ESTIMATION OF SOIL MOISTURE DEffCIT IN GUINEA SAVANNAH REGION USING WATER BALANCE APPROACH, GIDAN KWANO AS A CASE STUDY

. BY

FOLARIN, HAFSAT OYEFUNKE

PGDICEIOSI036

DEPARTME,NT OF CIVIL ENGINEERING

FEDERAL UNIVERSITY OF TECHNOLOGY, ~INNA, NIGERIA

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A THESIS SUBMITTED TO POSTGRADUATE SCHOOL IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE'AWARD OF POST GRADUATE DIPLOMA (PGD) DEGREE IN CIVIL ENGINEERING

SCHOOL OF ENGINEERING AND ENGINEERING TECHNOLOGY, FEDERAL UNIVERSITY OF '
TECHNOLOGY, MINNA, NIGERIA

FEBRUARY, 2011

DECLARATION

I hereby declare that this project titled "Estimation of Soil Moisture Deficit in Guinea Savannah Region Using Water Balance Approach. A case study of Gidankwano, Minna, Niger State" was written by me under the supervision of Engr. A.R Adesiji, which is a research project in accordance with the requirement of the Civil Engineering Department, Federal University of Technology, Minna.

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Folarin, Fausat Oyefunke

PGDICEIOSI036

Date

CERTIFICATION'

This is to certify that this project work titled 'Estimation of Soil Moisture Deficit in Guinea Savannah Region Using Water Balance Approach. A case study of Gldnnkwano, Minna, Niger State' was fully carried out by me under the supervision of Engr. A.R Adesiji and submitted to the Department of Civil Engineering Federal University of Technology, Minna, to meet the requirement governing the award of Postgraduate Diploma(PGD) in the Department of Civil Engineering, Federal University ofTe hnology, Minna, Niger State, Nigeria.

Engr. A. R. Adesiji Date

(Project Supervisor)

Eugr. (Prof.) S. Sadiku Date

(IIead of Department)

Prof. S. L. Lamai Date

(Dean PGS)

External Supervisor Date

, ABSTRACT

This project work presents estimation of soil moisture deficit in Guinea Savannah region using water balance approach. The analysis was carried out on a measured datas collected from Nigeria Meteorological Study Centre, Minna, Station for one year, (2010). From the calculations, the maximum and minimum value of evapotranspiration occur in the month of March and august at G.789111mday" and 2.418mm day" ı and the maximum and minimum moisture content to be at 32.2111111 and 5.9mm which occur in the month of October and May with an SMD demand of J 7.5mlll respectively. Therefore the effect of soil moisture deficit on plant growth is enormous as it is known that the higher soil moisture deficit means there is no much available moisture for the plants which then results to wilting and stunted growth in the case shallow rooted plants such as (pepper okro and tomatoes etc) while too much water will also make tuber crops such as (yam, cassava potato etc) to experience rotting due to excess precipitation, which lower the soil moisture deficit and capillary rise beyond the root zone plant thereby leading to water-logging. It was noticed that the events that followed the excessive or significant rainfall decreased the value ofsoil moisture deficit as noticed in the months of July and August.

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CHAPTER ONE

INTRODUCTION

1.1 Background of study

SoiI moisture deficit is the volume of water needed to raise the soil water content in the root zone to field capacity (or any further reduction in moisture content assigned to evaporation expressed as a depth of water as soil moisture deficit.). In the dry season, the moisture deficiency is always very high which reach a stage where the plant can no longer extract water from the ground therefore the need of water balance method in very important to plant growth. One of the important elements of growth of plant is water.

The water balance models are based on a conceptual representation of the soil water profile as one or more layers in which soil water state is defined by a variable deficit of soil water with respect to a reference level of field capacity. Simulation models generally estimate the ratio of actual evaporation to potential evaporation as a function of simulated soil moisture state. It is therefore possible that measurements of soil content from a disturbed network can be used to calibrate model representation Of soil moisture and hence improve evaporation estimation. Ilowever, moisture content measurements must be applied with care since an inconsistency exists between the physics of soil moisture movement and the conceptual basis of many regional models.

Rainfall is the principal means for replenishment of moisture in the soil water system and recharge to ground water. Moisture movement in the unsaturated zone controlled by capillary pressure and hydraulic conductivity. The amount of this recharge depends upon the rate and duration of rainfall, the subsequent conditions at the upper boundary, the antecedent soil moisture conditions, the water table depth and the soil type. The origin of groundwater can be linked to the hydrological cycle. Water can exist in gaseous, liquid or solid state. It is circulated on the planetary forces. Because of this circulation, various hydrologic phenomena occur in nature. This continuous chain of hydrologic phenomena is known as the *hydrologic cycle*. In this cycle. water is transported from the oceans to the atmosphere as vapor by evaporation, from the atmosphere to the land as precipitation, and back from the land to oceans as runoff. The hydrologic cycle is endless, as it has no beginning or end (Arora, 2002). Ground-water level is round to be dependent of many factors. By definition, ground-water level can be defined as the \\uter table which is the level of water encountered in boreholes. However, various ground-water levels are levels indicate that ground-water levels are not always static. Water level rises when the rate of recharge to the ground-water exceeds its rate of recharge to rivers, lakes and seas. The factor depends on the geology of the soil of the area.

1.2 Aims and objectives

The aim of this project is to estimate soil moisture deficit using water balance method. The objectives of this project work include:

1. To determine the natural moisture content of the soil
2. To determine the liquid limits, plastic limits and plasticity index of the soil

3. To determine the particle size distribution of the soil using mechanical sieve analysis

4. To determine the rate of plantgrowth.

I.J .Justification of study

Since the soil moisture deficit (SMD) is the deficiency of moisture in the soil which affects the balance water system, then it is very important to determine the amount of water that will recharge the soil. and also, it is important to know the different types of soil and the way they ahsorb water during system of the water balance.

1.4 Scope of Work

The scope of this project is aimed at carrying out mechanical sieve analysis, classifying the soil in the catchments area and also the amount of moisture that will be available for plantgrowth. The project catchments area is limited to Gidan Kwano campus Federal University of Technology minna,

CHAPTER TWO

LITERATURE REVIEW

2.1 Gcncral Review

Rainfall is the principal means for replenishment of moisture in the soil water system and recharge to ground water. Moisture movement in the unsaturated zone is controlled by capillary pressure and hydraulic conductivity. The amount of moisture that will eventually reach the water table is defined as natural ground water recharge. The amount of this recharge depends upon the rate and duration of rainfall, the subsequent conditions at the upper boundary, the antecedent soil moisture conditions, the water table depth and the soil type.

In many arid and semi-arid regions, surface water resources are limited and ground water is the major source for agricultural, industrial and domestic water supplies. Because of lowering of water tables and the consequently increased energy costs for pumping, it is recognized that ground water extraction should balance ground water recharge in areas with scarce fresh water supplies.

This objective can be achieved either by restricting ground water use to the water volume which becomes available through the process of natural recharge or by recharging the aquifer artificially with surface water. Both options require knowledge of the ground water recharge process through the unsaturated zone from the land surface of the regional water table.

When water is supplied to the soil surface, whether by precipitation or irrigation, some of the arriving water penetrates the surface and is absorbed into the soil, while some may fail to penetrate but instead accrue at the surface or flow over it. The water which does penetrate is itsclr later partitioned between that amount which returns to the atmosphere by evapotranspiration and that which seepS downward, with some of the latter re-emerging as stream now while the remainder recharges the ground water reservoir.

Quantification of ground water recharge IS a major problem 111 many water-resource investigations. It is a complex function of meteorological conditions, soil, vegetation, physiographic characteristics and properties of the geologic material within the paths of flow. Soi I layering in the unsaturated zone plays an important role in facilitating or restricting downward water movement to the water table. Also, the depth to the water table is important in ground water recharge estimations. Of all the factors controlling ground water recharge, the antecedent soil moisture regime probably is the most important.

Water balance models were developed in the 1940s by Thornthwaite (1948) and revised by Thornthwaite and Mather (1955). The method is essentially a book-keeping procedure which cstimates the balance between the inflow and outflow of water. In a standard soil water balance calculation, the volume of water required to saturate the soil is expressed as an equivalent depth of water and is called the soil water deficit. The soil water balance can be represented by:

$$Gr = P - Ea + \Delta S - Ro \qquad 1.$$

where,

Or -e- recharge;

P = precipitation;

Ea = actual evapotranspiration;

AS = change in soil water storage; and

Ro = run-off.

One condition that is enforced, is that if the soil water deficit is greater than a critical value (called the root constant), evapotranspiration will occur at a rate less than the potential rate,.

The magnitude of the root constant depends on the vegetation, the stage of plant growth and the nature of the soil. A range of techniques for estimating Ea, usually based on Penman-type equations, can be used. The data requirement of the soil water balance method is large.

Whcn applying this method to estimate the recharge for a catchment area, the calculation should hc repeated for areas with different precipitation, evapotranspiration, crop type and soil type,

2.2 Water Balance model

A simplified daily soil moisture balance model is used which is based on the methodology described by Rushton (2003). The basis of potential recharge estimation using a soil moisture balance technique is that the soil becomes free draining when the moisture content of the soil exceeds a limiting value called the field capacity; excess water then drains through the soil to become potential recharge. To determine when the soil reaches this critical condition, it is necessary to estimate soil moisture conditions on a daily basis throughout the year. The principal recharge mechanisms are direct recharge, indirect recharge and localised recharge (Lerner et aI., 19()()). Direct recharge is the recharge derived from rainfall over large areas that enters the soil and. in excess of soil moisture deficits and evapotranspiration, which moves downward by direct infltration through the unsaturated zones. Indirect recharge is the water infiltrating through the beds of surface water courses or lakes, and localised recharge is the near surface concentration of water in the absence of well-defined channels. This study is focused on direct recharge mechanism.

Soil water balance method, as used in this work, account for all water entering and leaving the soil zone based on the quantification of the individual physical processes (the inputs and outputs), without representing all the physical soil physics and their interactions which describe the movement of water within the soil (Eilers, 2002). Thus, the approach is based on fewer physical processes and it is not subject to the uncertainties of the mechanisms of a full soil physics analysis. Eilers (2002) and Rushton et al (2006) among others, discussed the merits and demerits of the soil water balarice techniques over other methods such as empirical rainfall-recharge expression, lysimeters, zero flux plane, and numerical solutions based on Darcy's law. Specifically, soil water balance method is favoured for Guinea-Savannah region because of its physical credibility at daily or less time scale, and its simplicity with less uncertainty in spatial variability in hydraulic soil properties. In addition, the technique is favoured because model parameters are few. As the number of parameters increases, the level of data required for parameter estimation increases. In Guinea-Savannah areas, the availability of complex information (e.g. soil-vegetation system) is poor and there are financial and technical limitations involved in gathering a large amount of data.

There are different types of soil water models. There are conventional single layer model as presented by Penman (1990).;. the CROPWAT model which was developed by the Food and Agriculture Organization of the United Nations (Smith, 1992); the Balance model (Grema, 1994). a two layer model which was dev.eloped to estimate daily soil water balance for cropped or un-cropped surface; and the four root layer model (FRLM) developed by the Institute of Ilydrology, UK for the estimation of soil moisture deficits in sites under permanent grass cover (Ragab et aI., 1997).

The model used in this study is a single layer soil water balance model that incorporates the physical processes such as: rainfall, surface" runoff, soil evaporation, crop transpiration, root growth, soil water distribution following rain event and potential recharge. It is termed SAMBA model as previously mentioned and the model has been applied in various areas in Nigeria. (Grema, 1994) considered Maiduguri where a detailed field investigation was carried out for a complete rainy season and Nguru where daily rainfall and potential evaporation data arc available for several decades. The successes recorded in these two locations encouraged the application of this model to Guinea Savannah region.

2.3 Purpose of water balance method

To add water to soil to supply the moisture essential for plant growth

1. To provide crop insurance against short duration droughts

2. To cool the soil and atmosphere, thereby making more favorable environment for plant growth
3. To reduce hazard of frost
4. To reduce or wash out dilute salt in the soil

2.4 Sources of Water balance method

Water balance method can be achieved the following ways:

I. By the means of rain fall

2 l3y flooding

3 By applying water under neat the land surface through sub-irrigation, thus causing the water to rise

4 By sprinkling through nozzle pipes

2.5 Soil Moisture Deficit

Soi l moisture deficit is the volume of water needed to raise the soil water content to the ro t zone to field capacity (or any further reduction in moisture content assigned to evaporation expressed as a depth of water as soil moisture deficit).

In the dry season, the moisture deficiency is always very high which reach a stage where the plant call no longer extract water from the ground therefore the need of water balance method in very important to plant growth. One of the important element of growth of plant is water. Water in the soil resides within soil pores in close association with soil particle. of largest pores transport water to fill smaller pores, soil moisture deficit is the amount of moisture or irrigation needed to get the soil to its field capacity, i.e. the maximum water holding capacity when free drainage can occur. After irrigation, the large pores drain due to gravity and water is held by the attraction of small pores and soil particles.

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Soil with small pores (clayey soils) will hold more water per unit volume than soils with large pores (sandy soils). After a complete wetting and time is allowed for the soil to de-water the large pores, a typical soil will have about 50% of the pores space as water and 50% air. This is a condition generally called the field capacity or the full point. The soil moisture content of the soil varies from a low point where extraction by the weed stops (permanent wilting point, PWP) and a high point when the pores are full of water (soil saturation). After a significant irrigation of rainfall event and the soil has drain time to usually about 48 - 72 hour, the soil is said to have reached field capacity (FC). This is the point where most of the large pores have de-watered.

The moisture between field capacity and the permanent wilting point is known as the plant available water.

Fe - *PWP = Plant Available Water.*

The terms, field capacity and permanent wilting point, are conceptual, as the actual soul moisture values will vary in each soil due to differences in soil texture and structure. Soil water can be measured throughout the unavailable through saturated levels, however, the most useful IS between the lower point near the permanent wilting point and field capacity. The water balance models' are based on a conceptual representation of the soil water profile as one or more layers in which soil water state is defined by a variable deficit of soil water with respect to a reference level of field capacity.

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Simulation models generally estimated the ratio of actual to potential evaporation as a function of' simulated 'soil moisture state. It is therefore possible that measurements of soil content from a disturbed network can be used to calibrate model representation of soil moisture and hence improve evaporation estimation. However, moisture content measurements must be applied with care since an inconsistency exists between the physics of soil moisture movement and the conceptual basis of many regional models.(Liseley ,R.K 1982)

2.6 Relevance of Soil Moisture Deficit

lhc importance SMD varies from the engineering point of view to that of the agricultural point I) I'view. here are the lists of some of the relevance associated to the measurement of SMD

I. Water resource planners

2. Engineer who give flood warnings

3. River flow modelers.

2.7 Plant growth

The hydrologist greatest interest is the rate at which evaporation occurs from the vegetated surfaces which include agricultural crop, natural vegetation etc. It has been emphasized that the total evaporation from the soil, comprises the sum of the evaporation of the intercepted water from the wet surface of the vegetation. The transpiration system provides a particular example of the evaporation process in which water is evaporated from plant tissue.

Transpiration is closely linked to photosynthesis which is an essential process by which plant form carbohydrates which are fundamental to live of plant. For most plants the overall can be written as:

Thus, the plant take in CO_2 from the air and combine it with water to produce carbohydrate, and O_2 is loss [rom the plant as gaseous by product. The photosynthetic tissue, the mesophyll, in the leaf is protected by an outer epidermis which consolidates the leaf structure and protects the inner tissues from the physical damage, from attacks form micro-organisms, and also from desiccation. Numerous small holes called stomata (singular stoma) on the leaf 'enable the diffusion CO_2 and O_2 during photosynthesis, but they also allow loses of water vapor from a plant. The complexity of transpiration for a single plant in a vegetation cover surface and shows that it is dependent upon a sequence of water moving process. Soil, plant and atmospheric form part of continuous flow path of varying resistant in which water moves at varying rate and undergoes both chemical and phase changes. Water at point in the soil profile moves under the influence of a moisture gradient towards a root hair, is there absorbed and travels up the plant streams through the xylem, which is low resistance hydraulic conductor, to the plant leaf from.

"

where it is finally vaporized in the stomata cavities of the leaf before passing through the stomata aperture to the atmospheric. All these processes are responsible for plant growth.

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CHAPTER THREE

MATERIALS AND METHODS

3.0 Location of the Study Area

The study area is located on Lat 9°15' & 9°45' North and Long 6°15' & 6°45' East, along minna-bida road, gidankwanu. It forms the low land area of Gara'tu hill and also extended to Yadna hill. The valley *is* located at the western end of Minna Township, and within the permanent site or Federal University of Technology, Minna, Niger State. Fig.I, Map of Nigeria showing Niger State and its capital and also the location area.

Figure 3.1: *Project area location*

3.1 Climate ami Vegetation

According to the classification of vegetation by WARDA (1997), this research area is classified as Guinea Savannah. Characteristic vegetation in the study area includes shrubs ~ith scattered shear butter and locust bean trees. The climate is characterized by low' rainfall ranging Iron: 1000mm to 1200mm and the temperature between 20°C and. 40°C (NPC, 1991). As in Plate 2. the nature of vegetation varies from one season to another with shrubs at the early period of the year showing what the vegetation looks like when the soil moisture deficit, *SMD,* is high. This is close to the wilting point, *WP,* when there is hardly any water available to the crops.

3.2 Geological Setting

Minna lies within the Guinea Savannah region and the Sahel region as shown in Fig. 5. The city is underlain by basement complex rocks, consisting of a suite of Precambrian granites, gneisses. migmatites and schists (Oyawoye, 1972). The gneisses and schists which constitute the host rocks are found mostly as flat-lying outcrops, often poorly exposed except along river channels and road cuttings. In the Basement Complex rocks, two aquifer types exist, These are the weathered zone aquifer and the fracture zone aquifer. The fracture zone aquifer underlies the weathered zone. A typical weathered profile .of the Basement rocks consists of two main zones, firstly, the surficial zone, which is usually about on or two meters thick, and secondly, the fractured or fissured rock zone, which may range from a few meters to over 20 m in places. Products of weathered granites and gneisses are usually loose aggregates of medium to coarse sand (Shekwolo et al, 1999), while the weathered products of schist are generally made up of clayey sand. The effect of the geological formation is that most of the boreholes are in the fractured zone, and the yield from such borehole is less than 86 m^3/d.

Figure 3.2: Niger State Area Showing theGeological Formation of the Study Area.

3.3 Method used in determine soil moisture deficit

Ass explained before, soil moisture deficit is the amount of water needed to raise soil moisture content to its field capacity, Therefore in other to determine the soil moisture deficit the following step must be followed

I. Select the crop of plant in the area and determine crop rooting depth, *RD* (m), which is as given in Table 3.1.

2. Determine of available water storage capacity of the soil, *AWSC (mm/m),* the values of this for different classification of soil is given in Table 3.2.

3. Calculate the total soil water storage, SWS (mm)

   i.e. $SWS\ (mm) = RD\ (111)\ x\ A\ WSC\ (mm/m)$

4. Determine the availability coefficient of the water to the crop, *AC* (%), Table 3.3.

5. Calculate the maximum soil moisture deficit, *MSMD (mm)*

$MSMD = SWS\ (mm)\ x\ AC$ (%) For the purpose of this estimation, the monthly *SMD* is being compared to the monthly rainfall for the study period. For the purpose of this estimation, thc monthly *SMD* is being compared to the monthly rainfall' for the study period.

3.4 Field experiment and data collection

flaving gotten the geographical map showing the location of the site and with the aid of compass, the catchment extent and area were determiried as follows; from the topography sheet the catchment area was delineated with the aid of AutoCAD which was used to observe the portion of the sheet contributing to the catchment. From the measurement, the catchment area of the site is 671,778.17m2 (67.23ha) and the catchment has the perimeter of 3700m and the boundary is as shown in the figure below.

3.5 Meteorological Data

(i) Rainfall

Rainfall being the major source o[water 'for the model, the rainfall data was collected from Nigerian Meteorological Agency in Minna Airport and the ,daily distribution is as presented in Chapter Four.

(ii) Temperature, Relative Humidity and Evapotranspiration, ETo

In estimating the reference evapotranspiration, *ETo,* the data needed are the monthly mean maximum and minimum temperature and monthly mean of relative humidity. All these are still collected from the same source, NIMEt, Minna. The application of the data above into the Blaney-Morin Nigeria for the 'estimation of reference evapotranspiration is as presented in Chapter 4.

3.6 LABORATORY TESTS

3.6.1 Natural Moisture Content Determination

Two moisture content cans were weighed empty and fresh soil sample (undisturbed soil samples collected from trial pits) were placed on cans as' soon as they were collected from site and reweighed. The samples were placed in an oven [or 24 hours

at 100°c temperature. The oven dried samples were then removed from the oven and new weight were taken and recorded. The weight of the water and that of the solid were obtained by diIlerences in weights using the relationship' below. Thus, the natural moisture content was also determined.

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Where,

M = Natural moisture content

1111 = Weight of empty can (g)

m2 = Weight of can + Wet soil (g)

1113 = Weight of can + dry soil (g)

(m--m.) = Weight of solid

Thus,

M = Weight of water x 100

Weight of solid

3.6.2 Sieve Analysis

SOOgOf the sample was sieved washed through sieve 7S~m and the clay particles was ensured to be completely removed, the soil sample was then placed in an oven and after oven dry, it was then placed in a set of sieves with the known masses descending in aperture sizes from sieve 5.0mm, 3.35mm, 2.0mm, 1.18mm, 850f.lm,600f.lm,425f.lm,300f.lm, 150f.lm,75f.lmand pan.

The set of sieves were placed on a mechanical sieve shaker and was shack for about 10 minutes. The weight of each sieve + the mass of the soil it retains was taken and recorded, the percentage mass retained and the passing were calculated by the formulae below:

% mass retained   Weight of sample retained on a sieve   x   100

Weight of original sample

% passing = original weight - weight retained on sieve that is

% passing = Total cumulative mass retained - weight retained on individual sieve

Cumulative percentage (%) mass retained = summation of percentage (%) mass retains

Plate 1: A set of sieves.

3.6.3 Atterberg's Limit Test

3.6.3.1 Liquid Limit Test (Cone Penetration Method)

About 200g of air dried soil sample passing the 425mm BS test sieve was mixed with water using pallet knife until it gives a considerable stiff paste. The sample was then placed in a cup and leveled with a spatula. The height of the penetration cone was then adjusted to O.OOmm reading. Then the penetrometer brass cup well compacted with mixed soil sample was place directly under the cone. The knob was adjusted until there was a slight contact between the tip of the penetrometer and the surface of the soil in the

brass cup .The knob was pressed and the penetrometer released to penetrate into the soil sample in the brass cup for five seconds. The reading of the penerometer was taken and recorded. Representative sample from the brass cup was then placed in the moisture content can noting the can number and empty weight. The weight of the can and the wet sample was taken and recorded and was then placed in an oven for 24hours after which it was

removed and reweighed for moisture content determination. The test was repeated four (4) times with water content increasing at each test. The moisture content for each test was calculated using the formula below and a graph of penetration against moisture content corresponding to 20mm penetration was taken and was noted to be the liquid limit.

3.6.3.2 Plastic Limit Test

About 200g of air dried soil sample passing through 425mm BS test sieve was thoroughly mixed on a glass plate with water until it becomes homogenous and plastic enough to be rolled into a ball, the ball of the soil was then moulded and rolled continuously between the finger lips and the palms with glass plate until thread of 3mm in diameter was obtained. The thread crumbled at this stage and the portion of the crumbled soil were then gathered and placed in a moisture content can for moisture content determination. This was repeated once again. The moisture contents for the two tests were determined and the average which was taken to be the plastic limit.

$$M \quad \frac{\text{weight of can + wet soil - weight of can + dry soil}}{\text{Weight of can + dry soil- weight of can}} \quad x \quad 100$$

Where,

M = moisture content

3.6.3.3 Plasticity Index

This is obtained by computation from the equation below:

PI =LL-PL

Where

PI = Plasticity Index

LL = Liquid Limit

PL = Plastic Limit

3.7 Methods of Analyzing Results

In this research, a model was developed relating the various hydrological components to show the relationship between them. Also, hydrographs and charts were used to appreciate the behaviour and trend of some hydrological characteristics of soil moisture contents, soil moisture deficit, readily available water, available water for evaporation and so on, of the region for the water period and beyond. Comparative analysis of the rainfall pattern and other hydrological components with that of the soil moisture content of the soil over the months were established through graphs.

3.8 Method of investigation of the computational model

(i) Get daily rainfall and reference evapotranspiration.Iz'L)

(ii) Use *SMD* at the driest season as initial soil moisture deficit - SMD (start up only)

(iii) Compute runoff coefficient, using the runoff matrix (assume)

(iv) Compute the Runoff = Rainfall * Runoff coefficient

(v) Then, Available water for evaporation (AWE) is determined as follows:

If SMDpr > 0, AWE = Rain - Runoff + NSSpr

If SMDpr ~ 0, AWE = Rain - Runoff

(vi) Compute crop coefficient Kc using information on planting date and crop duration

(vii) Potential evapotranspiration = Kc * ETo

(viii) Determine root depth Zr based on growth stage

(ix) Total available water, TAW is determined as:

TAW = max[(FC-WP)*1000*Zr, (FC-WP/2)*1000*Ze]

Ze is the soil evaporative surface

(x) Readily available water, RAW = TAW * p (a constant between 0.2 and 0.7, Allen et aI., 1998)

(xi) Determine soil stress coefficient, ks as follows:

If SMDpr~TAW, ks=O

If SMDpr~RAW, ks=l

(xii) Compute actual evapotranspiration, AE:

If SMDpr < RAW, AE = PE

Else If AWE~PE, AE=PE

If SMDpr~TAW, AE = AWE

Else AE = AWE + ks(PE - AWE)

(xiii) Determine the near surface storage (NSS)

If (AWE - AE) > SMDpr, NSS = 0

Else, NSS = max((A WE-AE)*NSSfactor, 0)

(xiv) If SMDpr ~ 0, SMD = AE - AWE + NSS

Else SMD = SMDpr + RECHpr + AE - AWE + NSS

(xv) Compute recharge:

If SMD < 0, Rech = -1 * SMD + NSS

Else, Rech = 0

CHAPTER FOUR

RESULTS

4.0 Natural Moisture Content

The below table 4.1 shows the summary of the natural moisture content test results obtained, starting from the month of may and extents to the month of October. The below figure is the graph of the natural moisture content in percentage against time in weeks.

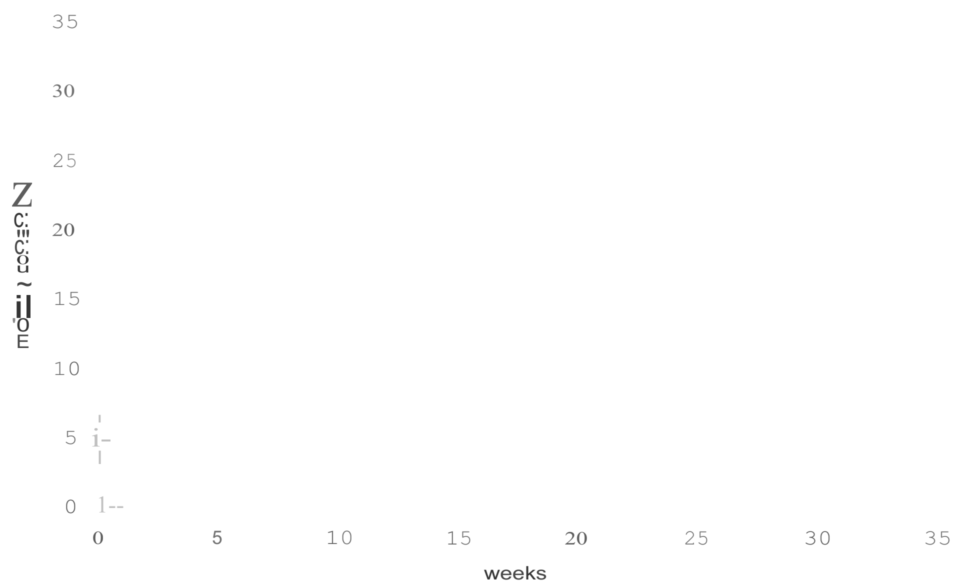

Fig 4.1 Moisture content graph

The field capacity of the soil is O.284(mm)as shown in the graph above (Figure 4.1).

Table 4.1 Annual Rainfall Table

MONTH	RAINFALL DEPTH(mm)
January	
February	
March	
April	46.3
May	131.5
June	109.8
July	260.9
August	163.2
September	230.8
October	161.1
November	
December	

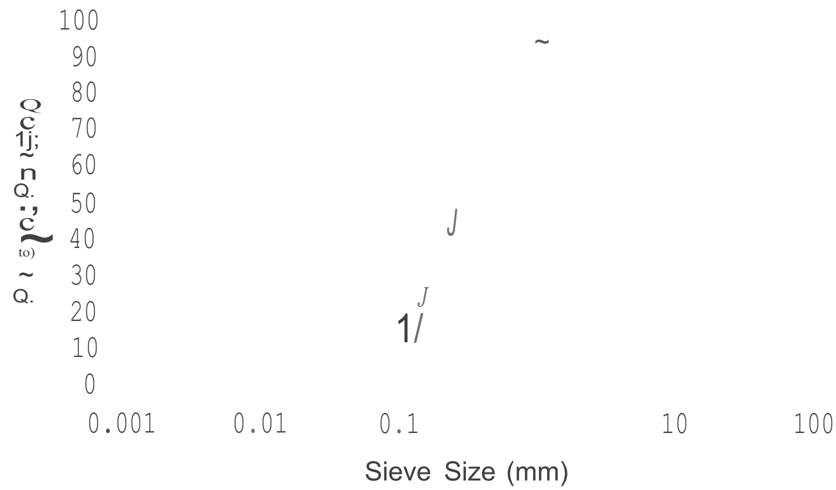

Fig. 4.4.: Particle Size Distribution Curve 2

4.2 Atterberg's Limit Test

The results obtained from the atterberg's limit test are shown in table 4.4 and table 4.5and their graphs were also plotted as shown in figure 4.4 and figure 4.5 respectively. Also from the graphs, Liquid Limit (LL), Plastic Limit (PL) and Plasticity Index (PI) were calculated and recorded as in tables 4.6 and 4.7 respectively. The liquid limit, plastic limit and plasticity Index for each soil were obtained and were used together with the sieve analysis to o classify the soil sample.

Table 4.2: Atterberg's limit test result

	LL					PL	
Test No	1	2	3	4	5	1	2
Penetration(mm)	105	123	148	191	225		
Can No	M2	A6	5g	P4	la	B11	MI0
WtofCan (g)	23.2	23.4	24.5	25.0	25.4	23.4	24.5
Wt of can +wet soil (g)	36.5	32.1	46.2	32.5	31.2	27.4	28.2
Wt of can +dry soil (g)	35.1	31.0	43.0	31.0	30.0	27.0	28.0
Wt of moisture(g)	1.4	1.1	3.2	1.5	1.2	0.4	0.2
Wt of dry (g)	11.9	7.6	3.2	6.0	4.6	3.6	3.5
Moisture content (%)	11.8	14.5	17.3	25.0	26.1	11.1	5.7
						8.4	

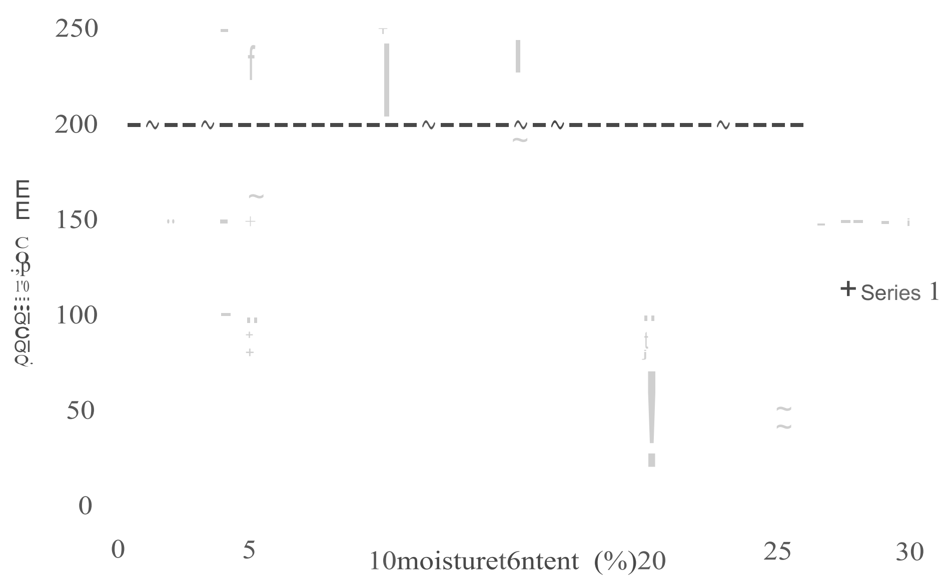

Fig 4.5: Graph Of Atterbergs limit test curve

Table 4.3: Atterberg's limit test result

	LL					PL	
Test No	1	2	3	4	5	1	2
Penetration(mm)	61	127	153	189	222		
Can No	A8	D3	W6	B2	86	A4	C6
WtofCan (g)	24.9	24.8	24.5	24.7	23.3	24.6	22.9
Wt of can +wet soil (g)	30.2	29.0	31.8	34.9	34.5	25.5	23.9
Wt of can +dry soil (g)	29.4	28.3	30.4	32.9	32.2	25.4	23.8
Wt of dry soil (g)	4.5	3.5	5.9	8.2	8.9	0.8	0.9
Wt of moisture (g)	0.8	0.7	1.4	2.0	2.3	0.1	0.1
Moisture content (%)	17.8	20.0	23.7	24.4	25.8	12.5	11.1
						11.8%	

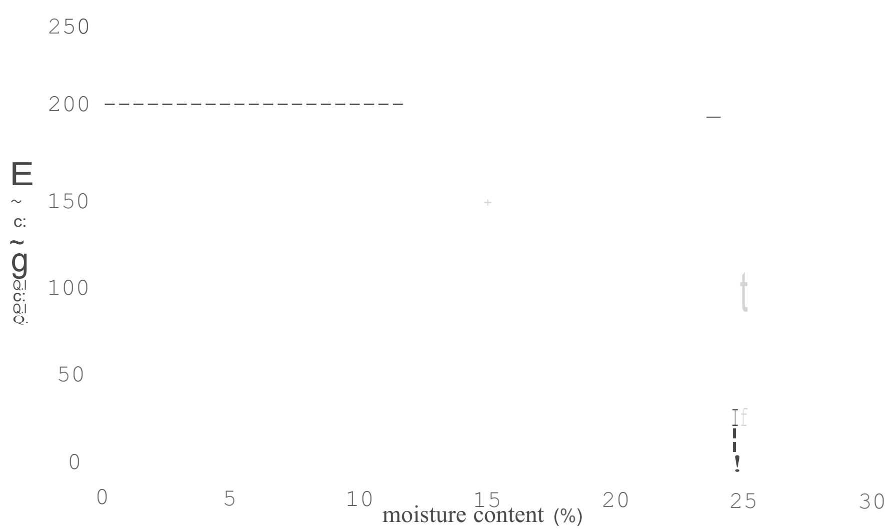

Fig 4.6 Graph of Atterbergs limit test curve

The summaries result of Atterberg limit test and sieve analysis shown in the below table

Table 4.4 Summary result of sieve analysis

Sample A			Sieve Analysis		
	DlO	D30	D60	Cu	Cc
	0.17	0.24	0.43	2.53	6.57

LL	PL	PI
23.5	8.4	15.1

Table 4.5 Summary result of sieve analysis

Sample B			Sieve Analysis		
	DI0	D30	D60	Cu	Cc
	0.15	0.22	0.41	2.7	7.2

LL	PL	PI
26	11.8	14.2

The results from the model showing the salient parameters like runoff, evaporarion, and soil moisture deficit, are graphically represented below, also with emphasis on planting and harvesting dates.

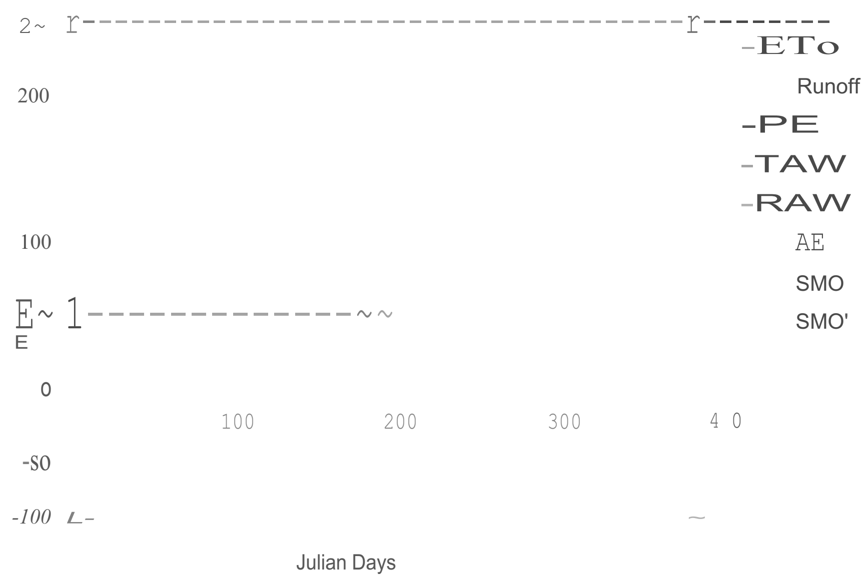

Fig. 4.7: Graphical Representation of Model Showing Variation ofSMD, TAW, RAW, PE, AE, and Rainfall depth.

properties. The linear root growth increases from approximately 8 days after planting to a maximum root depth of 1.2m at maturity. The readily available functions REW and RAW are calculated using a depletion factor p equal to 0.6 (Rockstrom et al, 1998). Variations of these parameter values with time are plotted in Fig. 4.7. The diagram shows the rainfall distribution, Total Available Water, TAW and Readily Available Water, RAW, Potential Evaporation, PE, and Actual Evaporation, AE which apply during the dry season. From Fig. 16,

5.2 Conclusions

Understanding hydrological process and developing suitable models is crucial for water resources management and to be able to predict future impacts initialed through global changes. This research is undertaken at different scales, for example rainfall-runoff the generation, and water-soil-plant-atmosphere interactions. Therefore, from the study the soil type in the region is mostly gravelly sand up to the rooting depth of 80-90cm. The particles zero distribution of soil explains why the annual runoff in the model is just 11% of the annual rainfall. The runoff obtained from the model compares favourably with that obtained from the field measurement. Low rainfall-runoff rate observed explains the nature of the soil in the catchment which allows for much water infiltrating into the soil mass there by recharging the groundwater and reducing. The annual recharge is found to be 132.93mm which is far greater than that obtained for Nguru as observed by Rushton, 2006.

The model has so far only been used under rainfed cropping conditions, but irrigated crops can also be included by setting the daily rainfall equal to the actual rainfall plus the depth of irrigation. A study of the detailed water balances indicates that deep drainage is predicted to occur under rainfed pepper cropping at Minna when:

(i) the soil moisture deficit carried over from the previous day is less than zero i.e negative.

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5.3 Recommendations

Aspects of the model which could be recommended for further studies include:

i. Response of the crops to stress imposed by hydro-meteorological conditions;

ii. The inclusion of run-on from adjacent areas;

iii. The linking of root development to soil moisture of deficit;

iv. The explicit inclusion of interception.

v. This work could be extended to neighbouring areas like Minna metropolis, Zungeru town, Bida town, etc., so that conclusion can be drawn as regards estimation of the parameters discussed to favourably represent the Niger State as a whole.

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AMBA model

crop stage start days (jutian days)

moff matrix					Soil	NSS fraction		Kc's			2010
ainfall	SMD			Fe	0.284	10.451	Kc ini	1.05		Planting	1--'_8_7
:ensity	0-20	20 - 50	> 50	WP	0.03		Kc mid	1.10		dev	'92
m/day	20	50			0.25	initial SMD (mm)	Kc end	0.60		mid	227
·2 20	0.1	0.05	0			Llate	Kc bs	1.05		lat	262
1- 50	0.04	0.15	0.1	Ze	0.2Slmm	37.4	Total			harvest	277
50	0.3	0.25	0.2				pi	0.6			

max root depth | 1.2 [mm

Planting date	6-Jul	t-Jan	t-Jan	t-Jan	t-Jan

ay	month	year	J	Rain	AWE	NSS	ETo	Runoff	Kc's	PE.	Zr	TAW	RAW	Ks	AE	SMD	SMD'	Rec
1	1	2010	1	a	0.0	0.0	6.043	a	1.05	6.3	0.00	67		1.0	e 3		37.4	0.0
2	1	2010	2	a	00	0.0	6.043	a	1.05	6.3	0.00	67		0.9	: 5		43.7	00
3	1	2010	3	a	00	0.0	6.043	a	1.05	6.3	0.00	67		0.7	[illegible]		49.3	0.0
4	1	2010	4	0	00	0.0	6.043	a	1.05	6.3	0.00	67		0.5	32		53.5	0.0
5	1	2010	5	0	0.0	0.0	6.043	a	1.05	6.3	0.00	67		0.4	25		56.8	0.0
6	1	2010	6	0	00	0.0	6.043	a	1.05	63	0.00	67		0.3	. 9		59.2	0.0
7	1	2010	7	a	00	0.0	6.043	0	1.05	6.3	0.00	67		0.2	[illegible]		61.1	00
8	1	2010	8	a	00	0.0	6.043	a	1.05	6.3	0.00	67		0.2	[illegible]		62.6	00
9	1	2010	9	0	00	0.0	6.043	a	1.05	63	0.00	67		0.1	[illegible]		63.7	00
10	1	2010	10	0	00	0.0	6.043	a	1.05	63	0.00	67		0.1	[illegible]		64.5	00
11	1	2010	11	a	00	0.0	6.043	a	1.05	6.3	0.00	67		0.1	[illegible]		65.2	0.0
12	1	2010	12	a	0.0	0.0	6.043	0	1.05	6.3	0.00	67		0.1	:: c		65.7	0.0
13	1	2010	13	0	0.0	0.0	6.043	0	1.05	63	0.00	67		0.0	[illegible]		66.0	00
14	1	2010	14	0	00	0.0	6.043	a	1.05	[illegible]	0.00	07		0.0	[illegible]		66.3	00
15	1	2010	15	a	00	0.0	6.043	0	1.05	63	0.00	67		0.0	'J 2		66.5	00
16	1	2010	16	0	00	0.0	6.043	0	1.05	6.3	0.00	67		0.0	[illegible]		66.7	00
17	1	2010	17	0	0.0	0.0	6.043	0	1.05	6.3	0.00	67		0.0	(I 1		66.8	0.0
18	1	2010	18	0	0.0	0.0	6.043	0	1.05	6.3	0.00	67		0.0	0 1		66.9	00
19	1	2010	19	0	0.0	0.0	6.043	a	1.05	6.3	0.00	67		0.0	[illegible]		67.0	00
20	1	2010	20	0	0.0	0.0	6.043	0	1.05	6.3	0.00	67		0.0	00		67.1	0.0
21	1	2010	21	0	00	0.0	6.043	a	1.05	6.3	0.00	67		0.0	00		67.1	0.0
22	1	2010	22	a	00	0.0	6.043	a	1.05	6.3	0.00	67		0.0	GO		67.1	0.0
23	1	2010	23	0	00	0.0	6.043	a	1.05	63	0.00	67		0.0	00		67.2	0.0
4	1	2010	24	a	0.0	0.0	6.043	a	1.05	6.3	0.00	67		0.0	GO		67.2	0.0

3	3	2010	62	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	~	0.0	0.0	67.2	67.2	0.0
4	3	2010	63	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	3	2010	64	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	3	2010	65	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	3	2010	66	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	3	2010	67	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	3	2010	68	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	3	2010	69	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	3	2010	70	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	3	2010	71	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	3	2010	72	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	3	2010	73	0.		0.0	0.0.	6.7	0	0	1.05	7.0	0.00	67	40.	0.0	0.0	67.2	67.2	0.0
15	3	2010	74	0		0.0	0.0	6,7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	3	2010	75	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	3	2010	76	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	3	2010	77	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	3	2010	78	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	3	2010	79	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	3	2010	80	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	3	2010	81	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	3	20·10	82	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	3	2010	83	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	3	2010	84	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	3	2010	85	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	3	2010	86	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
-28	3	2010	87	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
29	3	2010	88	0		0.0	0.0	6.7	0	0	1.05	7.G	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	3	2010	89	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
31	3	2010	90	0		0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	4	2010	91	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	4	2010	92	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	4	2010	93	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	4	2010	94	57.9	94	46.3	18.9	4.07	0.2	11.58	1.05	4.3	0.00	67	40	0.0	4.3	44.1	67.2	0.0
5	4	2010	95	0		18.9	6.6	4.07	0.05	0	1.05	4.3	0.00	67	40	0.9	4.3	36.1	44.1	0.0
6	4	2010	96	0		6.6	1.0	4.07	0.05	0	1.05	4.3	0.00	67	40	1.0	4.3	34.8	36.1	0.0
7	4	2010	97	0		1.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	1.0	4.3	38.0	34.8	0.0
8	4	2010	98	0		0.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	1.0	4.3	42.3	38.0	0.0

25	1	2010	25	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	1	2010	26	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	1	2010	27	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	1	2010	28	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
29	1	2010	29	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	1	2010	30	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
31	1	2010	31	0	0.0	0.0	6.043	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	2	2010	32	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	2	2010	33	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	2	2010	34	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	2	2010	35	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	2	2010	36	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	2	2010	37	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	2	2010	38	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	2	2010	39	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	2	2010	40	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	2	2010	41	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	2	2010	42	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	2	2010	43	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	2	2010	44	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	2	2010	45	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	2	2010	46	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	2	2010	47	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	2	2010	48	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	2	2010	49	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	2	2010	50	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	2	2010	51	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	2	2010	52	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	2	2010	53	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	2	2010	54	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	2	2010	55	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	2	2010	56	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	2	2010	57	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	2	2010	58	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	2	2010	59	0	0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
	3	2010	60	0	0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	3	2010	61	0	0.0	0.0	6.7	0	0	1.05	7.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0

9	4	2010	99	0		0.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.9	4.0	46.3	42.3	0.0
10	4	2010	100	0		0.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.8	3.3	49.6	46.3	0.0
11	4	2010	101	0		0.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.7	2.8	52.4	49.6	0.0
12	4	2010	102	11.8	##	11.8	3.4	4.07	0	0	1.05	4.3	0.00	67	40	0.6	4.3	48.3	52.4	0.0
13	4	2010	103	0		3.4	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.7	4.0	48.9	48.3	0.0
14	4	2010	104	0		0.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.7	2.9	51.8	48.9	0.0
15	4	2010	105	11.7	##	11.7	3.3	4.07	0	0	1.05	4.3	0.00	67	40	0.6	4.3	47.7	51.8	0.0
16	4	2010	106	0		3.3	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.7	4.0	48.4	47.7	0.0
17	4	2010	107	0		0.0	0.0	4.07	0.05	0	1.05	4.3	0.00	67	40	0.7	3.0	51.4	48.4	0.0
18	4	2010	108	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.6	2.5	53.9	51.4	0.0
19	4	2010	109	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.5	2.1	56.0	53.9	0.0
20	4	2010	110	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.4	1.8	57.8	56.0	0.0
21	4	2010	111	3.8	##	3.8	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.4	4.0	58.0	57.8	0.0
22	4	2010	112	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.3	1.5	59.5	58.0	0.0
23	4	2010	113	3.3	##	3.3	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.3	3.6	59.7	59.5	0.0
24	4	2010	114	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.3	1.2	60.9	59.7	0.0
25	4	2010	115	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.2	1.0	61.9	60.9	0.0
26	4	2010	116	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.2	0.8	62.8	61.9	0.0
27	4	2010	117	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.2	0.7	63.5	62.8	0.0
28	4	2010	118	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.1	0.6	64.1	63.5	0.0
29	4	2010	119	0		0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.1	0.5	64.6	64.1	0.0
30	4	2010	120	14	##	14.0	4.4	4.07	0	0	1.05	4.3	0.00	67	40	0.1	4.3	59.2	64.6	0.0
1	5	2010	121	0		4.4	0.2	3.71	0	0	1.05	3.9	0.00	67	40	0.3	3.9	59.0	59.2	0.0
2	5	2010	122	0		0.2	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.3	1.3	60.1	59.0	0.0
3	5	2010	123	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.3	1.0	61.1	60.1	0.0
4	5	2010	124	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.2	0.9	62.0	61.1	0.0
5	5	2010	125	16.8	##	16.8	5.8	3.71	0	0	1.05	3.9	0.00	67	40	0.2	3.9	54.9	62.0	0.0
6	5	2010	126	0.5	##	6.3	1.1	3.71	0	0	1.05	3.9	0.00	67	40	0.5	3.9	53.6	54.9	0.0
7	5	2010	127	0		1.1	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	2.5	55.0	53.6	0.0
8	5	2010	128	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	1.8	56.8	55.0	0.0
9	5	2010	129	35.6	##	32.0	12.7	3.71	0.1	3.56	1.05	3.9	0.00	67	40	0.4	3.9	41.3	56.8	0.0
10	5	2010	130	0		12.7	3.9	3.71	0.05	0	1.05	3.9	0.00	67	40	1.0	3.9	36.5	41.3	0.0
11	5	2010	131	0		3.9	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	1.0	3.9	36.5	36.5	0.0
12	5	2010	132	0		0.0	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	1.0	3.9	40.3	36.5	0.0
13	5	2010	133	0		0.0	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	1.0	3.9	44.2	40.3	0.0
14	5	2010	134	0		0.0	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	0.9	3.3	47.6	44.2	0.0
15	5	2010	135	0		0.0	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	0.7	2.9	50.4	47.6	0.0

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16	5	2010	136	0		0.0	0.0	3.71	G	0	1.05	3.9	0.00	67	40	0.6	2.4	52.9	50.4	0.0
17	5	2010	137	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	2.1	54.9	52.9	0.0
18	5	2010	138	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	1.8	56.7	54.9	0.0
19	5	2010	139	5	##	5.0	0.5	3.71	0	0	1.05	3.9	0.00	67	40	0.4	3.9	56.1	56.7	0.0
20	5	2010	140	15.7	##	16.2	5.5	3.71	0	0	1.05	3.9	0.00	67	40	0.4	3.9	49.3	56.1	0.0
21	5	2010	141	0		5.5	0.7	3.71	0.05	0	1.05	3.9	0.00	67	40	0.7	3.9	48.4	49.3	0.0
22	5	2010	142	0		0.7	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	0.7	2.9	50.7	48.4	0.0
23	5	2010	143	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.6	2.4	53.1	50.7	0.0
24	5	2010	144	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	2.1	55.1	53.1	0.0
25	5	2010	145	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	1.8	56.9	55.1	0.0
26	5	2010	146	20.7	##	18.6	6.6	3.71	0.1	2.07	1.05	3.9	0.00	67	40	0.4	3.9	48.8	56.9	0.0
27	5	2010	147	0		6.6	1.2	3.71	0.05	0	1.05	3.9	0.00	67	40	0.7	3.9	47.3	48.8	0.0
28	5	2010	148	0		1.2	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	0.7	3.2	49.2	47.3	0.0
29	5	2010	149	0		0.0	0.0	3.71	0.05	0	1.05	3.9	0.00	67	40	0.7	2.6	51.8	49.2	0.0
30	5	2010	150	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.6	2.2	54.1	51.8	0.0
31	5	2010	151	0		0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.5	1.9	56.0	54.1	0.0
1	6	2010	152	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	OA	1.3	57.3	56.0	0.0
2	6	2010	153	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	OA	1.2	58.5	57.3	0.0
3	6	2010	154	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	0.3	1.0	59.5	58.5	0.0
4	6	2010	155	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	0.3	0.9	60.4	59.5	0.0
5	6	2010	156	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	0.3	0.8	61.2	60A	0.0
6	6	2010	157	0.9	##	0.9	0.0	3.02	0	0	1.05	3.2	0.00	67	40	0.2	1.4	61.7	61.2	0.0
7	6	2010	158	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	0.2	0.6	62.4	61.7	0.0
8	6	2010	159	13.4	##	13A	4.6	3.02	0	0	1.05	3.2	0.00	67	40	0.2	3.2	56.8	62A	0.0
9	6	2010	160	0		4.6	0.6	3.02	0	0	1.05	3.2	0.00	67	40	OA	3.2	56.0	56.8	0.0
10	6	2010	161	0		0.6	0.0	3.02	0	0	1.05	~~.2	0.00	67	40	OA	1.7	57.0	56.0	0.0
11	6	2010	162	18.4	##	18A	6.9	3.02	0	0	1.05	3.2	0.00	67	40	OA	3.2	48.7	57.0	0.0
12	6	2010	163	0		6.9	1.7	3.02	0.05	0	1.05	3.2	0.00	67	40	0.69	3.2	46.6	48.7	0.0
13	6	2010	164	0.4	##	2.0	0.0	3.02	0.05	0.02	1.05	3.2	0.00	67	40	0.8	2.9	47.5	46.6	0.0
14	6	2010	165	8	##	7.6	2.0	3.02	0.05	OA	1.05	3.2	0.00	67	40	0.7	3.2	45.1	47.5	0.0
15	6	2010	166	0		2.0	0.0	3.02	0.05	0	1.05	3.2	0.00	67	40	0.8	3.0	46.0	45.1	0.0
16	6	2010	167	3	##	2.9	0.0	3.02	0.05	0.15	1.05	3.2	0.00	67	40	0.8	3.1	46.3	46.0	0.0
17	6	2010	168	0		0.0	0.0	3.02	0.05	0	1.05	3.2	0.00	67	40	0.8	2.5	48.8	46.3	0.0
18	6	2010	169	0		0.0	0.0	3.02	0.05	0	1.05	3.2	0.00	67	40	0.7	2.2	50.9	48.8	0.0
19	6	2010	170	0		0.0	0.0	3.02	0	0	[illegible]	3.2	0.00	67	40	[illegible]	1.9	52.9	50.9	0.0
20	6	2010	171	0		0.0	0.0	3.02	0	0	1.05	3.2	000	67	40	0.5	1.7	54.6	52.9	0.0
21	6	2010	172	0		0.0	0.0	3.02	0	0	1.05	3.2	0.00	67	40	0.5	1.5	56.1	54.6	0.0

22	6	2010	173	58.4	##	46.7	19.6	3.02	0.2	11.68	1.05	3.2	0.00	67	40	0.4	3.2	32.1	56.1	0.0
23	6	2010	174	0		19.6	7.4	3.02	0.05	0	1.05	3.2	0.00	67	40	1.0	3.2	23.1	32.1	0.0
24	6	2010	175	0		7.4	1.9	3.02	0.05	0	1.05	3.2	0.00	67	40	1.0	3.2	20.7	23.1	0.0
25	6	2010	176	0		1.9	0.0	3.02	0.05	0	1.05	3.2	0.00	67	40	1.0	3.2	22.0	20.7	0.0
26	6	2010	177	4.3	##	4.1	0.4	3.02	0.05	0.215	1.05	3.2	0.00	67	40	1.0	3.2	21.5	22.0	0.0
27	6	2010	178	1.6	##	1.9	0.0	3.02	0.05	0.08	1.05	3.2	0.00	67	40	1.0	3.2	22.8	21.5	0.0
28	6	2010	179	0		0.0	0.0	3.02	0.05	0	1.05	3.2	0.00	67	40	1.0	3.2	25.9	22.8	0.0
29	6	2010	180	0.5	##	0.5	0.0	3.02	0.05	0.025	1.05	3.2	0.00	67	40	1.0	3.2	28.6	25.9	0.0
30	6	2010	181	0		0.0	0.0	3.02	0.05	0	1.05	3.2	0.00	67	40	1.0	3.2	31.8	28.6	0.0
1	7	2010	182	0		0.0	0.0	3.27	0.05	0	1.05	3.4	0.00	67	40	1.0	3.4	35.2	31.8	0.0
2	7	2010	183	0		0.0	0.0	3.27	0.05	0	1.05	3.4	0.00	67	40	1.0	3.4	38.7	35.2	0.0
3	7	2010	184	0		0.0	0.0	3.27	0.05	0	1.05	3.4	0.00	67	40	1.0	3.4	42.1	38.7	0.0
4	7	2010	185	0		0.0	0.0	3.27	0.05	0	1.05	3.4	0.00	67	40	0.9	3.2	45.3	42.1	0.0
5	7	2010	186	0		0.0	0.0	3.27	0.05	0	1.05	3.4	0.00	67	40	0.8	2.8	48.1	45.3	0.0
6	7	2010	187	0		0.0	0.0	3.27	0.05	0	1.05	3.4	0.25	67	40	0.7	2.4	50.6	48.1	0.0
7	7	2010	188	0		0.0	0.0	3.27	0	0	1.05	3.4	0.25	67	40	0.6	2.1	52.7	50.6	0.0
8	7	2010	189	1.5	##	1.5	0.0	3.27	0	0	1.05	3.4	0.25	67	40	0.5	2.5	53.7	52.7	0.0
9	7	2010	190	0		0.0	0.0	3.27	0	0	1.05	3.4	0.25	67	40	0.5	1.7	55.5	53.7	0.0
10	7	2010	191	6.6	##	6.6	1.4	3.27	0	0	1.05	3.4	0.25	67	40	0.4	3.4	53.7	55.5	0.0
11	7	2010	192	0.2	##	1.6	0.0	3.27	0	0	1.05	3.4	0.25	67	40	0.5	2.5	54.6	53.7	0.0
12	7	2010	193	0		0.0	0.0	3.27	0	0	1.05	3.4	0.28	70	42	0.6	1.9	56.5	54.6	0.0
13	7	2010	194	2.4	##	2.4	0.0	3.27	0	0	1.05	3.4	0.30	77	46	0.7	3.1	57.2	56.5	0.0
14	7	2010	195	0		0.0	0.0	3.27	0	0	1.05	3.4	0.33	84	51	0.8	2.8	60.0	57.2	0.0
15	7	2010	196	5.6	##	5.6	1.0	3.27	0	0	1.06	3.5	0.36	91	55	0.9	3.5	58.8	60.0	0.0
16	7	2010	197	0		1.0	0.0	3.27	0	0	1.06	3.5	0.39	98	59	1.0	3.5	61.3	58.8	0.0
17	7	2010	198	0		0.0	0.0	3.27	0	0	1.06	3.5	0.41	105	63	1.0	3.5	64.8	61.3	0.0
18	7	2010	199	8.5	##	8.5	2.3	3.27	0	0	1.06	3.5	0.44	112	67	1.0	3.5	62.0	64.8	0.0
19	7	2010	200	2.9	##	5.2	0.8	3.27	0	0	1.06	3.5	0.47	119	71	1.0	3.5	61.1	62.0	0.0
20	7	2010	201	0		0.8	0.0	3.27	0	0	1.06	3.5	0.49	126	75	1.0	3.5	63.8	61.1	0.0
21	7	2010	202	0		0.0	0.0	3.27	0	0	1.06	3.5	0.52	132	79	1.0	3.5	67.3	63.8	0.0
22	7	2010	203	10.9	##	10.9	3.3	3.27	0	0	1.07	3.5	0.55	139	84	1.0	3.5	63.2	67.3	0.0
23	7	2010	204	0		3.3	0.0	3.27	0	0	1.07	3.5	0.58	146	88	1.0	3.5	63.3	63.2	0.0
24	7	2010	205	0		0.0	0.0	3.27	0	0	1.07	3.5	0.60	153	92	1.0	3.5	66.8	63.3	0.0
25	7	2010	206	0		0.0	0.0	3.27	0	0	1.07	3.5	0.63	160	96	1.0	3.5	70.3	66.8	0.0
26	7	2010	207	11.3	##	11.3	3.5	3.27	0	0	1.07	3.5	0.66	167	100	1.0	3.5	66.0	70.3	0.0
27	7	2010	208	1.1	##	4.6	0.5	3.27	0	0	1.07	3.5	0.68	174	104	1.0	3.5	65.4	66.0	0.0
28	7	2010	209	28.6	##	26.2	10.2	3.27	0.1	2.86	1.07	3.5	0.71	181	108	1.0	3.5	52.9	65.4	0.0

29	7	2010	210	10.2	"	20.4	7.6	3.27	0	C	1.08	3.5	0.74	188	113	1.0	3.5	43.6	52.9	0.0
30	7	2010	211	7.6	tI#	14.8	5.1	3.27	0.05	0.38	1.08	3.5	0.77	194	117	1.0	3.5	37.4	43.6	0.0
31	7	2010	212	0		5.1	0.7	3:27	0.05	0	1.08	3.5	0.79	201	121	1.0	3.5	36.6	37.4	0.0
1	8	2010	213	56.3	tI#	42.9	0.0	4.1	0.25	14.075	1.08	4.4	0.82	208	125	1.0	4.4	-1.9	36.6	1.9
2	8	2010	214	1.3	tI#	1.2	0.0	4.1	0.1	0.13	1.08	4.4	0.85	215	12;	1.0	4.4	3.3	0.0	0.0
3	8	2010	215	0		0.0	0.0	4.1	0.1	0	1.08	4.4	0.87	222	133	1.0	4.4	7.7	3.3	0.0
4	8	2010	216	48.7	tI#	46.8	0.0	4.1	0.04	1.948	1.08	4.4	0.90	229	137	1.0	4.4	-34.6	7.7	34.6
5	8	2010	217	1	tI#	0.9	0.0	4.1	0.1	0.1	1.09	4.5	0.93	236	142	1.0	4.5	3.6	0.0	0.0
6	8	2010	218	0		0.0	0.0	4.1	0.1	0	1.09	4.5	0.96	243	146	1.0	4.5	8.0	3.6	0.0
7	8	2010	219	43.7	tI#	42.0	0.0	4	0.04	1.748	1.09	4.4	0.98	250	150	1.0	4.4	-29.6	8.0	29.6
8	8	2010	220	0		0.0	0:0	4	0.1	0	1.09	4.4	1.01	257	154	1.0	4.4	4.4	0.0	0.0
9	8	2010	221	0.3	##	0.3	0.0	4	0.1	0.03	1.09	4.4	1.04	263	158	1.0	4.4	8.5	4.4	0.0
10	8	2010	222	0		0.0	0.0	4	0.1	0	1.09	4.4	1.06	270	162	1.0	4.4	12.8	8.5	0.0
11	8	2010	223	1.3	##	1.2	0.0	4	0.1	0.13	1.09	4.4	1.09	277	166	1.0	4.4	16.0	12.8	0.0
12	8	2010	224	0		0.0	0.0	4	0.1	0	1.10	4.4	1.12	284	170	1.0	4.4	20.4	16.0	0.0
13	8	2010	225	14.2	##	13.5	4.1	4	0.05	0.71	1.10	4.4	1.15	291	175	1.0	4.4	15.4	20.4	0.0
14	8	2010	226	0		4.1	0.0	3.9	0.1	0	1.10	4.3	1.17	298	179	1.0	4.3	15.6	15.4	0.0
15	8	2010	227	1.7	##	1.5	0.0	3.9	0.1	.0.17	1.10	4.3	1.20	305	183	1.0	4.3	18.4	15.6	0.0
16	8	2010	228	0.:1	##	0,1	0.0	3.9	0.1	0.01	1.10	4.3	1.20	305	183	1.0	4.3	22.6	18.4	0.0
17	8	2010	229	69.7	##	52.3	0.0	3.9	0.25	17.425	1.10	4.3	1.20	305	183	1.0	4.3	-25.4	22.6	25.4
18	8	.2010	230	25.5-'.,	##	24~5	0.0J	3.9	0.04	1.02	1.10	4.3	1.20	305	183	1.0	4.3	-20.2	0.0	20.2
19	8	2010	231	0.4_	##	0.4	0.0	3.9	0.1	0.04	1.10	4.3	1.20	305	183	1.0	4.3	3.9	0.0	0.0
20.	B	'2010	232	2.5	##	2.3	0.0	3.9	0.1	0.25	1.10	4.3	1.20	305	183	1.0	4.3	6.0	3.9	0.0
21	8	2010	233	35.8	##	34.4	0.0	3.9	0.04	1.432	1.10	4.3	1.20	305	183	1.0	4.3	-24.1	6.0	24.1
22	8	2010	234	0.6	##	0.5	0.0	3.9	0.1	0.06	1.10	4.3	1.20	305	183	1.0	4.3	3.8	0.0	0.0
23	8	2010	235	8.7	##	7.8	1.6	3.9	0.1	0.87	1.10	4.3	1.20	305	183	1.0	4.3	1.8	3.8	0.0
24	8	2010	236	0.4	##	2.0	0.0	4	0.1	0.04	1.10	4.4	1.20	305	183	1.0	4.4	4.3	1.8	0.0
25	8	2010	237	0		0.0	0.0	4	0.1	0	1.10	4.4	1.20	305	183	1.0	4.4	8.7	4.3	0.0
26	8	2010	238	28.6	##	27.5	0.0	4	0.04	1.144	1.10	4.4	1.20	305	183	1.0	4.4	-14.4	8.7	14.4
27	8	2010	239	0.6	##	0.5	0.0	4	0.1	0.06	1.10	4.4	1.20	305	183	1.0	4.4	3.9	0.0	0.0
28	8	2010	240	0		0.0	0.0	4	0.1	0	1.10	4.4	1.20	305	183	1.0	4.4	8.3	3.9	0.0
29	8	2010	241	87.6	##	61.3	0.0	4	0.3	26.28	1.10	4.4	1.20	305	183	1.0	4.4	-48.7	8.3	48.7
30	8	2010	242	13.3	##	12.0	0.0	4	0.1	1.33	1.10	4.4	1.20	305	183	1.0	4.4	-7.6	0.0	7.6
31	8	2010	243	0.7	##	0.6	0.0	4	0.1	. 0.07	1.10	4.4	1.20	305	183	1.0	4.4	3.8	0.0	0.0
	9	2010	244	95.2	##	66.6	0.0	4	0.3	28.56	1.10	4.4	1.20	305	183	1.0	4.4	-58.5	3.8	58.5
2	9	2010	245	7.1	##	6.4	0.0	4.57	0.1	0.71	1.10	5.0	1.20	305	183	1.0	5.0	-1.4	0.0	1.4
3	9	2010	246	13.3	##	12.0	0.0	4.58	0.1	1.33	1.10	5.0	1.20	305	183	1.0	5.0	-6.9	0.0	6.9

4	9	2010	247	0.8	##	0.7	0.0	4.59	0.1	0.08	1.10	5.1	1.20	305	183	1.0	5.1	4.3	0.0	0.0
5	9	2010	248	19.7	##	17.7	0.0	4.60	0.1	1.97	1.10	5.1	1.20	305	183	1.0	5.1	-8.3	4.3	8.3
6	9	2010	249	21.9	##	21.0	0.0	4.61	0.04	0.876	1.10	5.1	1.20	305	183	1.0	5.1	-15.9	0.0	15.9
7	9	2010	250	0.0		0.0	0.0	4.62	0.1	0	1.10	5.1	1.20	305	183	1.0	5.1	5.1	0.0	0.0
8	9	2010	251	0.0		0.0	0.0	4.63	0.1	0	1.10	5.1	1.20	305	183	1.0	5.1	10.2	5.1	0.0
9	9	2010	252	3.7	##	3.3	0.0	4.64	0.1	0.37	1.10	5.1	1.20	305	183	1.0	5.1	12.0	10.2	0.0
10	9	2010	253	1.6	##	1.4	0.0	4.65	0.1	0.16	1.10	5.1	1.20	305	183	1.0	5.1	15.6	12.0	0.0
11	9	2010	254	0.0		0.0	0.0	4.66	0.1	0	1.10	5.1	1.20	305	183	1.0	5.1	20.8	15.6	0.0
12	9	2010	255	16.4	##	15.6	4.7	4.67	0.05	0.82	1.10	5.1	1.20	305	183	1.0	5.1	15.0	20.8	0.0
13	9	2010	256	24.8	##	28.5	0.0	4.68	0.04	0.992	1.10	5.1	1.20	305	183	1.0	5.1	-8.3	15.0	8.3
14	9	2010	257	18.1	##	16.3	0.0	4.69	0.1	1.81	1.10	5.2	1.20	305	183	1.0	5.2	-11.1	0.0	11.1
15	9	2010	258	9.9	##	8.9	0.0	4.70	0.1	0.99	1.10	5.2	1.20	305	183	1.0	5.2	-3.7	0.0	3.7
16	9	2010	259	0.0		0.0	0.0	4.70	0.1	0	1.10	5.2	1.20	305	183	1.0	5.2	5.2	0.0	0.0
17	9	2010	260	19.8	##	17.8	0.0	4.71	0.1	1.98	1.10	5.2	1.20	305	183	1.0	5.2	-7.5	5.2	7.5
18	9	2010	261	0.0		0.0	0.0	4.71	0.1	0	1.10	5.2	1.20	305	183	1.0	5.2	5.2	0.0	0.0
19	9	2010	262	0.0		0.0	0.0	4.71	0.1	0	1.10	5.2	1.20	305	183	1.0	5.2	10.4	5.2	0.0
20	9	2010	263	17.9	##	16.1	0.0	4.72	0.1	1.79	1.07	5.0	1.20	305	183	1.0	5.0	-0.7	10.4	0.7
21	9	2010	264	0.0		0.0	0.0	4.72	0.1	0	1.03	4.9	1.20	305	183	1.0	4.9	4.9	0.0	0.0
22	9	2010	265	1.8	##	1.6	0.0	4.72	0.1	0.18	1.00	4.7	1.20	305	183	1.0	4.7	8.0	4.9	0.0
23	9	2010	266	0.0		0.0	0.0	4.73	0.1	0	0.97	4.6	1.20	305	183	1.0	4.6	12.5	8.0	0.0
24	9	2010	267	8.8	##	7.9	1.6	4.73	0.1	0.88	0.93	4.4	1.20	305	183	1.0	4.4	10.6	12.5	0.0
25	9	2010	268	0.0		1.6	0.0	4.73	0.1	0	0.90	4.3	1.20	305	183	1.0	4.3	13.3	10.6	0.0
26	9	2010	269	0.0		0.0	0.0	4.74	0.1	0	0.87	4.1	1.20	305	183	1.0	4.1	17.4	13.3	0.0
27	9	2010	270	24.6	##	23.6	0.0	4.74	0.04	0.984	0.83	4.0	1.20	305	183	1.0	4.0	-2.3	17.4	2.3
28	9	2010	271	0.0		0.0	0.0	4.74	0.1	0	0.80	3.8	1.20	305	183	1.0	3.8	3.8	0.0	0.0
29	9	2010	272	0.0		0.0	0.0	4.75	0.1	0	0.77	3.6	1.20	305	183	1.0	3.6	7.4	3.8	0.0
30	9	2010	273	5.6	##	5.0	0.7	4.75	0.1	0.56	0.73	3.5	1.20	305	183	1.0	3.5	6.6	7.4	0.0
1	10	2010	274	0		0.7	0.0	4.75	0.1	0	0.70	3.3	1.20	305	183	1.0	3.3	9.2	6.6	0.0
2	10	2010	275	0		0.0	0.0	4.76	0.1	0	0.67	3.2	1.20	305	183	1.0	3.2	12.4	9.2	0.0
3	10	2010	276	0		0.0	0.0	4.76	0.1	0	0.63	3.0	1.20	305	183	1.0	3.0	15.4	12.4	0.0
4	10	2010	277	0		0.0	0.0	4.76	0.1	0	0.60	2.9	0.00	67	40	1.0	2.9	18.2	15.4	0.0
5	10	2010	278	0		0.0	0.0	4.77	0.1	0	0.65	3.1	0.00	67	40	1.0	3.1	21.3	18.2	0.0
6	10	2010	279	0		0.0	0.0	4.77	0.05	0	0.69	3.3	0.00	67	40	1.0	3.3	24.6	21.3	0.0
7	10	2010	280	0		0.0	0.0	4.77	0.05	0	0.74	3.5	0.00	67	40	1.0	3.5	28.1	24.6	0.0
8	10	2010	281	0		0.0	0.0	4.78	0.05	0	0.78	3.7	0.00	67	40	1.0	3.7	31.8	28.1	0.0
9	10	2010	282	0		0.0	0.0	4.78	0.05	0	0.83	3.9	0.00	67	40	1.0	3.9	35.8	31.8	0.0
10	10	2010	283	0		0.0	0.0	4.78	0.05	0	0.87	4.2	0.00	67	40	1.0	4.2	40.0	35.8	0.0

11	10	2010	284	0	0.0	0.0	4.79	0.05	0	0.92	4.4	0.00	67	40	1.0	4.4	«.3	40.0	0.0
12	10	2010	285	0	0.0	0.0	4.79	0.05	0	0.96	4.6	0.00	67	40	0.9	3.9	48.3	44.3	0.0
13	10	2010	286	0	0.0	0.0	4.79	0.05	0	1.01	4.8	0.00	67	40	0.7	3.4	51.7	48.3	0.0
14	10	2010	287	0	0.0	0.0	4.80	0	0	1.05	5.0	0.00	67	40	0.6	2.9	54.6	51.7	0.0
15	10	2010	288	0	0.0	0.0	4.80	0	0	1.05	5.0	0.00	67	40	0.5	2.4	56.8	54.6	0.0
16	10	2010	289	0	0.0	0.0	4.79	0	0	1.05	5.0	0.00	67	40	0.4	1.9	58.i	56.9	0.0
17	10	2010	290	0	0.0	0.0	4.77	0	0	1.05	5.0	0.00	67	40	0.3	1.6	60.4	58.9	0.0
18	10	2010	291	0	0.0	0.0	4.76	0	0	1.05	5.0	0.00	67	40	0.3	1.3	61.7	60.4	0.0
19	10	2010	292	0	0.0	0.0	4.75	0	0	1.05	5.0	0.00	67	40	0.2	1.0	62.7	61.7	0.0
20	10	2010	293	0	0.0	0.0	4.74	0	0	1.05	5.0	0.00	67	40	0.2	0.8	63.6	62.7	0.0
21	10	2010	294	0	0.0	0.0	4.72	0	'O	1.05	5.0	0.00	67	40	0.1	0.7	64.2	63.6	0.0
22	10	2010	295	0	0.0	0.0	4.71	0	0	1.05	4.9	0.00	67	40	0.1	0.6	64.S	64.2	0.0
23	10	20iO	296	0	0.0	0.0	4.70	0	0	1.05	4.9	0.00	67	40	0.1	0.4	65.2	64.8	0.0
24	10	2010	297	0	0.0	0.0	4.68	0	0	1.05	4.9	0.00	67	40	0.1	0.4	65.6	65.2	0.0
25	10	2010	298	0	0.0	0.0	4.67	0	0	1.05	4.9	0.00	67	40	0.1	0.3	65.9	65.6	0.0
26	10	2010	299	0	0.0	0.0	4.66	0	0	1.05	4.9	0.00	67	40	0.0	0.2	66.2	65.9	0.0
27	10	2010	300	0	0.0	0.0	4.65	0	0	1.05	4.9	0.00	67	40	0.0	0.2	66.4	66.2	0.0
28	10	2010	301	0	0.0	0.0	4.63	0	0	1.05	4.9	0.00	67	40	0.0	0.2	66.5	66.4	0.0
29	10	2010	302	0	0.0	0.0	4.62	0	0	1.05	4.9	0.00	67	40	0.0	0.1	66.6	66.5	0.0
30	10	2010	303	0	0.0	0.0	4.61	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.S	66.6	0.0
31	10	2010	304	0	0.0	0.0	4.59	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.S	66.8	0.0
1	11	2010	305	0	0.0	0.0	4.58	0	0	1.05	4.8	0.00	67	40	6.0	0.1	66.9	66.8	0.0
2	11	2010	306	0	0.0	0.0	4.57	0	0	1.05	4.8	0.00	67	40	0.0	0.1	67.0	66.9	0.0
3	11	2010	307	0	0.0	0.0	4.55	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.0	67.0	0.0
4	11	2010	308	0	0.0	0.0	4.54	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.1	67.0	0.0
5	11	2010	309	0	0.0	0.0	4.53	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.1	67.1	0.0
6	11	2010	310	0	0.0	0.0	4.52	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.1	67.1	0.0
7	11	2010	311	0	0.0	0.0	4.50	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.1	67.1	0.0
8	11	2010	312	0	0.0	0.0	4.49	0	a	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.1	0.0
9	11	2010	313	0	0.0	0.0	4.48	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	11	2010	314	0	0.0	0.0	4.46	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	11	2010	315	0	0.0	0.0	4.45	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	11	2010	316	0	0.0	0.0	4.44	0	a	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	11	2010	317	0	0.0	0.0	4.43	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	11	2010	318	a	0.0	0.0	4.41	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	11	2010	319	0	0.0	0.0	4.40	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	11	2010	320	0	0.0	0.0	4.39	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0

17	11	2010	321	0	0.0	0.0	4.38	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	11	2010	322	0	0.0	0.0	4.37	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	11	2010	323	0	0.0	0.0	4.36	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	11	2010	324	0	0.0	0.0	4.35	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	11	2010	325	0	0.0	0.0	4.34	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	11	2010	326	0	0.0	0.0	4.33	0	a	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	11	2010	327	0	0.0	0.0	4.32	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	11	2010	328	0	0.0	0.0	4.31	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	11	2010	329	0	0.0	0.0	4.30	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	11	2010	330	0	0.0	0.0	4.29	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	11	2010	331	0	0.0	0.0	4.28	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	11	2010	332	0	0.0	0.0	4.27	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
29	11	2010	333	0	0.0	0.0	4.26	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	11	2010	334	0	0.0	0.0	4.25	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	12	2010	335	0	0.0	0.0	4.24	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	12	2010	336	0	0.0	0.0	4.23	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	12	2010	337	0	0.0	0.0	4.22	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	12	2010	338	0	0.0	0.0	4.21	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	12	2010	339	0	0.0	0.0	4.20	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	12	2010	340	0	0.0	0.0	4.19	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	12	2010	341	0	0.0	0.0	4.18	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	12	2010	342	0	0.0	0.0	4.17	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	12	2010	343	0	0.0	0.0	4.16	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	12	2010	344	0	0.0	0.0	4.15	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	12	2010	345	0	0.0	0.0	4.14	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	12	2010	346	0	0.0	0.0	4.13	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	12	2010	347	0	0.0	0.0	4.12	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	12	2010	348	0	0.0	0.0	4.11	0	0	1.05	4.3	0.00	õ1	40	0.0	0.0	67.2	67.2	0.0
15	12	2010	349	0	0.0	0.0	4.10	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	12	2010	350	0	0.0	0.0	4.09	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	12	2010	351	0	0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	12	2010	352	0	0.0	0.0	4.06	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	12	2010	353	0	0.0	0.0	4.05	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	12	2010	354	0	0.0	0.0	4.04	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	12	2010	355	0	0.0	0.0	4.02	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	12	2010	356	0	0.0	0.0	4.01	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	12	2010	357	0	0.0	0.0	4.00	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0

24	12	2010	358	0	0.0	0.0	3.96	0	0	1.0~	4.2	0.00	67	.0	0.0	0.0	67.2	67.2	0.0
25	12	2010	359	0	0.0	0.0	3.97	0	0	1.05	4.2	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
26	12	2010	360	0	0.0	0.0	3.96	0	0	1.05	4.2	0.00	67	.0	0.0	0.0	67.2	67.2	0.0
27	12	2010	361	0	0.0	0.0	3.95	0	0	1.05	4.1	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
28	12	2010	362	0	0.0	0.0	3.93	0	0	1.05	4.1	0.00	67	.0	0.0	0.0	87.2	67.2	0.0
29	12	2010	363	0	0.0	0.0	3.92	0	0	1.05	4.1	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
30	12	2010	364	0	0.0	0.0	3.91	0	0	1.05	4.1	0.00	67	.0	0.0	0.0	67.2	67.2	0.0
31	12	2010	365	0	0.0	0.0	3.89	0	0	1.05	4.1	0.00	67	.0	0.0	0.0	67.2	67.2	0.0
1	1	2000	1	0	0.0	0.0	3.88	0	0	0.65	2.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
2	1	2000	2	0	0.0	0.0	3.87	0	0	0.69	2.7	0.00	67	.0	0.0	0.0	67.2	67.2	0.0
3	1	2000	3	0	0.0	0.0	3.85	0	0	0.74	2.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	1	2000	4	0	0.0	0.0	3.84	0	0	0.78	3.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	1	2000	5	a	0.0	0.0	3.83	0	0	0.83	3.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	1	2000	6	0	0.0	0.0	3.82	0	0	0.87	3.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	1	2000	7	0	0.0	0.0	3.80	0	0	0.92	3.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	1	2000	8	0	0.0	0.0	3.79	0	0	0.96	3.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	1	2000	9	0	0.0	0.0	3.78	0	0	1.01	3.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	1	2000	10	0	0.0	0.0	3.76	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	1	2000	11	0	0.0	0.0	3.75	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	1	2000	12	0	0.0	0.0	3.74	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	1	2000	13	'0	0.0	0.0	3.73	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	1	2000	14	0	0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	1	2000	15	0	0.0	0.0	3.70	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	1	2000	16	0	0.0	0.0	3.72	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	1	2000	17	0	0.0	0.0	3.73	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	1	2000	18	0	0.0	0.0	3.75	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	1	2000	19	0	0.0	0.0	3.76	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	1	2000	20	0	0.0	0.0	3.78	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	1	2000	21	0	0.0	0.0	3.80	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	1	2000	22	0	0.0	0.0	3.81	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	1	2000	23	0	0.0	0.0	3.83	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	1	2000	24	0	0.0	0.0	3.85	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	1	2000	25	0	0.0	0.0	3.86	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	1	2000	26	0	0.0	0.0	3.88	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	1	2000	27	0	0.0	0.0	3.89	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	1	2000	28	0	0.0	0.0	3.91	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
29	1	2000	29	0	0.0	0.0	3.93	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0

30	1	2000	30	0	0.0	0.0	3.94	0	0	1.05	4.1	0.00	67	.0	0.0	0.0	67.2	67.2	0.0
31	1	2000	31	0	0.0	0.0	3.96	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	2	2000	32	0	0.0	0.0	3.97	0	0	1.05	4.2	0.00	67	.o	0.0	0.0	61.2	67.2	0.0
2	2	2000	33	0	0.0	0.0	3.99	0	0	1.05	4.2	0.00	67	.o	0.0	0.0	67.2	67.2	0.0
3	2	2000	34	0	0.0	0.0	4.01	0	0	1.05	4.2	0.00	67	40	0.0	0.0	61.2	67.2	0.0
4	2	2000	35	0	0.0	0.0	4.02	0	0	1.05	4.2	0.00	67	.o	0.0	0.0	67.2	67.2	0.0
5	2	2000	36	0	0.0	0.0	4.04	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	2	2000	37	0	0.0	0.0	4.05	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	2	2000	38	0	0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	2	2000	39	0	0.0	0.0	4.09	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	2	2000	40	0	0.0	0.0	4.10	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	2	2000	41	0	0.0	0.0	4.12	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	2	2000	42	0	0.0	0.0	4.14	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	2	2000	43	0	0.0	0.0	4.15	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	2	2000	44	0	0.0	0.0	4.17	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	2	2000	45	0	0.0	0.0	4.18	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	2	2000	46	0	0.0	0.0	4.20	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	2	2000	47	0	0.0	0.0	4.21	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	2	2000	48	0	0.0	0.0	4.23	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	2	2000	49	0	0.0	0.0	4.24	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	2	2000	50	0	0.0	0.0	4.26	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	2	2000	51	0	0.0	0.0	4.27	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	2	2000	52	0	0.0	0.0	4.29	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	2	2000	53	0	0.0	0.0	4.30	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	2	2000	54	0	0.0	0.0	4.31	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	2	2000	55	0	0.0	0.0	4.33	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	2	2000	56	0	0.0	0.0	4.34	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	2	2000	57	0	0.0	0.0	4.36	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	2	2000	58	0	0.0	0.0	4.37	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	2	2000	59	0	0.0	0.0	4.39	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	3	2000	60	0	0.0	0.0	4.40	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	3	2000	61	0	0.0	0.0	4.41	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	3	2000	62	0	0.0	0.0	4.43	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0,0
4	3	2000	63	0	0.0	0.0	4.44	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	3	2000	64	0	0.0	0.0	4.46	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	3	2000	65	0	0.0	0.0	4.47	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	3	2000	66	0	0.0	0.0	4.49	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0

8	3	2000	67	0	0.0	0.0	4.50	0	0	1.05	4.7	0.00	57	40	0.0	0.0	67.2	67.2	0.0
9	3	2000	68	0	0.0	0.0	4.51	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	3	2000	69	0	0.0	0.0	4.53	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	3	2000	70	0	0.0	0.0	4.54	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	3	2000	71	0	0.0	0.0	4.56	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	3	2000	72	0	0.0	0.0	4.57	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	3	2000	73	0	0.0	0.0	4.59	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	3	2000	74	0	0.0	0.0	4.60	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	3	2000	75	0	0.0	0.0	4.63	0	0	1.05	4.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	3	2000	76	0	0.0	0.0	4.65	0	0	1.05	4.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	3	2000	77	0	0.0	0.0	4.68	0	0	1.05	4.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	3	2000	78	0	0.0	0.0	4.70	0	0	1.05	4.9	0.00	67	040	0.0	0.0	67.2	67.2	0.0
20	3	2000	79	0	0.0	0.0	4.73	0	0	1.05	5.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	3	2000	80	0	0.0	0.0	4.75	0	0	1.05	5.0	0.00	67	040	0.0	0.0	67.2	67.2	0.0
22	3	2000	81	0	0.0	0.0	4.78	0	0	1.05	5.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	3	2000	82	0	0.0	0.0	4.81	0	0	1.05	5.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	3	2000	83	0	0.0	0.0	4.83	0	0	1.05	5.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	3	2000	84	0	0.0	0.0	4.86	0	0	1.05	5.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	3	2000	85	0	0.0	0.0	4.88	0	0	1.05	5.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	3	2000	86	0	0.0	0.0	4.91	0	0	1.05	5.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	3	~OOO	87	Q	0.0	0.0	4.94	0	0	1.05	5.2	0.00	,67,	40"	0.0	0.0	67.2	67.2	'0.0
29	3	2000	88	0	0.0	0.0	4.96	0	0	1.05	5.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	3	2000	89	0	0.0	0.0	4.99	0	0	1.05	5.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
31	3	2000	90	0	0.0	0.0	5.01	0	0	1.05	5.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
	4	2000	91	0	0.0	0.0	5.04	0	0	1.05	5.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	4	2000	92	0	0.0	0.0	5.06	0	0	1.05	5.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	4	2000	93	0	0.0	0.0	5.09	0	0	1.05	5.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	4	2000	94	0	0.0	0.0	5'.12	0	0	1.05	5.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	4	2000	95	0	0.0	0.0	5.14	0	0	1.05	5.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	4	2000	96	0	0.0	0.0	5.17	0	0	1.05	5.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	4	2000	97	0	0.0	0,0	5.19	0	0	1.05	5.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	4	2000	98	0	0.0	0.0	5.22	0	0	1.05	5.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	4	2000	99	0	0.0	0.0	5.25	0	0	1.05	5.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	4	2000	100	0	0.0	0.0	5.27	0	0	1.05	5.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	4	2000	10'1	0	0.0	0.0	5.30	0	0	1.05	5.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	4	2000	102	0	0.0	0.0	5.32	0	0	1.05	5.6	(1.00	67	40	0.0	0.0	67.2	67.2	0.0
13	4	2000	103	0	0.0	0.0	5.35	0	0	1.05	5.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0

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14	4	2000	104	0		0.0	0.0	5.37	0	0	'1.05	5.6	0.00	67	oi.0	0.0	0.0	67.3	67.2	0.0
15	4	2000	105	0		0.0	0.0	5.~0	0	0	1.05	5.7	0.00	67	~o	0.0	0.0	67.3	67.3	0.0
16	4	2000	106	0		0.0	0.0	5.~3	0	0	1.05	5.7	0.00	67	~o	0.0	0.0	67.3	67.3	0.0
17	4	2000	107	0		0.0	0.0	5.~7	0	0	1.05	5.7	0.00	67	~	0.0	0.0	67.3	67.3	0.0
18	4	2000	108	0		0.0	0.0	5.50	0	0	1.05	5.8	0.00	67	~o	0.0	0.0	67.3	67.3	0.0
19	4	2000	109	0		0.0	0.0	5.53	0	0	1.05	5.8	0.00	67	40	0.0	0.0	67.3	67.3	0.0
20	4	2000	110	0		0.0	0.0	5.57	0	0	1.05	5.8	0.00	67	~	0.0	0.0	67.3	67.3	0.0
21	4	2000	111	0		0.0	0.0	5.60	0	0	1.05	5.9	0.00	67	~	0.0	0.0	67.3	67.3	0.0
22	4	2000	112	0		0.0	0.0	5.63	0	0	1.05	5.9	0.00	67	~	0.0	0.0	67.3	67.3	0.0
23	4	2000	113	0		0.0	0.0	5.67	0	0	1.05	6.0	0.00	67	40	0.0	0.0	67.3	67.3	0.0
24	4	2000	114	0		0.0	0.0	5.70	0	0	1.05	6.0	0.00	67	40	0.0	0.0	67.3	67.3	0.0
25	4	2000	115	0		0.0	0.0	5.73	0	0	1.05	6.0	0.00	67	40	0.0	0.0	67.3	67.3	0.0
26	4	2000	116	0		0.0	0.0	5.77	0	0	1.05	6.1	0.00	67	40	0.0	0.0	67.3	67.3	0.0
27	4	2000	117	0		0.0	0.0	5.80	0	0	1.05	6.1	0.00	67	40	0.0	0.0	67.3	67.3	0.0
28	'4	2000	118	0		0.0	0.0	5.83	0	0	1.05	6.1	0.00	67	40	0.0	0.0	67.3	67.3	0.0
29	4	2000	119	0		0.0	0.0	5.87	0	0	1.05	6.2	0.00	67	40	0.0	0.0	67.3	67.3	0.0
30	4	2000	120	0		0.0	0.0	5.90	0	0	1.05	6.2	0.00	67	40	0.0	0.0	67.3	67.3	0.0
1	5	2000	121	0.0		0.0	0.0	5.93	0	0	1.05	6.2	0.00	67	40	0.0	0.0	67.3	67.3	0.0
2	5	2000	122	0.0		0.0	0.0	5.97	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.3	67.3	0.0
3	5	2000	123	0.0		0.0	0.0	6.00	0	0	1.05	6.3	0.00	67	40	0.0	0.0	67.3	67.3	0.0
4	5	2000	124	1.2	##	1.2	0.0	6.03	0	O	1.05	6.3	0.00	67	40	0.0	1.2	67.3	67.3	0.0
5	5	2000	125	0.0		0.0	0.0	6.07	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.3	67.3	0.0
6	5	2000	126	0.0		0.0	0.0	6.10	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.3	67.3	0.0
7	5	2000	127	0.0		0.0	0.0	6.13	0	0	1.05	6.4	0.00	67	40	0.0	0.0	67.3	67.3	0.0
8	5	2000	128	0.0		0.0	0.0	6.17	0	0	1.05	6.5	0.00	67	40	0.0	0.0	67.3	67.3	0.0
9	5	2000	129	0.0		0.0	0.0	6.20	0	0	1.05	6.5	0.00	67	40	0.0	0.0	67.3	67.3	0.0
10	5	2000	130	0.0		0.0	0.0	6.23	0	0	1.05	6.5	0.00	67	40	0.0	0.0	67.3	67.3	0.0
11	5	2000	131	0.0		0.0	0.0	6.27	0	0	1.05	6.6	0.00	67	40	0.0	0.0	67.3	67.3	0.0
12	5	2000	132	0.0		0.0	0.0	6.30	0	0	1.05	6.6	0.00	67	40	0.0	0.0	67.3	67.3	0.0
13	5	2000	133	0.0		0.0	0.0	6.33	0	0	1.05	6.7	0.00	67	40	0.0	0.0	67.3	67.3	0.0
14	5	2000	134	0.0		0.0	0.0	6.37	0	0	1.05	6.7	0.00	67	40	0.0	0.0	67.3	67.3	0.0
15	5	2000	135	0.0		0.0	0.0	6.40	0	0	1.05	6.7	0.00	67	40	0.0	0.0	67.3	67.3	0.0
16	5	2000	136	21.0	##	18.9	5.5	6.39	0.1	2.1	1.05	6.7	0.00	67	40	0.0	6.7	60.5	67.3	0.0
17	5	2000	137	37.3	##	39.1	14.6	6.39	0.1	3.73	1.05	6.7	0.00	67	40	0.2	6.7	42.8	60.5	0.0
18	5	2000	138	1.6	##	16.1	4.2	6.38	0.05	0.08	1.05	6.7	0.00	67	40	0.9	6.7	37.6	42.8	0.0
19	5	2000	139	11.8	##	15.4	3.9	6.37	0.05	0.59	1.05	6.7	0.00	67	40	1.0	6.7	32.8	37.6	0.0
20	5	2000	140	8.1	##	11.6	2.2	6.37	0.05	0.405	1.05	6.7	0.00	67	40	1.0	6.7	30.1	32.8	0.0

21	5	2000	141	1.2	".	3.4	0.0	6.36	0.05	0.06	1.05	6.7	0.00	67	40	1.0	6.7	33.4	30.1	0.0
22	5	2000	142	0.0		0.0	0.0	6.35	0.05	0	1.05	6.7	0.00	67	40	1.0	6.7	40.1	33.4	0.0
23	5	2000	143	1.6	..	1.S	0.0	6.35	0.05	0.08	1.05	6.7	0.00	67	40	1.0	6.7	45.2	40.1	0.0
24	5	2000	144	2.3	..	2.2	0.0	6.34	0.05	0.115	1.05	6.7	0.00	67	40	0.8	5.9	48.1	4S.2	0.0
25	5	2000	145	3.9	..	3.7	0.0	6.34	0.05	0.195	1.05	6.7	0.00	67	40	0.7	S.7	SO.I	48.9	0.0
26	5	2000	146	1.S	..	1.S	0.0	6.33	0	0	1.05	6.6	0.00	67	40	0.6	4.6	54.0	SO.9	0.0
27	5	2000	147	26.9	..	24.2	7.9	6.32	0.1	2.69	1.0S	6.6	0.00	67	40	0.5	6.6	44.4	54.0	0.0
28	5	2000	148	0.0		7.9	0.6	6.32	0.05	0	1.05	6.6	0.00	67	40	0.9	6.6	43.1	44.4	0.0
29	5	2000	149	0.0		0.6	0.0	6.31	0.05	0	1.05	6.6	0.00	67	40	0.9	5.9	49.0	43.7	0.0
30	5	2000	150	6.3	".	6.0	0.0	6.30	0.05	0.315	1.05	6.6	0.00	67	40	0.7	6.4	49.4	49.0	0.0
31	5	2000	151	11.2	##I	10.6	1.8	6.30	0.05	0.56	1.05	6.6	0.00	67	40	0.7	6.6	47.2	49.4	0.0
1	6	2000	152	16.S	tI#	17.5	4.9	6.29	0.05	0.825	1.05	6.6	0.00	67	40	0.7	6.6	41.2	47.2	0.0
2	6	2000	153	3.0	tI#	7.7	0.5	6.28	0.05	0.15	1.05	6.6	0.00	67	40	1.0	6.6	40.6	41.2	0.0
3	6	2000	154	0.0		0.5	0.0	6.28	0.05	0	1.05	6.6	0.00	67	40	1.0	6.5	46.6	40.6	0.0
4	6	2000	155	4.8	##	4.6	0.0	6.27	0.05	0.24	1.05	6.6	0.00	67	40	0.8	6.1	48.1	46.6	0.0
5	6	2000	156	0.6	##	0.6	0.0	6.26	0.05	0.03	1.05	6.6	0.00	67	40	0.7	4.8	52.4	48.1	0.0
6	6	2000	157	0.1	##	0.1	0.0	6.26	0	0	1.05	6.6	0.00	67	40	0.6	3.7	56.0	52.4	0.0
7	6	2000	158	15.2	##	15.2	3.9	6.25	0	0	1.05	6.6	0.00	67	40	0.4	6.6	51.2	56.0	0.0
e	6	2000	159	0.0		3.9	0.0	6.25	0	0	1.05	6.6	0.00	67	40	0.6	5.5	52.8	51.2	0.0
9	6	2000	160	0.0		0.0	0.0	6.24	0	0	1.05	6.6	0.00	67	40	0.5	3.5	56.3	52.8	0.0
10	6	2000	1.6,1,	6.0	##	6.0	0.0	6.23	0	0	1.05	6.5	0.00	67	40	0.4	6.2	56.6	56.3	; 0.0
11	6	2000	162	0.0		0.0	0.0	6.23	0	0	1.05	6.5	0.00	67	40	0.4	2.6	59.2	56.6	0.0
12	6	2000	163	0.0		0.0	0.0	6.22	0	0	1.05	6.5	0.00	67	40	0.3	2.0	61.1	59.2	0.0
13	6	2000	164	2.9	##	2.9	0.0	6.21	0	0	1.05	6.5	0.00	67	40	0.2	3.7	61.9	61.1	0.0
14	6	2000	165	45.6	##	41.0	15.5	6.21	0.1	4.56	1.05	6.5	0.00	67	40	0.2	6.5	43.0	61.9	0.0.
15	6	2000	166	2.6	##	18.0	5.2	6.20	0.05	0.13	1.05	6.5	0.00	67	40	0.9	6.5	36.6	43.0	0.0
16	6	2000	167	0.0		5.2	0.0	6.17	0.05	0	1.05	6.5	0.00	67	40	1.0	6.5	37.9	36.6	0.0
17	6	2000	168	2.0	##	1.9	0.0	6.15	0.05	0.1	1.05	6.5	0.00	67	40	1.0	6.5	42.5	37.9	0.0
18	6	2000	169	16.7	##	15.9	4.2	6.12	0.05	0.835	1.05	6.4	0.00	67	40	0.9	6.4	37.3	42.5	0.0
19	6	2000	170	0.0		4.2	0.0	6.09	0.05	0	1.05	6.4	0.00	67	40	1.0	6.4	39.5	37.3	0.0
20	6	2000	171	28.4	##	24.1	8.0	6.07	0.15	4.26	1.05	6.4	0.00	67	40	1.0	6.4	29.7	39.5	0.0
21	6	2000	172	12.7	##	20.1	6.2	6.04	0.05	0.635	1.05	6.3	0.00	67	40	1.0	6.3	22.1	29.7	0.0
22	6	2000	173	3.8	##	9.8	1.6	6.01	0.05	0.19	1.05	6.3	0.00	67	40	1.0	6.3	20.2	22.1	0.0
23	6	2000	174	0.0		1.6	0.0	5.99	0.05	0	1.05	6.3	0.00	67	40	1.0	6.3	25.0	20.2	0.0
24	6	2000	175	[illegible]		0.0	0.0	5.96	0.05	0	1.05	6.3	0.00	67	40	1.0	6.3	31.2	25.0	0.0
25	6	2000	176	0.0		0.0	0.0	5.93	0.05	0	1.05	6.2	0.00	67	40	i.o	6.2	37.4	31.2	0.0
26	6	2000	177	0.0		0.0	0.0	5.91	0.05	0	1.05	6.2	0.00	67	40	1.0	6.2	43.6	37.4	0.0

27	6	2000	176	0.0		0.0	0.0	5.86	0.05	a	1.05	6.2	0.00	67	40	0.9	5.4	49.1	43.6	0.0
28	6	2000	179	0.0		0.0	0.0	5.65	0.05	a	1.05	6.1	0.00	67	40	0.7	4.2	53.2	49.1	0.0
29	6	2000	160	0.0		0.0	0.0	5.83	0	a	1.05	6.1	0.00	67	40	0.5	3.2	56.4	53.2	0.0
30	6	2000	161	0.0		0.0	0.0	5.80	0	a	1.05	6.1	0.00	67	40	0.4	2.5	58.9	56.4	0.0
1	7	2000	182	26.1	..	23.5	7.8	5.77	0.1	2.61	1.05	6.1	0.00	67	40	0.3	6.1	49.3	56.9	0.0
2	7	2000	163	4.0	..	11.6	2.5	5.75	0.05	0.2	1.05	6.0	0.00	67	40	0.7	6.0	46.2	49.3	0.0
3	7	2000	164	0.0		2.5	0.0	5.72	0.05	0	1.05	6.0	0.00	67	40	0.6	5.2	48.9	46.2	0.0
4	7	2000	185	20.7	..	17.6	5.2	5.69	0.15	3.105	1.05	6.0	0.00	67	40	0.7	6.0	42.5	46.9	0.0
5	7	2000	166	15.6	..	20.0	6.3	5.67	0.05	0.76	1.05	6.0	0.00	67	40	0.9	6.0	34.8	42.5	0.0
6	7	2000	167	6.4	tI#	12.4	2.9	5.64	0.05	0.32	1.05	5.9	0.00	67	40	1.0	5.9	31.2	34.8	0.0
7	7	2000	188	0.0		2.9	0.0	5.61	0.05	0	1.05	5.9	0.00	67	40	1.0	5.9	34.2	31.2	0.0
8	7	2000	189	0.0		0.0	0.0	5.59	0.05	0	1.05	5.9	0.00	67	40	1.0	5.9	40.0	34.2	0.0
9	7	2000	190	0.0		0.0	0.0	5.56	0.05	0	1.05	5.B	0.00	67	40	1.0	5.8	45.9	40.0	0.0
10	7	2000	191	0.0		0.0	0.0	5.53	0.05	0	1.05	5.8	0.00	67	40	0.8	4.6	50.5	45.9	0.0
11	7	2000	192	0.0		0.0	0.0	5.51	0	0	1.05	5.8	0.00	67	40	0.6	3.6	54.1	50.5	0.0
12	7	2000	193	0.0		0.0	0.0	5.48	0	0	1.05	5.8	0.00	67	40	0.5	2.8	56.9	54.1	0.0
13	7	2000	194	0.0		0.0	0.0	5.45	0	0	1.05	5.7	0.00	67	40	0.4	2.2	59.1	56.9	0.0
14	7	2000	195	0.0		0.0	0.0	5.43	0	0	1.05	5.7	0.00	67	40	0.3	1.7	60.8	59.1	0.0
15	7	2000	196	0.0		0.0	0.0	5.40	0	0	1.05	5.7	0.00	67	40	0.2	1.4	62.2	60.8	0.0
16	7	2000	197	21.7	##	19.5	6.3	5.37	0.1	2.17	1.05	5.6	0.00	6-'	40	0.2	5.6	54.5	62.2	0.0
17	7	2000	198	0.0		6.3	0.3	5.34	0	'0	1.05	5.6	0.00	67	4Q	0.5.'	5.6	54.2	54.5	0.0
18	7	2000	199	39.1	##	35.5	13.5	5.30	0.1	3.91	1.05	5.6	0.00	67	40	0.5	5.6	37.7	54.2	0.0
19	7	2000	200	13.5	##	26.3	9.3	5.27	0.05	0.675	1.05	5.5	0.00	67	40	1.0	5.5	26.3	37.7	0.0
20	7	2000	201	0.0		9.3	1.7	5.24	0.05	0	1.05	5.5	0.00	67	40	1.0	5.5	24.2	26.3	0.0
21	7	2000	202	0.0		1.7	0.0	5.21	0.05	0	1.05	5.5	0.00	67	40	1.0	5.5	27.9	24.2	0.0
22	7	2000	203	0.0		0.0	0.0	5.17	0.05	0	1.05	5.4	0.00	67	40	1.0	5.4	33.4	27.9	0.0
23	7	2000	204	0.0		0.0	0.0	5.14	0.05	a	1.05	5.4	0.00	67	40	1.0	5.4	38.8	33.4	0.0
24	7	2000	205	0.0'		0.0	0.0	5.11	0.05	a	1.05	5.4	0.00	67	40	1.0'	5.4	44.1	38.8	0.0
25	7	2000	206	0.0		0.0	0.0	5.08	0.05	a	1.05	5.3	0.00	67	40	0.9	4.6	48.7	44.1	0.0
26	7	2000	207	0.0		0.0	0.0	5.05	0.05	a	1.05	5.3	0.00	67	40.	0.7	3.6	52.4	48.7	0.0
27	7	2000	208	27.4	##	24.7	8.7	5.01	0.1	2.74	1.05	5.3	0.00	67	40	0.6	5.3	41.7	52.4	0.0
28	7	2000	209	0.0		8.7	1.6	4.98	0.05	a	1.05	5.2	0.00	67	40	0.9	5.2	39.8	41.7	0.0
29	7	2000	210	28.7	##	26.0	9.3	4.95	0.15	4.305	1.05	5.2	0.00	67	40	1.0	5.2	28.4	39.8	0_0
30	7	2000	211	0.8	##	10.1	2.2	4.92	0.05	0.04	1.05	5.2	0.00	67	40	1.0	5.2	25.6	28.4	0.0
31	7	2000	2;2	4.8	##	6.8	v.r	4.88	0.05	0.24	1.05	5.1	0,00	67	40	1.0	5.1	24.7	25.6	0.0
1	8	2000	213	0.0		0.7	0.0	4.85	0.05	0	1.05	5.1	0.00	67	40	1.0	5.1	29.1	24.7	0.0
2	8	2000	214	4.3	##	4.1	0.0	4.82	0.05	0.215	1.05	5.1	0.00	67	40	1.0	5.1	30.0	29.1	0.0

3	8	2000	215	3.7	..	3.5	0.0	4.79	0.05	0.185	1.05	5.0	0.00	67	.o	1.0	5.0	31.6	30.0	0.0
4	8	2000	216	18.4	..	17.5	5.6	4.75	0.05	0.92	1.05	5.0	0.00	67	40	1.0	5.0	24.7	31.6	0.0
5	8	2000	217	0.0		5.6	0.3	4.72	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	24.3	24.7	0.0
6	8	2000	218	0.0		0.3	0.0	4.69	0.05	0	1.05	4.9	0.00	67	40	1.0	4.9	lSI.O	24.3	0.0
7	8	2000	219	0.0		0.0	0.0	4.66	0.05	0	1.05	4.9	0.00	67	40	1.0	4.9	33.8	29.0	0_0
8	8	2000	220	30.2	..	25.7	9.4	4.63	0.15	4.53	1.05	4.9	0.00	67	40	1.0	4.9	22.4	33.8	0.0
9	8	2000	221	0.0		9.4	2.0	4.59	0.05	0	1.05	4.8	0.00	67	40	1.0	4.8	19.9	22.4	0.0
10	8	2000	222	0.0		2.0	0.0	4.56	0.1	0	1.05	4.8	0.00	67	40	1.0	4.8	22.6	19.9	0.0
11	8	2000	223	0.0		0.0	0.0	4.53	0.05	0	1.05	4.8	0.00	67	40	1.0	4.8	27.4	22.6	0.0
12	8	2000	224	0.0		0.0	0.0	4.50	0.05	0	1.05	4.7	0.00	67	40	1.0	4.7	32.1	27.4	0.0
13	8	2000	225	10.0	##	9.5	2.2	4.46	0.05	0.5	1.05	4.7	0.00	67	40	1.0	4.7	29.5	32.1	0.0
14	8	2000	226	0.2	##	2.4	0.0	4.43	0.05	0.01	1.05	4.7	0.00	67	40	1.0	4.7	31.8	29.5	0.0
15	8	2000	227	34.2	##	29.1	11.0	4.40	0.15	5.13	1.05	4.6	0.00	67	40	1.0	4.6	18.3	31.8	0.0
16	8	2000	228	0.0		11.0	2.9	4.41	0:1	0	1.05	4.6	0.00	67	40	1.0	4.6	14.8	18.3	0.0
17	8	2000	229	22.9	##	24,9	0.0	4.42	0.04	0.916	1.05	4.6	0.00	67	40	1.0	4.6	-5.4	14.8	5.4
18	8	2000	230	8.6	##	7.7	0.0	4.43	0.1	0.86	1.05	4.7	0.00	67	40	1.0	4.7	-3.1	0.0	3.1
19	8	2000	231	2.4	##	2.2	0.0	4.44	0.1	0.24	1.05	4.7	0.00	67	40	1.0	4.7	2.5	0.0	0.0
20	8	2000	232	0.0		0.0	0.0	4.45	0.1	0	1.05	4.7	0.00	67	40	1.0	4.7	7.2	2.5	0.0
21	8	2000	233	26.4	##	25.3	0.0	4.46	0.04	1.056	1.05	4.7	0.00	67	40	1.0	4.7	-13.5	7.2	13.5
22	8	2000	234	0.0		0.0	0.0	4.47	0.1	0	1.05	4.7	0.00	67	40	1.0	4.7	4.7	0.0	0.0
23	8	2000	235	0.2	##	0,2	0.0	4.48	0.1	0.02	1.05	4.7	0.00	67	40	1.0	4.7	9.2	4.7	0.0
24	8	2000	236	63.0	##	44.1	0.0	4.49	0.3	18.9	1.05	4.7	0.00	67	40	1.0	4.7	-30.2	9.2	30.2
25	8	2000	237	13.9	##	12.5	0.0	4.50	0.1	1.39	1.05	4.7	0.00	67	40	1.0	4.7	-7.8	0.0	7.8
26	8	2000	238	1.9	##	1.7	0.0	4.51	0.1	0.19	1.05	4.7	0.00	67	40	1.0	4.7	3.0	0.0	0.0
27	8	2000	239	2.9	##	2.6	0.0	4.52	0.1	0.29	1.05	4.7	0.00	67	40	1.0	4.7	5.2	3.0	0.0
28	8	2000	240	0.0		0.0	0.0	4.53	0.1	0	1.05	4.8	0.00	67	40	1.0	4.8	9.9	5.2	0.0
29	8	2000	241	19.9	##	17.9	0.0	4.54	0.1	1.99	1.05	4.8	0.00	67	40	1.0	4.8	-3.2	9.9	3.2
30	8	2000	242	0.0		0.0	0.0	4.55	0.1	a	1.05	4.8	0.00	67	40	1.0	4.8	4.8	0.0	0.0
31	8	2000	243	0.0		0.0	0.0	4.55	0.1	0	1.05	4.8	0.00	67	40	1.0	4.8	9.6	4.8	0.0
1	9	2000	244	2.7	##	2.4	0.0	4.56	0.1	0.27	1.05	4.8	0.00	67	40	1.0	4.8	11.9	9.6	0.0
2	9	2000	245	0.0		0.0	0.0	4.57	0.1	0	1.05	4.8	0.00	67	40	1.0	4.8	16.7	11.9	0.0
3	9	2000	246	0.0		0.0	0.0	4.58	0.1	0	1.05	4.8	0.00	67	40	1.0	4.8	21.5	16.7	0.0
4	9	2000	247	0.0		0.0	0.0	4.59	0.05	0	1.05	4.8	0.00	67	40	1.0	4.8	26.4	21.5	0_0
5	9	2000	248	1.8	##	1.7	0.0	4.60	0.05	0.09	1.05	4.8	0.00	67	40	1.0	4.8	29,5	26.4	0.0
6	9	2000	249	48.5	##	41.2	0.0	4.61	0.15	7.275	1.05	4.8	0.00	67	40	1.0	4.8	-6.9	29.5	6.9
7	9	2000	250	0.0		0.0	0.0	4.62	0.1	0	1.05	4.9	0.00	67	40	1.0	4.9	4.9	0.0	0.0
8	9	2000	251	0.0		0.0	0.0	4.63	0.1	0	1.05	4.9	0.00	67	40	1.0	4.9	9.7	4.9	0.0

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9	9	2000	252	30.0	..	28.8	0.0	4.64	0.04	1.2	1.05	4.9	0.00	67	40	1.0	4.9	-1~.2	9.7	14.2
10	9	2000	253	63.3	..	44.3	0.0	4.65	0.3	18.99	1.05	4.9	0.00	67	40	1.0	4.9	-3g.~	0.0	39.4
11	9	2000	254	5.8	..	5.2	0.0	4.66	0.1	0.58	1.05	4.9	0.00	67	40	1.0	4.9	-0.3	0.0	0.3
12	9	2000	255	0.0		0.0	0.0	4.67	0.1	0	1.05	4.9	0.00	67	40	1.0	4.9	~g	0.0	0.0
13	9	2000	256	1.6	..	1.4	0.0	4.68	0.1	0.16	1.05	4.9	0.00	67	40	1.0	4.9	e.~	4.9	0.0
14	9	2000	257	9.6	..	8.6	1.7	4.69	0.1	0.96	1.05	4.9	0.00	67	40	1.0	4.9	6.3	8.4	0.0
15	9	2000	258	0.0		1.7	0.0	4.70	0.1	0	1.05	4.9	0.00	67	40	1.0	4.9	9.6	6.3	0.0
16	9	2000	2S9	6.6	..	S.9	0.5	4.70	0.1	0.66	1.0S	4.9	0.00	67	40	1.0	4.9	9.0	9.6	0.0
17	9	2000	260	0.0		O.S	0.0	4.71	0.1	0	1.0S	4.9	0.00	67	40	1.0	4.9	13.5	9.0	0.0
18	9	2000	261	0.0		0.0	0.0	4.71	0.1	a	1.0S	4.9	0.00	67	40	1.0	4.9	18.5	13.S	0.0
19	9	2000	262	17.1	..	1S.4	4.7	4.71	0.1	1.71	1.0S	4.9	0.00	67	40	1.0	4.9	12.7	18.5	0.0
20	9	2000	263	21.6	###	25.4	0.0	4.72	0.04	0.864	1.05	5.0	0.00	67	40	1.0	5.0	-7.7	12.7	7.7
21	9	2000	264	11.2	..	10.1	0.0	4.72	0.1	1.12	1.05	5.0	0.00	67	40	1.0	5.0	-5.1	0.0	5.1
22	9	2000	265	0.0		0.0	0.0	4.72	0.1	a	1.05	5.0	0.00	67	40	1.0	5.0	5.0	0.0	0.0
23	9	2000	266	4.0	###	3.6	0.0	4.73	0.1	0.4	1.05	5.0	0.00	67	40	1.0	5.0	6.3	5.0	0.0
24	9	2000	267	*8.5*	*tl#*	7.7	1.2	4.73	0.1	0.85	1.05	5.0	0.00	67	40	1.0	5.0	4.8	6.3	0.0
25	9	2000	268	*23.3*	*tl#*	*23.6*	0.0	4.73	0.04	0.932	1.05	5.0	0.00	67	40	1.0	5.0	-13.8	4.8	13.8
26	9	2000	269	*45.2*	*tl#*	*43.4*	0.0	4.74	0.04	1.808	1.05	5.0	0.00	67	40	1.0	5.0	-38.4	0.0	38.4
27	9	2000	270	*0.3*	*tl#*	0.3	0.0	4.74	0.1	0.03	1.05	5.0	0.00	67	40	1.0	5.0	4.7	0.0	0.0
28	9	2000	271	0.0		0.0	0.0	4.74	0.1	a	1.05	5.0	0.00	67	40	1.0	5.0	9.7	4.7	0.0
29	9	2000	272	0.0		0.0	0.0	4.75	0.1	a	1.05	5.0	0.00	67	40	1.0	5.0	14.7	9.7	0.0
30	9	2000	273	*24.9*	*tl#*	*23.9*	0.0	4.75	0.04	0.996	1.05	5.0	0.00	67	40	1.0	5.0	-4.2	14.7	4.2
1	10	2000	274	16	*tl#*	14.4	0.0	4.75	0,1	1.6	1.05	5.0	0.00	67	40	1.0	5.0	-9.4	0.0	9.4
2	10	2000	275	a		0.0	0.0	4.76	0.1	a	1.05	5.0	0.00	67	40	1.0	5.0	5.0	0.0	0.0
3	10	2000	276	a		0.0	0.0	4.76	0.1	a	1.05	5.0	0.00	67	40	1.0	5.0	10.0	5.0	0.0
4	10	2000	277	a		0.0	0.0	4.76	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	15.0	10.0	0.0
5	10	2000	278	0.5	*tl#*	0.5	0.0	4.77	0.1	0.05	1.05	5.0	0.00	67	40	1.0	5.0	19.5	15.0	0.0
6	10	2000	279	a		0.0	0.0	4.77	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	24.6	19.5	0.0
7	10	2000	280	0		0.0	0.0	4.77	0.05	a	1.05	5.0	0.00	67	40	1.0	5.0	29.6	24.6	0.0
8	10	2000	281	a		0.0	0.0	4.78	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	34.6	29.6	0.0
9	10	2000	282	0		0.0	0.0	4.78	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	39.6	34.6	0.0
10	10	2000	283	0		0.0	0.0	4.78	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	44.6	39.6	0.0
11	10	2000	284	0		0.0	0.0	4.79	0.05	0	1.05	5.0	0.00	67	40	0.8	4.2	48.9	44.6	0.0
12	10	2000	285	0		0.0	0.0	4.79	0.05	0	1.05	5.0	0.00	67	40	0.7	3.4	52.3	48.9	0.0
13	10	2000	286	0		0.0	0.0	4.79	0	0	1.05	5.0	0.00	67	40	0.6	2.8	55.1	52.3	0.0
14	10	2000	287	0		0.0	0.0	4.80	0	0	1.05	5.0	0.00	67	40	0.5	2.3	57.4	55.1	0.0
15	10	2000	288	0		0.0	0.0	4.80	0	0	1.05	5.0	0.00	67	40	0.4	1.9	59.2	57.4	0.0

16	10	2000	289	0		0.0	0.0	4.79	'0	0	1.05	5.0	0.00	67	40	0.3	1.5	60.7	59.2	0.0
17	10	2000	290	0		0.0	0.0	4.77	0	0	1.05	5.0	0.00	67	40	0.2	1.2	61.8	60.7	0.0
18	10	2000	291	0		0.0	0.0	4.76	0	0	1.05	5.0	0.00	67	40	0.2	1.0	~.8	61.9	0.0
19	10	2000	292	0		0.0	0.0	4.75	0	0	1.05	5.0	0.00	67	.O	0.2	0.8	&3.7	62.9	0.0
20	10	2000	293	0		0.0	0.0	4.74	0	0	1.05	5.0	0.00	67	.O	0.1	0.7	64.4	63.7	0.0
21	10	2000	294	0		0.0	0.0	4.72	0	0	1.05	5.0	0.00	67	.O	0.1	0.5	64.9	64.4	0.0
22	10	2000	295	0		0.0	0.0	4.71	0	0	1.05	4.9	0.00	67	.O	0.1	0.4	65.3	64.9	0.0
23	10	2000	296	0.5	*tl#*	0.5	0.0	4.70	0	0	1.05	4.9	0.00	67	.O	0.1	0.8	65.7	65.3	0.0
24	10	2000	297	0		0.0	0.0	4.68	0	0	1.05	4.9	0.00	67	.O	0.1	0.3	65.9	65.7	0.0
25	10	2000	298	0		0.0	0.0	4.67	0	0	1.05	4.9	0.00	67	.O	0.0	0.2	66.2	65.9	0.0
26	10	2000	299	0		0.0	0.0	4.66	0	0	1.05	4.9	0.00	67	.O	0.0	0.2	66.4	66.2	0.0
27	10	2000	300	a		0.0	0.0	4.65	0	0	1.05	4.9	0.00	67	40	0.0	0.2	66.5	66.4	0.0
28	10	2000	301	0		0.0	0.0	4.63	0	0	1.05	4.9	0.00	67	40	0.0	0.1	66.7	66.5	0.0
29	10	2000	302	a		0.0	0.0	4.62	0	0	1.05	4.9	0.00	67	40	0.0	0.1	66.8	66.7	0.0
30	10	2000	303	a		0.0	0.0	4.61	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.9	66.8	0.0
31	10	2000	304	a		0.0	0.0	4.59	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.9	66.9	0.0
	11	2000	305	a		0.0	0.0	4.58	0	a	1.05	4.8	0.00	67	40	0.0	0.1	67.0	66.9	0.0
2	11	2000	306	0		0.0	0.0	4.57	0	a	1.05	4.8	0.00	67	40	0.0	0.0	67.0	67.0	0.0
3	11	2000	307	8.9	##	8.9	1.9	4.55	0	0	1.05	4.8	0.00	67	40	0.0	4.8	64.8	67.0	0.0
4	11	2000	308	a		1.9	0.0	4.54	0	a	1.05	4.8	0.00	67	40	0.1	2.1	65.0	64.8	0.0
5	11	2000	309	a		0.0	0.0	4.53	0	a	1.05	4.8	0.00	67	40	0.1	0.4	65.4	65.0	0.0
6	11	2000	310	a		0.0	0.0	4.52	0	0	1.05	4.7	0.00	67	40	0.1	0.3	65.7	65.4	0.0
7	11	2000	311	a		0.0	0.0	4.50	0	a	1.05	4.7	0.00	67	40	0.1	0.3	66.0	65.7	0.0
8	11	2000	312	a		0.0	0.0	4.49	0	0	1.05	4.7	0.00	67	40	0.0	0.2	66.2	66.0	0.0
9	11	2000	313	a		0.0	0.0	4.48	0	a	1.05	4.7	0.00	67	40	0.0	0.2	66.4	66.2	0.0
10	11	2000	314	a		0.0	0.0	4.46	0	0	1.05	4.7	0.00	67	40	0.0	0.1	66.6	66.4	0.0
11	11	2000	315	a		0.0	0.0	4.45	0	0	1.05	4.7	0.00	67	40	0.0	0.1	66.7	66.6	0.0
12	11	2000	316	a		0.0	0.0	4.44	0	0	1.05	4.7	0.00	67	40	0.0	0.1	66.8	66.7	0.0
13	11	2000	317	a		0.0	0.0	4.43	0	0	1.05	4.6	0.00	67	40	0.0	0.1	66.9	66.8	0.0
14	11	2000	318	a		0.0	0.0	4.41	0	a	1.05	4.6	0.00	67	40	0.0	0.1	66.9	66.9	0.0
15	11	2000	319	a		0.0	0.0	4.40	0	a	1.05	4.6	0.00	67	40	0.0	0.1	67.0	66.9	0.0
16	11	2000	320	0		0.0	0.0	4.39	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.0	67.0	0.0
17	11	2000	321	a		0.0	0.0	4.38	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.1	67.0	0.0
18	11	2000	322	a		0.0	0.0	4.37	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.1	67.1	0.0
19	11	2000	323	a		0.0	0.0	4.36	0	0	i.05	4.6	ü.üü	57	40	0.0	0.0	67.1	67.1	0.0
20	11	2000	324	a		0.0	0.0	4.35	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.1	67.1	0.0
21	11	2000	325	a		0.0	0.0	4.34	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.1	0.0

22	11	2000	326	0	0.0	0.0	4.33	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
23	11	2000	327	0	0.0	0.0	4.32	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
24	11	2000	326	0	0.0	0.0	4.31	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
25	11	2000	329	0	0.0	0.0	4.30	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
26	11	2000	330	0	0.0	0.0	4.29	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
27	11	2000	331	0	0.0	0.0	4.28	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
28	11	2000	332	0	0.0	0.0	4.27	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
29	11	2000	333	0	0.0	0.0	4.26	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
30	11	2000	334	0	0.0	0.0	4.25	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
1	12	2000	335	0	0.0	0.0	4.24	0	0	1.05	4.5	0.00	67	.O	0.0	0.0	67.2	67.2	0.0
2	12	2000	336	0	0.0	0.0	4.23	0	0	1.05	4.4	0.00	67	<40	0.0	0.0	67.2	67.2	0.0
3	12	2000	337	0	0.0	0.0	4.22	0	0	1.05	4.4	0.00	67	<40	0.0	0.0	67.2	67.2	0.0
4	12	2000	338	0	0.0	0.0	4.21	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	12	2000	339	0	0.0	0.0	4.20	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	12	2000	340	0	0.0	0.0	4.19	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	12	2000	341	0	0.0	0.0	4.18	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	12	2000	342	0	0.0	0.0	4.17	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	12	2000	343	0	0.0	0.0	4.16	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	12	2000	344	0	0.0	0.0	4.15	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	12	2000	345	0	0.0	0.0	4.14	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	12	2000	346	0	0.0	0:0	4.13	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	12	2000	347	0	0.0	0.0	4.12	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	12	2000	348	0	0.0	0.0	4.11	0	0	1.05	4.3	0.00	67	<40	0.0	0.0	67.2	67.2	0.0
15	12	2000	349	0	0.0	0.0	4.10	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	12	2000	350	0	0.0	0.0	4.09	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	12	2000	351	0	0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	12	2000	352	0	0.0	0.0	4.06	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	12	2000	353	0	0.0	0.0	4.05	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	12	2000	354	0	0.0	0.0	4.04	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	12	2000	355	0	0.0	0.0	4.02	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	12	2000	356	0	0.0	0.0	4.01	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	12	2000	357	0	0.0	0.0	4.00	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	12	2000	358	0	0.0	0.0	3.98	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	12	2000	359	0	0.0	0.0	3.97	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	12	2000	360	0	0.0	0.0	3.96	0	0	1.05	[illegible]	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	12	2000	361	0	0.0	0.0	3.95	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	12	2000	362	0	0.0	0.0	3.93	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0

29	12	2000	363	0	0.0	0.0	3.92	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	12	2000	364	0	0.0	0.0	3.91	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
31	12	2000	365	a	0.0	0.0	3.89	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	1	2001	1	a	0.0	0.0	3.88	0	0	0.65	2.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	1	2001	2	0	0.0	0.0	3.87	0	0	0.69	2.7	0.00	67	40	0.0	0.0	67.2	67.2	O.Q
3	1	2001	3	0	0.0	0.0	3.85	0	a	0.74	2.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	1	2001	4	0	0.0	0.0	3.84	0	0	0.78	3.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	1	2001	5	a	0.0	0.0	3.83	0	0	0.83	3.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	1	2001	6	a	0.0	0.0	3.82	0	0	0.87	3.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	1	2001	7	a	0.0	0.0	3.80	0	0	0.92	3.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	1	2001	8	0	0.0	0.0	3.79	0	0	0.96	3.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	1	2001	9	0	0.0	0.0	3.78	0	0	1.01	3.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	1	2001	10	0	0.0	0.0	3.76	c	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	1	2001	11	0	0.0	0.0	3.75	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	1	2001	12	0	0.0	0.0	3.74	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	1	2001	13	0	0.0	0.0	3.73	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	1	2001	14	0	0.0	0.0	3.71	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	1	2001	15	0	0.0	0.0	3.70	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	1	2001	16	0	0.0	0.0	3.72	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	1	2001	17	0	0.0	0.0	3.73	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	1	2001	18	0	0.0	0.0	3.75	0	0	1.05	3.9	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	1	2001	19	0	0.0	0.0	3.76	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	1	2001	20	0	0.0	0.0	3.78	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	1	2001	21	0	0.0	0.0	3.80	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	1	2001	22	0	0.0	0.0	3.81	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	1	2001	23	0	0.0	0.0	3.83	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	1	2001	24	0	0.0	0.0	3.85	0	0	1.05	4.0	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	i	2001	25	0	0.0	0.0	3.86	0	0	1.05	4:1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	1	2001	26	0	0.0	0.0	3.88	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
27	1	2001	27	0	0.0	0.0	3.89	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	1	2001	28	0	0.0	0.0	3.91	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
29	1	2001	29	0	0.0	0.0	3.93	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	1	2001	30	0	0.0	0.0	3.94	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	(LO
31	1	2001	31	0	0.0	0.0	3.96	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	2	2001	32	0	0.0	0.0	3.97	0	ü	1.05	[illegible]	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	2	2001	33	0	0.0	0.0	3.99	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	2	2001	34	0	0.0	0.0	4.01	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0

4	2	2001	35	0	0.0	0.0	4.02	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	2	2001	36	0	0.0	0.0	4.04	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	2	2001	37	0	0.0	0.0	4.05	0	0	1.05	4.3	0.00	67	40	0.0	0.0	17.2	67.2	0.0
7	2	2001	38	0	0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	17.2	67.2	0.0
8	2	2001	39	0	0.0	0.0	4.09	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	2	2001	40	0	0.0	0.0	4.10	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	2	2001	41	0	0.0	0.0	4.12	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	2	2001	42	0	0.0	0.0	4.14	0	0	1.05	4.3	0.00	67	40	0.0	0.0	17.2	67.2	0.0
12	2	2001	43	0	0.0	0.0	4.15	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	2	2001	44	0	0.0	0.0	4.17	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	2	2001	45	0	0.0	0.0	4.18	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	2	2001	46	0	0.0	0.0	4.20	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
16	2	2001	47	0	0.0	0.0	4.21	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
17	2	2001	48	0	0.0	0.0	4.23	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
18	2	2001	49	0	0.0	0.0	4.24	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
19	2	2001	50	0	0.0	0.0	4.26	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
20	2	2001	51	0	0.0	0.0	4.27	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
21	2	2001	52	0	0.0	0.0	4.29	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
22	2	2001	53	0	0.0	0.0	4.30	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
23	2	2001	54	0	0.0	0.0	4.31	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
24	2	2001	55	0	0;0	0.0	4.33	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
25	2	2001	56	0	0.0	0.0	4.34	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
26	2	2001	57	0	0.0	0.0	4.36	0	0	1.05	4.6	0.00	67	40	0.0	0.0	57.2	67.2	0.0
27	2	2001	58	0	0.0	0.0	4.37	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	2	2001	59	0	0.0	0.0	4.39	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	3	2001	60	0	0.0	0.0	4.40	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	3	2001	61	0	0.0	0.0	4.40	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	3	2001	62	0	0.0	0.0	4.41	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	3	2001	63	0	0.0	0.0	4.43	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	3	2001	64	0	0.0	0.0	4.44	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	3	2001	65	0	0.0	0.0	4.46	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	3	2001	66	0	0.0	0.0	4.47	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	3	2001	67	0	0.0	0.0	4.49	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	3	2001	68	0	0.0	0.0	4.50	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	3	2001	69	0	0.0	0.0	4.51	0	0	1.05	4.7	0.00	67	40	0.0	0.0	61.2	67.2	0.0
11	3	2001	70	0	0.0	0.0	4.53	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	3	2001	71	0	0.0	0.0	4.54	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.2	67.2	0.0

14	9	2001	257	3.1	..	2.9	0.0	4.68	1.1.05	0.155	1.05	4.9	0.00	67	40	1.0	4.9	23.s1	21.9	0.0
15	9	2001	258	0.0		0.0	0.0	4.69	0.0S	0	1.05	4.9	0.00	67	40	1.0	4.9	28.8	23.9	0.0
16	9	2001	259	4.8	..	4.6	0.0	4.70	0.0S	0.24	1.05	4.9	0.00	67	40	1.0	4.9	~.2	28.8	0.0
17	9	2001	260	8.3	..	7.g	1.3	4.70	0.0S	0.415	1.05	4.9	0.00	67	40	1.0	4.9	27.8	29.2	0.0
18	9	2001	261	0.0		1.3	0.0	4.71	0.0S	0	1.05	4.9	0.00	67	40	1.0	4.9	31.2	27.6	0.0
19	9	2001	262	3.8	..	3.6	0.0	4.71	0.05	0.19	1.05	4.9	0.00	67	40	1.0	4.9	32.5	31.2	0.0
20	9	2001	263	0.0		0.0	0.0	4.71	0.0S	0	1.05	4.9	0.00	67	40	1.0	4.9	37.5	32.5	0.0
21	9	2001	264	42.8	..	36.4	14.1	4.72	0.15	6.42	1.05	5.0	0.00	67	40	1.0	5.0	20.2	37.5	0.0
22	9	2001	265	6.3	..	20.1	6.8	4.72	0.05	0.315	1.05	5.0	0.00	67	40	1.0	5.0	11.9	20.2	0.0
23	9	2001	266	3.9	..	10.3	2.4	4.72	0.1	0.39	1.05	5.0	0.00	67	40	1.0	5.0	u	11.9	0.0
24	9	2001	267	20.8	..	22.4	0.0	4.73	0.04	0.832	1.05	5.0	0.00	67	40	1.0	5.0	-8.5	8.9	8.5
25	9	2001	268	30.0	..	28.8	0.0	4.73	0.04	1.2	1.05	5.0	0.00	67	40	1.0	5.0	-23.8	0.0	- 23.8
26	9	2001	269	0.0		0.0	0.0	4.73	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	5.0	0.0	0.0
27	9	2001	270	*11.0*	*fill.*	9.9	2.2	4.74	0.1	1.1	1.05	5.0	0.00	67	40	1.0	5.0	2.3	5.0	0.0
28	9	2001	271	0.0		2.2	0.0	4.74	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	5.0	2.3	0.0
29	9	2001	272	0.0		0.0	0.0	4.74	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	10.0	5.0	0.0
30	9	2001	273	*4.4*	*fill.*	4.0	0.0	4.75	0.1	0.44	1.05	5.0	0.00	67	40	1.0	5.0	11.0	10.0	0.0
1	10	2001	274	0		0.0	0.0	4.75	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	16.0	11.0	0.0
2	10	2001	275	0		0.0	0.0	4.75	0.1	0	1.05	5.0	0.00	67	40	1.0	5.0	21.0	16.0	0.0
3	10	2001	276	0		0.0	0.0	4.76	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	26.0	21.0	0.0
4	10	2001	277	0		0.0	0.0	4.76	0.05	0	1.05	5.0	0.00	67	40	1.0-	5.0	31.0.	--26.0	0.0
5	10	2001	278	0		0.0	0.0	4.76	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	36.0	31.0	0.0
6	10	2001	279	0		0.0	0.0	4.77	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	41.0	36.0	0.0
7	10	2001	280	19.8	••	18.8	6.2	4.77	0.05	0.99	1.05	5.0	0.00	67	40	1.0	5.0	33.4	41.0	0.0
8	10	2001	281	0		6.2	0.5	4.77	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	32.8	33.4	0.0
9	10	2001	282	0		0.5	0.0	4.78	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	37.2	32.8	0.0
10	10	2001	283	0		0.0	0.0	4.78	0.05	0	1.05	5.0	0.00	67	40	1.0	5.0	42.2	37.2	0.0
11	10	2001	284	0		0.0	0.0	4.78	0.05	0	1.05	5.0	0.00	67	40	0.9	4.7	46.9	42.2	0.0
12	10	2001	285	0		0.0	0.0	4.79	0.05	0	1.05	5.0	0.00	67	40	0.8	3.8	50.7	46.9	0.0
13	10	2001	286	0		0.0	0.0	4.79	0	0	1.05	5.0	0.00	67	40	0.6	3.1	53.8	50.7	0.0
14	10	2001	287	0		0.0	0.0	4.79	a	0	1.05	5.0	0.00	67	40	0.5	2.5	56.3	53.8	0.0
15	10	2001	288	0		0.0	0.0	4.80	0	0	1.05	5.0	0.00	67	40	0.4	2.0	58.4	56.3	0.0
16	10	2001	289	5.8	*fill.*	5.8	0.3	4.80	0	0	1.05	5.0	0.00	67	40	0.3	5.0	57.9	58.4	0.0
17	10	2001	290	0		0.3	0.0	4.79	0	0	1.05	5.0	0.00	67	40	0.3	2.0	59.6	57.9	0.0
18	10	2001	291	0.B	▪▪	0.8	0.0	4.77	a	0	1.05	5.0	0.00	67	40	0.3	2.0	60.8	59.6	0.0
19	10	2001	292	0		0.0	0.0	4.76	0	0	1.05	5.0	0.00	67	40	0.2	1.2	62.0	60.8	0.0
20	10	2001	293	0		0.0	0.0	4.75	a	0	1.05	5.0	0.00	67	40	0.2	1.0	63.0	62.0	0.0

21	10	2001	294	a	0.0	0.0'	4.74	0	0	1.05	5.0	0.00	67	40	0.2	0.8	63.7	63.0	0
22	10	2001	295	a	0.0	0.0	4.72	0	0	1.05	5.0	0.00	67	40	0.1	0.6	&4.'	63.7	0
23	10	2001	296	a	0.0	0.0	~.71	0	0	1.05	4.9	0.00	67	40	0.1	0.5	&4.8	64.4	0
24	10	2001	297	a	0.0	0.0	~.70	0	0	1.05	4.9	0.00	67	40	0.1	0.4	65.3	64.9	0
25	10	2001	298	0	0.0	0.0	4.68	0	0	*1.05*	4.9	0.00	67	40	0.1	0.3	65.7	65.3	0
26	10	*2001*	299	0	0.0	0.0	4.67	0	0	1.05	4.9	0.00	67	40	0.1	0.3	66.0	65.7	0
27	10	2001	300	0	0.0	0.0	4.66	0	0	1.05	4.9	0.00	67	40	0.0	0.2	116.2	66.0	0
28	10	2001	301	0	0.0	0.0	4.65	0	0	1.05	4.9	0.00	67	40	0.0	0.2	66.4	66.2	0
29	10	2001	*302*	0	0.0	*0.0*	4.63	0	0	1.05	4.9	0.00	67	40	0.0	0.2	116.6	66.4	0
30	10	2001	303	0	0.0	0.0	4.62	0	0	1.05	4.9	0.00	67	40	0.0	0.1	66.7	66.6	0
31	10	2001	304	0	0.0	0.0	4.61	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.8	66.7	0
1	11	2001	305	0	0.0	0.0	4.59	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.g	66.8	0
2	11	2001	306	a	0.0	0.0	4.58	0	0	1.05	4.8	0.00	67	40	0.0	0.1	66.9	66.9	0
3	11	2001	307	0	0.0	0.0	4.57	0	0	1.05	4.8	0.00	67	40	0.0	0.1	67.0	66.9	0
4	11	2001	*308*	0	*0.0*	0.0	4.55	0	a	1.05	4.8	0.00	67	40	0.0	0.0	67.0	67.0	0
5	11	2001	*309*	0	0.0	0.0	4.54	0	a	1.05	4.8	0.00	67	.0	0.0	0.0	67.1	67.0	0
6	11	2001	310	0	0.0	0.0	4.53	0	0	1.05	4.8	0.00	67	40	0.0	0.0	67.1	67.1	0
7	11	2001	311	0	0.0	0.0	4.52	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.1	67.1	0
8	11	2001	312	0	0.0	0.0	4.50	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.1	0
9	11	2001	313	0	0.0	0.0	4.49	0	a	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0
10	11	2001	3-14	:0	'.0.0	.0.0	4.48	0	0	1.05	4.7	0.00	67	40	'0.0	.0.0	67:2	67.2	'0
11	11	2001	315	0	0.0	0.0	4.46	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0
12	11	2001	316	0	0.0	0.0	4.45	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0
13	11	2001	317	a	0.0	0.0	4.44	0	0	1.05	4.7	0.00	67	40	0.0	0.0	67.2	67.2	0
14	11	2001	318	0	0.0	0.0	4.43	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
15	11	2001	319	a	0.0	0.0	4.41	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
16	11	2001	320	0	0.0	0.0	4.40	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
17	11	2001	321	0	0.0	0.0	4.39	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
18	11	2001	322	0	*0.0*	0.0	4.38	0	0	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
19	11	2001	323	a	0.0	0.0	4.37	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
20	11	2001	324	a	0.0	0.0	4.36	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
21	11	2001	325	0	0.0	0.0	4.35	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
22	11	2001	326	a	0.0	0.0	4.34	0	a	1.05	4.6	0.00	67	40	0.0	0.0	67.2	67.2	0
23	11	2001	327	0	0.0	0.0	4.33	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	. 67.2	0
24	11	2001	328	a	0.0	0.0	4.32	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0
25	11	2001	329	a	0.0	0.0	4.31	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0
26	11	2001	330	a	0.0	0.0	4.30	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0

27	11	2001	331	0	0.0	0.0	4.29	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
28	11	2001	332	0	0.0	0.0	4.28	0	0	1.05	4.5	0.00	67	40	0:0	0.0	67.2	67.2	0.0
29	11	2001	333	0	0.0	0.0	4.27	0	0	1--05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
30	11	2001	334	0	0.0	0.0	4.26	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
1	12	2001	335	0	0.0	0.0	4.25	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
2	12	2001	336	0	0.0	0.0	4.24	0	0	1.05	4.5	0.00	67	40	0.0	0.0	67.2	67.2	0.0
3	12	2001	337	0	0.0	0.0	4.23	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
4	12	2001	338	0	0.0	0.0	4.22	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
5	12	2001	339	0	0.0	0.0	4.21	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
6	12	2001	340	0	0.0	0.0	4.20	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
7	12	2001	341	0	0.0	0.0	4.19	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
8	12	2001	342	0	0.0	0.0	4.18	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
9	12	2001	343	0	0.0	0.0	4.17	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
10	12	2001	344	0	0.0	0.0	4.16	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
11	12	2001	345	0	0.0	0.0	4.15	0	0	1.05	4.4	0.00	67	40	0.0	0.0	67.2	67.2	0.0
12	12	2001	346	0	0.0	0.0	4.14	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
13	12	2001	347	0	0.0	0.0	4.13	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
14	12	2001	348	0	0.0	0.0	4.12	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
15	12	2001	349	0	0.0	0.0	4.11	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.10	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.09	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.07	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.06	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.05	0	0	1.05	4.3	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.04	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.02	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.01	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	4.00	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.98	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.97	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.96	0	0	1.05	4.2	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.95	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.93	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.92	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0
					0.0	0.0	3.91	0	0	1.05	4.1	0.00	67	40	0.0	0.0	67.2	67.2	0.0