APPENDIX H

HELP MODEL RESULTS

SCS ENGINEERS

June 27, 2012
File No. 01210155.00 T8A

MEMORANDUM

TO: Joe Miller, PE
Ambrose McCready, PE

FROM: Mark Erickson, EIT

SUBJECT: **HELP Model Evaluation** – Landfill Containment Systems, Sonoma County Central Disposal Site

The proposed engineered alternative and prescriptive landfill liner containment systems for the future development of Landfill-2 (LF-2) and the Rock Extraction Area (REA) were evaluated using the Hydrologic Evaluation of Landfill Performance (HELP) Model. Specifically, the model was used for purpose of sizing the leachate collection and control system (LCRS) for new cells, and to estimate potential infiltration through bottom liner systems for the purpose of a liner equivalency demonstration.

HELP MODEL DESCRIPTION

The HELP model was used to evaluate and compare the proposed landfill containment system hydraulic conductivity and estimated leachate percolation rates with those of the system prescribed by CCR Title 27 Sections 20310 through 20330. The HELP model version 3.07 was used; this version was released in November 1997 and was developed by the EPA under Interagency Agreement No. DW21931425 to the U.S. Army Engineer Waterways Experiment Station (WES).

The HELP model adequately simulates saturated and unsaturated vertical flow through a liner system when considering climate, runoff and other features of a site-specific design. It is often used to compare performance such as the rate of infiltration through a system of liner and leachate collection layers or the amount of percolation collected in the leachate collection layer typically found in a model landfill environment. It determines the water balance or amount of leachate movement through the soil/liner profile, whether it is for the bottom (e.g., base and sidelopes) liner system or for the final cover system.

The majority of the information presented in this section is taken from the latest HELP Model version 3.07 Engineering Documentation and User Manual (P.R. Schroeder, et. Al), which contains a detailed description of the model's underlying theory.

The HELP model computer program was developed in response to requirements expressed in the Resource Conservation and Recovery Act and the Comprehensive Environmental Response,

Compensation and Liability Act (CERCLA, better known as Superfund) as identified by the EPA Office of Solid Waste, Washington, DC. The primary purpose of the model is to assist in the comparison of landfill design alternatives as judged by their water balances.

The HELP model was developed to assist municipal and hazardous waste landfill designers and regulators evaluate the hydrologic performance of proposed landfill final cover and liner designs. The model accepts weather, soil and design data and uses solution techniques that account for the effects of surface storage, snowmelt (where applicable), runoff, infiltration, evapotranspiration, vegetative growth, soil moisture storage, lateral subsurface drainage, leachate recirculation, saturated and unsaturated vertical drainage; and leakage through soil, geomembrane or composite liner systems. Landfill systems including various combinations of vegetation, cover soils, waste cells, lateral drain layers, low- permeability barrier soils, and synthetic geomembrane liners may be modeled. Results can be expressed as daily, monthly, annual and long-term average water budgets.

LANDFILL BASE LINER AND FINAL COVER SYSTEMS

Separate scenarios for landfill containment system design at the Sonoma County Central Disposal Site were modeled. They include the following:

- Minimum "prescriptive" cell bottom and sideslope bottom liner systems, as required under California Code of Regulations Title 27 (27 CCR) Sections 20310 and 20330, respectively, and a corresponding cover system to "mirror" the bottom liner permeability as required under 27 CCR Section 21090.

- An engineered alternative landfill cell bottom and sideslope bottom liner systems and cover system as proposed by SCS.

Each system was modeled with the final cover in place for a 30-year post-closure period. In addition, HELP analyses were performed for a one-year operational period. This one-year operational period represents a worst-case scenario for leachate production, and incorporates 6-inches of daily cover soils over one 10-foot lift of waste (in place) over a bottom liner system sloped at 2.5 percent (%). The systems are described below; the layer systems with their corresponding HELP model layer numbers are included as ***Table 1***.

Prescriptive Bottom Liner and Cover Systems

Per CCR Title 27 Sections 20310 through 20330, the prescriptive standard for a landfill bottom liner system consists of the following (from top to bottom):

Base Liner – Cell Bottom

- Waste layer (modeled at a thickness of 100 ft.),
- 24-inch thick soil operations layer,
- 12-inch leachate collection and removal system (LCRS) layer (or a geocomposite drainage net on sideslope),

- 60-mil thick high density polyethylene (HDPE) geomembrane; and,
- a 24-inch low-permeability soil liner layer with a permeability of 1 x 10^{-7} cm/s.

For the purposes of the HELP model, the slope of the bottom liner system was set at 2.5% to reflect proposed cell excavation grades in LF-2 and the REA.

Base Liner – Cell Sideslopes

Proposed new waste cell excavation sideslopes will be at slopes of 3:1 (H:V) or less. Please note that the cell sidelopes in LF-2 will be cut at 2.5:1; therefore, a more conservative slope of 3:1 was used in the modeling to compare to the prescriptive liner system, as well as, represent a worse-case scenario for leachate generation for this site area. In our experience, the 2-ft thick low permeability soil layer of the prescriptive base liner system is impractical to construct on slopes, and in California, industry convention is to utilize a GCL in lieu of the soil layer. Therefore, for the purposes of our analyses, we assume the prescriptive standards for base liner on cell sideslopes would consist of the following, from top to bottom:

- Waste layer (modeled at a thickness of 100 ft.),
- 24-inch thick soil operations layer,
- Geocomposite drainage layer,
- 60-mil HDPE geomembrane; and
- a GCL.

Final Cover System

For landfill cover systems, the minimum prescriptive requirement under 27 CCR Section 21090 entails a 2-ft thick soil foundation layer over waste, overlain by a 1-foot thick low-permeability soil layer, overlain by a minimum 12-inch thick vegetative soil layer. However, the regulations also require that the cover system equal the hydraulic conductivity of the bottom liner system. Therefore, for purposes of our analyses, we view the "prescriptive" cover for a landfill with composite base liner as described above to consist of the following (top to bottom):

- 18-inch vegetative soil cover layer,
- Geocomposite drainage layer,
- 60-mil HDPE geomembrane,
- Geosynthetic clay layer (GCL); and,
- a 24-inch compacted foundation layer.

For our analysis we assume an 18-inch thick vegetative layer, which technically exceeds the minimum standards. However, in practice, an 18-inch thick vegetative soil layer is the minimum thickness recommended to protect a cover system with HDPE and GCL components from damage due to normal post-closure maintenance activities (mowing, pick-up truck or utility vehicle access for well monitoring, etc.).

Engineered Alternative Bottom Liner and Cover Systems

The proposed engineered alternative base liner and cover system configurations for LF-2 and the REA consist of the following, from top to bottom:

Base Liner – Cell Bottom

- Waste layer (modeled at a thickness of 100 ft.),
- 24-inch thick soil operations layer,
- 12-inch LCRS,
- 60-mil HDPE geomembrane,
- 24-inch thick low-permeability soil liner (1 $x10^{-7}$ cm/s),
- 12-inch detection sand layer (2 $x10^{-3}$ cm/s),
- 60-mil HDPE geomembrane; and,
- a 12-inch thick low-permeability soil liner (1 $x10^{-7}$ cm/s).

Please note that a 4-foot thick soil buffer layer will be placed, as appropriate, between the low-permeable soils and the underdrain system.

Base Liner – Cell Sideslopes

- Waste layer (modeled at a thickness of 100 ft.);
- 24-inch thick soil operations layer
- 200-mil geocomposite drainage layer,
- 60-mil thick HDPE geomembrane,
- GCL,
- 60-mil thick HDPE geomembrane,
- GCL; and,
- a 60-mil thick HDPE geomembrane.

Please note that a Geocomposite drainage layer, underlying a 24” cushion layer (REA area only) resides below the proposed cell sideslope liner system.

Final Cover System

- 18-inch vegetative soil cover layer;
- Geocomposite drainage layer;
- 60-mil HDPE geomembrane;
- GCL (Used in LF-2 only);
- 24-inch compacted foundation layer;

LANDFILL BASE LINER SYSTEMS WITH SINGLE 10-FT LIFT AND 6-INCH DAILY COVER

The systems described above were modeled for a one-year operational period which included a 100-yr storm event. For each system, the final cover was removed and replaced with a 6-inch daily cover. The waste thickness was reduced to a single 10-ft lift. The bottom liner parameters remained the same. This is considered a worst-case scenario, where the expected infiltration rates into the LCRS system (or potential infiltration through the base liner) would be the highest with only one lift in place.

PERFORMANCE EQUIVALENCY COMPARISON

HELP modeling was performed for the following two scenarios for both the prescribed and proposed engineered alternative liner systems: (1) Over a 30-year post closure period with the final cover in place; and (2) over a 1-year operational period with one lift of waste and daily cover.

Design Parameters / Model Input Assumptions

- 2.5% average bottom liner base slope and 500 ft. drainage length on cell floor.
- 33% base side slope (3:1 H:V) and 563 ft. drainage length on cell side slopes.
- Final cover surface slope of 25% (4:1 H:V) with slope length of 800 feet for 2.5% bottom liner model.
- Final cover surface slope of 31% with slope length of 563 feet for 3:1 side slope model.
- Daily cover surface slopes equivalent to bottom slope (i.e. either 2.5% or 3:1).
- 30-year simulation period for final cap.
- 1-year simulated operational period that included a 100-year 24-hour storm event of 5.77 inches for the 10-foot lift of waste model runs.
- Synthetically-generated climate data (evapotranspiration, precipitation, temperature, humidity, and solar radiation) was developed using HELP model weather generation coefficients for San Francisco, California, and climate data for Cotati, California. An annual average precipitation of 30.96 inches was used as a basis for rain-event generation.
- Bare ground condition for bottom liner with one 10-foot lift of waste and a 6-inch daily cover.
- Fair grass ground condition for the final cap liner system.
- Initial moisture content of the layers specified was determined by the program for the waste and synthetic layers. Optimum moisture contents for compacted on-site soils were used as initial moisture contents of the soil layers.

- Geomembrane pinhole density of one (1) defect (hole diameter = 1mm) per acre. This value has been accepted by California agencies for use in the HELP model and is considered by SCS to be reasonable when comparing leakage rates between alternate liner configurations.
- Geomembrane installation defect density of five (5) defects (each hole size = 1 cm^2) per acre. Based on our experience, this value has been accepted by California agencies for use in the HELP model.
- Good geomembrane placement quality = 3 (on a scale of 1 to 5, with 5 being the best)
- In general, the HELP model does not permit impermeable barriers, depending on configuration, to be placed on top of one another; therefore, the 60-mil HDPE geomembrane on top of the GCL was modeled as one layer, as applicable, using the formula $K_{effective} = (T_1 + T_2)/ (T_1/K_1 + T_2/K_2)$, with K = hydraulic conductivity and T = layer thickness. This gave a $K_{effective}$ of 7×10^{-14} for the combined 60-mil HDPE/GCL layer.
- Where applicable, HELP modeling of two low-permeability layers using the HELP model (e.g., flexible membrane liner and GCL layer), the GCL layer was modeled as a vertical percolation layer with the permeability outlined in EPA guidelines.

Assumptions used for HELP modeling for the site are based on SCS's best judgment and industry practice for this application are as follows:

- Since the surface area of each cell will vary, the slope used in the analysis is calculated as an approximate average value, but considered to be on the conservative side in terms of leachate generation (flatter slopes result in greater stormwater infiltration generating more leachate).
- 30-year simulation was used for the final cap system to obtain results in equilibrium condition and to meet the typical 30-year post-closure care requirements.
- Drainage length on the final slope surfaces of the Landfill is conservatively assumed and without considering the location of future access roads which shorten slope length.
- All leachate generated is assumed to be collected at the lowest point of the 2.5% cell floor within the LCRS sump.

RESULTS OF HELP MODEL ANALYSIS

The quantitative performance of the landfill bottom liner to control generated leachate and of the final cover systems to control leachate generation into the waste mass were evaluated using the HELP Model, Version 3.07. The results of HELP modeling are presented in ***Table 2*** (Final cover with 30-year precipitation) and ***Table 3*** (Ten-foot lift of with one-year precipitation). Printouts of the HELP model output data are included in ***Attachment A***.

Anticipated average annual leachate generation during site operations can be used as a basis for LCRS sizing. The average volume of leachate expected to be captured in the new LCRS systems at LF-2 and the REA for the engineered alternative (RWQCB Modified) designs are as follows:

Active Landfill – 10 feet of Waste

- Cell sideslope areas: 121,000 gallons/acre-year.
- Cell floor areas: 129,700 gallons/acre-year.

Final Cover - 100 Feet Waste

- Cell sideslope areas: 6,420 gallons/acre-year.
- Cell floor areas: 6,400 gallons/acre-year.

Results of modeling can also be used for comparing containment features between the proposed engineered alternative and prescriptive liner systems. For the 30-year final closure simulations, the estimated percolation/leakage rate through the cell floor low-permeability soil layer were for the proposed engineered alternative liner system (annual average of 0.00 cubic feet/acre-year) and for the prescribed liner system (annual average of 0.024 cubic feet/acre-year).

For the 1-year 10-ft waste simulations, the estimated percolation/leakage rate through the cell floor low-permeability soil layer was less for the proposed engineered alternative base liner system (annual average of 0.00 cubic feet/acre-year) than for the prescriptive liner system (annual average of 0.33 cubic feet/acre-year). These values convert to 0.00 inches/year and 1×10^{-4} inches/year respectively; these percolation rates are for use as the infiltration rates for the companion MULTIMED contaminant dispersion modeling.

For the 30-year final closure simulations, the estimated percolation/leakage rate through the proposed engineered alternative slope liner system was 0.00 and for the prescribed sideslope liner system (annual average of 47.64 cubic feet/acre-year).
For the 1-year 10-ft waste simulations, the estimated percolation/leakage rate through the engineered alternative sideslope liner system was 0.00 cubic feet/ acre.

Percolation through the synthetic liners is a function of the number of defects attributed to the liner (pinholes and placement). Conservative values were chosen for this modeling; if a “perfect” liner is assumed (i.e. no pinholes and excellent placement), there is virtually no leachate flow through the synthetic liners.

LIMITATIONS

Results of HELP modeling, and in particular, estimated infiltration and leakage rates presented herein are offered for comparison purposes, to show differences between bottom liner prescriptive standards and engineered alternatives. The model outputs presented are not intended to be interpreted as actual liquids volumes that will be released to the environment. A comprehensive water quality monitoring program is currently in effect and will be continued to detect potential releases from existing landfill cells and new cells at the Central Disposal Site, in accordance with requirements issued by the North Coast Regional Water Quality Control Board.

REFERENCE

U.S. Environmental Protection Agency (November 1997). The Hydrologic Evaluation of Landfill Performance (HELP) Model – User's Guide and Engineering Documentation For Version 3, by Paul R. Schroeder, Tamsen S. Dozier, Paul A. Zappi, Bruce M. McEnroe, John W. Sjostrom and R. Lee Peyton, Environmental Laboratory, U.S. Army Corps of Engineers, Waterways Experimental Station, Interagency Agreement No. DW21931425.

Table 1. HELP model layer numbering and description

2.5 % Bottom with 3:1 Final Cover

LAYER #	PROPOSED 2.5%	THICKNESS (INCHES)	LAYER #	PRESCRIBED 2.5%	THICKNESS (INCHES)
1	VEGETATIVE COVER	18	1	VEGETATIVE COVER	18
2	GEOCOMPOSITE DRAINAGE LAYER	0.2	2	GEOCOMPOSITE DRAINAGE LAYER	0.2
3	60 mil HDPE + GCL LAYER	0.1	3	60 mil HDPE + GCL LAYER	0.1
4	FOUNDATION LAYER	24	4	FOUNDATION LAYER	24
5	WASTE	1200	5	WASTE	1200
6	OPERATIONS LAYER	24	6	OPERATIONS LAYER	24
7	LCRS GRANULAR LAYER	12	7	LCRS GRANULAR LAYER	0.2
8	60 mil HDPE LAYER	0.06	8	60 mil HDPE LAYER	0.06
9	LOW-PERM SOIL LAYER	24	9	LOW-PERM SOIL LAYER	24
10	LCRS DETECTION LAYER	12			
11	60 mil HDPE LAYER	0.06			
12	LOW-PERM SOIL LAYER	12			

3:1 Side Slopes with 3:1 Final Cover

LAYER #	PROPOSED 3:1	THICKNESS (INCHES)	LAYER #	PRESCRIBED 3:1	THICKNESS (INCHES)
1	VEGETATIVE COVER	18	1	VEGETATIVE COVER	18
2	GEOCOMPOSITE DRAINAGE LAYER	0.2	2	GEOCOMPOSITE DRAINAGE LAYER	0.2
3	60 mil HDPE + GCL LAYER	0.1	3	60 mil HDPE + GCL LAYER	0.1
4	FOUNDATION LAYER	24	4	FOUNDATION LAYER	24
5	WASTE	1200	5	WASTE	1200
6	OPERATIONS LAYER	24	6	OPERATIONS LAYER	24
7	GEOCOMPOSITE DRAINAGE LAYER	0.2	7	GEOCOMPOSITE DRAINAGE LAYER	0.2
8	60 mil HDPE	0.06	8	60 mil HDPE + GCL LAYER	0.1
9	GCL LAYER	0.2			
10	60 mil HDPE	0.06			
11	GCL LAYER	0.2			
12	60 mil HDPE	0.06			

2.5 % Bottom with Daily Cover

LAYER #	PROPOSED 2.5%	THICKNESS (INCHES)	LAYER #	PRESCRIBED 2.5%	THICKNESS (INCHES)
1	DAILY COVER	6	1	DAILY COVER	6
2	WASTE	120	2	WASTE	120
3	OPERATIONS LAYER	24	3	OPERATIONS LAYER	24
4	LCRS GRANULAR LAYER	12	4	LCRS GRANULAR LAYER	12
5	60 mil HDPE LAYER	0.06	5	60 mil HDPE LAYER	0.06
6	LOW-PERM SOIL LAYER	24	6	LOW-PERM SOIL LAYER	24
7	LCRS DETECTION LAYER	12			
8	60 mil HDPE	0.06			
9	LOW-PERM SOIL LAYER	12			

3:1 Side Slopes with 3:1 Daily Cover

LAYER #	PROPOSED 3:1	THICKNESS (INCHES)	LAYER #	PRESCRIBED 3:1	THICKNESS (INCHES)
1	DAILY COVER	6	1	DAILY COVER	6
2	WASTE	120	2	WASTE	120
3	OPERATIONS LAYER	24	3	OPERATIONS LAYER	24
4	GEOCOMPOSITE DRAINAGE LAYER	0.2	4	GEOCOMPOSITE DRAINAGE LAYER	0.2
5	60 mil HDPE LAYER	0.06	5	60 mil HDPE + GCL LAYER	0.1
6	GCL LAYER	0.2			
7	60 mil HDPE LAYER	0.06			
8	GCL LAYER	0.2			
9	60 mil HDPE LAYER	0.06			

TABLE 2. FINAL CLOSURE - 30 YEARS
AVERAGE ANNUAL TOTALS IN CUBIC FEET/ACRE

	2.5% BOTTOM			3:1 SIDE SLOPE	
	Proposed Liner	Prescribed Liner		Proposed Liner	Prescribed Liner
PRECIPITATION	113484.70	113484.70		113484.70	113484.70
RUNOFF	12889.67	12747.70		13515.98	13491.69
EVAPOTRANSPIRATION	48119.42	48116.30		48085.67	48080.53
VEGETATIVE COVER			1	VEGETATIVE COVER	
GEOCOMPOSITE DRAINAGE LAYER			2	GEOCOMPOSITE DRAINAGE LAYER	
LATERAL DRAINAGE COLLECTED FROM GEOCOMPOSITE DRAINAGE LAYER	52483.41	52628.38		LATERAL DRAINAGE COLLECTED FROM GEOCOMPOSITE DRAINAGE LAYER	51890.98	51920.25
60 mil HDPE LAYER			3	60 mil HDPE LAYER + GEOSYNTHETIC CLAY LAYER	
	0.256			PERCOLATION/LEAKAGE THROUGH 60 mil HDPE + GCL LAYER	0.196	See Note below
GEOSYNTHETIC CLAY LAYER					
	NA				
FOUNDATION LAYER			4	FOUNDATION LAYER	
PERCOLATION/LEAKAGE THROUGH FOUNDATION LAYER	NA	0.32		PERCOLATION/LEAKAGE THROUGH FOUNDATION LAYER	NA	0.21
WASTE - 100 FT			5	WASTE - 100 FT	
OPERATIONS LAYER			6	OPERATIONS LAYER	
PERCOLATION/LEAKAGE THROUGH OPERATIONS LAYER	NA	1161.93		PERCOLATION/LEAKAGE THROUGH OPERATIONS LAYER	NA	1161.81
LCRS GRANULAR LAYER			7	GEOCOMPOSITE DRAINAGE LAYER	
LATERAL DRAINAGE COLLECTED FROM LCRS GRANULAR LAYER	859.57	1158.99		LATERAL DRAINAGE COLLECTED GEOCOMPOSITE DRAINAGE LAYER	862.49	1161.80
60 mil HDPE LAYER			8	60 mil HDPE LAYER	
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA		PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA
GEOCOMPOSITE DRAINAGE LAYER				GEOCOMPOSITE DRAINAGE LAYER		
LATERAL DRAINAGE COLLECTED FROM GEOCOMPOSITE DRAINAGE LAYER	NA	NA		LATERAL DRAINAGE COLLECTED FROM GEOCOMPOSITE DRAINAGE LAYER	NA	NA
LOW-PERM SOIL LAYER			9	60 mil HDPE LAYER		
					NA	NA
PERCOLATION/LEAKAGE THROUGH LOW-PERM SOIL LAYER	0	NA		GEOSYNTHETIC CLAY LAYER		
LCRS DETECTION LAYER (Sand)			10	PERCOLATION/LEAKAGE THROUGH 60 mil HDPE + GCL LAYER	0	NA
LCRS DRAINAGE DETECTION LAYER	0	NA		GEOSYNTHETIC CLAY LAYER		
60 mil HDPE LAYER			11	PERCOLATION/LEAKAGE THROUGH GCL LAYER	0	NA
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA		60 mil HDPE LAYER		
LOW-PERM SOIL LAYER			12	PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA
PERCOLATION/LEAKAGE THROUGH LOW-PERM SOIL LAYER	0	NA		GEOSYNTHETIC CLAY LAYER		
SOIL BUFFER BETWEEN LOW-PERM AND UNDER DRAIN SYSTEM			13	PERCOLATION/LEAKAGE THROUGH GCL LAYER	0	NA
PERCOLATION/LEAKAGE THROUGH SOIL BUFFER LAYER	0	NA		60 mil HDPE LAYER		
				PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA

Note:

PERCOLATION/LEAKAGE THROUGH 60 mil HDPE + GCL LAYER		
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE + GCL LAYER	0.196	47.64
FIRST YEAR	0.164	1423.65
AVERAGE OF YEARS TWO THROUGH THIRTY	0.197	0.19

TABLE 3. 10' WASTE - ONE YEAR

AVERAGE ANNUAL TOTALS IN CUBIC FEET/ACRE

	2.5% Bottom	
	Proposed Liner	Prescribed Liner
PRECIPITATION	156053.70	156053.70
RUNOFF	89550.10	89550.10
EVAPOTRANSPIRATION	47265.15	4726.15
DAILY COVER		
WASTE - 10 FT		
OPERATIONS LAYER		
PERCOLATION/LEAKAGE THROUGH OPERATIONS LAYER	17572.13	17572.13
LCRS GRANULAR LAYER		
LATERAL DRAINAGE COLLECTED FROM LCRS GRANULAR LAYER	17411.62	17411.62
60 mil HDPE LAYER		
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	NA	NA
LOW-PERM SOIL LAYER		
PERCOLATION/LEAKAGE THROUGH LOW-PERM SOIL LAYER	0	0.328
LCRS DETECTION LAYER (Sand)		
LATERAL DRAINAGE COLLECTED FROM LCRS DETECTION LAYER	0	NA
60 mil HDPE LAYER		
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA
LOW-PERM SOIL LAYER		
PERCOLATION/LEAKAGE THROUGH LOW-PERM SOIL LAYER	0	NA

	3:1 SLOPE	
	Proposed Liner	Prescribed Liner
PRECIPITATION	156053.70	156053.70
RUNOFF	91733.14	91733.14
EVAPOTRANSPIRATION	46058.09	46058.09
DAILY COVER		
WASTE - 10 FT		
OPERATIONS LAYER		
PERCOLATION/LEAKAGE THROUGH OPERATIONS LAYER	17240.65	17240.65
GEOCOMPOSITE DRAINAGE LAYER		
LATERAL DRAINAGE COLLECTED FROM GEOCOMPOSITE DRAINAGE LAYER	17240.65	16247.74
60 mil HDPE LAYER		
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0.001	NA
GEOSYNTHETIC CLAY LAYER		
PERCOLATION/LEAKAGE THROUGH GCL LAYER	0	1000.18
60 mil HDPE LAYER		
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA
GEOSYNTHETIC CLAY LAYER		
PERCOLATION/LEAKAGE GCL LAYER	0	NA
60 mil HDPE LAYER		
PERCOLATION/LEAKAGE THROUGH 60 mil HDPE LAYER	0	NA

ATTACHMENT A

HELP MODEL PRINTOUTS

Prescribed

One Lift Bottom 2.5% Bottom

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**                                                                              **
**                                                                              **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                    **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY                       **
**                    USAE WATERWAYS EXPERIMENT STATION                         **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:    C:\HELP3\SCLFprs\SCLF1L.D4
TEMPERATURE DATA FILE:      C:\HELP3\SCLFprs\SCLF30.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\SCLFprs\SCLF30.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\SCLFprs\SCLF30.D11
SOIL AND DESIGN DATA FILE:  C:\HELP3\SCLfprs\LF2PR1Y.D10
OUTPUT DATA FILE:           C:\HELP3\SCLfprs\LF2PR1Y.OUT


TIME:  17:24     DATE:   2/ 8/2011


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     TITLE:  SCLF LANDFILL 2 EXPANSION - ONE LIFT PRESCRIBED 2.5% BOTTOM

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
              WERE SPECIFIED BY THE USER.


                                LAYER  1
                                --------

                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   0
          THICKNESS                    =      6.00   INCHES
          POROSITY                     =      0.3650 VOL/VOL
          FIELD CAPACITY               =      0.3050 VOL/VOL
          WILTING POINT                =      0.2020 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.2500 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.600000021000E-05 CM/SEC
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LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS	=	120.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 3

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 4

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	12.00	INCHES
POROSITY	=	0.3970	VOL/VOL
FIELD CAPACITY	=	0.0320	VOL/VOL
WILTING POINT	=	0.0130	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0300	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	1.00000000000	CM/SEC
SLOPE	=	2.50	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 5

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL

WILTING POINT	=	0.0000 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12 CM/SEC
FML PINHOLE DENSITY	=	1.00 HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00 HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD

LAYER 6

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00 INCHES
POROSITY	=	0.4510 VOL/VOL
FIELD CAPACITY	=	0.4190 VOL/VOL
WILTING POINT	=	0.3320 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4510 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000001000E-06 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #24 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	96.70	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	5.100	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	10.242	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.136	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	57.444	INCHES
TOTAL INITIAL WATER	=	57.444	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
COTATI CALIFORNIA

STATION LATITUDE	=	38.33 DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00

START OF GROWING SEASON (JULIAN DATE) = 78
END OF GROWING SEASON (JULIAN DATE) = 328
EVAPORATIVE ZONE DEPTH = 18.0 INCHES
AVERAGE ANNUAL WIND SPEED = 5.50 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 75.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 71.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 73.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 74.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
RUNOFF	10.382	5.204	1.617	0.824	0.108	0.029
	0.000	0.000	0.000	0.241	2.572	3.692

EVAPOTRANSPIRATION	1.275	1.624	2.820	2.348	2.772	0.077
	0.235	0.000	0.000	0.068	0.595	1.208
PERCOLATION/LEAKAGE THROUGH	2.0458	1.5959	1.1316	0.0058	0.0044	0.0000
LAYER 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0574
LATERAL DRAINAGE COLLECTED	1.9340	1.6321	1.1831	0.0058	0.0044	0.0000
FROM LAYER 4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0372
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.021	0.013	0.009	0.000	0.000	0.000
TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.001
STD. DEVIATION OF DAILY	0.022	0.011	0.013	0.001	0.001	0.000
HEAD ON TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.002
AVERAGE DAILY HEAD ON	0.317	0.296	0.194	0.001	0.001	0.000
TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.006
STD. DEVIATION OF DAILY	0.137	0.201	0.226	0.002	0.002	0.000
HEAD ON TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.008

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	24.669	89550.102	57.38
EVAPOTRANSPIRATION	13.021	47265.152	30.29
PERC./LEAKAGE THROUGH LAYER 3	4.840807	17572.129	11.26
AVG. HEAD ON TOP OF LAYER 3	0.0037		
DRAINAGE COLLECTED FROM LAYER 4	4.7966	17411.621	11.16
PERC./LEAKAGE THROUGH LAYER 6	0.000090	0.328	0.00
AVG. HEAD ON TOP OF LAYER 5	0.0679		

CHANGE IN WATER STORAGE	0.503	1826.507	1.17
SOIL WATER AT START OF YEAR	57.444	208521.516	
SOIL WATER AT END OF YEAR	57.947	210348.016	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.011	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
RUNOFF						
TOTALS	10.382	5.204	1.617	0.824	0.108	0.029
	0.000	0.000	0.000	0.241	2.572	3.692
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	1.275	1.624	2.820	2.348	2.772	0.077
	0.235	0.000	0.000	0.068	0.595	1.208
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
PERCOLATION/LEAKAGE THROUGH LAYER 3						
TOTALS	2.0458	1.5959	1.1316	0.0058	0.0044	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0574
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 4

TOTALS	1.9340	1.6321	1.1831	0.0058	0.0044	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0372
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 6

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0205	0.0135	0.0094	0.0001	0.0001	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 5

AVERAGES	0.3171	0.2963	0.1940	0.0010	0.0007	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0061
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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TITLE: SCLF LANDFILL 2 EXPANSION - ONE LIFT PRESCRIBED 2.5% BOTTOM

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99 (0.000)	156053.7	100.00
RUNOFF	24.669 (0.0000)	89550.10	57.384
EVAPOTRANSPIRATION	13.021 (0.0000)	47265.15	30.288
PERCOLATION/LEAKAGE THROUGH LAYER 3	4.84081 (0.00000)	17572.129	11.26031
AVERAGE HEAD ON TOP OF LAYER 3	0.004 (0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 4	4.79659 (0.00000)	17411.621	11.15745
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.00009 (0.00000)	0.328	0.00021
AVERAGE HEAD ON TOP OF LAYER 5	0.068 (0.000)		
CHANGE IN WATER STORAGE	0.503 (0.0000)	1826.51	1.170

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	5.441	19751.1914
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.136729	496.32715
AVERAGE HEAD ON TOP OF LAYER 3	0.123	
DRAINAGE COLLECTED FROM LAYER 4	0.12027	436.57095
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.000002	0.00774
AVERAGE HEAD ON TOP OF LAYER 5	0.611	
MAXIMUM HEAD ON TOP OF LAYER 5	1.194	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	16.5 FEET	
SNOW WATER	0.00	0.0000

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3424
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1187

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	2.1156	0.3526
2	35.8434	0.2987
3	8.7600	0.3650
4	0.4041	0.0337
5	0.0000	0.0000
6	10.8240	0.4510
SNOW WATER	0.000	

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Prescribed

One Lift 3:1 Side Slopes

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**                                                                              **
**                                                                              **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                    **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY                       **
**                    USAE WATERWAYS EXPERIMENT STATION                         **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:    C:\HELP3\SCLFprs\SCLF1L.D4
TEMPERATURE DATA FILE:      C:\HELP3\SCLFprs\SCLF30.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\SCLFprs\SCLF30.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\SCLFprs\SCLF30.D11
SOIL AND DESIGN DATA FILE:  C:\HELP3\SCLfprs\SDSLPR1Y.D10
OUTPUT DATA FILE:           C:\HELP3\SCLfprs\SDSLPR1Y.OUT


TIME:  17:30     DATE:   2/ 8/2011


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     TITLE:  SCLF LANDFILL 2 EXPANSION - Rx LINER - 1 LIFT - 3:1 SLOPES

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
              WERE SPECIFIED BY THE USER.


                                  LAYER  1
                                  --------

                    TYPE 1 - VERTICAL PERCOLATION LAYER
                        MATERIAL TEXTURE NUMBER   0
          THICKNESS                     =      6.00   INCHES
          POROSITY                      =      0.3650 VOL/VOL
          FIELD CAPACITY                =      0.3050 VOL/VOL
          WILTING POINT                 =      0.2020 VOL/VOL
          INITIAL SOIL WATER CONTENT    =      0.2500 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.600000021000E-05 CM/SEC
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LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS	=	120.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 3

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 4

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0200	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 5

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.10	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL

WILTING POINT	=	0.0000 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.700000022000E-13 CM/SEC
FML PINHOLE DENSITY	=	1.00 HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00 HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #24 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 33.% AND A SLOPE LENGTH OF 563. FEET.

SCS RUNOFF CURVE NUMBER	=	96.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	5.100	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	10.242	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.136	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	46.264	INCHES
TOTAL INITIAL WATER	=	46.264	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
COTATI CALIFORNIA

STATION LATITUDE	=	38.33	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	78	
END OF GROWING SEASON (JULIAN DATE)	=	328	
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	5.50	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	71.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	73.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	74.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
RUNOFF	10.557	5.292	1.683	0.878	0.121	0.034
	0.000	0.000	0.000	0.259	2.646	3.800
EVAPOTRANSPIRATION	1.277	1.625	2.803	2.250	2.551	0.072
	0.235	0.000	0.000	0.065	0.593	1.218
PERCOLATION/LEAKAGE THROUGH	2.0875	1.4796	1.0929	0.0054	0.0563	0.0000
LAYER 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0277
LATERAL DRAINAGE COLLECTED	1.9695	1.3929	1.0341	0.0044	0.0518	0.0000
FROM LAYER 4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0232
PERCOLATION/LEAKAGE THROUGH	0.1201	0.0867	0.0587	0.0010	0.0045	0.0000
LAYER 5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.021	0.014	0.010	0.000	0.001	0.000
TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.022	0.013	0.013	0.001	0.003	0.000
HEAD ON TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.001
AVERAGE DAILY HEAD ON	0.007	0.005	0.003	0.000	0.000	0.000
TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.004	0.004	0.005	0.000	0.001	0.000
HEAD ON TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.000

ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	25.271	91733.141	58.78
EVAPOTRANSPIRATION	12.688	46058.090	29.51
PERC./LEAKAGE THROUGH LAYER 3	4.749491	17240.652	11.05
AVG. HEAD ON TOP OF LAYER 3	0.0038		
DRAINAGE COLLECTED FROM LAYER 4	4.4760	16247.741	10.41
PERC./LEAKAGE THROUGH LAYER 5	0.275531	1000.176	0.64
AVG. HEAD ON TOP OF LAYER 5	0.0013		
CHANGE IN WATER STORAGE	0.279	1014.554	0.65
SOIL WATER AT START OF YEAR	46.268	167952.641	
SOIL WATER AT END OF YEAR	46.547	168967.187	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.018	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
RUNOFF						
TOTALS	10.557	5.292	1.683	0.878	0.121	0.034
	0.000	0.000	0.000	0.259	2.646	3.800
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	1.277	1.625	2.803	2.250	2.551	0.072
	0.235	0.000	0.000	0.065	0.593	1.218
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
PERCOLATION/LEAKAGE THROUGH LAYER 3						
TOTALS	2.0875	1.4796	1.0929	0.0054	0.0563	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0277
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LATERAL DRAINAGE COLLECTED FROM LAYER 4						
TOTALS	1.9695	1.3929	1.0341	0.0044	0.0518	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0232
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH LAYER 5						
TOTALS	0.1201	0.0867	0.0587	0.0010	0.0045	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0210	0.0139	0.0096	0.0001	0.0005	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 5

AVERAGES	0.0066	0.0052	0.0035	0.0000	0.0002	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TITLE: SCLF LANDFILL 2 EXPANSION - Rx LINER - 1 LIFT - 3:1 SLOPES

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99 (0.000)	156053.7	100.00
RUNOFF	25.271 (0.0000)	91733.14	58.783
EVAPOTRANSPIRATION	12.688 (0.0000)	46058.09	29.514
PERCOLATION/LEAKAGE THROUGH LAYER 3	4.74949 (0.00000)	17240.652	11.04790
AVERAGE HEAD ON TOP OF LAYER 3	0.004 (0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 4	4.47596 (0.00000)	16247.741	10.41163
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.27553 (0.00000)	1000.176	0.64092
AVERAGE HEAD ON TOP OF LAYER 5	0.001 (0.000)		
CHANGE IN WATER STORAGE	0.279 (0.0000)	1014.55	0.650

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	5.457	19810.4590
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.144908	526.01447
AVERAGE HEAD ON TOP OF LAYER 3	0.123	
DRAINAGE COLLECTED FROM LAYER 4	0.13868	503.42303
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.007520	27.29601
AVERAGE HEAD ON TOP OF LAYER 5	0.014	
MAXIMUM HEAD ON TOP OF LAYER 5	0.011	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	0.0 FEET	
SNOW WATER	0.00	0.0000

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3372
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1187

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	2.1220	0.3537
2	35.6594	0.2972
3	8.7600	0.3650
4	0.0020	0.0100
5	0.0000	0.0000
SNOW WATER	0.000	

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Prescribed

Final Cover 2.5% Bottom

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**                                                                  **
**                                                                  **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE        **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)        **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY           **
**                    USAE WATERWAYS EXPERIMENT STATION             **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY       **
**                                                                  **
**                                                                  **
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PRECIPITATION DATA FILE: C:\HELP3\SCLFprs\SCLF30.D4
TEMPERATURE DATA FILE: C:\HELP3\SCLFprs\SCLF30.D7
SOLAR RADIATION DATA FILE: C:\HELP3\SCLFprs\SCLF30.D13
EVAPOTRANSPIRATION DATA: C:\HELP3\SCLFprs\SCLF30.D11
SOIL AND DESIGN DATA FILE: C:\HELP3\SCLfprs\LF2PRFC.D10
OUTPUT DATA FILE: C:\HELP3\SCLfprs\LF2PRFC.OUT

TIME: 17:21 DATE: 2/ 8/2011

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TITLE: SCLF LANDFILL 2 EXPANSION - PRESCRIBED LINER - FINAL COVER -

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NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
WERE SPECIFIED BY THE USER.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 10

THICKNESS	=	18.00 INCHES
POROSITY	=	0.3980 VOL/VOL
FIELD CAPACITY	=	0.2440 VOL/VOL
WILTING POINT	=	0.1360 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2500 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.119999997000E-03 CM/SEC

NOTE: SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY 3.00
FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.

LAYER 2

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0200	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	25.00	PERCENT
DRAINAGE LENGTH	=	800.0	FEET

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.10	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.700000022000E-13	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 4

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS	=	1200.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 6

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	12.00	INCHES
POROSITY	=	0.3970	VOL/VOL
FIELD CAPACITY	=	0.0320	VOL/VOL
WILTING POINT	=	0.0130	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0300	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	1.00000000000	CM/SEC
SLOPE	=	2.50	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE

FML PLACEMENT QUALITY = 3 - GOOD

LAYER 9

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.4510	VOL/VOL
FIELD CAPACITY	=	0.4190	VOL/VOL
WILTING POINT	=	0.3320	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4510	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000001000E-06	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #10 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 25.% AND A SLOPE LENGTH OF 800. FEET.

SCS RUNOFF CURVE NUMBER	=	85.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	4.500	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	7.164	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.448	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	393.208	INCHES
TOTAL INITIAL WATER	=	393.208	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM COTATI CALIFORNIA

STATION LATITUDE	=	38.33	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	78	
END OF GROWING SEASON (JULIAN DATE)	=	328	
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	5.50	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%

AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 71.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 73.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 74.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.02	90822.609	100.00
RUNOFF	3.328	12079.622	13.30
EVAPOTRANSPIRATION	9.544	34645.895	38.15
DRAINAGE COLLECTED FROM LAYER 2	12.1977	44277.531	48.75
PERC./LEAKAGE THROUGH LAYER 4	0.000073	0.265	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
PERC./LEAKAGE THROUGH LAYER 6	9.600089	34848.324	38.37

AVG. HEAD ON TOP OF LAYER 6	0.0066		
DRAINAGE COLLECTED FROM LAYER 7	9.5759	34760.590	38.27
PERC./LEAKAGE THROUGH LAYER 9	0.000173	0.627	0.00
AVG. HEAD ON TOP OF LAYER 8	0.1353		
CHANGE IN WATER STORAGE	-9.626	-34941.629	-38.47
SOIL WATER AT START OF YEAR	393.208	1427345.120	
SOIL WATER AT END OF YEAR	383.582	1392403.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.028	0.00

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	35.53	128973.883	100.00
RUNOFF	4.154	15079.125	11.69
EVAPOTRANSPIRATION	13.313	48326.402	37.47
DRAINAGE COLLECTED FROM LAYER 2	16.9681	61594.242	47.76
PERC./LEAKAGE THROUGH LAYER 4	0.000100	0.364	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0028		
PERC./LEAKAGE THROUGH LAYER 6	0.000100	0.364	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.356	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.095	3973.747	3.08
SOIL WATER AT START OF YEAR	383.582	1392403.500	

SOIL WATER AT END OF YEAR	384.677	1396377.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.71	86067.297	100.00
RUNOFF	1.123	4075.348	4.74
EVAPOTRANSPIRATION	12.739	46241.027	53.73
DRAINAGE COLLECTED FROM LAYER 2	10.7562	39045.160	45.37
PERC./LEAKAGE THROUGH LAYER 4	0.000067	0.242	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		
PERC./LEAKAGE THROUGH LAYER 6	0.000067	0.242	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.243	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.908	-3294.451	-3.83
SOIL WATER AT START OF YEAR	384.677	1396377.120	
SOIL WATER AT END OF YEAR	383.769	1393082.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.035	0.00

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.94	94162.227	100.00
RUNOFF	2.326	8444.968	8.97
EVAPOTRANSPIRATION	13.849	50271.344	53.39
DRAINAGE COLLECTED FROM LAYER 2	9.2770	33675.422	35.76
PERC./LEAKAGE THROUGH LAYER 4	0.000058	0.211	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0015		
PERC./LEAKAGE THROUGH LAYER 6	0.000058	0.211	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.200	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.488	1770.245	1.88
SOIL WATER AT START OF YEAR	383.769	1393082.750	
SOIL WATER AT END OF YEAR	384.257	1394853.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.048	0.00

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.02	119862.570	100.00
RUNOFF	2.676	9712.868	8.10
EVAPOTRANSPIRATION	16.032	58196.062	48.55

DRAINAGE COLLECTED FROM LAYER 2	14.7913	53692.504	44.80
PERC./LEAKAGE THROUGH LAYER 4	0.000090	0.325	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0024		
PERC./LEAKAGE THROUGH LAYER 6	0.000090	0.325	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.331	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.479	-1739.116	-1.45
SOIL WATER AT START OF YEAR	384.257	1394853.000	
SOIL WATER AT END OF YEAR	383.778	1393113.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.078	0.00

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ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.63	85776.914	100.00
RUNOFF	1.763	6400.874	7.46
EVAPOTRANSPIRATION	11.167	40536.996	47.26
DRAINAGE COLLECTED FROM LAYER 2	10.8293	39310.301	45.83
PERC./LEAKAGE THROUGH LAYER 4	0.000064	0.233	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		
PERC./LEAKAGE THROUGH LAYER 6	0.000064	0.233	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.230	0.00

PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.002	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.130	-471.585	-0.55
SOIL WATER AT START OF YEAR	383.778	1393113.870	
SOIL WATER AT END OF YEAR	383.648	1392642.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.095	0.00

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ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	8.215	29818.727	19.11
EVAPOTRANSPIRATION	14.029	50925.637	32.63
DRAINAGE COLLECTED FROM LAYER 2	19.4311	70534.930	45.20
PERC./LEAKAGE THROUGH LAYER 4	0.000115	0.416	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0032		
PERC./LEAKAGE THROUGH LAYER 6	0.000115	0.416	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.404	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.315	4774.013	3.06
SOIL WATER AT START OF YEAR	383.648	1392642.250	
SOIL WATER AT END OF YEAR	384.963	1397416.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00

SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.005	0.00

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ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT
PRECIPITATION	41.82	151806.594	100.00
RUNOFF	5.519	20034.719	13.20
EVAPOTRANSPIRATION	15.691	56959.312	37.52
DRAINAGE COLLECTED FROM LAYER 2	21.0574	76438.414	50.35
PERC./LEAKAGE THROUGH LAYER 4	0.000142	0.516	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0043		
PERC./LEAKAGE THROUGH LAYER 6	0.000142	0.516	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.522	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.448	-1626.344	-1.07
SOIL WATER AT START OF YEAR	384.963	1397416.250	
SOIL WATER AT END OF YEAR	384.515	1395790.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.030	0.00

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ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.22	87918.609	100.00
RUNOFF	3.871	14053.185	15.98
EVAPOTRANSPIRATION	8.312	30174.352	34.32
DRAINAGE COLLECTED FROM LAYER 2	12.3939	44989.742	51.17
PERC./LEAKAGE THROUGH LAYER 4	0.000074	0.270	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
PERC./LEAKAGE THROUGH LAYER 6	0.000074	0.270	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.269	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.358	-1298.882	-1.48
SOIL WATER AT START OF YEAR	384.515	1395790.000	
SOIL WATER AT END OF YEAR	384.157	1394491.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.057	0.00

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ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	36.89	133910.719	100.00
RUNOFF	5.117	18575.980	13.87
EVAPOTRANSPIRATION	14.974	54357.301	40.59
DRAINAGE COLLECTED FROM LAYER 2	16.7750	60893.133	45.47

PERC./LEAKAGE THROUGH LAYER 4	0.000105	0.382	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0030		
PERC./LEAKAGE THROUGH LAYER 6	0.000105	0.381	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.370	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.023	83.860	0.06
SOIL WATER AT START OF YEAR	384.157	1394491.120	
SOIL WATER AT END OF YEAR	384.180	1394574.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.082	0.00

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ANNUAL TOTALS FOR YEAR 11

	INCHES	CU. FEET	PERCENT
PRECIPITATION	34.79	126287.734	100.00
RUNOFF	3.124	11339.646	8.98
EVAPOTRANSPIRATION	13.871	50350.734	39.87
DRAINAGE COLLECTED FROM LAYER 2	17.1098	62108.395	49.18
PERC./LEAKAGE THROUGH LAYER 4	0.000102	0.371	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0028		
PERC./LEAKAGE THROUGH LAYER 6	0.000102	0.372	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.365	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00

AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.686	2488.535	1.97
SOIL WATER AT START OF YEAR	384.180	1394574.870	
SOIL WATER AT END OF YEAR	384.866	1397063.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.052	0.00

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ANNUAL TOTALS FOR YEAR 12

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.97	108791.094	100.00
RUNOFF	2.828	10267.266	9.44
EVAPOTRANSPIRATION	11.860	43051.770	39.57
DRAINAGE COLLECTED FROM LAYER 2	17.0028	61720.039	56.73
PERC./LEAKAGE THROUGH LAYER 4	0.000103	0.372	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0028		
PERC./LEAKAGE THROUGH LAYER 6	0.000103	0.372	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.382	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.721	-6248.368	-5.74
SOIL WATER AT START OF YEAR	384.866	1397063.500	
SOIL WATER AT END OF YEAR	383.145	1390815.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 13

	INCHES	CU. FEET	PERCENT
PRECIPITATION	27.79	100877.703	100.00
RUNOFF	2.362	8574.205	8.50
EVAPOTRANSPIRATION	12.652	45925.582	45.53
DRAINAGE COLLECTED FROM LAYER 2	11.3302	41128.727	40.77
PERC./LEAKAGE THROUGH LAYER 4	0.000071	0.259	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0019		
PERC./LEAKAGE THROUGH LAYER 6	0.000071	0.259	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.237	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.446	5248.921	5.20
SOIL WATER AT START OF YEAR	383.145	1390815.120	
SOIL WATER AT END OF YEAR	384.591	1396064.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.028	0.00

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ANNUAL TOTALS FOR YEAR 14

	INCHES	CU. FEET	PERCENT

PRECIPITATION	32.80	119064.023	100.00
RUNOFF	5.034	18274.594	15.35
EVAPOTRANSPIRATION	12.482	45308.133	38.05
DRAINAGE COLLECTED FROM LAYER 2	16.5231	59978.695	50.38
PERC./LEAKAGE THROUGH LAYER 4	0.000098	0.354	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0028		
PERC./LEAKAGE THROUGH LAYER 6	0.000098	0.354	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.369	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.239	-4497.730	-3.78
SOIL WATER AT START OF YEAR	384.591	1396064.000	
SOIL WATER AT END OF YEAR	383.352	1391566.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.035	0.00

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ANNUAL TOTALS FOR YEAR 15

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.74	93436.203	100.00
RUNOFF	1.601	5810.086	6.22
EVAPOTRANSPIRATION	12.072	43820.574	46.90
DRAINAGE COLLECTED FROM LAYER 2	12.3237	44735.160	47.88
PERC./LEAKAGE THROUGH LAYER 4	0.000078	0.284	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0021		

PERC./LEAKAGE THROUGH LAYER 6	0.000078	0.284	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.279	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.256	-929.877	-1.00
SOIL WATER AT START OF YEAR	383.352	1391566.250	
SOIL WATER AT END OF YEAR	383.095	1390636.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.021	0.00

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ANNUAL TOTALS FOR YEAR 16

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.49	96158.703	100.00
RUNOFF	1.861	6756.787	7.03
EVAPOTRANSPIRATION	14.625	53089.187	55.21
DRAINAGE COLLECTED FROM LAYER 2	8.8024	31952.891	33.23
PERC./LEAKAGE THROUGH LAYER 4	0.000052	0.190	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		
PERC./LEAKAGE THROUGH LAYER 6	0.000052	0.190	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.187	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.002	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.201	4359.589	4.53

SOIL WATER AT START OF YEAR	383.095	1390636.370	
SOIL WATER AT END OF YEAR	384.296	1394996.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.065	0.00

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ANNUAL TOTALS FOR YEAR 17

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.33	95577.883	100.00
RUNOFF	2.083	7562.613	7.91
EVAPOTRANSPIRATION	12.489	45333.508	47.43
DRAINAGE COLLECTED FROM LAYER 2	11.6734	42374.316	44.33
PERC./LEAKAGE THROUGH LAYER 4	0.000072	0.263	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
PERC./LEAKAGE THROUGH LAYER 6	0.000072	0.263	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.260	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.085	307.190	0.32
SOIL WATER AT START OF YEAR	384.296	1394996.000	
SOIL WATER AT END OF YEAR	384.381	1395303.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.011	0.00

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ANNUAL TOTALS FOR YEAR 18

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.00	116160.016	100.00
RUNOFF	5.285	19185.789	16.52
EVAPOTRANSPIRATION	12.051	43745.707	37.66
DRAINAGE COLLECTED FROM LAYER 2	13.6039	49382.234	42.51
PERC./LEAKAGE THROUGH LAYER 4	0.000086	0.313	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0025		
PERC./LEAKAGE THROUGH LAYER 6	0.000086	0.314	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.290	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.059	3845.908	3.31
SOIL WATER AT START OF YEAR	384.381	1395303.120	
SOIL WATER AT END OF YEAR	385.441	1399149.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.084	0.00

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ANNUAL TOTALS FOR YEAR 19

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.22	102438.602	100.00

RUNOFF	2.184	7928.140	7.74
EVAPOTRANSPIRATION	14.090	51145.715	49.93
DRAINAGE COLLECTED FROM LAYER 2	13.5369	49139.062	47.97
PERC./LEAKAGE THROUGH LAYER 4	0.000088	0.320	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0024		
PERC./LEAKAGE THROUGH LAYER 6	0.000088	0.320	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.333	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.591	-5774.567	-5.64
SOIL WATER AT START OF YEAR	385.441	1399149.120	
SOIL WATER AT END OF YEAR	383.850	1393374.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.082	0.00

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ANNUAL TOTALS FOR YEAR 20

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.68	93218.398	100.00
RUNOFF	1.708	6200.997	6.65
EVAPOTRANSPIRATION	16.117	58504.953	62.76
DRAINAGE COLLECTED FROM LAYER 2	8.4453	30656.295	32.89
PERC./LEAKAGE THROUGH LAYER 4	0.000055	0.199	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		
PERC./LEAKAGE THROUGH LAYER 6	0.000055	0.199	0.00

AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.199	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.591	-2144.124	-2.30
SOIL WATER AT START OF YEAR	383.850	1393374.500	
SOIL WATER AT END OF YEAR	383.259	1391230.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.076	0.00

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ANNUAL TOTALS FOR YEAR 21

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.64	107593.195	100.00
RUNOFF	3.842	13947.329	12.96
EVAPOTRANSPIRATION	11.129	40398.434	37.55
DRAINAGE COLLECTED FROM LAYER 2	12.7229	46184.187	42.92
PERC./LEAKAGE THROUGH LAYER 4	0.000075	0.272	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0021		
PERC./LEAKAGE THROUGH LAYER 6	0.000075	0.272	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.251	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.946	7063.035	6.56
SOIL WATER AT START OF YEAR	383.259	1391230.370	

SOIL WATER AT END OF YEAR	385.205	1398293.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.039	0.00

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ANNUAL TOTALS FOR YEAR 22

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.55	121786.508	100.00
RUNOFF	3.657	13275.800	10.90
EVAPOTRANSPIRATION	10.751	39027.906	32.05
DRAINAGE COLLECTED FROM LAYER 2	20.4923	74387.047	61.08
PERC./LEAKAGE THROUGH LAYER 4	0.000122	0.444	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0034		
PERC./LEAKAGE THROUGH LAYER 6	0.000122	0.444	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.455	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.351	-4904.732	-4.03
SOIL WATER AT START OF YEAR	385.205	1398293.370	
SOIL WATER AT END OF YEAR	383.854	1393388.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.027	0.00

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ANNUAL TOTALS FOR YEAR 23

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.45	114163.516	100.00
RUNOFF	3.472	12604.649	11.04
EVAPOTRANSPIRATION	11.707	42495.504	37.22
DRAINAGE COLLECTED FROM LAYER 2	15.3883	55859.672	48.93
PERC./LEAKAGE THROUGH LAYER 4	0.000110	0.398	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0033		
PERC./LEAKAGE THROUGH LAYER 6	0.000110	0.398	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.388	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.882	3203.280	2.81
SOIL WATER AT START OF YEAR	383.854	1393388.750	
SOIL WATER AT END OF YEAR	384.736	1396592.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.019	0.00

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ANNUAL TOTALS FOR YEAR 24

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.54	103600.195	100.00
RUNOFF	2.879	10452.098	10.09
EVAPOTRANSPIRATION	15.556	56467.719	54.51

DRAINAGE COLLECTED FROM LAYER 2	11.9698	43450.324	41.94
PERC./LEAKAGE THROUGH LAYER 4	0.000071	0.258	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
PERC./LEAKAGE THROUGH LAYER 6	0.000071	0.258	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.267	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.865	-6770.136	-6.53
SOIL WATER AT START OF YEAR	384.736	1396592.000	
SOIL WATER AT END OF YEAR	382.871	1389821.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.078	0.00

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ANNUAL TOTALS FOR YEAR 25

	INCHES	CU. FEET	PERCENT
PRECIPITATION	34.75	126142.516	100.00
RUNOFF	4.747	17229.979	13.66
EVAPOTRANSPIRATION	12.678	46019.871	36.48
DRAINAGE COLLECTED FROM LAYER 2	17.3216	62877.582	49.85
PERC./LEAKAGE THROUGH LAYER 4	0.000109	0.394	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0032		
PERC./LEAKAGE THROUGH LAYER 6	0.000109	0.394	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.390	0.00

PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.004	14.623	0.01
SOIL WATER AT START OF YEAR	382.871	1389821.870	
SOIL WATER AT END OF YEAR	382.875	1389836.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.067	0.00

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ANNUAL TOTALS FOR YEAR 26

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.87	104798.102	100.00
RUNOFF	1.744	6330.828	6.04
EVAPOTRANSPIRATION	15.743	57148.461	54.53
DRAINAGE COLLECTED FROM LAYER 2	9.7350	35337.879	33.72
PERC./LEAKAGE THROUGH LAYER 4	0.000062	0.223	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
PERC./LEAKAGE THROUGH LAYER 6	0.000062	0.223	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.202	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.648	5980.727	5.71
SOIL WATER AT START OF YEAR	382.875	1389836.500	
SOIL WATER AT END OF YEAR	384.523	1395817.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00

SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.003	0.00

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ANNUAL TOTALS FOR YEAR 27

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.81	140880.297	100.00
RUNOFF	6.190	22471.395	15.95
EVAPOTRANSPIRATION	13.020	47263.695	33.55
DRAINAGE COLLECTED FROM LAYER 2	18.8654	68481.414	48.61
PERC./LEAKAGE THROUGH LAYER 4	0.000108	0.393	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0031		
PERC./LEAKAGE THROUGH LAYER 6	0.000108	0.393	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.386	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.734	2663.455	1.89
SOIL WATER AT START OF YEAR	384.523	1395817.250	
SOIL WATER AT END OF YEAR	385.256	1398480.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.060	0.00

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ANNUAL TOTALS FOR YEAR 28

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.15	138484.500	100.00
RUNOFF	4.946	17954.131	12.96
EVAPOTRANSPIRATION	16.577	60173.512	43.45
DRAINAGE COLLECTED FROM LAYER 2	17.9684	65225.211	47.10
PERC./LEAKAGE THROUGH LAYER 4	0.000108	0.392	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0029		
PERC./LEAKAGE THROUGH LAYER 6	0.000108	0.392	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.406	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.341	-4868.729	-3.52
SOIL WATER AT START OF YEAR	385.256	1398480.620	
SOIL WATER AT END OF YEAR	383.915	1393611.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.031	0.00

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ANNUAL TOTALS FOR YEAR 29

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.86	122911.828	100.00
RUNOFF	4.702	17068.969	13.89
EVAPOTRANSPIRATION	10.723	38923.719	31.67
DRAINAGE COLLECTED FROM LAYER 2	19.2405	69842.844	56.82

PERC./LEAKAGE THROUGH LAYER 4	0.000112	0.408	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0033		
PERC./LEAKAGE THROUGH LAYER 6	0.000112	0.408	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.407	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.003	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.806	-2924.117	-2.38
SOIL WATER AT START OF YEAR	383.915	1393611.870	
SOIL WATER AT END OF YEAR	383.110	1390687.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.002	0.00

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ANNUAL TOTALS FOR YEAR 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.69	136814.703	100.00
RUNOFF	3.010	10928.112	7.99
EVAPOTRANSPIRATION	17.813	64660.180	47.26
DRAINAGE COLLECTED FROM LAYER 2	16.4127	59577.922	43.55
PERC./LEAKAGE THROUGH LAYER 4	0.000100	0.361	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0027		
PERC./LEAKAGE THROUGH LAYER 6	0.000099	0.361	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0001	0.356	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000001	0.004	0.00

AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.454	1648.056	1.20
SOIL WATER AT START OF YEAR	383.110	1390687.750	
SOIL WATER AT END OF YEAR	383.564	1392335.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.079	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 30

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	6.11	5.10	3.98	2.06	1.04	0.21
	0.03	0.13	0.27	1.52	3.96	6.87
STD. DEVIATIONS	2.75	3.41	1.95	1.40	0.96	0.27
	0.05	0.19	0.45	1.51	2.43	3.45
RUNOFF						
TOTALS	0.946	0.759	0.147	0.046	0.010	0.000
	0.000	0.000	0.003	0.084	0.419	1.098
STD. DEVIATIONS	1.046	0.880	0.197	0.125	0.029	0.000
	0.000	0.000	0.016	0.151	0.562	0.936
EVAPOTRANSPIRATION						
TOTALS	1.248	1.722	2.825	2.744	1.422	0.299
	0.049	0.120	0.136	0.604	0.953	1.134
STD. DEVIATIONS	0.066	0.156	0.420	1.208	0.972	0.401
	0.083	0.183	0.207	0.626	0.389	0.115
LATERAL DRAINAGE COLLECTED FROM LAYER 2						
TOTALS	4.0186	2.9459	1.4835	0.3072	0.0229	0.0001
	0.0000	0.0000	0.0000	0.0978	1.3968	4.2254

STD. DEVIATIONS	1.9409	2.1261	1.2769	0.4621	0.1023	0.0003
	0.0000	0.0000	0.0000	0.2314	1.5459	2.2281

PERCOLATION/LEAKAGE THROUGH LAYER 4

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 6

TOTALS	0.1192	0.0997	0.1012	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.6525	0.5458	0.5545	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

TOTALS	0.1114	0.1001	0.1030	0.0048	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.6098	0.5482	0.5640	0.0263	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 9

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0080	0.0066	0.0029	0.0006	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0002	0.0029	0.0086
STD. DEVIATIONS	0.0039	0.0048	0.0025	0.0009	0.0002	0.0000
	0.0000	0.0000	0.0000	0.0004	0.0032	0.0044

DAILY AVERAGE HEAD ON TOP OF LAYER 6

AVERAGES	0.0010	0.0007	0.0010	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0052	0.0037	0.0056	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	0.0183	0.0182	0.0169	0.0008	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.1000	0.0995	0.0925	0.0045	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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TITLE: SCLF LANDFILL 2 EXPANSION - PRESCRIBED LINER - FINAL COVER -

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.26 (5.468)	113484.7	100.00
RUNOFF	3.512 (1.6304)	12747.96	11.233
EVAPOTRANSPIRATION	13.255 (2.2062)	48116.30	42.399
LATERAL DRAINAGE COLLECTED FROM LAYER 2	14.49818 (3.65828)	52628.383	46.37487
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.00009 (0.00002)	0.323	0.00028
AVERAGE HEAD ON TOP OF LAYER 3	0.002 (0.001)		
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.32009 (1.75271)	1161.925	1.02386
AVERAGE HEAD ON TOP OF LAYER 6	0.000 (0.001)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.31928 (1.74830)	1158.998	1.02128
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.00001 (0.00003)	0.024	0.00002
AVERAGE HEAD ON TOP OF LAYER 8	0.005 (0.025)		
CHANGE IN WATER STORAGE	-0.321 (2.0550)	-1166.97	-1.028

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 30

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	4.415	16026.6279
DRAINAGE COLLECTED FROM LAYER 2	1.35580	4921.56396
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.000016	0.05828
AVERAGE HEAD ON TOP OF LAYER 3	0.250	
MAXIMUM HEAD ON TOP OF LAYER 3	0.312	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.140086	508.51361
AVERAGE HEAD ON TOP OF LAYER 6	0.096	
DRAINAGE COLLECTED FROM LAYER 7	0.12202	442.94162
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.000002	0.00785
AVERAGE HEAD ON TOP OF LAYER 8	0.620	
MAXIMUM HEAD ON TOP OF LAYER 8	1.211	
LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN)	17.0 FEET	
SNOW WATER	0.01	37.4433

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3480
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1360

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 30

LAYER	(INCHES)	(VOL/VOL)
1	4.4322	0.2462
2	0.0034	0.0170
3	0.0000	0.0000
4	8.7600	0.3650
5	350.4000	0.2920
6	8.7600	0.3650
7	0.3840	0.0320
8	0.0000	0.0000
9	10.8240	0.4510
SNOW WATER	0.000	

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Prescribed

Final Cover 3:1 Side Slopes

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**                                                                              **
**                                                                              **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                    **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY                       **
**                    USAE WATERWAYS EXPERIMENT STATION                         **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:    C:\HELP3\SCLFprs\SCLF30.D4
TEMPERATURE DATA FILE:      C:\HELP3\SCLFprs\SCLF30.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\SCLFprs\SCLF30.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\SCLFprs\SCLF30.D11
SOIL AND DESIGN DATA FILE:  C:\HELP3\SCLfprs\SDSLPRFC.D10
OUTPUT DATA FILE:           C:\HELP3\SCLfprs\SDSLPRFC.OUT


TIME:  17: 8     DATE:   2/ 9/2011


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     TITLE:  SCLF LANDFILL 2 EXPANSION - PRESCRIBED LINER 3:1 SLOPES

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
              WERE SPECIFIED BY THE USER.


                                  LAYER  1
                                  --------

                    TYPE 1 - VERTICAL PERCOLATION LAYER
                        MATERIAL TEXTURE NUMBER  10
          THICKNESS                     =     18.00   INCHES
          POROSITY                      =      0.3980 VOL/VOL
          FIELD CAPACITY                =      0.2440 VOL/VOL
          WILTING POINT                 =      0.1360 VOL/VOL
          INITIAL SOIL WATER CONTENT    =      0.2500 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.119999997000E-03 CM/SEC
        NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  3.00
                 FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
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LAYER 2

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0200	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	31.00	PERCENT
DRAINAGE LENGTH	=	600.0	FEET

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.10	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.700000022000E-13	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 4

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS	=	1200.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 6

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.10	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.700000022000E-13	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE

FML PLACEMENT QUALITY = 3 - GOOD

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #10 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 31.% AND A SLOPE LENGTH OF 563. FEET.

SCS RUNOFF CURVE NUMBER	=	86.20	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	4.500	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	7.164	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.448	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	382.026	INCHES
TOTAL INITIAL WATER	=	382.026	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM COTATI CALIFORNIA

STATION LATITUDE	=	38.33	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	78	
END OF GROWING SEASON (JULIAN DATE)	=	328	
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	5.50	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	71.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	73.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	74.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.02	90822.609	100.00
RUNOFF	3.492	12676.022	13.96
EVAPOTRANSPIRATION	9.542	34638.437	38.14
DRAINAGE COLLECTED FROM LAYER 2	12.0340	43683.250	48.10
PERC./LEAKAGE THROUGH LAYER 4	0.000047	0.172	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
PERC./LEAKAGE THROUGH LAYER 6	9.600065	34848.238	38.37
AVG. HEAD ON TOP OF LAYER 6	0.0068		
DRAINAGE COLLECTED FROM LAYER 7	9.2079	33424.582	36.80
PERC./LEAKAGE THROUGH LAYER 8	0.392190	1423.650	1.57
AVG. HEAD ON TOP OF LAYER 8	0.0040		
CHANGE IN WATER STORAGE	-9.648	-35023.387	-38.56
SOIL WATER AT START OF YEAR	382.028	1386761.750	
SOIL WATER AT END OF YEAR	372.380	1351738.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00

SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.050	0.00

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	35.53	128973.883	100.00
RUNOFF	4.410	16007.570	12.41
EVAPOTRANSPIRATION	13.293	48254.238	37.41
DRAINAGE COLLECTED FROM LAYER 2	16.7179	60685.883	47.05
PERC./LEAKAGE THROUGH LAYER 4	0.000065	0.236	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
PERC./LEAKAGE THROUGH LAYER 6	0.000065	0.236	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.017	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000060	0.219	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.109	4026.034	3.12
SOIL WATER AT START OF YEAR	372.380	1351738.370	
SOIL WATER AT END OF YEAR	373.489	1355764.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.082	0.00

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.71	86067.297	100.00
RUNOFF	1.242	4509.395	5.24
EVAPOTRANSPIRATION	12.747	46270.434	53.76
DRAINAGE COLLECTED FROM LAYER 2	10.6410	38626.965	44.88
PERC./LEAKAGE THROUGH LAYER 4	0.000043	0.158	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
PERC./LEAKAGE THROUGH LAYER 6	0.000043	0.158	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.010	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000041	0.148	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.920	-3339.649	-3.88
SOIL WATER AT START OF YEAR	373.489	1355764.500	
SOIL WATER AT END OF YEAR	372.569	1352424.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.004	0.00

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.94	94162.227	100.00
RUNOFF	2.447	8881.854	9.43
EVAPOTRANSPIRATION	13.849	50272.359	53.39
DRAINAGE COLLECTED FROM LAYER 2	9.1551	33233.090	35.29

PERC./LEAKAGE THROUGH LAYER 4	0.000038	0.137	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0009		
PERC./LEAKAGE THROUGH LAYER 6	0.000038	0.137	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.008	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000035	0.129	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.489	1774.677	1.88
SOIL WATER AT START OF YEAR	372.569	1352424.750	
SOIL WATER AT END OF YEAR	373.058	1354199.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.116	0.00

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.02	119862.570	100.00
RUNOFF	2.892	10497.669	8.76
EVAPOTRANSPIRATION	16.044	58239.156	48.59
DRAINAGE COLLECTED FROM LAYER 2	14.5521	52824.250	44.07
PERC./LEAKAGE THROUGH LAYER 4	0.000058	0.211	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0015		
PERC./LEAKAGE THROUGH LAYER 6	0.000058	0.211	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.014	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000054	0.197	0.00

AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.468	-1698.682	-1.42
SOIL WATER AT START OF YEAR	373.058	1354199.500	
SOIL WATER AT END OF YEAR	372.590	1352500.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.027	0.00

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ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.63	85776.914	100.00
RUNOFF	1.902	6904.904	8.05
EVAPOTRANSPIRATION	11.172	40554.926	47.28
DRAINAGE COLLECTED FROM LAYER 2	10.6897	38803.730	45.24
PERC./LEAKAGE THROUGH LAYER 4	0.000042	0.151	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
PERC./LEAKAGE THROUGH LAYER 6	0.000042	0.151	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.011	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000039	0.140	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.134	-486.762	-0.57
SOIL WATER AT START OF YEAR	372.590	1352500.750	
SOIL WATER AT END OF YEAR	372.456	1352014.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	-0.035	0.00

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ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	8.621	31292.947	20.05
EVAPOTRANSPIRATION	14.031	50932.891	32.64
DRAINAGE COLLECTED FROM LAYER 2	19.0038	68983.789	44.21
PERC./LEAKAGE THROUGH LAYER 4	0.000074	0.268	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
PERC./LEAKAGE THROUGH LAYER 6	0.000074	0.268	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.020	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000068	0.249	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.334	4843.803	3.10
SOIL WATER AT START OF YEAR	372.456	1352014.000	
SOIL WATER AT END OF YEAR	373.790	1356857.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.019	0.00

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ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT

PRECIPITATION	41.82	151806.594	100.00
RUNOFF	5.872	21315.135	14.04
EVAPOTRANSPIRATION	15.668	56875.328	37.47
DRAINAGE COLLECTED FROM LAYER 2	20.7558	75343.719	49.63
PERC./LEAKAGE THROUGH LAYER 4	0.000080	0.291	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0021		
PERC./LEAKAGE THROUGH LAYER 6	0.000080	0.291	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.021	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000074	0.270	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.476	-1727.928	-1.14
SOIL WATER AT START OF YEAR	373.790	1356857.870	
SOIL WATER AT END OF YEAR	373.314	1355129.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.051	0.00

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ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.22	87918.609	100.00
RUNOFF	4.050	14701.921	16.72
EVAPOTRANSPIRATION	8.314	30178.246	34.33
DRAINAGE COLLECTED FROM LAYER 2	12.2174	44349.023	50.44
PERC./LEAKAGE THROUGH LAYER 4	0.000048	0.175	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		

PERC./LEAKAGE THROUGH LAYER 6	0.000048	0.175	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.012	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000045	0.163	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.361	-1310.735	-1.49
SOIL WATER AT START OF YEAR	373.314	1355129.870	
SOIL WATER AT END OF YEAR	372.953	1353819.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.018	0.00

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ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	36.89	133910.719	100.00
RUNOFF	5.390	19565.381	14.61
EVAPOTRANSPIRATION	14.960	54304.148	40.55
DRAINAGE COLLECTED FROM LAYER 2	16.4998	59894.148	44.73
PERC./LEAKAGE THROUGH LAYER 4	0.000065	0.235	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
PERC./LEAKAGE THROUGH LAYER 6	0.000065	0.235	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.017	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000060	0.218	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.040	146.782	0.11

SOIL WATER AT START OF YEAR	372.953	1353819.120	
SOIL WATER AT END OF YEAR	372.993	1353966.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.030	0.00

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ANNUAL TOTALS FOR YEAR 11

	INCHES	CU. FEET	PERCENT
PRECIPITATION	34.79	126287.734	100.00
RUNOFF	3.358	12189.345	9.65
EVAPOTRANSPIRATION	13.870	50349.270	39.87
DRAINAGE COLLECTED FROM LAYER 2	16.8714	61243.191	48.49
PERC./LEAKAGE THROUGH LAYER 4	0.000066	0.240	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
PERC./LEAKAGE THROUGH LAYER 6	0.000066	0.240	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.017	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000062	0.224	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.690	2505.595	1.98
SOIL WATER AT START OF YEAR	372.993	1353966.000	
SOIL WATER AT END OF YEAR	373.684	1356471.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.089	0.00

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ANNUAL TOTALS FOR YEAR 12

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.97	108791.094	100.00
RUNOFF	3.008	10920.648	10.04
EVAPOTRANSPIRATION	11.861	43057.008	39.58
DRAINAGE COLLECTED FROM LAYER 2	16.8422	61137.164	56.20
PERC./LEAKAGE THROUGH LAYER 4	0.000067	0.242	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
PERC./LEAKAGE THROUGH LAYER 6	0.000067	0.242	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.016	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000062	0.226	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.742	-6323.919	-5.81
SOIL WATER AT START OF YEAR	373.684	1356471.500	
SOIL WATER AT END OF YEAR	371.941	1350147.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.046	0.00

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ANNUAL TOTALS FOR YEAR 13

	INCHES	CU. FEET	PERCENT
PRECIPITATION	27.79	100877.703	100.00

RUNOFF	2.491	9041.617	8.96
EVAPOTRANSPIRATION	12.654	45933.012	45.53
DRAINAGE COLLECTED FROM LAYER 2	11.1871	40609.070	40.26
PERC./LEAKAGE THROUGH LAYER 4	0.000046	0.168	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
PERC./LEAKAGE THROUGH LAYER 6	0.000046	0.168	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.010	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000043	0.158	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.458	5293.787	5.25
SOIL WATER AT START OF YEAR	371.941	1350147.620	
SOIL WATER AT END OF YEAR	373.400	1355441.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.047	0.00

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ANNUAL TOTALS FOR YEAR 14

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.80	119064.023	100.00
RUNOFF	5.263	19105.373	16.05
EVAPOTRANSPIRATION	12.483	45314.066	38.06
DRAINAGE COLLECTED FROM LAYER 2	16.3082	59198.734	49.72
PERC./LEAKAGE THROUGH LAYER 4	0.000063	0.230	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
PERC./LEAKAGE THROUGH LAYER 6	0.000063	0.230	0.00

AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.017	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000059	0.213	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.255	-4554.449	-3.83
SOIL WATER AT START OF YEAR	373.400	1355441.370	
SOIL WATER AT END OF YEAR	372.145	1350887.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.068	0.00

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ANNUAL TOTALS FOR YEAR 15

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.74	93436.203	100.00
RUNOFF	1.720	6243.871	6.68
EVAPOTRANSPIRATION	12.075	43831.465	46.91
DRAINAGE COLLECTED FROM LAYER 2	12.1956	44270.137	47.38
PERC./LEAKAGE THROUGH LAYER 4	0.000051	0.185	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0013		
PERC./LEAKAGE THROUGH LAYER 6	0.000051	0.185	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.010	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000048	0.174	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.251	-909.383	-0.97
SOIL WATER AT START OF YEAR	372.145	1350887.000	

SOIL WATER AT END OF YEAR	371.895	1349977.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.067	0.00

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ANNUAL TOTALS FOR YEAR 16

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.49	96158.703	100.00
RUNOFF	2.016	7317.434	7.61
EVAPOTRANSPIRATION	14.626	53091.227	55.21
DRAINAGE COLLECTED FROM LAYER 2	8.6412	31367.643	32.62
PERC./LEAKAGE THROUGH LAYER 4	0.000034	0.123	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0009		
PERC./LEAKAGE THROUGH LAYER 6	0.000034	0.123	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.009	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000031	0.114	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.207	4382.299	4.56
SOIL WATER AT START OF YEAR	371.895	1349977.620	
SOIL WATER AT END OF YEAR	373.102	1354359.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.017	0.00

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ANNUAL TOTALS FOR YEAR 17

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.33	95577.883	100.00
RUNOFF	2.187	7940.051	8.31
EVAPOTRANSPIRATION	12.472	45271.633	47.37
DRAINAGE COLLECTED FROM LAYER 2	11.5937	42085.105	44.03
PERC./LEAKAGE THROUGH LAYER 4	0.000047	0.171	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
PERC./LEAKAGE THROUGH LAYER 6	0.000047	0.171	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.011	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000044	0.161	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.077	280.935	0.29
SOIL WATER AT START OF YEAR	373.102	1354359.870	
SOIL WATER AT END OF YEAR	373.179	1354640.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 18

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.00	116160.016	100.00
RUNOFF	5.494	19944.500	17.17
EVAPOTRANSPIRATION	12.040	43703.430	37.62

DRAINAGE COLLECTED FROM LAYER 2	13.2916	48248.391	41.54
PERC./LEAKAGE THROUGH LAYER 4	0.000052	0.189	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		
PERC./LEAKAGE THROUGH LAYER 6	0.000052	0.190	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.013	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000049	0.176	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.174	4263.433	3.67
SOIL WATER AT START OF YEAR	373.179	1354640.870	
SOIL WATER AT END OF YEAR	374.354	1358904.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.068	0.00

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ANNUAL TOTALS FOR YEAR 19

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.22	102438.602	100.00
RUNOFF	2.308	8379.149	8.18
EVAPOTRANSPIRATION	14.057	51025.398	49.81
DRAINAGE COLLECTED FROM LAYER 2	13.5602	49223.426	48.05
PERC./LEAKAGE THROUGH LAYER 4	0.000055	0.198	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		
PERC./LEAKAGE THROUGH LAYER 6	0.000055	0.198	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.013	0.00

PERC./LEAKAGE THROUGH LAYER 8	0.000051	0.185	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.705	-6189.544	-6.04
SOIL WATER AT START OF YEAR	374.354	1358904.250	
SOIL WATER AT END OF YEAR	372.649	1352714.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.022	0.00

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ANNUAL TOTALS FOR YEAR 20

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.68	93218.398	100.00
RUNOFF	1.811	6572.631	7.05
EVAPOTRANSPIRATION	16.116	58500.082	62.76
DRAINAGE COLLECTED FROM LAYER 2	8.3467	30298.348	32.50
PERC./LEAKAGE THROUGH LAYER 4	0.000036	0.129	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0009		
PERC./LEAKAGE THROUGH LAYER 6	0.000036	0.129	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.007	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000034	0.122	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.593	-2152.765	-2.31
SOIL WATER AT START OF YEAR	372.649	1352714.750	
SOIL WATER AT END OF YEAR	372.056	1350562.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00

SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.021	0.00

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ANNUAL TOTALS FOR YEAR 21

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.64	107593.195	100.00
RUNOFF	4.118	14949.810	13.89
EVAPOTRANSPIRATION	11.123	40377.711	37.53
DRAINAGE COLLECTED FROM LAYER 2	12.4556	45213.812	42.02
PERC./LEAKAGE THROUGH LAYER 4	0.000048	0.176	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0013		
PERC./LEAKAGE THROUGH LAYER 6	0.000048	0.176	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.013	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000045	0.163	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.943	7051.736	6.55
SOIL WATER AT START OF YEAR	372.056	1350562.000	
SOIL WATER AT END OF YEAR	373.998	1357613.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.049	0.00

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ANNUAL TOTALS FOR YEAR 22

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.55	121786.508	100.00
RUNOFF	3.870	14049.055	11.54
EVAPOTRANSPIRATION	10.749	39018.094	32.04
DRAINAGE COLLECTED FROM LAYER 2	20.2758	73601.062	60.43
PERC./LEAKAGE THROUGH LAYER 4	0.000080	0.289	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0021		
PERC./LEAKAGE THROUGH LAYER 6	0.000080	0.289	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.020	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000074	0.269	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.345	-4882.022	-4.01
SOIL WATER AT START OF YEAR	373.998	1357613.620	
SOIL WATER AT END OF YEAR	372.653	1352731.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.036	0.00

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ANNUAL TOTALS FOR YEAR 23

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.45	114163.516	100.00
RUNOFF	3.622	13147.468	11.52
EVAPOTRANSPIRATION	11.637	42242.668	37.00
DRAINAGE COLLECTED FROM LAYER 2	15.2834	55478.621	48.60

PERC./LEAKAGE THROUGH LAYER 4	0.000062	0.226	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
PERC./LEAKAGE THROUGH LAYER 6	0.000062	0.226	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.014	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000059	0.212	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.908	3294.451	2.89
SOIL WATER AT START OF YEAR	372.653	1352731.620	
SOIL WATER AT END OF YEAR	373.561	1356026.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.085	0.00

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ANNUAL TOTALS FOR YEAR 24

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.54	103600.195	100.00
RUNOFF	3.035	11017.598	10.63
EVAPOTRANSPIRATION	15.551	56449.504	54.49
DRAINAGE COLLECTED FROM LAYER 2	11.8437	42992.477	41.50
PERC./LEAKAGE THROUGH LAYER 4	0.000046	0.168	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
PERC./LEAKAGE THROUGH LAYER 6	0.000046	0.168	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.012	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000043	0.156	0.00

AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.890	-6859.535	-6.62
SOIL WATER AT START OF YEAR	373.561	1356026.120	
SOIL WATER AT END OF YEAR	371.671	1349166.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.013	0.00

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ANNUAL TOTALS FOR YEAR 25

	INCHES	CU. FEET	PERCENT
PRECIPITATION	34.75	126142.516	100.00
RUNOFF	5.062	18376.039	14.57
EVAPOTRANSPIRATION	12.679	46026.207	36.49
DRAINAGE COLLECTED FROM LAYER 2	17.0055	61729.887	48.94
PERC./LEAKAGE THROUGH LAYER 4	0.000067	0.243	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		
PERC./LEAKAGE THROUGH LAYER 6	0.000067	0.243	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.017	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000062	0.226	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.003	10.192	0.01
SOIL WATER AT START OF YEAR	371.671	1349166.620	
SOIL WATER AT END OF YEAR	371.674	1349176.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	-0.051	0.00

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ANNUAL TOTALS FOR YEAR 26

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.87	104798.102	100.00
RUNOFF	1.884	6839.747	6.53
EVAPOTRANSPIRATION	15.710	57025.996	54.42
DRAINAGE COLLECTED FROM LAYER 2	9.6341	34971.937	33.37
PERC./LEAKAGE THROUGH LAYER 4	0.000040	0.146	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0010		
PERC./LEAKAGE THROUGH LAYER 6	0.000040	0.146	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.008	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000038	0.137	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	1.642	5960.232	5.69
SOIL WATER AT START OF YEAR	371.674	1349176.750	
SOIL WATER AT END OF YEAR	373.316	1355137.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.044	0.00

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ANNUAL TOTALS FOR YEAR 27

	INCHES	CU. FEET	PERCENT

PRECIPITATION	38.81	140880.297	100.00
RUNOFF	6.541	23744.951	16.85
EVAPOTRANSPIRATION	13.008	47220.676	33.52
DRAINAGE COLLECTED FROM LAYER 2	18.5077	67182.812	47.69
PERC./LEAKAGE THROUGH LAYER 4	0.000070	0.253	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0019		
PERC./LEAKAGE THROUGH LAYER 6	0.000070	0.253	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.020	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000064	0.233	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.753	2731.584	1.94
SOIL WATER AT START OF YEAR	373.316	1355137.000	
SOIL WATER AT END OF YEAR	374.068	1357868.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.015	0.00

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ANNUAL TOTALS FOR YEAR 28

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.15	138484.500	100.00
RUNOFF	5.175	18784.908	13.56
EVAPOTRANSPIRATION	16.541	60043.082	43.36
DRAINAGE COLLECTED FROM LAYER 2	17.7890	64574.160	46.63
PERC./LEAKAGE THROUGH LAYER 4	0.000070	0.255	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		

PERC./LEAKAGE THROUGH LAYER 6	0.000070	0.255	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.018	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000065	0.237	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-1.355	-4917.915	-3.55
SOIL WATER AT START OF YEAR	374.068	1357868.620	
SOIL WATER AT END OF YEAR	372.714	1352950.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.015	0.00

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ANNUAL TOTALS FOR YEAR 29

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.86	122911.828	100.00
RUNOFF	4.983	18086.584	14.72
EVAPOTRANSPIRATION	10.694	38819.625	31.58
DRAINAGE COLLECTED FROM LAYER 2	18.9965	68957.172	56.10
PERC./LEAKAGE THROUGH LAYER 4	0.000073	0.265	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
PERC./LEAKAGE THROUGH LAYER 6	0.000073	0.265	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.020	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000067	0.245	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	-0.813	-2951.812	-2.40

SOIL WATER AT START OF YEAR	372.714	1352950.620	
SOIL WATER AT END OF YEAR	371.901	1349998.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.003	0.00

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ANNUAL TOTALS FOR YEAR 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.69	136814.703	100.00
RUNOFF	3.236	11747.268	8.59
EVAPOTRANSPIRATION	17.795	64595.316	47.21
DRAINAGE COLLECTED FROM LAYER 2	16.1974	58796.539	42.98
PERC./LEAKAGE THROUGH LAYER 4	0.000065	0.234	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
PERC./LEAKAGE THROUGH LAYER 6	0.000065	0.234	0.00
AVG. HEAD ON TOP OF LAYER 6	0.0000		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.015	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000060	0.219	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
CHANGE IN WATER STORAGE	0.462	1675.308	1.22
SOIL WATER AT START OF YEAR	371.901	1349998.870	
SOIL WATER AT END OF YEAR	372.362	1351674.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.043	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 30

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	6.11	5.10	3.98	2.06	1.04	0.21
	0.03	0.13	0.27	1.52	3.96	6.87
STD. DEVIATIONS	2.75	3.41	1.95	1.40	0.96	0.27
	0.05	0.19	0.45	1.51	2.43	3.45
RUNOFF						
TOTALS	0.996	0.801	0.160	0.051	0.011	0.000
	0.000	0.000	0.003	0.090	0.442	1.162
STD. DEVIATIONS	1.089	0.926	0.211	0.133	0.032	0.000
	0.000	0.000	0.018	0.160	0.583	0.984
EVAPOTRANSPIRATION						
TOTALS	1.248	1.722	2.825	2.745	1.416	0.303
	0.049	0.120	0.136	0.601	0.947	1.133
STD. DEVIATIONS	0.066	0.156	0.420	1.209	0.967	0.404
	0.084	0.183	0.207	0.623	0.389	0.115
LATERAL DRAINAGE COLLECTED FROM LAYER 2						
TOTALS	3.9714	2.9010	1.4765	0.3053	0.0239	0.0001
	0.0000	0.0000	0.0000	0.0911	1.3788	4.1550
STD. DEVIATIONS	1.9046	2.0771	1.2655	0.4572	0.1023	0.0003
	0.0000	0.0000	0.0000	0.2225	1.5243	2.1833
PERCOLATION/LEAKAGE THROUGH LAYER 4						
TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH LAYER 6						
TOTALS	0.1190	0.0998	0.1012	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

STD. DEVIATIONS	0.6517	0.5465	0.5545	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

TOTALS	0.1143	0.0957	0.0969	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.6260	0.5242	0.5309	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 8

TOTALS	0.0047	0.0041	0.0043	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0257	0.0223	0.0236	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0048	0.0038	0.0018	0.0004	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0001	0.0017	0.0050
STD. DEVIATIONS	0.0023	0.0028	0.0015	0.0006	0.0001	0.0000
	0.0000	0.0000	0.0000	0.0003	0.0019	0.0026

DAILY AVERAGE HEAD ON TOP OF LAYER 6

AVERAGES	0.0009	0.0008	0.0010	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0052	0.0041	0.0055	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	0.0006	0.0005	0.0005	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0031	0.0029	0.0027	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TITLE: SCLF LANDFILL 2 EXPANSION - PRESCRIBED LINER 3:1 SLOPES

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.26 (5.468)	113484.7	100.00
RUNOFF	3.717 (1.7032)	13491.69	11.889
EVAPOTRANSPIRATION	13.245 (2.2036)	48080.53	42.367
LATERAL DRAINAGE COLLECTED FROM LAYER 2	14.30310 (3.59708)	51920.254	45.75089
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.00006 (0.00001)	0.205	0.00018
AVERAGE HEAD ON TOP OF LAYER 3	0.001 (0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.32006 (1.75271)	1161.808	1.02376
AVERAGE HEAD ON TOP OF LAYER 6	0.000 (0.001)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.30693 (1.68112)	1114.167	0.98178
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.01312 (0.07159)	47.641	0.04198
AVERAGE HEAD ON TOP OF LAYER 8	0.000 (0.001)		
CHANGE IN WATER STORAGE	-0.322 (2.0678)	-1169.59	-1.031

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 30

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	4.560	16553.5898
DRAINAGE COLLECTED FROM LAYER 2	1.25197	4544.63721
PERCOLATION/LEAKAGE THROUGH LAYER 4	0.000004	0.01486
AVERAGE HEAD ON TOP OF LAYER 3	0.047	
MAXIMUM HEAD ON TOP OF LAYER 3	0.235	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.140332	509.40646
AVERAGE HEAD ON TOP OF LAYER 6	0.096	
DRAINAGE COLLECTED FROM LAYER 7	0.13529	491.11432
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.005039	18.29213
AVERAGE HEAD ON TOP OF LAYER 8	0.021	
MAXIMUM HEAD ON TOP OF LAYER 8	0.156	
LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN)	0.0 FEET	
SNOW WATER	0.01	37.4433

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3577
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1360

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 30

LAYER	(INCHES)	(VOL/VOL)
1	4.4351	0.2464
2	0.0029	0.0144
3	0.0000	0.0000
4	8.7600	0.3650
5	350.4000	0.2920
6	8.7600	0.3650
7	0.0020	0.0100
8	0.0000	0.0000
SNOW WATER	0.000	

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One Lift Bottom 2.5% Bottom

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**
** HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
** HELP MODEL VERSION 3.07 (1 NOVEMBER 1997)
** DEVELOPED BY ENVIRONMENTAL LABORATORY
** USAE WATERWAYS EXPERIMENT STATION
** FOR USEPA RISK REDUCTION ENGINEERING LABORATORY
**
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PRECIPITATION DATA FILE: C:\HELP3\SCLFL2\SCLF1L.D4
TEMPERATURE DATA FILE: C:\HELP3\SCLFL2\SCLF30.D7
SOLAR RADIATION DATA FILE: C:\HELP3\SCLFL2\SCLF30.D13
EVAPOTRANSPIRATION DATA: C:\HELP3\SCLFL2\SCLF30.D11
SOIL AND DESIGN DATA FILE: C:\HELP3\SCLFL2\LF2PR1RV.D10
OUTPUT DATA FILE: C:\HELP3\SCLFL2\LF2PR1RV.OUT

TIME: 12:30 DATE: 6/25/2012

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TITLE: SCLF LANDFILL 2 EXPANSION - ONE LIFT MODIFIED 2.5% BOTTOM

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NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
WERE SPECIFIED BY THE USER.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	6.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 18

THICKNESS	=	120.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 3

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 4

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	12.00	INCHES
POROSITY	=	0.3970	VOL/VOL
FIELD CAPACITY	=	0.0320	VOL/VOL
WILTING POINT	=	0.0130	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0300	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	1.00000000000	CM/SEC
SLOPE	=	2.50	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 5

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 6

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.4510	VOL/VOL
FIELD CAPACITY	=	0.4190	VOL/VOL
WILTING POINT	=	0.3320	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4510	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000001000E-06	CM/SEC

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	12.00	INCHES
POROSITY	=	0.4170	VOL/VOL
FIELD CAPACITY	=	0.0450	VOL/VOL
WILTING POINT	=	0.0180	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0300	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.200000009000E-02	CM/SEC
SLOPE	=	2.50	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 9

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 16

THICKNESS	=	12.00	INCHES
POROSITY	=	0.4270	VOL/VOL
FIELD CAPACITY	=	0.4180	VOL/VOL
WILTING POINT	=	0.3670	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4270	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000001000E-06	CM/SEC

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	48.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.6000000210000E-05	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #24 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2.% AND A SLOPE LENGTH OF 500. FEET.

SCS RUNOFF CURVE NUMBER	=	96.70	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	5.100	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	10.242	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.136	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	74.928	INCHES
TOTAL INITIAL WATER	=	74.928	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
COTATI CALIFORNIA

STATION LATITUDE	=	38.33	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	78	
END OF GROWING SEASON (JULIAN DATE)	=	328	
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	5.50	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	71.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	73.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	74.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
RUNOFF	10.382	5.204	1.617	0.824	0.108	0.029
	0.000	0.000	0.000	0.241	2.572	3.692
EVAPOTRANSPIRATION	1.275	1.624	2.820	2.348	2.772	0.077
	0.235	0.000	0.000	0.068	0.595	1.208
PERCOLATION/LEAKAGE THROUGH	2.0458	1.5959	1.1316	0.0058	0.0044	0.0000
LAYER 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0574
LATERAL DRAINAGE COLLECTED	1.9340	1.6321	1.1831	0.0058	0.0044	0.0000
FROM LAYER 4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0372
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LATERAL DRAINAGE COLLECTED	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
FROM LAYER 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.021	0.013	0.009	0.000	0.000	0.000
TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.001
STD. DEVIATION OF DAILY	0.022	0.011	0.013	0.001	0.001	0.000
HEAD ON TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.002
AVERAGE DAILY HEAD ON	0.317	0.296	0.194	0.001	0.001	0.000
TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.006
STD. DEVIATION OF DAILY	0.137	0.201	0.226	0.002	0.002	0.000
HEAD ON TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.008
AVERAGE DAILY HEAD ON	0.000	0.000	0.000	0.000	0.000	0.000
TOP OF LAYER 8	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.000	0.000	0.000	0.000	0.000	0.000
HEAD ON TOP OF LAYER 8	0.000	0.000	0.000	0.000	0.000	0.000

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	24.669	89550.102	57.38
EVAPOTRANSPIRATION	13.021	47265.152	30.29
PERC./LEAKAGE THROUGH LAYER 3	4.840807	17572.129	11.26
AVG. HEAD ON TOP OF LAYER 3	0.0037		
DRAINAGE COLLECTED FROM LAYER 4	4.7966	17411.621	11.16
PERC./LEAKAGE THROUGH LAYER 6	0.000090	0.328	0.00
AVG. HEAD ON TOP OF LAYER 5	0.0679		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.503	1826.826	1.17
SOIL WATER AT START OF YEAR	74.928	271988.437	
SOIL WATER AT END OF YEAR	75.431	273815.281	

SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.021	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
RUNOFF						
TOTALS	10.382	5.204	1.617	0.824	0.108	0.029
	0.000	0.000	0.000	0.241	2.572	3.692
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	1.275	1.624	2.820	2.348	2.772	0.077
	0.235	0.000	0.000	0.068	0.595	1.208
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
PERCOLATION/LEAKAGE THROUGH LAYER 3						
TOTALS	2.0458	1.5959	1.1316	0.0058	0.0044	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0574
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LATERAL DRAINAGE COLLECTED FROM LAYER 4						
TOTALS	1.9340	1.6321	1.1831	0.0058	0.0044	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0372
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH LAYER 6						

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 9

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 10

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0205	0.0135	0.0094	0.0001	0.0001	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 5

AVERAGES	0.3171	0.2963	0.1940	0.0010	0.0007	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0061
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 1

	INCHES		CU. FEET	PERCENT
PRECIPITATION	42.99	(0.000)	156053.7	100.00
RUNOFF	24.669	(0.0000)	89550.10	57.384
EVAPOTRANSPIRATION	13.021	(0.0000)	47265.15	30.288
PERCOLATION/LEAKAGE THROUGH LAYER 3	4.84081	(0.00000)	17572.129	11.26031
AVERAGE HEAD ON TOP OF LAYER 3	0.004	(0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 4	4.79659	(0.00000)	17411.621	11.15745
PERCOLATION/LEAKAGE THROUGH LAYER 6	0.00009	(0.00000)	0.328	0.00021
AVERAGE HEAD ON TOP OF LAYER 5	0.068	(0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.00000	(0.00000)	0.000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.00000	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	(0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 10	0.00000	(0.00000)	0.000	0.00000
CHANGE IN WATER STORAGE	0.503	(0.0000)	1826.83	1.171

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	5.441	19751.1914
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.136729	496.32715
AVERAGE HEAD ON TOP OF LAYER 3	0.123	
DRAINAGE COLLECTED FROM LAYER 4	0.12027	436.57095

PERCOLATION/LEAKAGE THROUGH LAYER 6	0.000002	0.00774
AVERAGE HEAD ON TOP OF LAYER 5	0.611	
MAXIMUM HEAD ON TOP OF LAYER 5	1.194	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	16.5 FEET	
DRAINAGE COLLECTED FROM LAYER 7	0.00000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	
MAXIMUM HEAD ON TOP OF LAYER 8	0.000	
LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 10	0.000000	0.00000
SNOW WATER	0.00	0.0000

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3424
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1187

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	2.1156	0.3526
2	35.8434	0.2987
3	8.7600	0.3650
4	0.4041	0.0337
5	0.0000	0.0000
6	10.8240	0.4510
7	0.3601	0.0300

8	0.0000	0.0000
9	5.1240	0.4270
10	12.0000	0.2500
SNOW WATER	0.000	

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One Lift 3:1 Side Slopes

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**                                                                              **
**                                                                              **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                    **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY                       **
**                    USAE WATERWAYS EXPERIMENT STATION                         **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:    C:\HELP3\SCLFL2\SCLF1L.D4
TEMPERATURE DATA FILE:      C:\HELP3\SCLFL2\SCLF30.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\SCLFL2\SCLF30.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\SCLFL2\SCLF30.D11
SOIL AND DESIGN DATA FILE:  C:\HELP3\SCLFL2\SDSLPFR3.D10
OUTPUT DATA FILE:           C:\HELP3\SCLFL2\SDSLPFR3.OUT


TIME:  12: 3     DATE:   6/27/2012


**********************************************************************************

     TITLE:  SCLF LANDFILL 2 EXPANSION - 1 LIFT MODIFIED LINER 3:1 SS

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
              WERE SPECIFIED BY THE USER.


                                LAYER  1
                                --------

                TYPE 1 - VERTICAL PERCOLATION LAYER
                    MATERIAL TEXTURE NUMBER   0
          THICKNESS                    =      6.00   INCHES
          POROSITY                     =      0.3650 VOL/VOL
          FIELD CAPACITY               =      0.3050 VOL/VOL
          WILTING POINT                =      0.2020 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.2500 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.600000021000E-05 CM/SEC



                                LAYER  2
                                --------

                TYPE 1 - VERTICAL PERCOLATION LAYER
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MATERIAL TEXTURE NUMBER 18

THICKNESS	=	120.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 3

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3650	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 4

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 5

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 6

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.20	INCHES
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

LAYER 7

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 8

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.20	INCHES
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

LAYER 9

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 10

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0800	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC

LAYER 11

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 22

THICKNESS	=	12.00	INCHES
POROSITY	=	0.4190	VOL/VOL
FIELD CAPACITY	=	0.3070	VOL/VOL
WILTING POINT	=	0.1800	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1800	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.189999992000E-04	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #24 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 33.% AND A SLOPE LENGTH OF 700. FEET.

SCS RUNOFF CURVE NUMBER	=	96.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	5.100	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	10.242	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.136	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	48.598	INCHES
TOTAL INITIAL WATER	=	48.598	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM COTATI CALIFORNIA

STATION LATITUDE	=	38.33 DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00

START OF GROWING SEASON (JULIAN DATE) = 78
END OF GROWING SEASON (JULIAN DATE) = 328
EVAPORATIVE ZONE DEPTH = 18.0 INCHES
AVERAGE ANNUAL WIND SPEED = 5.50 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 75.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 71.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 73.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 74.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
RUNOFF	10.557	5.292	1.683	0.878	0.121	0.034
	0.000	0.000	0.000	0.259	2.646	3.800
EVAPOTRANSPIRATION	1.277	1.625	2.803	2.250	2.551	0.072
	0.235	0.000	0.000	0.065	0.593	1.218
PERCOLATION/LEAKAGE THROUGH	2.0875	1.4796	1.0929	0.0054	0.0563	0.0000
LAYER 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0277

LATERAL DRAINAGE COLLECTED	2.0875	1.4796	1.0929	0.0054	0.0563	0.0000
FROM LAYER 4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0277
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PERCOLATION/LEAKAGE THROUGH	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAYER 11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	0.021	0.014	0.010	0.000	0.001	0.000
TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.022	0.013	0.013	0.001	0.003	0.000
HEAD ON TOP OF LAYER 3	0.000	0.000	0.000	0.000	0.000	0.001
AVERAGE DAILY HEAD ON	0.007	0.005	0.003	0.000	0.000	0.000
TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.004	0.004	0.005	0.000	0.001	0.000
HEAD ON TOP OF LAYER 5	0.000	0.000	0.000	0.000	0.000	0.000
AVERAGE DAILY HEAD ON	0.000	0.000	0.000	0.000	0.000	0.000
TOP OF LAYER 7	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.000	0.000	0.000	0.000	0.000	0.000
HEAD ON TOP OF LAYER 7	0.000	0.000	0.000	0.000	0.000	0.000
AVERAGE DAILY HEAD ON	0.000	0.000	0.000	0.000	0.000	0.000
TOP OF LAYER 9	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATION OF DAILY	0.000	0.000	0.000	0.000	0.000	0.000
HEAD ON TOP OF LAYER 9	0.000	0.000	0.000	0.000	0.000	0.000

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	25.271	91733.141	58.78
EVAPOTRANSPIRATION	12.688	46058.090	29.51
PERC./LEAKAGE THROUGH LAYER 3	4.749491	17240.652	11.05

AVG. HEAD ON TOP OF LAYER 3	0.0038		
DRAINAGE COLLECTED FROM LAYER 4	4.7495	17240.652	11.05
PERC./LEAKAGE THROUGH LAYER 5	0.000000	0.001	0.00
AVG. HEAD ON TOP OF LAYER 5	0.0013		
PERC./LEAKAGE THROUGH LAYER 7	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 7	0.0000		
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 9	0.0000		
PERC./LEAKAGE THROUGH LAYER 11	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.281	1021.838	0.65
SOIL WATER AT START OF YEAR	48.838	177281.750	
SOIL WATER AT END OF YEAR	49.119	178303.594	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.000	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	14.40	7.75	3.79	2.98	1.01	0.34
	0.00	0.00	0.00	0.99	4.83	6.90
STD. DEVIATIONS	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
RUNOFF						
TOTALS	10.557	5.292	1.683	0.878	0.121	0.034
	0.000	0.000	0.000	0.259	2.646	3.800
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						

TOTALS	1.277	1.625	2.803	2.250	2.551	0.072
	0.235	0.000	0.000	0.065	0.593	1.218
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	2.0875	1.4796	1.0929	0.0054	0.0563	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0277
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 4

TOTALS	2.0875	1.4796	1.0929	0.0054	0.0563	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0277
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 5

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 7

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 9

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 11

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0210	0.0139	0.0096	0.0001	0.0005	0.0000

	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 5

AVERAGES	0.0067	0.0052	0.0035	0.0000	0.0002	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 7

AVERAGES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 9

AVERAGES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 1

	INCHES		CU. FEET	PERCENT
PRECIPITATION	42.99	(0.000)	156053.7	100.00
RUNOFF	25.271	(0.0000)	91733.14	58.783
EVAPOTRANSPIRATION	12.688	(0.0000)	46058.09	29.514
PERCOLATION/LEAKAGE THROUGH LAYER 3	4.74949	(0.00000)	17240.652	11.04790
AVERAGE HEAD ON TOP OF LAYER 3	0.004	(0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 4	4.74949	(0.00000)	17240.652	11.04790
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.00000	(0.00000)	0.001	0.00000
AVERAGE HEAD ON TOP OF LAYER 5	0.001	(0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 7	0.00000	(0.00000)	0.000	0.00000

AVERAGE HEAD ON TOP OF LAYER 7	0.000 (	0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.00000 (	0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 9	0.000 (	0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 11	0.00000 (	0.00000)	0.000	0.00000
CHANGE IN WATER STORAGE	0.281 (	0.0000)	1021.84	0.655

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 1

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	5.457	19810.4590
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.144908	526.01447
AVERAGE HEAD ON TOP OF LAYER 3	0.123	
DRAINAGE COLLECTED FROM LAYER 4	0.14491	526.01447
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.000000	0.00001
AVERAGE HEAD ON TOP OF LAYER 5	0.014	
MAXIMUM HEAD ON TOP OF LAYER 5	0.327	
LOCATION OF MAXIMUM HEAD IN LAYER 4 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 7	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 7	0.000	
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 9	0.000	
PERCOLATION/LEAKAGE THROUGH LAYER 11	0.000000	0.00000
SNOW WATER	0.00	0.0000

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3372
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1187

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 1

LAYER	(INCHES)	(VOL/VOL)
1	2.1220	0.3537
2	35.6594	0.2972
3	8.7600	0.3650
4	0.0020	0.0100
5	0.0000	0.0000
6	0.0800	0.4000
7	0.0000	0.0000
8	0.0800	0.4000
9	0.0000	0.0000
10	0.0063	0.0314
11	2.1697	0.1808
SNOW WATER	0.000	

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Final Cover 2.5% Bottom

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**                                                                              **
**                                                                              **
**               HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                  **
**                 HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                   **
**                   DEVELOPED BY ENVIRONMENTAL LABORATORY                      **
**                     USAE WATERWAYS EXPERIMENT STATION                        **
**              FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                 **
**                                                                              **
**                                                                              **
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PRECIPITATION DATA FILE:    C:\HELP3\SCLFL2\SCLF30.D4
TEMPERATURE DATA FILE:      C:\HELP3\SCLFL2\SCLF30.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\SCLFL2\SCLF30.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\SCLFL2\SCLF30.D11
SOIL AND DESIGN DATA FILE:  C:\HELP3\SCLFL2\LF22FRS.D10
OUTPUT DATA FILE:           C:\HELP3\SCLFL2\LF22FRS.OUT


TIME:  12:53     DATE:   6/27/2012


**********************************************************************************

     TITLE:  SCLF LANDFILL 2 EXPANSION - FINAL COVER 2.5% BOTTOM MODIFIED

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
              WERE SPECIFIED BY THE USER.


                                LAYER  1
                                --------

                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER  10
          THICKNESS                    =     18.00   INCHES
          POROSITY                     =      0.3980 VOL/VOL
          FIELD CAPACITY               =      0.2440 VOL/VOL
          WILTING POINT                =      0.1360 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.2500 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.119999997000E-03 CM/SEC
        NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  3.00
                 FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.


                                LAYER  2
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TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0200	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	800.0	FEET

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.10	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.700000022000E-13	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2020	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS	=	1200.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 6

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2020	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	12.00	INCHES
POROSITY	=	0.3970	VOL/VOL
FIELD CAPACITY	=	0.0320	VOL/VOL
WILTING POINT	=	0.0130	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0300	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	1.00000000000	CM/SEC
SLOPE	=	2.50	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 9

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 16

THICKNESS	=	24.00	INCHES
POROSITY	=	0.4270	VOL/VOL
FIELD CAPACITY	=	0.4180	VOL/VOL
WILTING POINT	=	0.3670	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4270	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000001000E-06	CM/SEC

LAYER 10

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	12.00	INCHES
POROSITY	=	0.4170	VOL/VOL
FIELD CAPACITY	=	0.0450	VOL/VOL
WILTING POINT	=	0.0180	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0300	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.200000009000E-02	CM/SEC
SLOPE	=	2.50	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 11

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 12

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 16

THICKNESS	=	12.00	INCHES
POROSITY	=	0.4270	VOL/VOL
FIELD CAPACITY	=	0.4180	VOL/VOL
WILTING POINT	=	0.3670	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4270	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000001000E-06	CM/SEC

LAYER 13

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	48.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #10 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 25.% AND A SLOPE LENGTH OF 800. FEET.

SCS RUNOFF CURVE NUMBER	=	85.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	4.500	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	7.164	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.448	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	402.292	INCHES
TOTAL INITIAL WATER	=	402.292	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM COTATI CALIFORNIA

STATION LATITUDE	=	38.33	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	78	
END OF GROWING SEASON (JULIAN DATE)	=	328	
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	5.50	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	71.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	73.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	74.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.02	90822.609	100.00
RUNOFF	3.365	12214.203	13.45
EVAPOTRANSPIRATION	9.542	34637.094	38.14
DRAINAGE COLLECTED FROM LAYER 2	12.1623	44149.312	48.61
PERC./LEAKAGE THROUGH LAYER 3	0.000059	0.214	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	7.1039	25787.123	28.39
PERC./LEAKAGE THROUGH LAYER 9	0.000130	0.471	0.00
AVG. HEAD ON TOP OF LAYER 8	0.1013		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-7.153	-25965.113	-28.59
SOIL WATER AT START OF YEAR	404.716	1469119.120	
SOIL WATER AT END OF YEAR	397.563	1443154.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.010	0.00

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	35.53	128973.883	100.00
RUNOFF	4.190	15210.359	11.79
EVAPOTRANSPIRATION	13.309	48312.258	37.46
DRAINAGE COLLECTED FROM LAYER 2	16.9319	61462.859	47.66
PERC./LEAKAGE THROUGH LAYER 3	0.000081	0.294	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0022		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.099	3988.480	3.09
SOIL WATER AT START OF YEAR	397.563	1443154.000	
SOIL WATER AT END OF YEAR	398.662	1447142.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.076	0.00

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.71	86067.297	100.00
RUNOFF	1.155	4192.728	4.87
EVAPOTRANSPIRATION	12.741	46248.312	53.74
DRAINAGE COLLECTED FROM LAYER 2	10.7247	38930.762	45.23

PERC./LEAKAGE THROUGH LAYER 3	0.000054	0.196	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.910	-3304.532	-3.84
SOIL WATER AT START OF YEAR	398.662	1447142.500	
SOIL WATER AT END OF YEAR	397.751	1443837.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.028	0.00

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.94	94162.227	100.00
RUNOFF	2.348	8524.849	9.05
EVAPOTRANSPIRATION	13.850	50276.648	53.39
DRAINAGE COLLECTED FROM LAYER 2	9.2591	33610.547	35.69
PERC./LEAKAGE THROUGH LAYER 3	0.000047	0.171	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00

AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.482	1750.084	1.86
SOIL WATER AT START OF YEAR	397.751	1443837.870	
SOIL WATER AT END OF YEAR	398.234	1445588.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.103	0.00

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.02	119862.570	100.00
RUNOFF	2.740	9947.016	8.30
EVAPOTRANSPIRATION	16.041	58230.582	48.58
DRAINAGE COLLECTED FROM LAYER 2	14.6983	53354.707	44.51
PERC./LEAKAGE THROUGH LAYER 3	0.000072	0.262	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0019		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.460	-1669.658	-1.39
SOIL WATER AT START OF YEAR	398.234	1445588.000	
SOIL WATER AT END OF YEAR	397.774	1443918.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	-0.072	0.00

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ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.63	85776.914	100.00
RUNOFF	1.790	6499.330	7.58
EVAPOTRANSPIRATION	11.174	40561.016	47.29
DRAINAGE COLLECTED FROM LAYER 2	10.8037	39217.406	45.72
PERC./LEAKAGE THROUGH LAYER 3	0.000052	0.189	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.138	-500.831	-0.58
SOIL WATER AT START OF YEAR	397.774	1443918.370	
SOIL WATER AT END OF YEAR	397.636	1443417.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.010	0.00

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ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT

PRECIPITATION	42.99	156053.719	100.00
RUNOFF	8.306	30150.357	19.32
EVAPOTRANSPIRATION	14.024	50907.617	32.62
DRAINAGE COLLECTED FROM LAYER 2	19.3370	70193.445	44.98
PERC./LEAKAGE THROUGH LAYER 3	0.000093	0.337	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0025		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.323	4802.261	3.08
SOIL WATER AT START OF YEAR	397.636	1443417.500	
SOIL WATER AT END OF YEAR	398.959	1448219.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.038	0.00

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ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT
PRECIPITATION	41.82	151806.594	100.00
RUNOFF	5.598	20320.797	13.39
EVAPOTRANSPIRATION	15.693	56966.898	37.53
DRAINAGE COLLECTED FROM LAYER 2	20.9889	76189.883	50.19
PERC./LEAKAGE THROUGH LAYER 3	0.000100	0.363	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0027		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00

PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.460	-1670.988	-1.10
SOIL WATER AT START OF YEAR	398.959	1448219.750	
SOIL WATER AT END OF YEAR	398.498	1446548.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.007	0.00

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ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.22	87918.609	100.00
RUNOFF	3.907	14181.707	16.13
EVAPOTRANSPIRATION	8.312	30171.086	34.32
DRAINAGE COLLECTED FROM LAYER 2	12.3635	44879.531	51.05
PERC./LEAKAGE THROUGH LAYER 3	0.000060	0.219	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.362	-1313.726	-1.49

SOIL WATER AT START OF YEAR	398.498	1446548.750	
SOIL WATER AT END OF YEAR	398.136	1445235.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.013	0.00

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ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	36.89	133910.719	100.00
RUNOFF	5.158	18724.559	13.98
EVAPOTRANSPIRATION	14.975	54358.281	40.59
DRAINAGE COLLECTED FROM LAYER 2	16.7170	60682.770	45.32
PERC./LEAKAGE THROUGH LAYER 3	0.000081	0.293	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0022		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.040	145.120	0.11
SOIL WATER AT START OF YEAR	398.136	1445235.120	
SOIL WATER AT END OF YEAR	398.176	1445380.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.005	0.00

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ANNUAL TOTALS FOR YEAR 11

	INCHES	CU. FEET	PERCENT
PRECIPITATION	34.79	126287.734	100.00
RUNOFF	3.183	11553.633	9.15
EVAPOTRANSPIRATION	13.894	50434.609	39.94
DRAINAGE COLLECTED FROM LAYER 2	17.0239	61796.582	48.93
PERC./LEAKAGE THROUGH LAYER 3	0.000082	0.299	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0022		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.689	2502.826	1.98
SOIL WATER AT START OF YEAR	398.176	1445380.250	
SOIL WATER AT END OF YEAR	398.866	1447883.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.085	0.00

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ANNUAL TOTALS FOR YEAR 12

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.97	108791.094	100.00
RUNOFF	2.853	10355.969	9.52
EVAPOTRANSPIRATION	11.852	43022.707	39.55
DRAINAGE COLLECTED FROM LAYER 2	17.0045	61726.258	56.74

PERC./LEAKAGE THROUGH LAYER 3	0.000083	0.302	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0022		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-1.739	-6313.838	-5.80
SOIL WATER AT START OF YEAR	398.866	1447883.000	
SOIL WATER AT END OF YEAR	397.126	1441569.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.001	0.00

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ANNUAL TOTALS FOR YEAR 13

	INCHES	CU. FEET	PERCENT
PRECIPITATION	27.79	100877.703	100.00
RUNOFF	2.363	8577.479	8.50
EVAPOTRANSPIRATION	12.652	45925.719	45.53
DRAINAGE COLLECTED FROM LAYER 2	11.3069	41043.992	40.69
PERC./LEAKAGE THROUGH LAYER 3	0.000058	0.209	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0015		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00

AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.468	5330.565	5.28
SOIL WATER AT START OF YEAR	397.126	1441569.120	
SOIL WATER AT END OF YEAR	398.595	1446899.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.052	0.00

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ANNUAL TOTALS FOR YEAR 14

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.80	119064.023	100.00
RUNOFF	5.073	18416.340	15.47
EVAPOTRANSPIRATION	12.489	45333.371	38.07
DRAINAGE COLLECTED FROM LAYER 2	16.4999	59894.676	50.30
PERC./LEAKAGE THROUGH LAYER 3	0.000079	0.287	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0022		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-1.262	-4580.482	-3.85
SOIL WATER AT START OF YEAR	398.595	1446899.750	
SOIL WATER AT END OF YEAR	397.333	1442319.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	0.121	0.00

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ANNUAL TOTALS FOR YEAR 15

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.74	93436.203	100.00
RUNOFF	1.619	5875.849	6.29
EVAPOTRANSPIRATION	12.064	43793.828	46.87
DRAINAGE COLLECTED FROM LAYER 2	12.3129	44695.684	47.84
PERC./LEAKAGE THROUGH LAYER 3	0.000063	0.230	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.256	-929.102	-0.99
SOIL WATER AT START OF YEAR	397.333	1442319.250	
SOIL WATER AT END OF YEAR	397.077	1441390.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.055	0.00

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ANNUAL TOTALS FOR YEAR 16

	INCHES	CU. FEET	PERCENT

PRECIPITATION	26.49	96158.703	100.00
RUNOFF	1.911	6938.602	7.22
EVAPOTRANSPIRATION	14.632	53113.000	55.23
DRAINAGE COLLECTED FROM LAYER 2	8.7455	31746.291	33.01
PERC./LEAKAGE THROUGH LAYER 3	0.000042	0.153	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.201	4360.697	4.53
SOIL WATER AT START OF YEAR	397.077	1441390.120	
SOIL WATER AT END OF YEAR	398.278	1445750.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.116	0.00

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ANNUAL TOTALS FOR YEAR 17

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.33	95577.883	100.00
RUNOFF	2.100	7623.709	7.98
EVAPOTRANSPIRATION	12.489	45335.961	47.43
DRAINAGE COLLECTED FROM LAYER 2	11.6552	42308.488	44.27
PERC./LEAKAGE THROUGH LAYER 3	0.000058	0.212	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00

PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.085	309.738	0.32
SOIL WATER AT START OF YEAR	398.278	1445750.870	
SOIL WATER AT END OF YEAR	398.364	1446060.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 18

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.00	116160.016	100.00
RUNOFF	5.318	19304.123	16.62
EVAPOTRANSPIRATION	12.044	43718.574	37.64
DRAINAGE COLLECTED FROM LAYER 2	13.4904	48970.055	42.16
PERC./LEAKAGE THROUGH LAYER 3	0.000065	0.237	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.148	4167.277	3.59

SOIL WATER AT START OF YEAR	398.364	1446060.620	
SOIL WATER AT END OF YEAR	399.512	1450227.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 19

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.22	102438.602	100.00
RUNOFF	2.197	7974.003	7.78
EVAPOTRANSPIRATION	14.094	51162.625	49.94
DRAINAGE COLLECTED FROM LAYER 2	13.6080	49397.035	48.22
PERC./LEAKAGE THROUGH LAYER 3	0.000068	0.246	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-1.679	-6095.050	-5.95
SOIL WATER AT START OF YEAR	399.512	1450227.870	
SOIL WATER AT END OF YEAR	397.833	1444132.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.010	0.00

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ANNUAL TOTALS FOR YEAR 20

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.68	93218.398	100.00
RUNOFF	1.730	6280.917	6.74
EVAPOTRANSPIRATION	16.113	58490.871	62.75
DRAINAGE COLLECTED FROM LAYER 2	8.4279	30593.264	32.82
PERC./LEAKAGE THROUGH LAYER 3	0.000044	0.161	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.591	-2146.561	-2.30
SOIL WATER AT START OF YEAR	397.833	1444132.870	
SOIL WATER AT END OF YEAR	397.241	1441986.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.090	0.00

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ANNUAL TOTALS FOR YEAR 21

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.64	107593.195	100.00
RUNOFF	3.914	14207.435	13.20
EVAPOTRANSPIRATION	11.131	40406.879	37.56
DRAINAGE COLLECTED FROM LAYER 2	12.6242	45825.914	42.59

PERC./LEAKAGE THROUGH LAYER 3	0.000060	0.219	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.970	7152.877	6.65
SOIL WATER AT START OF YEAR	397.241	1441986.250	
SOIL WATER AT END OF YEAR	399.212	1449139.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.093	0.00

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ANNUAL TOTALS FOR YEAR 22

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.55	121786.508	100.00
RUNOFF	3.700	13431.167	11.03
EVAPOTRANSPIRATION	10.751	39026.859	32.05
DRAINAGE COLLECTED FROM LAYER 2	20.4734	74318.422	61.02
PERC./LEAKAGE THROUGH LAYER 3	0.000099	0.360	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0027		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00

AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-1.375	-4989.921	-4.10
SOIL WATER AT START OF YEAR	399.212	1449139.120	
SOIL WATER AT END OF YEAR	397.837	1444149.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 23

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.45	114163.516	100.00
RUNOFF	3.480	12632.586	11.07
EVAPOTRANSPIRATION	11.707	42496.922	37.22
DRAINAGE COLLECTED FROM LAYER 2	15.3750	55811.273	48.89
PERC./LEAKAGE THROUGH LAYER 3	0.000077	0.281	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.888	3222.777	2.82
SOIL WATER AT START OF YEAR	397.837	1444149.250	
SOIL WATER AT END OF YEAR	398.725	1447372.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	-0.042	0.00

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ANNUAL TOTALS FOR YEAR 24

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.54	103600.195	100.00
RUNOFF	2.902	10532.642	10.17
EVAPOTRANSPIRATION	15.554	56462.793	54.50
DRAINAGE COLLECTED FROM LAYER 2	11.9553	43397.852	41.89
PERC./LEAKAGE THROUGH LAYER 3	0.000058	0.210	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0015		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-1.871	-6793.067	-6.56
SOIL WATER AT START OF YEAR	398.725	1447372.000	
SOIL WATER AT END OF YEAR	396.854	1440578.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.021	0.00

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ANNUAL TOTALS FOR YEAR 25

	INCHES	CU. FEET	PERCENT

PRECIPITATION	34.75	126142.516	100.00
RUNOFF	4.792	17393.752	13.79
EVAPOTRANSPIRATION	12.678	46022.074	36.48
DRAINAGE COLLECTED FROM LAYER 2	17.2718	62696.590	49.70
PERC./LEAKAGE THROUGH LAYER 3	0.000084	0.304	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0023		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.008	30.132	0.02
SOIL WATER AT START OF YEAR	396.854	1440578.870	
SOIL WATER AT END OF YEAR	396.862	1440609.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.033	0.00

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ANNUAL TOTALS FOR YEAR 26

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.87	104798.102	100.00
RUNOFF	1.773	6436.364	6.14
EVAPOTRANSPIRATION	15.761	57211.422	54.59
DRAINAGE COLLECTED FROM LAYER 2	9.7058	35232.191	33.62
PERC./LEAKAGE THROUGH LAYER 3	0.000050	0.181	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0013		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00

PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.630	5918.025	5.65
SOIL WATER AT START OF YEAR	396.862	1440609.000	
SOIL WATER AT END OF YEAR	398.492	1446527.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.099	0.00

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ANNUAL TOTALS FOR YEAR 27

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.81	140880.297	100.00
RUNOFF	6.264	22739.525	16.14
EVAPOTRANSPIRATION	13.028	47289.840	33.57
DRAINAGE COLLECTED FROM LAYER 2	18.7626	68108.086	48.34
PERC./LEAKAGE THROUGH LAYER 3	0.000087	0.316	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0024		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.756	2742.883	1.95

SOIL WATER AT START OF YEAR	398.492	1446527.120	
SOIL WATER AT END OF YEAR	399.248	1449270.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.043	0.00

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ANNUAL TOTALS FOR YEAR 28

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.15	138484.500	100.00
RUNOFF	4.975	18058.955	13.04
EVAPOTRANSPIRATION	16.580	60185.020	43.46
DRAINAGE COLLECTED FROM LAYER 2	17.9446	65138.824	47.04
PERC./LEAKAGE THROUGH LAYER 3	0.000087	0.317	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0023		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-1.349	-4898.307	-3.54
SOIL WATER AT START OF YEAR	399.248	1449270.000	
SOIL WATER AT END OF YEAR	397.899	1444371.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.012	0.00

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ANNUAL TOTALS FOR YEAR 29

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.86	122911.828	100.00
RUNOFF	4.771	17318.912	14.09
EVAPOTRANSPIRATION	10.691	38809.984	31.58
DRAINAGE COLLECTED FROM LAYER 2	19.2031	69707.266	56.71
PERC./LEAKAGE THROUGH LAYER 3	0.000091	0.330	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0026		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.806	-2924.339	-2.38
SOIL WATER AT START OF YEAR	397.899	1444371.620	
SOIL WATER AT END OF YEAR	397.093	1441447.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.005	0.00

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ANNUAL TOTALS FOR YEAR 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.69	136814.703	100.00
RUNOFF	3.050	11072.280	8.09
EVAPOTRANSPIRATION	17.815	64669.746	47.27
DRAINAGE COLLECTED FROM LAYER 2	16.3698	59422.527	43.43

PERC./LEAKAGE THROUGH LAYER 3	0.000080	0.292	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0021		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 9	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
DRAINAGE COLLECTED FROM LAYER 10	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 11	0.0000		
PERC./LEAKAGE THROUGH LAYER 13	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	0.455	1650.161	1.21
SOIL WATER AT START OF YEAR	397.093	1441447.370	
SOIL WATER AT END OF YEAR	397.548	1443097.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.008	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 30

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	6.11	5.10	3.98	2.06	1.04	0.21
	0.03	0.13	0.27	1.52	3.96	6.87
STD. DEVIATIONS	2.75	3.41	1.95	1.40	0.96	0.27
	0.05	0.19	0.45	1.51	2.43	3.45
RUNOFF						
TOTALS	0.956	0.768	0.149	0.047	0.010	0.000
	0.000	0.000	0.003	0.084	0.422	1.112
STD. DEVIATIONS	1.057	0.890	0.199	0.127	0.029	0.000
	0.000	0.000	0.016	0.151	0.564	0.946
EVAPOTRANSPIRATION						

TOTALS	1.248	1.722	2.825	2.745	1.421	0.300
	0.049	0.120	0.137	0.606	0.951	1.133
STD. DEVIATIONS	0.066	0.157	0.420	1.209	0.970	0.402
	0.084	0.183	0.207	0.626	0.392	0.115

LATERAL DRAINAGE COLLECTED FROM LAYER 2

TOTALS	4.0132	2.9338	1.4858	0.3077	0.0231	0.0001
	0.0000	0.0000	0.0000	0.0958	1.3945	4.2042
STD. DEVIATIONS	1.9330	2.1156	1.2773	0.4636	0.1015	0.0002
	0.0000	0.0000	0.0000	0.2275	1.5442	2.2168

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

TOTALS	0.0000	0.0802	0.1053	0.0504	0.0010	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.4394	0.5765	0.2758	0.0053	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 9

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 10

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 12

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 13

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0061	0.0049	0.0023	0.0005	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0001	0.0022	0.0064
STD. DEVIATIONS	0.0030	0.0036	0.0020	0.0007	0.0002	0.0000
	0.0000	0.0000	0.0000	0.0003	0.0024	0.0034

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	0.0000	0.0146	0.0173	0.0085	0.0002	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0798	0.0945	0.0467	0.0009	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 11

AVERAGES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.26 (5.468)	113484.7	100.00
RUNOFF	3.551 (1.6448)	12889.67	11.358
EVAPOTRANSPIRATION	13.256 (2.2093)	48119.42	42.402
LATERAL DRAINAGE COLLECTED FROM LAYER 2	14.45824 (3.64835)	52483.410	46.24713
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.00007 (0.00002)	0.256	0.00023
AVERAGE HEAD ON TOP OF LAYER 3	0.002 (0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.23680 (1.29699)	859.571	0.75743
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.00000 (0.00002)	0.016	0.00001
AVERAGE HEAD ON TOP OF LAYER 8	0.003 (0.018)		

LATERAL DRAINAGE COLLECTED FROM LAYER 10	0.00000 (0.00000)	0.000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 12	0.00000 (0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 11	0.000 (0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 13	0.00000 (0.00000)	0.000	0.00000
CHANGE IN WATER STORAGE	-0.239 (1.6945)	-867.39	-0.764

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 30

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	4.444	16130.0283
DRAINAGE COLLECTED FROM LAYER 2	1.30871	4750.63379
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.000005	0.01956
AVERAGE HEAD ON TOP OF LAYER 3	0.062	
MAXIMUM HEAD ON TOP OF LAYER 3	0.355	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	0.0 FEET	
DRAINAGE COLLECTED FROM LAYER 7	0.12952	470.16528
PERCOLATION/LEAKAGE THROUGH LAYER 9	0.000002	0.00828
AVERAGE HEAD ON TOP OF LAYER 8	0.658	
MAXIMUM HEAD ON TOP OF LAYER 8	1.283	
LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN)	17.8 FEET	
DRAINAGE COLLECTED FROM LAYER 10	0.00000	0.00000
PERCOLATION/LEAKAGE THROUGH LAYER 12	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 11	0.000	
MAXIMUM HEAD ON TOP OF LAYER 11	0.000	
LOCATION OF MAXIMUM HEAD IN LAYER 10 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 13	0.000000	0.00000

SNOW WATER 0.01 37.4433

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.3526

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.1360

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 30

LAYER	(INCHES)	(VOL/VOL)
1	4.4341	0.2463
2	0.0031	0.0157
3	0.0000	0.0000
4	4.8501	0.2021
5	350.4000	0.2920
6	7.3200	0.3050
7	0.3840	0.0320
8	0.0000	0.0000
9	10.2480	0.4270
10	0.3601	0.0300
11	0.0000	0.0000
12	5.1240	0.4270
13	12.0000	0.2500
SNOW WATER	0.000	

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Final Cover 3:1 Side Slopes

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** HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE **
** HELP MODEL VERSION 3.07 (1 NOVEMBER 1997) **
** DEVELOPED BY ENVIRONMENTAL LABORATORY **
** USAE WATERWAYS EXPERIMENT STATION **
** FOR USEPA RISK REDUCTION ENGINEERING LABORATORY **
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PRECIPITATION DATA FILE: C:\HELP3\SCLFL2\SCLF30.D4
TEMPERATURE DATA FILE: C:\HELP3\SCLFL2\SCLF30.D7
SOLAR RADIATION DATA FILE: C:\HELP3\SCLFL2\SCLF30.D13
EVAPOTRANSPIRATION DATA: C:\HELP3\SCLFL2\SCLF30.D11
SOIL AND DESIGN DATA FILE: C:\HELP3\SCLFL2\SDSLPFRO.D10
OUTPUT DATA FILE: C:\HELP3\SCLFL2\SDSLPFRO.OUT

TIME: 11:27 DATE: 6/27/2012

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TITLE: SCLF LANDFILL 2 EXPANSION - MODIFIED LINER 3:1 SLOPES

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NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER
WERE SPECIFIED BY THE USER.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 10

THICKNESS	=	18.00	INCHES
POROSITY	=	0.3980	VOL/VOL
FIELD CAPACITY	=	0.2440	VOL/VOL
WILTING POINT	=	0.1360	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2500	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.119999997000E-03	CM/SEC

NOTE: SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY 3.00
FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.

LAYER 2

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0200	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	600.0	FEET

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	0.10	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.700000022000E-13	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2020	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 18

THICKNESS	=	1200.00	INCHES
POROSITY	=	0.6710	VOL/VOL
FIELD CAPACITY	=	0.2920	VOL/VOL
WILTING POINT	=	0.0770	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.100000005000E-02	CM/SEC

LAYER 6

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 0

THICKNESS	=	24.00	INCHES
POROSITY	=	0.3650	VOL/VOL
FIELD CAPACITY	=	0.3050	VOL/VOL
WILTING POINT	=	0.2020	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2020	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.600000021000E-05	CM/SEC

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0100	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	10.0000000000	CM/SEC
SLOPE	=	33.00	PERCENT
DRAINAGE LENGTH	=	720.0	FEET

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 9

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.20	INCHES
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

LAYER 10

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 11

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 17

THICKNESS	=	0.20	INCHES
POROSITY	=	0.7500	VOL/VOL
FIELD CAPACITY	=	0.7470	VOL/VOL
WILTING POINT	=	0.4000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.300000003000E-08	CM/SEC

LAYER 12

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.06	INCHES
POROSITY	=	0.0000	VOL/VOL
FIELD CAPACITY	=	0.0000	VOL/VOL
WILTING POINT	=	0.0000	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12	CM/SEC
FML PINHOLE DENSITY	=	1.00	HOLES/ACRE
FML INSTALLATION DEFECTS	=	5.00	HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD	

LAYER 13

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 20

THICKNESS	=	0.20	INCHES
POROSITY	=	0.8500	VOL/VOL
FIELD CAPACITY	=	0.0100	VOL/VOL
WILTING POINT	=	0.0050	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0800	VOL/VOL

EFFECTIVE SAT. HYD. COND. = 10.0000000000 CM/SEC

LAYER 14

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 22

THICKNESS	=	12.00	INCHES
POROSITY	=	0.4190	VOL/VOL
FIELD CAPACITY	=	0.3070	VOL/VOL
WILTING POINT	=	0.1800	VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1800	VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.189999992000E-04	CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE #10 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 31.% AND A SLOPE LENGTH OF 563. FEET.

SCS RUNOFF CURVE NUMBER	=	86.20	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	1.000	ACRES
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	4.500	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	7.164	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	2.448	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	376.538	INCHES
TOTAL INITIAL WATER	=	376.538	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM COTATI CALIFORNIA

STATION LATITUDE	=	38.33	DEGREES
MAXIMUM LEAF AREA INDEX	=	2.00	
START OF GROWING SEASON (JULIAN DATE)	=	78	
END OF GROWING SEASON (JULIAN DATE)	=	328	
EVAPORATIVE ZONE DEPTH	=	18.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	5.50	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	75.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	71.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	73.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	74.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
6.29	5.39	3.84	1.93	0.88	0.24
0.04	0.12	0.33	1.86	4.14	5.90

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
49.00	52.00	55.00	58.00	62.00	66.00
68.00	68.00	67.00	63.00	54.00	49.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR COTATI CALIFORNIA
AND STATION LATITUDE = 38.33 DEGREES

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.02	90822.609	100.00
RUNOFF	3.505	12722.310	14.01
EVAPOTRANSPIRATION	9.547	34656.844	38.16
DRAINAGE COLLECTED FROM LAYER 2	12.0148	43613.754	48.02
PERC./LEAKAGE THROUGH LAYER 3	0.000045	0.164	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
DRAINAGE COLLECTED FROM LAYER 7	7.1280	25874.717	28.49
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.001	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0030		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		

PERC./LEAKAGE THROUGH LAYER 14	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-7.175	-26045.096	-28.68
SOIL WATER AT START OF YEAR	379.202	1376503.250	
SOIL WATER AT END OF YEAR	372.027	1350458.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.075	0.00

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	35.53	128973.883	100.00
RUNOFF	4.424	16057.345	12.45
EVAPOTRANSPIRATION	13.296	48264.406	37.42
DRAINAGE COLLECTED FROM LAYER 2	16.7023	60629.477	47.01
PERC./LEAKAGE THROUGH LAYER 3	0.000062	0.225	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	1.108	4022.600	3.12
SOIL WATER AT START OF YEAR	372.027	1350458.120	
SOIL WATER AT END OF YEAR	373.135	1354480.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	0.054	0.00

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.71	86067.297	100.00
RUNOFF	1.245	4519.255	5.25
EVAPOTRANSPIRATION	12.737	46234.531	53.72
DRAINAGE COLLECTED FROM LAYER 2	10.6484	38653.699	44.91
PERC./LEAKAGE THROUGH LAYER 3	0.000042	0.151	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0010		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000000	0.000	0.00
CHANGE IN WATER STORAGE	-0.920	-3340.203	-3.88
SOIL WATER AT START OF YEAR	373.135	1354480.750	
SOIL WATER AT END OF YEAR	372.215	1351140.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.015	0.00

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT

PRECIPITATION	25.94	94162.227	100.00
RUNOFF	2.445	8876.055	9.43
EVAPOTRANSPIRATION	13.852	50282.801	53.40
DRAINAGE COLLECTED FROM LAYER 2	9.1528	33224.504	35.28
PERC./LEAKAGE THROUGH LAYER 3	0.000036	0.131	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0009		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000004	0.014	0.00
CHANGE IN WATER STORAGE	0.490	1778.886	1.89
SOIL WATER AT START OF YEAR	372.215	1351140.500	
SOIL WATER AT END OF YEAR	372.705	1352919.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.028	0.00

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.02	119862.570	100.00
RUNOFF	2.897	10516.721	8.77
EVAPOTRANSPIRATION	16.042	58231.270	48.58
DRAINAGE COLLECTED FROM LAYER 2	14.5494	52814.480	44.06
PERC./LEAKAGE THROUGH LAYER 3	0.000056	0.202	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0014		

DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000040	0.146	0.00
CHANGE IN WATER STORAGE	-0.468	-1700.122	-1.42
SOIL WATER AT START OF YEAR	372.705	1352919.370	
SOIL WATER AT END OF YEAR	372.237	1351219.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.082	0.00

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ANNUAL TOTALS FOR YEAR 6

	INCHES	CU. FEET	PERCENT
PRECIPITATION	23.63	85776.914	100.00
RUNOFF	1.901	6901.609	8.05
EVAPOTRANSPIRATION	11.173	40556.852	47.28
DRAINAGE COLLECTED FROM LAYER 2	10.6912	38808.949	45.24
PERC./LEAKAGE THROUGH LAYER 3	0.000040	0.145	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0010		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00

AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000071	0.257	0.00
CHANGE IN WATER STORAGE	-0.135	-490.529	-0.57
SOIL WATER AT START OF YEAR	372.237	1351219.250	
SOIL WATER AT END OF YEAR	372.102	1350728.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	-0.0001	-0.229	0.00

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ANNUAL TOTALS FOR YEAR 7

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.99	156053.719	100.00
RUNOFF	8.638	31356.139	20.09
EVAPOTRANSPIRATION	14.029	50924.980	32.63
DRAINAGE COLLECTED FROM LAYER 2	18.9870	68922.953	44.17
PERC./LEAKAGE THROUGH LAYER 3	0.000071	0.256	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0019		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000091	0.331	0.00
CHANGE IN WATER STORAGE	1.336	4849.342	3.11
SOIL WATER AT START OF YEAR	372.102	1350728.750	
SOIL WATER AT END OF YEAR	373.437	1355578.120	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00

SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.027	0.00

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ANNUAL TOTALS FOR YEAR 8

	INCHES	CU. FEET	PERCENT
PRECIPITATION	41.82	151806.594	100.00
RUNOFF	5.884	21358.738	14.07
EVAPOTRANSPIRATION	15.668	56875.695	37.47
DRAINAGE COLLECTED FROM LAYER 2	20.7434	75298.383	49.60
PERC./LEAKAGE THROUGH LAYER 3	0.000077	0.278	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000106	0.385	0.00
CHANGE IN WATER STORAGE	-0.476	-1726.709	-1.14
SOIL WATER AT START OF YEAR	373.437	1355578.120	
SOIL WATER AT END OF YEAR	372.962	1353851.370	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.105	0.00

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ANNUAL TOTALS FOR YEAR 9

	INCHES	CU. FEET	PERCENT
PRECIPITATION	24.22	87918.609	100.00
RUNOFF	4.074	14789.997	16.82
EVAPOTRANSPIRATION	8.314	30180.852	34.33
DRAINAGE COLLECTED FROM LAYER 2	12.1899	44249.191	50.33
PERC./LEAKAGE THROUGH LAYER 3	0.000046	0.167	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000117	0.424	0.00
CHANGE IN WATER STORAGE	-0.359	-1301.873	-1.48
SOIL WATER AT START OF YEAR	372.962	1353851.370	
SOIL WATER AT END OF YEAR	372.603	1352549.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.021	0.00

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ANNUAL TOTALS FOR YEAR 10

	INCHES	CU. FEET	PERCENT
PRECIPITATION	36.89	133910.719	100.00
RUNOFF	5.398	19594.303	14.63
EVAPOTRANSPIRATION	14.963	54315.500	40.56
DRAINAGE COLLECTED FROM LAYER 2	16.4912	59863.207	44.70

PERC./LEAKAGE THROUGH LAYER 3	0.000062	0.224	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000125	0.454	0.00
CHANGE IN WATER STORAGE	0.038	137.255	0.10
SOIL WATER AT START OF YEAR	372.603	1352549.500	
SOIL WATER AT END OF YEAR	372.641	1352686.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.006	0.00

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ANNUAL TOTALS FOR YEAR 11

	INCHES	CU. FEET	PERCENT
PRECIPITATION	34.79	126287.734	100.00
RUNOFF	3.359	12194.573	9.66
EVAPOTRANSPIRATION	13.860	50313.305	39.84
DRAINAGE COLLECTED FROM LAYER 2	16.8800	61274.348	48.52
PERC./LEAKAGE THROUGH LAYER 3	0.000063	0.230	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00

AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000132	0.478	0.00
CHANGE IN WATER STORAGE	0.690	2504.930	1.98
SOIL WATER AT START OF YEAR	372.641	1352686.750	
SOIL WATER AT END OF YEAR	373.331	1355191.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.097	0.00

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ANNUAL TOTALS FOR YEAR 12

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.97	108791.094	100.00
RUNOFF	3.007	10914.418	10.03
EVAPOTRANSPIRATION	11.863	43061.145	39.58
DRAINAGE COLLECTED FROM LAYER 2	16.8446	61146.023	56.20
PERC./LEAKAGE THROUGH LAYER 3	0.000064	0.232	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000137	0.499	0.00
CHANGE IN WATER STORAGE	-1.744	-6331.009	-5.82
SOIL WATER AT START OF YEAR	373.331	1355191.750	

SOIL WATER AT END OF YEAR	371.587	1348860.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.019	0.00

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ANNUAL TOTALS FOR YEAR 13

	INCHES	CU. FEET	PERCENT
PRECIPITATION	27.79	100877.703	100.00
RUNOFF	2.492	9046.287	8.97
EVAPOTRANSPIRATION	12.654	45935.184	45.54
DRAINAGE COLLECTED FROM LAYER 2	11.1838	40597.027	40.24
PERC./LEAKAGE THROUGH LAYER 3	0.000044	0.160	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000141	0.513	0.00
CHANGE IN WATER STORAGE	1.460	5298.772	5.25
SOIL WATER AT START OF YEAR	371.587	1348860.750	
SOIL WATER AT END OF YEAR	373.047	1354159.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.081	0.00

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ANNUAL TOTALS FOR YEAR 14

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.80	119064.023	100.00
RUNOFF	5.273	19139.248	16.07
EVAPOTRANSPIRATION	12.485	45320.133	38.06
DRAINAGE COLLECTED FROM LAYER 2	16.2914	59137.695	49.67
PERC./LEAKAGE THROUGH LAYER 3	0.000060	0.219	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000145	0.527	0.00
CHANGE IN WATER STORAGE	-1.249	-4533.623	-3.81
SOIL WATER AT START OF YEAR	373.047	1354159.500	
SOIL WATER AT END OF YEAR	371.798	1349625.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.045	0.00

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ANNUAL TOTALS FOR YEAR 15

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.74	93436.203	100.00
RUNOFF	1.723	6253.723	6.69
EVAPOTRANSPIRATION	12.078	43843.543	46.92

DRAINAGE COLLECTED FROM LAYER 2	12.1963	44272.465	47.38
PERC./LEAKAGE THROUGH LAYER 3	0.000049	0.177	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000148	0.538	0.00
CHANGE IN WATER STORAGE	-0.257	-934.087	-1.00
SOIL WATER AT START OF YEAR	371.798	1349625.870	
SOIL WATER AT END OF YEAR	371.540	1348691.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.026	0.00

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ANNUAL TOTALS FOR YEAR 16

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.49	96158.703	100.00
RUNOFF	2.017	7320.212	7.61
EVAPOTRANSPIRATION	14.617	53058.848	55.18
DRAINAGE COLLECTED FROM LAYER 2	8.6499	31399.039	32.65
PERC./LEAKAGE THROUGH LAYER 3	0.000032	0.117	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0008		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		

PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000151	0.549	0.00
CHANGE IN WATER STORAGE	1.207	4379.973	4.55
SOIL WATER AT START OF YEAR	371.540	1348691.750	
SOIL WATER AT END OF YEAR	372.747	1353071.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.087	0.00

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ANNUAL TOTALS FOR YEAR 17

	INCHES	CU. FEET	PERCENT
PRECIPITATION	26.33	95577.883	100.00
RUNOFF	2.191	7954.288	8.32
EVAPOTRANSPIRATION	12.482	45309.551	47.41
DRAINAGE COLLECTED FROM LAYER 2	11.5789	42031.332	43.98
PERC./LEAKAGE THROUGH LAYER 3	0.000045	0.163	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000153	0.556	0.00
CHANGE IN WATER STORAGE	0.078	282.264	0.30

SOIL WATER AT START OF YEAR	372.747	1353071.750	
SOIL WATER AT END OF YEAR	372.825	1353354.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.112	0.00

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ANNUAL TOTALS FOR YEAR 18

	INCHES	CU. FEET	PERCENT
PRECIPITATION	32.00	116160.016	100.00
RUNOFF	5.513	20011.932	17.23
EVAPOTRANSPIRATION	12.046	43726.324	37.64
DRAINAGE COLLECTED FROM LAYER 2	13.2711	48174.125	41.47
PERC./LEAKAGE THROUGH LAYER 3	0.000050	0.181	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0013		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000155	0.563	0.00
CHANGE IN WATER STORAGE	1.170	4247.038	3.66
SOIL WATER AT START OF YEAR	372.825	1353354.000	
SOIL WATER AT END OF YEAR	373.995	1357601.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.033	0.00

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ANNUAL TOTALS FOR YEAR 19

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.22	102438.602	100.00
RUNOFF	2.310	8383.837	8.18
EVAPOTRANSPIRATION	14.055	51021.074	49.81
DRAINAGE COLLECTED FROM LAYER 2	13.5555	49206.645	48.04
PERC./LEAKAGE THROUGH LAYER 3	0.000052	0.189	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0013		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000157	0.569	0.00
CHANGE IN WATER STORAGE	-1.701	-6173.481	-6.03
SOIL WATER AT START OF YEAR	373.995	1357601.000	
SOIL WATER AT END OF YEAR	372.294	1351427.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.039	0.00

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ANNUAL TOTALS FOR YEAR 20

	INCHES	CU. FEET	PERCENT
PRECIPITATION	25.68	93218.398	100.00

RUNOFF	1.813	6582.713	7.06
EVAPOTRANSPIRATION	16.117	58505.246	62.76
DRAINAGE COLLECTED FROM LAYER 2	8.3428	30284.520	32.49
PERC./LEAKAGE THROUGH LAYER 3	0.000034	0.123	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0008		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000159	0.576	0.00
CHANGE IN WATER STORAGE	-0.594	-2154.648	-2.31
SOIL WATER AT START OF YEAR	372.294	1351427.620	
SOIL WATER AT END OF YEAR	371.701	1349272.870	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.006	0.00

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ANNUAL TOTALS FOR YEAR 21

	INCHES	CU. FEET	PERCENT
PRECIPITATION	29.64	107593.195	100.00
RUNOFF	4.122	14964.177	13.91
EVAPOTRANSPIRATION	11.124	40378.957	37.53
DRAINAGE COLLECTED FROM LAYER 2	12.4533	45205.469	42.02
PERC./LEAKAGE THROUGH LAYER 3	0.000046	0.168	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0012		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00

PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000159	0.579	0.00
CHANGE IN WATER STORAGE	1.940	7043.871	6.55
SOIL WATER AT START OF YEAR	371.701	1349272.870	
SOIL WATER AT END OF YEAR	373.641	1356316.750	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.147	0.00

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ANNUAL TOTALS FOR YEAR 22

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.55	121786.508	100.00
RUNOFF	3.873	14057.590	11.54
EVAPOTRANSPIRATION	10.752	39029.309	32.05
DRAINAGE COLLECTED FROM LAYER 2	20.2680	73572.867	60.41
PERC./LEAKAGE THROUGH LAYER 3	0.000076	0.276	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0020		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		

PERC./LEAKAGE THROUGH LAYER 14	0.000161	0.583	0.00
CHANGE IN WATER STORAGE	-1.343	-4873.824	-4.00
SOIL WATER AT START OF YEAR	373.641	1356316.750	
SOIL WATER AT END OF YEAR	372.298	1351443.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.013	0.00

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ANNUAL TOTALS FOR YEAR 23

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.45	114163.516	100.00
RUNOFF	3.626	13160.798	11.53
EVAPOTRANSPIRATION	11.638	42244.445	37.00
DRAINAGE COLLECTED FROM LAYER 2	15.2735	55442.625	48.56
PERC./LEAKAGE THROUGH LAYER 3	0.000060	0.216	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0015		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000162	0.586	0.00
CHANGE IN WATER STORAGE	0.913	3315.056	2.90
SOIL WATER AT START OF YEAR	372.298	1351443.000	
SOIL WATER AT END OF YEAR	373.212	1354758.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00

ANNUAL WATER BUDGET BALANCE	0.0000	0.004	0.00

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ANNUAL TOTALS FOR YEAR 24

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.54	103600.195	100.00
RUNOFF	3.054	11085.187	10.70
EVAPOTRANSPIRATION	15.550	56447.695	54.49
DRAINAGE COLLECTED FROM LAYER 2	11.8314	42948.133	41.46
PERC./LEAKAGE THROUGH LAYER 3	0.000044	0.161	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0011		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000163	0.591	0.00
CHANGE IN WATER STORAGE	-1.896	-6881.358	-6.64
SOIL WATER AT START OF YEAR	373.212	1354758.000	
SOIL WATER AT END OF YEAR	371.316	1347876.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.052	0.00

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ANNUAL TOTALS FOR YEAR 25

	INCHES	CU. FEET	PERCENT

PRECIPITATION	34.75	126142.516	100.00
RUNOFF	5.077	18430.547	14.61
EVAPOTRANSPIRATION	12.681	46030.738	36.49
DRAINAGE COLLECTED FROM LAYER 2	16.9861	61659.719	48.88
PERC./LEAKAGE THROUGH LAYER 3	0.000064	0.232	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000163	0.592	0.00
CHANGE IN WATER STORAGE	0.006	20.826	0.02
SOIL WATER AT START OF YEAR	371.316	1347876.620	
SOIL WATER AT END OF YEAR	371.322	1347897.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.090	0.00

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ANNUAL TOTALS FOR YEAR 26

	INCHES	CU. FEET	PERCENT
PRECIPITATION	28.87	104798.102	100.00
RUNOFF	1.890	6859.330	6.55
EVAPOTRANSPIRATION	15.729	57096.395	54.48
DRAINAGE COLLECTED FROM LAYER 2	9.5904	34813.328	33.22
PERC./LEAKAGE THROUGH LAYER 3	0.000038	0.139	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0009		

DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000164	0.595	0.00
CHANGE IN WATER STORAGE	1.661	6028.472	5.75
SOIL WATER AT START OF YEAR	371.322	1347897.500	
SOIL WATER AT END OF YEAR	372.982	1353926.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.016	0.00

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ANNUAL TOTALS FOR YEAR 27

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.81	140880.297	100.00
RUNOFF	6.552	23784.156	16.88
EVAPOTRANSPIRATION	13.012	47232.160	33.53
DRAINAGE COLLECTED FROM LAYER 2	18.5220	67234.922	47.72
PERC./LEAKAGE THROUGH LAYER 3	0.000067	0.242	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0018		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00

AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000165	0.597	0.00
CHANGE IN WATER STORAGE	0.724	2628.560	1.87
SOIL WATER AT START OF YEAR	372.982	1353926.000	
SOIL WATER AT END OF YEAR	373.706	1356554.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.100	0.00

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ANNUAL TOTALS FOR YEAR 28

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.15	138484.500	100.00
RUNOFF	5.175	18786.883	13.57
EVAPOTRANSPIRATION	16.542	60049.023	43.36
DRAINAGE COLLECTED FROM LAYER 2	17.7802	64542.297	46.61
PERC./LEAKAGE THROUGH LAYER 3	0.000067	0.243	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0017		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000165	0.601	0.00
CHANGE IN WATER STORAGE	-1.348	-4894.318	-3.53
SOIL WATER AT START OF YEAR	373.706	1356554.500	
SOIL WATER AT END OF YEAR	372.358	1351660.250	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00

SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.021	0.00

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ANNUAL TOTALS FOR YEAR 29

	INCHES	CU. FEET	PERCENT
PRECIPITATION	33.86	122911.828	100.00
RUNOFF	4.982	18086.066	14.71
EVAPOTRANSPIRATION	10.696	38825.387	31.59
DRAINAGE COLLECTED FROM LAYER 2	18.9877	68925.281	56.08
PERC./LEAKAGE THROUGH LAYER 3	0.000070	0.253	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0019		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000166	0.601	0.00
CHANGE IN WATER STORAGE	-0.806	-2925.558	-2.38
SOIL WATER AT START OF YEAR	372.358	1351660.250	
SOIL WATER AT END OF YEAR	371.552	1348734.620	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.053	0.00

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ANNUAL TOTALS FOR YEAR 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.69	136814.703	100.00
RUNOFF	3.243	11770.935	8.60
EVAPOTRANSPIRATION	17.801	64617.777	47.23
DRAINAGE COLLECTED FROM LAYER 2	16.1922	58777.504	42.96
PERC./LEAKAGE THROUGH LAYER 3	0.000062	0.224	0.00
AVG. HEAD ON TOP OF LAYER 3	0.0016		
DRAINAGE COLLECTED FROM LAYER 7	0.0000	0.000	0.00
PERC./LEAKAGE THROUGH LAYER 8	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 8	0.0000		
PERC./LEAKAGE THROUGH LAYER 10	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 10	0.0000		
PERC./LEAKAGE THROUGH LAYER 12	0.000000	0.000	0.00
AVG. HEAD ON TOP OF LAYER 12	0.0000		
PERC./LEAKAGE THROUGH LAYER 14	0.000166	0.602	0.00
CHANGE IN WATER STORAGE	0.454	1647.835	1.20
SOIL WATER AT START OF YEAR	371.552	1348734.620	
SOIL WATER AT END OF YEAR	372.006	1350382.500	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.054	0.00

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 30

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	6.11	5.10	3.98	2.06	1.04	0.21
	0.03	0.13	0.27	1.52	3.96	6.87

STD. DEVIATIONS	2.75	3.41	1.95	0.96	0.27	
	0.05	0.19	0.45	1.51	2.43	3.45

RUNOFF

TOTALS	0.998	0.802	0.159	0.051	0.011	0.000
	0.000	0.000	0.003	0.090	0.443	1.165
STD. DEVIATIONS	1.091	0.927	0.211	0.134	0.032	0.000
	0.000	0.000	0.018	0.160	0.585	0.986

EVAPOTRANSPIRATION

TOTALS	1.248	1.722	2.825	2.746	1.418	0.303
	0.049	0.120	0.136	0.601	0.947	1.133
STD. DEVIATIONS	0.066	0.156	0.419	1.208	0.967	0.403
	0.084	0.183	0.207	0.623	0.389	0.115

LATERAL DRAINAGE COLLECTED FROM LAYER 2

TOTALS	3.9727	2.8990	1.4757	0.3055	0.0229	0.0001
	0.0000	0.0000	0.0000	0.0908	1.3775	4.1508
STD. DEVIATIONS	1.9046	2.0747	1.2652	0.4582	0.1024	0.0003
	0.0000	0.0000	0.0000	0.2218	1.5218	2.1833

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LATERAL DRAINAGE COLLECTED FROM LAYER 7

TOTALS	0.0000	0.0876	0.1051	0.0447	0.0002	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.4795	0.5757	0.2450	0.0012	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 8

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 10

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 12

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PERCOLATION/LEAKAGE THROUGH LAYER 14

TOTALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	0.0046	0.0037	0.0017	0.0004	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0001	0.0016	0.0048
STD. DEVIATIONS	0.0022	0.0026	0.0015	0.0005	0.0001	0.0000
	0.0000	0.0000	0.0000	0.0003	0.0018	0.0025

DAILY AVERAGE HEAD ON TOP OF LAYER 8

AVERAGES	0.0000	0.0005	0.0005	0.0002	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0025	0.0028	0.0012	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 10

AVERAGES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DAILY AVERAGE HEAD ON TOP OF LAYER 12

AVERAGES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD. DEVIATIONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

	INCHES	CU. FEET	PERCENT
PRECIPITATION	31.26 (5.468)	113484.7	100.00
RUNOFF	3.723 (1.7070)	13515.98	11.910

EVAPOTRANSPIRATION	13.247	(2.2038)	48085.67	42.372
LATERAL DRAINAGE COLLECTED FROM LAYER 2	14.29498	(3.59725)	51890.793	45.72493
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.00005	(0.00001)	0.196	0.00017
AVERAGE HEAD ON TOP OF LAYER 3	0.001	(0.000)		
LATERAL DRAINAGE COLLECTED FROM LAYER 7	0.23760	(1.30139)	862.491	0.76001
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.00000	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 8	0.000	(0.001)		
PERCOLATION/LEAKAGE THROUGH LAYER 10	0.00000	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 10	0.000	(0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 12	0.00000	(0.00000)	0.000	0.00000
AVERAGE HEAD ON TOP OF LAYER 12	0.000	(0.000)		
PERCOLATION/LEAKAGE THROUGH LAYER 14	0.00012	(0.00006)	0.443	0.00039
CHANGE IN WATER STORAGE	-0.240	(1.6994)	-870.69	-0.767

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 30

	(INCHES)	(CU. FT.)
PRECIPITATION	5.77	20945.100
RUNOFF	4.568	16581.7910
DRAINAGE COLLECTED FROM LAYER 2	1.24429	4516.77539
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.000004	0.01413
AVERAGE HEAD ON TOP OF LAYER 3	0.044	
MAXIMUM HEAD ON TOP OF LAYER 3	0.150	
LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN)	0.0 FEET	

DRAINAGE COLLECTED FROM LAYER 7	0.16228	589.07013
PERCOLATION/LEAKAGE THROUGH LAYER 8	0.000000	0.00001
AVERAGE HEAD ON TOP OF LAYER 8	0.023	
MAXIMUM HEAD ON TOP OF LAYER 8	0.012	
LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN)	0.0 FEET	
PERCOLATION/LEAKAGE THROUGH LAYER 10	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 10	0.000	
PERCOLATION/LEAKAGE THROUGH LAYER 12	0.000000	0.00000
AVERAGE HEAD ON TOP OF LAYER 12	0.000	
PERCOLATION/LEAKAGE THROUGH LAYER 14	0.000000	0.00165
SNOW WATER	0.01	37.4433

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.3582
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.1360

*** Maximum heads are computed using McEnroe's equations. ***

Reference: Maximum Saturated Depth over Landfill Liner
by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 30

LAYER	(INCHES)	(VOL/VOL)
1	4.4355	0.2464
2	0.0028	0.0142
3	0.0000	0.0000
4	4.8496	0.2021
5	350.4000	0.2920
6	7.3200	0.3050
7	0.0020	0.0100

8	0.0000	0.0000
9	0.0800	0.4000
10	0.0000	0.0000
11	0.0800	0.4000
12	0.0000	0.0000
13	0.0041	0.0205
14	2.1682	0.1807
SNOW WATER	0.000	

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ATTACHMENT B

LEACHATE SIZING SUMMARY

Summary of HELP Model Leachate Results
Sonoma Central Landfill
Expected Peak Leachate Flows During Project Lifetime

Prepared by: JJM
Checked by: AAM
6/30/2012

New Cells	Area Sq ft	Area Ac [1]	Avg/Peak LCRS Capture gal/ac-yr	LCRS Capture gal/yr	LCRS Capture gpd	LCRS Capture gpm
LF-2 Cell Floor (2.5% slope)	258,000	5.9	129,721 [2]	768,320	2,105	1.5
LF-2 Cell Wall (2.5:1 slopes)	644,000	14.8	121,000 [2]	1,788,889	4,901	3.4
Subtotal, LF-2 Phase III-IV				2,557,209	7,006	4.9
REA Cell Floor (2.5% slope)	177,000	4.1	129,721 [2]	527,103	1,444	1.0
REA Cell Wall (2.5:1 slopes)	443,000	10.2	121,000 [2]	1,230,556	3,371	2.3
Subtotal, REA				1,757,659	4,816	3.3
Preferential Pathway						
REA	801,504	18.4	121,000 [3]	2,226,400	6,100	4.2
LF-2, Phase V	596,772	13.7	121,000 [3]	1,657,700	4,542	3.2
Compost Deck, Initial Construction	1,023,660	23.5	129,721 [3]	3,048,444	8,352	5.8
Compost Deck, Final Construction	435,600	10.0	423,400 [4]	4,234,000	11,600	8.1
Subtotal, Preferential Pathway					30,593	21.2
Existing LF Units						
LF-1					49,580 [5]	34.4
LF-2, Phases I-II					5,430 [5]	3.8
Subtotal, Existing LF Units					55,010	38.2
Total:					**97,425**	**67.7**

Notes:

[1] All surfaces represented in slope areas
[2] Average LCRS capture rates for LF-2 and REA determined via HELP model (SCS June 2012)
[3] Assumes preferential pathway performance for leachate capture is comparable to lined cells (worst-case condition for LCRS sizing)
[4] Compost deck is 33.5 acres. Assume final 10 acres to be constructed will have 10-ft thick lift of waste in place (worst-case). LCRS capture rate for 10-ft of waste in place determined via HELP model (SCS June 2012)
[5] Data provided by County for period 2000 - 2010 for fiscal years July 1 - June 30.