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* * * * * K Y P I P E 4 * * * * *
*
*           Pipe Network Modeling Software           *
*
*           Copyrighted by KYPIPE LLC                 *
*           Version 4 - April 2008                    *
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Date & Time: Thu Oct 23 12:39:33 2008

INPUT DATA FILENAME ----- E:\VP_Validation\P2K Files\EX1HE(Pi.DT2)
TABULATED OUTPUT FILENAME ----- E:\VP_Validation\P2K Files\EX1HE(Pi.OT2)
POSTPROCESSOR RESULTS FILENAME --- E:\VP_Validation\P2K Files\EX1HE(Pi.RS2)

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*****
S U M M A R Y   O F   O R I G I N A L   D A T A
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U N I T S S P E C I F I E D

- FLOWRATE = gallons/minute
HEAD (HGL) = feet
PRESSURE = psig

P I P E L I N E D A T A

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

P I P E N A M E	N O D E N A M E S		L E N G T H (ft)	D I A M E T E R (in)	R O U G H N E S S C O E F F .	M I N O R L O S S C O E F F .
	#1	#2				
1	FGN-AA	I-PUMP-1	300.00	12.00	120.0000	5.00
2	1	2	570.00	10.00	120.0000	0.00
3	2	3	650.00	6.00	120.0000	0.00
4-CV	3	FGN-BB	390.00	4.00	120.0000	0.00
5	4	3	675.00	6.00	120.0000	0.00
6	4	5	510.00	8.00	120.0000	0.00
7	2	4	680.00	6.00	120.0000	0.00
8	1	4	590.00	8.00	120.0000	0.00
X-1	O-PUMP-1	1	300.00	12.00	120.0000	5.00

P U M P / L O S S E L E M E N T D A T A

THERE IS A DEVICE AT NODE PUMP-1 DESCRIBED BY THE FOLLOWING DATA: (ID= 1)

HEAD	FLOWRATE	EFFICIENCY
(ft)	(gpm)	(%)
0.00	0.00	75.00 (Default)
-10.00	2000.00	75.00 (Default)
-30.00	4000.00	75.00 (Default)

N O D E D A T A

NODE	NODE	EXTERNAL	JUNCTION	EXTERNAL
NAME	TITLE	DEMAND	ELEVATION	GRADE
		(gpm)	(ft)	(ft)
1		0.00	90.00	
2		1000.00	80.00	
3		800.00	80.00	
4		0.00	86.00	
5		1200.00	75.00	

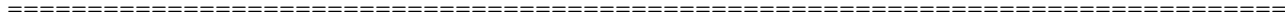
FGN-AA	----	0.00	330.76
FGN-BB	----	0.00	200.00
O-PUMP-1	0.00	0.00	
I-PUMP-1	0.00	0.00	

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES(p) = 9
NUMBER OF END NODES(j) = 6
NUMBER OF PRIMARY LOOPS(l) = 2
NUMBER OF SUPPLY NODES(f) = 2
NUMBER OF SUPPLY ZONES(z) = 1



Case: 0

RESULTS OBTAINED AFTER 5 TRIALS: ACCURACY = 0.00000

S I M U L A T I O N D E S C R I P T I O N (L A B E L)

Example 1 - KYPIPE2 Users Manual

Pump Fed - 8 pipes and 5 junction nodes

One change specified - close pipe no. 4

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

P I P E N A M E	N O D E N U M B E R S		F L O W R A T E (gpm)	H E A D L O S S (ft)	M I N O R L O S S (ft)	L I N E V E L O . (ft/s)	H L + M L / 1 0 0 0 (ft/ft)	H L / 1 0 0 0 (ft/ft)
	#1	#2						
1	FGN-AA	I-PUMP-1	3365.40	8.35	7.07	9.55	51.42	27.83
2	1	2	1989.99	14.57	0.00	8.13	25.56	25.56
3	2	3	648.68	25.08	0.00	7.36	38.58	38.58
4-CV	3	FGN-BB	365.40	37.45	0.00	9.33	96.02	96.02

5	4	3	516.72	17.09	0.00	5.86	25.32	25.32
6	4	5	1200.00	15.15	0.00	7.66	29.70	29.70
7	2	4	341.31	7.99	0.00	3.87	11.75	11.75
8	1	4	1375.41	22.56	0.00	8.78	38.23	38.23
X-1	O-PUMP-1	1	3365.40	8.35	7.07	9.55	51.42	27.83

P U M P / L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE (gpm)	INLET HEAD (ft)	OUTLET HEAD (ft)	PUMP HEAD (ft)	EFFIC- ENCY (%)	USEFUL POWER (Hp)	INCREMTL COST (\$)	TOTAL COST (\$)	#PUMPS PARALLEL	#PUMPS SERIES	NPSH Avail. (ft)
PUMP-1	3365.40	315.34	292.52	-22.8	----	-----	---	----	**	**	347.1

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	NODE ELEVATION (ft)	PRESSURE HEAD (ft)	NODE PRESSURE (psi)
1		0.00	277.10	90.00	187.10	81.07
2		1000.00	262.53	80.00	182.53	79.09
3		800.00	237.45	80.00	157.45	68.23

4	0.00	254.54	86.00	168.54	73.03
5	1200.00	239.39	75.00	164.39	71.24
FGN-AA	----	330.76			
FGN-BB	----	200.00			
O-PUMP-1	0.00	292.52			
I-PUMP-1	0.00	315.34			

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES

(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE	FLOWRATE	NODE
NAME	(gpm)	TITLE
FGN-AA	3365.40	
FGN-BB	-365.40	

NET SYSTEM INFLOW = 3365.40

NET SYSTEM OUTFLOW = -365.40

NET SYSTEM DEMAND = 3000.00

Case: 1

C H A N G E S F O R N E X T S I M U L A T I O N (Change Number = 1)

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

Pipe 5 is CLOSED

RESULTS OBTAINED AFTER 4 TRIALS: ACCURACY = 0.00000

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE CV -CHECK VALVE

P I P E NODE NUMBERS FLOWRATE HEAD MINOR LINE HL+ML/ HL/

N A M E	#1	#2	(gpm)	LOSS (ft)	LOSS (ft)	VELO. (ft/s)	1000 (ft/ft)	1000 (ft/ft)
1	FGN-AA	I-PUMP-1	3191.94	7.57	6.36	9.05	46.45	25.24
2	1	2	2055.80	15.48	0.00	8.40	27.15	27.15
3	2	3	991.94	55.07	0.00	11.25	84.73	84.73
4-CV	3	FGN-BB	191.94	11.36	0.00	4.90	29.14	29.14
5-XX	4	3						
6	4	5	1200.00	15.15	0.00	7.66	29.70	29.70
7	2	4	63.87	0.36	0.00	0.72	0.53	0.53
8	1	4	1136.13	15.83	0.00	7.25	26.84	26.84
X-1	O-PUMP-1	1	3191.94	7.57	6.36	9.05	46.45	25.24

P U M P / L O S S E L E M E N T R E S U L T S

NAME	FLOWRATE (gpm)	INLET HEAD (ft)	OUTLET HEAD (ft)	PUMP HEAD (ft)	EFFIC- ENCY (%)	USEFUL POWER (Hp)	INCREMTL COST (\$)	TOTAL COST (\$)	#PUMPS PARALLEL	#PUMPS SERIES	NPSH Avail. (ft)
PUMP-1	3191.94	316.83	295.85	-21.0	----	-----	---	----	**	**	348.8

N O D E R E S U L T S

NODE NAME	NODE TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	NODE ELEVATION (ft)	PRESSURE HEAD (ft)	NODE PRESSURE (psi)
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1	0.00	281.91	90.00	191.91	83.16
2	1000.00	266.44	80.00	186.44	80.79
3	800.00	211.36	80.00	131.36	56.92
4	0.00	266.08	86.00	180.08	78.03
5	1200.00	250.93	75.00	175.93	76.24
FGN-AA	----	330.76			
FGN-BB	----	200.00			
O-PUMP-1	0.00	295.85			
I-PUMP-1	0.00	316.83			

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES

(-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE	FLOWRATE	NODE
NAME	(gpm)	TITLE
FGN-AA	3191.94	

FGN-BB -191.94

NET SYSTEM INFLOW = 3191.94

NET SYSTEM OUTFLOW = -191.94

NET SYSTEM DEMAND = 3000.00

***** HYDRAULIC ANALYSIS COMPLETED *****