

## Norman, Yolande

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**From:** Jancin, Mark <mjancin@chesterengineers.com>  
**Sent:** Tuesday, July 02, 2013 4:00 PM  
**To:** Norman, Yolande  
**Cc:** Blickwedel, Roy (GE, Corporate); Warren, Robert; Ewart, James  
**Subject:** enclosure 2 comment 5  
**Attachments:** model water balance for 1986.pdf


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model water balance for 1986.txt

1/15/1986-2/11/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 39

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	578128832.0000	STORAGE =	122580.0859
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793486400.0000	RIVER LEAKAGE =	4248.1899
RECHARGE =	105209888.0000	RECHARGE =	33541.1289
TOTAL IN =	1476825088.0000	TOTAL IN =	160369.4062
OUT:		OUT:	
STORAGE =	1105047936.0000	STORAGE =	115719.7422
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	3675918.5000	WELLS =	4183.7476
DRAINS =	57241616.0000	DRAINS =	10612.0059
RIVER LEAKAGE =	256787232.0000	RIVER LEAKAGE =	11524.9492
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1422752640.0000	TOTAL OUT =	142040.4375
IN - OUT =	54072448.0000	IN - OUT =	18328.9688
PERCENT DISCREPANCY =	3.73	PERCENT DISCREPANCY =	12.12

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	2.40550E+06	40092.	668.19	27.841	7.62257E-02
STRESS PERIOD TIME	2.40550E+06	40092.	668.19	27.841	7.62257E-02
TOTAL TIME	5.32297E+08	8.87161E+06	1.47860E+05	6160.8	16.867

2/11/1986-3/13/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 2 IN STRESS PERIOD 39

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	581036544.0000	STORAGE =	99465.3828
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793618368.0000	RIVER LEAKAGE =	4514.0361

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RECHARGE =	106190416.0000	RECHARGE =	33541.1289
TOTAL IN =	1480845312.0000	TOTAL IN =	137520.5469
OUT:		OUT:	
----		----	
STORAGE =	1108132864.0000	STORAGE =	105528.7266
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	3798121.5000	WELLS =	4180.2373
DRAINS =	57560916.0000	DRAINS =	10922.3418
RIVER LEAKAGE =	257024912.0000	RIVER LEAKAGE =	8130.4043
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1426516864.0000	TOTAL OUT =	128761.7109
IN - OUT =	54328448.0000	IN - OUT =	8758.8359
PERCENT DISCREPANCY =	3.74	PERCENT DISCREPANCY =	6.58

	TIME SUMMARY AT END OF TIME STEP	2 IN STRESS PERIOD	39
	SECONDS	HOURS	YEARS
	MINUTES	DAYS	
TIME STEP LENGTH	2.52577E+06	701.60	8.00369E-02
STRESS PERIOD TIME	4.93127E+06	1369.8	0.15626
TOTAL TIME	5.34822E+08	1.48562E+05	16.948

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3/13/1986-4/12/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 3 IN STRESS PERIOD 39

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
-----		-----	
IN:		IN:	
----		----	
STORAGE =	583994944.0000	STORAGE =	96379.9922
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793762176.0000	RIVER LEAKAGE =	4684.2041
RECHARGE =	107219968.0000	RECHARGE =	33541.1289
TOTAL IN =	1484977152.0000	TOTAL IN =	134605.3281
OUT:		OUT:	
----		----	
STORAGE =	1111198976.0000	STORAGE =	99888.7109
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	3926542.2500	WELLS =	4183.7476
DRAINS =	57899948.0000	DRAINS =	11045.1045
RIVER LEAKAGE =	257239696.0000	RIVER LEAKAGE =	6997.1343
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1430265216.0000	TOTAL OUT =	122114.6953

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 IN - OUT = 54711936.0000 IN - OUT = 12490.6328  
 PERCENT DISCREPANCY = 3.75 PERCENT DISCREPANCY = 9.73

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME SUMMARY AT END OF TIME STEP 3 IN STRESS PERIOD 39					
TIME STEP LENGTH	2.65206E+06	44201.	736.68	30.695	8.40388E-02
STRESS PERIOD TIME	7.58334E+06	1.26389E+05	2106.5	87.770	0.24030
TOTAL TIME	5.37475E+08	8.95791E+06	1.49298E+05	6220.8	17.032

4/12/1986-5/15/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 4 IN STRESS PERIOD 39

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	587080832.0000	STORAGE =	95745.9766
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	4801.3916
RECHARGE =	108300992.0000	RECHARGE =	33541.1289
TOTAL IN =	1489298688.0000	TOTAL IN =	134088.5000
OUT:		OUT:	
STORAGE =	1114581120.0000	STORAGE =	104936.6094
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4061384.0000	WELLS =	4183.7476
DRAINS =	58248588.0000	DRAINS =	10817.2188
RIVER LEAKAGE =	257439920.0000	RIVER LEAKAGE =	6212.4077
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1434331008.0000	TOTAL OUT =	126149.9844
IN - OUT =	54967680.0000	IN - OUT =	7938.5156
PERCENT DISCREPANCY =	3.76	PERCENT DISCREPANCY =	6.10

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME SUMMARY AT END OF TIME STEP 4 IN STRESS PERIOD 39					
TIME STEP LENGTH	2.78466E+06	46411.	773.52	32.230	8.82407E-02
STRESS PERIOD TIME	1.03680E+07	1.72800E+05	2880.0	120.00	0.32854
TOTAL TIME	5.40259E+08	9.00432E+06	1.50072E+05	6253.0	17.120

5/15/1986-6/13/1986

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VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 40

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	590226048.0000	STORAGE =	105700.5625
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	109294776.0000	RECHARGE =	33397.6328
TOTAL IN =	1493437696.0000	TOTAL IN =	139098.1875
OUT:		OUT:	
STORAGE =	1117916288.0000	STORAGE =	112081.5000
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4191513.7500	WELLS =	4373.2129
DRAINS =	58543136.0000	DRAINS =	9898.7295
RIVER LEAKAGE =	257597584.0000	RIVER LEAKAGE =	5298.4717
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1438248576.0000	TOTAL OUT =	131651.9062
IN - OUT =	55189120.0000	IN - OUT =	7446.2812
PERCENT DISCREPANCY =	3.77	PERCENT DISCREPANCY =	5.50

TIME SUMMARY AT END OF TIME STEP	1 IN STRESS PERIOD	40			
SECONDS	MINUTES	HOURS	DAYS	YEARS	
TIME STEP LENGTH	2.57093E+06	42849.	714.15	29.756	8.14677E-02
STRESS PERIOD TIME	2.57093E+06	42849.	714.15	29.756	8.14677E-02
TOTAL TIME	5.42830E+08	9.04717E+06	1.50786E+05	6282.8	17.201

6/13/1986-7/15/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 2 IN STRESS PERIOD 40

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	592924800.0000	STORAGE =	86376.7578
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	110338248.0000	RECHARGE =	33397.6328
TOTAL IN =	1497180032.0000	TOTAL IN =	119774.3906

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OUT:		OUT:	
----		----	
STORAGE =	1120685056.0000	STORAGE =	88616.0469
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4328064.5000	WELLS =	4370.4829
DRAINS =	58857872.0000	DRAINS =	10073.5625
RIVER LEAKAGE =	257752016.0000	RIVER LEAKAGE =	4942.8374
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1441623040.0000	TOTAL OUT =	108002.9297
IN - OUT =	55556992.0000	IN - OUT =	11771.4609
PERCENT DISCREPANCY =	3.78	PERCENT DISCREPANCY =	10.34

	TIME SUMMARY AT END OF TIME STEP	2 IN	STRESS PERIOD	40	
	SECONDS	MINUTES	HOURS	DAYS	YEARS
	-----	-----	-----	-----	-----
TIME STEP LENGTH	2.69947E+06	44991.	749.85	31.244	8.55411E-02
STRESS PERIOD TIME	5.27040E+06	87840.	1464.0	61.000	0.16701
TOTAL TIME	5.45530E+08	9.09216E+06	1.51536E+05	6314.0	17.287

7/15/1986-8/13/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 41

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
-----		-----	
IN:		IN:	
----		----	
STORAGE =	595595776.0000	STORAGE =	91524.6328
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	111297984.0000	RECHARGE =	32886.6406
TOTAL IN =	1500810752.0000	TOTAL IN =	124411.2734
OUT:		OUT:	
----		----	
STORAGE =	1123609728.0000	STORAGE =	100216.8594
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4466077.5000	WELLS =	4729.1978
DRAINS =	59137516.0000	DRAINS =	9582.3672
RIVER LEAKAGE =	257887952.0000	RIVER LEAKAGE =	4658.2593
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1445101312.0000	TOTAL OUT =	119186.6875
IN - OUT =	55709440.0000	IN - OUT =	5224.5859
PERCENT DISCREPANCY =	3.78	PERCENT DISCREPANCY =	4.29

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	TIME SUMMARY AT END OF TIME STEP		1 IN STRESS PERIOD		41
	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	2.52143E+06	42024.	700.40	29.183	7.98992E-02
STRESS PERIOD TIME	2.52143E+06	42024.	700.40	29.183	7.98992E-02
TOTAL TIME	5.48051E+08	9.13418E+06	1.52236E+05	6343.2	17.367

8/13/1986-9/12/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 2 IN STRESS PERIOD 41

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
<b>IN:</b>		<b>IN:</b>	
STORAGE =	598579136.0000	STORAGE =	97360.5703
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	112305704.0000	RECHARGE =	32886.6406
TOTAL IN =	1504801792.0000	TOTAL IN =	130247.2109
<b>OUT:</b>		<b>OUT:</b>	
STORAGE =	1126484992.0000	STORAGE =	93832.4609
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4610613.0000	WELLS =	4716.8550
DRAINS =	59431168.0000	DRAINS =	9583.2246
RIVER LEAKAGE =	258024656.0000	RIVER LEAKAGE =	4461.1338
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1448551424.0000	TOTAL OUT =	112593.6719
IN - OUT =	56250368.0000	IN - OUT =	17653.5391
PERCENT DISCREPANCY =	3.81	PERCENT DISCREPANCY =	14.54

	TIME SUMMARY AT END OF TIME STEP		2 IN STRESS PERIOD		41
	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	2.64750E+06	44125.	735.42	30.642	8.38942E-02
STRESS PERIOD TIME	5.16893E+06	86149.	1435.8	59.826	0.16379
TOTAL TIME	5.50699E+08	9.17831E+06	1.52972E+05	6373.8	17.451

9/12/1986-10/15/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 3 IN STRESS PERIOD 41

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CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	601465920.0000	STORAGE =	89722.8750
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	113364664.0000	RECHARGE =	32913.0742
TOTAL IN =	1508747520.0000	TOTAL IN =	122635.9531
OUT:		OUT:	
STORAGE =	1129546496.0000	STORAGE =	95153.8984
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4762684.5000	WELLS =	4726.4678
DRAINS =	59737584.0000	DRAINS =	9523.5283
RIVER LEAKAGE =	258161648.0000	RIVER LEAKAGE =	4257.9375
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1452208384.0000	TOTAL OUT =	113661.8281
IN - OUT =	56539136.0000	IN - OUT =	8974.1250
PERCENT DISCREPANCY =	3.82	PERCENT DISCREPANCY =	7.60

10/15/1986-11/13/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 42

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	604505856.0000	STORAGE =	104168.0312
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	114311128.0000	RECHARGE =	32431.7051
TOTAL IN =	1512733952.0000	TOTAL IN =	136599.7344
OUT:		OUT:	
STORAGE =	1132427904.0000	STORAGE =	98734.6875
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	4890336.0000	WELLS =	4374.1440
DRAINS =	59992380.0000	DRAINS =	8730.9590
RIVER LEAKAGE =	258280592.0000	RIVER LEAKAGE =	4075.5708
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1455591168.0000	TOTAL OUT =	115915.3594



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 IN - OUT = 57142784.0000 IN - OUT = 20684.3750  
 PERCENT DISCREPANCY = 3.85 PERCENT DISCREPANCY = 16.38

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 42					
TIME STEP LENGTH	2.52143E+06	42024.	700.40	29.183	7.98992E-02
STRESS PERIOD TIME	2.52143E+06	42024.	700.40	29.183	7.98992E-02
TOTAL TIME	5.56000E+08	9.26666E+06	1.54444E+05	6435.2	17.619

11/13/1986-12/13/1986

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 2 IN STRESS PERIOD 42

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	607372224.0000	STORAGE =	93542.2812
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	115304912.0000	RECHARGE =	32431.7051
TOTAL IN =	1516594048.0000	TOTAL IN =	125973.9844
OUT:		OUT:	
STORAGE =	1135516416.0000	STORAGE =	100794.1641
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	5024370.0000	WELLS =	4374.1440
DRAINS =	60263492.0000	DRAINS =	8847.6758
RIVER LEAKAGE =	258399712.0000	RIVER LEAKAGE =	3887.3516
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1459203968.0000	TOTAL OUT =	117903.3359
IN - OUT =	57390080.0000	IN - OUT =	8070.6484
PERCENT DISCREPANCY =	3.86	PERCENT DISCREPANCY =	6.62

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME SUMMARY AT END OF TIME STEP 2 IN STRESS PERIOD 42					
TIME STEP LENGTH	2.64750E+06	44125.	735.42	30.642	8.38942E-02
STRESS PERIOD TIME	5.16893E+06	86149.	1435.8	59.826	0.16379
TOTAL TIME	5.58647E+08	9.31079E+06	1.55180E+05	6465.8	17.702

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12/13/1986-1/15/1987

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 3 IN STRESS PERIOD 42

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	609772736.0000	STORAGE =	74609.4297
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
DRAINS =	0.0000	DRAINS =	0.0000
RIVER LEAKAGE =	793916928.0000	RIVER LEAKAGE =	0.0000
RECHARGE =	116348384.0000	RECHARGE =	32431.7051
TOTAL IN =	1520038016.0000	TOTAL IN =	107041.1328
OUT:		OUT:	
STORAGE =	1138304640.0000	STORAGE =	86658.3125
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	5165080.0000	WELLS =	4373.3398
DRAINS =	60546372.0000	DRAINS =	8792.0479
RIVER LEAKAGE =	258519088.0000	RIVER LEAKAGE =	3710.4072
RECHARGE =	0.0000	RECHARGE =	0.0000
TOTAL OUT =	1462535168.0000	TOTAL OUT =	103534.1094
IN - OUT =	57502848.0000	IN - OUT =	3507.0234
PERCENT DISCREPANCY =	3.86	PERCENT DISCREPANCY =	3.33

TIME SUMMARY AT END OF TIME STEP	3	IN	STRESS PERIOD	42
	SECONDS	MINUTES	HOURS	DAYS
TIME STEP LENGTH	2.77987E+06	46331.	772.19	32.174
STRESS PERIOD TIME	7.94880E+06	1.32480E+05	2208.0	92.000
TOTAL TIME	5.61427E+08	9.35712E+06	1.55952E+05	6498.0
				YEARS
				8.80889E-02
				0.25188
				17.791