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1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)  *
*   Version 4.4H                         *
*   *                                   *
*   CDM/OSU Ongoing version 4.4h         *
*   Release Date - July 30, 2004         *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
*   Metcalf & Eddy, Inc.                 *
*   University of Florida                 *
*   Water Resources Engineers, Inc.      *
*   (Now Camp Dresser & McKee, Inc.)     *
*   September 1970                      *
*****

Version 4.3 (outdated) is
Distributed and Maintained by

*****
*   U.S. Environmental Protection Agency *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road            *
*   Athens, GA 30605-2720               *
*****

*****
*   This is an updated release of SWMM4.4h. *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                 *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.           *
*   The EPA-supported version is SWMM5 at: *
*   http://www.epa.gov/ednnrmrl/swmm/index.htm *
*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da Vinci *
*****

#####
#   File names by SWMM Block   #
#   JIN  -> Input to a Block   #
#   JOUT -> Output from a Block #
#####

JIN for Block # 1 File # 9 C:\GIGHAR-1\EXTrunk1.int
JOUT for Block # 1 File # 10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
*   Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO). 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG).... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```

EXTrunk1.out

Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

```
#####
# Entry made to the Transport Block, last updated
# by Oregon State University, April 2002.
#####
# "The sewer is the conscience of the city."
# Victor Hugo (1862)
#####
```

Gig Harbor 2008 Storm System Transport Analysis Trunkline 1 Existing System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE 80 *
* ----- *
* The default values are used if line 80 *
* is not part of the TRANSPORT input data. *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *
* IDETAIL=0 *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope.....(ITRAP=0)... 0
Horizontal/vertical trapezoid side slope.....(ITRAP=1)...
Default input of flow/pollutants on line R1...(IFLIP=0)... 0
Input flow/pollutants on one R1 line.....(IFLIP=1)...
Include only hydrograph input(s) on printout...(INFLEW=0).. 0
Include all input(s) on input printout.....(INFLEW=1)..
Normal division of irregular section data ...(IDETAIL=0).. 0
Subdivide lowermost equal area segment.....(IDETAIL=1)..
Print intermediate headers in tables.....(NOHEAD=0).. 0
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 420768
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 4
NO. TIME STEPS BETWEEN I/O PRINTS (INTPT)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NwQ = 0).

==> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff Block
Initial Julian date (IDATE2)..... 1948275
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 6
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
4368 2606 5549 5451 4386 5691
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1948/10/ 1

STARTING TIME OF DAY HR:MN:SEC

= 0/ 0/ 0

ExTrunk1.out

1 THERE WERE 71 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

 * ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

 * NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 72 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATION SEQUENCE	EXTERNAL AT EACH TIME		STEP (PROCEEDING DOWNSTREAM)		
				1	2	3		NUMBER	NUMBER	INTERNAL ELEMENT	UPSTREAM NUMBERS	
2604	1	19	MANHOLE	30	0	0	1	4368	8	72	72	72
2606	2	19	MANHOLE	1	0	0	2	5451	16	72	72	72
2612	3	19	MANHOLE	2	0	0	3	5722	35	72	72	72
2618	4	19	MANHOLE	3	0	0	4	20	49	35	72	72
2622	5	19	MANHOLE	4	0	0	5	24	53	8	72	72
2624	6	19	MANHOLE	5	0	0	6	4388	14	53	72	72
2630	7	19	MANHOLE	6	0	0	7	27	56	14	72	72
4368	8	19	MANHOLE	0	0	0	8	4386	13	56	72	72
4376	9	19	MANHOLE	29	0	0	9	26	55	13	72	72
4378	10	19	MANHOLE	28	0	0	10	4382	12	55	72	72
4380	11	19	MANHOLE	25	0	0	11	25	54	12	72	72
4382	12	19	MANHOLE	26	0	0	12	4380	11	54	72	72
4386	13	19	MANHOLE	27	0	0	13	28	57	11	72	72
4388	14	19	MANHOLE	24	0	0	14	4378	10	57	72	72
5447	15	19	MANHOLE	32	0	0	15	29	58	10	72	72
5451	16	19	MANHOLE	0	0	0	16	4376	9	58	72	72
5549	17	19	MANHOLE	23	0	0	17	30	60	9	72	72
5551	18	19	MANHOLE	31	0	0	18	2604	1	60	72	72
5553	19	19	MANHOLE	17	0	0	19	1	37	1	72	72
5555	20	19	MANHOLE	16	0	0	20	2606	2	37	72	72
5561	21	19	MANHOLE	7	0	0	21	2	48	2	72	72
5565	22	19	MANHOLE	15	0	0	22	2612	3	48	72	72
5567	23	19	MANHOLE	13	0	0	23	3	59	3	72	72
5573	24	19	MANHOLE	14	0	0	24	2618	4	59	72	72
5667	25	19	MANHOLE	19	20	0	25	32	62	16	72	72
5669	26	19	MANHOLE	21	0	0	26	5447	15	62	72	72
5671	27	19	MANHOLE	22	0	0	27	33	63	15	72	72
5675	28	19	MANHOLE	18	0	0	28	5693	33	63	72	72
5679	29	19	MANHOLE	10	11	0	29	34	64	33	72	72
5687	30	19	MANHOLE	12	0	0	30	5691	32	64	72	72
5689	31	19	MANHOLE	35	0	0	31	35	65	32	72	72
5691	32	19	MANHOLE	34	0	0	32	5689	31	65	72	72
5693	33	19	MANHOLE	33	0	0	33	12	40	31	72	72
5717	34	19	MANHOLE	9	0	0	34	5687	30	40	72	72
5722	35	19	MANHOLE	0	0	0	35	11	39	30	72	72
9999	36	19	MANHOLE	8	0	0	36	4	66	4	72	72
1	37	1	CIRCULAR	2604	0	0	37	2622	5	66	72	72
10	38	1	CIRCULAR	5675	0	0	38	5	67	5	72	72
11	39	1	CIRCULAR	5687	0	0	39	2624	6	67	72	72
12	40	1	CIRCULAR	5689	0	0	40	6	68	6	72	72
13	41	1	CIRCULAR	5565	0	0	41	2630	7	68	72	72
14	42	1	CIRCULAR	5567	0	0	42	23	52	7	72	72
15	43	1	CIRCULAR	5561	0	0	43	5549	17	52	72	72
16	44	1	CIRCULAR	5553	0	0	44	31	61	17	72	72
17	45	1	CIRCULAR	5551	0	0	45	5551	18	61	72	72
18	46	1	CIRCULAR	5671	0	0	46	17	45	18	72	72
19	47	1	CIRCULAR	5573	0	0	47	5553	19	45	72	72
2	48	1	CIRCULAR	2606	0	0	48	16	44	19	72	72
20	49	1	CIRCULAR	5722	0	0	49	5555	20	44	72	72
21	50	1	CIRCULAR	5667	0	0	50	7	69	20	72	72
22	51	1	CIRCULAR	5669	0	0	51	5561	21	69	72	72
23	52	1	CIRCULAR	2630	0	0	52	15	43	21	72	72
24	53	1	CIRCULAR	4368	0	0	53	5565	22	43	72	72
25	54	1	CIRCULAR	4382	0	0	54	13	41	22	72	72
26	55	1	CIRCULAR	4386	0	0	55	5567	23	41	72	72
27	56	1	CIRCULAR	4388	0	0	56	14	42	23	72	72
28	57	1	CIRCULAR	4380	0	0	57	5573	24	42	72	72
29	58	1	CIRCULAR	4378	0	0	58	19	47	24	72	72
3	59	1	CIRCULAR	2612	0	0	59	5667	25	47	49	72
30	60	1	CIRCULAR	4376	0	0	60	21	50	25	72	72
31	61	1	CIRCULAR	5549	0	0	61	5669	26	50	72	72
32	62	1	CIRCULAR	5451	0	0	62	22	51	26	72	72
33	63	1	CIRCULAR	5447	0	0	63	5671	27	51	72	72
34	64	1	CIRCULAR	5693	0	0	64	18	46	27	72	72
35	65	1	CIRCULAR	5691	0	0	65	5675	28	46	72	72
4	66	1	CIRCULAR	2618	0	0	66	10	38	28	72	72
5	67	1	CIRCULAR	2622	0	0	67	5679	29	38	39	72
6	68	1	CIRCULAR	2624	0	0	68	9	71	29	72	72
7	69	1	CIRCULAR	5555	0	0	69	5717	34	71	72	72
8	70	1	CIRCULAR	5717	0	0	70	8	70	34	72	72
9	71	1	CIRCULAR	5679	0	0	71	9999	36	70	72	72

1

 * DOWNSTREAM ELEMENTS (MODEL OUTLETS)
 * (internal number - external number)

36 9999

1

 * TRANSPORT ELEMENT PARAMETERS
 *
 * CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER
 * TO USERS MANUAL FOR MEANING FOR NON-CONDUITS.

EXT. ELE. TY NUM. PE	TYPE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
----------------------------	-----------	------------------	------------------	----------------------	---------------	---------------	---------------	-------------------------	-------------------	----------------	---------------	--

EXTRUNK1.out									
2604	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2606	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2612	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2618	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2622	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2624	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2630	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4368	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4376	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4378	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4380	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4382	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4386	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4388	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5447	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5451	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5549	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5551	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5553	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5555	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5561	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5565	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5567	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5573	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5667	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5669	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5671	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5675	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5679	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5687	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5689	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5691	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5693	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5717	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5722	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
9999	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
1	1	CIRCULAR	8.8E-02	349.44	0.0140	1.00	0.00	0.00	1.0
10	1	CIRCULAR	1.2E-02	41.88	0.0120	1.50	0.00	0.00	1.0
11	1	CIRCULAR	3.0E-02	119.05	0.0120	1.50	0.00	0.00	1.0
12	1	CIRCULAR	5.3E-03	104.82	0.0120	1.50	0.00	0.00	1.0
13	1	CIRCULAR	7.7E-03	42.75	0.0140	1.00	0.00	0.00	1.0
14	1	CIRCULAR	8.5E-02	151.50	0.0140	1.00	0.00	0.00	1.0
15	1	CIRCULAR	7.6E-02	122.81	0.0140	1.00	0.00	0.00	1.0
16	1	CIRCULAR	6.4E-02	81.45	0.0120	1.00	0.00	0.00	1.0
17	1	CIRCULAR	7.5E-02	103.93	0.0120	1.00	0.00	0.00	1.0
18	1	CIRCULAR	1.4E-02	157.24	0.0120	1.50	0.00	0.00	1.0
19	1	CIRCULAR	8.7E-02	56.08	0.0120	1.00	0.00	0.00	1.0
2	1	CIRCULAR	8.3E-02	190.91	0.0140	1.00	0.00	0.00	1.0
20	1	CIRCULAR	0.1	37.27	0.0140	1.00	0.00	0.00	1.0
21	1	CIRCULAR	5.7E-02	97.81	0.0120	1.50	0.00	0.00	1.0
22	1	CIRCULAR	2.8E-02	80.45	0.0120	1.50	0.00	0.00	1.0
23	1	CIRCULAR	8.3E-02	84.46	0.0140	1.00	0.00	0.00	1.0
24	1	CIRCULAR	5.9E-02	143.41	0.0240	1.00	0.00	0.00	1.0
25	1	CIRCULAR	9.5E-02	155.51	0.0120	1.00	0.00	0.00	1.0
26	1	CIRCULAR	8.0E-02	55.13	0.0120	1.00	0.00	0.00	1.0
27	1	CIRCULAR	8.6E-02	327.59	0.0120	1.00	0.00	0.00	1.0
28	1	CIRCULAR	8.5E-02	300.28	0.0120	1.00	0.00	0.00	1.0
29	1	CIRCULAR	0.1	15.85	0.0140	1.00	0.00	0.00	1.0
3	1	CIRCULAR	7.4E-02	139.84	0.0140	1.00	0.00	0.00	1.0
30	1	CIRCULAR	0.1	29.28	0.0140	1.00	0.00	0.00	1.0
31	1	CIRCULAR	7.0E-02	94.39	0.0140	1.00	0.00	0.00	1.0
32	1	CIRCULAR	0.1	198.81	0.0120	1.00	0.00	0.00	1.0
33	1	CIRCULAR	1.1E-02	79.19	0.0120	1.00	0.00	0.00	1.0
34	1	CIRCULAR	4.2E-02	147.22	0.0120	1.00	0.00	0.00	1.0
35	1	CIRCULAR	3.5E-02	213.06	0.0120	1.00	0.00	0.00	1.0
4	1	CIRCULAR	5.0E-02	120.53	0.0140	1.00	0.00	0.00	1.0
5	1	CIRCULAR	4.0E-02	65.51	0.0140	1.00	0.00	0.00	1.0
6	1	CIRCULAR	6.6E-02	203.65	0.0240	1.00	0.00	0.00	1.0
7	1	CIRCULAR	7.0E-02	168.10	0.0120	1.00	0.00	0.00	1.0
8	1	CIRCULAR	0.1	78.12	0.0140	1.50	0.00	0.00	1.0
9	1	CIRCULAR	4.7E-02	36.96	0.0120	1.50	0.00	0.00	1.0
							0.79	9.8	11.
							1.77	12.	13.
							1.77	20.	21.
							1.77	8.3	8.9
							0.79	2.9	3.1
							0.79	9.7	10.
							0.79	9.1	9.9
							0.79	9.8	11.
							0.79	11.	11.
							1.77	14.	15.
							0.79	11.	12.
							0.79	9.6	10.
							0.79	11.	12.
							1.77	27.	29.
							1.77	19.	21.
							0.79	9.5	10.
							0.79	4.7	5.1
							0.79	12.	13.
							0.79	11.	12.
							0.79	11.	12.
							0.79	11.	12.
							0.79	12.	13.
							0.79	9.0	9.7
							0.79	12.	13.
							0.79	8.7	9.4
							0.79	14.	16.
							0.79	4.1	4.4
							0.79	7.9	8.6
							0.79	7.2	7.8
							0.79	7.4	8.0
							0.79	6.6	7.1
							0.79	5.0	5.4
							0.79	10.	11.
							1.77	34.	37.
							1.77	25.	27.

Transport Block Flow Continuity #
#####

Sum of WET WEATHER Inflow.....	2.984E+08	cubic feet	74.7382	inches
Sum of DRY WEATHER Inflow.....	0.000E+00	cubic feet	0.0000	inches
Sum of INFILTRATION Inflow.....	0.000E+00	cubic feet	0.0000	inches
Sum of MANHOLE CONSTANT Inflow...	0.000E+00	cubic feet	0.0000	inches
INITIAL VOLUME IN CONDUITS.....	0.000E+00	cubic feet	0.0000	inches
REMAINING VOLUME IN CONDUITS.....	6.719E-03	cubic feet	0.0000	inches
Sum of FINAL SURCHARGE STORAGE...	0.000E+00	cubic feet	0.0000	inches
Sum of FINAL WET WELL VOLUME.....	0.000E+00	cubic feet	0.0000	inches
Sum of TRANSPORT Outflows.....	2.989E+08	cubic feet	74.8497	inches
A.Sum of INITIAL VOLUME + Inflows	2.984E+08	cubic feet	74.7382	inches
B.Sum REMAINING VOLUME + Outflows	2.989E+08	cubic feet	74.8497	inches
Percent flow continuity error....	0.149	= (B-A)/B * 100		

1

* CONDUIT SURCHARGE SUMMARY *

ELEMENT NUMBER	STARTING JULIAN DATE	STARTING TIME OF DAY(SEC)	ENDING JULIAN DATE	ENDING TIME OF DAY(SEC)	SURCHARGE LENGTH MINUTES	FULL FLOW (CFS)	PEAK FLW RATIO Qp/QFULL	SURCHARGE PEAK VOL. (CF)
2	1950357	28800	1980313	64800	1020.00	9.56	3.17	7.47E+04
3	1986299	7200	1986299	7200	0.00	8.97	1.13	4.25E+03
4	1950357	28800	1995189	79200	2340.00	7.38	2.51	4.01E+04
5	1949331	0	1995332	75600	3720.00	6.60	1.82	1.95E+04

6	1949047	75600	1996149	64800	11580.00	4.96	3.66	4.75E+04
31	1950357	28800	1995189	79200	3000.00	8.72	2.69	5.32E+04
13	1948278	3600	1996259	10800	312360.00	2.90	31.62	3.20E+05

ExTrunk1.out

 * TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
20	420768	1	0.0000	0.000	1.07E-01	1.07E-01	1.07E-01	1.07E-01	0.00E+00
24	421603	4	0.0001	4.987	5.89E-02	5.90E-02	5.89E-02	5.87E-02	3.45E+07
27	420768	1	0.0000	5.003	8.57E-02	8.57E-02	8.57E-02	8.59E-02	3.45E+07
26	420768	1	0.0000	9.983	7.97E-02	7.97E-02	7.97E-02	7.99E-02	6.89E+07
25	420768	1	0.0000	9.993	9.47E-02	9.47E-02	9.47E-02	9.41E-02	6.89E+07
28	420768	1	0.0000	10.016	8.47E-02	8.47E-02	8.47E-02	8.45E-02	6.89E+07
29	420768	1	0.0000	10.017	1.28E-01	1.28E-01	1.28E-01	1.29E-01	6.90E+07
30	420768	1	0.0000	10.018	1.29E-01	1.29E-01	1.29E-01	1.29E-01	6.90E+07
1	420768	1	0.0000	10.043	8.76E-02	8.76E-02	8.76E-02	8.76E-02	6.90E+07
2	420768	1	0.0000	10.149	8.35E-02	8.35E-02	8.35E-02	8.35E-02	1.58E+08
3	420768	1	0.0000	9.631	7.35E-02	7.35E-02	7.35E-02	7.38E-02	1.58E+08
32	420768	1	0.0000	3.856	1.40E-01	1.40E-01	1.40E-01	1.40E-01	2.67E+07
33	471745	4	0.0006	3.864	1.11E-02	1.12E-02	1.11E-02	1.11E-02	2.67E+07
34	420768	1	0.0000	3.872	4.23E-02	4.23E-02	4.23E-02	4.22E-02	2.67E+07
35	420768	1	0.0000	7.740	3.51E-02	3.51E-02	3.51E-02	3.51E-02	5.35E+07
12	513959	4	0.0027	7.761	5.28E-03	5.52E-03	5.28E-03	5.27E-03	5.35E+07
11	420768	1	0.0000	7.773	3.01E-02	3.01E-02	3.01E-02	3.02E-02	5.35E+07
4	420768	1	0.0000	7.959	4.97E-02	4.97E-02	4.97E-02	4.96E-02	1.58E+08
5	420768	1	0.0000	7.084	3.98E-02	3.98E-02	3.98E-02	3.98E-02	1.58E+08
6	423109	4	0.0001	5.368	6.61E-02	6.61E-02	6.61E-02	6.63E-02	1.58E+08
23	420768	1	0.0000	5.373	8.29E-02	8.29E-02	8.29E-02	8.25E-02	1.58E+08
31	420768	1	0.0000	9.370	6.95E-02	6.95E-02	6.95E-02	6.98E-02	2.45E+08
17	420768	1	0.0000	9.358	7.46E-02	7.46E-02	7.46E-02	7.43E-02	2.45E+08
16	420768	1	0.0000	9.347	6.45E-02	6.45E-02	6.45E-02	6.45E-02	2.45E+08
7	420768	1	0.0000	9.339	7.04E-02	7.04E-02	7.04E-02	7.03E-02	2.45E+08
15	420768	1	0.0000	9.359	7.64E-02	7.64E-02	7.64E-02	7.62E-02	2.45E+08
13	504672	4	0.0105	3.143	7.70E-03	7.90E-03	7.70E-03	7.74E-03	2.45E+08
14	420768	1	0.0000	3.150	8.51E-02	8.51E-02	8.51E-02	8.55E-02	2.45E+08
19	420768	1	0.0000	3.155	8.73E-02	8.73E-02	8.73E-02	8.73E-02	2.45E+08
21	420768	1	0.0000	3.162	5.70E-02	5.70E-02	5.70E-02	5.68E-02	2.45E+08
22	420768	1	0.0000	3.170	2.85E-02	2.85E-02	2.85E-02	2.84E-02	2.45E+08
18	456095	4	0.0003	3.189	1.45E-02	1.45E-02	1.45E-02	1.45E-02	2.45E+08
10	475391	4	0.0005	3.194	1.20E-02	1.21E-02	1.20E-02	1.20E-02	2.45E+08
9	420768	1	0.0000	10.733	4.71E-02	4.71E-02	4.71E-02	4.69E-02	2.99E+08
8	420768	1	0.0000	10.740	1.23E-01	1.23E-01	1.23E-01	1.22E-01	2.99E+08

 * Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
4368	3.44E+07
5451	2.67E+07
5722	0.00E+00
20	0.00E+00
24	3.45E+07
4388	3.45E+07
27	3.45E+07
4386	6.89E+07
26	6.89E+07
4382	6.89E+07
25	6.89E+07
4380	6.89E+07
28	6.89E+07
4378	6.89E+07
29	6.90E+07
4376	6.90E+07
30	6.90E+07
2604	6.90E+07
1	6.90E+07
2606	1.58E+08
2	1.58E+08
2612	1.58E+08
3	1.58E+08
2618	1.58E+08
32	2.67E+07
5447	2.67E+07
33	2.67E+07
5693	2.67E+07
34	2.67E+07
5691	5.35E+07
35	5.35E+07
5689	5.35E+07
12	5.35E+07
5687	5.35E+07
11	5.35E+07
4	1.58E+08
2622	1.58E+08
5	1.58E+08
2624	1.59E+08
6	1.58E+08
2630	1.58E+08
23	1.58E+08
5549	2.46E+08
31	2.45E+08
5551	2.45E+08
17	2.45E+08
5553	2.45E+08
16	2.45E+08
5555	2.45E+08
7	2.45E+08

```

5561 2.45E+08
15 2.45E+08
5565 3.79E+08
13 2.45E+08
5567 2.45E+08
14 2.45E+08
5573 2.45E+08
19 2.45E+08
5667 2.45E+08
21 2.45E+08
5669 2.45E+08
22 2.45E+08
5671 2.45E+08
18 2.45E+08
5675 2.45E+08
10 2.45E+08
5679 2.99E+08
9 2.99E+08
5717 2.99E+08
8 2.99E+08
9999 2.99E+08

```

```

The Total simulation Time =1514764800.0 seconds.
                        25246080.00 minutes.
                        420768.000 hours.
The Time Step(DT) = 3600.0 seconds.

```

```

The ending date (YEAR/MO/DAY)..1996/10/ 1
The ending time of day..... 0.000 seconds.

```

Transport simulation ended normally.

```

====> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

```

```

====> Your input file was named : C:\GIGHAR~1\EXTRUN~2.DAT
====> Your output file was named: C:\GIGHAR~1\ExTrunk1.out

```

```

*****
* SWMM 4.4H Simulation Date and Time Summary *
*****
* Starting Date... February 17, 2009 *
* Time... 11: 0: 2.484 *
* Ending Date... February 17, 2009 *
* Time... 11: 2:51.562 *
* Elapsed Time... 2.818 minutes. *
* Elapsed Time... 169.079 seconds. *
*****

```

```

1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)  *
*   Version 4.4H                         *
*   *                                   *
*   CDM/OSU Ongoing Version 4.4h         *
*   Release Date - July 30, 2004         *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
*   Metcalf & Eddy, Inc.                 *
*   University of Florida                 *
*   Water Resources Engineers, Inc.      *
*   (Now Camp Dresser & McKee, Inc.)     *
*   September 1970                      *
*****

Version 4.3 (outdated) is
Distributed and Maintained by

*****
*   U.S. Environmental Protection Agency *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road            *
*   Athens, GA 30605-2720              *
*****

*****
*   This is an updated release of SWMM4.4h, *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model *
*   contact Wayne Huber at Oregon State U., *
*   wayne.huber@orst.edu,                 *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.          *
*   The EPA-supported version is SWMM5 at: *
*   http://www.epa.gov/ednrmr1/swmm/index.htm *
*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da Vinci *
*****

#####
#   File names by SWMM Block           #
#   JIN -> Input to a Block            #
#   JOUT -> Output from a Block        #
#####

JIN for Block #    1 File #    9 C:\GIGHAR-1\Trunk1.int
JOUT for Block #   1 File #   10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT #    1 File #    1 SCRT1.UF
NSCRAT #    2 File #    2 SCRT2.UF

*****
*   Parameter values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG)... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```


Trunk1.out

Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

```
#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002. #
#####
# "The sewer is the conscience of the city." #
# Victor Hugo (1862) #
#####
```

Gig Harbor 2008 Storm System Transport Analysis Trunkline 1 Improved System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
* ----- *
* The default values are used if line B0 *
* is not part of the TRANSPORT input data. *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *
* IDETA1L=0 *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope....(ITRAP=0)... 0
Horizontal/vertical trapezoid side slope....(ITRAP=1)...
Default input of flow/pollutants on line R1...(IFLIP=0)... 0
Input flow/pollutants on one R1 line....(IFLIP=1)...
Include only hydrograph input(s) on printout...(INFLEW=0).. 0
Include all input(s) on input printout....(INFLEW=1)..
Normal division of irregular section data...(IDETA1L=0).. 0
Subdivide lowermost equal area segment....(IDETA1L=1)..
Print intermediate headers in tables....(NOHEAD=0).. 0
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 8760
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 4
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

==> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff Block
Initial Julian date (IDATE2)..... 1963001
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 6
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
4368 2606 5549 5451 4386 5691
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1963/ 1/ 1

STARTING TIME OF DAY HR:MM:SEC

= 0/ 0/ 0

Trunk1.out

1 THERE WERE 71 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

* ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

* NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 72 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	1	UPSTREAM ELEMENTS (EXTERNAL NOS.)	2	3	ORDER OF COMPUTATIONS SEQUENCE	EXTERNAL NUMBER	AT EACH TIME INTERNAL NUMBER	STEP (PROCEEDING INTERNAL ELEMENT	UPSTREAM NUMBERS
2604	1	19	MANHOLE	30	0	0		1	4368	8	72	72
2606	2	19	MANHOLE	1	0	0		2	5451	16	72	72
2612	3	19	MANHOLE	2	0	0		3	5722	35	72	72
2618	4	19	MANHOLE	3	0	0		4	20	49	35	72
2622	5	19	MANHOLE	4	0	0		5	24	53	8	72
2624	6	19	MANHOLE	5	0	0		6	4388	14	53	72
2630	7	19	MANHOLE	6	0	0		7	27	56	14	72
4368	8	19	MANHOLE	0	0	0		8	4386	13	56	72
4376	9	19	MANHOLE	29	0	0		9	26	55	13	72
4378	10	19	MANHOLE	28	0	0		10	4382	12	55	72
4380	11	19	MANHOLE	25	0	0		11	25	54	12	72
4382	12	19	MANHOLE	26	0	0		12	4380	11	54	72
4386	13	19	MANHOLE	27	0	0		13	28	57	11	72
4388	14	19	MANHOLE	24	0	0		14	4378	10	57	72
5447	15	19	MANHOLE	32	0	0		15	29	58	10	72
5451	16	19	MANHOLE	0	0	0		16	4376	9	58	72
5549	17	19	MANHOLE	23	0	0		17	30	60	9	72
5551	18	19	MANHOLE	31	0	0		18	2604	1	60	72
5553	19	19	MANHOLE	17	0	0		19	1	37	1	72
5555	20	19	MANHOLE	16	0	0		20	2606	2	37	72
5561	21	19	MANHOLE	7	0	0		21	2	48	2	72
5565	22	19	MANHOLE	15	0	0		22	2612	3	48	72
5567	23	19	MANHOLE	13	0	0		23	3	59	3	72
5573	24	19	MANHOLE	14	0	0		24	2618	4	59	72
5667	25	19	MANHOLE	19	20	0		25	32	62	16	72
5669	26	19	MANHOLE	21	0	0		26	5447	15	62	72
5671	27	19	MANHOLE	22	0	0		27	33	63	15	72
5675	28	19	MANHOLE	18	0	0		28	5693	33	63	72
5679	29	19	MANHOLE	10	11	0		29	34	64	33	72
5687	30	19	MANHOLE	12	0	0		30	5691	32	64	72
5689	31	19	MANHOLE	35	0	0		31	35	65	32	72
5691	32	19	MANHOLE	34	0	0		32	5689	31	65	72
5693	33	19	MANHOLE	33	0	0		33	12	40	31	72
5717	34	19	MANHOLE	9	0	0		34	5687	30	40	72
5722	35	19	MANHOLE	0	0	0		35	11	39	30	72
999	36	19	MANHOLE	8	0	0		36	4	66	4	72
1	37	1	CIRCULAR	2604	0	0		37	2622	5	66	72
10	38	1	CIRCULAR	5675	0	0		38	5	67	5	72
11	39	1	CIRCULAR	5687	0	0		39	2624	6	67	72
12	40	1	CIRCULAR	5689	0	0		40	6	68	6	72
13	41	1	CIRCULAR	5565	0	0		41	2630	7	68	72
14	42	1	CIRCULAR	5567	0	0		42	23	52	7	72
15	43	1	CIRCULAR	5561	0	0		43	5549	17	52	72
16	44	1	CIRCULAR	5553	0	0		44	31	61	17	72
17	45	1	CIRCULAR	5551	0	0		45	5551	18	61	72
18	46	1	CIRCULAR	5671	0	0		46	17	45	18	72
19	47	1	CIRCULAR	5573	0	0		47	5553	19	45	72
2	48	1	CIRCULAR	2606	0	0		48	16	44	19	72
20	49	1	CIRCULAR	5722	0	0		49	5555	20	44	72
21	50	1	CIRCULAR	5667	0	0		50	7	69	20	72
22	51	1	CIRCULAR	5669	0	0		51	5561	21	69	72
23	52	1	CIRCULAR	2630	0	0		52	15	43	21	72
24	53	1	CIRCULAR	4368	0	0		53	5565	22	43	72
25	54	1	CIRCULAR	4382	0	0		54	13	41	22	72
26	55	1	CIRCULAR	4386	0	0		55	5567	23	41	72
27	56	1	CIRCULAR	4388	0	0		56	14	42	23	72
28	57	1	CIRCULAR	4380	0	0		57	5573	24	42	72
29	58	1	CIRCULAR	4378	0	0		58	19	47	24	72
3	59	1	CIRCULAR	2612	0	0		59	5667	25	47	49
30	60	1	CIRCULAR	4376	0	0		60	21	50	25	72
31	61	1	CIRCULAR	5549	0	0		61	5669	26	50	72
32	62	1	CIRCULAR	5451	0	0		62	22	51	26	72
33	63	1	CIRCULAR	5447	0	0		63	5671	27	51	72
34	64	1	CIRCULAR	5693	0	0		64	18	46	27	72
35	65	1	CIRCULAR	5691	0	0		65	5675	28	46	72
4	66	1	CIRCULAR	2618	0	0		66	10	38	28	72
5	67	1	CIRCULAR	2622	0	0		67	5679	29	38	39
6	68	1	CIRCULAR	2624	0	0		68	9	71	29	72
7	69	1	CIRCULAR	5555	0	0		69	5717	34	71	72
8	70	1	CIRCULAR	5717	0	0		70	8	70	34	72
9	71	1	CIRCULAR	5679	0	0		71	999	36	70	72

1

* DOWNSTREAM ELEMENTS (MODEL OUTLETS) *

* (internal number - external number) *

36 999

1

* TRANSPORT ELEMENT PARAMETERS *

* CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *

* TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. NUM.	TY PE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ.FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
----------------------	------------------	------------------	------------------	----------------------	---------------	---------------	---------------	-------------------------	------------------	----------------	---------------	--

Trunk1.out									
2604	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2606	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2612	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2618	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2622	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2624	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
2630	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4368	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4376	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4378	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4380	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4382	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4386	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
4388	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5447	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5451	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5549	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5551	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5553	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5555	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5561	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5563	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5565	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5567	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5573	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5667	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5669	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5671	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5675	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5679	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5687	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5689	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5691	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5693	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5717	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
5722	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
999	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0
1	1	CIRCULAR	8.8E-02	349.44	0.0140	1.00	0.00	0.00	1.0
10	1	CIRCULAR	1.2E-02	41.88	0.0120	2.00	0.00	0.00	1.0
11	1	CIRCULAR	3.0E-02	119.05	0.0120	1.50	0.00	0.00	1.0
12	1	CIRCULAR	5.3E-03	104.82	0.0120	1.50	0.00	0.00	1.0
13	1	CIRCULAR	7.7E-03	42.75	0.0120	2.50	0.00	0.00	1.0
14	1	CIRCULAR	8.5E-02	151.50	0.0120	1.50	0.00	0.00	1.0
15	1	CIRCULAR	7.6E-02	122.81	0.0120	1.50	0.00	0.00	1.0
16	1	CIRCULAR	6.4E-02	81.45	0.0120	1.50	0.00	0.00	1.0
17	1	CIRCULAR	7.5E-02	103.93	0.0120	1.50	0.00	0.00	1.0
18	1	CIRCULAR	1.4E-02	157.24	0.0120	2.00	0.00	0.00	1.0
19	1	CIRCULAR	8.7E-02	56.08	0.0120	1.50	0.00	0.00	1.0
2	1	CIRCULAR	8.3E-02	190.91	0.0120	1.50	0.00	0.00	1.0
20	1	CIRCULAR	0.1	37.27	0.0140	1.00	0.00	0.00	1.0
21	1	CIRCULAR	5.7E-02	97.81	0.0120	1.50	0.00	0.00	1.0
22	1	CIRCULAR	2.8E-02	80.45	0.0120	2.00	0.00	0.00	1.0
23	1	CIRCULAR	8.3E-02	84.46	0.0120	1.50	0.00	0.00	1.0
24	1	CIRCULAR	5.9E-02	143.41	0.0240	1.00	0.00	0.00	1.0
25	1	CIRCULAR	9.5E-02	155.51	0.0120	1.00	0.00	0.00	1.0
26	1	CIRCULAR	8.0E-02	55.13	0.0120	1.00	0.00	0.00	1.0
27	1	CIRCULAR	8.6E-02	327.59	0.0120	1.00	0.00	0.00	1.0
28	1	CIRCULAR	8.5E-02	300.28	0.0120	1.00	0.00	0.00	1.0
29	1	CIRCULAR	0.1	15.85	0.0140	1.00	0.00	0.00	1.0
3	1	CIRCULAR	7.4E-02	139.84	0.0120	1.50	0.00	0.00	1.0
30	1	CIRCULAR	0.1	29.28	0.0140	1.00	0.00	0.00	1.0
31	1	CIRCULAR	7.0E-02	94.39	0.0120	1.50	0.00	0.00	1.0
32	1	CIRCULAR	0.1	198.81	0.0120	1.00	0.00	0.00	1.0
33	1	CIRCULAR	1.1E-02	79.19	0.0120	1.00	0.00	0.00	1.0
34	1	CIRCULAR	4.2E-02	147.22	0.0120	1.00	0.00	0.00	1.0
35	1	CIRCULAR	3.5E-02	213.06	0.0120	1.00	0.00	0.00	1.0
4	1	CIRCULAR	5.0E-02	120.53	0.0120	1.50	0.00	0.00	1.0
5	1	CIRCULAR	4.0E-02	65.51	0.0120	1.50	0.00	0.00	1.0
6	1	CIRCULAR	6.6E-02	203.65	0.0120	1.50	0.00	0.00	1.0
7	1	CIRCULAR	7.0E-02	168.10	0.0120	1.50	0.00	0.00	1.0
8	1	CIRCULAR	0.1	78.12	0.0140	1.50	0.00	0.00	1.0
9	1	CIRCULAR	4.7E-02	36.96	0.0120	2.00	0.00	0.00	1.0
							0.79	9.8	11.
							3.14	27.	29.
							1.77	20.	21.
							1.77	8.3	8.9
							4.91	39.	42.
							1.77	33.	36.
							1.77	31.	34.
							1.77	29.	31.
							1.77	31.	34.
							3.14	29.	32.
							1.77	34.	36.
							1.77	33.	36.
							0.79	11.	12.
							1.77	27.	29.
							3.14	41.	45.
							1.77	33.	35.
							0.79	4.7	5.1
							0.79	12.	13.
							0.79	11.	12.
							0.79	11.	12.
							0.79	11.	12.
							0.79	12.	13.
							1.77	31.	33.
							0.79	12.	13.
							1.77	30.	32.
							0.79	14.	16.
							0.79	4.1	4.4
							0.79	7.9	8.6
							0.79	7.2	7.8
							1.77	25.	27.
							1.77	23.	25.
							1.77	29.	32.
							1.77	30.	33.
							1.77	34.	37.
							3.14	53.	57.

Transport Block Flow Continuity #
#####

Sum of WET WEATHER Inflow..... 5.701E+06 cubic feet 1.4278 inches
Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of MANHOLE CONSTANT Inflow... 0.000E+00 cubic feet 0.0000 inches
INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
REMAINING VOLUME IN CONDUITS.... 1.460E-02 cubic feet 0.0000 inches
Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches
Sum of FINAL WET WELL VOLUME.... 0.000E+00 cubic feet 0.0000 inches
Sum of TRANSPORT Outflows..... 5.720E+06 cubic feet 1.4324 inches
A.Sum of INITIAL VOLUME + Inflows 5.701E+06 cubic feet 1.4278 inches
B.Sum REMAINING VOLUME + Outflows 5.720E+06 cubic feet 1.4324 inches
Percent flow continuity error.... 0.319 = (B-A)/B * 100

* Surcharge did not occur in this Transport simulation. *

* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
20	8760	1	0.0000	0.000	1.07E-01	1.07E-01	1.07E-01	1.07E-01	0.00E+00

Trunk1.out									
24	8788	4	0.0001	3.662	5.89E-02	5.89E-02	5.89E-02	5.89E-02	6.58E+05
27	8760	1	0.0000	3.619	8.57E-02	8.57E-02	8.57E-02	8.57E-02	6.58E+05
26	8760	1	0.0000	7.306	7.97E-02	7.97E-02	7.97E-02	7.97E-02	1.32E+06
25	8760	1	0.0000	7.274	9.47E-02	9.47E-02	9.47E-02	9.47E-02	1.32E+06
28	8760	1	0.0000	7.208	8.47E-02	8.47E-02	8.47E-02	8.47E-02	1.32E+06
29	8760	1	0.0000	7.205	1.28E-01	1.28E-01	1.28E-01	1.28E-01	1.32E+06
30	8760	1	0.0000	7.200	1.29E-01	1.29E-01	1.29E-01	1.29E-01	1.32E+06
1	8760	1	0.0000	7.114	8.76E-02	8.76E-02	8.76E-02	8.76E-02	1.32E+06
2	8760	1	0.0000	16.787	8.35E-02	8.35E-02	8.35E-02	8.35E-02	3.01E+06
3	8760	1	0.0000	16.726	7.35E-02	7.35E-02	7.35E-02	7.35E-02	3.01E+06
32	8760	1	0.0000	2.896	1.40E-01	1.40E-01	1.40E-01	1.40E-01	5.12E+05
33	9670	4	0.0005	2.878	1.11E-02	1.12E-02	1.11E-02	1.11E-02	5.12E+05
34	8760	1	0.0000	2.857	4.23E-02	4.23E-02	4.23E-02	4.23E-02	5.12E+05
35	8760	1	0.0000	5.717	3.51E-02	3.51E-02	3.51E-02	3.51E-02	1.02E+06
12	10710	4	0.0016	5.662	5.28E-03	5.42E-03	5.28E-03	5.28E-03	1.02E+06
11	8760	1	0.0000	5.630	3.01E-02	3.01E-02	3.01E-02	3.01E-02	1.03E+06
4	8760	1	0.0000	16.668	4.97E-02	4.97E-02	4.97E-02	4.97E-02	3.01E+06
5	8760	1	0.0000	16.631	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.01E+06
6	8760	1	0.0000	16.542	6.61E-02	6.61E-02	6.61E-02	6.61E-02	3.01E+06
23	8760	1	0.0000	16.508	8.29E-02	8.29E-02	8.29E-02	8.29E-02	3.01E+06
31	8760	1	0.0000	26.024	6.95E-02	6.95E-02	6.95E-02	6.95E-02	4.68E+06
17	8760	1	0.0000	25.963	7.46E-02	7.46E-02	7.46E-02	7.46E-02	4.68E+06
16	8760	1	0.0000	25.910	6.45E-02	6.45E-02	6.45E-02	6.45E-02	4.68E+06
7	8760	1	0.0000	25.805	7.04E-02	7.04E-02	7.04E-02	7.04E-02	4.68E+06
15	8760	1	0.0000	25.731	7.64E-02	7.64E-02	7.64E-02	7.64E-02	4.69E+06
13	11125	4	0.0016	25.675	7.70E-03	7.90E-03	7.70E-03	7.71E-03	4.69E+06
14	8760	1	0.0000	25.586	8.51E-02	8.51E-02	8.51E-02	8.51E-02	4.69E+06
19	8760	1	0.0000	25.556	8.73E-02	8.73E-02	8.73E-02	8.73E-02	4.69E+06
21	8760	1	0.0000	25.490	5.70E-02	5.70E-02	5.70E-02	5.70E-02	4.69E+06
22	8760	1	0.0000	25.424	2.85E-02	2.85E-02	2.85E-02	2.85E-02	4.69E+06
18	9491	4	0.0007	25.249	1.45E-02	1.46E-02	1.45E-02	1.45E-02	4.69E+06
10	9983	4	0.0009	25.199	1.20E-02	1.22E-02	1.20E-02	1.20E-02	4.69E+06
9	8760	1	0.0000	30.799	4.71E-02	4.71E-02	4.71E-02	4.71E-02	5.72E+06
8	8760	1	0.0000	30.748	1.23E-01	1.23E-01	1.23E-01	1.23E-01	5.72E+06

 * Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
4368	6.58E+05
5451	5.12E+05
5722	0.00E+00
20	0.00E+00
24	6.58E+05
4388	6.58E+05
27	6.58E+05
4386	1.32E+06
26	1.32E+06
4382	1.32E+06
25	1.32E+06
4380	1.32E+06
28	1.32E+06
4378	1.32E+06
29	1.32E+06
4376	1.32E+06
30	1.32E+06
2604	1.32E+06
1	1.32E+06
2606	3.01E+06
2	3.01E+06
2612	3.01E+06
3	3.01E+06
2618	3.01E+06
32	5.12E+05
5447	5.12E+05
33	5.12E+05
5693	5.12E+05
34	5.12E+05
5691	1.02E+06
35	1.02E+06
5689	1.02E+06
12	1.02E+06
5687	1.02E+06
11	1.03E+06
4	3.01E+06
2622	3.01E+06
5	3.01E+06
2624	3.01E+06
6	3.01E+06
2630	3.01E+06
23	3.01E+06
5549	4.68E+06
31	4.68E+06
5551	4.68E+06
17	4.68E+06
5553	4.68E+06
16	4.68E+06
5555	4.68E+06
7	4.68E+06
5561	4.68E+06
15	4.69E+06
5565	4.69E+06
13	4.69E+06
5567	4.69E+06
14	4.69E+06
5573	4.69E+06
19	4.69E+06
5567	4.69E+06
21	4.69E+06
5569	4.69E+06
22	4.69E+06
5571	4.69E+06

Trunk1.out

18	4.69E+06
5675	4.69E+06
10	4.69E+06
5679	5.72E+06
9	5.72E+06
5717	5.72E+06
8	5.72E+06
999	5.72E+06

The Total Simulation Time = 31536000.0 seconds.
525600.00 minutes.
8760.000 hours.
The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1964/ 1/ 1
The ending time of day..... 0.000 seconds.

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR-1\Trunk11.DAT
====> Your output file was named: C:\GIGHAR-1\Trunk1.out

```
*****
*          SWMM 4.4H Simulation Date and Time Summary          *
*****
* Starting Date... February 17, 2009                             *
* Time... 11: 4: 3.31                                           *
* Ending Date... February 17, 2009                             *
* Time... 11: 4: 6.953                                          *
* Elapsed Time... 0.065 minutes.                                *
* Elapsed Time... 3.923 seconds.                                *
*****
```

```

1 *****
* U.S. Environmental Protection Agency *
* Storm Water Management Model (SWMM) *
* Version 4.4H *
*
* CDM/OSU Ongoing Version 4.4h *
* Release Date - July 30, 2004 *
* Camp Dresser & McKee and Oregon St. Univ. *
* Chuck Moore, Bob Dickinson, and Wayne Huber *
* Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
* Metcalf & Eddy, Inc. *
* University of Florida *
* Water Resources Engineers, Inc. *
* (Now Camp Dresser & McKee, Inc.) *
* September 1970 *
*****

Version 4.3 (outdated) is
Distributed and Maintained by

*****
* U.S. Environmental Protection Agency *
* Center for Exposure Assessment Modeling (CEAM) *
* Athens Environmental Research Laboratory *
* 960 College Station Road *
* Athens, GA 30605-2720 *
*****

*****
* This is an updated release of SWMM4.4h. *
* no longer formally supported by the EPA. *
* If problems occur executing this model *
* contact Wayne Huber at Oregon State. U., *
* wayne.huber@orst.edu, *
* or Robert Dickinson at Camp Dresser & *
* McKee, DickinsonRE@CDM.COM. *
* The EPA-supported version is SWMM5 at: *
* http://www.epa.gov/ednnrmrl/swmm/index.htm *
*****

*****
* This is an implementation of EPA SWMM 4.4H *
* "Nature is full of infinite causes which *
* have never occurred in experience" da Vinci *
*****

#####
# File names by SWMM Block #
# JIN -> Input to a Block #
# JOUT -> Output from a Block #
#####

JIN for Block # 1 File # 9 C:\GIGHAR-1\ExTrunk2.int
JOUT for Block # 1 File # 10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
* Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP)... 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU)..... 20
Number of Groundwater Plot/prints in Runoff (NGW)..... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG)... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```

ExTrunk2.out
Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
Number of Storm Events for Rain Analysis (LSTORM).....20000
Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
Number Conduits for Extran Results to ASCII
File (MXFLOW)..... 400

```
#####  
# Entry made to the Transport Block, last updated #  
# by Oregon State University, April 2002. #  
#####  
# "The sewer is the conscience of the city." #  
# Victor Hugo (1862) #  
#####
```

Gig Harbor 2008 Storm System Transport Analysis
Trunkline 2 Existing System

```
*****  
* OPTIONAL INPUT PARAMETERS FROM DATA LINE 60 *  
*-----*  
* The default values are used if line 60 *  
* is not part of the TRANSPORT input data. *  
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *  
* IDETAIL=0 *  
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0  
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..  
Vertical/horizontal trapezoid side slope....(ITRAP=0).... 0  
Horizontal/vertical trapezoid side slope....(ITRAP=1)....  
Default input of flow/pollutants on line R1...(IFLIP=0).... 0  
Input flow/pollutants on one R1 line....(IFLIP=1)....  
Include only hydrograph input(s) on printout...(INFLEW=0).... 0  
Include all input(s) on input printout....(INFLEW=1)....  
Normal division of irregular section data...(IDETAIL=0).... 0  
Subdivide lowermost equal area segment....(IDETAIL=1)....  
Print intermediate headers in tables....(NOHEAD=0).... 0  
Do not print intermediate headers in table...(NOHEAD=1)....
```

```
NUMBER OF TIME STEPS (NDT)..... 420768  
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0  
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0  
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 7  
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1  
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0  
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0  
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

==> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:

```
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0  
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0  
CALL INFILTRATION ROUTINE (NINFIL)..... 0  
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0  
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0  
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100  
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00  
STARTING TIME OF DAY IN HOURS..... 0.00  
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05  
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####  
# Header information from interface file: #  
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff block  
Initial Julian date (IDATEZ)..... 1948275  
Initial time of day in seconds (TZERO)..... 0.0  
No. transfered input locations..... 7  
No. transfered pollutants..... 0  
Size of total catchment area (acres)..... 1100.00  
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####  
# Element numbers of interface inlet locations: #  
#####
```

```
9392      8371      8577      8591      7235      8562      8395
```

Conversion factor to cfs for flow units
on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1948/10/ 1

STARTING TIME OF DAY HR:MN:SEC

= 0/ 0/ 0

ExTrunk2.out

1THERE WERE 49 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

 * ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

 * NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 50 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATION SEQUENCE	EXTERNALS AT EACH TIME STEP (PROCEEDING DOWNSTREAM)		INTERNAL ELEMENT NUMBER	INTERNAL UPSTREAM ELEMENT NUMBERS
				1	2	3		NUMBER	NUMBER		
7235	1	19	MANHOLE	53	0	0	1	9392	23	50	50
7241	2	19	MANHOLE	38	0	0	2	52	41	23	50
8361	3	19	MANHOLE	44	0	0	3	8399	11	41	50
8363	4	19	MANHOLE	43	0	0	4	39	28	11	50
8367	5	19	MANHOLE	42	0	0	5	8395	10	28	50
8371	6	19	MANHOLE	58	0	0	6	40	29	10	50
8377	7	19	MANHOLE	57	0	0	7	8391	9	29	50
8389	8	19	MANHOLE	41	0	0	8	41	30	9	50
8391	9	19	MANHOLE	40	0	0	9	8389	8	30	50
8395	10	19	MANHOLE	39	0	0	10	57	46	8	50
8399	11	19	MANHOLE	52	0	0	11	8377	7	46	50
8548	12	19	MANHOLE	51	0	0	12	58	47	7	50
8554	13	19	MANHOLE	50	0	0	13	8371	6	47	50
8560	14	19	MANHOLE	54	0	0	14	42	31	6	50
8562	15	19	MANHOLE	59	0	0	15	8367	5	31	50
8577	16	19	MANHOLE	60	0	0	16	43	32	5	50
8579	17	19	MANHOLE	49	0	0	17	8363	4	32	50
8583	18	19	MANHOLE	48	0	0	18	44	33	4	50
8591	19	19	MANHOLE	47	0	0	19	8361	3	33	50
8592	20	19	MANHOLE	55	0	0	20	59	48	3	50
8615	21	19	MANHOLE	46	0	0	21	8562	15	48	50
8634	22	19	MANHOLE	45	0	0	22	54	43	15	50
9392	23	19	MANHOLE	0	0	0	23	8560	14	43	50
994	24	19	MANHOLE	56	0	0	24	50	39	14	50
999	25	19	MANHOLE	37	0	0	25	8554	13	39	50
37	26	1	CIRCULAR	7241	0	0	26	51	40	13	50
38	27	1	CIRCULAR	7235	0	0	27	8548	12	40	50
39	28	1	CIRCULAR	8399	0	0	28	60	49	12	50
40	29	1	CIRCULAR	8395	0	0	29	8577	16	49	50
41	30	1	CIRCULAR	8391	0	0	30	49	38	16	50
42	31	1	CIRCULAR	8371	0	0	31	8579	17	38	50
43	32	1	CIRCULAR	8367	0	0	32	48	37	17	50
44	33	1	CIRCULAR	8363	0	0	33	8583	18	37	50
45	34	1	CIRCULAR	8615	0	0	34	47	36	18	50
46	35	1	CIRCULAR	8592	0	0	35	8591	19	36	50
47	36	1	CIRCULAR	8583	0	0	36	56	45	19	50
48	37	1	CIRCULAR	8579	0	0	37	994	24	45	50
49	38	1	CIRCULAR	8577	0	0	38	55	44	24	50
50	39	1	CIRCULAR	8560	0	0	39	8592	20	44	50
51	40	1	CIRCULAR	8554	0	0	40	46	35	20	50
52	41	1	CIRCULAR	9392	0	0	41	8615	21	35	50
53	42	1	CIRCULAR	8634	0	0	42	45	34	21	50
54	43	1	CIRCULAR	8562	0	0	43	8634	22	34	50
55	44	1	CIRCULAR	994	0	0	44	53	42	22	50
56	45	1	CIRCULAR	8591	0	0	45	7235	1	42	50
57	46	1	CIRCULAR	8389	0	0	46	38	27	1	50
58	47	1	CIRCULAR	8377	0	0	47	7241	2	27	50
59	48	1	CIRCULAR	8361	0	0	48	37	26	2	50
60	49	1	CIRCULAR	8548	0	0	49	999	25	26	50

1

 * DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
 * (internal number - external number) *

25 999

1

 * TRANSPORT ELEMENT PARAMETERS *
 *
 * CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
 * TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. TY NUM. PE	TYPE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
7235	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
7241	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8361	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8363	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8367	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8371	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8377	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8389	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8391	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8395	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8399	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8548	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8554	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8560	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8562	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8577	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8579	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8583	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8591	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8592	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8615	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8634	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				


```
#####
# Transport Block Flow Continuity #
#####
```

* CONDUIT SURCHARGE SUMMARY *

```

*****
* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *
*****

```

* Total flow and mass (kg) out of all elements *

Page 4

```

8399 2.98E+07
39 2.98E+07
8395 7.45E+07
40 7.45E+07
8391 7.45E+07
41 7.45E+07
8389 7.45E+07
57 7.45E+07
8377 7.45E+07
58 7.45E+07
8371 1.01E+08
42 1.01E+08
8367 1.01E+08
43 1.01E+08
8363 1.01E+08
44 1.01E+08
8361 1.01E+08
59 1.01E+08
8562 2.49E+08
54 2.49E+08
8560 2.49E+08
50 2.49E+08
8554 2.49E+08
51 2.49E+08
8548 2.49E+08
60 2.49E+08
8577 3.11E+08
49 3.11E+08
8579 3.11E+08
48 3.11E+08
8583 3.11E+08
47 3.11E+08
8591 4.05E+08
56 4.05E+08
994 4.05E+08
55 4.05E+08
8592 4.05E+08
46 4.05E+08
8615 4.05E+08
45 4.05E+08
8634 4.05E+08
53 4.05E+08
7235 4.59E+08
38 4.59E+08
7241 4.59E+08
37 4.59E+08
999 4.59E+08

```

The Total Simulation Time =1514764800.0 seconds.
25246080.00 minutes.
420768.000 hours.
The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1996/10/ 1
The ending time of day..... 0.000 seconds.

AVERAGE FLOW.....	0.020	0.049	0.066	0.066	0.205	0.267	0.303
STANDARD DEVIATION OF FLOW.....	0.000	0.000	0.000	0.000	0.001	0.002	0.002
MAXIMUM FLOW.....	5.106	12.795	17.135	17.175	32.006	29.033	41.725
MINIMUM FLOW.....	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FLOW VOLUME (CUBIC FEET).....	2.98E+07	7.45E+07	1.01E+08	1.01E+08	3.11E+08	4.05E+08	4.59E+08

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR-1\EXTRUN-3.DAT
====> Your output file was named: C:\GIGHAR-1\EXTrunk2.out

```

*****
*      SWMM 4.4H Simulation Date and Time Summary      *
*****
* Starting Date... February 17, 2009                    *
* Time... 11:52:36.640                                  *
* Ending Date... February 17, 2009                      *
* Time... 11:54:43.93                                    *
* Elapsed Time... 2.108 minutes.                         *
* Elapsed Time... 126.452 seconds.                      *
*****

```



```

*****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)  *
*   Version 4.4H                         *
*   *                                   *
*   CDM/OSU Ongoing Version 4.4h         *
*   Release Date - July 30, 2004         *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

```

Developed by

```

*****
*   Metcalf & Eddy, Inc.                 *
*   University of Florida                 *
*   Water Resources Engineers, Inc.      *
*   (Now Camp Dresser & McKee, Inc.)    *
*   September 1970                      *
*****

```

Version 4.3 (outdated) is
Distributed and Maintained by

```

*****
*   U.S. Environmental Protection Agency *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road            *
*   Athens, GA 30605-2720              *
*****

```

```

*****
*   This is an updated release of SWMM4.4h. *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                 *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.          *
*   The EPA-supported version is SWMM5 at: *
*   http://www.epa.gov/ednrmr1/swmm/index.htm *
*****

```

```

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da Vinci *
*****

```

```

#####
#   File names by SWMM Block   #
#   JIN -> Input to a Block   #
#   JOUT -> Output from a Block #
#####

```

```

JIN for Block # 1 File # 9 C:\GIGHAR-1\Trunk2.int
JOUT for Block # 1 File # 10 Textint.int

```

```

#####
# Scratch file names for this simulation. #
#####

```

```

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

```

```

*****
* Parameter Values on the Tapes Common Block *
*****

```

```

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU)..... 20
Number of Groundwater Plot/prints in Runoff (NGW)..... 400
Number of Interface Locations for all Blocks (NIE)..... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG).... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```


Number of Allowable Precip. values/yr in Rain (LIMRN). 5000
Number of Storm Events for Rain Analysis (LSTORM).....20000
Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
Number Conduits for Extran Results to ASCII
File (MXFLOW)..... 400

Trunk2.out

```
#####  
# Entry made to the Transport Block, last updated #  
# by Oregon State University, April 2002. #  
#####  
# "The sewer is the conscience of the city." #  
# Victor Hugo (1862) #  
#####
```

Gig Harbor 2008 Storm System Transport Analysis
Trunkline 2 Improved System

```
*****  
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *  
* ----- *  
* The default values are used if line B0 *  
* is not part of the TRANSPORT input data. *  
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *  
* IDetail=0 *  
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0  
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..  
Vertical/horizontal trapezoid side slope....(ITRAP=0)... 0  
Horizontal/vertical trapezoid side slope....(ITRAP=1)...  
Default input of flow/pollutants on line R1...(IFLIP=0)... 0  
Input flow/pollutants on one R1 line....(IFLIP=1)...  
Include only hydrograph input(s) on printout.(INFLEW=0).. 0  
Include all input(s) on input printout.....(INFLEW=1)..  
Normal division of irregular section data...(IDetail=0).. 0  
Subdivide lowermost equal area segment.....(IDetail=1)..  
Print intermediate headers in tables.....(NOHEAD=0).. 0  
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 8760  
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0  
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0  
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 7  
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1  
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0  
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0  
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

==> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:

```
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0  
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0  
CALL INFILTRATION ROUTINE (NINFIL)..... 0  
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0  
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0  
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100  
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00  
STARTING TIME OF DAY IN HOURS..... 0.00  
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05  
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####  
# Header information from interface file: #  
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff block  
Initial Julian date (IDATEZ)..... 1963001  
Initial time of day in seconds (TZERO)..... 0.0  
No. transferred input locations..... 7  
No. transferred pollutants..... 0  
Size of total catchment area (acres)..... 1100.00  
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####  
# Element numbers of interface inlet locations: #  
#####
```

```
9392      8371      8577      8591      7235      8562      8395
```

Conversion factor to cfs for flow units
on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1963/ 1/ 1

STARTING TIME OF DAY HR:MN:SEC = 0/ 0/ 0 Trunk2.out

1 THERE WERE 49 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

* ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

* NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 50 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	1	UPSTREAM ELEMENTS (EXTERNAL NOS.) 2	3	ORDER OF COMPUTATIONS AT COMPUTATION SEQUENCE	EXTERNAL NUMBER	INTERNAL NUMBER	STEP (PROCEEDING DOWNSTREAM) INTERNAL ELEMENT NUMBERS	UPSTREAM NUMBERS
7235	1	19	MANHOLE	53	0	0	1	9392	23	50	50
7241	2	19	MANHOLE	38	0	0	2	52	41	23	50
8361	3	19	MANHOLE	44	0	0	3	8399	11	41	50
8363	4	19	MANHOLE	43	0	0	4	39	28	11	50
8367	5	19	MANHOLE	42	0	0	5	8395	10	28	50
8371	6	19	MANHOLE	58	0	0	6	40	29	10	50
8377	7	19	MANHOLE	57	0	0	7	8391	9	29	50
8389	8	19	MANHOLE	41	0	0	8	41	30	9	50
8391	9	19	MANHOLE	40	0	0	9	8389	8	30	50
8395	10	19	MANHOLE	39	0	0	10	57	46	8	50
8399	11	19	MANHOLE	52	0	0	11	8377	7	46	50
8548	12	19	MANHOLE	51	0	0	12	58	47	7	50
8554	13	19	MANHOLE	50	0	0	13	8371	6	47	50
8560	14	19	MANHOLE	54	0	0	14	42	31	6	50
8562	15	19	MANHOLE	59	0	0	15	8367	5	31	50
8577	16	19	MANHOLE	60	0	0	16	43	32	5	50
8579	17	19	MANHOLE	49	0	0	17	8363	4	32	50
8583	18	19	MANHOLE	48	0	0	18	44	33	4	50
8591	19	19	MANHOLE	47	0	0	19	8361	3	33	50
8592	20	19	MANHOLE	55	0	0	20	59	48	3	50
8615	21	19	MANHOLE	46	0	0	21	8562	15	48	50
8634	22	19	MANHOLE	45	0	0	22	54	43	15	50
9392	23	19	MANHOLE	0	0	0	23	8560	14	43	50
994	24	19	MANHOLE	56	0	0	24	50	39	14	50
9999	25	19	MANHOLE	37	0	0	25	8554	13	39	50
37	26	1	CIRCULAR	7241	0	0	26	51	40	13	50
38	27	1	CIRCULAR	7235	0	0	27	8548	12	40	50
39	28	1	CIRCULAR	8399	0	0	28	60	49	12	50
40	29	1	CIRCULAR	8395	0	0	29	8577	16	49	50
41	30	1	CIRCULAR	8391	0	0	30	49	38	16	50
42	31	1	CIRCULAR	8371	0	0	31	8579	17	38	50
43	32	1	CIRCULAR	8367	0	0	32	48	37	17	50
44	33	1	CIRCULAR	8363	0	0	33	8583	18	37	50
45	34	1	CIRCULAR	8615	0	0	34	47	36	18	50
46	35	1	CIRCULAR	8592	0	0	35	8591	19	36	50
47	36	1	CIRCULAR	8583	0	0	36	56	45	19	50
48	37	1	CIRCULAR	8579	0	0	37	994	24	45	50
49	38	1	CIRCULAR	8577	0	0	38	55	44	24	50
50	39	1	CIRCULAR	8560	0	0	39	8592	20	44	50
51	40	1	CIRCULAR	8554	0	0	40	46	35	20	50
52	41	1	CIRCULAR	9392	0	0	41	8615	21	35	50
53	42	1	CIRCULAR	8634	0	0	42	45	34	21	50
54	43	1	CIRCULAR	8562	0	0	43	8634	22	34	50
55	44	1	CIRCULAR	994	0	0	44	53	42	22	50
56	45	1	CIRCULAR	8591	0	0	45	7235	1	42	50
57	46	1	CIRCULAR	8389	0	0	46	38	27	1	50
58	47	1	CIRCULAR	8377	0	0	47	7241	2	27	50
59	48	1	CIRCULAR	8361	0	0	48	37	26	2	50
60	49	1	CIRCULAR	8548	0	0	49	9999	25	26	50

1

* DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
* (internal number - external number) *

25 9999

1

* TRANSPORT ELEMENT PARAMETERS *
*
* CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
* TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. NUM.	TY PE	TYPE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ.FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
7235	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
7241	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8361	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8363	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8367	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8371	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8377	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8389	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8391	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8395	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8399	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8548	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8554	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8560	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8562	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8577	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8579	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8583	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8591	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8592	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8615	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8634	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				

```
#####
# Transport Block Flow Continuity #
#####
```

* Surcharge did not occur in this Transport simulation.

```

*****
* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *
*****

```

* Total flow and mass (kg) out of all elements *

Page 4

Trunk2.out

58 1.45E+06
8371 1.96E+06
42 1.96E+06
8367 1.96E+06
43 1.96E+06
8363 1.96E+06
44 1.96E+06
8361 1.96E+06
59 1.96E+06
8562 4.84E+06
54 4.84E+06
8560 4.84E+06
50 4.84E+06
8554 4.84E+06
51 4.84E+06
8548 4.84E+06
60 4.84E+06
8577 6.05E+06
49 6.05E+06
8579 6.05E+06
48 6.05E+06
8583 6.05E+06
47 6.05E+06
8591 7.88E+06
56 7.88E+06
994 7.88E+06
55 7.88E+06
8592 7.88E+06
46 7.88E+06
8615 7.88E+06
45 7.88E+06
8634 7.88E+06
53 7.88E+06
7235 8.94E+06
38 8.94E+06
7241 8.94E+06
37 8.94E+06
9999 8.94E+06

The Total Simulation Time = 31536000.0 seconds.
525600.00 minutes.
8760.000 hours.
The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1964/ 1/ 1
The ending time of day..... 0.000 seconds.

AVERAGE FLOW.....	0.018	0.046	0.062	0.062	0.192	0.250	0.283
STANDARD DEVIATION OF FLOW.....	0.001	0.002	0.003	0.003	0.010	0.013	0.014
MAXIMUM FLOW.....	3.916	9.721	12.893	12.786	41.064	54.518	62.756
MINIMUM FLOW.....	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FLOW VOLUME (CUBIC FEET).....	5.79E+05	1.45E+06	1.96E+06	1.96E+06	6.05E+06	7.88E+06	8.94E+06

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR-1\Trunk21.DAT
====> Your output file was named: C:\GIGHAR-1\Trunk2.out

* SWMM 4.4H Simulation Date and Time Summary *

* Starting Date... February 17, 2009 *
* Time... 11:56:26.484 *
* Ending Date... February 17, 2009 *
* Time... 11:56:29.328 *
* Elapsed Time... 0.047 minutes. *
* Elapsed Time... 2.842 seconds. *

```

1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)   *
*   Version 4.4H                           *
*                                           *
*   CDM/OSU Ongoing Version 4.4h           *
*   Release Date - July 30, 2004          *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
*   Metcalf & Eddy, Inc.                   *
*   University of Florida                   *
*   Water Resources Engineers, Inc.         *
*   (Now Camp Dresser & McKee, Inc.)       *
*   September 1970                         *
*****

Version 4.3 (outdated) is
distributed and Maintained by

*****
*   U.S. Environmental Protection Agency   *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road              *
*   Athens, GA 30605-2720                 *
*****

*****
*   This is an updated release of SWMM4.4h, *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model  *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                   *
*   or Robert Dickinson at Camp Dresser &   *
*   McKee, DickinsonRE@CDM.COM.            *
*   The EPA-supported version is SWMM5 at:  *
*   http://www.epa.gov/ednrmrl/swmm/index.htm *
*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da vinci *
*****

#####
#   File names by SWMM Block               #
#   JIN -> Input to a Block                #
#   JOUT -> Output from a Block            #
#####

JIN for Block # 1 File # 9 C:\GIGHAR~1\EXTRUN~2.INT
JOUT for Block # 1 File # 10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
*   Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA).. 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG).... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```

```

Number of Allowable Precip. values/yr in Rain (LIMRN). 5000
Number of Storm Events for Rain Analysis (LSTORM).....20000
Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
Number Conduits for Extran Results to ASCII
File (MXFLOW)..... 400

```

ExTrunk 3_I.out

```

#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002.
#####
# "The sewer is the conscience of the city." #
# Victor Hugo (1862)#
#####

```

Gig Harbor 2008 Storm System Transport Analysis Trunkline 3.1 Existing System

```

*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
*-----*
* The default values are used if line B0 *
* is not part of the TRANSPORT input data. *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *
* IDetail=0 *
*****

```

```

use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope....(ITRAP=0)... 0
Horizontal/vertical trapezoid side slope....(ITRAP=1)...
Default input of flow/pollutants on line R1...(IFLIP=0)... 0
Input flow/pollutants on one R1 line....(IFLIP=1)...
Include only hydrograph input(s) on printout...(INFLEW=0).. 0
Include all input(s) on input printout....(INFLEW=1)..
Normal division of irregular section data...(IDetail=0)... 0
Subdivide lowermost equal area segment....(IDetail=1)..
Print intermediate headers in tables.....(NOHEAD=0).. 0
Do not print intermediate headers in table...(NOHEAD=1)..

```

```

NUMBER OF TIME STEPS (NDT)..... 420768
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN).. 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 1
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4

```

NO SIMULATION OF LINKED DO (NWQ = 0).

====> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```

FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0

```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```

SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00

```

```

#####
# Header information from interface file: #
#####

```

Title from first computational block:

Title from immediately preceding computational block:

```

Name of preceding block:.....Runoff Block
Initial Julian date (IDATEZ)..... 1948275
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 2
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0

```

```

#####
# Element numbers of interface inlet locations: #
#####
8837 8458

```

Conversion factor to cfs for flow units
on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1948/10/ 1

STARTING TIME OF DAY HR:MN:SEC

= 0/ 0/ 0

ExTrunk 3_I.out

1 THERE WERE 15 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

 * ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

 * NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 16 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATIONS SEQUENCE	AT EACH TIME STEP (PROCEEDING DOWNSTREAM)				
				1	2	3		EXTERNAL NUMBER	INTERNAL NUMBER	INTERNAL ELEMENT NUMBER	UPSTREAM NUMBERS	
5010	1	19	MANHOLE	124	0	0	1	8837	7	16	16	16
8456	2	19	MANHOLE	122	0	0	2	121	12	7	16	16
8458	3	19	MANHOLE	118	0	0	3	8839	8	12	16	16
8490	4	19	MANHOLE	119	0	0	4	122	13	8	16	16
8492	5	19	MANHOLE	120	0	0	5	8456	2	13	16	16
8496	6	19	MANHOLE	123	0	0	6	118	9	2	16	16
8837	7	19	MANHOLE	0	0	0	7	8458	3	9	16	16
8839	8	19	MANHOLE	121	0	0	8	119	10	3	16	16
118	9	1	CIRCULAR	8456	0	0	9	8490	4	10	16	16
119	10	1	CIRCULAR	8458	0	0	10	120	11	4	16	16
120	11	1	CIRCULAR	8490	0	0	11	8492	5	11	16	16
121	12	1	CIRCULAR	8837	0	0	12	123	14	5	16	16
122	13	1	CIRCULAR	8839	0	0	13	8496	6	14	16	16
123	14	1	CIRCULAR	8492	0	0	14	124	15	6	16	16
124	15	1	CIRCULAR	8496	0	0	15	5010	1	15	16	16

1

 * DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
 * (internal number - external number) *

1 5010

1

 * TRANSPORT ELEMENT PARAMETERS *
 *
 * CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
 * TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. NUM.	TY PE	NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
5010	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8456	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8458	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8490	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8492	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8496	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8837	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8839	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
118	1	CIRCULAR	4.9E-02	139.15	0.0140	1.50	0.00	0.00	1.0	1.77	22.	23.	YES
119	1	CIRCULAR	7.9E-03	78.71	0.0140	1.50	0.00	0.00	1.0	1.77	8.7	9.3	NO
120	1	CIRCULAR	8.7E-03	83.50	0.0140	1.50	0.00	0.00	1.0	1.77	9.1	9.8	NO
121	1	CIRCULAR	5.8E-02	174.70	0.0140	1.50	0.00	0.00	1.0	1.77	23.	25.	YES
122	1	CIRCULAR	2.9E-02	27.17	0.0140	1.50	0.00	0.00	1.0	1.77	17.	18.	YES
123	1	CIRCULAR	9.3E-03	206.68	0.0140	1.50	0.00	0.00	1.0	1.77	9.4	10.	NO
124	1	CIRCULAR	0.1	9.16	0.0240	2.00	0.00	0.00	1.0	3.14	40.	44.	YES

 # Transport Block Flow Continuity #
 #####

Sum of WET WEATHER Inflow..... 6.573E+07 cubic feet 16.4624 inches
 Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
 Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
 Sum of MANHOLE CONSTANT Inflow... 0.000E+00 cubic feet 0.0000 inches
 INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
 REMAINING VOLUME IN CONDUITS.... 1.905E-03 cubic feet 0.0000 inches
 Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches
 Sum of FINAL WET WELL VOLUME.... 0.000E+00 cubic feet 0.0000 inches
 Sum of TRANSPORT Outflows..... 6.572E+07 cubic feet 16.4594 inches
 A. Sum of INITIAL VOLUME + Inflows 6.573E+07 cubic feet 16.4624 inches
 B. Sum REMAINING VOLUME + Outflows 6.572E+07 cubic feet 16.4594 inches
 Percent flow continuity error.... -0.018 = (B-A)/B * 100

1

 * CONDUIT SURCHARGE SUMMARY *

ELEMENT NUMBER	STARTING JULIAN DATE	STARTING TIME OF DAY(SEC)	ENDING JULIAN DATE	ENDING TIME OF DAY(SEC)	SURCHARGE LENGTH MINUTES	FULL FLOW (CFS)	PEAK FLW RATIO Qp/QFULL	SURCHARGE PEAK VOL. (CF)
119	1960239	64800	1960239	64800	0.00	8.66	1.21	6.54E+03

 * TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
121	420768	1	0.0000	6.004	5.76E-02	5.76E-02	5.76E-02	5.79E-02	3.67E+07

Element Number	Flow (CF)	Mass (kg)	Flow (CF)	Mass (kg)	Flow (CF)	Mass (kg)	Flow (CF)	Mass (kg)	Flow (CF)	Mass (kg)
122	420768	1	0.0000	6.007	2.94E-02	2.94E-02	2.94E-02	2.94E-02	3.67E+07	
118	420768	1	0.0000	6.020	4.94E-02	4.94E-02	4.94E-02	4.94E-02	3.67E+07	
119	520009	4	0.0073	8.682	7.88E-03	8.04E-03	7.88E-03	7.87E-03	6.57E+07	
120	509753	4	0.0011	8.711	8.74E-03	8.89E-03	8.74E-03	8.78E-03	6.57E+07	
123	483120	4	0.0010	8.776	9.34E-03	9.48E-03	9.34E-03	9.31E-03	6.57E+07	
124	420768	1	0.0000	8.778	1.09E-01	1.09E-01	1.09E-01	1.09E-01	6.57E+07	

 * Total flow and mass (kg) out of all elements *

Element Number	Total Flow-CF
8837	3.67E+07
121	3.67E+07
8839	3.67E+07
122	3.67E+07
8456	3.67E+07
118	3.67E+07
8458	6.57E+07
119	6.57E+07
8490	6.57E+07
120	6.57E+07
8492	6.57E+07
123	6.57E+07
8496	6.57E+07
124	6.57E+07
5010	6.57E+07

The Total Simulation Time =1514764800.0 seconds.
 25246080.00 minutes.
 420768.000 hours.
 The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1996/10/ 1
 The ending time of day..... 0.000 seconds.

AVERAGE FLOW..... 0.043
 STANDARD DEVIATION OF FLOW..... 0.000
 MAXIMUM FLOW..... 8.778
 MINIMUM FLOW..... 0.000
 FLOW VOLUME (CUBIC FEET)..... 6.57E+07

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
 Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR~1\EX865B~1.DAT
 ====> Your output file was named: C:\GIGHAR~1\EXTRUN~2.OUT

 * SWMM 4.4H simulation Date and Time Summary *

 * Starting Date... February 17, 2009 *
 * Time... 14: 1: 7.828 *
 * Ending Date... February 17, 2009 *
 * Time... 14: 1:50.562 *
 * Elapsed Time... 0.712 minutes. *
 * Elapsed Time... 42.735 seconds. *

```

1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)   *
*   Version 4.4H                           *
*   *                                     *
*   CDM/OSU Ongoing Version 4.4h           *
*   Release Date - July 30, 2004          *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
*   Metcalf & Eddy, Inc.                   *
*   University of Florida                   *
*   Water Resources Engineers, Inc.        *
*   (Now Camp Dresser & McKee, Inc.)       *
*   September 1970                         *
*****

Version 4.3 (outdated) is
Distributed and Maintained by

*****
*   U.S. Environmental Protection Agency   *
*   Center for Exposure Assessment Modeling (CEAM) *
*   Athens Environmental Research Laboratory *
*   960 College Station Road              *
*   Athens, GA 30605-2720                 *
*****

*****
*   This is an updated release of SWMM4.4h, *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model *
*   contact Wayne Huber at Oregon State, U., *
*   wayne.huber@orst.edu,                  *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.           *
*   The EPA-supported version is SWMM5 at: *
*   http://www.epa.gov/ednrmrl/swmm/index.htm *
*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da Vinci *
*****

#####
#   File names by SWMM Block   #
#   JIN -> Input to a Block   #
#   JOUT -> Output from a Block #
#####

JIN for Block # 1 File # 9 C:\GIGHAR-1\EXTRUN-3.INT
JOUT for Block # 1 File # 10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
*   Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU)..... 20
Number of Groundwater Plot/prints in Runoff (NGW)..... 400
Number of Interface Locations for all Blocks (NIE)..... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG).... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NIVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```

ExTrunk 3 _II.out
 Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

```
#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002.         #
#####
# "The sewer is the conscience of the city."      #
# Victor Hugo (1862)#
#####
```

Gig Harbor 2008 Storm System Transport Analysis Trunkline 3.2 Existing System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
*-----*
* The default values are used if line B0        *
* is not part of the TRANSPORT input data.      *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0           *
* IDETAIL=0                                     *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope.....(ITRAP=0)... 0
Horizontal/vertical trapezoid side slope.....(ITRAP=1)...
Default input of flow/pollutants on line R1...(IFLIP=0)... 0
Input flow/pollutants on one R1 line.....(IFLIP=1)...
Include only hydrograph input(s) on printout...(INFLEW=0).. 0
Include all input(s) on input printout.....(INFLEW=1)..
Normal division of irregular section data...(IDETAIL=0).. 0
Subdivide lowermost equal area segment.....(IDETAIL=1)..
Print intermediate headers in tables.....(NOHEAD=0).. 0
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 420768
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 1
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

==== WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff block
Initial Julian date (IDATEZ)..... 1948275
Initial time of day in seconds (TZERO)..... 0.0
No. transfered input locations..... 2
No. transfered pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
919 921
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1948/10/ 1

STARTING TIME OF DAY HR:MN:SEC = 0/ 0/ 0 ExTrunk 3 _II.out

1 THERE WERE 13 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

* ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

* NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 14 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	1	UPSTREAM ELEMENTS (EXTERNAL NOS.)	2	3	ORDER OF COMPUTATIONS SEQUENCE	EXTERNAL NUMBER	AT EACH TIME INTERNAL NUMBER	STEP (PROCEEDING INTERNAL UPSTREAM ELEMENT NUMBERS	DOWNSTREAM)
919	1	19	MANHOLE	0	0	0	0	1	919	1	14	14
921	2	19	MANHOLE	108	0	0	0	2	108	8	1	14
925	3	19	MANHOLE	114	0	0	0	3	921	2	8	14
929	4	19	MANHOLE	113	0	0	0	4	114	13	2	14
933	5	19	MANHOLE	112	0	0	0	5	925	3	13	14
937	6	19	MANHOLE	111	0	0	0	6	113	12	3	14
939	7	19	MANHOLE	109	0	0	0	7	929	4	12	14
108	8	1	CIRCULAR	919	0	0	0	8	112	11	4	14
109	9	1	CIRCULAR	937	0	0	0	9	933	5	11	14
111	10	1	CIRCULAR	933	0	0	0	10	111	10	5	14
112	11	1	CIRCULAR	929	0	0	0	11	937	6	10	14
113	12	1	CIRCULAR	925	0	0	0	12	109	9	6	14
114	13	1	CIRCULAR	921	0	0	0	13	939	7	9	14

1

* DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
* (internal number - external number) *

7 939

1

* TRANSPORT ELEMENT PARAMETERS *

* CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
* TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. TY NUM. PE	TYPE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
919 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
921 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
925 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
929 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
933 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
937 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
939 19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
108 1	CIRCULAR	1.6E-03	120.88	0.0120	1.50	0.00	0.00	1.0	1.77	4.5	4.9	NO
109 1	CIRCULAR	4.3E-02	22.75	0.0120	1.50	0.00	0.00	1.0	1.77	24.	26.	YES
111 1	CIRCULAR	3.6E-02	112.04	0.0120	1.50	0.00	0.00	1.0	1.77	22.	23.	YES
112 1	CIRCULAR	2.4E-02	222.29	0.0120	1.50	0.00	0.00	1.0	1.77	18.	19.	YES
113 1	CIRCULAR	2.4E-02	219.15	0.0120	1.50	0.00	0.00	1.0	1.77	18.	19.	YES
114 1	CIRCULAR	4.1E-02	300.83	0.0120	1.50	0.00	0.00	1.0	1.77	23.	25.	YES

Transport Block Flow Continuity #
#####

Sum of WET WEATHER Inflow..... 8.474E+07 cubic feet 21.2214 inches
Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of MANHOLE CONSTANT Inflow... 0.000E+00 cubic feet 0.0000 inches
INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
REMAINING VOLUME IN CONDUITS..... 2.005E-03 cubic feet 0.0000 inches
Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches
Sum of FINAL WET WELL VOLUME..... 0.000E+00 cubic feet 0.0000 inches
Sum of TRANSPORT Outflows..... 8.477E+07 cubic feet 21.2304 inches
A. Sum of INITIAL VOLUME + Inflows 8.474E+07 cubic feet 21.2214 inches
B. Sum REMAINING VOLUME + Outflows 8.477E+07 cubic feet 21.2304 inches
Percent flow continuity error.... 0.043 = (B-A)/B * 100

1

* CONDUIT SURCHARGE SUMMARY *

ELEMENT NUMBER	STARTING JULIAN DATE	STARTING TIME OF DAY(SEC)	ENDING JULIAN DATE	ENDING TIME OF DAY(SEC)	SURCHARGE LENGTH MINUTES	FULL FLOW (CFS)	PEAK FLW RATIO Qp/QFULL	SURCHARGE PEAK VOL. (CF)
108	1957260	64800	1983241	72000	540.00	4.51	2.34	2.18E+04

* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
108	555448	4	0.0310	4.744	1.57E-03	1.79E-03	1.57E-03	1.58E-03	6.57E+07
114	420768	1	0.0000	7.400	4.14E-02	4.14E-02	4.12E-02	4.12E-02	8.47E+07
113	420768	1	0.0000	7.416	2.40E-02	2.40E-02	2.40E-02	2.40E-02	8.47E+07
112	420768	1	0.0000	7.432	2.43E-02	2.43E-02	2.43E-02	2.44E-02	8.47E+07
111	420768	1	0.0000	7.439	3.65E-02	3.65E-02	3.65E-02	3.63E-02	8.48E+07

109 420768 1 0.0000 ExTrunk 3 _II.out
7.438 4.33E-02 4.33E-02 4.33E-02 4.31E-02 8.48E+07

* Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
919	6.58E+07
108	6.57E+07
921	8.47E+07
114	8.47E+07
925	8.47E+07
113	8.47E+07
929	8.47E+07
112	8.47E+07
933	8.47E+07
111	8.48E+07
937	8.48E+07
109	8.48E+07
939	8.48E+07

The Total simulation Time =1514764800.0 seconds.
25246080.00 minutes.
420768.000 hours.
The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1996/10/ 1
The ending time of day..... 0.000 seconds.

AVERAGE FLOW..... 0.056
STANDARD DEVIATION OF FLOW..... 0.000
MAXIMUM FLOW..... 7.438
MINIMUM FLOW..... 0.000
FLOW VOLUME (CUBIC FEET)..... 8.48E+07

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR~1\EXAFB4~1.DAT
====> Your output file was named: C:\GIGHAR~1\EXTRUN~3.OUT

* SWMM 4.4H Simulation Date and Time Summary *

* Starting Date... February 17, 2009 *
* Time... 14: 3:28.406 *
* Ending Date... February 17, 2009 *
* Time... 14: 4: 5.812 *
* Elapsed Time... 0.623 minutes. *
* Elapsed Time... 37.406 seconds. *

```

1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)   *
*   Version 4.4H                           *
*                                           *
*   CDM/OSU Ongoing Version 4.4h           *
*   Release Date - July 30, 2004          *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

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*   Metcalf & Eddy, Inc.                   *
*   University of Florida                   *
*   Water Resources Engineers, Inc.         *
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*   September 1970                         *
*****

Version 4.3 (outdated) is
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*****
*   U.S. Environmental Protection Agency   *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road              *
*   Athens, GA 30605-2720                 *
*****

*****
*   This is an updated release of SWMM4.4h. *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model  *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                   *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.            *
*   The EPA-supported version is SWMM5 at:  *
*   http://www.epa.gov/ednrmr1/swmm/index.htm *
*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da vinci *
*****

#####
#   File names by SWMM Block               #
#   JIN -> Input to a Block                #
#   JOUT -> Output from a Block            #
#####

JIN for block # 1 File # 9 C:\GIGHAR-1\EXTRUN-1.INT
JOUT for block # 1 File # 10 Textint.int

#####
# Scratch File names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
* Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG).... 1000
Number of Extran weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of variable Orifice Data Points (NVOTIM)..... 50

```

ExTrunk 3_III.out
 Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

```
#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002.         #
#####
# "The sewer is the conscience of the city."       #
# Victor Hugo (1862)#
#####
```

Gig Harbor 2008 storm System Transport Analysis
 Trunkline 3.3 Existing System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
*-----*
* The default values are used if line B0        *
* is not part of the TRANSPORT input data.      *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0           *
* IDETAIl=0                                     *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope....(ITRAP=0).... 0
Horizontal/vertical trapezoid side slope....(ITRAP=1)....
Default input of flow/pollutants on line R1...(IFLIP=0).... 0
Input flow/pollutants on one R1 line....(IFLIP=1)....
Include only hydrograph input(s) on printout...(INFLEW=0).. 0
Include all input(s) on input printout....(INFLEW=1)..
Normal division of irregular section data...(IDETAIl=0).. 0
Subdivide lowermost equal area segment....(IDETAIl=1)..
Print intermediate headers in tables....(NOHEAD=0).... 0
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 420768
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 0
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

====> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff Block
Initial Julian date (IDATEZ)..... 1948275
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 4
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
957 959 5008 5009
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1948/10/ 1

STARTING TIME OF DAY HR:MN:SEC = 0/ 0/ 0 ExTrunk 3_III.out

1THERE WERE 29 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

* ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

* NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 30 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	1	2	3	ORDER OF COMPUTATIONS SEQUENCE	EXTERNAL NUMBER	INTERNAL NUMBER	INTERNAL UPSTREAM ELEMENT	STEP (PROCEEDING DOWNSTREAM) NUMBERS
114	1	19	MANHOLE	106	0	0	1	957	13	30	30
5001	2	19	MANHOLE	103	0	0	2	110	21	13	30
5002	3	19	MANHOLE	78	0	0	3	959	14	21	30
5003	4	19	MANHOLE	80	0	0	4	125	22	14	30
5004	5	19	MANHOLE	104	0	0	5	74	12	22	30
5005	6	19	MANHOLE	84	0	0	6	107	20	12	30
5006	7	19	MANHOLE	105	0	0	7	72	11	20	30
5007	8	19	MANHOLE	88	0	0	8	103	16	11	30
5008	9	19	MANHOLE	126	0	0	9	5001	2	16	30
5009	10	19	MANHOLE	91	0	0	10	78	25	2	30
72	11	19	MANHOLE	107	0	0	11	5002	3	25	30
74	12	19	MANHOLE	125	0	0	12	80	26	3	30
957	13	19	MANHOLE	0	0	0	13	5003	4	26	30
959	14	19	MANHOLE	110	0	0	14	104	17	4	30
999	15	19	MANHOLE	127	0	0	15	5004	5	17	30
103	16	1	CIRCULAR	72	0	0	16	84	27	5	30
104	17	1	CIRCULAR	5003	0	0	17	5005	6	27	30
105	18	1	CIRCULAR	5005	0	0	18	105	18	6	30
106	19	1	CIRCULAR	999	0	0	19	5006	7	18	30
107	20	1	CIRCULAR	74	0	0	20	88	28	7	30
110	21	1	CIRCULAR	957	0	0	21	5007	8	28	30
125	22	1	CIRCULAR	959	0	0	22	126	23	8	30
126	23	1	CIRCULAR	5007	0	0	23	5008	9	23	30
127	24	1	CIRCULAR	5009	0	0	24	91	29	9	30
78	25	13	TRAPEZOID	5001	0	0	25	5009	10	29	30
80	26	13	TRAPEZOID	5002	0	0	26	127	24	10	30
84	27	13	TRAPEZOID	5004	0	0	27	999	15	24	30
88	28	13	TRAPEZOID	5006	0	0	28	106	19	15	30
91	29	13	TRAPEZOID	5008	0	0	29	114	1	19	30

1

* DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
* (internal number - external number) *

1 114

1

* TRANSPORT ELEMENT PARAMETERS *

* CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
* TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. TY NUM. PE	TYPE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ.FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
114	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5001	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5002	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5003	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5004	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5005	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5006	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5007	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5008	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5009	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
72	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
74	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
957	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
959	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
999	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
103	1 CIRCULAR	5.0E-03	162.17	0.0120	1.50	0.00	0.00	1.0	1.77	8.0	8.7	NO
104	1 CIRCULAR	2.1E-02	20.92	0.0140	1.50	0.00	0.00	1.0	1.77	14.	15.	NO
105	1 CIRCULAR	3.5E-02	116.22	0.0140	1.00	0.00	0.00	1.0	0.79	6.1	6.6	YES
106	1 CIRCULAR	3.5E-02	65.15	0.0140	1.50	0.00	0.00	1.0	1.77	18.	20.	YES
107	1 CIRCULAR	2.1E-02	75.63	0.0120	1.50	0.00	0.00	1.0	1.77	17.	18.	YES
110	1 CIRCULAR	1.4E-02	36.37	0.0120	1.50	0.00	0.00	1.0	1.77	13.	15.	NO
125	1 CIRCULAR	1.1E-02	144.81	0.0120	1.50	0.00	0.00	1.0	1.77	12.	13.	NO
126	1 CIRCULAR	4.1E-02	31.51	0.0140	1.00	0.00	0.00	1.0	0.79	6.7	7.3	YES
127	1 CIRCULAR	6.5E-02	46.06	0.0140	1.50	0.00	0.00	1.0	1.77	25.	27.	YES
78	13 TRAPEZOID	1.4E-02	214.47	0.0300	3.17	5.83	1.00	1.0	28.50	2.59E+02	2.59E+02	NO
80	13 TRAPEZOID	5.0E-03	55.37	0.0300	1.92	3.08	1.00	1.0	9.58	36.	36.	NO
84	13 TRAPEZOID	4.0E-02	396.24	0.0300	1.83	2.75	1.00	1.0	8.40	86.	86.	NO
88	13 TRAPEZOID	3.8E-02	249.47	0.0300	1.92	2.92	1.00	1.0	9.26	95.	95.	NO
91	13 TRAPEZOID	3.2E-02	177.19	0.0300	1.83	2.50	1.00	1.0	7.94	72.	72.	NO

1

* ELEMENT FLOWS, AREAS, AND CONCENTRATIONS ARE INITIALIZED *
* TO DRY WEATHER FLOW AND INFILTRATION VALUES. *

ELEMENT NUMBER	TYPE	FLOW (CFS)	AREA (SQ.FT)	VELOCITY (FT/SEC)	DEPTH (FT)
957	19	0.000	0.000	0.000	0.000
110	1	0.000	0.000	0.000	0.000
959	19	0.000	0.000	0.000	0.000


```

125 1 0.000 0.000 0.000 0.000
74 19 0.000 0.000 0.000 0.000
107 1 0.000 0.000 0.000 0.000
72 19 0.000 0.000 0.000 0.000
103 1 0.000 0.000 0.000 0.000
5001 19 0.000 0.000 0.000 0.000
78 13 0.000 0.000 0.000 0.000
5002 19 0.000 0.000 0.000 0.000
80 13 0.000 0.000 0.000 0.000
5003 19 0.000 0.000 0.000 0.000
104 1 0.000 0.000 0.000 0.000
5004 19 0.000 0.000 0.000 0.000
84 13 0.000 0.000 0.000 0.000
5005 19 0.000 0.000 0.000 0.000
105 1 0.000 0.000 0.000 0.000
5006 19 0.000 0.000 0.000 0.000
88 13 0.000 0.000 0.000 0.000
5007 19 0.000 0.000 0.000 0.000
126 1 0.000 0.000 0.000 0.000
5008 19 0.000 0.000 0.000 0.000
91 13 0.000 0.000 0.000 0.000
5009 19 0.000 0.000 0.000 0.000
127 1 0.000 0.000 0.000 0.000
999 19 0.000 0.000 0.000 0.000
106 1 0.000 0.000 0.000 0.000
114 19 0.000 0.000 0.000 0.000

```

```

#####
# Transport Block Flow Continuity #
#####

```

```

Sum of WET WEATHER Inflow..... 2.537E+08 cubic feet 63.5326 inches
Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of MANHOLE CONSTANT Inflow.. 0.000E+00 cubic feet 0.0000 inches
INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
REMAINING VOLUME IN CONDUITS.... 3.244E+00 cubic feet 0.0000 inches
Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches
Sum of FINAL WET WELL VOLUME.... 0.000E+00 cubic feet 0.0000 inches
Sum of TRANSPORT Outflows..... 2.543E+08 cubic feet 63.6866 inches
A, Sum of INITIAL VOLUME + Inflows 2.537E+08 cubic feet 63.5326 inches
B, Sum REMAINING VOLUME + Outflows 2.543E+08 cubic feet 63.6866 inches
Percent flow continuity error.... 0.242 = (B-A)/B * 100

```

1

```

*****
* CONDUIT SURCHARGE SUMMARY *
*****

```

ELEMENT NUMBER	STARTING JULIAN DATE	STARTING TIME OF DAY(SEC)	ENDING JULIAN DATE	ENDING TIME OF DAY(SEC)	SURCHARGE LENGTH MINUTES	FULL FLOW (CFS)	PEAK FLW RATIO Qp/QFULL	SURCHARGE PEAK VOL. (CF)
125	1960239	61200	1960239	68400	120.00	11.89	1.62	2.64E+04
103	1957260	72000	1991050	21600	540.00	8.05	2.43	4.13E+04
105	1957260	72000	1995189	79200	2340.00	6.15	2.91	4.23E+04
127	1960239	64800	1960239	64800	0.00	24.96	1.19	1.69E+04
106	1960239	64800	1960239	68400	60.00	18.35	1.64	4.23E+04

```

*****
* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *
*****

```

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
110	444971	4	0.0003	7.452	1.40E-02	1.41E-02	1.40E-02	1.41E-02	8.48E+07
125	483052	4	0.0012	11.912	1.09E-02	1.10E-02	1.09E-02	1.09E-02	1.56E+08
107	420768	1	0.0000	11.919	2.13E-02	2.13E-02	2.13E-02	2.14E-02	1.56E+08
103	533701	4	0.0070	8.610	5.00E-03	5.12E-03	5.00E-03	5.00E-03	1.56E+08
78	439103	4	0.0001	8.528	1.40E-02	1.40E-02	1.40E-02	1.40E-02	1.56E+08
80	537321	4	0.0013	8.502	5.00E-03	5.11E-03	5.00E-03	5.00E-03	1.56E+08
104	494092	4	0.0005	8.499	2.06E-02	2.08E-02	2.06E-02	2.06E-02	1.56E+08
84	420937	3	0.0001	8.419	3.99E-02	3.99E-02	3.99E-02	4.00E-02	1.56E+08
105	420768	1	0.0000	6.598	3.45E-02	3.45E-02	3.45E-02	3.44E-02	1.56E+08
88	420950	4	0.0001	6.663	3.75E-02	3.75E-02	3.75E-02	3.74E-02	1.56E+08
126	420768	1	0.0000	6.667	4.13E-02	4.13E-02	4.13E-02	4.12E-02	1.56E+08
91	421783	4	0.0001	29.642	3.21E-02	3.21E-02	3.21E-02	3.22E-02	2.54E+08
127	420768	1	0.0000	24.957	6.55E-02	6.55E-02	6.55E-02	6.58E-02	2.54E+08
106	420768	1	0.0000	19.393	3.54E-02	3.54E-02	3.54E-02	3.54E-02	2.54E+08

```

*****
* Total flow and mass (kg) out of all elements *
*****

```

ELEMENT NUMBER	TOTAL FLOW-CF
957	8.48E+07
110	8.48E+07
959	1.56E+08
125	1.56E+08
74	1.56E+08
107	1.56E+08
72	1.56E+08
103	1.56E+08
5001	1.56E+08
78	1.56E+08
5002	1.56E+08
80	1.56E+08
5003	1.56E+08

104	1.56E+08
5004	1.56E+08
84	1.56E+08
5005	1.57E+08
105	1.56E+08
5006	1.56E+08
88	1.56E+08
5007	1.56E+08
126	1.56E+08
5008	2.54E+08
91	2.54E+08
5009	2.54E+08
127	2.54E+08
999	2.54E+08
106	2.54E+08
114	2.54E+08

The Total Simulation Time =1514764800.0 seconds.
 25246080.00 minutes.
 420768.000 hours.
 The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1996/10/ 1
 The ending time of day..... 0.000 seconds.

Transport simulation ended normally.

====> Correct Block Name not found.
 ====> was found instead. Program stops.
 ====> Check your data input for the following problems:
 1. Using the wrong executable file.
 2. Too many hydrograph input data lines.
 3. SWMM Block is commented out of MAIN.FOR
 4. wrong input sequence of data (likely!).

====> Your input file was named : C:\GIGHAR~1\EXE399~1.DAT
 ====> Your output file was named: C:\GIGHAR~1\EXTRUN~1.OUT

```
*****
*      SWMM 4.4H  Simulation Date and Time Summary  *
*****
* Starting Date... February 17, 2009                *
* Time...          14: 5:58.781                      *
* Ending Date...   February 17, 2009                *
* Time...          14: 6:57.828                      *
* Elapsed Time...           0.984 minutes.           *
* Elapsed Time...           59.047 seconds.           *
*****
```



```

*****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)   *
*   Version 4.4H                         *
*   *                                     *
*   CDM/OSU Ongoing Version 4.4h         *
*   Release Date - July 30, 2004         *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

```

Developed by

```

*****
*   Metcalf & Eddy, Inc.                 *
*   University of Florida                 *
*   Water Resources Engineers, Inc.      *
*   (Now Camp Dresser & McKee, Inc.)     *
*   September 1970                      *
*****

```

Version 4.3 (outdated) is
Distributed and Maintained by

```

*****
*   U.S. Environmental Protection Agency *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road            *
*   Athens, GA 30605-2720              *
*****

```

```

*****
*   This is an updated release of SWMM4.4h. *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                 *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM,          *
*   The EPA-supported version is SWMM5 at: *
*   http://www.epa.gov/ednnrmrl/swmm/index.htm *
*****

```

```

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da Vinci *
*****

```

```

#####
#   File names by SWMM Block           #
#   JIN -> Input to a Block           #
#   JOUT -> Output from a Block        #
#####

```

```

JIN for Block #    1 File #    9 C:\GIGHAR-1\TRUNK3-2.INT
JOUT for Block #    1 File #   10 Textint.int

```

```

#####
# Scratch file names for this simulation. #
#####

```

```

NSCRAT #    1 File #    1 SCRT1.UF
NSCRAT #    2 File #    2 SCRT2.UF

```

```

*****
*   Parameter values on the Tapes Common Block *
*****

```

```

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO). 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG)... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```


Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

Trunk 3_I.out

```
#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002. #
#####
# "The sewer is the conscience of the city." #
# Victor Hugo (1862)#
#####
```

Gig Harbor 2008 Storm System Transport Analysis
 Trunkline 3.1 Improved System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
* ----- *
* The default values are used if line B0 *
* is not part of the TRANSPORT input data. *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *
* IDETAIL=0 *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope....(ITRAP=0)... 0
Horizontal/vertical trapezoid side slope....(ITRAP=1)...
Default input of flow/pollutants on line R1...(IFLIP=0)... 0
Input flow/pollutants on one R1 line....(IFLIP=1)...
Include only hydrograph input(s) on printout.(INFLEW=0).. 0
Include all input(s) on input printout....(INFLEW=1)..
Normal division of irregular section data ...(IDETAIL=0).. 0
Subdivide lowermost equal area segment....(IDETAIL=1)..
Print intermediate headers in tables....(NOHEAD=0).. 0
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 8760
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 1
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

==> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff Block
Initial Julian date (IDATEZ)..... 1963001
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 2
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
8837 8458
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1963/ 1/ 1

STARTING TIME OF DAY HR:MN:SEC

= 0/ 0/ 0

Trunk 3_I.out

1 THERE WERE 15 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

* ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

* NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 16 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATIONS COMPUTATION SEQUENCE	EXTERNALS AT EXTERNAL NUMBER	EACH TIME INTERNAL NUMBER	STEP (PROCEEDING INTERNAL ELEMENT	DOWNSTREAM) UPSTREAM NUMBERS
				1	2	3					
5010	1	19	MANHOLE	124	0	0	1	8837	7	16	16
8456	2	19	MANHOLE	122	0	0	2	121	12	7	16
8458	3	19	MANHOLE	118	0	0	3	8839	8	12	16
8490	4	19	MANHOLE	119	0	0	4	122	13	8	16
8492	5	19	MANHOLE	120	0	0	5	8456	2	13	16
8496	6	19	MANHOLE	123	0	0	6	118	9	2	16
8837	7	19	MANHOLE	0	0	0	7	8458	3	9	16
8839	8	19	MANHOLE	121	0	0	8	119	10	3	16
118	9	1	CIRCULAR	8456	0	0	9	8490	4	10	16
119	10	1	CIRCULAR	8458	0	0	10	120	11	4	16
120	11	1	CIRCULAR	8490	0	0	11	8492	5	11	16
121	12	1	CIRCULAR	8837	0	0	12	123	14	5	16
122	13	1	CIRCULAR	8839	0	0	13	8496	6	14	16
123	14	1	CIRCULAR	8492	0	0	14	124	15	6	16
124	15	1	CIRCULAR	8496	0	0	15	5010	1	15	16

1

* DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
* (internal number - external number) *

1 5010

1

* TRANSPORT ELEMENT PARAMETERS *

* CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
* TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. NUM.	TY PE	NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
5010	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8456	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8458	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8490	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8492	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8496	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8837	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8839	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
118	1	CIRCULAR	4.9E-02	139.15	0.0140	1.50	0.00	0.00	1.0	1.77	22.	23.	YES
119	1	CIRCULAR	7.9E-03	78.71	0.0140	1.50	0.00	0.00	1.0	1.77	8.7	9.3	NO
120	1	CIRCULAR	8.7E-03	83.50	0.0140	1.50	0.00	0.00	1.0	1.77	9.1	9.8	NO
121	1	CIRCULAR	5.8E-02	174.70	0.0140	1.50	0.00	0.00	1.0	1.77	23.	25.	YES
122	1	CIRCULAR	2.9E-02	27.17	0.0140	1.50	0.00	0.00	1.0	1.77	17.	18.	YES
123	1	CIRCULAR	9.3E-03	206.68	0.0140	1.50	0.00	0.00	1.0	1.77	9.4	10.	NO
124	1	CIRCULAR	0.1	9.16	0.0240	2.00	0.00	0.00	1.0	3.14	40.	44.	YES

Transport Block Flow Continuity #
#####

Sum of WET WEATHER Inflow..... 1.275E+06 cubic feet 0.3193 inches
Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
Sum of MANHOLE CONSTANT Inflow... 0.000E+00 cubic feet 0.0000 inches
INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
REMAINING VOLUME IN CONDUITS..... 1.160E-02 cubic feet 0.0000 inches
Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches
Sum of FINAL WET WELL VOLUME.... 0.000E+00 cubic feet 0.0000 inches
Sum of TRANSPORT Outflows..... 1.274E+06 cubic feet 0.3192 inches
A.Sum of INITIAL VOLUME + Inflows 1.275E+06 cubic feet 0.3193 inches
B.Sum REMAINING VOLUME + Outflows 1.274E+06 cubic feet 0.3192 inches
Percent flow continuity error.... -0.044 = (B-A)/B * 100

* Surcharge did not occur in this Transport simulation. *

* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
121	8760	1	0.0000	4.180	5.76E-02	5.76E-02	5.76E-02	5.76E-02	7.12E+05
122	8760	1	0.0000	4.173	2.94E-02	2.94E-02	2.94E-02	2.94E-02	7.12E+05
118	8760	1	0.0000	4.145	4.94E-02	4.94E-02	4.94E-02	4.94E-02	7.12E+05
119	10855	4	0.0008	7.322	7.88E-03	7.88E-03	7.88E-03	7.88E-03	1.27E+06
120	10696	4	0.0006	7.273	8.74E-03	8.74E-03	8.74E-03	8.75E-03	1.27E+06
123	10076	4	0.0006	7.156	9.34E-03	9.34E-03	9.34E-03	9.34E-03	1.27E+06

124 8760 1 0.0000 7.153 1.09E-01 1.09E-01 1.09E-01 1.09E-01 1.27E+06 Trunk 3_I.out

 * Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
8837	7.13E+05
121	7.12E+05
8839	7.12E+05
122	7.12E+05
8456	7.12E+05
118	7.12E+05
8458	1.27E+06
119	1.27E+06
8490	1.27E+06
120	1.27E+06
8492	1.27E+06
123	1.27E+06
8496	1.27E+06
124	1.27E+06
5010	1.27E+06

The Total Simulation Time = 31536000.0 seconds.
 525600.00 minutes.
 8760.000 hours.
 The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1964/ 1/ 1
 The ending time of day..... 0.000 seconds.

AVERAGE FLOW..... 0.040
 STANDARD DEVIATION OF FLOW..... 0.002
 MAXIMUM FLOW..... 7.153
 MINIMUM FLOW..... 0.000
 FLOW VOLUME (CUBIC FEET)..... 1.27E+06

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
 Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR~1\TRDD44~1.DAT
 ====> Your output file was named: C:\GIGHAR~1\TRUNK3~2.OUT

 * SWMM 4.4H simulation Date and Time Summary *

 * Starting Date... February 17, 2009 *
 * Time... 13:45: 2.109 *
 * Ending Date... February 17, 2009 *
 * Time... 13:45: 3. 62 *
 * Elapsed Time... 0.016 minutes. *
 * Elapsed Time... 0.953 seconds. *

1

Trunk 3 _II.out

```

*****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)   *
*   Version 4.4H                           *
*                                           *
*   CDM/OSU Ongoing Version 4.4h           *
*   Release Date - July 30, 2004          *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

```

Developed by

```

*****
*   Metcalf & Eddy, Inc.                   *
*   University of Florida                   *
*   Water Resources Engineers, Inc.         *
*   (Now Camp Dresser & McKee, Inc.)       *
*   September 1970                         *
*****

```

Version 4.3 (outdated) is
Distributed and Maintained by

```

*****
*   U.S. Environmental Protection Agency   *
*   Center for Exposure Assessment Modeling (CEAM) *
*   Athens Environmental Research Laboratory *
*   960 College Station Road              *
*   Athens, GA 30605-2720                 *
*****

```

```

*****
*   This is an updated release of SWMM4.4h, *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model  *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                   *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.            *
*   The EPA-supported version is SWMM5 at:  *
*   http://www.epa.gov/ednnrml/swmm/index.htm *
*****

```

```

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da Vinci *
*****

```

```

#####
#   File names by SWMM Block               #
#   JIN  -> Input to a Block               #
#   JOUT -> Output from a Block            #
#####

```

```

JIN for Block #    1 File #    9 C:\GIGHAR~1\TRUNK3~3.INT
JOUT for Block #    1 File #   10 Textint.int

```

```

#####
# Scratch file names for this simulation. #
#####

```

```

NSCRAT #    1 File #    1 SCRT1.UF
NSCRAT #    2 File #    2 SCRT2.UF

```

```

*****
*   Parameter Values on the Tapes Common Block *
*****

```

```

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to Runoff Channels/Inlets (NCP). 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO). 500
Number of Transport input locations on R lines (NTHR). 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG)... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```


Trunk 3 _II.out

Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

```
#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002.         #
#####
# "The sewer is the conscience of the city."      #
# "The sewer is the conscience of the city."      #
# "The sewer is the conscience of the city."      #
#####
```

Gig Harbor 2008 Storm System Transport Analysis Trunkline 3.2 Improved System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
* ----- *
* The default values are used if line B0        *
* is not part of the TRANSPORT input data.      *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0           *
* IDETAIl=0                                     *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope....(ITRAP=0).... 0
Horizontal/vertical trapezoid side slope....(ITRAP=1)....
Default input of flow/pollutants on line R1...(IFLIP=0).... 0
Input flow/pollutants on one R1 line.....(IFLIP=1)....
Include only hydrograph input(s) on printout...(INFLEW=0).. 0
Include all input(s) on input printout.....(INFLEW=1)..
Normal division of irregular section data...(IDETAIl=0).. 0
Subdivide lowermost equal area segment.....(IDETAIl=1)..
Print intermediate headers in tables.....(NOHEAD=0).... 0
Do not print intermediate headers in table...(NOHEAD=1)...
```

```
NUMBER OF TIME STEPS (NDT)..... 8760
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 1
NO. TIME STEPS BETWEEN I/O PRINTS (INTPRT)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

==> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff block
Initial Julian date (IDATEZ)..... 1963001
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 2
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
919 921
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1963/ 1/ 1

STARTING TIME OF DAY HR:MN:SEC

= 0/ 0/ 0

Trunk 3 _II.out

1 THERE WERE 13 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

 * ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

 * NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 14 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATION SEQUENCE	AT EACH TIME STEP (PROCEEDING DOWNSTREAM)				
				1	2	3		EXTERNAL NUMBER	INTERNAL NUMBER	INTERNAL ELEMENT NUMBER	UPSTREAM NUMBERS	
919	1	19	MANHOLE	0	0	0	1	919	1	14	14	14
921	2	19	MANHOLE	108	0	0	2	108	8	1	14	14
925	3	19	MANHOLE	114	0	0	3	921	2	8	14	14
929	4	19	MANHOLE	113	0	0	4	114	13	2	14	14
933	5	19	MANHOLE	112	0	0	5	925	3	13	14	14
937	6	19	MANHOLE	111	0	0	6	113	12	3	14	14
939	7	19	MANHOLE	109	0	0	7	929	4	12	14	14
108	8	1	CIRCULAR	919	0	0	8	112	11	4	14	14
109	9	1	CIRCULAR	937	0	0	9	933	5	11	14	14
111	10	1	CIRCULAR	933	0	0	10	111	10	5	14	14
112	11	1	CIRCULAR	929	0	0	11	937	6	10	14	14
113	12	1	CIRCULAR	925	0	0	12	109	9	6	14	14
114	13	1	CIRCULAR	921	0	0	13	939	7	9	14	14

1

 * DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
 * (internal number - external number) *

7 939

1

 * TRANSPORT ELEMENT PARAMETERS *
 *
 * CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
 * TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. NUM.	TY PE	NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
919	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
921	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
925	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
929	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
933	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
937	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
939	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
108	1	CIRCULAR	1.6E-03	120.88	0.0120	1.50	0.00	0.00	1.0	1.77	4.5	4.9	NO
109	1	CIRCULAR	4.3E-02	22.75	0.0120	1.50	0.00	0.00	1.0	1.77	24.	26.	YES
111	1	CIRCULAR	3.6E-02	112.04	0.0120	1.50	0.00	0.00	1.0	1.77	22.	23.	YES
112	1	CIRCULAR	2.4E-02	222.29	0.0120	1.50	0.00	0.00	1.0	1.77	18.	19.	YES
113	1	CIRCULAR	2.4E-02	219.15	0.0120	1.50	0.00	0.00	1.0	1.77	18.	19.	YES
114	1	CIRCULAR	4.1E-02	300.83	0.0120	1.50	0.00	0.00	1.0	1.77	23.	25.	YES

 # Transport Block Flow Continuity #
 #####

Sum of WET WEATHER Inflow..... 1.653E+06 cubic feet 0.4139 inches
 Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
 Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
 Sum of MANHOLE CONSTANT Inflow... 0.000E+00 cubic feet 0.0000 inches
 INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
 REMAINING VOLUME IN CONDUITS.... 5.954E-03 cubic feet 0.0000 inches
 Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches
 Sum of FINAL WET WELL VOLUME.... 0.000E+00 cubic feet 0.0000 inches
 Sum of TRANSPORT Outflows..... 1.653E+06 cubic feet 0.4140 inches
 A. Sum of INITIAL VOLUME + Inflows 1.653E+06 cubic feet 0.4139 inches
 B. Sum REMAINING VOLUME + Outflows 1.653E+06 cubic feet 0.4140 inches
 Percent flow continuity error.... 0.023 = (B-A)/B * 100

 * Surcharge did not occur in this Transport simulation. *

 * TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
108	12109	4	0.0038	4.744	1.57E-03	1.65E-03	1.57E-03	1.57E-03	1.27E+06
114	8760	1	0.0000	4.780	4.14E-02	4.14E-02	4.14E-02	4.14E-02	1.65E+06
113	8760	1	0.0000	4.810	2.40E-02	2.40E-02	2.40E-02	2.40E-02	1.65E+06
112	8760	1	0.0000	4.839	2.43E-02	2.43E-02	2.43E-02	2.43E-02	1.65E+06
111	8760	1	0.0000	4.852	3.65E-02	3.65E-02	3.65E-02	3.65E-02	1.65E+06
109	8760	1	0.0000	4.855	4.33E-02	4.33E-02	4.33E-02	4.33E-02	1.65E+06

 * Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
919	1.27E+06
108	1.27E+06
921	1.65E+06
114	1.65E+06
925	1.65E+06
113	1.65E+06
929	1.65E+06
112	1.65E+06
933	1.65E+06
111	1.65E+06
937	1.65E+06
109	1.65E+06
939	1.65E+06

```

The Total Simulation Time = 31536000.0 seconds.
                          525600.00 minutes.
                          8760.000 hours.
The Time Step(DT) =      3600.0 seconds.

```

The ending date (YEAR/MO/DAY)..1964/ 1/ 1
The ending time of day..... 0.000 seconds.

AVERAGE FLOW.....	0.052
STANDARD DEVIATION OF FLOW.....	0.002
MAXIMUM FLOW.....	4.855
MINIMUM FLOW.....	0.000
FLOW VOLUME (CUBIC FEET).....	1.65E+06

Transport simulation ended normally.

```
====> SWMM 4.4H simulation ended normally.
      Always check output file for possible warning messages.
```

```
====> Your input file was named : C:\GIGHAR~1\TR4B3D~1.DAT
====> Your output file was named: C:\GIGHAR~1\TRUNK3~3.OUT
```

```
***** SWMM 4.4H Simulation Date and Time Summary *****
*****
* Starting Date... February      17, 2009
*               ... Time...     13:45:13.812
* Ending Date... February      17, 2009
*               ... Time...     13:45:14.828
* Elapsed Time...                0.017 minutes.
* Elapsed Time...                1.016 seconds.
```

```

1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)  *
*   Version 4.4H                         *
*   *                                   *
*   CDM/OSU Ongoing Version 4.4h         *
*   Release Date - July 30, 2004         *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
*   Metcalf & Eddy, Inc.                 *
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*   Water Resources Engineers, Inc.      *
*   (Now Camp Dresser & McKee, Inc.)     *
*   September 1970                      *
*****

Version 4.3 (outdated) is
Distributed and Maintained by

*****
*   U.S. Environmental Protection Agency *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road           *
*   Athens, GA 30605-2720              *
*****

*****
*   This is an updated release of SWMM4.4h. *
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*   wayne.huber@orst.edu,                *
*   or Robert Dickinson at Camp Dresser & *
*   McKee, DickinsonRE@CDM.COM.          *
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*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da vinci *
*****

#####
#   File names by SWMM Block           #
#   JIN  -> Input to a Block           #
#   JOUT -> Output from a Block        #
#####

JIN for Block # 1 File # 9 C:\GIGHAR~1\TRUNK3~1.INT
JOUT for Block # 1 File # 10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
* Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per Subcatchment (NLU)..... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG).... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```

Trunk 3_III.out

Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
 Number of Storm Events for Rain Analysis (LSTORM).....20000
 Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
 Number Conduits for Extran Results to ASCII
 File (MXFLOW)..... 400

```
#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002.         #
#####
# "The sewer is the conscience of the city."      #
# Victor Hugo (1862)#
#####
```

Gig Harbor 2008 Storm System Transport Analysis
 Trunkline 3.3 Improved System

```
*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
* ----- *
* The default values are used if line B0         *
* is not part of the TRANSPORT input data.      *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0           *
* IDETAIL=0                                     *
*****
```

```
Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope.....(ITRAP=0)... 0
Horizontal/vertical trapezoid side slope.....(ITRAP=1)...
Default input of flow/pollutants on line R1...(IFLIP=0)... 0
Input flow/pollutants on one R1 line.....(IFLIP=1)...
Include only hydrograph input(s) on printout.(INFLEW=0)... 0
Include all input(s) on input printout.....(INFLEW=1)..
Normal division of irregular section data...(IDETAIL=0)... 0
Subdivide lowermost equal area segment.....(IDETAIL=1)..
Print intermediate headers in tables.....(NOHEAD=0)... 0
Do not print intermediate headers in table...(NOHEAD=1)..
```

```
NUMBER OF TIME STEPS (NDT)..... 8760
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 1
NO. TIME STEPS BETWEEN I/O PRINTS (INTPR)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4
```

NO SIMULATION OF LINKED DO (NWQ = 0).

====> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
 SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```
FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0
```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```
SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00
```

```
#####
# Header information from interface file: #
#####
```

Title from first computational block:

Title from immediately preceding computational block:

```
Name of preceding block:.....Runoff Block
Initial Julian date (IDATEZ)..... 1963001
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 4
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0
```

```
#####
# Element numbers of interface inlet locations: #
#####
957 959 5008 5009
```

Conversion factor to cfs for flow units
 on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1963/ 1/ 1

STARTING TIME OF DAY HR:MM:SEC

= 0/ 0/ 0

Trunk 3_III.out

1 THERE WERE 29 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

 * ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

 * NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 30 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATION SEQUENCE	AT EACH TIME STEP (PROCEEDING DOWNSTREAM)				
				1	2	3		EXTERNAL NUMBER	INTERNAL NUMBER	INTERNAL ELEMENT	UPSTREAM NUMBERS	
114	1	19	MANHOLE	106	0	0	1	957	13	30	30	30
5001	2	19	MANHOLE	103	0	0	2	110	21	13	30	30
5002	3	19	MANHOLE	78	0	0	3	959	14	21	30	30
5003	4	19	MANHOLE	80	0	0	4	125	22	14	30	30
5004	5	19	MANHOLE	104	0	0	5	74	12	22	30	30
5005	6	19	MANHOLE	84	0	0	6	107	20	12	30	30
5006	7	19	MANHOLE	105	0	0	7	72	11	20	30	30
5007	8	19	MANHOLE	88	0	0	8	103	16	11	30	30
5008	9	19	MANHOLE	126	0	0	9	5001	2	16	30	30
5009	10	19	MANHOLE	91	0	0	10	78	25	2	30	30
72	11	19	MANHOLE	107	0	0	11	5002	3	25	30	30
74	12	19	MANHOLE	125	0	0	12	80	26	3	30	30
957	13	19	MANHOLE	0	0	0	13	5003	4	26	30	30
959	14	19	MANHOLE	110	0	0	14	104	17	4	30	30
999	15	19	MANHOLE	127	0	0	15	5004	5	17	30	30
103	16	1	CIRCULAR	72	0	0	16	84	27	5	30	30
104	17	1	CIRCULAR	5003	0	0	17	5005	6	27	30	30
105	18	1	CIRCULAR	5005	0	0	18	105	18	6	30	30
106	19	1	CIRCULAR	999	0	0	19	5006	7	18	30	30
107	20	1	CIRCULAR	74	0	0	20	88	28	7	30	30
110	21	1	CIRCULAR	957	0	0	21	5007	8	28	30	30
125	22	1	CIRCULAR	959	0	0	22	126	23	8	30	30
126	23	1	CIRCULAR	5007	0	0	23	5008	9	23	30	30
127	24	1	CIRCULAR	5009	0	0	24	91	29	9	30	30
78	25	13	TRAPEZOID	5001	0	0	25	5009	10	29	30	30
80	26	13	TRAPEZOID	5002	0	0	26	127	24	10	30	30
84	27	13	TRAPEZOID	5004	0	0	27	999	15	24	30	30
88	28	13	TRAPEZOID	5006	0	0	28	106	19	15	30	30
91	29	13	TRAPEZOID	5008	0	0	29	114	1	19	30	30

1

 * DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
 * (internal number - external number) *

1 114

1

 * TRANSPORT ELEMENT PARAMETERS *

 * CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
 * TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. NUM.	TY PE	NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ.FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
114	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5001	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5002	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5003	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5004	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5005	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5006	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5007	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5008	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
5009	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
72	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
74	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
957	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
959	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
999	19	MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
103	1	CIRCULAR	5.0E-03	162.17	0.0120	2.00	0.00	0.00	1.0	3.14	17.	19.	NO
104	1	CIRCULAR	2.1E-02	20.92	0.0140	1.50	0.00	0.00	1.0	1.77	14.	15.	NO
105	1	CIRCULAR	3.5E-02	116.22	0.0140	1.50	0.00	0.00	1.0	1.77	18.	20.	YES
106	1	CIRCULAR	3.5E-02	65.15	0.0140	2.00	0.00	0.00	1.0	3.14	40.	43.	YES
107	1	CIRCULAR	2.1E-02	75.63	0.0120	1.50	0.00	0.00	1.0	1.77	17.	18.	YES
110	1	CIRCULAR	1.4E-02	36.37	0.0120	1.50	0.00	0.00	1.0	1.77	13.	15.	NO
125	1	CIRCULAR	1.1E-02	144.81	0.0120	1.50	0.00	0.00	1.0	1.77	12.	13.	NO
126	1	CIRCULAR	4.1E-02	31.51	0.0140	1.50	0.00	0.00	1.0	1.77	20.	21.	YES
127	1	CIRCULAR	6.5E-02	46.06	0.0140	1.50	0.00	0.00	1.0	1.77	25.	27.	YES
78	13	TRAPEZOID	1.4E-02	214.47	0.0300	3.17	5.83	1.00	1.0	28.50	2.59E+02	2.59E+02	NO
80	13	TRAPEZOID	5.0E-03	55.37	0.0300	1.92	3.08	1.00	1.0	9.58	36.	36.	NO
84	13	TRAPEZOID	4.0E-02	396.24	0.0300	1.83	2.75	1.00	1.0	8.40	86.	86.	NO
88	13	TRAPEZOID	3.8E-02	249.47	0.0300	1.92	2.92	1.00	1.0	9.26	95.	95.	NO
91	13	TRAPEZOID	3.2E-02	177.19	0.0300	1.83	2.50	1.00	1.0	7.94	72.	72.	NO

 # Transport Block Flow Continuity #

Sum of WET WEATHER Inflow..... 5.878E+06 cubic feet 1.4720 inches
 Sum of DRY WEATHER Inflow..... 0.000E+00 cubic feet 0.0000 inches
 Sum of INFILTRATION Inflow..... 0.000E+00 cubic feet 0.0000 inches
 Sum of MANHOLE CONSTANT Inflow... 0.000E+00 cubic feet 0.0000 inches
 INITIAL VOLUME IN CONDUITS..... 0.000E+00 cubic feet 0.0000 inches
 REMAINING VOLUME IN CONDUITS..... 3.404E+00 cubic feet 0.0000 inches
 Sum of FINAL SURCHARGE STORAGE... 0.000E+00 cubic feet 0.0000 inches

Trunk 3_III.out
Sum of FINAL WET WELL VOLUME..... 0.000E+00 cubic feet 0.0000 inches
Sum of TRANSPORT Outflows..... 5.890E+06 cubic feet 1.4752 inches
A.Sum of INITIAL VOLUME + Inflows 5.878E+06 cubic feet 1.4720 inches
B.Sum REMAINING VOLUME + Outflows 5.890E+06 cubic feet 1.4752 inches
Percent flow continuity error.... 0.213 = (B-A)/B * 100

* Surcharge did not occur in this Transport simulation. *

* TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
110	9414	4	0.0002	4.776	1.40E-02	1.41E-02	1.40E-02	1.40E-02	1.65E+06
125	9929	4	0.0003	9.259	1.09E-02	1.10E-02	1.09E-02	1.09E-02	3.03E+06
107	8760	1	0.0000	9.231	2.13E-02	2.13E-02	2.13E-02	2.13E-02	3.03E+06
103	11177	4	0.0010	9.128	5.00E-03	5.08E-03	5.00E-03	5.00E-03	3.03E+06
78	9028	4	0.0001	8.899	1.40E-02	1.40E-02	1.40E-02	1.40E-02	3.04E+06
80	11278	4	0.0011	8.825	5.00E-03	5.09E-03	5.00E-03	5.00E-03	3.04E+06
104	10113	4	0.0005	8.818	2.06E-02	2.08E-02	2.06E-02	2.06E-02	3.04E+06
84	8767	3	0.0001	8.581	3.99E-02	3.99E-02	3.99E-02	3.99E-02	3.04E+06
105	8760	1	0.0000	8.545	3.45E-02	3.45E-02	3.45E-02	3.45E-02	3.04E+06
88	8766	3	0.0001	8.393	3.75E-02	3.75E-02	3.75E-02	3.75E-02	3.04E+06
126	8760	1	0.0000	8.385	4.13E-02	4.13E-02	4.13E-02	4.13E-02	3.04E+06
91	8783	4	0.0001	18.286	3.21E-02	3.21E-02	3.21E-02	3.21E-02	4.93E+06
127	8760	1	0.0000	26.316	6.55E-02	6.55E-02	6.55E-02	6.55E-02	5.89E+06
106	8760	1	0.0000	26.264	3.54E-02	3.54E-02	3.54E-02	3.54E-02	5.89E+06

* Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
957	1.65E+06
110	1.65E+06
959	3.03E+06
125	3.03E+06
74	3.03E+06
107	3.03E+06
72	3.03E+06
103	3.03E+06
5001	3.03E+06
78	3.04E+06
5002	3.04E+06
80	3.04E+06
5003	3.04E+06
104	3.04E+06
5004	3.04E+06
84	3.04E+06
5005	3.04E+06
105	3.04E+06
5006	3.04E+06
88	3.04E+06
5007	3.04E+06
126	3.04E+06
5008	4.93E+06
91	4.93E+06
5009	5.89E+06
127	5.89E+06
999	5.89E+06
106	5.89E+06
114	5.89E+06

The Total Simulation Time = 31536000.0 seconds.
525600.00 minutes.
8760.000 hours.
The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1964/ 1/ 1
The ending time of day..... 0.000 seconds.

AVERAGE FLOW..... 0.187
STANDARD DEVIATION OF FLOW..... 0.007
MAXIMUM FLOW..... 26.264
MINIMUM FLOW..... 0.000
FLOW VOLUME (CUBIC FEET)..... 5.89E+06

Transport simulation ended normally.

====> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

====> Your input file was named : C:\GIGHAR~1\TRUNK3~2.DAT
====> Your output file was named: C:\GIGHAR~1\TRUNK3~1.OUT

* SWMM 4.4H Simulation Date and Time Summary *

* Starting Date... February 17, 2009 *
* Time... 13:45:26.843 *
* Ending Date... February 17, 2009 *
* Time... 13:45:28.718 *

```
* Elapsed Time...      0.031 minutes.  *
* Elapsed Time...      1.875 seconds.  *
*****
```

Trunk 3_III.out


```

1 *****
*   U.S. Environmental Protection Agency   *
*   Storm Water Management Model (SWMM)   *
*   Version 4.4H                           *
*                                           *
*   CDM/OSU Ongoing Version 4.4h           *
*   Release Date - July 30, 2004          *
*   Camp Dresser & McKee and Oregon St. Univ. *
*   Chuck Moore, Bob Dickinson, and Wayne Huber *
*   Compiled using Compaq Visual Fortran v.6.6 *
*****

Developed by

*****
*   Metcalf & Eddy, Inc.                   *
*   University of Florida                   *
*   Water Resources Engineers, Inc.         *
*   (Now Camp Dresser & McKee, Inc.)       *
*   September 1970                         *
*****

Version 4.3 (outdated) is
distributed and Maintained by

*****
*   U.S. Environmental Protection Agency   *
*   Center for Exposure Assessment Modeling (CEAM)*
*   Athens Environmental Research Laboratory *
*   960 College Station Road              *
*   Athens, GA 30605-2720                 *
*****

*****
*   This is an updated release of SWMM4.4h, *
*   no longer formally supported by the EPA. *
*   If problems occur executing this model  *
*   contact Wayne Huber at Oregon State. U., *
*   wayne.huber@orst.edu,                   *
*   or Robert Dickinson at Camp Dresser &  *
*   McKee, DickinsonRE@CDM.COM,            *
*   The EPA-supported version is SWMM5 at:  *
*   http://www.epa.gov/ednrmr1/swmm/index.htm *
*****

*****
*   This is an implementation of EPA SWMM 4.4H *
*   "Nature is full of infinite causes which *
*   have never occurred in experience" da vinci *
*****

#####
#   File names by SWMM Block               #
#   JIN  -> Input to a Block               #
#   JOUT -> Output from a Block            #
#####

JIN for Block # 1 File # 9 C:\GIGHAR~1\ExTrunk4.int
JOUT for Block # 1 File # 10 Textint.int

#####
# Scratch file names for this simulation. #
#####

NSCRAT # 1 File # 1 SCRT1.UF
NSCRAT # 2 File # 2 SCRT2.UF

*****
*   Parameter Values on the Tapes Common Block *
*****

Number of Subcatchments in the Runoff Block (NW)..... 2000
Number of Channel/Pipes in the Runoff Block (NG)..... 2000
Number of Connections to runoff Channels/Inlets (NCP).. 6
Number of Water Quality Constituents (MQUAL)..... 20
Number of Runoff Land Uses per subcatchment (NLU).... 20
Number of Groundwater Plot/prints in Runoff (NGW).... 400
Number of Interface Locations for all Blocks (NIE).... 2000
Number of Elements in the Transport Block (NET)..... 1000
Number of Storage Junctions in Transport (NTSE)..... 100
Number of Transport interface input locations (NTHI).. 500
Number of Transport interface output locations (NTHO).. 500
Number of Transport input locations on R lines (NTHR).. 80
Number of Transport printed output locations (NTOA)... 80
Number of Tabular Flow Splitters in Transport (NTSP).. 50
Number of Elements in the Extran Block (NEE)..... 4000
Number of Pumps in Extran (NEP)..... 1000
Number of Orifices in Extran (NEO)..... 200
Number of Tide Gates/Free Outfalls in Extran (NTG)... 1000
Number of Extran Weirs (NEW)..... 400
Number of Extran Printout Locations (NPO)..... 150
Number of Tide Elements in Extran (NTE)..... 50
Number of Natural Channels (NNC)..... 1200
Number of Storage Junctions in Extran (NVSE)..... 2000
Number of Time History Data Points in Extran (NTVAL).. 500
Number of Data Points for Variable Storage Elements
in the Extran Block (NVST)..... 200
Number of Input Hydrographs in Extran (NEH)..... 500
Number of Allowable Channel Connections to
Junctions in the Extran Block (NCHN)..... 15
Number Rain Gages in Rain and Runoff (MAXRG)..... 200
Number PRATE/VRATE Points for Extran Pump
Input (MAXPRA)..... 10
Number of Variable Orifices in Extran (NVORF)..... 50
Number of Variable Orifice Data Points (NVOTIM)..... 50

```



```

Number of Allowable Precip. Values/yr in Rain (LIMRN). 5000
Number of Storm Events for Rain Analysis (LSTORM).....20000
Number of Plugs for Plug-flow in S/T (NPLUG)..... 3000
Number Conduits for Extran Results to ASCII
File (MXFLOW)..... 400

```

```

#####
# Entry made to the Transport Block, last updated #
# by Oregon State University, April 2002. #
#####
# "The sewer is the conscience of the city." #
# Victor Hugo (1862) #
#####

```

Gig Harbor 2008 Storm System Transport Analysis Trunkline 4 Existing System

```

*****
* OPTIONAL INPUT PARAMETERS FROM DATA LINE B0 *
* ----- *
* The default values are used if line B0 *
* is not part of the TRANSPORT input data. *
* Defaults: ISLOPE=0 ITRAP=0 IFLIP=0 *
* IDETAIl=0 *
*****

```

```

Use ft/100 ft or m/100 m for conduit slope...(ISLOPE=0).. 0
Use ft/ft or m/m for input of conduit slope...(ISLOPE=1)..
Vertical/horizontal trapezoid side slope....(ITRAP=0).... 0
Horizontal/vertical trapezoid side slope....(ITRAP=1)....
Default input of flow/pollutants on line R1...(IFLIP=0).... 0
Input flow/pollutants on one R1 line.....(IFLIP=1)....
Include only hydrograph input(s) on printout.(INFLEW=0).... 0
Include all input(s) on input printout.....(INFLEW=1)....
Normal division of irregular section data ... (IDETAIl=0).... 0
Subdivide lowermost equal area segment.....(IDETAIl=1)....
Print intermediate headers in tables.....(NOHEAD=0).... 0
Do not print intermediate headers in table...(NOHEAD=1)....

```

```

NUMBER OF TIME STEPS (NDT)..... 420768
NO. OF ELEMENTS FOR CARD HYDROGRAPH INPUT (NINPUT) 0
NO. OF ELEMENTS FOR INPUT HYDROGRAPH PRINT (NNYN) 0
NO. OF ELEMENTS FOR OUTPUT HYDROGRAPH PRINT (NNPE) 4
NO. TIME STEPS BETWEEN I/O PRINTS (INTPRT)..... 1
NO. OF ELEMENTS FOR INTERFACE TRANSFER (NOUTS).... 0
NO. OF POLLUTANTS SIMULATED (NPOLL)..... 0
NO. OF ITERATIONS FOR FLOW ROUTING (NITER)..... 4

```

NO SIMULATION OF LINKED DO (NWQ = 0).

====> WARNING !! FROM SUB TRANS. NOUTS= 0 AND JOUT = 10. BOTH MUST BE GT 0 TO GENERATE INTERFACE FILE.
SIMULATION WILL CONTINUE, BUT NO NEW INTERFACE FILE WILL BE GENERATED.

```

FOR THE FOLLOWING PARAMETERS, 1=YES, 0=NO:
PRINT INTERNAL ERROR MESSAGES (NPRINT)..... 0
HYDROGRAPH INPUT FROM CARDS ONLY (NCNTRL)..... 0
CALL INFILTRATION ROUTINE (NINFIL)..... 0
CALL DRY-WEATHER FLOW ROUTINE (NFILTH)..... 0
USE HYDRAULIC DESIGN ROUTINE (NDESN)..... 0

```

USE U.S. CUSTOMARY UNITS FOR INPUT/OUTPUT(METRIC=0).

```

SIZE OF TIME STEP (DT, SECONDS)..... 3600.0
ALLOWABLE ROUTING CONVERGENCE ERROR (EPSIL).....0.000100
NO. DRY DAYS PRIOR TO SIMULATION (DWDAYS)..... 0.00
STARTING TIME OF DAY IN HOURS..... 0.00
KINEMATIC VISCOSITY (GNU, SQ FT/SEC).....1.00E-05
TOTAL CATCHMENT AREA (TRIBA, ACRES)..... 100.00

```

```

#####
# Header information from interface file: #
#####

```

Title from first computational block:

Title from immediately preceding computational block:

```

Name of preceding block:.....Runoff Block
Initial Julian date (IDATEZ)..... 1948275
Initial time of day in seconds (TZERO)..... 0.0
No. transferred input locations..... 4
No. transferred pollutants..... 0
Size of total catchment area (acres)..... 1100.00
ID numbers (JCE=0) or alphanumeric (JCE=1)..... 0

```

```

#####
# Element numbers of interface inlet locations: #
#####
8671 8651 8635 1779

```

Conversion factor to cfs for flow units
on interface file. Multiply by: 1.00000

STARTING DATE OF SIMULATION (YR/MO/DAY) = 1948/10/ 1

STARTING TIME OF DAY HR:MM:SEC

= 0/ 0/ 0

ExTrunk4.out

1 THERE WERE 37 ELEMENTS (NE) INPUT INTO TRANSPORT BLOCK FROM DATA GROUP E1.

1

 * ELEMENT LINKAGES AND COMPUTATION SEQUENCE *

 * NOTE: ELEMENT # 0 IS GIVEN AN INTERNAL # OF 38 *

EXTERNAL ELEMENT NUMBER	INTERNAL ELEMENT NUMBER	TYPE	DISCRIPTION	UPSTREAM ELEMENTS (EXTERNAL NOS.)			ORDER OF COMPUTATION SEQUENCE	COMPUTATIONS AT EACH TIME		STEP (PROCEEDING DOWNSTREAM)	
				1	2	3		EXTERNAL NUMBER	INTERNAL NUMBER	INTERNAL ELEMENT	UPSTREAM NUMBERS
1370	1	19	MANHOLE	63	0	0	1	1779	5	38	38
1374	2	19	MANHOLE	78	0	0	2	8635	7	38	38
1376	3	19	MANHOLE	77	0	0	3	64	22	5	38
1773	4	19	MANHOLE	64	0	0	4	1773	4	22	38
1779	5	19	MANHOLE	0	0	0	5	72	30	7	38
7189	6	19	MANHOLE	75	0	0	6	8639	8	30	38
8635	7	19	MANHOLE	0	0	0	7	71	29	8	38
8639	8	19	MANHOLE	72	0	0	8	8643	9	29	38
8643	9	19	MANHOLE	71	0	0	9	70	28	9	38
8647	10	19	MANHOLE	70	0	0	10	8647	10	28	38
8649	11	19	MANHOLE	69	76	0	11	69	27	10	38
8651	12	19	MANHOLE	68	0	0	12	76	34	4	38
8655	13	19	MANHOLE	67	0	0	13	8649	11	27	38
8659	14	19	MANHOLE	66	0	0	14	68	26	11	38
8663	15	19	MANHOLE	74	0	0	15	8651	12	26	38
8665	16	19	MANHOLE	73	0	0	16	67	25	12	38
8671	17	19	MANHOLE	79	0	0	17	8655	13	25	38
8677	18	19	MANHOLE	65	0	0	18	66	24	13	38
9999	19	19	MANHOLE	62	0	0	19	8659	14	24	38
62	20	1	CIRCULAR	1370	0	0	20	74	32	14	38
63	21	1	CIRCULAR	1374	0	0	21	8663	15	32	38
64	22	1	CIRCULAR	1779	0	0	22	73	31	15	38
65	23	1	CIRCULAR	8671	0	0	23	8665	16	31	38
66	24	1	CIRCULAR	8655	0	0	24	79	37	16	38
67	25	1	CIRCULAR	8651	0	0	25	8671	17	37	38
68	26	1	CIRCULAR	8649	0	0	26	65	23	17	38
69	27	1	CIRCULAR	8647	0	0	27	8677	18	23	38
70	28	1	CIRCULAR	8643	0	0	28	75	33	18	38
71	29	1	CIRCULAR	8639	0	0	29	7189	6	33	38
72	30	1	CIRCULAR	8635	0	0	30	77	35	6	38
73	31	1	CIRCULAR	8663	0	0	31	1376	3	35	38
74	32	1	CIRCULAR	8659	0	0	32	78	36	3	38
75	33	1	CIRCULAR	8677	0	0	33	1374	2	36	38
76	34	1	CIRCULAR	1773	0	0	34	63	21	2	38
77	35	1	CIRCULAR	7189	0	0	35	1370	1	21	38
78	36	1	CIRCULAR	1376	0	0	36	62	20	1	38
79	37	1	CIRCULAR	8665	0	0	37	9999	19	20	38

1

 * DOWNSTREAM ELEMENTS (MODEL OUTLETS) *
 * (internal number - external number) *

19 9999

1

 * TRANSPORT ELEMENT PARAMETERS *
 *
 * CAUTION: COLUMN HEADINGS ARE FOR CONDUITS. REFER *
 * TO USERS MANUAL FOR MEANING FOR NON-CONDUITS. *

EXT. ELE. TY NUM. PE	TYPE NAME	SLOPE (FT/FT)	DISTANCE (FT)	MANNING ROUGHNESS	GEOM1 (FT)	GEOM2 (FT)	GEOM3 (FT)	NUMBER OF BARRELS	AFULL (SQ. FT)	QFULL (CFS)	QMAX (CFS)	SUPER-CRITICAL FLOW WHEN LESS THAN 95% FULL?
1370	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
1374	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
1376	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
1773	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
1779	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
7189	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8635	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8639	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8643	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8647	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8649	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8651	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8655	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8659	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8663	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8665	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8671	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
8677	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
9999	19 MANHOLE	0.	0.00	0.0000	0.00	0.00	0.00	1.0				
62	1 CIRCULAR	0.2	125.30	0.0140	1.50	0.00	0.00	1.0	1.77	40.	43.	YES
63	1 CIRCULAR	7.7E-02	188.81	0.0140	1.50	0.00	0.00	1.0	1.77	27.	29.	YES
64	1 CIRCULAR	8.9E-02	298.23	0.0140	1.00	0.00	0.00	1.0	0.79	9.9	11.	YES
65	1 CIRCULAR	8.3E-02	252.63	0.0140	1.50	0.00	0.00	1.0	1.77	28.	30.	YES
66	1 CIRCULAR	6.8E-02	286.90	0.0120	1.50	0.00	0.00	1.0	1.77	30.	32.	YES
67	1 CIRCULAR	5.6E-02	298.90	0.0120	1.50	0.00	0.00	1.0	1.77	27.	29.	YES
68	1 CIRCULAR	5.0E-02	278.16	0.0120	1.50	0.00	0.00	1.0	1.77	26.	28.	YES
69	1 CIRCULAR	5.0E-03	37.43	0.0120	1.50	0.00	0.00	1.0	1.77	8.0	8.7	NO
70	1 CIRCULAR	2.9E-02	145.76	0.0120	1.50	0.00	0.00	1.0	1.77	19.	21.	YES
71	1 CIRCULAR	3.7E-02	147.92	0.0120	1.50	0.00	0.00	1.0	1.77	22.	24.	YES
72	1 CIRCULAR	4.0E-02	151.82	0.0120	1.50	0.00	0.00	1.0	1.77	23.	24.	YES
73	1 CIRCULAR	8.4E-02	109.24	0.0120	1.50	0.00	0.00	1.0	1.77	33.	36.	YES
74	1 CIRCULAR	5.8E-02	97.47	0.0120	1.50	0.00	0.00	1.0	1.77	27.	30.	YES
75	1 CIRCULAR	8.5E-02	128.76	0.0120	1.50	0.00	0.00	1.0	1.77	33.	36.	YES
76	1 CIRCULAR	0.2	37.28	0.0120	1.50	0.00	0.00	1.0	1.77	48.	52.	YES

77	1	CIRCULAR	0.3	58.55	0.0140	1.50	0.00	0.00	1.0	1.77	57.	61.	YES
78	1	CIRCULAR	0.2	7.07	0.0120	1.50	0.00	0.00	1.0	1.77	49.	53.	YES
79	1	CIRCULAR	8.6E-02	136.52	0.0120	1.50	0.00	0.00	1.0	1.77	33.	36.	YES

ExTrunk4.out

 # Transport Block Flow Continuity #
 #####

SUM of WET WEATHER Inflow.....	2.378E+08	cubic feet	59.5500	inches
SUM of DRY WEATHER Inflow.....	0.000E+00	cubic feet	0.0000	inches
SUM of INFILTRATION Inflow.....	0.000E+00	cubic feet	0.0000	inches
SUM of MANHOLE CONSTANT Inflow...	0.000E+00	cubic feet	0.0000	inches
INITIAL VOLUME IN CONDUITS.....	0.000E+00	cubic feet	0.0000	inches
REMAINING VOLUME IN CONDUITS.....	7.465E-03	cubic feet	0.0000	inches
SUM of FINAL SURCHARGE STORAGE...	0.000E+00	cubic feet	0.0000	inches
SUM of FINAL WET WELL VOLUME.....	0.000E+00	cubic feet	0.0000	inches
SUM of TRANSPORT Outflows.....	2.382E+08	cubic feet	59.6572	inches
A.Sum of INITIAL VOLUME + Inflows	2.378E+08	cubic feet	59.5500	inches
B.Sum REMAINING VOLUME + Outflows	2.382E+08	cubic feet	59.6572	inches
Percent flow continuity error....	0.180	= (B-A)/B * 100		

1.

 * CONDUIT SURCHARGE SUMMARY *

ELEMENT NUMBER	STARTING JULIAN DATE	STARTING TIME OF DAY(SEC)	ENDING JULIAN DATE	ENDING TIME OF DAY(SEC)	SURCHARGE LENGTH MINUTES	FULL FLOW (CFS)	PEAK FLW RATIO Qp/QFULL	SURCHARGE PEAK VOL. (CF)
64	1960239	64800	1960239	64800	0.00	9.85	1.26	9.14E+03
65	1960239	64800	1960239	64800	0.00	28.07	1.12	1.23E+04

 * TOTAL ITERATIONS AND MAXIMUM # OF ITERATIONS *

ELEMENT NUMBER	TOTAL NUMBER OF ITERATIONS	MAXIMUM NUMBER OF ITERATIONS	MAXIMUM ERROR	MAXIMUM FLOW(CFS)	CONDUIT SLOPE	MAXIMUM SLOPE	MINIMUM SLOPE	MEAN SLOPE	TOTAL FLOW-CF
64	420768	1	0.0000	9.899	8.87E-02	8.87E-02	8.87E-02	8.85E-02	9.09E+07
72	420768	1	0.0000	3.848	3.97E-02	3.97E-02	3.97E-02	3.98E-02	2.62E+07
71	420768	1	0.0000	3.856	3.68E-02	3.68E-02	3.68E-02	3.69E-02	2.62E+07
70	420768	1	0.0000	3.864	2.92E-02	2.92E-02	2.92E-02	2.92E-02	2.62E+07
69	509822	4	0.0028	3.869	5.00E-03	5.24E-03	5.00E-03	5.00E-03	2.62E+07
76	420768	1	0.0000	9.905	1.80E-01	1.80E-01	1.80E-01	1.80E-01	9.09E+07
68	420768	1	0.0000	13.831	5.05E-02	5.05E-02	5.05E-02	5.06E-02	1.17E+08
67	420768	1	0.0000	20.841	5.62E-02	5.62E-02	5.62E-02	5.65E-02	1.64E+08
66	420768	1	0.0000	20.899	6.80E-02	6.80E-02	6.80E-02	6.82E-02	1.64E+08
74	420768	1	0.0000	20.918	5.80E-02	5.80E-02	5.80E-02	5.81E-02	1.64E+08
73	420768	1	0.0000	20.941	8.40E-02	8.40E-02	8.40E-02	8.41E-02	1.65E+08
79	420768	1	0.0000	20.967	8.55E-02	8.55E-02	8.55E-02	8.58E-02	1.65E+08
65	420768	1	0.0000	28.143	8.28E-02	8.28E-02	8.28E-02	8.25E-02	2.38E+08
75	420768	1	0.0000	28.181	8.48E-02	8.48E-02	8.48E-02	8.46E-02	2.38E+08
77	420768	1	0.0000	28.191	3.36E-01	3.36E-01	3.36E-01	3.37E-01	2.38E+08
78	420768	1	0.0000	28.192	1.84E-01	1.84E-01	1.84E-01	1.84E-01	2.38E+08
63	420768	1	0.0000	28.252	7.69E-02	7.69E-02	7.69E-02	7.66E-02	2.38E+08
62	420768	1	0.0000	28.285	1.66E-01	1.66E-01	1.66E-01	1.67E-01	2.38E+08

 * Total flow and mass (kg) out of all elements *

ELEMENT NUMBER	TOTAL FLOW-CF
1779	9.09E+07
8635	2.61E+07
64	9.09E+07
1773	9.09E+07
72	2.62E+07
8639	2.62E+07
71	2.62E+07
8643	2.62E+07
70	2.62E+07
8647	2.62E+07
69	2.62E+07
76	9.09E+07
8649	1.17E+08
68	1.17E+08
8651	1.64E+08
67	1.64E+08
8655	1.64E+08
66	1.64E+08
8659	1.64E+08
74	1.64E+08
8663	1.64E+08
73	1.65E+08
8665	1.65E+08
79	1.65E+08
8671	2.38E+08
65	2.38E+08
8677	2.38E+08
75	2.38E+08
7189	2.38E+08
77	2.38E+08
1376	2.38E+08
78	2.38E+08
1374	2.38E+08
63	2.38E+08

1370 2.38E+08
62 2.38E+08
9999 2.38E+08

ExTrunk4.out

The Total Simulation Time =1514764800.0 seconds.
25246080.00 minutes.
420768.000 hours.
The Time Step(DT) = 3600.0 seconds.

The ending date (YEAR/MO/DAY)..1996/10/ 1
The ending time of day..... 0.000 seconds.

AVERAGE FLOW.....	0.060	0.017	0.109	0.157
STANDARD DEVIATION OF FLOW.....	0.000	0.000	0.001	0.001
MAXIMUM FLOW.....	9.853	3.840	20.779	28.073
MINIMUM FLOW.....	0.000	0.000	0.000	0.000
FLOW VOLUME (CUBIC FEET).....	9.09E+07	2.62E+07	1.64E+08	2.38E+08

Transport simulation ended normally.

==> SWMM 4.4H simulation ended normally.
Always check output file for possible warning messages.

==> Your input file was named : C:\GIGHAR~1\EX2EA4~1.DAT
==> Your output file was named: C:\GIGHAR~1\EXTrunk4.out

```
*****
*      SWMM 4.4H Simulation Date and Time Summary      *
*****
* Starting Date... February 17, 2009                    *
* Time...          15:34:24.187                          *
* Ending Date...   February 17, 2009                    *
* Time...          15:36:12.625                          *
* Elapsed Time...  1.807 minutes.                        *
* Elapsed Time...  108.436 seconds.                     *
*****
```