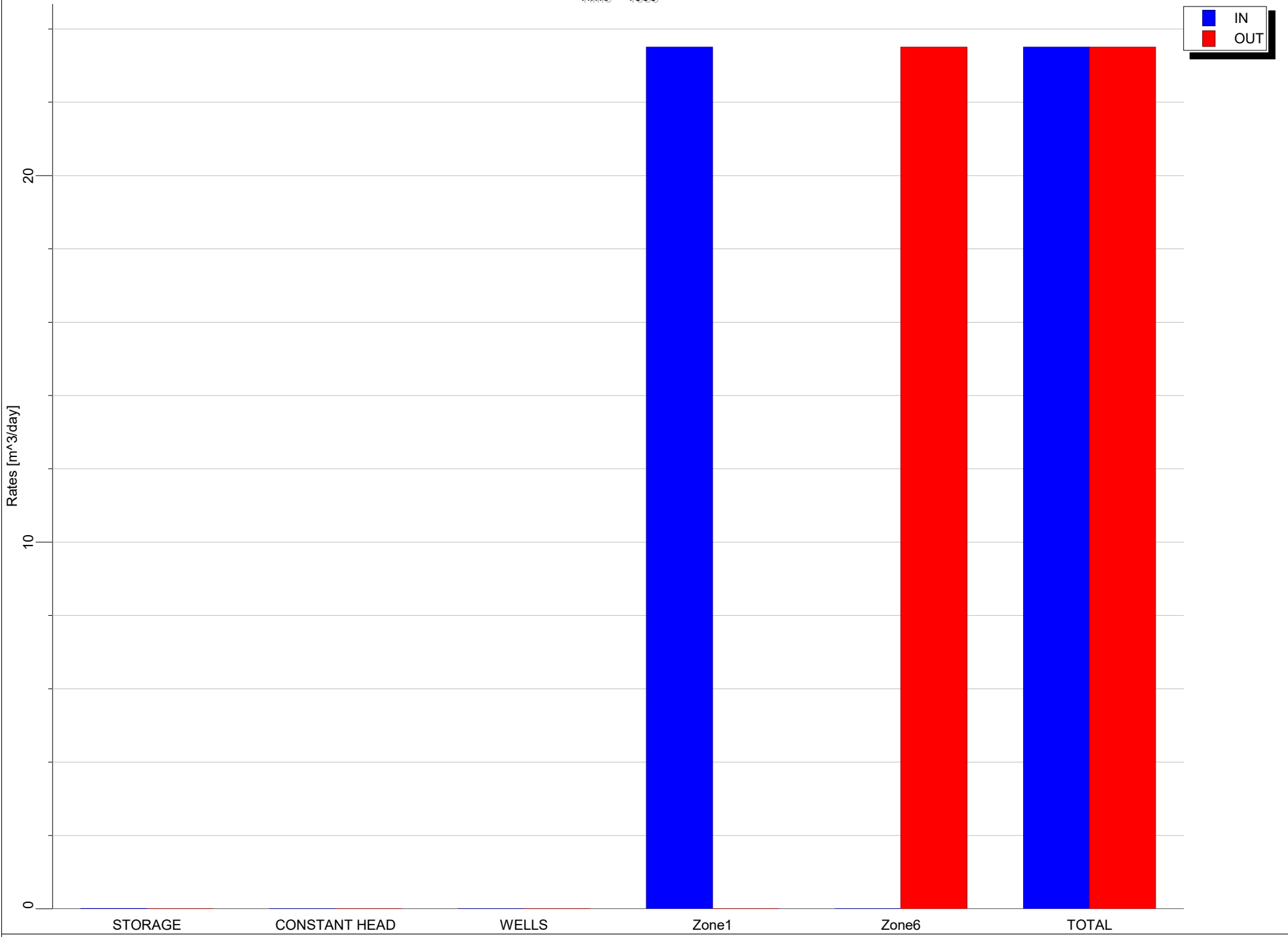
Appendix C - Zone Budget Charts

Time = 1000



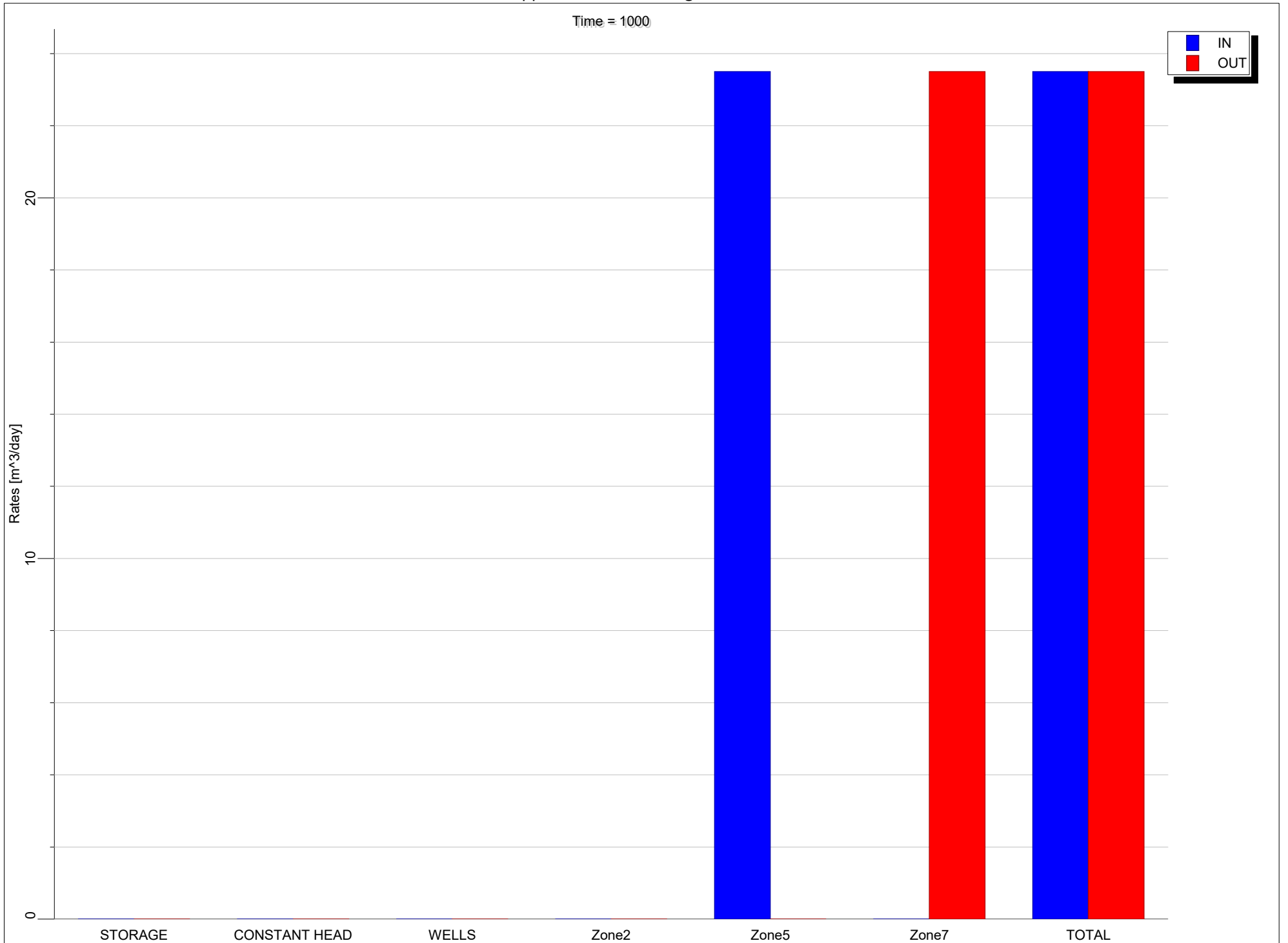
Appendix C - Zone Budget Charts

Time = 1000



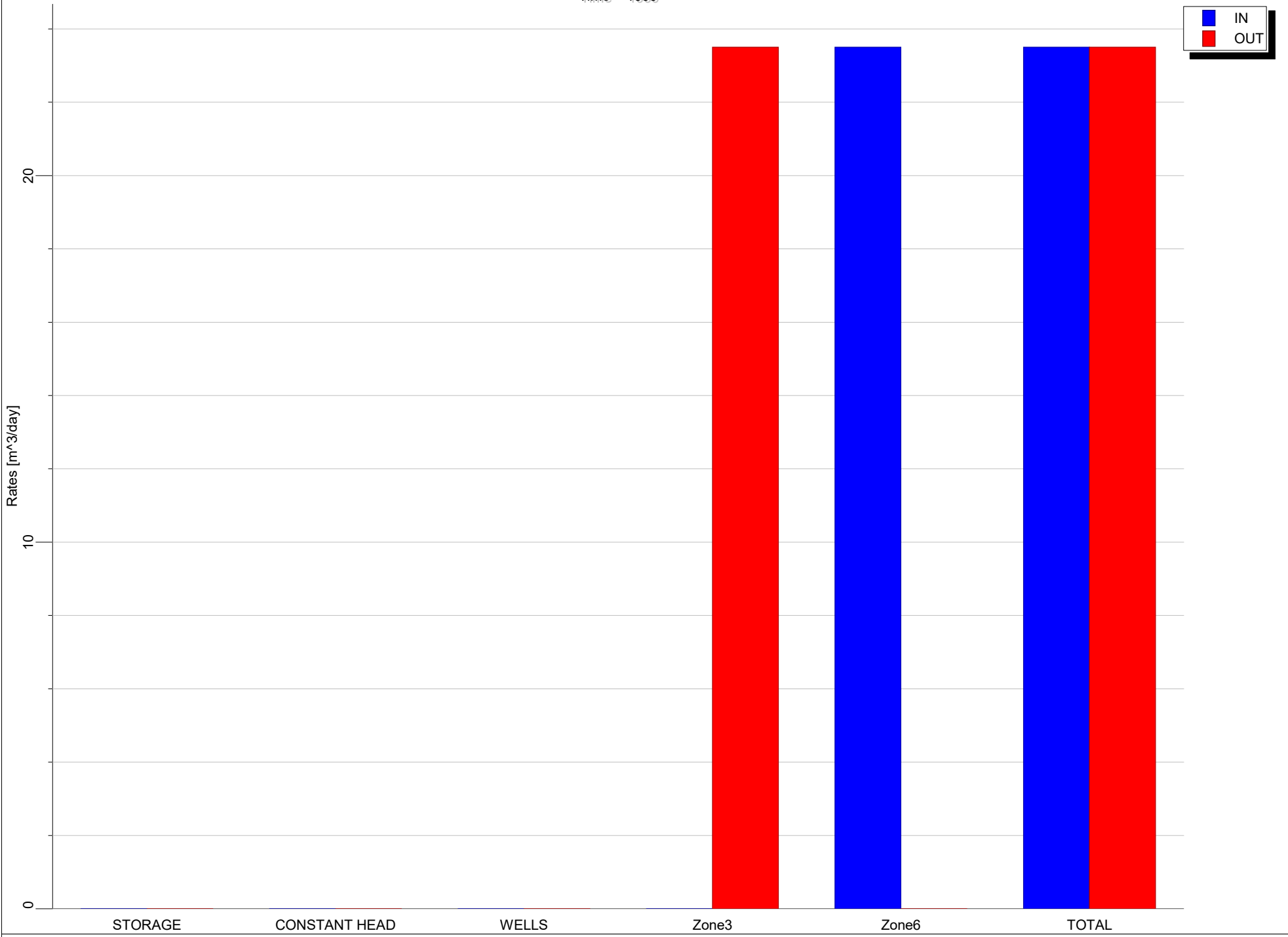
Appendix C - Zone Budget Charts

Time = 1000



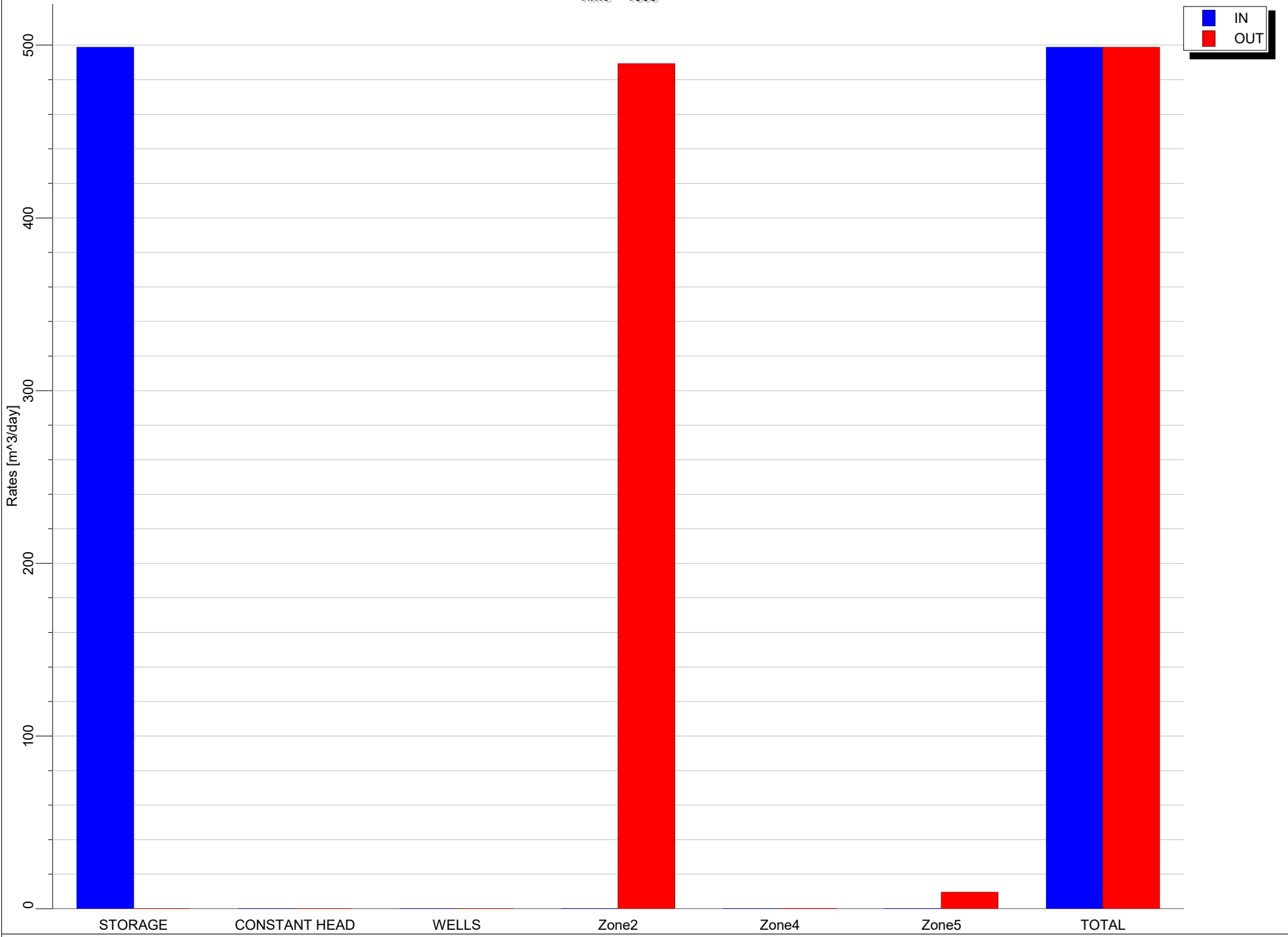
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

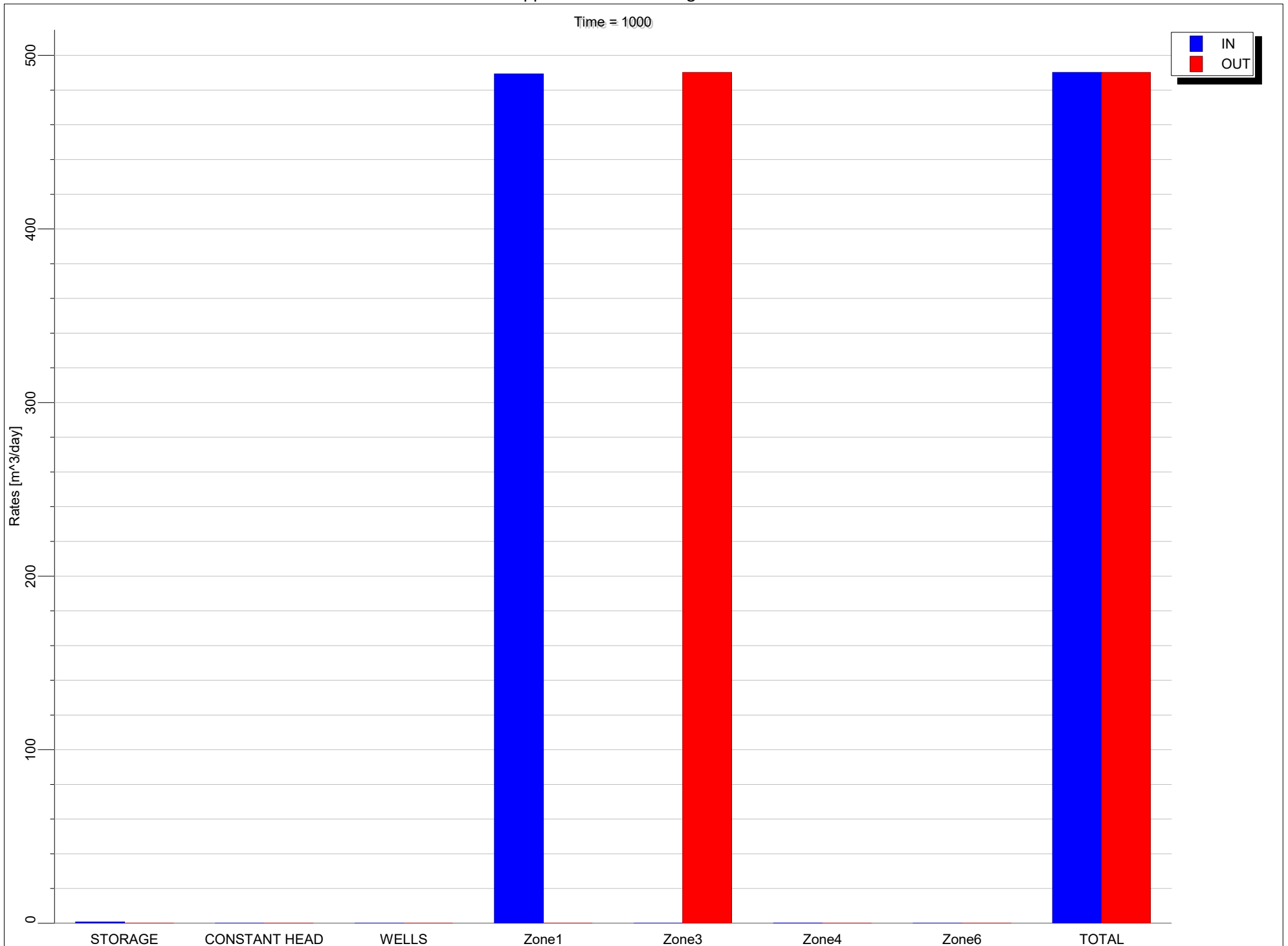
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Zone 1
Scenario 6.7
Abandoned Well 500m

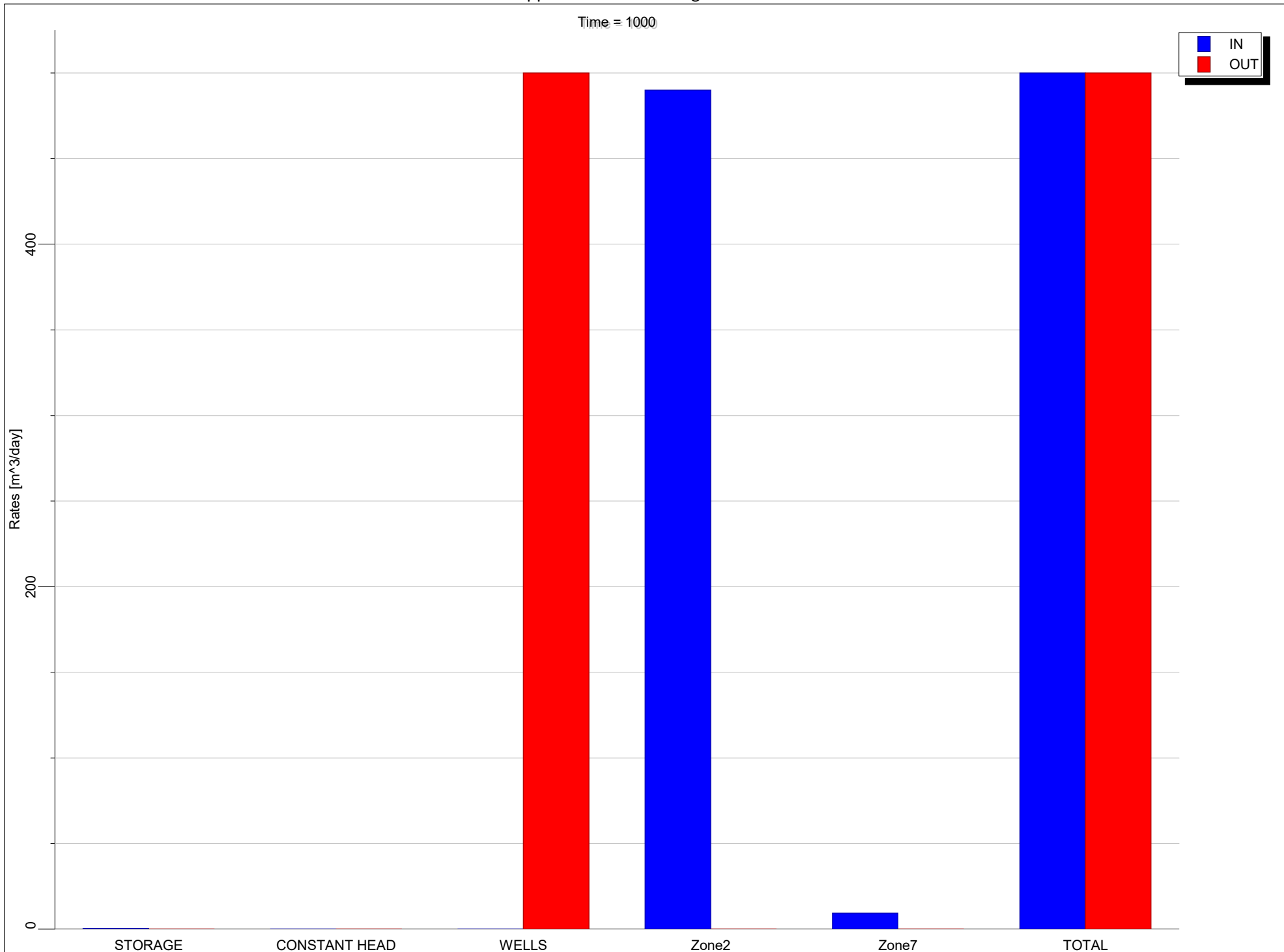
Appendix C - Zone Budget Charts

Time = 1000



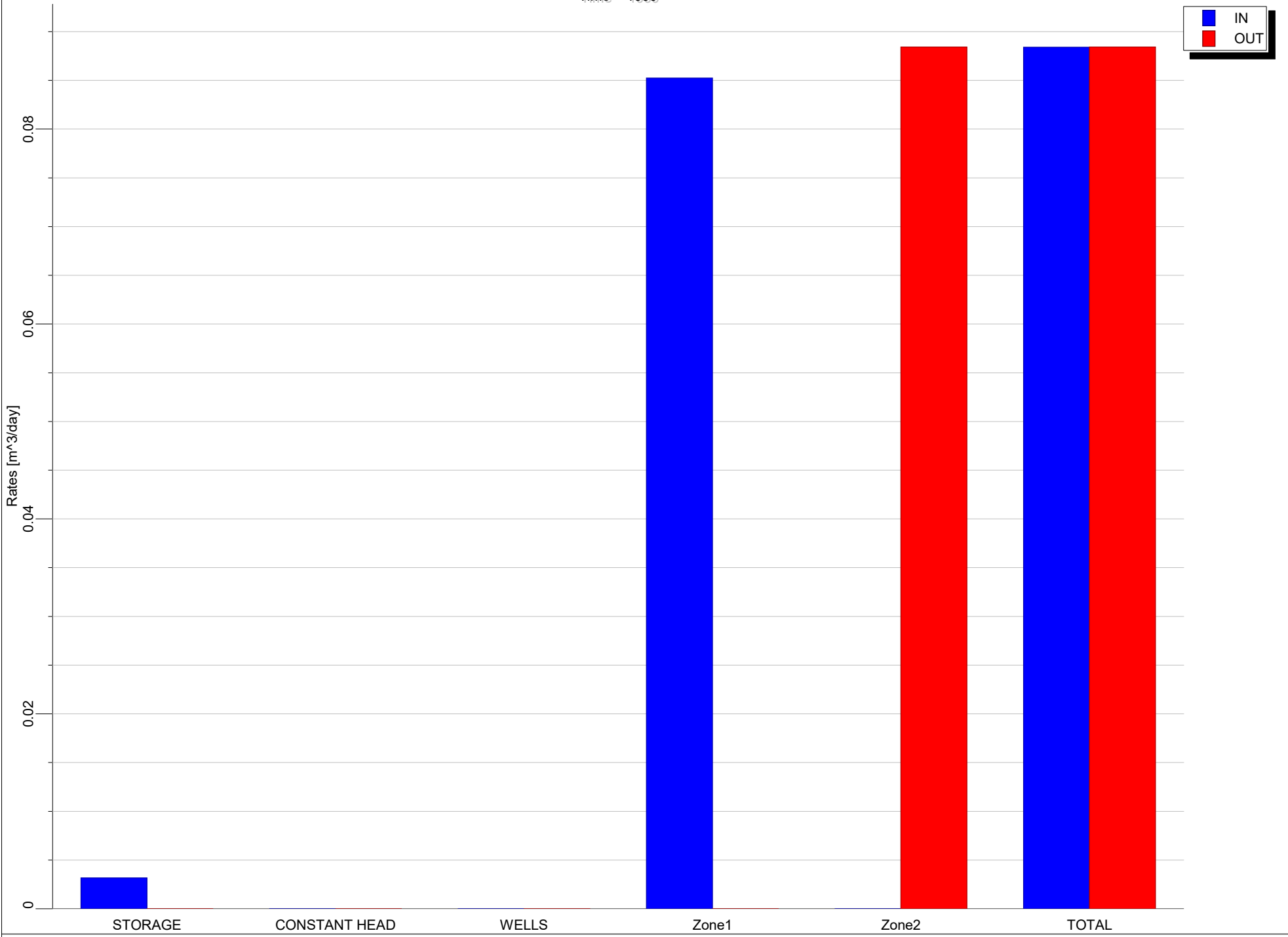
Appendix C - Zone Budget Charts

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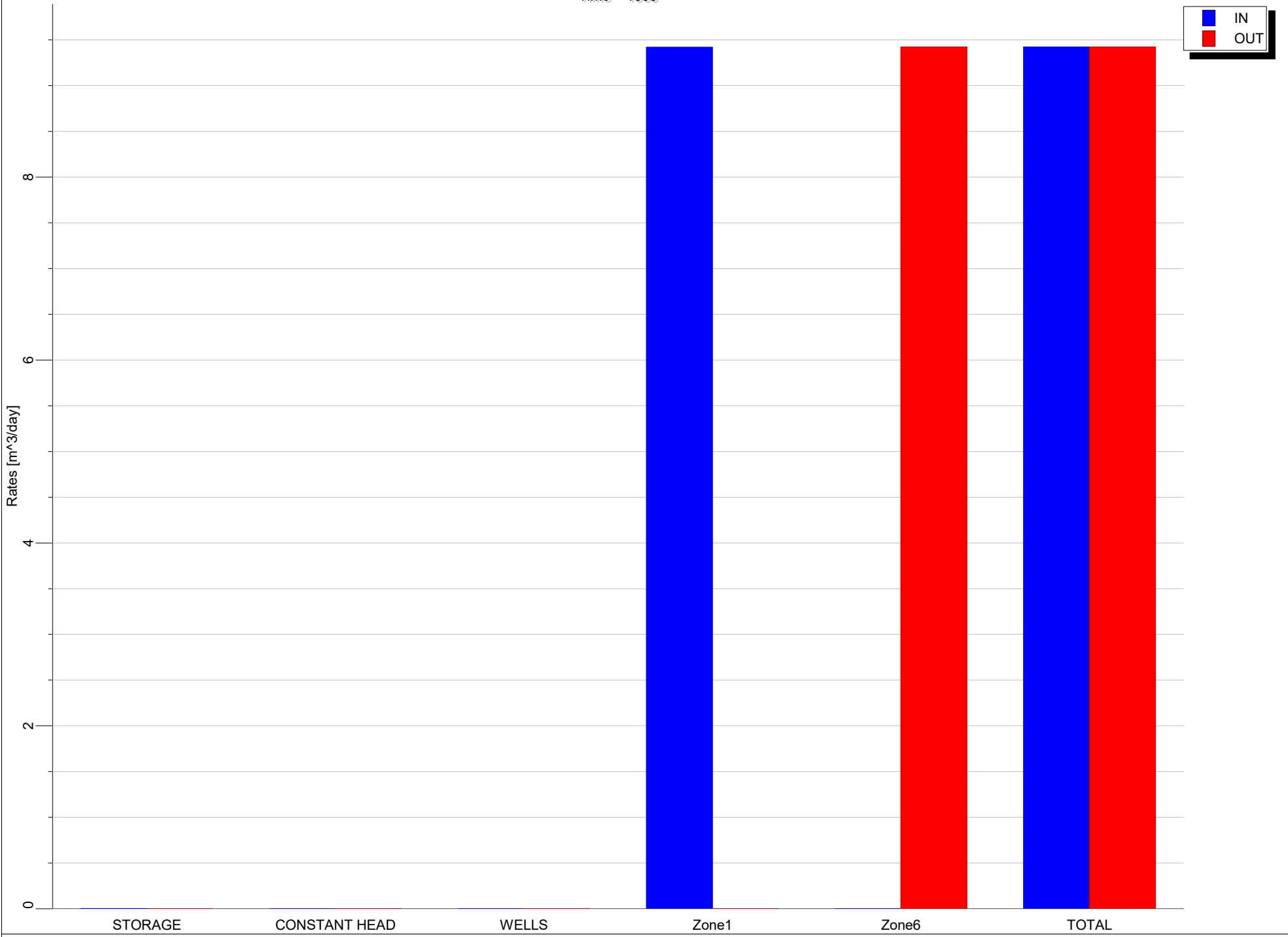
Appendix C - Zone Budget Charts

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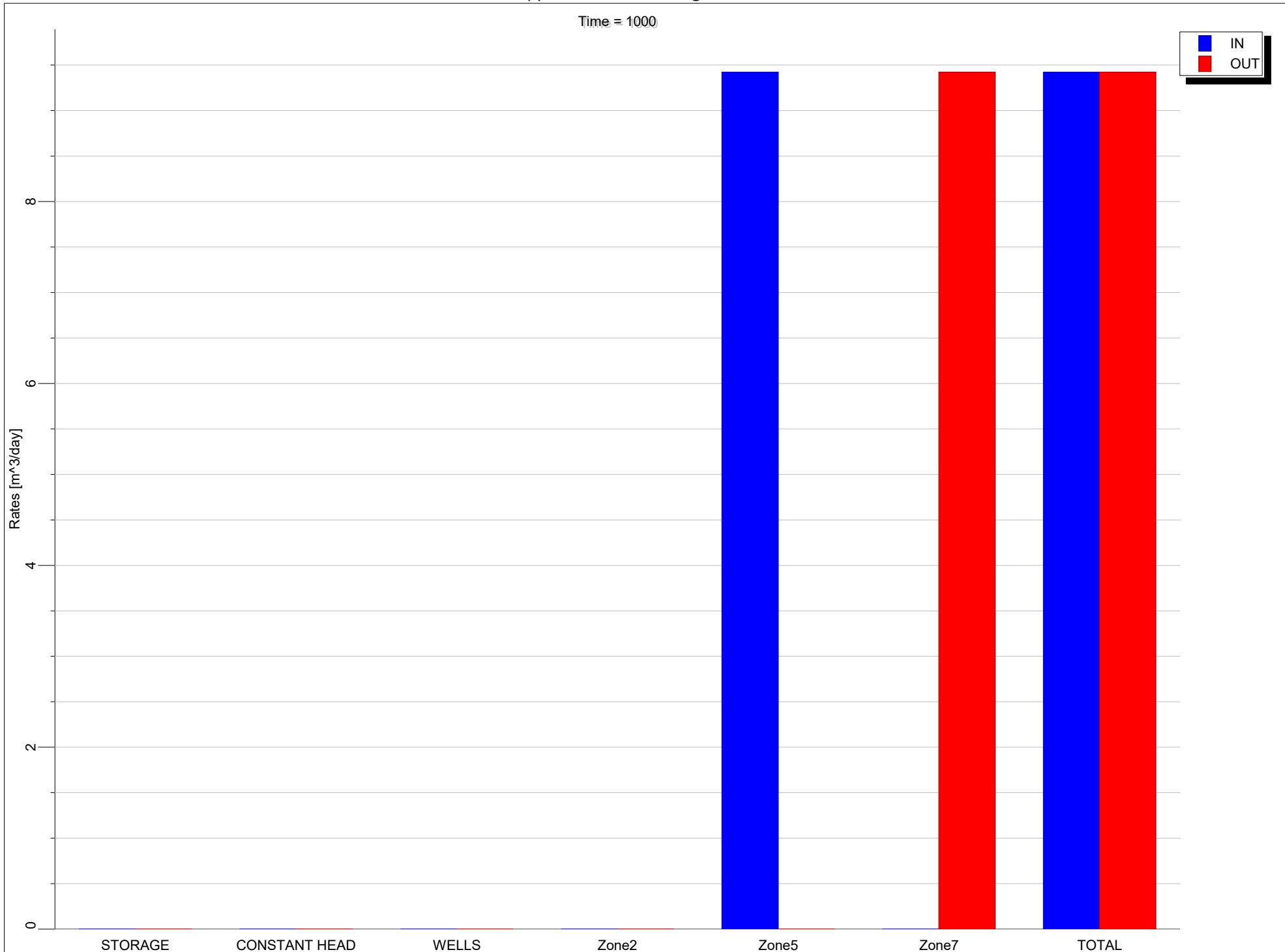
Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

Time = 1000



Appendix C - Zone Budget Charts

Time = 1000

