SKYLINE LANDFILL

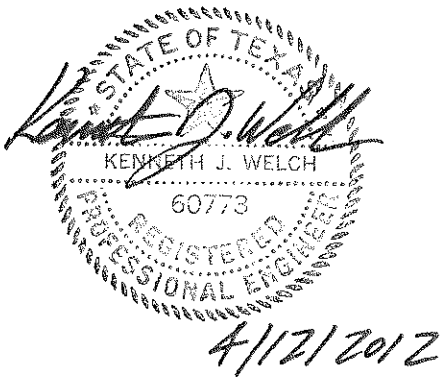
ATTACHMENT C1

APPENDIX C1-C

POSTDEVELOPMENT HYDROLOGIC CALCULATIONS

Includes pages C1-C-1 through C1-C-143

CONTENTS



POSTDEVELOPMENT NARRATIVE

30 TAC §§330.303 and 330.305(a)-(d)

The postdevelopment hydrologic analysis represents the hydrologic calculations after the proposed landfill is developed in accordance with §330.305(a)-(d).

POSTDEVELOPMENT DRAINAGE AREA DRAWINGS

The Postdevelopment Drainage Area Summary (Drawing C1-C-1) delineates the drainage areas that contribute stormwater runon or runoff to the proposed permit boundary. Off-site drainage areas are designated by the prefix "OS". Drainage areas within the proposed permit boundary are designated by the prefix "DA". Refer to Drawing C1-C-2 for the postdeveloped runoff summary.

POSTDEVELOPMENT WATERSHED CHARACTERISTICS

Watershed characteristics have been developed for the postdevelopment hydrologic evaluation. The watershed characteristics address drainage area runoff characteristics, unit hydrograph data, reach characteristics, existing culverts, and the proposed final condition drainage system including the detention ponds. This information is included on pages C1-C-8 through C1-C-41.

The first table, titled Postdevelopment Watershed Characteristics, provides the summary of drainage areas, soil types, Curve Numbers (CN) values, initial loss, reach slope calculations, and determination of Manning's n value. The Soil Conservation Service (SCS) CN were derived from watershed characteristic tables from the SCS Technical Report 55 (TR-55), which included evaluation of anticipated postdevelopment soil and surface cover/condition characteristics. The second table, titled Unit Hydrograph Data, provides the determination of the Snyder's Unit Hydrograph parameters. Refer to pages C1-C-8 through C1-C-10 for these tables. The runoff characteristics for the off-site drainage areas did not change from the permitted condition.

POSTDEVELOPMENT DRAINAGE STRUCTURE DESIGN PARAMETERS

Pages C1-C-16 through C1-C-41 include drainage structure data for the existing and proposed detention ponds, existing retention ponds, and culverts for the surface impoundments incorporated into the hydrologic model.

POSTDEVELOPED MAJOR DRAINAGE DIVIDES

Drawing C1-C-4 – Postdeveloped Major Drainage Divides delineates the major drainage areas that contribute stormwater runoff to the permit boundary in the postdeveloped condition. The Ten Mile Creek Area includes the subbasins that contribute stormwater runoff to the northern permit boundary along Ten Mile Creek. The Southern Permit Boundary Area includes the subbasins that contribute stormwater runoff to the southern permit boundary and through culverts under Ferris Avenue. The Southeastern Permit Boundary Area includes the subbasins that contribute stormwater runoff to the south and eastern permit boundary and through culverts under the T&HC Line of the Union Pacific Railroad and under Old State Highway 75.

HEC-HMS SCHEMATIC

Drawing C1-C-5 – Ten Mile Creek Schematic Postdeveloped was prepared due to the complexity of the Ten Mile Creek watershed. The individual schematics and HEC-HMS results for each basin are included beginning on page C1-C-45. The schematics provide the hydrologic element number and routing used for evaluating the postdeveloped condition in HEC-HMS.

HYDROLOGIC ANALYSIS

For the hydrologic evaluation, HEC-HMS was used for the precipitation runoff simulation for the postdevelopment condition. The following describes the various modeling components. The HEC-HMS hydrologic analysis results begin on page C1-C-45.

Watershed Subareas and Schematization

The drainage areas that contribute flow to the Skyline Landfill property were delineated into subareas to derive peak flows to determine current permitted runon and runoff flows. Hydrographs are developed for each subarea and appropriately combined and routed through the swales and perimeter channels. The subareas are shown on Attachment C1-C-1 – Postdeveloped Permit Drainage Area Summary, and page C1-C-44 for the HEC-HMS schematic of the postdevelopment condition.

Time Step

The time step, or the program computation interval, is the duration of the unit hydrograph. The time step is selected as 5 minutes, which results in 289 hydrograph ordinates in 24 hours.

Hypothetical Precipitation

A return period of 25 years and a duration of 24 hours was used for the design storm. The rainfall data used is shown in the rainfall data table on page C1-B-19. The precipitation is assumed to be evenly distributed over the entire landfill for each time interval.

Precipitation Losses

Precipitation losses (the precipitation that does not contribute to the runoff) are calculated using the Soil Conservation Service (SCS) Curve Number (CN) method. CN is a function of soil cover, land use, and antecedent moisture conditions. A CN of 87 was selected to represent the erosion layer at this site. The erosion layer consists of 24 inches of soil with established native and introduced grasses. Refer to pages C1-C-8 through C1-C-15 for the postdevelopment drainage area.

Synthetic Unit Hydrographs and Flow Routing

The rainfall/runoff transformation was performed with the Unit Hydrograph Method. The synthetic unit hydrographs for each watershed were derived by the Snyder Method and Espey's "10-Minute Method" for estimating Snyder Parameters for the landfill permit boundary, and the Fort Worth District Method was used for estimating Snyder Parameters for off-site drainage areas. The parameters and input values for this model are included in the Watershed Characteristics tables on pages C1-C-8 through C1-C-15.

The Kinematic Wave Method was used for routing of the flood wave through the drainage channels. This method is capable of accounting for hydrograph attenuation based on physical channel properties such as length, bottom slope, channel shape, bottom width, and channel roughness.

POSTDEVELOPMENT FLOW SUMMARY

The postdevelopment flow summary table on page C1-C-138 lists the postdevelopment runoff for each drainage area for the 25-year rainfall event. This table summarizes the results of the postdevelopment hydrologic evaluation.

VELOCITY

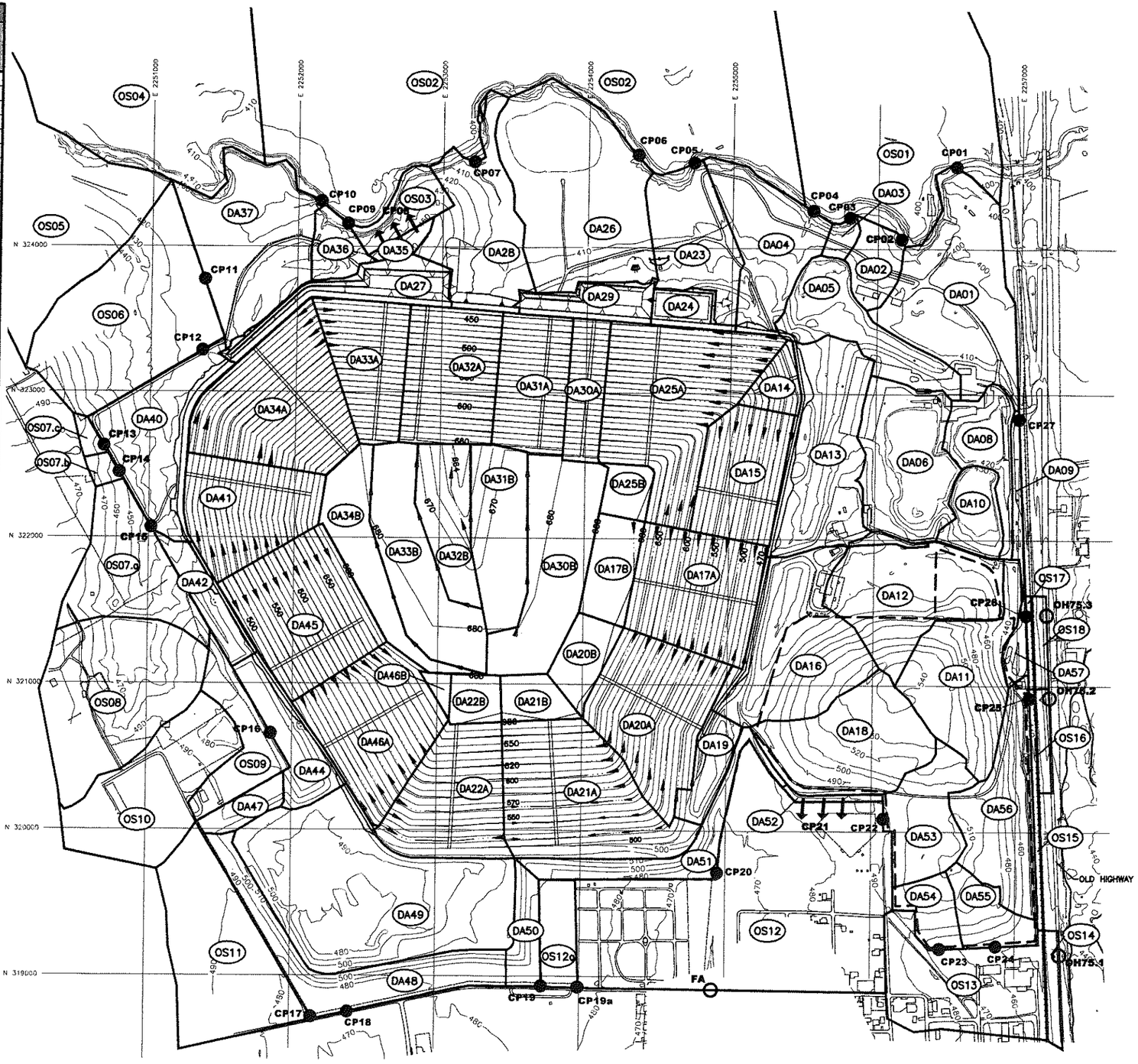
Surface water velocities were determined for each discharge point where the surface water enters or exits the permit boundary. The 25-year, 24-hour peak flow rate was analyzed to determine the velocity at the permit boundary. Manning's Equation was used to evaluate the velocities at the discharge points. Refer to Drawing C1-C-2 for location of discharge points and peak flow rates. Refer to the postdevelopment velocity summary on page C1-C-141 for postdeveloped velocity calculations.

POSTDEVELOPMENT BOUNDARY ANALYSIS SUMMARY

The analysis summary for the postdevelopment condition is provided on page C1-C-143. The table provides for each comparison point (C01 through C14) the peak flow rate, velocity, and volume resulting from the HEC-HMS evaluation for the 25-year, 24 hour rainfall.

POSTDEVELOPMENT DRAINAGE AREA DRAWINGS

POSTDEVELOPED DRAINAGE AREAS			
WATERSHED NAME	AREA (ac)	25-YEAR FLOW RATE (cfs)	25-YEAR VOLUME (ac-ft)
DA1	21.7	86.1	11.1
DA2	4.0	15.4	1.9
DA3	1.2	5.4	0.6
DA4	12.4	46.9	6.0
DA5	10.3	40.9	5.5
DA6	14.3	63.2	7.6
DA7	0.7	2.5	0.3
DA8	6.4	21.2	3.3
DA9	1.7	5.3	0.8
DA10	4.7	23.5	2.6
DA11	14.5	49.8	7.0
DA12	16.4	61.3	7.9
DA13	17.3	55.5	8.3
DA14	2.8	13.7	1.4
DA15	11.6	54.6	5.9
DA16	18.5	68.0	8.9
DA17.A	16.0	72.4	8.2
DA17.B	5.3	17.0	2.6
DA18	15.4	51.4	7.4
DA19	4.1	14.3	2.0
DA20.A	17.2	77.0	8.8
DA20.B	4.2	13.5	2.1
DA21.A	20.9	91.8	10.7
DA21.B	3.2	10.5	1.6
DA22.A	14.4	63.7	7.4
DA22.B	2.7	8.8	1.3
DA23	11.2	38.8	5.4
DA24	2.8	13.4	1.5
DA25.A	23.6	101.3	12.1
DA25.B	2.7	8.3	1.3
DA26	26.6	80.0	60.0
DA27	7.4	20.5	3.8
DA28	14.8	49.6	7.1
DA29	4.7	12.9	2.5
DA30.A	5.6	27.1	2.9
DA30.B	15.6	40.6	7.7
DA31.A	10.5	48.2	5.4
DA31.B	10.4	28.8	5.1
DA32.A	13.7	62.7	7.0
DA32.B	8.1	23.6	4.0
DA33.A	10.8	50.0	5.5
DA33.B	13.8	33.3	6.8
DA34.A	19.5	89.4	10.0
DA34.B	9.0	22.2	4.4
DA35	1.2	5.5	0.6
DA36	3.3	15.0	1.6
DA37	18.3	53.1	8.8
DA40	13.6	39.0	6.6
DA41	13.4	60.5	6.8
DA42	4.4	15.8	2.1
DA44	6.8	16.4	3.5
DA45	17.5	73.9	8.9
DA46.A	16.6	74.6	8.5
DA46.B	0.8	3.2	0.4
DA47	2.6	9.4	1.3
DA48	12.6	37.4	6.1
DA49	34.8	102.9	16.8
DA50	3.5	14.6	1.7
DA51	7.1	23.2	3.4
DA52	0.7	2.7	0.3
DA53	9.0	29.6	4.4
DA54	3.8	15.1	1.8
DA55	4.8	18.6	2.3
DA56	12.7	41.3	6.1
DA57	1.5	5.1	0.7
OS12a	4.3	13.0	2.1



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SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- EXISTING CONTOUR
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA REACH
- STREAM
- DA18 DRAINAGE AREA DESIGNATION
- POINT DISCHARGE
- SHEET FLOW
- OTHER COMPARISON POINT

NOTES:

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY. FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
2. CONTOURS WITHIN THE LANDFILL FOOTPRINT DEPICT POSTDEVELOPED FINAL CONTOURS.
3. DRAINAGE AREA BOUNDARY NOT SHOWN WHERE COINCIDENTAL WITH PERMIT BOUNDARY.

STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED
PROFESSIONAL ENGINEER

C1-C-5 4/12/2012

POSTDEVELOPED DRAINAGE AREA SUMMARY

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD
DALLAS ◆ WICHITA FALLS
817-563-1144

ISSUED FOR PERMITTING PURPOSES ONLY

REVISIONS						
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222

DSN. FAW	DATE : 04/12	DRAWING
DWN. BBB	SCALE : GRAPHIC	C1-C-1
CHK. KJW	DWG : C1_C_1.dwg	

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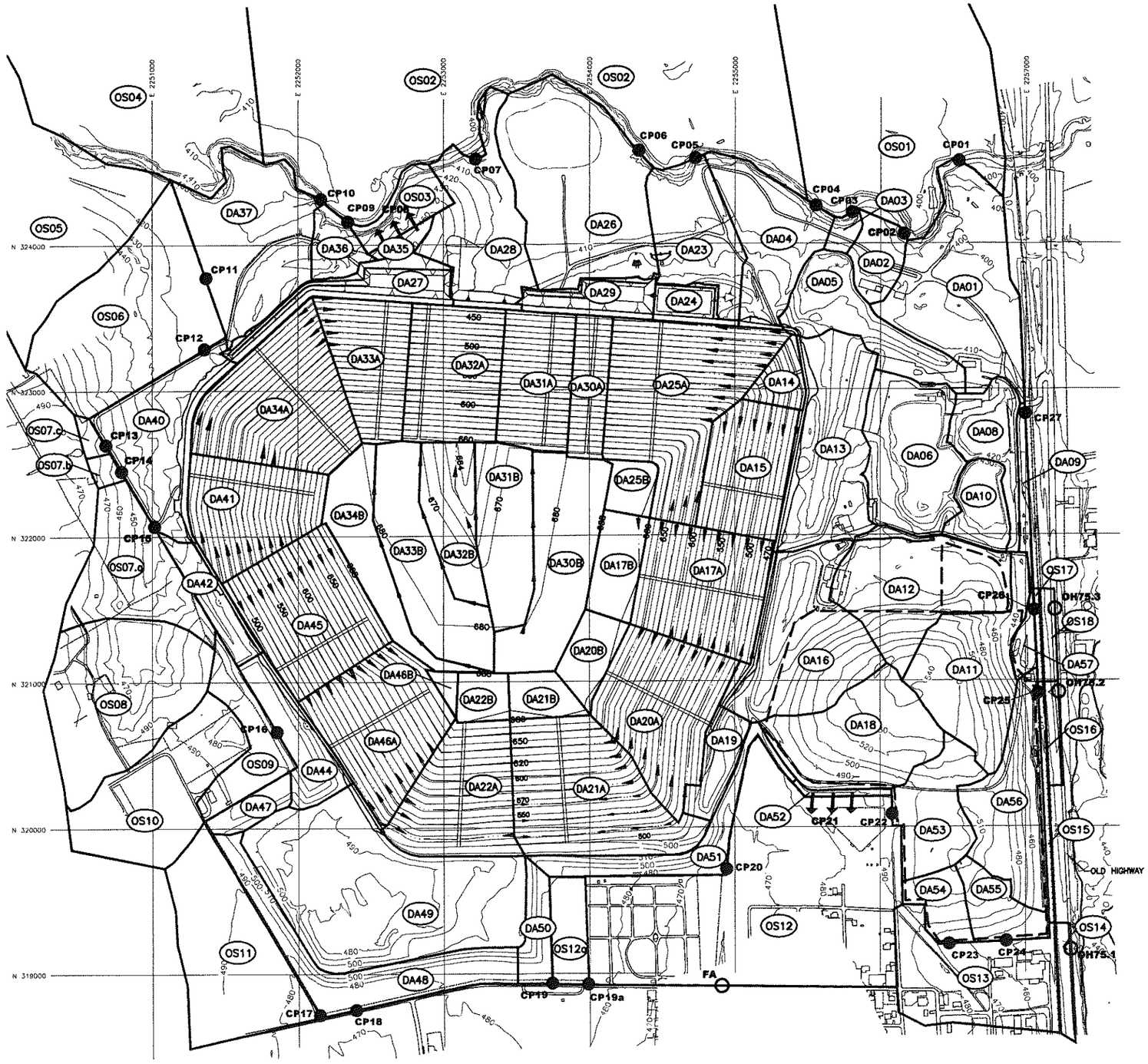
POSTDEVELOPED BOUNDARY ANALYSIS SUMMARY			
BOUNDARY COMPARISON POINT	25-YEAR FLOW RATE (cfs)	25-YEAR VOLUME (ac-ft)	25-YEAR VELOCITY (fps)
CP01	66.1	11.1	2.32
CP02	15.4	1.9	2.46
CP03	5.4	0.6	1.00
CP04	465.4	96.7	19.35
CP05	93.7	20.1	2.02
CP06	80.0	13.6	1.25
CP07	204.6	71.9	9.90
CP08	5.4	0.6	1.62
CP09	15.0	1.6	8.53
CP10	278.9	82.9	16.33
CP11	249.2	74.1	2.79
CP12	187.6	61.7	4.39
CP13	4.2	0.4	3.00
CP14	4.2	0.4	2.83
CP15	45.2	11.3	2.88
CP16	129.3	11.4	13.33
CP17	113.0	9.5	9.60
CP18	124.8	32.4	4.88
CP19	14.6	1.7	3.36
CP19a	25.5	3.8	4.11
CP20	23.2	3.4	1.77
CP21	2.7	0.3	1.32
CP22	29.6	5.8	1.09
CP23	15.1	1.8	4.44
CP24	18.6	2.3	6.00
CP25	41.3	6.1	7.96
CP26	5.1	0.7	2.44
CP27	0.0	0.0	0.0
OTHER COMPARISON POINTS			
FA	323.5	37.8	
OH75.1	68.3	11.9	
OH75.2	53.1	8.1	
OH75.3	24.0	2.1	



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SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPERTY BOUNDARY
- LANDFILL FOOTPRINT
- 60 EXISTING CONTOUR
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA REACH
- STREAM
- DA18 DRAINAGE AREA DESIGNATION
- POINT DISCHARGE
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- OTHER COMPARISON POINT

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REVISIONS						
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

POSTDEVELOPED BOUNDARY ANALYSIS SUMMARY

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
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MANSFIELD
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TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222

DSN. FAW	DATE : 04/12	DRAWING	
DWN. BBB	SCALE : GRAPHIC	C1-C-2	
CHK. KJW	DWG : C1_C_2.dwg		

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POSTDEVELOPED WATERSHED CHARACTERISTICS

Waste Management of Texas, Inc.
Skyline Landfill
UNIT HYDROGRAPH DATA
Postdeveloped Watershed Characteristics

				Main Reach Slope Calculation (for Espey Method)					Manning's "n" Determination				Reach 2 Slope Calculation								Reach 3 Slope Calculation							
Watershed Name	Watershed Area (ac)	Watershed Area (sq mi)	CN	Longest Reach (ft)	20% of Reach Length (ft)	Elevation @ 20% Reach Length from Upstream	Downstream Elevation	Slope (ft/ft)	Sheet Flow % of n = 0.070	Shallow Concentrated or Swale Flow	Channelized Flow % of n = 0.035	Composite n	Reach 2 Length (ft)	Upstream Elevation	Downstream Elevation	Slope (ft/ft)	Manning's "n"	Shape	Bottow Width (ft)	Side Slopes (H:V)	Reach 3 Length (ft)	Upstream Elevation	Downstream Elevation	Slope (ft/ft)	Manning's "n"	Shape	Bottow Width (ft)	Side Slopes (H:V)
Changed Areas																												
DA04	12.4	0.0193	84	993	199	432	382	0.0629	20		80	0.042	429	412	382	0.070	0.035	Trap	20	6.0								
DA05	10.3	0.0161	89	634	127	437	412	0.0493	45	40	15	0.057																
DA13	17.3	0.0270	84	1579	316	448	413	0.0277	20		80	0.042	482	450	413	0.077	0.035	Trap	56	5.0	1380	460	413	0.034	0.035	Trap	30	4.0
													1364	430	414	0.012	0.035	Trap	30	4.0								
DA14	2.8	0.0044	87	548	110	528	450	0.1779	25	20	55	0.047																
DA15	11.6	0.0181	87	830	166	580	460	0.1807	5	20	75	0.040																
DA16	18.5	0.0289	84	1083	217	500	430	0.0808	30	55	15	0.054	464	460	430	0.065	0.035	Trap	10	4.0	1005	460	430	0.030	0.035	Trap	60	4.0
DA17A	16.0	0.0250	87	1186	237	660	460	0.2108	5	25	70	0.041	876	680	460	0.251	0.013	Trap	20	4.0								
DA17B	5.3	0.0083	85	530	106	685	680	0.0118	45	55		0.059																
DA19	4.1	0.0064	84	697	139	467	458	0.0161			100	0.035	697	480	458	0.032	0.035	Trap	6	4.0								
DA20A	17.2	0.0269	87	1135	227	660	480	0.1982	5	30	65	0.041	800	680	480	0.250	0.013	Trap	20	4.0								
DA20B	4.2	0.0066	85	559	112	685	680	0.0112	40	60		0.058																
DA21A	20.9	0.0327	87	1159	232	650	500	0.1618	5	25	70	0.041	1019	500	484	0.016	0.035	Trap	0	4.0	867	680	500	0.208	0.013	Trap	20	4
													752	504	500	0.005	0.035	Trap	0	4.0								
DA21B	3.2	0.0050	85	532	106	685	680	0.0117	45	55		0.059																
DA22A	14.4	0.0225	87	1156	231	663	504	0.1719	10	15	75	0.041	862	680	504	0.204	0.013	Trap	20	4.0								
DA22B	2.7	0.0042	85	530	106	685	680	0.0118	45	55		0.059																
DA23	11.2	0.0175	84	1303	261	444	383	0.0585	25	45	30	0.051	973	434	383	0.052	0.035	Trap	20	10.0								
DA24	2.8	0.0043	89	387	77	430	412	0.0581			100	0.035																
DA25A	23.6	0.0369	87	1537	307	661	437	0.1822	5	35	60	0.042	958	680	437	0.254	0.013	Trap	20	4.0								
DA25B	2.7	0.0042	84	606	121	685	680	0.0103	40	60		0.058																
DA26	26.6	0.0415	87	1284	257	409	384	0.0243	90		10	0.067																
DA27	7.4	0.0116	87	1656	331	423	415	0.0060			100	0.035																
DA28	14.8	0.0231	84	1300	260	431	392	0.0375	25	10	65	0.045	1182	420	392	0.024	0.035	Trap	100	5.0								
DA29	4.7	0.0074	88	602	120	413	412	0.0021	20		80	0.042																
DA30A	5.6	0.0088	87	1074	215	655	450	0.2386	5	10	85	0.038	886	670	450	0.248	0.013	Trap	20	4.0								
DA30B	15.6	0.0244	85	1836	367	681	670	0.0075	15	30	55	0.045																
DA31A	10.5	0.0164	87	1161	232	651	440	0.2272	5	30	65	0.041	911	660	440	0.241	0.013	Trap	20	4.0								
DA31B	10.4	0.0163	85	1538	308	672	660	0.0098	20	40	40	0.048																

Waste Management of Texas, Inc.
Skyline Landfill
UNIT HYDROGRAPH DATA
Postdeveloped Watershed Characteristics

				Main Reach Slope Calculation (for Espey Method)					Manning's "n" Determination				Reach 2 Slope Calculation								Reach 3 Slope Calculation							
Watershed Name	Watershed Area (ac)	Watershed Area (sq mi)	CN	Longest Reach (ft)	20% of Reach Length (ft)	Elevation @ 20% Reach Length from Upstream	Downstream Elevation	Slope (ft/ft)	Sheet Flow % of n = 0.070	Shallow Concentrated or Swale Flow	Channelized Flow % of n = 0.035	Composite n	Reach 2 Length (ft)	Upstream Elevation	Downstream Elevation	Slope (ft/ft)	Manning's "n"	Shape	Bottow Width (ft)	Side Slopes (H:V)	Reach 3 Length (ft)	Upstream Elevation	Downstream Elevation	Slope (ft/ft)	Manning's "n"	Shape	Bottow Width (ft)	Side Slopes (H:V)
DA32A	13.7	0.0214	87	1148	230	650	440	0.2287	5	20	75	0.040	923	660	440	0.238	0.013	Trap	20	4.0								
DA32B	8.1	0.0127	85	1139	228	671	660	0.0121	25	55	20	0.052																
DA33A	10.8	0.0169	87	1094	219	650	430	0.2514	10	20	70	0.042	948	670	430	0.253	0.013	Trap	20	4.0								
DA33B	13.8	0.0216	85	1930	386	677	670	0.0045	15	30	55	0.045																
DA34A	19.5	0.0305	87	1184	237	650	440	0.2217	5	10	85	0.038	982	680	440	0.244	0.013	Trap	20	4.0								
DA34B	9.0	0.0141	85	1923	385	687	680	0.0046	15	30	55	0.045																
DA35	1.2	0.0018	84	115	23	453	443	0.1087	100			0.070																
DA36	3.3	0.0052	84	367	73	431	394	0.1260	70		30	0.060																
DA37	18.3	0.0286	84	1326	265	414	394	0.0189	70		30	0.060	979	412	394	0.018	0.035	Trap	50	20.0								
DA40	13.6	0.0213	84	1444	289	425	414	0.0095			100	0.035	619	418	414	0.006	0.035	Trap	90	6.0	504	458	418	0.079	0.035	Trap	10	5.0
													568	450	418	0.056	0.035	Trap	10	6.0	824	431	418	0.016	0.035	Trap	60	6.0
DA41	13.4	0.0209	87	1268	254	662	441	0.2179	5	25	70	0.041																
DA42	4.4	0.0069	84	1061	212	460	434	0.0306	10		90	0.039	995	462	434	0.028	0.035	Trap	20	4.5								
DA44	6.8	0.0106	88	919	184	463	462	0.0014	10		90	0.039																
DA45	17.5	0.0273	87	1409	282	671	490	0.1606	5	45	50	0.044																
DA46A	16.6	0.0259	87	1062	212	670	510	0.1883	5	20	75	0.040	761	670	510	0.210	0.013	Trap	20	4.0								
DA46B	0.8	0.0013	85	272	54	686	680	0.0276	100			0.070																
DA49	34.8	0.0544	84	1374	275	497	475	0.0200	20	40	40	0.048																
OS12a	4.3	0.0067	84	702	140	490	484	0.0107	40	60		0.058	252	486	484	0.008	0.035	Trap	15	5.0								
Areas Unchanged																												
DA01	21.7	0.0339	87	1756	351	407	379	0.0199	15	35	50	0.046																
DA02	4.0	0.0063	84	624	125	411	380	0.0621	50	50		0.060																
DA03	1.2	0.0019	84	292	58	407	382	0.1070	100			0.070																
DA06	14.3	0.0223	89	351	70	456	425	0.1104	100			0.070																
DA07	0.7	0.0011	84	505	101	462	454	0.0198	60	40		0.062																
DA08	6.4	0.0100	88	1109	222	432	420	0.0135		55	45	0.043	672	426	420	0.009	0.035	Trap	10	4.0								
DA09	1.7	0.0027	84	1182	236	435	422	0.0137	25	50	25	0.051																
DA10	4.7	0.0073	91	218	44	451	426	0.1433	100			0.070																
DA11	14.5	0.0227	84	2133	427	533	430	0.0604	15	30	55	0.045																
DA12	16.4	0.0256	84	1296	259	520	436	0.0810	20	45	35	0.049	488	454	436	0.037	0.035	Trap	0	5.0								
DA18	15.4	0.0241	84	1781	356	532	475	0.0400	15	15	70	0.043																

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Waste Management of Texas, Inc.
Skyline Landfill
UNIT HYDROGRAPH DATA
Postdeveloped Watershed Characteristics

				Main Reach Slope Calculation (for Espey Method)					Manning's "n" Determination				Reach 2 Slope Calculation								Reach 3 Slope Calculation							
Watershed Name	Watershed Area (ac)	Watershed Area (sq mi)	CN	Longest Reach (ft)	20% of Reach Length (ft)	Elevation @ 20% Reach Length from Upstream	Downstream Elevation	Slope (ft/ft)	Sheet Flow % of n = 0.070	Shallow Concentrated or Swale Flow	Channelized Flow % of n = 0.035	Composite n	Reach 2 Length (ft)	Upstream Elevation	Downstream Elevation	Slope (ft/ft)	Manning's "n"	Shape	Bottow Width (ft)	Side Slopes (H:V)	Reach 3 Length (ft)	Upstream Elevation	Downstream Elevation	Slope (ft/ft)	Manning's "n"	Shape	Bottow Width (ft)	Side Slopes (H:V)
Areas Unchanged																												
DA47	2.6	0.0041	84	640	128	491	483	0.0156			100	0.035																
DA48	12.6	0.0197	84	1566	313	490	474	0.0128			100	0.035																
DA50	3.5	0.0055	84	329	66	509	486	0.0874	100			0.070																
DA51	7.1	0.0111	84	1348	270	489	466	0.0213			100	0.035																
DA52	0.7	0.0011	84	248	50	491	486	0.0252	100			0.070																
DA53	9.0	0.0141	84	935	187	519	489	0.0401	90		10	0.067																
DA54	3.8	0.0059	84	616	123	503	466	0.0751	45	20	35	0.054																
DA55	4.8	0.0075	84	795	159	502	454	0.0755	40	30	30	0.054																
DA56	12.7	0.0198	84	1739	348	484	436	0.0345	15	10	75	0.042																
DA57	1.5	0.0023	84	492	98	441	432	0.0229	100			0.070																
OS06	(Ft. Worth District Method)												516	413	412	0.002	0.035	Trap	130	16.0								
OS07.A	13.2	0.0206	84	1178	236	472	431	0.0435	25	25	50	0.048	570	444	431	0.023	0.035	Trap	22	4.0								
OS07.B	0.9	0.0014	84	247	49	473	450	0.1164	100			0.070																
OS07.C	0.9	0.0014	84	274	55	483	458	0.1141	100			0.070																
OS09	(Ft. Worth District Method)												427	476	468	0.019	0.035	Trap	20	10.0								
OS12	(Ft. Worth District Method)												1175	484	452	0.027	0.035	Trap	15	5.0	800	466	452	0.018	0.035	Trap	15	3.0
													1160	486	466	0.017	0.035	Trap	10	5.0								
OS13	(Ft. Worth District Method)												310	454	444	0.032	0.035	Trap	30	20.0	711	466	444	0.031	0.035	Trap	30	10.0
OS14	1.8	0.0028	84	620	124	447	440	0.0141	10	90		0.052																
OS15	1.6	0.0025	84	1563	313	446	432	0.0112	15	25	60	0.044																
OS16	1.6	0.0025	84	645	129	435	426	0.0174	20	30	50	0.047																
OS17	0.6	0.0009	84	472	94	436	430	0.0159	15	25	60	0.044																
OS18	1.5	0.0023	84	510	102	429	424	0.0123	15	25	60	0.044																

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Waste Management of Texas, Inc.
Skyline Landfill
UNIT HYDROGRAPH DATA

Snyder's Hydrograph Coefficients (Espey's 10-Minute Method)

Postdeveloped Conditions

Watershed Name	Longest Reach (ft)	Slope (ft/ft)	Impervious Cover %	Manning's "n"	Eff. Coeff.	Tr (min)	Tlag (min)	Area (sq mi)	qp (cfs/sq mi)	Tlag (hr)	Cp
					(A)	(B)	(C)		(D)		(E)
Changed Areas											
DA04	993	0.0629	2.0	0.042	0.88	21.7	19.2	0.0193	1377.3	0.32	0.69
DA05	634	0.0493	2.0	0.057	0.94	23.2	20.7	0.0161	1286.8	0.35	0.70
DA13	1579	0.0277	2.0	0.042	0.88	29.6	27.1	0.0270	973.6	0.45	0.69
DA14	548	0.1779	2.0	0.047	0.90	15.2	12.7	0.0044	2138.2	0.21	0.71
DA15	830	0.1807	2.0	0.040	0.85	15.3	12.8	0.0181	1997.3	0.21	0.67
DA16	1083	0.0808	2.0	0.054	0.93	22.7	20.2	0.0289	1287.3	0.34	0.68
DA17A	1186	0.2108	2.0	0.041	0.88	16.7	14.2	0.0250	1803.1	0.24	0.67
DA17B	530	0.0118	2.0	0.059	0.94	31.9	29.4	0.0083	942.0	0.49	0.72
DA19	697	0.0161	2.0	0.035	0.85	27.0	24.5	0.0064	1139.0	0.41	0.73
DA20A	1135	0.1982	2.0	0.041	0.88	16.8	14.3	0.0269	1787.8	0.24	0.66
DA20B	559	0.0112	2.0	0.058	0.94	32.7	30.2	0.0066	925.1	0.50	0.73
DA21A	1159	0.1618	2.0	0.041	0.88	17.7	15.2	0.0327	1671.4	0.25	0.66
DA21B	532	0.0117	2.0	0.059	0.94	31.9	29.4	0.0050	959.3	0.49	0.74
DA22A	1156	0.1719	2.0	0.041	0.88	17.4	14.9	0.0225	1725.5	0.25	0.67
DA22B	530	0.0118	2.0	0.059	0.94	31.9	29.4	0.0042	967.7	0.49	0.74
DA23	1303	0.0585	2.0	0.051	0.93	25.7	23.2	0.0175	1151.1	0.39	0.70
DA24	387	0.0581	2.0	0.035	0.85	17.1	14.6	0.0043	1883.9	0.24	0.72
DA25A	1537	0.1822	2.0	0.042	0.88	18.4	15.9	0.0369	1601.8	0.26	0.66
DA25B	606	0.0103	2.0	0.058	0.94	34.0	31.5	0.0042	903.4	0.53	0.74
DA26	1284	0.0243	2.0	0.067	0.98	34.9	32.4	0.0415	801.2	0.54	0.68
DA27	1656	0.0060	2.0	0.035	0.85	42.1	39.6	0.0116	691.1	0.66	0.71

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Waste Management of Texas, Inc.
Skyline Landfill
UNIT HYDROGRAPH DATA

Snyder's Hydrograph Coefficients (Espey's 10-Minute Method)

Postdeveloped Conditions

Watershed Name	Longest Reach (ft)	Slope (ft/ft)	Impervious Cover %	Manning's "n"	Eff. Coeff.	Tr (min)	Tlag (min)	Area (sq mi)	qp (cfs/sq mi)	Tlag (hr)	Cp
					(A)	(B)	(C)		(D)		(E)
DA28	1300	0.0375	2.0	0.045	0.90	27.3	24.8	0.0231	1066.8	0.41	0.69
DA29	602	0.0021	2.0	0.042	0.88	45.3	42.8	0.0074	650.0	0.71	0.72
DA30A	1074	0.2386	2.0	0.038	0.85	15.2	12.7	0.0088	2078.8	0.21	0.69
DA30B	1836	0.0075	2.0	0.045	0.88	42.5	40.0	0.0244	663.8	0.67	0.69
DA31A	1161	0.2272	2.0	0.041	0.88	16.3	13.8	0.0164	1880.6	0.23	0.68
DA31B	1538	0.0098	2.0	0.048	0.90	39.8	37.3	0.0163	724.0	0.62	0.70
DA32A	1148	0.2287	2.0	0.040	0.85	15.6	13.1	0.0214	1950.8	0.22	0.66
DA32B	1139	0.0121	2.0	0.052	0.93	37.0	34.5	0.0127	790.3	0.57	0.71
DA33A	1094	0.2514	2.0	0.042	0.88	15.7	13.2	0.0169	1958.5	0.22	0.67
DA33B	1930	0.0045	2.0	0.045	0.88	48.7	46.2	0.0216	576.1	0.77	0.69
DA34A	1184	0.2217	2.0	0.038	0.85	15.8	13.3	0.0305	1893.2	0.22	0.66
DA34B	1923	0.0046	2.0	0.045	0.88	48.6	46.1	0.0141	587.1	0.77	0.71
DA35	115	0.1087	2.0	0.070	1.00	14.2	11.7	0.0018	2370.7	0.20	0.72
DA36	367	0.1260	2.0	0.060	0.94	16.2	13.7	0.0052	1980.0	0.23	0.71
DA37	1326	0.0189	2.0	0.060	0.94	35.0	32.5	0.0286	811.0	0.54	0.69
DA40	1444	0.0095	2.0	0.035	0.85	36.4	33.9	0.0213	788.1	0.56	0.70
DA41	1268	0.2179	2.0	0.041	0.88	16.8	14.3	0.0209	1802.1	0.24	0.67
DA42	1061	0.0306	2.0	0.039	0.85	25.3	22.8	0.0069	1215.7	0.38	0.72
DA44	919	0.0014	2.0	0.039	0.85	53.3	50.8	0.0106	538.0	0.85	0.71
DA45	1409	0.1606	2.0	0.044	0.88	18.6	16.1	0.0273	1601.1	0.27	0.67
DA46A	1062	0.1883	2.0	0.040	0.85	16.1	13.6	0.0259	1873.5	0.23	0.66
DA46B	272	0.0276	2.0	0.070	1.00	24.5	22.0	0.0013	1349.8	0.37	0.77
DA49	1374	0.0200	2.0	0.048	0.90	32.4	29.9	0.0544	859.7	0.50	0.67
OS12a	702	0.0107	2.0	0.058	0.94	34.9	32.4	0.0067	863.6	0.54	0.73

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Waste Management of Texas, Inc.
Skyline Landfill
UNIT HYDROGRAPH DATA

Snyder's Hydrograph Coefficients (Espey's 10-Minute Method)

Postdeveloped Conditions

Watershed Name	Longest Reach (ft)	Slope (ft/ft)	Impervious Cover %	Manning's "n"	Eff. Coeff.	Tr (min)	Tlag (min)	Area (sq mi)	qp (cfs/sq mi)	Tlag (hr)	Cp
					(A)	(B)	(C)		(D)		(E)
Areas Unchanged											
DA01	1756	0.0199	2.0	0.046	0.90	34.3	31.8	0.0339	823.8	0.53	0.68
DA02	624	0.0621	2.0	0.060	0.96	22.7	20.2	0.0063	1372.8	0.34	0.72
DA03	292	0.1070	2.0	0.070	1.00	17.7	15.2	0.0019	1875.8	0.25	0.74
DA06	351	0.1104	2.0	0.070	1.00	18.3	15.8	0.0223	1637.1	0.26	0.67
DA07	505	0.0198	2.0	0.062	0.96	28.7	26.2	0.0011	1142.1	0.44	0.78
DA08	1109	0.0135	2.0	0.043	0.88	32.6	30.1	0.0100	912.1	0.50	0.72
DA09	1182	0.0137	2.0	0.051	0.93	36.1	33.6	0.0027	863.1	0.56	0.76
DA10	218	0.1433	2.0	0.070	1.00	15.4	12.9	0.0073	2063.7	0.21	0.69
DA11	2133	0.0604	2.0	0.045	0.88	26.1	23.6	0.0227	1121.3	0.39	0.69
DA12	1296	0.0810	2.0	0.049	0.90	22.5	20.0	0.0256	1306.4	0.33	0.68
DA18	1781	0.0400	2.0	0.043	0.88	27.7	25.2	0.0241	1047.5	0.42	0.69
DA47	640	0.0156	2.0	0.035	0.85	26.7	24.2	0.0041	1174.4	0.40	0.74
DA48	1566	0.0128	2.0	0.035	0.85	34.4	31.9	0.0197	838.1	0.53	0.70
DA50	329	0.0874	2.0	0.070	1.00	19.1	16.6	0.0055	1653.1	0.28	0.72
DA51	1348	0.0213	2.0	0.035	0.85	29.3	26.8	0.0111	1020.7	0.45	0.71
DA52	248	0.0252	2.0	0.070	1.00	24.5	22.0	0.0011	1355.2	0.37	0.78
DA53	935	0.0401	2.0	0.067	0.98	28.7	26.2	0.0141	1033.9	0.44	0.70
DA54	616	0.0751	2.0	0.054	0.93	20.3	17.8	0.0059	1545.1	0.30	0.72
DA55	795	0.0755	2.0	0.054	0.93	21.5	19.0	0.0075	1439.6	0.32	0.71
DA56	1739	0.0345	2.0	0.042	0.88	28.6	26.1	0.0198	1020.6	0.44	0.69
DA57	492	0.0229	2.0	0.070	1.00	29.4	26.9	0.0023	1082.0	0.45	0.76

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Skyline Landfill
UNIT HYDROGRAPH DATA

Snyder's Hydrograph Coefficients (Espey's 10-Minute Method)

Postdeveloped Conditions

Watershed Name	Longest Reach (ft)	Slope (ft/ft)	Impervious Cover %	Manning's "n"	Eff. Coeff.	Tr (min)	Tlag (min)	Area (sq mi)	qp (cfs/sq mi)	Tlag (hr)	Cp
					(A)	(B)	(C)		(D)		(E)
Areas Unchanged											
OS07.A	1178	0.0435	2.0	0.048	0.90	25.7	23.2	0.0206	1142.4	0.39	0.69
OS07.B	247	0.1164	2.0	0.070	1.00	16.7	14.2	0.0014	2022.2	0.24	0.75
OS07.C	274	0.1141	2.0	0.070	1.00	17.2	14.7	0.0014	1960.5	0.24	0.75
OS14	620	0.0141	2.0	0.052	0.93	30.9	28.4	0.0028	1016.4	0.47	0.75
OS15	1563	0.0112	2.0	0.044	0.88	37.0	34.5	0.0025	842.4	0.58	0.76
OS16	645	0.0174	2.0	0.047	0.90	28.2	25.7	0.0025	1129.0	0.43	0.75
OS17	472	0.0159	2.0	0.044	0.88	25.8	23.3	0.0009	1291.8	0.39	0.78
OS18	510	0.0123	2.0	0.044	0.88	28.0	25.5	0.0023	1139.8	0.42	0.76

(A) Conveyance efficiency from Dodson & Associates, Inc., *Hands-On HEC-1*, February 1999, pgs 6-19.

(B) $Tr=3.1(L^{0.23})(S^{-0.25})(I^{-0.18})(Effcoef^{-1.57})$

(C) $Tlag=Tr-(5/2)$

(D) $qp=31600(A^{-0.04})(Tr^{-1.07})$

(E) $Cp=49.375(A^{-0.04})(Tr^{-1.07})(Tlag)$

Tr = Surface runoff to unit hydrograph peak (min)
L = Distance along main channel from study point to watershed boundary
S = Main channel slope (ft/ft)
I = Impervious cover within the watershed
Tlag = Watershed lag time (min)
qp = Hydrograph peak discharge (cfs/sq. mi.)
Cp = Snyder's peaking coefficient

Waste Management of Texas, Inc.
Skyline Landfill
Postdeveloped Regional Watershed Characteristics
Snyder's Hydrograph Coefficients (Ft. Worth District Method)

Watershed Name	Area (acres)	Area (sq mi)	CN	Watershed Length (ft)	Upstream Elevation at 80% (ft)	Downstream Elevation (ft)	Length to Centroid (ft)	L Watershed Length (mi)	Lca Length to Centroid (mi)	S Slope (ft/mi)	LLca/S^0.5	Tlag (hr)	Percent Urbanization (%)	Fraction Urbanization	Percent Sand (%)	Cp	Tlag (hr)	qp (cfs/sq mi)
																(C)	(A)	(B)
OS01	420.4	0.6569	84	10,790	470	395	2,837	2.04	0.54	36.7	0.181	0.49	0.6	0.006	0	0.72	0.73	946.5
OS02	354.2	0.5534	83	9,660	470	396	4,293	1.83	0.81	40.4	0.234	0.53	2.3	0.023	0	0.72	0.81	867.6
OS03 (Espey)																		
OS04	398.3	0.6223	83	10,957	475	405	4,063	2.08	0.77	33.7	0.275	0.56	3.6	0.036	0	0.72	0.86	822.2
OS05	29.7	0.0464	81	2,363	450	394	1,704	0.45	0.32	125.1	0.013	0.17	8.6	0.086	0	0.72	0.26	2747.8
OS06	25.8	0.0403	84	1,487	460	412	582	0.28	0.11	170.4	0.002	0.09	5.4	0.054	0	0.72	0.13	5154.7
OS07 (Espey)																		
OS08	22.7	0.0355	86	1,409	499	462	701	0.27	0.13	138.7	0.003	0.09	24.0	0.240	0	0.72	0.15	5314.4
OS09	7.1	0.0111	84	843	492	468	55	0.16	0.01	150.3	0.000	0.03	0.0	0.000	0	0.72	0.04	14954.9
OS10	17.1	0.0267	84	1,456	500	478	682	0.28	0.13	79.8	0.004	0.11	0.0	0.000	0	0.72	0.16	4082.7
OS11	19.7	0.0308	84	1,520	494	478	796	0.29	0.15	55.6	0.006	0.13	0.0	0.000	0	0.72	0.19	3530.7
OS12	53.7	0.0839	84	2,017	478	452	1,465	0.38	0.28	68.1	0.013	0.18	0.0	0.000	0	0.72	0.26	2605.2
OS13	16.2	0.0253	84	1,270	476	444	607	0.24	0.11	133.0	0.002	0.09	0.0	0.000	0	0.72	0.14	4963.8
Regional	43,066	67.2906	82	115,174	610	405	63,613	21.81	12.05	9.4	85.727	4.86	10.3	0.103	0	0.72	8.06	55.7

Snyder's hydrograph coefficients determined using the Ft. Worth District Method.

(A) Watershed Lag, Tlag, is based on Figure 4 - Watershed Lag vs. Watershed Characteristics on page 14 of Reference 1.

(B) Peak Unit Hydrograph Flow Rate, qp = 460 / Tlag, page 16 of Reference 1.

(C) Peaking Coefficient, Cp = 460 / 640 = 0.72, page 8 of Reference 2.

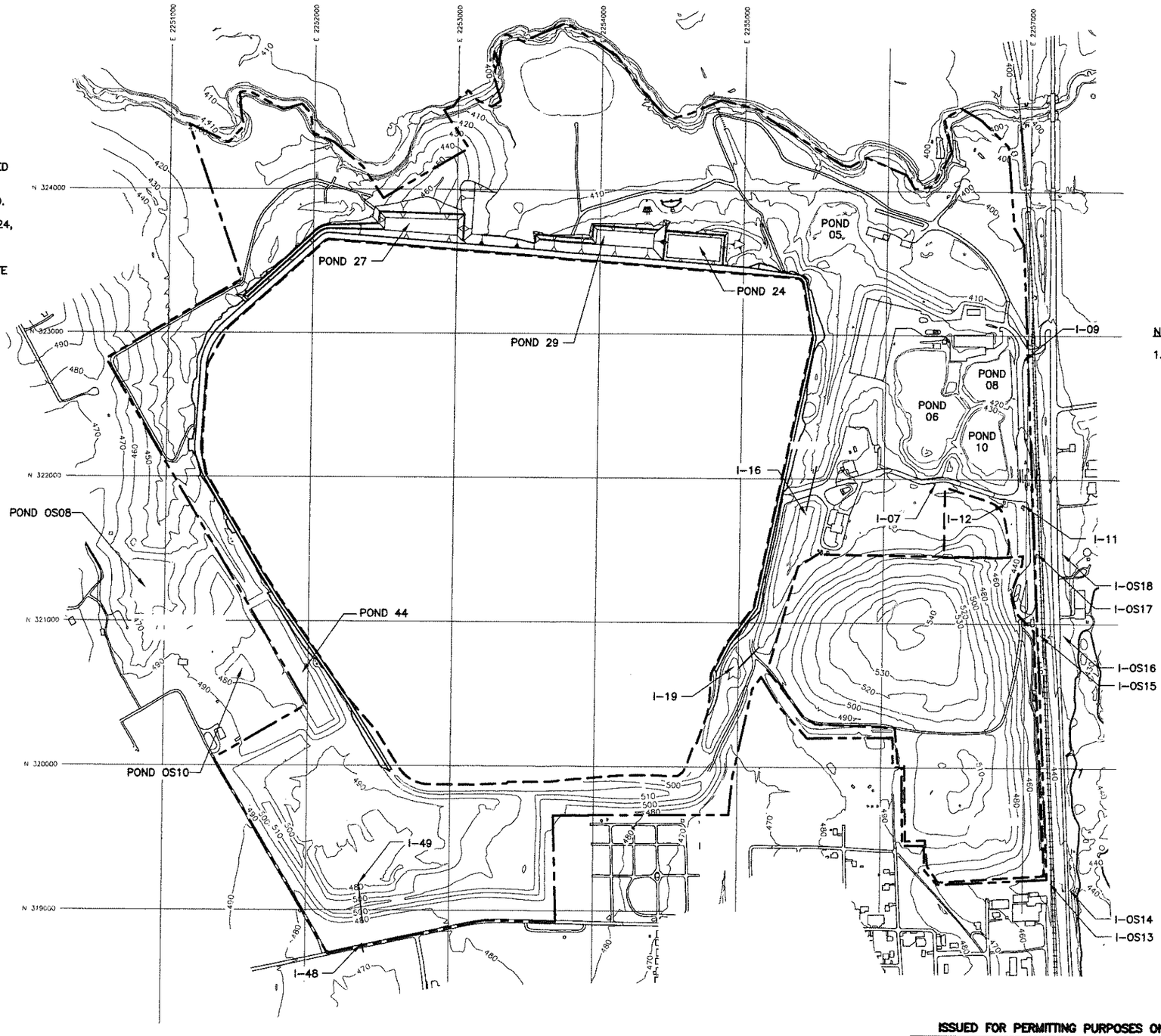
References:

1. *Synthetic Unit Hydrograph Relationships, Trinity River Tributaries, Fort Worth - Dallas Urban Area* , August 1970, by Thomas L. Nelson.
2. *Effects of Urbanization on Various Frequency Peak Discharges* , October 1977, by Paul K. Rodman.

POSTDEVELOPMENT DRAINAGE STRUCTURE DESIGN PARAMETERS

DRAINAGE STRUCTURE NOTES:

1. POND 24, POND 27, AND POND 29 ARE PROPOSED ONSITE DETENTION PONDS.
2. POND 44 IS AN EXISTING ONSITE DETENTION POND.
3. POND 05, POND 06, POND 08, POND 10, POND 24, AND POND 29 ARE EXISTING ONSITE RETENTION PONDS.
4. POND OS08 AND POND OS10 ARE EXISTING OFFSITE RETENTION PONDS.
5. I-16 AND I-19 ARE EXISTING DRAINAGE CONTROL STRUCTURES WITHIN THE EAST DITCH.
6. I-07, I-09, I-11, I-12, I-48, AND I-49 ARE EXISTING ONSITE DRAINAGE CONTROL STRUCTURES.
7. I-OS13, I-OS14, I-OS15, I-OS16, I-OS17, AND I-OS18 ARE EXISTING OFFSITE DRAINAGE CONTROL STRUCTURES WHICH RECEIVE STORMWATER RUNOFF FROM THE SKYLINE LANDFILL.



0 400 800
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- 60 EXISTING CONTOUR
- STREAM

NOTES:

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY. FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.

STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED
PROFESSIONAL ENGINEER
4/12/2012

C1-C-17

POSTDEVELOPED DRAINAGE STRUCTURE LOCATION PLAN

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD
DALLAS • WICHITA FALLS
817-563-1144

ISSUED FOR PERMITTING PURPOSES ONLY

REVISIONS							TBPE FIRM NO. F-256	TBPG FIRM NO. 50222
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	DSN. FAW / DATE : 04/12	DRAWING C1-C-3
							DWN. BBB / SCALE : GRAPHIC	
							CHK. KJW / DWG : C1_C_3.dwg	

J:\101\01\120\ATT C\C1_C_3.dwg Layout: Layout1 User: bboles

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 05

Reservoir

Description:	
Downstream:	R04
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 05
Initial Condition:	Elevation
Initial Elevation:	412 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	0
Spillways:	1
Dam Tops:	1
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	
Direction:	
Number Barrels:	
Solution Method:	
Shape:	
Chart:	
Scale:	
Length:	ft
Diameter:	ft
Inlet Elevation:	ft
Entrance Coefficient:	
Outlet Elevation:	
Exit Coefficient:	
Mannings n:	

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	412 ft
Length:	40 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	Level Overflow
Direction:	Main
Elevation:	415
Length:	800
Coefficient:	2.6

Paired Data

Elevation Storage Functions
Pond 05

Elevation (ft)	Storage (ac-ft)	Storage (cy)
400	0.000	0
402	4.000	6,453
404	13.000	20,973
406	30.000	48,400
408	56.000	90,347
410	93.000	150,040
412	101.753	164,161
414	110.505	178,282
416	121.0457	195,287

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 06

Reservoir

Description:	
Downstream:	Pond 05
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 06
Initial Condition:	Elevation
Initial Elevation:	424.5 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Orifice Outlet
Direction:	Main
Number Barrels:	1
Center Elevation:	430 ft
Area	18 sf
Coefficient:	0.67

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	430.7 ft
Length:	50 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
Pond 06

Elevation (ft)	Storage (ac-ft)	Storage (cy)
416	0.000	0
418	7.789	12,566
420	16.352	26,381
422	26.662	43,015
424	36.062	58,180
426	44.069	71,098
428	56.461	91,090
430	69.247	111,718
432	82.049	132,373

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 08

Reservoir

Description:	
Downstream:	Pond 05
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 08
Initial Condition:	Elevation
Initial Elevation:	418.5 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Orifice Outlet
Direction:	Main
Number Barrels:	1
Center Elevation:	420 ft
Area	18 sf
Coefficient:	0.67

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	422.5 ft
Length:	60 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	Level Overflow
Direction:	Main
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
Pond 08

Elevation (ft)	Storage (ac-ft)	Storage (cy)
405	0.000	0
406	1.000	1,613
408	2.000	3,227
410	3.000	4,840
412	4.000	6,453
414	7.000	11,293
416	10.000	16,133
418	12.000	19,360
420	15.286	24,662
422	20.451	32,995
424	25.903	41,790

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 10

Reservoir

Description:	
Downstream:	Pond 06
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 10
Initial Condition:	Elevation
Initial Elevation:	425.5 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	0
Spillways:	1
Dam Tops:	1
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	
Direction:	
Number Barrels:	
Solution Method:	
Shape:	
Chart:	
Scale:	
Length:	ft
Diameter:	ft
Inlet Elevation:	ft
Entrance Coefficient:	
Outlet Elevation:	
Exit Coefficient:	
Mannings n:	

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	430 ft
Length:	14 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	Level Overflow
Direction:	Main
Elevation:	432
Length:	200
Coefficient:	2.6

Paired Data

Elevation Storage Functions
Pond 10

Elevation (ft)	Storage (ac-ft)	Storage (cy)
415	0.000	0
416	1.061	1,712
418	3.438	5,546
420	6.171	9,955
422	9.291	14,989
424	12.829	20,697
426	16.809	27,119
428	21.990	35,478
430	27.809	44,866
432	33.934	54,748

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 24

Reservoir

Description:	
Downstream:	R23
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 24
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	1: Square edge entrance with headwall
Length:	150 ft
Diameter:	3 ft
Inlet Elevation:	430
Entrance Coefficient:	0.5
Outlet Elevation:	429
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	435 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
Pond 24

Elevation (ft)	Storage (ac-ft)	Storage (cy)
430	0.000	0
432	2.876	4,639
434	6.057	9,771
436	9.556	15,417

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 27

Reservoir

Description:	
Downstream:	R28
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 27
Initial Condition:	Elevation
Initial Elevation:	427 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	1: Square edge entrance with headwall
Length:	110
Diameter:	3.5
Inlet Elevation:	415
Entrance Coefficient:	0.5
Outlet Elevation:	414
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	428 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
Pond 27

Elevation (ft)	Storage (ac-ft)	Storage (cy)
415	0.000	0.00
417	2.486	4,010.50
419	5.420	8,743.70
421	8.870	14,309.90
423	12.944	20,882.40
425	17.880	28,846.10
427	23.837	38,457.30
429	30.800	88,147.97

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 29

Reservoir

Description:	
Downstream:	R28
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 29
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	1
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	1: Square edge entrance with headwall
Length:	80 ft
Diameter:	3 ft
Inlet Elevation:	412
Entrance Coefficient:	0.5
Outlet Elevation:	411
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	419.5 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	Level Overflow
Direction:	Main
Elevation:	420
Length:	200
Coefficient:	2.6

Paired Data

Elevation Storage Functions
Pond 29

Elevation (ft)	Storage (ac-ft)	Storage (cy)
410	0.000	0
412	0.000	0
414	2.282	3,682
416	5.072	8,184
418	8.384	13,527
420	12.230	19,732

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond 44

Reservoir

Description:	
Downstream:	R42.2
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond 44
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	1
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	1: Square edge entrance with headwall
Length:	115
Diameter:	2
Inlet Elevation:	461
Entrance Coefficient:	0.5
Outlet Elevation:	460
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	473 ft
Length:	20 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	Level Overflow
Direction:	Main
Elevation:	474
Length:	175
Coefficient:	2.6

Paired Data

Elevation Storage Functions
Pond 44

Elevation (ft)	Storage (ac-ft)	Storage (cy)
460	0.000	0
462	0.008	13
464	1.515	2,445
466	5.408	8,725
468	10.237	16,516
470	15.889	25,635
472	22.383	36,111
474	29.724	47,954
476	38.508	62,127

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond OS-08

Reservoir

Description:	
Downstream:	R-OS07
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond OS-08
Initial Condition:	Elevation
Initial Elevation:	460 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	0
Spillways:	1
Dam Tops:	1
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	
Direction:	
Number Barrels:	
Solution Method:	
Shape:	
Chart:	
Scale:	
Length:	ft
Diameter:	ft
Inlet Elevation:	ft
Entrance Coefficient:	
Outlet Elevation:	
Exit Coefficient:	
Mannings n:	

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	462 ft
Length:	14 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	Level Overflow
Direction:	Main
Elevation:	463
Length:	60
Coefficient:	2.6

Paired Data

Elevation Storage Functions
Pond OS-08

Elevation (ft)	Storage (ac-ft)	(cy)
452	0.000	0
454	2.000	3,227
456	2.500	4,033
458	5.000	8,067
460	7.500	12,100
462	14.000	22,587
464	18.500	29,847
466	24.000	38,720

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
Pond OS-10

Reservoir

Description:	
Downstream:	R-OS09
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	Pond OS-10
Initial Condition:	Elevation
Initial Elevation:	477 ft
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	0
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	
Direction:	
Number Barrels:	
Solution Method:	
Shape:	
Chart:	
Scale:	
Length:	ft
Diameter:	ft
Inlet Elevation:	ft
Entrance Coefficient:	
Outlet Elevation:	
Exit Coefficient:	
Mannings n:	

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	477.5 ft
Length:	180 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
Pond OS-10

Elevation (ft)	Storage (ac-ft)	Storage (cy)
470	0.000	0
471	0.100	161
472	0.200	323
473	0.300	484
474	0.400	645
475	0.600	968
476	1.000	1,613
477	1.450	2,339
478	2.000	3,227
480	3.033	4,893

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-07

Reservoir

Description:	
Downstream:	Pond 06
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-07
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	R12
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Orifice Outlet
Direction:	Main
Number Barrels:	1
Center Elevation:	453.25
Area	7
Coefficient:	0.67

Spillway

Method:	Broad-Crested Spillway
Direction:	Auxilliary
Elevation:	453.5 ft
Length:	15 ft
Coefficient:	2.6
Gates:	

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-07

Elevation (ft)	Storage (ac-ft)	(cy)
453	0.000	0
455	0.006	10.3

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-09

Reservoir

Description:	
Downstream:	Pond 08
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-09
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	CP27
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	1
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Orifice Outlet
Direction:	Main
Number Barrels:	1
Center Elevation:	421.5
Area	4.5
Coefficient:	0.67

Spillway

Method:	Broad-Crested Spillway
Direction:	Auxiliary
Elevation:	421.5 ft
Length:	10 ft
Coefficient:	2.6
Gates:	

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-09

Elevation (ft)	Storage (ac-ft)	(cy)
421	0.000	0
423	0.009	13.9

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-11

Reservoir

Description:	
Downstream:	R08
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-11
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	1: Square edge entrance with headwall
Length:	492 ft
Diameter:	3.5 ft
Inlet Elevation:	430 ft
Entrance Coefficient:	0.5
Outlet Elevation:	426
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	435 ft
Length:	60 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions

I-11

Elevation (ft)	Storage (ac-ft)	(cy)
428	0.000	0
430	0.003	5
432	0.147	237
434	0.694	1120
436	1.491	2406
438	2.288	3692

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-12

Reservoir

Description:	
Downstream:	Pond 10
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-12
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Orifice Outlet	
Direction:	Main	
Number Barrels:	1	
Center Elevation:	436	ft
Area	7	sf
Coefficient:	0.67	

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	437 ft
Length:	20 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-12

Elevation (ft)	Storage (ac-ft)	(cy)
434	0.000	0
436	0.001	2
438	0.037	59

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-16

Reservoir

Description:	
Downstream:	R13.3
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-16
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	3
Solution Method:	Automatic
Shape:	Circular
Chart:	2: Corrugated Metal Pipe
Scale:	3: Pipe Projecting from Fill
Length:	268 ft
Diameter:	4 ft
Inlet Elevation:	432 ft
Entrance Coefficient:	0.8
Outlet Elevation:	430
Exit Coefficient:	1
Mannings n:	0.015

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	458 ft
Length:	25 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-16

Elevation (ft)	Storage (ac-ft)	Storage (cy)
432	0.050	80
434	0.292	471
436	0.784	1265
438	1.584	2555
440	2.756	4447
442	4.416	7124
444	6.707	10821
446	9.761	15747
448	13.615	21965
450	18.264	29466
452	23.727	38280
454	30.138	48623
456	37.624	60700
458	45.751	73811
460	53.877	86922

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-19

Reservoir

Description:	
Downstream:	J06
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-19
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	1: Square edge entrance with headwall
Length:	260 ft
Diameter:	4 ft
Inlet Elevation:	458 ft
Entrance Coefficient:	0.5
Outlet Elevation:	455
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	476 ft
Length:	60 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-19

Elevation (ft)	Storage (ac-ft)	Storage (cy)
458	0.000	0
460	0.218	351
462	0.793	1280
464	1.775	2864
466	3.394	5475
468	5.582	9005
470	8.284	13365
472	11.517	18581
474	15.436	24903
476	19.837	32003
478	24.237	39103

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-48

Reservoir

Description:	
Downstream:	CP-18
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-48
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	1: Concrete Pipe Culvert
Scale:	3: Pipe projecting from fill
Length:	29 ft
Diameter:	4 ft
Inlet Elevation:	468 ft
Entrance Coefficient:	0.8
Outlet Elevation:	468
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	474 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-48

Elevation (ft)	Storage (ac-ft)	(cy)
468	0.000	0
472	0.001	1
474	0.660	1,064
476	4.341	7,003

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-49

Reservoir

Description:	
Downstream:	I-48
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-49
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	0
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet	
Direction:	Main	
Number Barrels:	2	
Solution Method:	Automatic	
Shape:	Circular	
Chart:	1: Concrete Pipe Culvert	
Scale:	3: Pipe projecting from fill	
Length:	280	ft
Diameter:	3	ft
Inlet Elevation:	475	ft
Entrance Coefficient:	0.8	
Outlet Elevation:	474	
Exit Coefficient:	1	
Mannings n:	0.013	

Spillway

Method:	
Direction:	
Elevation:	ft
Length:	ft
Coefficient:	
Gates:	

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-49

Elevation (ft)	Storage (ac-ft)	(cy)
474	0.000	0
476	0.425	686
478	3.482	5,618
480	10.499	16,939

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-OS13

Reservoir

Description:	
Downstream:	I-OS14
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-OS13
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	R-OS15
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	0
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	2: Corrugated Metal Pipe
Scale:	1: Headwall
Length:	64 ft
Diameter:	3 ft
Inlet Elevation:	444 ft
Entrance Coefficient:	0.5
Outlet Elevation:	442
Exit Coefficient:	1
Mannings n:	0.015

Spillway

Method:	Broad-Crested Spillway
Direction:	Auxiliary
Elevation:	448 ft
Length:	10 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-OS13

Elevation (ft)	Storage (ac-ft)	(cy)
444	0.018	29
446	0.085	137
448	0.463	747
450	1.665	2687
452	3.353	5409

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-OS14

Reservoir

Description:	
Downstream:	OH75.1
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-OS14
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	443 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Outlet

Method:	Culvert Outlet	
Direction:	Main	
Number Barrels:	1	
Solution Method:	Automatic	
Shape:	Box	
Chart:	8: Flared Wingwalls	
Scale:	1: Wingwalls Flared 30 to 75 degrees	
Length:	34	ft
Rise:	2	ft
Span:	3	ft
Inlet Elevation:	442	ft
Entrance Coefficient:	0.5	
Outlet Elevation:	442	
Exit Coefficient:	1	
Mannings n:	0.013	

Paired Data
Elevation Storage Functions
I-OS14

Elevation (ft)	Storage (ac-ft)	(cy)
440	0.002	3
442	0.051	82
444	0.180	290

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-OS15

Reservoir

Description:	
Downstream:	I-OS16
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-OS15
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	R-OS17
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	0
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Box
Chart:	10: 90 degree headwall
Scale:	1: Inlets chamfered 3/4-inch
Length:	50 ft
Rise:	2 ft
Span:	2 ft
Inlet Elevation:	432
Entrance Coefficient:	0.5
Outlet Elevation:	430
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Auxiliary
Elevation:	438 ft
Length:	10 ft
Coefficient:	2.6
Gates:	

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-OS15

Elevation (ft)	Storage (ac-ft)	(cy)
432	0.001	2
434	0.025	40.9
436	0.118	190.9
438	0.339	546.9
440	0.660	1064.9

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-OS16

Reservoir

Description:	
Downstream:	OH75.2
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-OS16
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	2: Corrugated Metal Pipe
Scale:	3: Pipe projecting from fill
Length:	65 ft
Diameter:	2 ft
Inlet Elevation:	426 ft
Entrance Coefficient:	0.5
Outlet Elevation:	426
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	430 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-OS16

Elevation (ft)	Storage (ac-ft)	(cy)
426	0.000	0
428	0.009	14.6
430	0.037	59.9
432	0.065	105.2

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-OS17

Reservoir

Description:	
Downstream:	I-OS18
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-OS17
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	0
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Box
Chart:	10: 90 degree headwall
Scale:	1: Inlets chamfered 3/4-inch
Length:	50 ft
Rise:	2 ft
Span:	2 ft
Inlet Elevation:	430
Entrance Coefficient:	0.5
Outlet Elevation:	428
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	
Direction:	
Elevation:	ft
Length:	ft
Coefficient:	
Gates:	

Dam Tops

Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-OS17

Elevation (ft)	Storage (ac-ft)	(cy)
428	0.000	0
430	0.004	6
432	0.030	48
434	0.203	328

WASTE MANAGEMENT OF TEXAS, INC.
Skyline Landfill
Pond Data for HEC-HMS
I-OS18

Reservoir

Description:	
Downstream:	OH75.3
Method:	Outflow Structures
Storage Method:	Elevation-Storage
Elev-Stor Function:	I-OS18
Initial Condition:	Inflow = Outflow
Main Tailwater:	Assume None
Auxiliary:	--None--
Time Step Method:	Automatic Adaption
Outlets:	1
Spillways:	1
Dam Tops:	0
Pumps:	0
Dam Break:	No
Dam Seepage:	No
Release:	No
Evaporation:	No

Outlet

Method:	Culvert Outlet
Direction:	Main
Number Barrels:	1
Solution Method:	Automatic
Shape:	Circular
Chart:	2: Corrugated Metal Pipe
Scale:	3: Pipe projecting from fill
Length:	76 ft
Diameter:	2 ft
Inlet Elevation:	424 ft
Entrance Coefficient:	0.5
Outlet Elevation:	421
Exit Coefficient:	1
Mannings n:	0.013

Spillway

Method:	Broad-Crested Spillway
Direction:	Main
Elevation:	425 ft
Length:	100 ft
Coefficient:	2.6
Gates:	0

Dam Tops

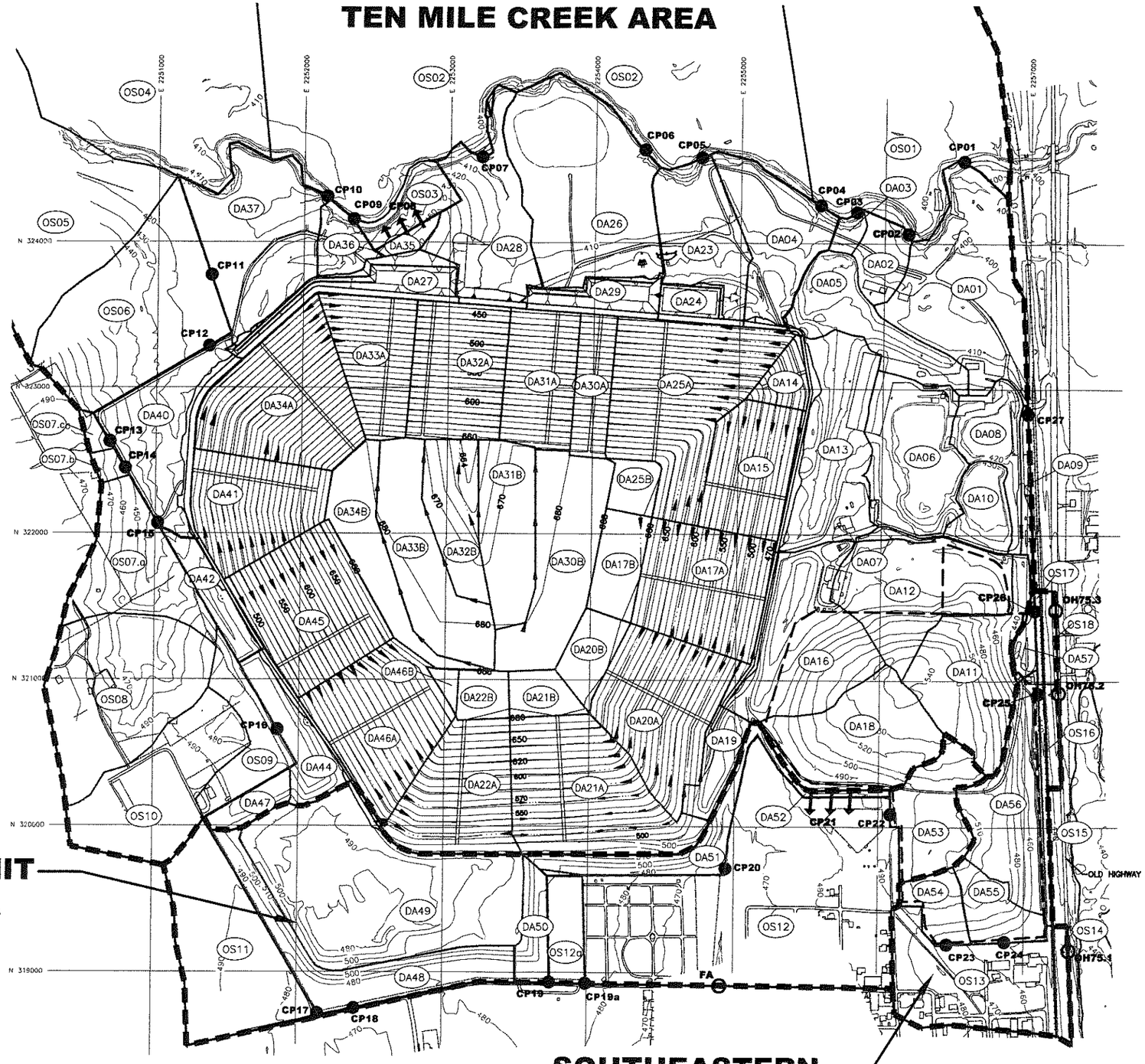
Method:	
Direction:	
Elevation:	
Length:	
Coefficient:	

Paired Data

Elevation Storage Functions
I-OS18

Elevation (ft)	Storage (ac-ft)	(cy)
424	0.004	6
426	0.127	205

TEN MILE CREEK AREA



SOUTHERN PERMIT BOUNDARY AREA

SOUTHEASTERN PERMIT BOUNDARY AREA

0 400 800
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PROPERTY BOUNDARY
- LANDFILL FOOTPRINT
- 60 EXISTING CONTOUR
- DRAINAGE AREA BOUNDARY
- MAJOR DRAINAGE DIVIDE BOUNDARY
- (CA01) DRAINAGE AREA DESIGNATION
- POINT DISCHARGE
- SHEET FLOW
- OTHER COMPARISON POINT

NOTES:

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY, FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.

STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED
PROFESSIONAL ENGINEER

C1-C-42 4/12/2012

ISSUED FOR PERMITTING PURPOSES ONLY

REVISIONS						
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

POSTDEVELOPED MAJOR DRAINAGE DIVIDES

WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD
DALLAS • WICHITA FALLS
817-563-1144

TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222

DSN. FAW	DATE : 04/12	DRAWING	C1-C-4
DWN. BBB	SCALE : GRAPHIC		
CHK. KJW	DWG : C1_C_4.dwg		

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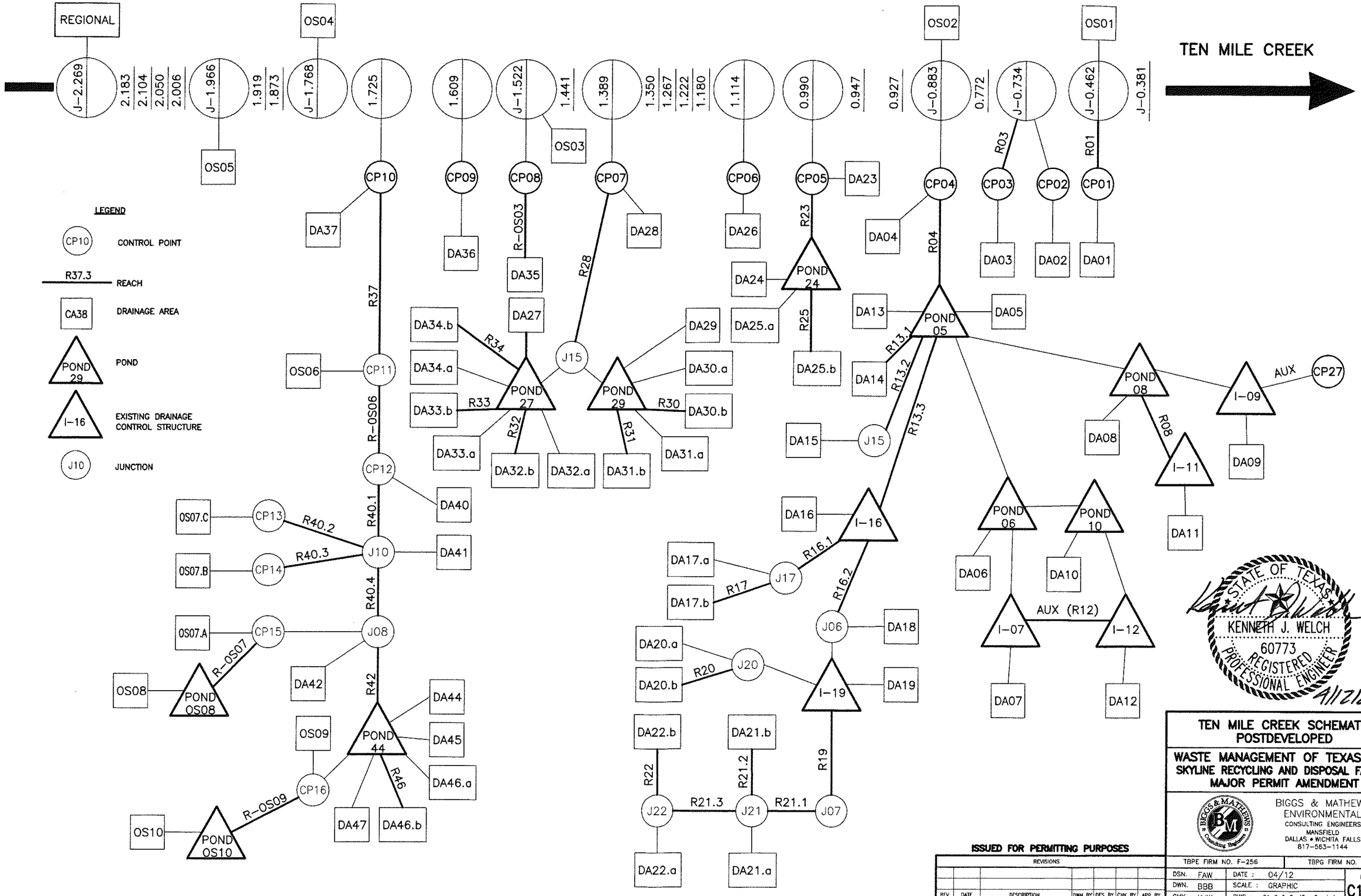
POSTDEVELOPED HEC-HMS SCHEMATIC



STATE OF TEXAS
KENNETH J. WELCH
60773
REGISTERED PROFESSIONAL ENGINEER
4/12/2012

TEN MILE CREEK SCHEMATIC POSTDEVELOPED

WASTE MANAGEMENT OF TEXAS, INC. SKYLINE RECYCLING AND DISPOSAL FACILITY MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS ENVIRONMENTAL
CONSULTING ENGINEERS
MANSFIELD
DALLAS • WICHITA FALLS
817-563-1144

ISSUED FOR PERMITTING PURPOSES

REVISIONS						
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222

DSN. FAW | DATE : 04/12
DWN. BBB | SCALE : GRAPHIC
CHK. KJW | DWG : C1_C_5-PostDrngGraph.dwg

DRAWING C1-C-5

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TEN MILE CREEK
POSTDEVELOPED HYDROLOGIC ANALYSIS

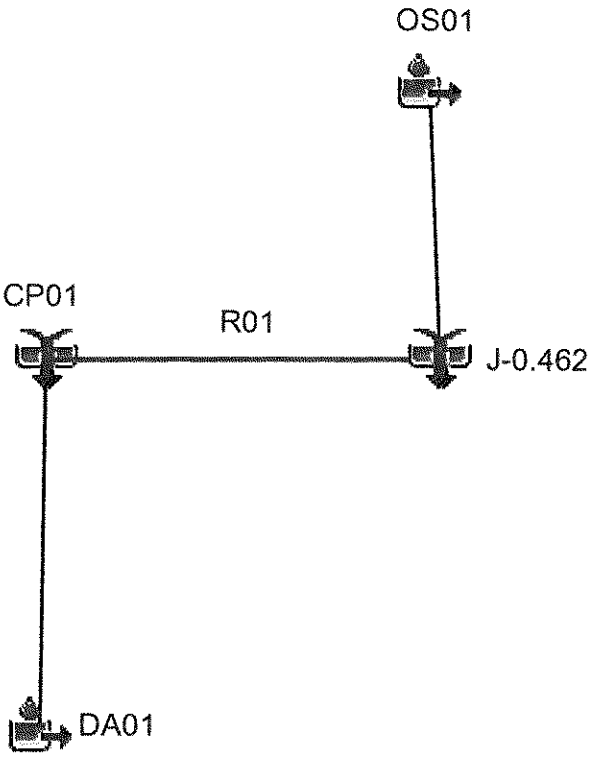
25-YEAR, 24-HOUR STORM EVENT
100-YEAR, 24-HOUR STORM EVENT

HEC-HMS

Project : 2011 Skyline Post

Basin Model : CP01

Feb 27 09:31:48 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-CP01

Start of Run: 01Jan2011, 00:00 Basin Model: CP01
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:43:44 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS01	0.6569	1342.2	01Jan2011, 12:30	202.8
DA01	0.0339	66.1	01Jan2011, 12:35	11.1
CP01	0.0339	66.1	01Jan2011, 12:35	11.1
R01	0.0339	65.3	01Jan2011, 12:35	11.1
J-0.462	0.6908	1404.2	01Jan2011, 12:30	213.9

Project: 2011 Skyline Post Simulation Run: 100-CP01

Start of Run: 01Jan2011, 00:00 Basin Model: CP01
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:16 Control Specifications: Control 1

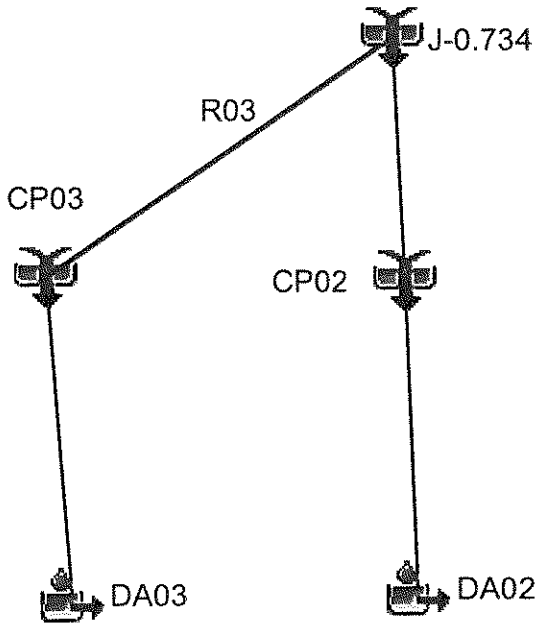
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS01	0.6569	1717.8	01Jan2011, 12:30	271.1
DA01	0.0339	83.8	01Jan2011, 12:35	14.7
CP01	0.0339	83.8	01Jan2011, 12:35	14.7
R01	0.0339	83.0	01Jan2011, 12:35	14.7
J-0.462	0.6908	1797.1	01Jan2011, 12:30	285.7

HEC-HMS

Project : 2011 Skyline Post

Basin Model : CP02

Feb 27 09:32:21 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-CP02

Start of Run: 01Jan2011, 00:00 Basin Model: CP02
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:43:48 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA02	0.0063	15.4	01Jan2011, 12:25	1.9
CP02	0.0063	15.4	01Jan2011, 12:25	1.9
DA03	0.0019	5.4	01Jan2011, 12:20	0.6
CP03	0.0019	5.4	01Jan2011, 12:20	0.6
R03	0.0019	5.4	01Jan2011, 12:30	0.6
J-0.734	0.0082	20.6	01Jan2011, 12:25	2.5

Project: 2011 Skyline Post Simulation Run: 100-CP02

Start of Run: 01Jan2011, 00:00 Basin Model: CP02
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:18 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA02	0.0063	19.5	01Jan2011, 12:25	2.6
CP02	0.0063	19.5	01Jan2011, 12:25	2.6
DA03	0.0019	6.9	01Jan2011, 12:20	0.8
CP03	0.0019	6.9	01Jan2011, 12:20	0.8
R03	0.0019	6.7	01Jan2011, 12:30	0.8
J-0.734	0.0082	26.2	01Jan2011, 12:25	3.4

PROJECT: SKYLINE POST
BASIN MODEL: CP04

REFER TO PAGE C1-C-44 FOR BASIN SCHEMATIC

Project: 2011 Skyline Post Simulation Run: 025-CP04

Start of Run: 01Jan2011, 00:00 Basin Model: CP04
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:08 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS02	0.5534	1067.8	01Jan2011, 12:35	167.4
DA21.A	0.0327	91.8	01Jan2011, 12:20	10.7
DA22.A	0.0225	63.7	01Jan2011, 12:20	7.4
DA22.B	0.0042	8.8	01Jan2011, 12:30	1.3
R22	0.0042	8.7	01Jan2011, 12:30	1.3
J22	0.0267	70.9	01Jan2011, 12:20	8.7
R21.3	0.0267	69.5	01Jan2011, 12:20	8.7
DA21.B	0.0050	10.5	01Jan2011, 12:30	1.6
R21.2	0.0050	10.4	01Jan2011, 12:30	1.6
J21	0.0644	169.8	01Jan2011, 12:20	21.0
R21.1	0.0644	165.2	01Jan2011, 12:20	21.0
J07	0.0644	165.2	01Jan2011, 12:20	21.0
R19	0.0644	164.2	01Jan2011, 12:25	21.0
DA20.A	0.0269	77.0	01Jan2011, 12:15	8.8
DA20.B	0.0066	13.5	01Jan2011, 12:30	2.1
R20	0.0066	13.5	01Jan2011, 12:35	2.1
J20	0.0335	87.5	01Jan2011, 12:20	10.9
DA19	0.0064	14.3	01Jan2011, 12:25	2.0
I-19	0.1043	164.3	01Jan2011, 12:40	33.8
DA18	0.0241	51.4	01Jan2011, 12:30	7.4
J06	0.1284	210.7	01Jan2011, 12:35	41.2
R16.2	0.1284	210.1	01Jan2011, 12:35	41.2
DA17.A	0.0250	72.4	01Jan2011, 12:15	8.2
DA17.B	0.0083	17.0	01Jan2011, 12:30	2.6
R17	0.0083	16.8	01Jan2011, 12:30	2.6
J17	0.0333	85.7	01Jan2011, 12:20	10.8

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
R16.1	0.0333	85.4	01Jan2011, 12:20	10.8
DA16	0.0289	68.0	01Jan2011, 12:25	8.9
I-16	0.1906	327.6	01Jan2011, 12:35	60.9
R13.3	0.1906	326.3	01Jan2011, 12:35	60.9
DA12	0.0256	61.3	01Jan2011, 12:25	7.9
AUX-R12	0.0000	0.0	01Jan2011, 00:00	0.0
I-12	0.0256	61.0	01Jan2011, 12:25	7.9
DA10	0.0073	23.5	01Jan2011, 12:15	2.6
POND10	0.0329	0.0	01Jan2011, 00:00	0.0
DA06	0.0223	63.2	01Jan2011, 12:20	7.6
DA07	0.0011	2.5	01Jan2011, 12:30	0.3
I-07	0.0011	2.6	01Jan2011, 12:30	0.3
Pond 06	0.0563	0.0	01Jan2011, 00:00	0.0
DA11	0.0227	49.8	01Jan2011, 12:25	7.0
I-11	0.0227	44.8	01Jan2011, 12:35	7.0
R08	0.0227	44.2	01Jan2011, 12:40	7.0
DA08	0.0100	21.2	01Jan2011, 12:30	3.3
DA09	0.0027	5.3	01Jan2011, 12:35	0.8
I09	0.0027	5.4	01Jan2011, 12:40	0.8
POND08	0.0354	57.2	01Jan2011, 12:50	8.7
DA13	0.0270	55.5	01Jan2011, 12:30	8.3
DA15	0.0181	54.6	01Jan2011, 12:15	5.9
J15	0.0181	54.6	01Jan2011, 12:15	5.9
R13.2	0.0181	53.3	01Jan2011, 12:20	5.9
DA05	0.0161	40.9	01Jan2011, 12:25	5.5
DA14	0.0044	13.7	01Jan2011, 12:15	1.4
R13.1	0.0044	13.2	01Jan2011, 12:15	1.4
POND05	0.3479	443.6	01Jan2011, 12:50	90.7
R04	0.3479	443.1	01Jan2011, 12:50	90.7
DA04	0.0193	46.9	01Jan2011, 12:20	6.0
CP04	0.3672	465.4	01Jan2011, 12:50	96.7

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
J-0.883	0.9206	1493.7	01Jan2011, 12:35	264.1
CP27	0.0000	0.0	01Jan2011, 00:00	0.0

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: POND05

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	504.1 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:30
Peak Outflow :	443.6 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:50
Total Inflow :	90.8 (AC-FT)	Peak Storage :	113.8 (AC-FT)
Total Outflow :	90.7 (AC-FT)	Peak Elevation :	414.6 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: POND08

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	70.3 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:35
Peak Outflow :	57.2 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:50
Total Inflow :	11.2 (AC-FT)	Peak Storage :	16.2 (AC-FT)
Total Outflow :	8.7 (AC-FT)	Peak Elevation :	420.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: I09

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	5.3 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:35
Peak Outflow :	5.4 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:40
Total Inflow :	0.8 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	0.8 (AC-FT)	Peak Elevation :	421.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: I-11

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	49.8 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	44.8 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:35
Total Inflow :	7.0 (AC-FT)	Peak Storage :	0.5 (AC-FT)
Total Outflow :	7.0 (AC-FT)	Peak Elevation :	433.4 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: Pond 06

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	65.3 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	0.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 00:00
Total Inflow :	7.9 (AC-FT)	Peak Storage :	46.0 (AC-FT)
Total Outflow :	0.0 (AC-FT)	Peak Elevation :	426.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: POND10

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	79.0 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	0.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 00:00
Total Inflow :	10.5 (AC-FT)	Peak Storage :	26.3 (AC-FT)
Total Outflow :	0.0 (AC-FT)	Peak Elevation :	429.5 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: I-07

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	2.5 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:30
Peak Outflow :	2.6 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:30
Total Inflow :	0.3 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	0.3 (AC-FT)	Peak Elevation :	453.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: I-12

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	61.3 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	61.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:25
Total Inflow :	7.9 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	7.9 (AC-FT)	Peak Elevation :	437.5 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: I-16

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	341.8 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	327.6 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:35
Total Inflow :	61.0 (AC-FT)	Peak Storage :	1.8 (AC-FT)
Total Outflow :	60.9 (AC-FT)	Peak Elevation :	438.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP04 Reservoir: I-19

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	261.6 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	164.3 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:40
Total Inflow :	33.8 (AC-FT)	Peak Storage :	5.0 (AC-FT)
Total Outflow :	33.8 (AC-FT)	Peak Elevation :	467.5 (FT)

Project: 2011 Skyline Post Simulation Run: 100-CP04

Start of Run: 01Jan2011, 00:00 Basin Model: CP04
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:35 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS02	0.5534	1373.3	01Jan2011, 12:35	224.7
DA21.A	0.0327	114.7	01Jan2011, 12:20	14.1
DA22.A	0.0225	79.6	01Jan2011, 12:20	9.7
DA22.B	0.0042	11.2	01Jan2011, 12:30	1.8
R22	0.0042	11.1	01Jan2011, 12:30	1.8
J22	0.0267	88.9	01Jan2011, 12:20	11.5
R21.3	0.0267	87.4	01Jan2011, 12:20	11.5
DA21.B	0.0050	13.3	01Jan2011, 12:30	2.1
R21.2	0.0050	13.2	01Jan2011, 12:30	2.1
J21	0.0644	213.2	01Jan2011, 12:20	27.7
R21.1	0.0644	208.3	01Jan2011, 12:20	27.7
J07	0.0644	208.3	01Jan2011, 12:20	27.7
R19	0.0644	206.0	01Jan2011, 12:25	27.7
DA20.A	0.0269	96.4	01Jan2011, 12:15	11.6
DA20.B	0.0066	17.3	01Jan2011, 12:30	2.8
R20	0.0066	17.1	01Jan2011, 12:35	2.8
J20	0.0335	109.8	01Jan2011, 12:20	14.4
DA19	0.0064	18.3	01Jan2011, 12:25	2.6
I-19	0.1043	186.6	01Jan2011, 12:45	44.8
DA18	0.0241	65.6	01Jan2011, 12:30	9.9
J06	0.1284	244.4	01Jan2011, 12:35	54.7
R16.2	0.1284	243.9	01Jan2011, 12:35	54.7
DA17.A	0.0250	90.6	01Jan2011, 12:15	10.8
DA17.B	0.0083	21.7	01Jan2011, 12:30	3.5
R17	0.0083	21.5	01Jan2011, 12:30	3.5
J17	0.0333	107.6	01Jan2011, 12:20	14.3

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
R16.1	0.0333	107.4	01Jan2011, 12:20	14.3
DA16	0.0289	86.5	01Jan2011, 12:25	11.9
I-16	0.1906	384.3	01Jan2011, 12:35	80.9
R13.3	0.1906	383.4	01Jan2011, 12:40	80.9
DA12	0.0256	77.8	01Jan2011, 12:25	10.6
AUX-R12	0.0000	0.0	01Jan2011, 00:00	0.0
I-12	0.0256	77.6	01Jan2011, 12:25	10.6
DA10	0.0073	28.9	01Jan2011, 12:15	3.4
POND10	0.0329	3.0	01Jan2011, 18:35	1.9
DA06	0.0223	78.5	01Jan2011, 12:20	9.9
DA07	0.0011	3.2	01Jan2011, 12:30	0.5
I-07	0.0011	3.3	01Jan2011, 12:30	0.5
Pond 06	0.0563	0.0	01Jan2011, 00:00	0.0
DA11	0.0227	63.6	01Jan2011, 12:25	9.4
I-11	0.0227	57.7	01Jan2011, 12:35	9.4
R08	0.0227	57.1	01Jan2011, 12:35	9.4
DA08	0.0100	26.7	01Jan2011, 12:30	4.4
DA09	0.0027	6.8	01Jan2011, 12:35	1.1
I09	0.0027	6.8	01Jan2011, 12:40	1.1
POND08	0.0354	72.0	01Jan2011, 12:55	12.4
DA13	0.0270	70.9	01Jan2011, 12:30	11.1
DA15	0.0181	68.1	01Jan2011, 12:15	7.8
J15	0.0181	68.1	01Jan2011, 12:15	7.8
R13.2	0.0181	66.2	01Jan2011, 12:20	7.8
DA05	0.0161	51.0	01Jan2011, 12:25	7.2
DA14	0.0044	17.1	01Jan2011, 12:15	1.9
R13.1	0.0044	16.5	01Jan2011, 12:15	1.9
POND05	0.3479	555.1	01Jan2011, 12:50	121.3
R04	0.3479	554.6	01Jan2011, 12:50	121.3
DA04	0.0193	59.7	01Jan2011, 12:20	8.0
CP04	0.3672	583.6	01Jan2011, 12:50	129.2

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
J-0.883	0.9206	1917.4	01Jan2011, 12:35	353.9
CP27	0.0000	0.0	01Jan2011, 00:00	0.0

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: POND05

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	604.0 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:30
Peak Outflow :	555.1 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:50
Total Inflow :	121.3 (AC-FT)	Peak Storage :	115.9 (AC-FT)
Total Outflow :	121.3 (AC-FT)	Peak Elevation :	415.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: POND08

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	90.1 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:35
Peak Outflow :	72.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:55
Total Inflow :	14.9 (AC-FT)	Peak Storage :	16.7 (AC-FT)
Total Outflow :	12.4 (AC-FT)	Peak Elevation :	420.6 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: I09

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	6.8 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:35
Peak Outflow :	6.8 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:40
Total Inflow :	1.1 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	1.1 (AC-FT)	Peak Elevation :	421.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: I-11

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	63.6 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	57.7 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:35
Total Inflow :	9.4 (AC-FT)	Peak Storage :	0.7 (AC-FT)
Total Outflow :	9.4 (AC-FT)	Peak Elevation :	434.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: Pond 06

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	81.1 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	0.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 00:00
Total Inflow :	12.3 (AC-FT)	Peak Storage :	50.4 (AC-FT)
Total Outflow :	0.0 (AC-FT)	Peak Elevation :	427.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: POND10

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	100.1 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	3.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 18:35
Total Inflow :	13.9 (AC-FT)	Peak Storage :	28.4 (AC-FT)
Total Outflow :	1.9 (AC-FT)	Peak Elevation :	430.2 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: I-07

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	3.2 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:30
Peak Outflow :	3.3 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:30
Total Inflow :	0.5 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	0.5 (AC-FT)	Peak Elevation :	453.3 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: I-12

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	77.8 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	77.6 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:25
Total Inflow :	10.6 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	10.6 (AC-FT)	Peak Elevation :	437.7 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: I-16

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	413.6 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	384.3 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:35
Total Inflow :	80.9 (AC-FT)	Peak Storage :	2.7 (AC-FT)
Total Outflow :	80.9 (AC-FT)	Peak Elevation :	439.9 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP04 Reservoir: I-19

Start of Run:	01Jan2011, 00:00	Basin Model:	CP04
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	330.6 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	186.6 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:45
Total Inflow :	44.8 (AC-FT)	Peak Storage :	7.5 (AC-FT)
Total Outflow :	44.8 (AC-FT)	Peak Elevation :	469.4 (FT)

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Project : 2011 Skyline Post

Basin Model : CP05

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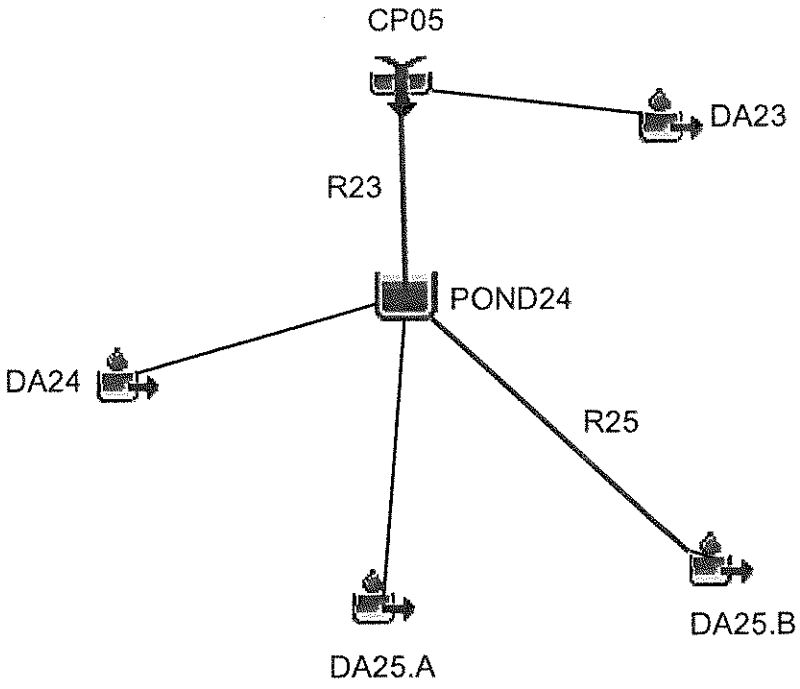

Project: 2011 Skyline Post Simulation Run: 025-CP05

Start of Run: 01Jan2011, 00:00 Basin Model: CP05
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:14 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA25.A	0.0369	101.3	01Jan2011, 12:20	12.1
DA24	0.0043	13.4	01Jan2011, 12:15	1.5
DA25.B	0.0042	8.3	01Jan2011, 12:35	1.3
R25	0.0042	8.3	01Jan2011, 12:35	1.3
POND24	0.0454	62.2	01Jan2011, 12:45	14.7
R23	0.0454	62.2	01Jan2011, 12:45	14.7
DA23	0.0175	38.8	01Jan2011, 12:25	5.4
CP05	0.0629	93.7	01Jan2011, 12:35	20.1

Project: 2011 Skyline Post
Simulation Run: 025-CP05 Reservoir: POND24

Start of Run:	01Jan2011, 00:00	Basin Model:	CP05
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	120.7 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	62.2 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:45
Total Inflow :	14.8 (AC-FT)	Peak Storage :	4.9 (AC-FT)
Total Outflow :	14.7 (AC-FT)	Peak Elevation :	433.3 (FT)

Project: 2011 Skyline Post Simulation Run: 100-CP05

Start of Run: 01Jan2011, 00:00 Basin Model: CP05
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:41 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA25.A	0.0369	126.7	01Jan2011, 12:20	16.0
DA24	0.0043	16.6	01Jan2011, 12:15	1.9
DA25.B	0.0042	10.6	01Jan2011, 12:35	1.7
R25	0.0042	10.6	01Jan2011, 12:35	1.7
POND24	0.0454	79.5	01Jan2011, 12:45	19.5
R23	0.0454	79.4	01Jan2011, 12:45	19.5
DA23	0.0175	49.6	01Jan2011, 12:25	7.2
CP05	0.0629	118.7	01Jan2011, 12:30	26.7

Project: 2011 Skyline Post
Simulation Run: 100-CP05 Reservoir: POND24

Start of Run:	01Jan2011, 00:00	Basin Model:	CP05
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:41	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	151.2 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	79.5 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:45
Total Inflow :	19.6 (AC-FT)	Peak Storage :	6.2 (AC-FT)
Total Outflow :	19.5 (AC-FT)	Peak Elevation :	434.1 (FT)

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Project : 2011 Skyline Post

Basin Model : CP06

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Project: 2011 Skyline Post Simulation Run: 025-CP06

Start of Run: 01Jan2011, 00:00
End of Run: 03Jan2011, 00:00
Compute Time: 27Feb2012, 09:44:16

Basin Model: CP06
Meteorologic Model: 025-Year
Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA26	0.0415	80.0	01Jan2011, 12:35	13.6
CP06	0.0415	80.0	01Jan2011, 12:35	13.6

Project: 2011 Skyline Post Simulation Run: 100-CP06

Start of Run: 01Jan2011, 00:00 Basin Model: CP06
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:43 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA26	0.0415	101.4	01Jan2011, 12:35	18.0
CP06	0.0415	101.4	01Jan2011, 12:35	18.0

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Project : 2011 Skyline Post

Basin Model : CP07

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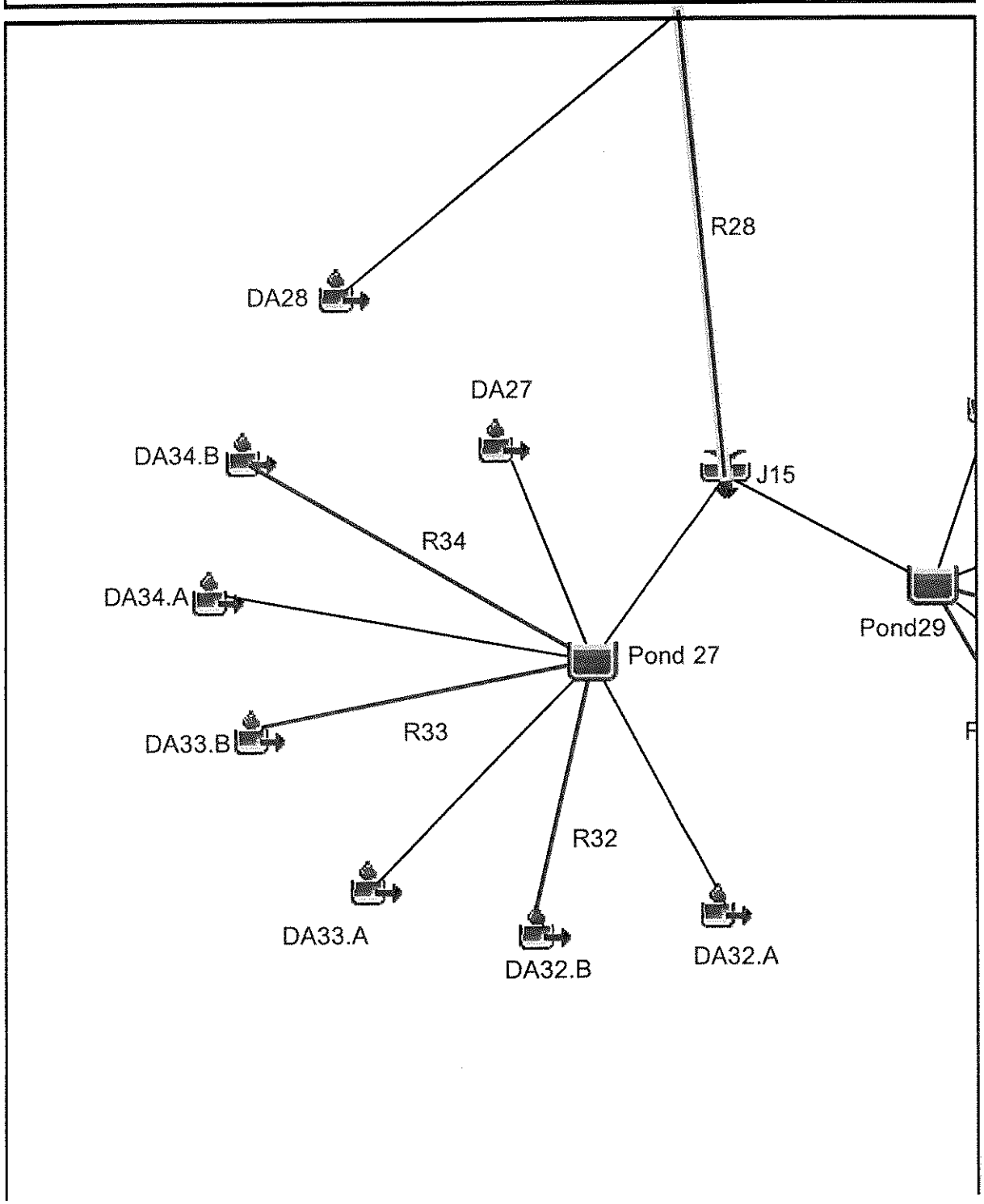


Project: 2011 Skyline Post Simulation Run: 025-CP07

Start of Run: 01Jan2011, 00:00 Basin Model: CP07
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:26 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA34.A	0.0305	89.4	01Jan2011, 12:15	10.0
DA33.B	0.0216	33.3	01Jan2011, 12:50	6.8
R33	0.0216	33.3	01Jan2011, 12:50	6.8
DA32.A	0.0214	62.7	01Jan2011, 12:15	7.0
DA33.A	0.0169	50.0	01Jan2011, 12:15	5.5
DA34.B	0.0141	22.2	01Jan2011, 12:50	4.4
R34	0.0141	22.2	01Jan2011, 12:50	4.4
DA32.B	0.0127	23.6	01Jan2011, 12:35	4.0
DA27	0.0116	20.5	01Jan2011, 12:40	3.8
R32	0.0127	23.5	01Jan2011, 12:35	4.0
Pond 27	0.1288	115.2	01Jan2011, 13:10	41.4
DA30.B	0.0244	40.6	01Jan2011, 12:40	7.7
R30	0.0244	40.5	01Jan2011, 12:45	7.7
DA31.A	0.0164	48.2	01Jan2011, 12:15	5.4
DA31.B	0.0163	28.8	01Jan2011, 12:40	5.1
R31	0.0163	28.7	01Jan2011, 12:40	5.1
DA30.A	0.0088	27.1	01Jan2011, 12:15	2.9
DA29	0.0074	12.9	01Jan2011, 12:45	2.5
Pond29	0.0733	66.7	01Jan2011, 13:15	23.4
J15	0.2021	181.8	01Jan2011, 13:10	64.8
R28	0.2021	181.7	01Jan2011, 13:15	64.8
DA28	0.0231	49.6	01Jan2011, 12:25	7.1
CP07	0.2252	204.6	01Jan2011, 12:50	71.9

Project: 2011 Skyline Post
Simulation Run: 025-CP07 Reservoir: Pond 27

Start of Run:	01Jan2011, 00:00	Basin Model:	CP07
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:26	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	255.8 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:15
Peak Outflow :	115.2 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:10
Total Inflow :	41.6 (AC-FT)	Peak Storage :	13.0 (AC-FT)
Total Outflow :	41.4 (AC-FT)	Peak Elevation :	423.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP07 Reservoir: Pond29

Start of Run:	01Jan2011, 00:00	Basin Model:	CP07
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:26	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	126.9 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	66.7 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:15
Total Inflow :	23.5 (AC-FT)	Peak Storage :	7.6 (AC-FT)
Total Outflow :	23.4 (AC-FT)	Peak Elevation :	417.5 (FT)

Project: 2011 Skyline Post Simulation Run: 100-CP07

Start of Run: 01Jan2011, 00:00 Basin Model: CP07
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:53 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA34.A	0.0305	111.7	01Jan2011, 12:15	13.2
DA33.B	0.0216	42.8	01Jan2011, 12:50	9.1
R33	0.0216	42.8	01Jan2011, 12:50	9.1
DA32.A	0.0214	78.4	01Jan2011, 12:15	9.3
DA33.A	0.0169	62.4	01Jan2011, 12:15	7.3
DA34.B	0.0141	28.6	01Jan2011, 12:50	5.9
R34	0.0141	28.6	01Jan2011, 12:50	5.9
DA32.B	0.0127	30.2	01Jan2011, 12:35	5.3
DA27	0.0116	26.1	01Jan2011, 12:40	5.0
R32	0.0127	30.1	01Jan2011, 12:35	5.3
Pond 27	0.1288	133.4	01Jan2011, 13:15	54.9
DA30.B	0.0244	52.1	01Jan2011, 12:40	10.2
R30	0.0244	52.0	01Jan2011, 12:40	10.2
DA31.A	0.0164	60.2	01Jan2011, 12:15	7.1
DA31.B	0.0163	36.9	01Jan2011, 12:40	6.8
R31	0.0163	36.8	01Jan2011, 12:40	6.8
DA30.A	0.0088	33.7	01Jan2011, 12:15	3.8
DA29	0.0074	16.4	01Jan2011, 12:45	3.3
Pond29	0.0733	79.0	01Jan2011, 13:20	31.1
J15	0.2021	212.3	01Jan2011, 13:15	86.0
R28	0.2021	212.2	01Jan2011, 13:20	86.0
DA28	0.0231	63.4	01Jan2011, 12:25	9.5
CP07	0.2252	242.5	01Jan2011, 12:40	95.5

Project: 2011 Skyline Post
Simulation Run: 100-CP07 Reservoir: Pond 27

Start of Run:	01Jan2011, 00:00	Basin Model:	CP07
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:53	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	324.2 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:15
Peak Outflow :	133.4 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:15
Total Inflow :	55.1 (AC-FT)	Peak Storage :	17.8 (AC-FT)
Total Outflow :	54.9 (AC-FT)	Peak Elevation :	425.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP07 Reservoir: Pond29

Start of Run:	01Jan2011, 00:00	Basin Model:	CP07
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:45:53	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

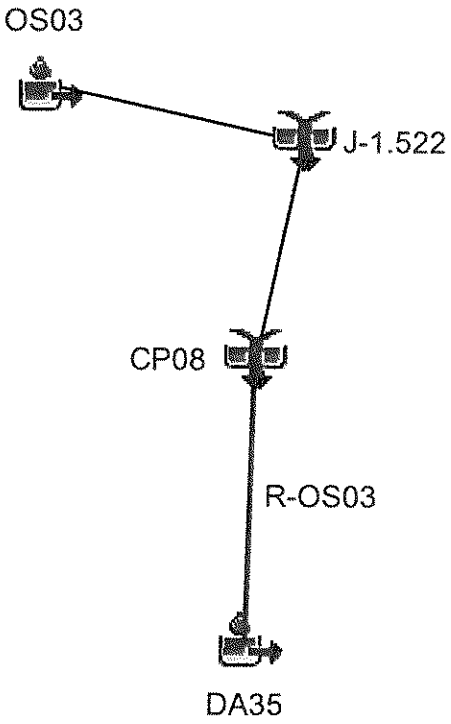
Peak Inflow :	162.1 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	79.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:20
Total Inflow :	31.2 (AC-FT)	Peak Storage :	10.2 (AC-FT)
Total Outflow :	31.1 (AC-FT)	Peak Elevation :	419.0 (FT)

HEC-HMS

Project : 2011 Skyline Post

Basin Model : CP08

Feb 27 09:34:47 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-CP08

Start of Run: 01Jan2011, 00:00 Basin Model: CP08
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:28 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS03	0.0066	11.5	01Jan2011, 12:40	2.0
DA35	0.0018	5.5	01Jan2011, 12:15	0.6
R-OS03	0.0018	5.4	01Jan2011, 12:20	0.6
CP08	0.0018	5.4	01Jan2011, 12:20	0.6
J-1.522	0.0084	14.3	01Jan2011, 12:30	2.6

Project: 2011 Skyline Post Simulation Run: 100-CP08

Start of Run: 01Jan2011, 00:00 Basin Model: CP08
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:55 Control Specifications: Control 1

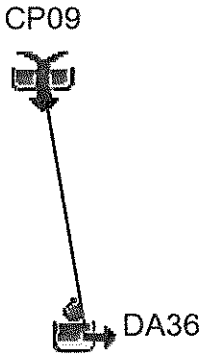
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS03	0.0066	14.8	01Jan2011, 12:40	2.7
DA35	0.0018	7.0	01Jan2011, 12:15	0.7
R-OS03	0.0018	6.8	01Jan2011, 12:20	0.7
CP08	0.0018	6.8	01Jan2011, 12:20	0.7
J-1.522	0.0084	18.3	01Jan2011, 12:30	3.5

HEC-HMS

Project : 2011 Skyline Post

Basin Model : CP09

Feb 27 09:35:09 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-CP09

Start of Run: 01Jan2011, 00:00 Basin Model: CP09
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:31 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA36	0.0052	15.0	01Jan2011, 12:15	1.6
CP09	0.0052	15.0	01Jan2011, 12:15	1.6

Project: 2011 Skyline Post Simulation Run: 100-CP09

Start of Run: 01Jan2011, 00:00 Basin Model: CP09
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:45:57 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA36	0.0052	19.0	01Jan2011, 12:15	2.1
CP09	0.0052	19.0	01Jan2011, 12:15	2.1

PROJECT: SKYLINE POST
BASIN MODEL: CP10

REFER TO PAGE C1-C-44 FOR BASIN SCHEMATIC

Project: 2011 Skyline Post Simulation Run: 025-CP10

Start of Run: 01Jan2011, 00:00 Basin Model: CP10
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:41 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS10	0.0267	101.9	01Jan2011, 12:10	8.2
PONDOS10	0.0267	94.4	01Jan2011, 12:10	8.0
R-OS09	0.0267	90.1	01Jan2011, 12:15	8.0
OS09	0.0111	45.8	01Jan2011, 12:05	3.4
CP16	0.0378	129.3	01Jan2011, 12:10	11.4
POND44	0.1070	41.7	01Jan2011, 13:25	34.0
DA45	0.0273	73.9	01Jan2011, 12:20	8.9
DA46.A	0.0259	74.6	01Jan2011, 12:15	8.5
DA44	0.0106	16.4	01Jan2011, 12:50	3.5
DA47	0.0041	9.4	01Jan2011, 12:25	1.3
DA46.B	0.0013	3.2	01Jan2011, 12:25	0.4
R42	0.1070	41.7	01Jan2011, 13:30	34.0
OS08	0.0355	139.5	01Jan2011, 12:10	11.4
R46	0.0013	3.2	01Jan2011, 12:25	0.4
PONDOS08	0.0355	13.7	01Jan2011, 13:05	4.9
R-OS07	0.0355	13.7	01Jan2011, 13:10	4.9
OS07.A	0.0206	45.2	01Jan2011, 12:25	6.4
CP15	0.0561	45.2	01Jan2011, 12:25	11.3
DA42	0.0069	15.8	01Jan2011, 12:25	2.1
J08	0.1700	96.8	01Jan2011, 12:30	47.4
R40.4	0.1700	96.7	01Jan2011, 12:30	47.4
DA41	0.0209	60.5	01Jan2011, 12:15	6.8
OS07.B	0.0014	4.2	01Jan2011, 12:15	0.4
CP14	0.0014	4.2	01Jan2011, 12:15	0.4
R40.3	0.0014	4.1	01Jan2011, 12:20	0.4
OS07.C	0.0014	4.2	01Jan2011, 12:15	0.4

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP13	0.0014	4.2	01Jan2011, 12:15	0.4
R40.2	0.0014	4.1	01Jan2011, 12:20	0.4
J10	0.1937	153.3	01Jan2011, 12:20	55.1
R40.1	0.1937	153.0	01Jan2011, 12:25	55.1
DA40	0.0213	39.0	01Jan2011, 12:35	6.6
CP12	0.2150	187.6	01Jan2011, 12:25	61.7
R-OS06	0.2150	187.4	01Jan2011, 12:30	61.6
OS06	0.0403	154.7	01Jan2011, 12:10	12.4
CP11	0.2553	249.2	01Jan2011, 12:10	74.1
R37	0.2553	241.1	01Jan2011, 12:15	74.1
DA37	0.0286	53.1	01Jan2011, 12:35	8.8
CP10	0.2839	278.9	01Jan2011, 12:30	82.9

Project: 2011 Skyline Post
Simulation Run: 025-CP10 Reservoir: PONDOS08

Start of Run:	01Jan2011, 00:00	Basin Model:	CP10
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:41	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	139.5 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:10
Peak Outflow :	13.7 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:05
Total Inflow :	11.4 (AC-FT)	Peak Storage :	15.2 (AC-FT)
Total Outflow :	4.9 (AC-FT)	Peak Elevation :	462.5 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP10 Reservoir: POND44

Start of Run:	01Jan2011, 00:00	Basin Model:	CP10
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:41	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	276.3 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:15
Peak Outflow :	41.7 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:25
Total Inflow :	34.0 (AC-FT)	Peak Storage :	15.9 (AC-FT)
Total Outflow :	34.0 (AC-FT)	Peak Elevation :	470.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP10 Reservoir: PONDOS10

Start of Run:	01Jan2011, 00:00	Basin Model:	CP10
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:41	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	101.9 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:10
Peak Outflow :	94.4 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:10
Total Inflow :	8.2 (AC-FT)	Peak Storage :	1.9 (AC-FT)
Total Outflow :	8.0 (AC-FT)	Peak Elevation :	477.8 (FT)

Project: 2011 Skyline Post Simulation Run: 100-CP10

Start of Run: 01Jan2011, 00:00 Basin Model: CP10
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:46:07 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS10	0.0267	127.0	01Jan2011, 12:10	11.0
PONDOS10	0.0267	118.5	01Jan2011, 12:10	10.7
R-OS09	0.0267	112.1	01Jan2011, 12:15	10.7
OS09	0.0111	57.1	01Jan2011, 12:05	4.6
CP16	0.0378	162.8	01Jan2011, 12:10	15.3
POND44	0.1070	46.4	01Jan2011, 13:35	45.2
DA45	0.0273	92.6	01Jan2011, 12:20	11.8
DA46.A	0.0259	93.3	01Jan2011, 12:15	11.2
DA44	0.0106	20.9	01Jan2011, 12:50	4.7
DA47	0.0041	11.9	01Jan2011, 12:25	1.7
DA46.B	0.0013	4.1	01Jan2011, 12:25	0.5
R42	0.1070	46.4	01Jan2011, 13:40	45.2
OS08	0.0355	172.1	01Jan2011, 12:10	15.1
R46	0.0013	4.1	01Jan2011, 12:25	0.5
PONDOS08	0.0355	36.8	01Jan2011, 12:40	8.6
R-OS07	0.0355	36.7	01Jan2011, 12:40	8.6
OS07.A	0.0206	57.8	01Jan2011, 12:25	8.5
CP15	0.0561	90.6	01Jan2011, 12:30	17.1
DA42	0.0069	20.2	01Jan2011, 12:25	2.8
J08	0.1700	151.2	01Jan2011, 12:30	65.2
R40.4	0.1700	149.7	01Jan2011, 12:30	65.2
DA41	0.0209	75.7	01Jan2011, 12:15	9.0
OS07.B	0.0014	5.3	01Jan2011, 12:15	0.6
CP14	0.0014	5.3	01Jan2011, 12:15	0.6
R40.3	0.0014	5.2	01Jan2011, 12:20	0.6
OS07.C	0.0014	5.3	01Jan2011, 12:15	0.6

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP13	0.0014	5.3	01Jan2011, 12:15	0.6
R40.2	0.0014	5.2	01Jan2011, 12:20	0.6
J10	0.1937	215.2	01Jan2011, 12:25	75.4
R40.1	0.1937	212.5	01Jan2011, 12:30	75.4
DA40	0.0213	50.1	01Jan2011, 12:35	8.8
CP12	0.2150	261.1	01Jan2011, 12:30	84.1
R-OS06	0.2150	258.9	01Jan2011, 12:35	84.1
OS06	0.0403	192.3	01Jan2011, 12:10	16.6
CP11	0.2553	319.2	01Jan2011, 12:10	100.8
R37	0.2553	308.9	01Jan2011, 12:15	100.8
DA37	0.0286	68.2	01Jan2011, 12:35	11.8
CP10	0.2839	374.1	01Jan2011, 12:35	112.6

Project: 2011 Skyline Post
Simulation Run: 100-CP10 Reservoir: PONDOS08

Start of Run:	01Jan2011, 00:00	Basin Model:	CP10
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:46:07	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	172.1 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:10
Peak Outflow :	36.8 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:40
Total Inflow :	15.1 (AC-FT)	Peak Storage :	16.3 (AC-FT)
Total Outflow :	8.6 (AC-FT)	Peak Elevation :	463.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP10 Reservoir: POND44

Start of Run:	01Jan2011, 00:00	Basin Model:	CP10
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:46:07	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	347.0 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:15
Peak Outflow :	46.4 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:35
Total Inflow :	45.2 (AC-FT)	Peak Storage :	22.1 (AC-FT)
Total Outflow :	45.2 (AC-FT)	Peak Elevation :	471.9 (FT)

Project: 2011 Skyline Post
Simulation Run: 100-CP10 Reservoir: PONDOS10

Start of Run:	01Jan2011, 00:00	Basin Model:	CP10
End of Run:	03Jan2011, 00:00	Meteorologic Model:	100-Year
Compute Time:	27Feb2012, 09:46:07	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

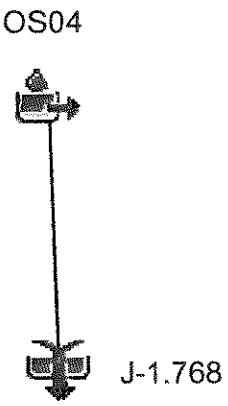
Peak Inflow :	127.0 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:10
Peak Outflow :	118.5 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:10
Total Inflow :	11.0 (AC-FT)	Peak Storage :	1.9 (AC-FT)
Total Outflow :	10.7 (AC-FT)	Peak Elevation :	477.9 (FT)

HEC-HMS

Project : 2011 Skyline Post

Basin Model : J-1.768

Feb 27 09:38:37 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-J-1.768

Start of Run: 01Jan2011, 00:00 Basin Model: J-1.768
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:55 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS04	0.62	1153.3	01Jan2011, 12:35	187.4
J-1.768	0.62	1153.3	01Jan2011, 12:35	187.4

Project: 2011 Skyline Post Simulation Run: 100-J-1.768

Start of Run: 01Jan2011, 00:00
End of Run: 03Jan2011, 00:00
Compute Time: 27Feb2012, 09:46:09

Basin Model: J-1.768
Meteorologic Model: 100-Year
Control Specifications: Control 1

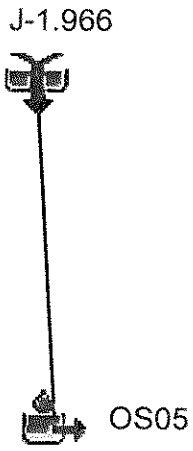
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS04	0.62	1486.1	01Jan2011, 12:35	251.5
J-1.768	0.62	1486.1	01Jan2011, 12:35	251.5

HEC-HMS

Project : 2011 Skyline Post

Basin Model : J-1.966

Feb 27 09:39:03 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-J-1.966

Start of Run: 01Jan2011, 00:00 Basin Model: J-1.966
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:57 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS05	0.0464	146.7	01Jan2011, 12:15	13.5
J-1.966	0.0464	146.7	01Jan2011, 12:15	13.5

Project: 2011 Skyline Post Simulation Run: 100-J-1.966

Start of Run: 01Jan2011, 00:00 Basin Model: J-1.966
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:46:11 Control Specifications: Control 1

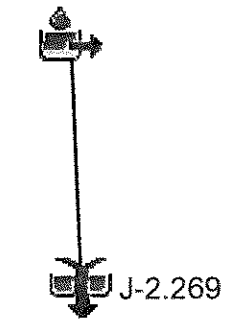
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS05	0.0464	186.0	01Jan2011, 12:15	18.2
J-1.966	0.0464	186.0	01Jan2011, 12:15	18.2

HEC-HMS

Project : 2011 Skyline Post

Basin Model : J-2.269

Feb 27 09:39:45 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-J-2.269

Start of Run: 01Jan2011, 00:00 Basin Model: J-2.269
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:59 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
REGIONAL	67.29	25043.0	01Jan2011, 16:50	18454.2
J-2.269	67.29	25043.0	01Jan2011, 16:50	18454.2

Project: 2011 Skyline Post Simulation Run: 100-J-2.269

Start of Run: 01Jan2011, 00:00 Basin Model: J-2.269
End of Run: 03Jan2011, 00:00 Meteorologic Model: 100-Year
Compute Time: 27Feb2012, 09:46:14 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
REGIONAL	67.29	33629.0	01Jan2011, 16:50	24953.1
J-2.269	67.29	33629.0	01Jan2011, 16:50	24953.1

SOUTHERN PERMIT BOUNDARY
POSTDEVELOPED HYDROLOGIC ANALYSIS

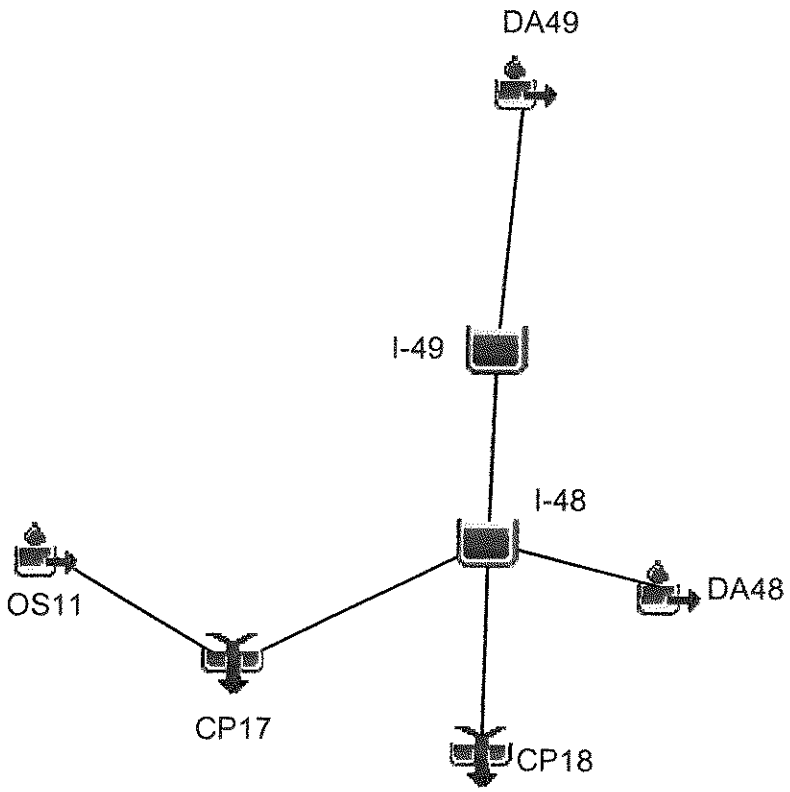
25-YEAR, 24-HOUR STORM EVENT

HEC-HMS

Project : 2011 Skyline Post

Basin Model : CP18

Feb 27 09:36:28 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-CP18

Start of Run: 01Jan2011, 00:00 Basin Model: CP18
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:44:49 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DA49	0.0544	102.9	01Jan2011, 12:35	16.8
I-49	0.0544	64.5	01Jan2011, 13:00	16.8
OS11	0.0308	113.0	01Jan2011, 12:10	9.5
CP17	0.0308	113.0	01Jan2011, 12:10	9.5
DA48	0.0197	37.4	01Jan2011, 12:35	6.1
I-48	0.1049	124.8	01Jan2011, 12:20	32.4
CP18	0.1049	124.8	01Jan2011, 12:20	32.4

Project: 2011 Skyline Post
Simulation Run: 025-CP18 Reservoir: I-49

Start of Run:	01Jan2011, 00:00	Basin Model:	CP18
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:49	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	102.9 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:35
Peak Outflow :	64.5 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 13:00
Total Inflow :	16.8 (AC-FT)	Peak Storage :	4.0 (AC-FT)
Total Outflow :	16.8 (AC-FT)	Peak Elevation :	478.1 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-CP18 Reservoir: I-48

Start of Run:	01Jan2011, 00:00	Basin Model:	CP18
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:44:49	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

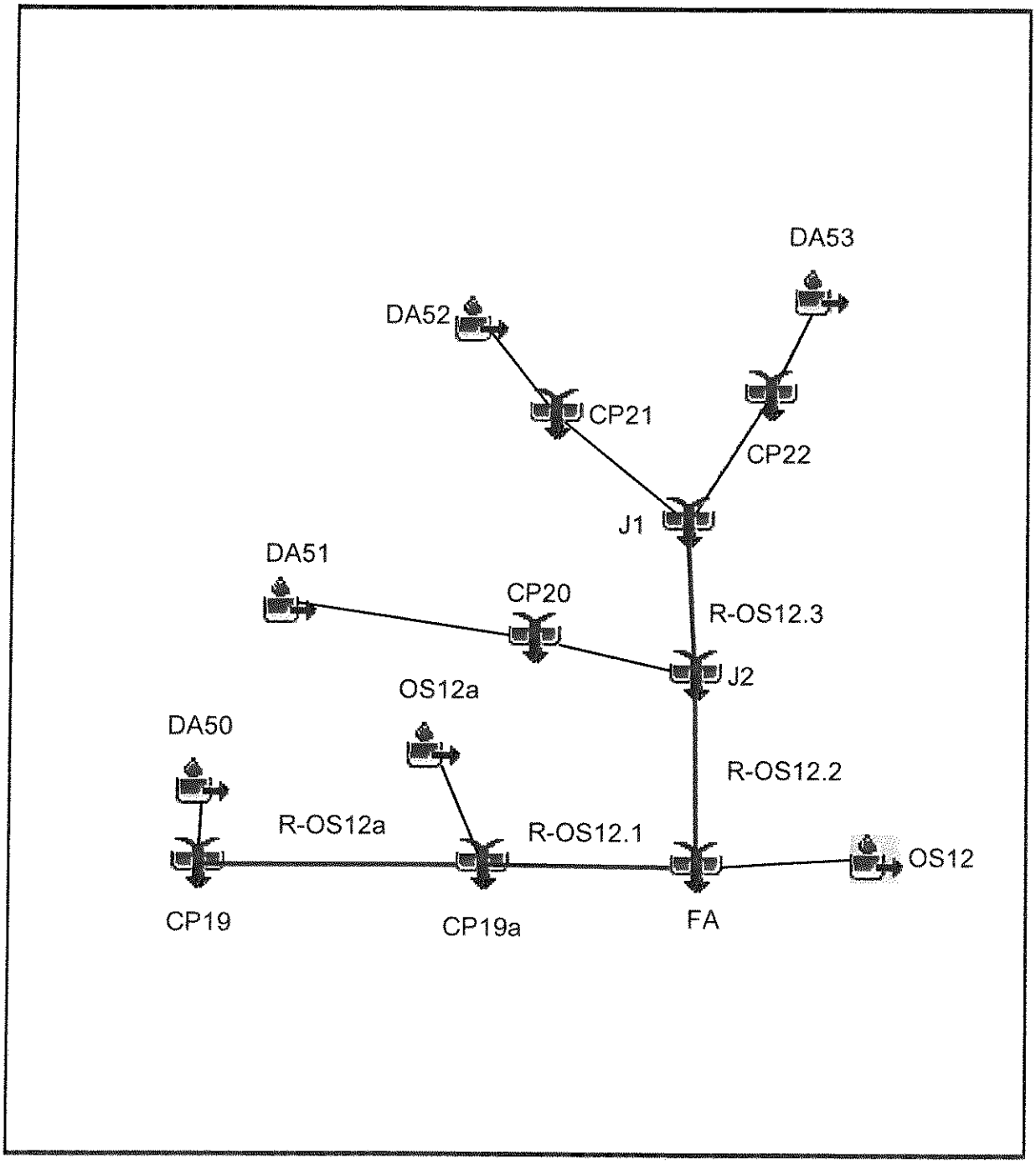
Peak Inflow :	151.2 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:10
Peak Outflow :	124.8 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:20
Total Inflow :	32.4 (AC-FT)	Peak Storage :	0.9 (AC-FT)
Total Outflow :	32.4 (AC-FT)	Peak Elevation :	474.1 (FT)

HEC-HMS

Project : 2011 Skyline Post

Basin Model : FA

Apr 04 11:11:24 CDT 2012



Project: 2011 Skyline Post Simulation Run: 025-FA

Start of Run: 01Jan2011, 00:00 Basin Model: FA
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 04Apr2012, 11:17:14 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS12	0.0839	273.2	01Jan2011, 12:15	25.9
DA53	0.0141	29.6	01Jan2011, 12:30	4.4
CP22	0.0141	29.6	01Jan2011, 12:30	4.4
DA52	0.0011	2.7	01Jan2011, 12:25	0.3
CP21	0.0011	2.7	01Jan2011, 12:25	0.3
J1	0.0152	32.2	01Jan2011, 12:30	4.7
R-OS12.3	0.0152	31.9	01Jan2011, 12:35	4.7
DA51	0.0111	23.2	01Jan2011, 12:30	3.4
CP20	0.0111	23.2	01Jan2011, 12:30	3.4
J2	0.0263	54.9	01Jan2011, 12:30	8.1
R-OS12.2	0.0263	54.6	01Jan2011, 12:35	8.1
OS12a	0.0067	13.0	01Jan2011, 12:35	2.1
DA50	0.0055	14.6	01Jan2011, 12:20	1.7
CP19	0.0055	14.6	01Jan2011, 12:20	1.7
R-OS12a	0.0055	14.4	01Jan2011, 12:20	1.7
CP19a	0.0122	25.5	01Jan2011, 12:25	3.8
R-OS12.1	0.0122	25.2	01Jan2011, 12:30	3.8
FA	0.1224	323.5	01Jan2011, 12:15	37.8

SOUTHEASTERN PERMIT BOUNDARY
POSTDEVELOPED HYDROLOGIC ANALYSIS

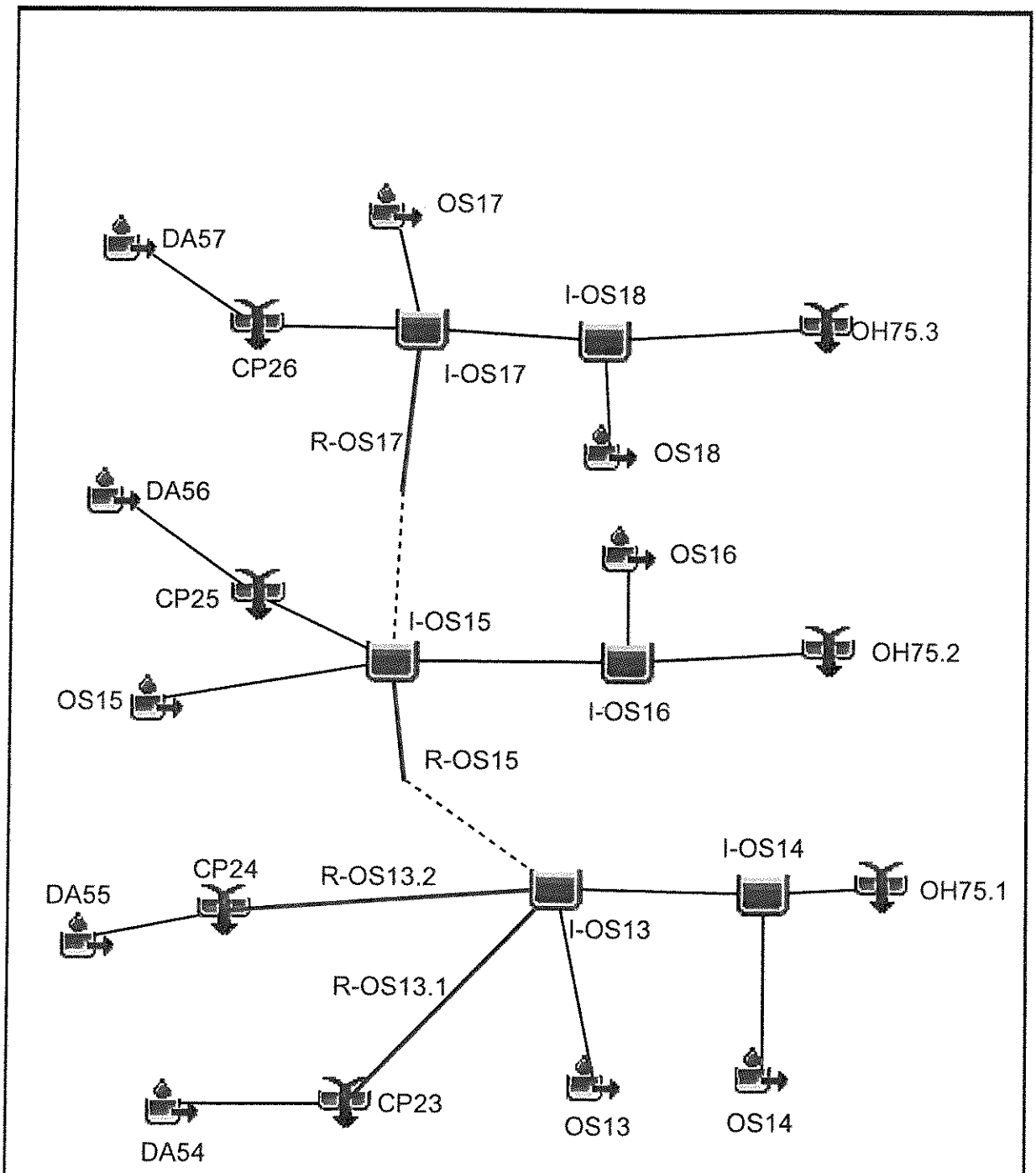
25-YEAR, 24-HOUR STORM EVENT

HEC-HMS

Project : 2011 Skyline Post

Basin Model : OH75

Feb 27 09:40:35 CST 2012



Project: 2011 Skyline Post Simulation Run: 025-OH75

Start of Run: 01Jan2011, 00:00 Basin Model: OH75
End of Run: 03Jan2011, 00:00 Meteorologic Model: 025-Year
Compute Time: 27Feb2012, 09:45:13 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OS13	0.0253	97.2	01Jan2011, 12:10	7.8
DA55	0.0075	18.6	01Jan2011, 12:20	2.3
CP24	0.0075	18.6	01Jan2011, 12:20	2.3
R-OS13.2	0.0075	18.5	01Jan2011, 12:25	2.3
DA54	0.0059	15.1	01Jan2011, 12:20	1.8
CP23	0.0059	15.1	01Jan2011, 12:20	1.8
R-OS13.1	0.0059	14.8	01Jan2011, 12:20	1.8
I-OS13	0.0387	63.0	01Jan2011, 12:15	11.1
OS14	0.0028	5.9	01Jan2011, 12:30	0.9
I-OS14	0.0415	68.3	01Jan2011, 12:20	11.9
OH75.1	0.0415	68.3	01Jan2011, 12:20	11.9
DA56	0.0198	41.3	01Jan2011, 12:30	6.1
CP25	0.0198	41.3	01Jan2011, 12:30	6.1
OS15	0.0025	4.8	01Jan2011, 12:35	0.8
R-OS15	0.0000	26.1	01Jan2011, 12:25	0.8
I-OS15	0.0223	47.1	01Jan2011, 12:30	7.3
OS16	0.0025	5.6	01Jan2011, 12:30	0.8
I-OS16	0.0248	53.1	01Jan2011, 12:35	8.1
OH75.2	0.0248	53.1	01Jan2011, 12:35	8.1
DA57	0.0023	5.1	01Jan2011, 12:30	0.7
CP26	0.0023	5.1	01Jan2011, 12:30	0.7
OS17	0.0009	2.2	01Jan2011, 12:25	0.3
R-OS17	0.0000	17.1	01Jan2011, 12:35	0.4
I-OS17	0.0032	20.4	01Jan2011, 12:40	1.4
OS18	0.0023	5.2	01Jan2011, 12:30	0.7
I-OS18	0.0055	24.0	01Jan2011, 12:40	2.1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
OH75.3	0.0055	24.0	01Jan2011, 12:40	2.1

Project: 2011 Skyline Post
Simulation Run: 025-OH75 Reservoir: I-OS13

Start of Run:	01Jan2011, 00:00	Basin Model:	OH75
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:45:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	118.3 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:10
Peak Outflow :	63.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:15
Total Inflow :	11.9 (AC-FT)	Peak Storage :	1.1 (AC-FT)
Total Outflow :	11.1 (AC-FT)	Peak Elevation :	449.0 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-OH75 Reservoir: I-OS14

Start of Run:	01Jan2011, 00:00	Basin Model:	OH75
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:45:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	67.7 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:20
Peak Outflow :	68.3 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:20
Total Inflow :	12.0 (AC-FT)	Peak Storage :	0.1 (AC-FT)
Total Outflow :	11.9 (AC-FT)	Peak Elevation :	443.4 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-OH75 Reservoir: I-OS15

Start of Run:	01Jan2011, 00:00	Basin Model:	OH75
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:45:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	70.4 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:25
Peak Outflow :	47.1 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:30
Total Inflow :	7.7 (AC-FT)	Peak Storage :	0.5 (AC-FT)
Total Outflow :	7.3 (AC-FT)	Peak Elevation :	438.8 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-OH75 Reservoir: I-OS16

Start of Run:	01Jan2011, 00:00	Basin Model:	OH75
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:45:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	52.6 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:30
Peak Outflow :	53.1 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:35
Total Inflow :	8.1 (AC-FT)	Peak Storage :	0.0 (AC-FT)
Total Outflow :	8.1 (AC-FT)	Peak Elevation :	430.2 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-OH75 Reservoir: I-OS17

Start of Run:	01Jan2011, 00:00	Basin Model:	OH75
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:45:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	23.8 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:35
Peak Outflow :	20.4 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:40
Total Inflow :	1.4 (AC-FT)	Peak Storage :	0.1 (AC-FT)
Total Outflow :	1.4 (AC-FT)	Peak Elevation :	432.6 (FT)

Project: 2011 Skyline Post
Simulation Run: 025-OH75 Reservoir: I-OS18

Start of Run:	01Jan2011, 00:00	Basin Model:	OH75
End of Run:	03Jan2011, 00:00	Meteorologic Model:	025-Year
Compute Time:	27Feb2012, 09:45:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	24.6 (CFS)	Date/Time of Peak Inflow :	01Jan2011, 12:40
Peak Outflow :	24.0 (CFS)	Date/Time of Peak Outflow :	01Jan2011, 12:40
Total Inflow :	2.1 (AC-FT)	Peak Storage :	0.1 (AC-FT)
Total Outflow :	2.1 (AC-FT)	Peak Elevation :	425.2 (FT)

POSTDEVELOPED FLOW SUMMARY

Waste Management of Texas, Inc.
Skyline Landfill
POSTDEVELOPED FLOW SUMMARY

Watershed Name	Drainage Area (Ac)	Drainage Area (mi^2)	25-Year Peak Flow (cfs)	25-Year Volume (Ac-ft)
DA1	21.7	0.0339	66.1	11.10
DA2	4.0	0.0063	15.4	1.90
DA3	1.2	0.0019	5.4	0.60
DA4	12.4	0.0193	46.9	6.00
DA5	10.3	0.0161	40.9	5.50
DA6	14.3	0.0223	63.2	7.60
DA7	0.7	0.0011	2.5	0.30
DA8	6.4	0.0100	21.2	3.30
DA9	1.7	0.0027	5.3	0.80
DA10	4.7	0.0073	23.5	2.60
DA11	14.5	0.0227	49.8	7.00
DA12	16.4	0.0256	61.3	7.90
DA13	17.3	0.0270	55.5	8.30
DA14	2.8	0.0044	13.7	1.40
DA15	11.6	0.0181	54.6	5.90
DA16	18.5	0.0289	68.0	8.90
DA17.A	16.0	0.0250	72.4	8.20
DA17.B	5.3	0.0083	17.0	2.60
DA18	15.4	0.0241	51.4	7.40
DA19	4.1	0.0064	14.3	2.00
DA20.A	17.2	0.0269	77.0	8.80
DA20.B	4.2	0.0066	13.5	2.10
DA21.A	20.9	0.0327	91.8	10.70
DA21.B	3.2	0.0050	10.5	1.60
DA22.A	14.4	0.0225	63.7	7.40
DA22.B	2.7	0.0042	8.8	1.30
DA23	11.2	0.0175	38.8	5.40
DA24	2.8	0.0043	13.4	1.50
DA25.A	23.6	0.0369	101.3	12.10
DA25.B	2.7	0.0042	8.3	1.30
DA26	26.6	0.0415	80.0	13.60
DA27	7.4	0.0116	20.5	3.80
DA28	14.8	0.0231	49.6	7.10
DA29	4.7	0.0074	12.9	2.50
DA30.A	5.6	0.0088	27.1	2.9
DA30.B	15.6	0.0244	40.6	7.7
DA31.A	10.5	0.0164	48.2	5.4
DA31.B	10.4	0.0163	28.8	5.1
DA32.A	13.7	0.0214	62.7	7.0
DA32.B	8.1	0.0127	23.6	4.0
DA33.A	10.8	0.0169	50.0	5.5
DA33.B	13.8	0.0216	33.3	6.8
DA34.A	19.5	0.0305	89.4	10.0
DA34.B	9.0	0.0141	22.2	4.4

Waste Management of Texas, Inc.
Skyline Landfill
POSTDEVELOPED FLOW SUMMARY

Watershed Name	Drainage Area (Ac)	Drainage Area (mi^2)	25-Year Peak Flow (cfs)	25-Year Volume (Ac-ft)
DA35	1.2	0.0018	5.5	0.6
DA36	3.3	0.0052	15.0	1.6
DA37	18.3	0.0286	53.1	8.8
DA40	13.6	0.0213	39.0	6.6
DA41	13.4	0.0209	60.5	6.8
DA42	4.4	0.0069	15.8	2.1
DA44	6.8	0.0106	16.4	3.5
DA45	17.5	0.0273	73.9	8.9
DA46.A	16.6	0.0259	74.6	8.5
DA46.B	0.8	0.0013	3.2	0.4
DA47	2.6	0.0041	9.4	1.3
DA48	12.6	0.0197	37.4	6.1
DA49	34.8	0.0544	102.9	16.8
DA50	3.5	0.0055	14.6	1.7
DA51	7.1	0.0111	23.2	3.4
DA52	0.7	0.0011	2.7	0.3
DA53	9.0	0.0141	29.6	4.4
DA54	3.8	0.0059	15.1	1.8
DA55	4.8	0.0075	18.6	2.3
DA56	12.7	0.0198	41.3	6.1
DA57	1.5	0.0023	5.1	0.7
OS01	420.4	0.6569	1342.2	202.8
OS02	354.2	0.5534	1067.8	167.4
OS03	4.2	0.0066	11.5	2.0
OS04	398.3	0.6223	1153.3	187.4
OS05	29.7	0.0464	146.7	13.5
OS06	25.8	0.0403	154.7	12.4
OS07.A	13.2	0.0206	45.2	6.4
OS07.B	0.9	0.0014	4.2	0.4
OS07.C	0.9	0.0014	4.2	0.4
OS08	22.7	0.0355	139.5	11.4
OS09	7.1	0.0111	45.8	3.4
OS10	17.1	0.0267	101.9	8.2
OS11	19.7	0.0308	113.0	9.5
OS12	53.7	0.0839	273.2	25.9
OS12a	4.3	0.0067	13.0	2.1
OS13	16.2	0.0253	97.2	7.8
OS14	1.8	0.0028	5.9	0.9
OS15	1.6	0.0025	4.8	0.8
OS16	1.6	0.0025	5.6	0.8
OS17	0.6	0.0009	2.2	0.3
OS18	1.5	0.0023	5.2	0.7

POSTDEVELOPED VELOCITY SUMMARY

Waste Management of Texas, Inc.
Skyline Landfill
Postdeveloped 25-Year Velocity Calculations at Permit Boundary Comparison Points

Required: Determine the 25-year flow depths and velocities at the permit boundary.

Method: Calculate the flow depths and velocities using Manning's Equation.

Solution:

		Velocity Calculations						
Comparison Point	Q (cfs)	Width[1] (ft)	Bottom Slope[2] (%)	Side Slopes[3] (h:v)	Manning's n	Depth (ft)	Velocity (fps)	Shear Stress (psf)
CP01	66.1	500	10.00	0.0	0.030	**0.06**	**2.32**	**0.36**
CP02	15.4	100	10.00	0.0	0.030	**0.06**	**2.46**	**0.39**
CP03	5.4	200	5.00	0.0	0.030	**0.03**	**1.00**	**0.08**
CP04	465.4	6	9.00	2.0	0.030	**2.28**	**19.35**	**12.80**
CP05	93.7	300	2.00	0.0	0.030	**0.15**	**2.02**	**0.19**
CP06	80.0	300	0.50	0.0	0.030	**0.21**	**1.25**	**0.07**
CP07	204.6	3	2.00	1.0	0.030	**3.29**	**9.90**	**4.10**
CP08	5.4	100	10.00	0.0	0.030	**0.03**	**1.62**	**0.21**
CP09	15.0	4	15.00	2.5	0.030	**0.36**	**8.53**	**3.36**
CP10	278.9	4	7.00	1.5	0.030	**2.29**	**16.33**	**10.02**
CP11	249.2	60	0.20	0.0	0.030	**1.49**	**2.79**	**0.19**
CP12	187.6	30	1.00	10.0	0.030	**1.05**	**4.39**	**0.66**
CP13	4.2	20	15.00	20.0	0.030	**0.07**	**3.00**	**0.61**
CP14	4.2	20	12.50	20.0	0.030	**0.07**	**2.83**	**0.54**
CP15	45.2	70	2.60	5.0	0.030	**0.22**	**2.88**	**0.36**
CP16	129.3	8	10.00	2.0	0.030	**0.98**	**13.33**	**6.08**
CP17	113.0	10	4.00	0.0	0.030	**1.18**	**9.60**	**2.94**
CP18	124.8	30	2.00	10.0	0.030	**0.69**	**4.88**	**0.86**
CP19	14.6	15	3.00	5.0	0.030	**0.27**	**3.36**	**0.50**
CP19a	25.5	15	3.00	5.0	0.030	**0.37**	**4.11**	**0.69**
CP20	23.2	125	2.60	0.0	0.030	**0.10**	**1.77**	**0.17**
CP21	2.7	50	5.00	0.0	0.030	**0.04**	**1.32**	**0.13**
CP22	29.6	600	3.00	0.0	0.030	**0.05**	**1.09**	**0.08**
CP23	15.1	10	6.00	10.0	0.030	**0.27**	**4.44**	**1.00**
CP24	18.6	10	12.00	10.0	0.030	**0.25**	**6.00**	**1.86**
CP25	41.3	10	8.00	2.0	0.030	**0.47**	**7.96**	**2.37**
CP26	5.1	20	5.00	0.0	0.030	**0.10**	**2.44**	**0.33**
CP27	50.0	No Discharge						

Notes:

1. Comparison points where surface water runoff enters or exits the permit boundary in established natural or constructed channels; width refers to the bottom width of the channel.
   Comparison points where surface water runoff enters or exits the permit boundary as sheet flow or not well established channels; width refers to the sheet flow width.
2. For channels, bottom slope is the slope of the channel bottom where surface water enters or exits the permit boundary or where surface water enters into Ten Mile Creek.
   For sheet flow, bottom slope is the slope of the ground where surface water enters or exits the permit boundary or the ground slope prior to where surface water enters into Ten Mile Creek.
3. For channels, side slope is the average side slope of the channel where surface water enters or exits the permit boundary or where surface water enters into Ten Mile Creek.
   For sheet flow, there are no side slopes and are represented by "0" in this table.

POSTDEVELOPMENT BOUNDARY ANALYSIS SUMMARY

Waste Management of Texas, Inc.
Skyline Landfill

Postdeveloped HEC HMS Boundary Analysis Summary

Boundary	Comparison Point	Total Contributing Drainage Area (ac)	25-Year Flow Rate (cfs)	25-Year Volume (ac-ft)	25-Year Velocity (fps)	Drainage Areas
Permit Boundary	CP01	21.7	66.1	11.1	2.32	DA01
	CP02	4.0	15.4	1.9	2.46	DA02
	CP03	1.2	5.4	0.6	1.00	DA03
	CP04	235.0	465.4	96.7	19.35	DA04, DA05, DA06, DA07, DA08, DA09, DA10, DA11, DA12, DA13, DA14, DA15, DA16, DA17.A, DA17.B, DA18, DA19, DA20.A, DA20.B, DA21.A, DA21.B, DA22.A, DA22.B
	CP05	40.3	93.7	20.1	2.02	DA23, DA24, DA25.A, DA25.B
	CP06	26.6	80.0	13.6	1.25	DA26
	CP07	143.9	204.6	71.9	9.90	DA27, DA28, DA29, DA30.A, DA30.B, DA31.A, DA31.B, DA32.A, DA32.B, DA33.A, DA33.B, DA34.A, DA34.B
	CP08	1.2	5.4	0.6	1.62	DA35
	CP09	3.3	15.0	1.6	8.53	DA36
	CP10	181.7	278.9	82.9	16.33	DA37, CP11
	CP11	163.4	249.2	74.1	2.79	OS06, CP12
	CP12	137.6	187.6	61.7	4.39	DA40, DA41, DA42, DA44, DA45, DA46.A, DA46.B, DA47, CP13, CP14, CP15, CP16
	CP13	0.9	4.2	0.4	3.00	OS07.C
	CP14	0.9	4.2	0.4	2.83	OS07.B
	CP15	35.9	45.2	11.3	2.88	OS07.A, OS08
	CP16	24.2	129.3	11.4	13.33	OS09, OS10
	CP17	19.7	113.0	9.5	9.60	OS11
	CP18	67.1	124.8	32.4	4.88	DA48, DA49, CP17
	CP19	3.5	14.6	1.7	3.36	DA50
	CP19a	7.8	25.5	3.8	4.11	DA50, OS12a
	CP20	7.1	23.2	3.4	1.77	DA51
	CP21	0.7	2.7	0.3	1.32	DA52
	CP22	9.0	29.6	5.8	1.09	DA53
	CP23	3.8	15.1	1.8	4.44	DA54
	CP24	4.8	18.6	2.3	6.00	DA55
	CP25	12.7	41.3	6.1	7.96	DA56
	CP26	1.5	5.1	0.7	2.44	DA57
	CP27	0.0	0.0	0.0	0.00	Overflow for DA09
Other Comparison Points	FA	78.3	323.5	37.8		OS12, CP19, CP20, CP21, CP22
	OH75.1	26.6	68.3	11.9		OS13, OS14, CP23, CP24
	OH75.2	15.9	53.1	8.1		OS15, OS16, CP25
	OH75.3	3.6	24.0	2.1		OS17, OS18, CP26