

Appendix I  
Outfall Dilution Model Runs (on CD)



/ UM3. 8/11/2016 9:10:05 AM  
**Case 01;** ambient file :\\Plumes\sct\_7Q10\_ebb\_ Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966
14	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.692	4.3	20	135	10	16	24.3	243	42.6	10.01	1.00E-03	23	100

Simulation:

Froude	number:	41.95;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	1.255(m/s);			
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time				
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)				
0	42.6	0.129	0.692	100	1	0	0	0.0;	0.00			
10	42.5	0.129	0.83	82.03	1.219	-0.196	0.2	0.0803;	0.28			
20	42.38	0.129	1.002	67.3	1.486	-0.419	0.435	0.191;	0.60			
30	42.25	0.129	1.208	55.21	1.811	-0.67	0.712	0.344;	0.98			
40	42.11	0.129	1.453	45.29	2.208	-0.952	1.039	0.553;	1.41			
50	41.95	0.129	1.743	37.15	2.691	-1.264	1.422	0.834;	1.90			
60	41.77	0.129	2.082	30.48	3.28	-1.606	1.869	1.21;	2.46			
70	41.58	0.129	2.479	25	3.998	-1.976	2.392	1.706;	3.10			
80	41.37	0.129	2.937	20.51	4.874	-2.369	2.996	2.349;	3.82			
90	41.15	0.129	3.462	16.83	5.941	-2.779	3.689	3.166;	4.62			
100	40.93	0.129	4.058	13.8	7.242	-3.202	4.481	4.193;	5.51			
110	40.69	0.129	4.729	11.32	8.828	-3.636	5.392	5.477;	6.50			
120	40.45	0.129	5.478	9.289	10.76	-4.081	6.446	7.08;	7.63			
130	40.2	0.129	6.307	7.62	13.12	-4.538	7.682	9.088;	8.92			
140	39.93	0.129	7.219	6.251	15.99	-5.009	9.15	11.62;	10.43			
150	39.65	0.129	8.219	5.128	19.49	-5.5	10.92	14.82;	12.23			
160	39.34	0.129	9.313	4.207	23.76	-6.013	13.09	18.91;	14.41			
170	39	0.129	10.51	3.451	28.96	-6.554	15.77	24.17;	17.08			
180	38.63	0.129	11.81	2.831	35.31	-7.127	19.12	30.95;	20.41			
188	38.28	0.129	12.94	2.416	41.37	-7.632	22.58	38.1;	23.83			
<b>merging;</b>												
<b>13.04 41.86 -7.696 23.05 24.30 acute zone;</b>												
189	38.21	0.129	13.1	2.369	42.19	-7.739	23.36	39.75;	24.61			
190	38.12	0.129	13.27	2.323	43.04	-7.859	24.27	41.65;	25.51			
200	37.06	0.129	15.48	1.905	52.46	-9.215	35.52	65.52;	36.70			
210	35.74	0.129	18.52	1.563	63.95	-10.66	49.88	96.56;	51.01			
220	34.08	0.129	22.49	1.282	77.96	-12.18	67.97	136.3;	69.05			
230	32.02	0.129	27.53	1.052	95.03	-13.76	90.58	186.5;	91.62			
240	29.44	0.129	33.82	0.863	115.8	-15.38	118.6	249.5;	119.59			
250	26.24	0.129	41.6	0.708	141.2	-17.04	153.1	327.8;	154.05			
257	23.55	0.129	48.1	0.616	162.2	-18.21	181.9	393.5;	182.81			
<b>bottom hit;</b>												
<b>surface;</b>												
Const	Eddy	Diffusivity.	Farfield	dispersion	based	on	wastefield	width	of	45.7	m	
	conc	dilutn	width	distnce	time							
	(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	γ/s(m0.67/s2)					
	0.61335	163	45.72	56	5.87E-04	0	0	0.129	3.00E-04			
	0.61403	162.8	45.92	58	0.00489	0	0	0.129	3.00E-04			
	0.61452	162.7	46.12	60	0.0092	0	0	0.129	3.00E-04			
	0.61482	162.6	46.32	62	0.0135	0	0	0.129	3.00E-04			
	0.61503	162.5	46.51	64	0.0178	0	0	0.129	3.00E-04			
	0.61518	162.5	46.71	66	0.0221	0	0	0.129	3.00E-04			
	0.6153	162.5	46.91	68	0.0264	0	0	0.129	3.00E-04			
	0.6154	162.4	47.1	70	0.0307	0	0	0.129	3.00E-04			
	0.61548	162.4	47.29	72	0.035	0	0	0.129	3.00E-04			
	0.61555	162.4	47.48	74	0.0393	0	0	0.129	3.00E-04			
	0.61561	162.4	47.68	76	0.0437	0	0	0.129	3.00E-04			

count: 11

/ UM3.  
**Case 12;** ambient file :\\Plumes\sct\_7Q10\_ebb\_ Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966

14 0.129 90 0 21.1 0 0 0.129 90 0.0003 -1.966

Diffuser

table:	P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
	(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
	0.803	4.3	20	135	10	16	24.3	243	42.6	<b>18.92</b>	1.00E-03	23	100

Simulation:

Froude	number:	54.66;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	1.762(m/s);
	Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	0	42.6	0.129	0.803	100	1	0	0	0.0;
	10	42.47	0.129	0.965	82.03	1.219	-0.243	0.246	0.0708;
	20	42.33	0.129	1.168	67.3	1.486	-0.524	0.538	0.171;
	30	42.16	0.129	1.413	55.21	1.811	-0.847	0.885	0.31;
	40	41.97	0.129	1.706	45.29	2.208	-1.215	1.295	0.505;
	50	41.76	0.129	2.055	37.15	2.691	-1.632	1.779	0.773;
	60	41.52	0.129	2.47	30.48	3.28	-2.097	2.347	1.138;
	70	41.25	0.129	2.959	25	3.998	-2.612	3.013	1.629;
	80	40.96	0.129	3.533	20.51	4.874	-3.174	3.791	2.285;
	90	40.64	0.129	4.201	16.83	5.941	-3.782	4.698	3.148;
	100	40.3	0.129	4.972	13.8	7.242	-4.427	5.744	4.264;
	110	39.94	0.129	5.854	11.32	8.828	-5.1	6.942	5.681;
	120	39.57	0.129	6.853	9.289	10.76	-5.793	8.313	7.462;
	130	39.18	0.129	7.977	7.62	13.12	-6.504	9.889	9.69;
	140	38.77	0.129	9.229	6.251	15.99	-7.234	11.72	12.47;
	150	38.35	0.129	10.61	5.128	19.49	-7.984	13.86	15.97;
	160	37.9	0.129	12.14	4.207	23.76	-8.759	16.41	20.36;
	170	37.42	0.129	13.81	3.451	28.96	-9.566	19.49	25.94;
	<b>174</b>	<b>37.04</b>	<b>0.129</b>	<b>14.64</b>	<b>3.188</b>	<b>31.35</b>	<b>-10.19</b>	<b>22.14</b>	<b>30.9;</b>
	180	36.3	0.129	16.25	2.831	35.31	-11.34	27.45	41.02;
	190	34.83	0.129	19.82	2.323	43.04	-13.44	38.46	62.62;
	200	33.03	0.129	24.59	1.905	52.46	-15.74	52.69	91.4;
	210	30.8	0.129	30.74	1.563	63.95	-18.21	70.85	129.1;
	218	28.64	0.129	36.81	1.334	74.93	-20.29	88.78	167.1;
	220	28.04	0.129	38.51	1.282	77.96	-20.82	93.79	177.8;
	230	24.63	0.129	48.2	1.052	95.03	-23.56	122.5	239.9;
	231	24.24	0.129	49.29	1.031	96.93	-23.84	125.7	247.0;
Const	Eddy	Diffusivity.	Farfield	dispersion	based	on	wastefield	width	of
	conc	dilutn	width	distnce	time				
	(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	γ/s(m0.67/s2)		
	1.02671	97.36	46.16	40	0.00213	0	0	0.129	3.00E-04
	1.02787	97.25	46.36	42	0.00644	0	0	0.129	3.00E-04
	1.02855	97.18	46.56	44	0.0107	0	0	0.129	3.00E-04
	1.02898	97.14	46.75	46	0.0151	0	0	0.129	3.00E-04
	1.02929	97.11	46.95	48	0.0194	0	0	0.129	3.00E-04
	1.02953	97.09	47.15	50	0.0237	0	0	0.129	3.00E-04
	1.02971	97.07	47.34	52	0.028	0	0	0.129	3.00E-04
	1.02987	97.06	47.54	54	0.0323	0	0	0.129	3.00E-04
	1.02999	97.05	47.73	56	0.0366	0	0	0.129	3.00E-04
	1.0301	97.04	47.92	58	0.0409	0	0	0.129	3.00E-04
	1.0302	97.03	48.11	60	0.0452	0	0	0.129	3.00E-04
	1.03028	97.02	48.3	62	0.0495	0	0	0.129	3.00E-04
	1.03036	97.01	48.5	64	0.0538	0	0	0.129	3.00E-04
	1.03042	97.01	48.68	66	0.0581	0	0	0.129	3.00E-04
	1.03048	97	48.87	68	0.0624	0	0	0.129	3.00E-04
	1.03054	97	49.06	70	0.0667	0	0	0.129	3.00E-04
	1.03058	96.99	49.25	72	0.071	0	0	0.129	3.00E-04
	1.03063	96.99	49.44	74	0.0753	0	0	0.129	3.00E-04
	1.03066	96.98	49.62	76	0.0797	0	0	0.129	3.00E-04

count: 19

/ UM3.

**Case 23;** ambient file :\\Plumes\sct\_7Q10\_ebb\_ Diffuser table record 3:00 -----

Ambient

Table:	Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
	m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
	0	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966
	14	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966

Diffuser	table:	P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (I)	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
		0.862	4.3	20	135	10	16	24.3	243	42.6	25.93	1.00E-03	23	100

Simulation:

Froude	number:	62.75;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	2.095(m/s);					
	Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn (I)	x-posn (ft)	y-posn (ft)	Time (s)					
	0	42.6	0.129	0.862	100	1	0	0	0.0;					0.00
	10	42.46	0.129	1.036	82.03	1.219	-0.268	0.271	0.0657;					0.38
	20	42.3	0.129	1.256	67.3	1.486	-0.58	0.593	0.159;					0.83
	30	42.12	0.129	1.521	55.21	1.811	-0.941	0.977	0.29;					1.36
	40	41.9	0.129	1.84	45.29	2.208	-1.357	1.432	0.475;					1.97
	50	41.66	0.129	2.22	37.15	2.691	-1.831	1.971	0.732;					2.69
	60	41.38	0.129	2.674	30.48	3.28	-2.367	2.607	1.085;					3.52
	70	41.07	0.129	3.213	25	3.998	-2.965	3.353	1.566;					4.48
	80	40.72	0.129	3.848	20.51	4.874	-3.626	4.227	2.213;					5.57
	90	40.35	0.129	4.593	16.83	5.941	-4.348	5.246	3.075;					6.81
	100	39.94	0.129	5.458	13.8	7.242	-5.128	6.434	4.209;					8.23
	110	39.5	0.129	6.456	11.32	8.828	-5.954	7.804	5.674;					9.82
	120	39.04	0.129	7.597	9.289	10.76	-6.815	9.372	7.533;					11.59
	130	38.56	0.129	8.89	7.62	13.12	-7.702	11.17	9.87;					13.57
	140	38.06	0.129	10.34	6.251	15.99	-8.613	13.23	12.79;					15.79
	150	37.54	0.129	11.96	5.128	19.49	-9.547	15.62	16.45;					18.31
	160	36.99	0.129	13.75	4.207	23.76	-10.51	18.43	21.03;					21.22
	163	36.82	0.129	14.32	3.964	25.21	-10.8	19.38	22.62;					22.19
				15.07		26.90	-11.417	21.45			24.30	merging;		
												acute	zone;	
	167	36.38	0.129	15.25	3.662	27.29	-11.56	21.93	27.03;					24.79
	170	35.96	0.129	16.09	3.451	28.96	-12.24	24.34	31.28;					27.24
	180	34.39	0.129	19.74	2.831	35.31	-14.72	34.06	48.91;					37.10
	190	32.47	0.129	24.76	2.323	43.04	-17.49	46.68	72.8;					49.85
	200	30.13	0.129	31.35	1.905	52.46	-20.5	62.83	104.5;					66.09
	210	27.28	0.129	39.77	1.563	63.95	-23.72	83.3	146.0;			bottom	hit;	
	219	24.16	0.129	49.21	1.308	76.43	-26.78	106.2	193.4;			surface;		109.52
Const	Eddy conc (%)	Diffusivity. dilutn (m)	Farfield width (m)	dispersion distnce (hrs)	based time (kg/kg)	on (s-1)	wastefield 1/s)(m0.67/s2)	width	of		46.03	m		
	1.30184	76.78	46.1	34	0.00135	0	0	0.129			3.00E-04			
	1.30338	76.69	46.3	36	0.00566	0	0	0.129			3.00E-04			
	1.30433	76.64	46.5	38	0.00997	0	0	0.129			3.00E-04			
	1.30492	76.6	46.69	40	0.0143	0	0	0.129			3.00E-04			
	1.30533	76.58	46.89	42	0.0186	0	0	0.129			3.00E-04			
	1.30564	76.56	47.09	44	0.0229	0	0	0.129			3.00E-04			
	1.30589	76.54	47.28	46	0.0272	0	0	0.129			3.00E-04			
	1.30609	76.53	47.48	48	0.0315	0	0	0.129			3.00E-04			
	1.30625	76.52	47.67	50	0.0358	0	0	0.129			3.00E-04			
	1.3064	76.51	47.86	52	0.0401	0	0	0.129			3.00E-04			
	1.30652	76.51	48.05	54	0.0444	0	0	0.129			3.00E-04			
	1.30663	76.5	48.24	56	0.0487	0	0	0.129			3.00E-04			
	1.30672	76.49	48.44	58	0.053	0	0	0.129			3.00E-04			
	1.30681	76.49	48.63	60	0.0573	0	0	0.129			3.00E-04			
	1.30689	76.49	48.81	62	0.0616	0	0	0.129			3.00E-04			
	1.30696	76.48	49	64	0.066	0	0	0.129			3.00E-04			
	1.30702	76.48	49.19	66	0.0703	0	0	0.129			3.00E-04			
	1.30707	76.47	49.38	68	0.0746	0	0	0.129			3.00E-04			
	1.30712	76.47	49.56	70	0.0789	0	0	0.129			3.00E-04			
	1.30716	76.47	49.75	72	0.0832	0	0	0.129			3.00E-04			
	1.30719	76.47	49.93	74	0.0875	0	0	0.129			3.00E-04			
	1.30721	76.47	50.12	76	0.0918	0	0	0.129			3.00E-04			

count: 22

/ UM3.

Case 34; ambient file :\\Plumes\sct\_7Q10\_ebb\_ Diffuser table record 4:00 -----

Ambient

Table:	Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
	0	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966
	14	0.129	90	0	21.1	0	0	0.129	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.931	4.3	20	135	10	16	24.3	243	42.6	37.31	1.00E-03	23	100

Simulation:

Froude number:	74.47;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	2.585(m/s);				
Step	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)				
0	42.6	0.129	0.931	100	1	0	0	0.0;	<b>0.00</b>			
10	42.45	0.129	1.12	82.03	1.219	-0.297	0.3	0.0591;	<b>0.42</b>			
20	42.27	0.129	1.359	67.3	1.486	-0.646	0.658	0.143;	<b>0.92</b>			
30	42.06	0.129	1.648	55.21	1.811	-1.053	1.086	0.264;	<b>1.51</b>			
40	41.81	0.129	1.996	45.29	2.208	-1.527	1.596	0.434;	<b>2.21</b>			
50	41.53	0.129	2.414	37.15	2.691	-2.072	2.201	0.673;	<b>3.02</b>			
60	41.21	0.129	2.914	30.48	3.28	-2.694	2.918	1.006;	<b>3.97</b>			
70	40.85	0.129	3.51	25	3.998	-3.398	3.762	1.465;	<b>5.07</b>			
80	40.44	0.129	4.218	20.51	4.874	-4.185	4.754	2.089;	<b>6.33</b>			
90	39.98	0.129	5.053	16.83	5.941	-5.055	5.916	2.932;	<b>7.78</b>			
100	39.49	0.129	6.032	13.8	7.242	-6.007	7.272	4.055;	<b>9.43</b>			
110	38.94	0.129	7.171	11.32	8.828	-7.037	8.852	5.536;	<b>11.31</b>			
120	38.36	0.129	8.486	9.289	10.76	-8.132	10.68	7.454;	<b>13.42</b>			
130	37.75	0.129	9.99	7.62	13.12	-9.274	12.76	9.892;	<b>15.77</b>			
140	37.11	0.129	11.7	6.251	15.99	-10.45	15.15	12.96;	<b>18.40</b>			
150	36.45	0.129	13.61	5.128	19.49	-11.66	17.9	16.8;	<b>21.36</b>			
156	36.03	0.129	14.87	4.554	21.95	-12.4	19.75	19.55;	<b>23.32</b>			
			<b>15.27</b>		<b>22.68</b>	<b>-12.755</b>	<b>20.68</b>		<b>24.30</b>	<b>merging;</b>		
										<b>acute</b>	<b>zone;</b>	
158	35.79	0.129	15.36	4.377	22.84	-12.83	20.88	21.28;	<b>24.51</b>			
160	35.48	0.129	15.92	4.207	23.76	-13.37	22.32	23.52;	<b>26.02</b>			
170	33.69	0.129	19.64	3.451	28.96	-16.42	31.23	37.92;	<b>35.28</b>			
180	31.5	0.129	24.95	2.831	35.31	-19.89	42.89	57.88;	<b>47.28</b>			
190	28.88	0.129	32.09	2.323	43.04	-23.71	57.78	84.7;	<b>62.46</b>			
200	25.74	0.129	41.41	1.905	52.46	-27.85	76.55	120.0;	<b>81.46</b>			
204	24.31	0.129	45.83	1.76	56.79	-29.57	85.31	136.9;	<b>90.29</b>	bottom	hit;	
206	23.56	0.129	48.21	1.692	59.08	-30.45	89.99	146.1;	<b>95.00</b>	surface;		
Const	Eddy conc (%)	Diffusivity (m)	Farfield width (m)	dispersion distnce (hrs)	based time (kg/kg)	on (s-1)	wastefield width (1/s)(m0.67/s2)	of		45.73	m	
	1.6845	59.34	45.83	30	0.00225	0	0	0.129	3.00E-04			
	1.68639	59.27	46.03	32	0.00655	0	0	0.129	3.00E-04			
	1.68748	59.23	46.23	34	0.0109	0	0	0.129	3.00E-04			
	1.68818	59.21	46.43	36	0.0152	0	0	0.129	3.00E-04			
	1.68869	59.19	46.62	38	0.0195	0	0	0.129	3.00E-04			
	1.68907	59.18	46.82	40	0.0238	0	0	0.129	3.00E-04			
	1.68937	59.17	47.01	42	0.0281	0	0	0.129	3.00E-04			
	1.68962	59.16	47.21	44	0.0324	0	0	0.129	3.00E-04			
	1.68983	59.15	47.4	46	0.0367	0	0	0.129	3.00E-04			
	1.69001	59.15	47.59	48	0.041	0	0	0.129	3.00E-04			
	1.69016	59.14	47.78	50	0.0453	0	0	0.129	3.00E-04			
	1.6903	59.14	47.97	52	0.0496	0	0	0.129	3.00E-04			
	1.69042	59.13	48.16	54	0.0539	0	0	0.129	3.00E-04			
	1.69053	59.13	48.35	56	0.0582	0	0	0.129	3.00E-04			
	1.69062	59.12	48.54	58	0.0625	0	0	0.129	3.00E-04			
	1.69071	59.12	48.73	60	0.0668	0	0	0.129	3.00E-04			
	1.69079	59.12	48.92	62	0.0712	0	0	0.129	3.00E-04			
	1.69086	59.12	49.1	64	0.0755	0	0	0.129	3.00E-04			
	1.69092	59.11	49.29	66	0.0798	0	0	0.129	3.00E-04			
	1.69097	59.11	49.47	68	0.0841	0	0	0.129	3.00E-04			
	1.691	59.11	49.66	70	0.0884	0	0	0.129	3.00E-04			
	1.69103	59.11	49.84	72	0.0927	0	0	0.129	3.00E-04			
	1.69103	59.11	50.02	74	0.097	0	0	0.129	3.00E-04			
	1.69102	59.11	50.21	76	0.101	0	0	0.129	3.00E-04			

count:

24

;

9:10:05

AM.

amb

fills:

2

/ UM3. 8/11/2016 9:29:17 AM

**Case 02;** ambient file \Plumes\sc7Q10\_ebb Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966
14	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.692	4.3	20	135	10	16	24.3	243	42.6	10.01	1.00E-03	23	100

Simulation:

Froude	number:	41.95;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	1.255(m/s);
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time	
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)	
0	42.6	0.376	0.692	100	1	0	0	0.0;	0.00
10	42.53	0.376	0.819	82.03	1.219	-0.135	0.142	0.0549;	0.20
20	42.46	0.376	0.973	67.3	1.486	-0.272	0.302	0.123;	0.41
30	42.39	0.376	1.148	55.21	1.811	-0.414	0.485	0.209;	0.64
40	42.31	0.376	1.348	45.29	2.208	-0.558	0.697	0.316;	0.89
50	42.24	0.376	1.572	37.15	2.691	-0.705	0.941	0.449;	1.18
60	42.16	0.376	1.82	30.48	3.28	-0.854	1.225	0.613;	1.49
70	42.08	0.376	2.094	25	3.998	-1.007	1.561	0.817;	1.86
80	42	0.376	2.394	20.51	4.874	-1.164	1.964	1.074;	2.28
90	41.91	0.376	2.721	16.83	5.941	-1.328	2.458	1.401;	2.79
100	41.82	0.376	3.076	13.8	7.242	-1.502	3.072	1.822;	3.42
110	41.73	0.376	3.463	11.32	8.828	-1.687	3.849	2.37;	4.20
120	41.62	0.376	3.884	9.289	10.76	-1.886	4.844	3.088;	5.20
130	41.51	0.376	4.342	7.62	13.12	-2.101	6.131	4.035;	6.48
140	41.38	0.376	4.843	6.251	15.99	-2.335	7.806	5.289;	8.15
150	41.24	0.376	5.391	5.128	19.49	-2.59	10	6.955;	10.33
160	41.09	0.376	5.992	4.207	23.76	-2.867	12.89	9.169;	13.20
170	40.91	0.376	6.651	3.451	28.96	-3.17	16.68	12.11;	16.98
180	40.72	0.376	7.374	2.831	35.31	-3.501	21.69	16.02;	21.97
			7.67		38.12	-3.636	24.03	24.30	acute zone;
184	40.64	0.376	7.683	2.616	38.22	-3.641	24.11	17.93;	24.38
190	40.5	0.376	8.17	2.323	43.04	-3.86	28.28	21.21;	28.54
200	40.26	0.376	9.045	1.905	52.46	-4.249	36.94	28.06;	37.18
210	39.97	0.376	10.01	1.563	63.95	-4.669	48.29	37.07;	48.52
220	39.65	0.376	11.07	1.282	77.96	-5.12	63.07	48.85;	63.28
225	39.46	0.376	11.64	1.161	86.07	-5.356	72.03	56.01;	72.23 merging;
230	39.1	0.376	12.32	1.052	95.03	-5.793	90.36	70.67;	90.55
240	38.12	0.376	14.14	0.863	115.8	-6.811	139.6	110.2;	139.77
250	36.91	0.376	16.54	0.708	141.2	-7.84	200.3	158.9;	200.45
256	36.05	0.376	18.3	0.629	159	-8.462	243.1	193.3;	243.25 chronic zone;
260	35.41	0.376	19.62	0.581	172.1	-8.878	274.7	218.7;	274.84
270	33.56	0.376	23.48	0.476	209.8	-9.921	365.7	292.0;	365.83
280	31.29	0.376	28.29	0.391	255.8	-10.97	476.9	381.7;	477.03
290	28.5	0.376	34.23	0.321	311.8	-12.02	612.6	491.3;	612.72
300	25.08	0.376	41.52	0.263	380.1	-13.07	778.2	625.0;	778.31
306	22.67	0.376	46.68	0.234	428	-13.7	894.4	719.0;	894.50 surface;

/ UM3.

**Case 13;** ambient file \Plumes\sc7Q10\_ebb Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966
14	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966

Diffuser	table:												
	P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ( )	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	<b>Ttl-flo (MGD)</b>	Eff-sal (psu)	Temp (C)	Polutnt (%)
	0.803	4.3	20	135	10	16	24.3	243	42.6	<b>18.92</b>	1.00E-03	23	100

Simulation:

Froude	number:	54.66;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	1.762(m/s);				
	Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ( )	x-posn (ft)	y-posn (ft)	Time (s)				
	0	42.6	0.376	0.803	100	1	0	0	0.0;	<b>0.00</b>			
	10	42.51	0.376	0.956	82.03	1.219	-0.183	0.189	0.0531;	<b>0.26</b>			
	20	42.41	0.376	1.143	67.3	1.486	-0.378	0.407	0.122;	<b>0.56</b>			
	30	42.3	0.376	1.363	55.21	1.811	-0.588	0.663	0.213;	<b>0.89</b>			
	40	42.18	0.376	1.616	45.29	2.208	-0.811	0.958	0.331;	<b>1.26</b>			
	50	42.06	0.376	1.906	37.15	2.691	-1.041	1.297	0.479;	<b>1.66</b>			
	60	41.94	0.376	2.235	30.48	3.28	-1.278	1.687	0.664;	<b>2.12</b>			
	70	41.82	0.376	2.605	25	3.998	-1.519	2.135	0.895;	<b>2.62</b>			
	80	41.69	0.376	3.017	20.51	4.874	-1.766	2.657	1.182;	<b>3.19</b>			
	90	41.56	0.376	3.471	16.83	5.941	-2.019	3.272	1.541;	<b>3.84</b>			
	100	41.42	0.376	3.97	13.8	7.242	-2.282	4.009	1.994;	<b>4.61</b>			
	110	41.28	0.376	4.515	11.32	8.828	-2.556	4.908	2.572;	<b>5.53</b>			
	120	41.12	0.376	5.109	9.289	10.76	-2.845	6.022	3.316;	<b>6.66</b>			
	130	40.96	0.376	5.756	7.62	13.12	-3.154	7.424	4.283;	<b>8.07</b>			
	140	40.79	0.376	6.462	6.251	15.99	-3.485	9.211	5.549;	<b>9.85</b>			
	150	40.59	0.376	7.232	5.128	19.49	-3.843	11.51	7.216;	<b>12.13</b>			
	160	40.38	0.376	8.074	4.207	23.76	-4.231	14.49	9.42;	<b>15.10</b>			
	170	40.15	0.376	8.994	3.451	28.96	-4.653	18.38	12.34;	<b>18.96</b>			
	180	39.89	0.376	10	2.831	35.31	-5.112	23.47	16.22;	<b>24.02</b>			
				<b>10.05</b>		<b>35.64</b>	<b>-5.135</b>	<b>23.75</b>		<b>24.30</b>	<b>acute</b>	<b>zone;</b>	
	181	39.86	0.376	10.11	2.776	36.01	-5.16	24.06	16.67;	<b>24.61</b>			
	190	39.6	0.376	11.11	2.323	43.04	-5.612	30.15	21.36;	<b>30.67</b>			
	198	39.34	0.376	12.07	1.982	50.43	-6.043	36.97	26.65;	<b>37.46</b>	<b>merging;</b>		
	200	39.23	0.376	12.35	1.905	52.46	-6.226	40.16	29.13;	<b>40.64</b>			
	210	38.36	0.376	14.15	1.563	63.95	-7.554	66.14	49.46;	<b>66.57</b>			
	220	37.27	0.376	16.61	1.282	77.96	-9.035	101.2	77.04;	<b>101.60</b>			
	230	35.91	0.376	19.79	1.052	95.03	-10.63	146.9	113.2;	<b>147.28</b>			
	240	34.23	0.376	23.81	0.863	115.8	-12.32	205.6	159.9;	<b>205.97</b>			
	246	33.04	0.376	26.68	0.766	130.5	-13.36	248.2	193.9;	<b>248.56</b>	<b>chronic</b>	<b>zone;</b>	
	250	32.16	0.376	28.81	0.708	141.2	-14.08	280	219.3;	<b>280.35</b>			
	257	30.42	0.376	33	0.616	162.2	-15.34	343.1	269.7;	<b>343.44</b>	<b>bottom</b>	<b>hit;</b>	
	260	29.59	0.376	35	0.581	172.1	-15.89	373.2	293.8;	<b>373.54</b>			
	270	26.43	0.376	42.61	0.476	209.8	-17.74	489	386.7;	<b>489.32</b>			
	277	23.79	0.376	48.94	0.415	241	-19.06	585.9	464.5;	<b>586.21</b>	<b>surface;</b>		

Outside chronic zone

/ UM3.

**Case 24;** ambient file \Plumes\sc7Q10\_ebb Diffuser table record 3:00 -----

Ambient

Table:	Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
	m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
	0	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966
	14	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966

Diffuser

table:	P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
	(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
	0.862	4.3	20	135	10	16	24.3	243	42.6	<b>25.93</b>	1.00E-03	23	100

Simulation:

Froude	number:	62.75;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	2.095(m/s);				
	Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ( )	x-posn (ft)	y-posn (ft)	Time (s)				
	0	42.6	0.376	0.862	100	1	0	0	0.0;	<b>0.00</b>			
	10	42.49	0.376	1.028	82.03	1.219	-0.209	0.216	0.0512;	<b>0.30</b>			



20	42.38	0.376	1.234	67.3	1.486	-0.436	0.465	0.119;	<b>0.64</b>
30	42.25	0.376	1.476	55.21	1.811	-0.685	0.758	0.209;	<b>1.02</b>
40	42.11	0.376	1.757	45.29	2.208	-0.952	1.1	0.328;	<b>1.45</b>
50	41.96	0.376	2.083	37.15	2.691	-1.236	1.496	0.481;	<b>1.94</b>
60	41.81	0.376	2.457	30.48	3.28	-1.53	1.95	0.675;	<b>2.48</b>
70	41.65	0.376	2.88	25	3.998	-1.833	2.47	0.918;	<b>3.08</b>
80	41.49	0.376	3.356	20.51	4.874	-2.143	3.07	1.221;	<b>3.74</b>
90	41.33	0.376	3.885	16.83	5.941	-2.46	3.768	1.599;	<b>4.50</b>
100	41.16	0.376	4.47	13.8	7.242	-2.785	4.59	2.073;	<b>5.37</b>
110	40.98	0.376	5.113	11.32	8.828	-3.123	5.575	2.671;	<b>6.39</b>
120	40.8	0.376	5.816	9.289	10.76	-3.476	6.774	3.434;	<b>7.61</b>
130	40.6	0.376	6.584	7.62	13.12	-3.849	8.259	4.417;	<b>9.11</b>
140	40.39	0.376	7.421	6.251	15.99	-4.247	10.12	5.694;	<b>10.98</b>
150	40.16	0.376	8.333	5.128	19.49	-4.674	12.5	7.366;	<b>13.35</b>
160	39.92	0.376	9.329	4.207	23.76	-5.134	15.55	9.565;	<b>16.38</b>
170	39.64	0.376	10.42	3.451	28.96	-5.634	19.5	12.47;	<b>20.30</b>

			<b>11.36</b>		<b>33.95</b>	<b>-6.064</b>	<b>23.53</b>		<b>24.30</b>	acute zone;
179	39.37	0.376	11.48	2.888	34.61	-6.12	24.06	15.88;	<b>24.83</b>	
180	39.34	0.376	11.61	2.831	35.31	-6.176	24.64	16.32;	<b>25.40</b>	
186	39.14	0.376	12.38	2.514	39.76	-6.524	28.45	19.21;	<b>29.19</b>	merging;
190	38.88	0.376	13	2.323	43.04	-6.984	34	23.43;	<b>34.71</b>	
200	37.95	0.376	15.07	1.905	52.46	-8.505	54.91	39.48;	<b>55.56</b>	
210	36.81	0.376	17.87	1.563	63.95	-10.22	83.41	61.56;	<b>84.03</b>	
220	35.4	0.376	21.47	1.282	77.96	-12.12	121.5	91.35;	<b>122.10</b>	
230	33.66	0.376	26	1.052	95.03	-14.19	171.7	130.8;	<b>172.29</b>	
234	32.85	0.376	28.12	0.972	102.9	-15.05	195.6	149.7;	<b>196.18</b>	bottom hit;
240	31.51	0.376	31.65	0.863	115.8	-16.39	236.4	182.0;	<b>236.97</b>	
241	31.27	0.376	32.28	0.846	118.2	-16.62	243.8	187.8;	<b>244.37</b>	chronic zone;
250	28.86	0.376	38.62	0.708	141.2	-18.7	318.9	247.5;	<b>319.45</b>	
260	25.59	0.376	47.2	0.581	172.1	-21.09	422.8	330.2;	<b>423.33</b>	
263	24.46	0.376	50.13	0.547	182.7	-21.83	458.7	358.9;	<b>459.22</b>	surface;

Outside chronic zone

/ UM3.

Case 35; ambient file \Plumes\sc7Q10\_ebb Diffuser table record 4:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966
14	0.376	90	0	21.1	0	0	0.376	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.931</b>	4.3	20	135	10	16	24.3	243	42.6	<b>37.31</b>	1.00E-03	23	100

Simulation:

Froude number:	74.47;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	2.585(m/s);	
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	42.6	0.376	0.931	100	1	0	0	0.0;	<b>0.00</b>
10	42.48	0.376	1.113	82.03	1.219	-0.242	0.248	0.048;	<b>0.35</b>
20	42.34	0.376	1.34	67.3	1.486	-0.509	0.536	0.113;	<b>0.74</b>
30	42.19	0.376	1.608	55.21	1.811	-0.805	0.875	0.2;	<b>1.19</b>
40	42.02	0.376	1.923	45.29	2.208	-1.129	1.272	0.316;	<b>1.70</b>
50	41.84	0.376	2.291	37.15	2.691	-1.48	1.736	0.47;	<b>2.28</b>
60	41.64	0.376	2.718	30.48	3.28	-1.854	2.274	0.67;	<b>2.93</b>
70	41.44	0.376	3.207	25	3.998	-2.244	2.892	0.924;	<b>3.66</b>
80	41.24	0.376	3.763	20.51	4.874	-2.646	3.599	1.243;	<b>4.47</b>
90	41.02	0.376	4.388	16.83	5.941	-3.058	4.413	1.641;	<b>5.37</b>
100	40.8	0.376	5.086	13.8	7.242	-3.481	5.358	2.139;	<b>6.39</b>
110	40.58	0.376	5.859	11.32	8.828	-3.916	6.468	2.764;	<b>7.56</b>
120	40.34	0.376	6.709	9.289	10.76	-4.366	7.793	3.553;	<b>8.93</b>
130	40.09	0.376	7.641	7.62	13.12	-4.836	9.4	4.558;	<b>10.57</b>



/ UM3. 8/11/2016 9:33:05 AM  
**Case 03;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966
14	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.692	4.3	20	135	10	16	24.3	243	42.6	10.01	1.00E-03	23	100

Simulation:

Froude number:	41.95;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	1.255(m/s);				
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time				
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)				
0	42.6	0.042	0.692	100	1	0	0	0.0;	<b>0.00</b>			
10	42.48	0.042	0.833	82.03	1.219	-0.23	0.231	0.0939;	<b>0.33</b>			
20	42.34	0.042	1.013	67.3	1.486	-0.502	0.508	0.23;	<b>0.71</b>			
30	42.17	0.042	1.23	55.21	1.811	-0.825	0.842	0.426;	<b>1.18</b>			
40	41.98	0.042	1.493	45.29	2.208	-1.204	1.241	0.708;	<b>1.73</b>			
50	41.75	0.042	1.81	37.15	2.691	-1.649	1.719	1.109;	<b>2.38</b>			
60	41.48	0.042	2.191	30.48	3.28	-2.165	2.287	1.678;	<b>3.15</b>			
70	41.17	0.042	2.649	25	3.998	-2.76	2.962	2.476;	<b>4.05</b>			
80	40.81	0.042	3.197	20.51	4.874	-3.438	3.76	3.587;	<b>5.09</b>			
90	40.39	0.042	3.849	16.83	5.941	-4.206	4.699	5.117;	<b>6.31</b>			
100	39.93	0.042	4.622	13.8	7.242	-5.064	5.802	7.203;	<b>7.70</b>			
110	39.4	0.042	5.533	11.32	8.828	-6.014	7.091	10.02;	<b>9.30</b>			
120	38.8	0.042	6.6	9.289	10.76	-7.053	8.595	13.77;	<b>11.12</b>			
130	38.13	0.042	7.839	7.62	13.12	-8.176	10.34	18.7;	<b>13.18</b>			
140	37.4	0.042	9.268	6.251	15.99	-9.358	12.34	25.04;	<b>15.49</b>			
150	36.59	0.042	10.9	5.128	19.49	-10.58	14.6	33.02;	<b>18.03</b>			
160	35.72	0.042	12.75	4.207	23.76	-11.82	17.14	42.92;	<b>20.82</b>			
170	34.77	0.042	14.83	3.451	28.96	-13.08	20.01	55.1;	<b>23.91</b>			
			<b>15.02</b>		<b>29.45</b>	<b>-13.232</b>	<b>20.38</b>		<b>24.30</b>	merging;		
										acute zone;		
171	34.63	0.042	15.05	3.384	29.54	-13.26	20.45	57.03;	<b>24.37</b>			
180	32.68	0.042	17.83	2.831	35.31	-15.51	26.29	83.94;	<b>30.52</b>			
190	29.9	0.042	22.34	2.323	43.04	-18.21	34.25	123.0;	<b>38.79</b>			
200	26.42	0.042	28.53	1.905	52.46	-21.01	43.69	172.2;	<b>48.48</b>			
210	22.11	0.042	36.68	1.563	63.95	-23.86	54.8	233.3;	<b>59.77</b>			
216	19.05	0.042	42.67	1.388	72.02	-25.59	62.4	276.5;	<b>67.44</b>	surface;		
Const	Eddy conc	Diffusivity. dilutn	Farfield width	dispersion distnce	based time	on	wastefield width	of	44.04	m		
	(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	/s)(m0.67/s2)					
	1.38414	72.22	44.48	22	0.00955	0	0	0.042	3.00E-04			
	1.3856	72.14	45.07	24	0.0228	0	0	0.042	3.00E-04			
	1.38625	72.11	45.66	26	0.036	0	0	0.042	3.00E-04			
	1.38665	72.09	46.24	28	0.0492	0	0	0.042	3.00E-04			
	1.38693	72.07	46.81	30	0.0625	0	0	0.042	3.00E-04			
	1.38712	72.06	47.38	32	0.0757	0	0	0.042	3.00E-04			
	1.38722	72.06	47.94	34	0.0889	0	0	0.042	3.00E-04			
	1.38721	72.06	48.49	36	0.102	0	0	0.042	3.00E-04			
	1.38701	72.07	49.04	38	0.115	0	0	0.042	3.00E-04			
	1.38656	72.09	49.58	40	0.129	0	0	0.042	3.00E-04			
	1.38579	72.13	50.11	42	0.142	0	0	0.042	3.00E-04			
	1.38467	72.19	50.64	44	0.155	0	0	0.042	3.00E-04			
	1.38315	72.27	51.17	46	0.168	0	0	0.042	3.00E-04			
	1.38122	72.37	51.69	48	0.182	0	0	0.042	3.00E-04			
	1.3788	72.5	52.2	50	0.195	0	0	0.042	3.00E-04			
	1.3761	72.64	52.71	52	0.208	0	0	0.042	3.00E-04			
	1.37304	72.8	53.21	54	0.221	0	0	0.042	3.00E-04			
	1.36962	72.98	53.71	56	0.234	0	0	0.042	3.00E-04			
	1.36591	73.18	54.2	58	0.248	0	0	0.042	3.00E-04			

1.36189	73.4	54.69	60	0.261	0	0	0.042	3.00E-04
1.35768	73.62	55.18	62	0.274	0	0	0.042	3.00E-04
1.35316	73.87	55.66	64	0.287	0	0	0.042	3.00E-04
1.34845	74.13	56.14	66	0.301	0	0	0.042	3.00E-04
1.34355	74.4	56.61	68	0.314	0	0	0.042	3.00E-04
1.33845	74.68	57.08	70	0.327	0	0	0.042	3.00E-04
1.33319	74.98	57.54	72	0.34	0	0	0.042	3.00E-04
1.32771	75.29	58.01	74	0.353	0	0	0.042	3.00E-04
1.32224	75.6	58.46	76	0.367	0	0	0.042	3.00E-04

count: 28

/ UM3.

**Case 14;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966
14	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.803	4.3	20	135	10	16	24.3	243	42.6	<b>18.92</b>	1.00E-03	23	100

Simulation:

Froude	number:	54.66;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	1.762(m/s);			
Step	Depth	(ft)	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time			
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)				
0	42.6	0.042	0.803	100	1	0	0	0.0;	<b>0.00</b>			
10	42.46	0.042	0.968	82.03	1.219	-0.273	0.274	0.0795;	<b>0.39</b>			
20	42.29	0.042	1.177	67.3	1.486	-0.598	0.604	0.195;	<b>0.85</b>			
30	42.09	0.042	1.431	55.21	1.811	-0.987	1.002	0.364;	<b>1.41</b>			
40	41.85	0.042	1.739	45.29	2.208	-1.45	1.481	0.608;	<b>2.07</b>			
50	41.57	0.042	2.111	37.15	2.691	-1.996	2.057	0.96;	<b>2.87</b>			
60	41.24	0.042	2.561	30.48	3.28	-2.639	2.746	1.464;	<b>3.81</b>			
70	40.84	0.042	3.104	25	3.998	-3.389	3.568	2.182;	<b>4.92</b>			
80	40.39	0.042	3.757	20.51	4.874	-4.259	4.546	3.196;	<b>6.23</b>			
90	39.86	0.042	4.539	16.83	5.941	-5.259	5.706	4.617;	<b>7.76</b>			
100	39.25	0.042	5.474	13.8	7.242	-6.398	7.076	6.589;	<b>9.54</b>			
110	38.55	0.042	6.586	11.32	8.828	-7.681	8.687	9.299;	<b>11.60</b>			
120	37.76	0.042	7.902	9.289	10.76	-9.114	10.58	12.98;	<b>13.96</b>			
130	36.86	0.042	9.45	7.62	13.12	-10.69	12.78	17.94;	<b>16.66</b>			
140	35.84	0.042	11.26	6.251	15.99	-12.42	15.35	24.52;	<b>19.75</b>			
150	34.7	0.042	13.35	5.128	19.49	-14.27	18.32	33.14;	<b>23.22</b>			
<b>153</b>	<b>34.34</b>	<b>0.042</b>	<b>14.04</b>	<b>4.833</b>	<b>20.68</b>	<b>-14.84</b>	<b>19.29</b>	<b>36.17;</b>	<b>24.34</b>	<b>acute</b>	<b>zone;</b>	
159	33.58	0.042	15.5	4.291	23.29	-16.01	21.34	42.9;	<b>26.68</b>	merging;		
160	33.38	0.042	15.76	4.207	23.76	-16.3	21.88	44.73;	<b>27.28</b>			
170	30.42	0.042	19.51	3.451	28.96	-20.39	29.74	73.12;	<b>36.06</b>			
180	26.41	0.042	25.14	2.831	35.31	-25.15	39.85	113.2;	<b>47.12</b>			
190	21.27	0.042	32.97	2.323	43.04	-30.25	52	165.7;	<b>60.16</b>			
196	17.6	0.042	38.91	2.062	48.47	-33.4	60.26	203.6;	<b>68.90</b>	surface;		
Const	Eddy	Diffusivity.	Farfield	dispersion	based	on	wastefield	width	of	42.9	m	
conc	dilutn	width	distnce	time	(s-1)	/s(m0.67/s2)						
(%)	(m)	(m)	(hrs)	(kg/kg)								
2.05583	48.62	43.19	22	0.00662	0	0	0.042	3.00E-04				
2.05864	48.56	43.79	24	0.0198	0	0	0.042	3.00E-04				
2.05977	48.53	44.37	26	0.0331	0	0	0.042	3.00E-04				
2.06041	48.51	44.95	28	0.0463	0	0	0.042	3.00E-04				
2.06085	48.5	45.52	30	0.0595	0	0	0.042	3.00E-04				
2.06116	48.5	46.08	32	0.0728	0	0	0.042	3.00E-04				
2.06133	48.49	46.63	34	0.086	0	0	0.042	3.00E-04				
2.06133	48.49	47.18	36	0.0992	0	0	0.042	3.00E-04				
2.06105	48.5	47.72	38	0.112	0	0	0.042	3.00E-04				
2.06039	48.51	48.26	40	0.126	0	0	0.042	3.00E-04				

2.05926	48.54	48.79	42	0.139	0	0	0.042	3.00E-04
2.05758	48.58	49.32	44	0.152	0	0	0.042	3.00E-04
2.05529	48.63	49.84	46	0.165	0	0	0.042	3.00E-04
2.05237	48.7	50.35	48	0.179	0	0	0.042	3.00E-04
2.04869	48.79	50.86	50	0.192	0	0	0.042	3.00E-04
2.04457	48.89	51.36	52	0.205	0	0	0.042	3.00E-04
2.03992	49	51.86	54	0.218	0	0	0.042	3.00E-04
2.03471	49.13	52.35	56	0.231	0	0	0.042	3.00E-04
2.02906	49.26	52.84	58	0.245	0	0	0.042	3.00E-04
2.02292	49.41	53.33	60	0.258	0	0	0.042	3.00E-04
2.0165	49.57	53.81	62	0.271	0	0	0.042	3.00E-04
2.00961	49.74	54.29	64	0.284	0	0	0.042	3.00E-04
2.00246	49.92	54.76	66	0.298	0	0	0.042	3.00E-04
1.99499	50.11	55.23	68	0.311	0	0	0.042	3.00E-04
1.98722	50.3	55.69	70	0.324	0	0	0.042	3.00E-04
1.97903	50.51	56.15	72	0.337	0	0	0.042	3.00E-04
1.97091	50.72	56.61	74	0.351	0	0	0.042	3.00E-04
1.96258	50.93	57.06	76	0.364	0	0	0.042	3.00E-04

count: 28

/ UM3.

**Case 25;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 3:00 -----

Ambient

Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966
14	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966

Diffuser

table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
0.862	4.3	20	135	10	16	24.3	243	42.6	<b>25.93</b>	1.00E-03	23	100

Simulation:

Froude	number:	62.75;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	2.095(m/s);		
Step	Depth	(ft)	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time		
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)			
0	42.6	0.042	0.862	100	1	0	0	0.0;	<b>0.00</b>		
10	42.45	0.042	1.039	82.03	1.219	-0.295	0.296	0.0724;	<b>0.42</b>		
20	42.27	0.042	1.264	67.3	1.486	-0.649	0.654	0.178;	<b>0.92</b>		
30	42.05	0.042	1.538	55.21	1.811	-1.073	1.087	0.333;	<b>1.53</b>		
40	41.79	0.042	1.869	45.29	2.208	-1.579	1.608	0.557;	<b>2.25</b>		
50	41.48	0.042	2.271	37.15	2.691	-2.18	2.236	0.883;	<b>3.12</b>		
60	41.11	0.042	2.758	30.48	3.28	-2.89	2.989	1.351;	<b>4.16</b>		
70	40.67	0.042	3.345	25	3.998	-3.724	3.89	2.022;	<b>5.39</b>		
80	40.17	0.042	4.053	20.51	4.874	-4.697	4.965	2.976;	<b>6.83</b>		
90	39.57	0.042	4.904	16.83	5.941	-5.824	6.244	4.323;	<b>8.54</b>		
100	38.89	0.042	5.924	13.8	7.242	-7.118	7.759	6.208;	<b>10.53</b>		
110	38.1	0.042	7.143	11.32	8.828	-8.591	9.547	8.821;	<b>12.84</b>		
120	37.19	0.042	8.59	9.289	10.76	-10.25	11.65	12.41;	<b>15.52</b>		
130	36.16	0.042	10.3	7.62	13.12	-12.1	14.11	17.28;	<b>18.59</b>		
140	34.99	0.042	12.31	6.251	15.99	-14.13	16.99	23.82;	<b>22.10</b>		
			<b>13.60</b>		<b>17.89</b>	<b>-15.364</b>	<b>18.83</b>		<b>24.30</b>	<b>acute zone;</b>	
146	34.21	0.042	13.68	5.551	18.01	-15.44	18.94	28.74;	<b>24.44</b>		
150	33.66	0.042	14.66	5.128	19.49	-16.35	20.34	32.51;	<b>26.10</b>		
154	33.08	0.042	15.7	4.738	21.1	-17.28	21.82	36.7;	<b>27.83</b>	<b>merging;</b>	
160	31.37	0.042	17.71	4.207	23.76	-19.93	26.21	49.88;	<b>32.93</b>		
170	27.41	0.042	22.71	3.451	28.96	-25.51	36.09	82.39;	<b>44.20</b>		
180	22.07	0.042	29.94	2.831	35.31	-31.96	48.66	128.2;	<b>58.22</b>		
188	16.72	0.042	37.65	2.416	41.37	-37.5	60.5	175.1;	<b>71.18</b>	<b>surface;</b>	
Const	Eddy	Diffusivity.	Farfield	dispersion	based	on	wastefield	width	of	42.51	m
	conc	dilutn	width	distnce	time						
	(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	/s)(m0.67/s2)				
2.40577	41.55	42.6	22	0.00201	0	0	0.042	3.00E-04			

2.4113	41.45	43.2	24	0.0152	0	0	0.042	3.00E-04
2.41299	41.42	43.78	26	0.0285	0	0	0.042	3.00E-04
2.41389	41.41	44.36	28	0.0417	0	0	0.042	3.00E-04
2.41447	41.4	44.93	30	0.0549	0	0	0.042	3.00E-04
2.41487	41.39	45.49	32	0.0681	0	0	0.042	3.00E-04
2.41513	41.39	46.05	34	0.0814	0	0	0.042	3.00E-04
2.41521	41.39	46.6	36	0.0946	0	0	0.042	3.00E-04
2.41499	41.39	47.14	38	0.108	0	0	0.042	3.00E-04
2.41436	41.4	47.67	40	0.121	0	0	0.042	3.00E-04
2.4132	41.42	48.2	42	0.134	0	0	0.042	3.00E-04
2.41141	41.45	48.73	44	0.148	0	0	0.042	3.00E-04
2.40891	41.5	49.25	46	0.161	0	0	0.042	3.00E-04
2.40567	41.55	49.76	48	0.174	0	0	0.042	3.00E-04
2.40152	41.62	50.27	50	0.187	0	0	0.042	3.00E-04
2.39686	41.7	50.77	52	0.2	0	0	0.042	3.00E-04
2.39152	41.8	51.27	54	0.214	0	0	0.042	3.00E-04
2.38555	41.9	51.77	56	0.227	0	0	0.042	3.00E-04
2.37901	42.02	52.26	58	0.24	0	0	0.042	3.00E-04
2.37191	42.14	52.74	60	0.253	0	0	0.042	3.00E-04
2.36443	42.28	53.22	62	0.267	0	0	0.042	3.00E-04
2.35641	42.42	53.7	64	0.28	0	0	0.042	3.00E-04
2.34795	42.57	54.17	66	0.293	0	0	0.042	3.00E-04
2.33931	42.73	54.64	68	0.306	0	0	0.042	3.00E-04
2.33023	42.9	55.1	70	0.319	0	0	0.042	3.00E-04
2.32083	43.07	55.56	72	0.333	0	0	0.042	3.00E-04
2.31108	43.25	56.01	74	0.346	0	0	0.042	3.00E-04
2.30131	43.44	56.47	76	0.359	0	0	0.042	3.00E-04

count: 28

/ UM3.

**Case 36;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 4:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966
14	0.042	90	0	21.1	0	0	0.042	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.931</b>	4.3	20	135	10	16	24.3	243	42.6	<b>37.31</b>	1.00E-03	23	100

Simulation:

Froude number:	74.47;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	2.585(m/s);		
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)		
0	42.6	0.042	0.931	100	1	0	0	0.0;	<b>0.00</b>	
10	42.43	0.042	1.122	82.03	1.219	-0.322	0.323	0.064;	<b>0.46</b>	
20	42.23	0.042	1.366	67.3	1.486	-0.709	0.713	0.158;	<b>1.01</b>	
30	42	0.042	1.662	55.21	1.811	-1.174	1.186	0.295;	<b>1.67</b>	
40	41.71	0.042	2.022	45.29	2.208	-1.731	1.757	0.496;	<b>2.47</b>	
50	41.36	0.042	2.458	37.15	2.691	-2.396	2.446	0.787;	<b>3.42</b>	
60	40.96	0.042	2.987	30.48	3.28	-3.185	3.274	1.21;	<b>4.57</b>	
70	40.47	0.042	3.627	25	3.998	-4.118	4.268	1.819;	<b>5.93</b>	
80	39.9	0.042	4.4	20.51	4.874	-5.215	5.459	2.69;	<b>7.55</b>	
90	39.23	0.042	5.331	16.83	5.941	-6.496	6.879	3.931;	<b>9.46</b>	
100	38.45	0.042	6.451	13.8	7.242	-7.981	8.569	5.684;	<b>11.71</b>	
110	37.54	0.042	7.794	11.32	8.828	-9.686	10.57	8.139;	<b>14.34</b>	
120	36.5	0.042	9.397	9.289	10.76	-11.63	12.93	11.54;	<b>17.39</b>	
130	35.3	0.042	11.3	7.62	13.12	-13.82	15.71	16.22;	<b>20.92</b>	
			<b>13.17</b>		<b>15.50</b>	<b>-15.850</b>	<b>18.42</b>		<b>24.30</b>	<b>acute zone;</b>
139	34.08	0.042	13.31	6.376	15.68	-16	18.62	21.85;	<b>24.55</b>	
140	33.93	0.042	13.56	6.251	15.99	-16.26	18.97	22.58;	<b>24.98</b>	
149	32.54	0.042	15.92	5.231	19.11	-18.66	22.36	30.15;	<b>29.12</b>	<b>merging;</b>

	150	32.29	0.042	16.22	5.128	19.49	-19.08	22.97	31.59;	<b>29.86</b>	
	160	28.69	0.042	20.49	4.207	23.76	-24.9	31.77	54.24;	<b>40.37</b>	
	170	23.36	0.042	27.09	3.451	28.96	-32.62	44.33	90.74;	<b>55.04</b>	
	180	16.14	0.042	36.47	2.831	35.31	-41.7	60.37	142.9;	<b>73.37</b>	surface;
Const	Eddy	Diffusivity.	Farfield	dispersion	based	on	wastefield	width	of	42.15	m
	conc	dilutn	width	distnce	time						
	(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	/s)(m0.67/s2)				
	2.82404	35.4	42.64	24	0.0108	0	0	0.042	3.00E-04		
	2.82672	35.36	43.22	26	0.024	0	0	0.042	3.00E-04		
	2.82798	35.35	43.8	28	0.0373	0	0	0.042	3.00E-04		
	2.82875	35.34	44.37	30	0.0505	0	0	0.042	3.00E-04		
	2.82928	35.33	44.94	32	0.0637	0	0	0.042	3.00E-04		
	2.82964	35.33	45.49	34	0.077	0	0	0.042	3.00E-04		
	2.8298	35.32	46.04	36	0.0902	0	0	0.042	3.00E-04		
	2.82966	35.33	46.58	38	0.103	0	0	0.042	3.00E-04		
	2.82907	35.33	47.12	40	0.117	0	0	0.042	3.00E-04		
	2.82789	35.35	47.65	42	0.13	0	0	0.042	3.00E-04		
	2.826	35.37	48.18	44	0.143	0	0	0.042	3.00E-04		
	2.82329	35.4	48.7	46	0.156	0	0	0.042	3.00E-04		
	2.8197	35.45	49.21	48	0.17	0	0	0.042	3.00E-04		
	2.81522	35.51	49.72	50	0.183	0	0	0.042	3.00E-04		
	2.80974	35.58	50.22	52	0.196	0	0	0.042	3.00E-04		
	2.80364	35.65	50.72	54	0.209	0	0	0.042	3.00E-04		
	2.79679	35.74	51.21	56	0.222	0	0	0.042	3.00E-04		
	2.78923	35.84	51.7	58	0.236	0	0	0.042	3.00E-04		
	2.78101	35.94	52.19	60	0.249	0	0	0.042	3.00E-04		
	2.77231	36.06	52.67	62	0.262	0	0	0.042	3.00E-04		
	2.76298	36.18	53.14	64	0.275	0	0	0.042	3.00E-04		
	2.75312	36.31	53.61	66	0.289	0	0	0.042	3.00E-04		
	2.743	36.44	54.08	68	0.302	0	0	0.042	3.00E-04		
	2.73238	36.58	54.54	70	0.315	0	0	0.042	3.00E-04		
	2.72138	36.73	55	72	0.328	0	0	0.042	3.00E-04		
	2.70991	<b>36.89</b>	<b>55.46</b>	<b>74</b>	0.342	0	0	0.042	3.00E-04		
	2.69845	37.04	55.91	76	0.355	0	0	0.042	3.00E-04		
count:	27										
	;										
9:33:05	AM.	amb	fills:	2							

/ UM3. 8/11/2016 9:36:32 AM

**Case 04;** ambient file \Plumes\sc7Q10\_flooc Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966
14	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.692	4.3	20	135	10	16	24.3	243	42.6	10.01	1.00E-03	23	100

Simulation:

Froude number:	41.95;	effluent	density	(sigma-T)	-2.398;	effluent	velocity	1.255(m/s);		
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time		
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)		
0	42.6	0.251	0.692	100	1	0	0	0.0;	0.00	
10	42.52	0.251	0.824	82.03	1.219	-0.161	0.167	0.0659;	0.23	
20	42.43	0.251	0.987	67.3	1.486	-0.335	0.36	0.152;	0.49	
30	42.33	0.251	1.178	55.21	1.811	-0.523	0.585	0.267;	0.78	
40	42.23	0.251	1.4	45.29	2.208	-0.724	0.848	0.415;	1.12	
50	42.12	0.251	1.654	37.15	2.691	-0.933	1.15	0.604;	1.48	
60	42.01	0.251	1.944	30.48	3.28	-1.149	1.496	0.841;	1.89	
70	41.89	0.251	2.271	25	3.998	-1.37	1.893	1.137;	2.34	
80	41.77	0.251	2.636	20.51	4.874	-1.595	2.354	1.504;	2.84	
90	41.65	0.251	3.04	16.83	5.941	-1.826	2.893	1.964;	3.42	
100	41.53	0.251	3.484	13.8	7.242	-2.064	3.535	2.542;	4.09	
110	41.4	0.251	3.971	11.32	8.828	-2.311	4.312	3.275;	4.89	
120	41.26	0.251	4.502	9.289	10.76	-2.572	5.268	4.214;	5.86	
130	41.11	0.251	5.081	7.62	13.12	-2.848	6.462	5.429;	7.06	
140	40.95	0.251	5.713	6.251	15.99	-3.143	7.972	7.013;	8.57	
150	40.77	0.251	6.401	5.128	19.49	-3.461	9.903	9.088;	10.49	
160	40.58	0.251	7.153	4.207	23.76	-3.803	12.39	11.82;	12.96	
170	40.36	0.251	7.976	3.451	28.96	-4.174	15.62	15.42;	16.17	
180	40.12	0.251	8.877	2.831	35.31	-4.575	19.81	20.17;	20.33	
			9.61		41.00	-4.899	23.80		24.30	acute zone;
188	39.91	0.251	9.659	2.416	41.37	-4.92	24.06	25.04;	24.56	
190	39.85	0.251	9.864	2.323	43.04	-5.009	25.27	26.43;	25.76	
200	39.54	0.251	10.95	1.905	52.46	-5.476	32.37	34.66;	32.83	
209	39.2	0.251	12.02	1.594	62.7	-5.944	40.89	44.61;	41.32	merging;
210	39.14	0.251	12.15	1.563	63.95	-6.032	42.64	46.66;	43.06	
220	38.24	0.251	13.88	1.282	77.96	-7.133	67.15	75.49;	67.53	
230	37.1	0.251	16.24	1.052	95.03	-8.295	98.42	112.5;	98.77	
240	35.69	0.251	19.3	0.863	115.8	-9.49	137.5	158.9;	137.83	
250	33.93	0.251	23.17	0.708	141.2	-10.71	185.9	216.6;	186.21	
260	31.76	0.251	27.99	0.581	172.1	-11.95	245.5	288.0;	245.79	chronic zone;
270	29.07	0.251	33.96	0.476	209.8	-13.2	318.7	375.8;	318.97	
280	25.77	0.251	41.3	0.391	255.8	-14.45	408.3	483.6;	408.56	
287	23.02	0.251	47.42	0.34	293.8	-15.34	482.7	573.1;	482.94	surface;

Outside chronic zone

/ UM3.

**Case 15;** ambient file \Plumes\sc7Q10\_flooc Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966
14	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)



0.803 4.3 20 135 10 16 24.3 243 42.6 **18.92** 1.00E-03 23 100

Simulation:

Froude number:	54.66;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	1.762(m/s);		
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time		
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)		
0	42.6	0.251	0.803	100	1	0	0	0.0;	<b>0.00</b>	
10	42.49	0.251	0.96	82.03	1.219	-0.21	0.215	0.0611;	<b>0.30</b>	
20	42.37	0.251	1.156	67.3	1.486	-0.442	0.465	0.144;	<b>0.64</b>	
30	42.24	0.251	1.388	55.21	1.811	-0.7	0.76	0.255;	<b>1.03</b>	
40	42.09	0.251	1.661	45.29	2.208	-0.982	1.104	0.404;	<b>1.48</b>	
50	41.94	0.251	1.979	37.15	2.691	-1.288	1.507	0.601;	<b>1.98</b>	
60	41.77	0.251	2.349	30.48	3.28	-1.615	1.975	0.857;	<b>2.55</b>	
70	41.59	0.251	2.773	25	3.998	-1.957	2.512	1.183;	<b>3.18</b>	
80	41.41	0.251	3.256	20.51	4.874	-2.31	3.127	1.594;	<b>3.89</b>	
90	41.22	0.251	3.8	16.83	5.941	-2.672	3.834	2.107;	<b>4.67</b>	
100	41.02	0.251	4.407	13.8	7.242	-3.043	4.654	2.748;	<b>5.56</b>	
110	40.82	0.251	5.08	11.32	8.828	-3.424	5.614	3.551;	<b>6.58</b>	
120	40.61	0.251	5.822	9.289	10.76	-3.818	6.757	4.564;	<b>7.76</b>	
130	40.4	0.251	6.634	7.62	13.12	-4.228	8.139	5.85;	<b>9.17</b>	
140	40.16	0.251	7.522	6.251	15.99	-4.66	9.838	7.501;	<b>10.89</b>	
150	39.91	0.251	8.491	5.128	19.49	-5.119	11.96	9.636;	<b>13.01</b>	
160	39.64	0.251	9.548	4.207	23.76	-5.609	14.63	12.42;	<b>15.67</b>	
170	39.34	0.251	10.7	3.451	28.96	-6.135	18.04	16.06;	<b>19.05</b>	
180	39.02	0.251	11.96	2.831	35.31	-6.702	22.43	20.84;	<b>23.41</b>	
			<b>12.20</b>		<b>36.56</b>	<b>-6.806</b>	<b>23.33</b>		<b>24.30</b>	<b>acute zone;</b>
182	38.95	0.251	12.23	2.721	36.73	-6.82	23.45	21.96;	<b>24.42</b>	
185	38.82	0.251	12.64	2.564	38.98	-7.024	25.28	23.99;	<b>26.24</b>	<b>merging;</b>
190	38.43	0.251	13.48	2.323	43.04	-7.675	31.58	31.03;	<b>32.50</b>	
200	37.42	0.251	15.77	1.905	52.46	-9.203	48.56	50.19;	<b>49.42</b>	
210	36.18	0.251	18.83	1.563	63.95	-10.89	71.15	76.01;	<b>71.98</b>	
220	34.63	0.251	22.77	1.282	77.96	-12.73	100.8	110.2;	<b>101.60</b>	
230	32.71	0.251	27.74	1.052	95.03	-14.69	138.9	154.7;	<b>139.67</b>	
236	31.34	0.251	31.28	0.934	107	-15.91	166.7	187.2;	<b>167.46</b>	<b>bottom hit;</b>
240	30.32	0.251	33.91	0.863	115.8	-16.75	187.5	211.7;	<b>188.25</b>	
250	27.37	0.251	41.54	0.708	141.2	-18.88	248.4	283.7;	<b>249.12</b>	<b>chronic zone;</b>
259	24.12	0.251	49.88	0.592	168.8	-20.85	316	363.8;	<b>316.69</b>	<b>surface;</b>

Outside chronic zone

/ UM3.

**Case 26;** ambient file \Plumes\sc7Q10\_flooc Diffuser table record 3:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966
14	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
0.862	4.3	20	135	10	16	24.3	243	42.6	<b>25.93</b>	1.00E-03	23	100

Simulation:

Froude number:	62.75;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	2.095(m/s);		
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time		
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)		
0	42.6	0.251	0.862	100	1	0	0	0.0;	<b>0.00</b>	
10	42.48	0.251	1.032	82.03	1.219	-0.236	0.241	0.0578;	<b>0.34</b>	
20	42.34	0.251	1.245	67.3	1.486	-0.501	0.523	0.137;	<b>0.72</b>	
30	42.19	0.251	1.499	55.21	1.811	-0.797	0.855	0.245;	<b>1.17</b>	
40	42.02	0.251	1.798	45.29	2.208	-1.126	1.245	0.391;	<b>1.68</b>	
50	41.83	0.251	2.151	37.15	2.691	-1.487	1.702	0.586;	<b>2.26</b>	
60	41.63	0.251	2.563	30.48	3.28	-1.879	2.235	0.844;	<b>2.92</b>	
70	41.41	0.251	3.04	25	3.998	-2.296	2.854	1.179;	<b>3.66</b>	

80	41.19	0.251	3.588	20.51	4.874	-2.733	3.564	1.607;	<b>4.49</b>		
90	40.95	0.251	4.21	16.83	5.941	-3.185	4.377	2.145;	<b>5.41</b>		
100	40.71	0.251	4.912	13.8	7.242	-3.648	5.312	2.819;	<b>6.44</b>		
110	40.46	0.251	5.695	11.32	8.828	-4.124	6.396	3.662;	<b>7.61</b>		
120	40.2	0.251	6.564	9.289	10.76	-4.613	7.667	4.718;	<b>8.95</b>		
130	39.94	0.251	7.52	7.62	13.12	-5.119	9.179	6.051;	<b>10.51</b>		
140	39.65	0.251	8.568	6.251	15.99	-5.647	11.01	7.747;	<b>12.37</b>		
150	39.35	0.251	9.715	5.128	19.49	-6.203	13.26	9.923;	<b>14.64</b>		
160	39.03	0.251	10.97	4.207	23.76	-6.793	16.06	12.74;	<b>17.44</b>		
170	38.68	0.251	12.33	3.451	28.96	-7.423	19.59	16.4;	<b>20.95</b>		
175	38.47	0.251	13.06	3.126	31.98	-7.779	21.87	18.81;	<b>23.21</b>	merging;	
			<b>13.27</b>		<b>32.78</b>	<b>-7.941</b>	<b>22.97</b>		<b>24.30</b>	acute	zone;
177	38.32	0.251	13.4	3.004	33.27	-8.041	23.64	20.7;	<b>24.97</b>		
180	38.05	0.251	13.98	2.831	35.31	-8.509	26.94	24.25;	<b>28.25</b>		
190	37	0.251	16.5	2.323	43.04	-10.24	40.71	39.24;	<b>41.98</b>		
200	35.7	0.251	19.91	1.905	52.46	-12.2	59.32	59.89;	<b>60.56</b>		
210	34.1	0.251	24.31	1.563	63.95	-14.38	84.15	87.87;	<b>85.37</b>		
219	32.35	0.251	29.25	1.308	76.43	-16.51	113.1	120.9;	<b>114.30</b>	bottom	hit;
220	32.13	0.251	29.86	1.282	77.96	-16.75	116.8	125.1;	<b>117.99</b>		
230	29.69	0.251	36.78	1.052	95.03	-19.3	158.9	173.8;	<b>160.07</b>		
240	26.68	0.251	45.34	0.863	115.8	-21.99	212.7	236.4;	<b>213.83</b>		
245	24.92	0.251	50.33	0.782	127.9	-23.38	244.6	273.8;	<b>245.71</b>	chronic	zone, surface;

Outside chronic zone

/ UM3.

**Case 37;** ambient file \Plumes\sc7Q10\_flooc Diffuser table record 4:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966
14	0.251	90	0	21.1	0	0	0.251	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.931</b>	4.3	20	135	10	16	24.3	243	42.6	<b>37.31</b>	1.00E-03	23	100

Simulation:

Froude number:	74.47;	effleunt	density	(sigma-T)	-2.398;	effleunt	velocity	2.585(m/s);			
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)			
0	42.6	0.251	0.931	100	1	0	0	0.0;	<b>0.00</b>		
10	42.46	0.251	1.117	82.03	1.219	-0.268	0.272	0.0531;	<b>0.38</b>		
20	42.31	0.251	1.35	67.3	1.486	-0.571	0.592	0.127;	<b>0.82</b>		
30	42.13	0.251	1.628	55.21	1.811	-0.916	0.971	0.229;	<b>1.33</b>		
40	41.93	0.251	1.96	45.29	2.208	-1.304	1.417	0.368;	<b>1.93</b>		
50	41.71	0.251	2.352	37.15	2.691	-1.735	1.94	0.557;	<b>2.60</b>		
60	41.46	0.251	2.814	30.48	3.28	-2.208	2.552	0.81;	<b>3.37</b>		
70	41.2	0.251	3.354	25	3.998	-2.723	3.268	1.145;	<b>4.25</b>		
80	40.91	0.251	3.98	20.51	4.874	-3.274	4.098	1.582;	<b>5.25</b>		
90	40.61	0.251	4.7	16.83	5.941	-3.853	5.053	2.142;	<b>6.35</b>		
100	40.3	0.251	5.519	13.8	7.242	-4.452	6.147	2.848;	<b>7.59</b>		
110	39.97	0.251	6.444	11.32	8.828	-5.069	7.403	3.734;	<b>8.97</b>		
120	39.64	0.251	7.478	9.289	10.76	-5.702	8.856	4.843;	<b>10.53</b>		
130	39.3	0.251	8.625	7.62	13.12	-6.353	10.56	6.233;	<b>12.32</b>		
140	38.94	0.251	9.891	6.251	15.99	-7.027	12.58	7.987;	<b>14.41</b>		
150	38.56	0.251	11.28	5.128	19.49	-7.729	15.01	10.22;	<b>16.88</b>		
160	38.16	0.251	12.8	4.207	23.76	-8.467	17.99	13.07;	<b>19.88</b>		
165	37.95	0.251	13.61	3.81	26.23	-8.853	19.74	14.8;	<b>21.63</b>	merging;	
			<b>14.32</b>		<b>28.17</b>	<b>-9.396</b>	<b>22.41</b>		<b>24.30</b>	acute	zone;
169	37.61	0.251	14.41	3.52	28.4	-9.461	22.73	17.79;	<b>24.62</b>		
170	37.51	0.251	14.64	3.451	28.96	-9.646	23.66	18.74;	<b>25.55</b>		
180	36.35	0.251	17.5	2.831	35.31	-11.67	35	30.4;	<b>36.89</b>		
190	34.94	0.251	21.42	2.323	43.04	-14	50.42	46.72;	<b>52.33</b>		



/ UM3. 8/11/2016 9:41:53 AM  
**Case 05;** ambient file \Plumes\sc\_7Q10\_ebb Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.758	4.3	20	135	10	16	24.3	243	43.2	14.81	1.00E-03	19.8	100

Simulation:

Froude number:	27.55;	effleunt	density	(sigma-T)	-1.691;	effleunt	velocity	1.548(m/s);		
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time		
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)		
0	43.2	0.344	0.758	100	1	0	0	0.0;	0.00	
10	43.11	0.344	0.902	82.03	1.219	-0.169	0.176	0.0561;	0.24	
20	43.02	0.344	1.078	67.3	1.485	-0.35	0.378	0.129;	0.52	
30	42.92	0.344	1.283	55.21	1.81	-0.543	0.615	0.224;	0.82	
40	42.81	0.344	1.519	45.29	2.206	-0.747	0.888	0.346;	1.16	
50	42.71	0.344	1.79	37.15	2.689	-0.957	1.201	0.5;	1.54	
60	42.59	0.344	2.096	30.48	3.278	-1.172	1.56	0.692;	1.95	
70	42.48	0.344	2.439	25	3.995	-1.391	1.975	0.93;	2.42	
80	42.36	0.344	2.82	20.51	4.87	-1.615	2.458	1.226;	2.94	
90	42.24	0.344	3.24	16.83	5.936	-1.844	3.03	1.597;	3.55	
100	42.11	0.344	3.7	13.8	7.236	-2.082	3.717	2.065;	4.26	
110	41.98	0.344	4.203	11.32	8.82	-2.331	4.556	2.663;	5.12	
120	41.83	0.344	4.75	9.289	10.75	-2.594	5.599	3.432;	6.17	
130	41.68	0.344	5.347	7.62	13.11	-2.874	6.913	4.43;	7.49	
140	41.51	0.344	5.998	6.251	15.98	-3.174	8.585	5.735;	9.15	
150	41.33	0.344	6.708	5.128	19.47	-3.497	10.73	7.448;	11.29	
160	41.12	0.344	7.484	4.207	23.74	-3.846	13.51	9.702;	14.05	
170	40.89	0.344	8.333	3.451	28.94	-4.222	17.11	12.67;	17.62	
180	40.62	0.344	9.264	2.831	35.27	-4.629	21.78	16.57;	22.27	
			9.63		37.93	-4.785	23.82		24.30	acute zone;
184	40.51	0.344	9.661	2.616	38.18	-4.8	24.02	18.45;	24.49	
190	40.32	0.344	10.29	2.323	43	-5.065	27.84	21.68;	28.30	
200	39.98	0.344	11.41	1.905	52.41	-5.533	35.68	28.36;	36.11	
204	39.83	0.344	11.89	1.76	56.73	-5.729	39.42	31.55;	39.83	merging;
210	39.37	0.344	12.76	1.563	63.89	-6.276	50.99	41.48;	51.37	
220	38.35	0.344	14.73	1.282	77.88	-7.322	76.7	63.64;	77.05	
230	37.08	0.344	17.35	1.052	94.94	-8.389	108.5	91.2;	108.82	
240	35.5	0.344	20.71	0.863	115.7	-9.473	147.7	125.3;	148.00	
250	33.56	0.344	24.92	0.708	141.1	-10.57	195.9	167.3;	196.18	
259	31.41	0.344	29.58	0.592	168.6	-11.56	248.4	213.3;	248.67	chronic zone;
260	31.15	0.344	30.16	0.581	172	-11.67	254.9	218.9;	255.17	
270	28.19	0.344	36.62	0.476	209.6	-12.78	327	282.2;	327.25	
280	24.54	0.344	44.56	0.391	255.5	-13.89	415.1	359.6;	415.33	
283	23.3	0.344	47.28	0.368	271.2	-14.23	445.1	386.0;	445.33	surface;

Outside chronic zone

/ UM3.  
**Case 16;** ambient file \Plumes\sc\_7Q10\_ebb Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
-------	--------	---------	---------	-------	---------	---------	--------	---------	---------	---------	------	---------

(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
0.86	4.3	20	135	10	16	24.3	243	43.2	<b>25.82</b>	1.00E-03	19.8	100

Simulation:

Froude number:	35.03;	effluent	density	(sigma-T)	-1.691;	effluent	velocity	2.096(m/s);			
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)			
0	43.2	0.344	0.86	100	1	0	0	0.0;			
10	43.09	0.344	1.027	82.03	1.219	-0.215	0.221	0.0526;			
20	42.97	0.344	1.234	67.3	1.485	-0.45	0.477	0.123;			
30	42.83	0.344	1.477	55.21	1.81	-0.709	0.778	0.217;			
40	42.69	0.344	1.763	45.29	2.206	-0.989	1.13	0.341;			
50	42.53	0.344	2.094	37.15	2.689	-1.29	1.54	0.504;			
60	42.37	0.344	2.476	30.48	3.278	-1.605	2.011	0.711;			
70	42.2	0.344	2.911	25	3.995	-1.931	2.551	0.972;			
80	42.03	0.344	3.402	20.51	4.87	-2.264	3.171	1.298;			
90	41.85	0.344	3.951	16.83	5.936	-2.606	3.887	1.705;			
100	41.66	0.344	4.56	13.8	7.236	-2.955	4.724	2.214;			
110	41.47	0.344	5.231	11.32	8.82	-3.316	5.716	2.853;			
120	41.27	0.344	5.967	9.289	10.75	-3.691	6.913	3.662;			
130	41.05	0.344	6.772	7.62	13.11	-4.084	8.378	4.698;			
140	40.82	0.344	7.65	6.251	15.98	-4.5	10.2	6.034;			
150	40.57	0.344	8.607	5.128	19.47	-4.944	12.49	7.77;			
160	40.3	0.344	9.651	4.207	23.74	-5.419	15.41	10.04;			
170	40	0.344	10.79	3.451	28.94	-5.931	19.15	13.01;			
<b>179</b>	<b>39.69</b>	<b>0.344</b>	<b>11.91</b>	<b>2.888</b>	<b>34.58</b>	<b>-6.425</b>	<b>23.44</b>	<b>16.48;</b>	<b>24.30</b>	<b>acute</b>	<b>zone;</b>
180	39.66	0.344	12.04	2.831	35.27	-6.482	23.98	16.92;			
183	39.55	0.344	12.44	2.668	37.43	-6.655	25.68	18.31;			
190	39	0.344	13.6	2.323	43	-7.491	34.74	25.78;			
200	37.95	0.344	15.92	1.905	52.41	-8.919	52.8	40.83;			
210	36.65	0.344	19.01	1.563	63.89	-10.46	76.31	60.63;			
220	35.03	0.344	22.95	1.282	77.88	-12.1	106.5	86.29;			
230	33.01	0.344	27.91	1.052	94.94	-13.82	144.8	119.0;			
240	30.51	0.344	34.07	0.863	115.7	-15.59	192.7	160.4;			
249	27.75	0.344	40.83	0.722	138.3	-17.23	245.8	206.3;			
250	27.41	0.344	41.66	0.708	141.1	-17.42	252.3	212.0;			
258	24.42	0.344	48.97	0.604	165.3	-18.9	310	262.0;			

Outside chronic zone

/ UM3.

<b>Case 27;</b>	ambient	file	\Plumes\sc_7Q10_ebb	Diffuser	table	record	3:00	-----
-----------------	---------	------	---------------------	----------	-------	--------	------	-------

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
0.921	4.3	20	135	10	16	24.3	243	43.2	<b>35.38</b>	1.00E-03	19.8	100

Simulation:

Froude number:	40.44;	effluent	density	(sigma-T)	-1.691;	effluent	velocity	2.504(m/s);	
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	43.2	0.344	0.921	100	1	0	0	0.0;	
10	43.07	0.344	1.102	82.03	1.219	-0.243	0.249	0.0497;	
20	42.94	0.344	1.327	67.3	1.485	-0.513	0.539	0.117;	
30	42.78	0.344	1.593	55.21	1.81	-0.812	0.88	0.208;	
40	42.61	0.344	1.908	45.29	2.206	-1.142	1.279	0.331;	
50	42.43	0.344	2.275	37.15	2.689	-1.5	1.746	0.493;	
60	42.23	0.344	2.702	30.48	3.278	-1.884	2.29	0.704;	
70	42.02	0.344	3.194	25	3.995	-2.287	2.915	0.975;	

80	41.8	0.344	3.754	20.51	4.87	-2.704	3.631	1.316;	<b>4.53</b>		
90	41.57	0.344	4.386	16.83	5.936	-3.132	4.452	1.743;	<b>5.44</b>		
100	41.34	0.344	5.094	13.8	7.236	-3.57	5.401	2.276;	<b>6.47</b>		
110	41.1	0.344	5.879	11.32	8.82	-4.02	6.511	2.943;	<b>7.65</b>		
120	40.86	0.344	6.745	9.289	10.75	-4.484	7.826	3.782;	<b>9.02</b>		
130	40.6	0.344	7.695	7.62	13.11	-4.967	9.41	4.846;	<b>10.64</b>		
140	40.32	0.344	8.733	6.251	15.98	-5.474	11.35	6.207;	<b>12.60</b>		
150	40.02	0.344	9.867	5.128	19.47	-6.01	13.75	7.962;	<b>15.01</b>		
160	39.7	0.344	11.1	4.207	23.74	-6.58	16.78	10.24;	<b>18.02</b>		
170	39.34	0.344	12.45	3.451	28.94	-7.192	20.62	13.22;	<b>21.84</b>		
173	39.23	0.344	12.88	3.252	30.71	-7.384	21.97	14.28;	<b>23.18</b>	merging;	
			<b>13.11</b>		<b>31.60</b>	<b>-7.537</b>	<b>23.10</b>		<b>24.30</b>	<b>acute</b>	<b>zone;</b>
175	39.1	0.344	13.2	3.126	31.95	-7.597	23.54	15.52;	<b>24.74</b>		
180	38.65	0.344	14.18	2.831	35.27	-8.334	29.3	20.11;	<b>30.46</b>		
190	37.56	0.344	16.75	2.323	43	-9.988	44.13	32.08;	<b>45.25</b>		
200	36.21	0.344	20.19	1.905	52.41	-11.82	63.86	48.27;	<b>64.94</b>		
210	34.54	0.344	24.61	1.563	63.89	-13.82	89.72	69.78;	<b>90.78</b>		
220	32.47	0.344	30.17	1.282	77.88	-15.97	123.1	97.87;	<b>124.13</b>	bottom	hit;
230	29.9	0.344	37.08	1.052	94.94	-18.23	165.7	134.0;	<b>166.70</b>		
240	26.71	0.344	45.6	0.863	115.7	-20.58	219.2	179.8;	<b>220.16</b>		
244	25.24	0.344	49.54	0.797	125.3	-21.54	244.2	201.2;	<b>245.15</b>	chronic	zone;
245	24.85	0.344	50.57	0.782	127.8	-21.79	250.8	206.9;	<b>251.74</b>	surface;	

Outside chronic zone

/ UM3.

**Case 38;** ambient file \Plumes\sc\_7Q10\_ebb Diffuser table record 4:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (I)	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.99</b>	4.3	20	135	10	16	24.3	243	43.2	<b>50.9</b>	1.00E-03	19.8	100

Simulation:

Froude number:	48.56;	effleunt	density	(sigma-T)	-1.691;	effleunt	velocity	3.118(m/s);			
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn (I)	x-posn (ft)	y-posn (ft)	Time (s)			
0	43.2	0.344	0.99	100	1	0	0	0.0;	<b>0.00</b>		
10	43.06	0.344	1.186	82.03	1.219	-0.276	0.282	0.0455;	<b>0.39</b>		
20	42.9	0.344	1.432	67.3	1.485	-0.588	0.612	0.108;	<b>0.85</b>		
30	42.72	0.344	1.725	55.21	1.81	-0.939	1.002	0.194;	<b>1.37</b>		
40	42.51	0.344	2.072	45.29	2.206	-1.33	1.46	0.31;	<b>1.97</b>		
50	42.29	0.344	2.482	37.15	2.689	-1.761	1.996	0.467;	<b>2.66</b>		
60	42.05	0.344	2.962	30.48	3.278	-2.232	2.624	0.675;	<b>3.44</b>		
70	41.78	0.344	3.521	25	3.995	-2.738	3.355	0.949;	<b>4.33</b>		
80	41.51	0.344	4.164	20.51	4.87	-3.273	4.197	1.3;	<b>5.32</b>		
90	41.22	0.344	4.899	16.83	5.936	-3.827	5.161	1.745;	<b>6.43</b>		
100	40.92	0.344	5.73	13.8	7.236	-4.398	6.267	2.303;	<b>7.66</b>		
110	40.61	0.344	6.662	11.32	8.82	-4.984	7.542	3.0;	<b>9.04</b>		
120	40.29	0.344	7.699	9.289	10.75	-5.585	9.029	3.873;	<b>10.62</b>		
130	39.96	0.344	8.844	7.62	13.11	-6.206	10.78	4.97;	<b>12.44</b>		
140	39.61	0.344	10.1	6.251	15.98	-6.85	12.89	6.361;	<b>14.60</b>		
150	39.24	0.344	11.48	5.128	19.47	-7.525	15.46	8.136;	<b>17.19</b>		
160	38.84	0.344	12.98	4.207	23.74	-8.237	18.63	10.42;	<b>20.37</b>		
163	38.72	0.344	13.46	3.964	25.19	-8.46	19.73	11.23;	<b>21.47</b>	merging;	
			<b>14.18</b>		<b>27.14</b>	<b>-9.001</b>	<b>22.57</b>		<b>24.30</b>	<b>acute</b>	<b>zone;</b>
167	38.39	0.344	14.23	3.662	27.27	-9.037	22.76	13.49;	<b>24.49</b>		
170	38.07	0.344	14.93	3.451	28.94	-9.573	25.74	15.73;	<b>27.46</b>		
180	36.88	0.344	17.88	2.831	35.27	-11.54	37.95	25.1;	<b>39.67</b>		
190	35.43	0.344	21.86	2.323	43	-13.76	54.39	38.02;	<b>56.10</b>		



/ UM3. 8/11/2016 9:50:30 AM  
**Case 06;** ambient file \Plumes\sc7Q10\_ebb Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966
14	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.658	4.3	20	135	10	16	24.3	243	42.6	8.07	1.00E-03	22.7	100

Simulation:

Froude	number:	41.95;	effluent	density	(sigma-T)	-2.327;	effluent	velocity	1.119(m/s);
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time	
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)	
0	42.6	0.311	0.658	100	1	0	0	0.0;	0.00
10	42.53	0.311	0.78	82.03	1.219	-0.133	0.14	0.0609;	0.19
20	42.46	0.311	0.928	67.3	1.486	-0.271	0.298	0.138;	0.40
30	42.39	0.311	1.098	55.21	1.811	-0.414	0.481	0.235;	0.63
40	42.31	0.311	1.292	45.29	2.208	-0.561	0.691	0.357;	0.89
50	42.23	0.311	1.511	37.15	2.691	-0.711	0.933	0.509;	1.17
60	42.15	0.311	1.755	30.48	3.28	-0.863	1.213	0.696;	1.49
70	42.07	0.311	2.025	25	3.998	-1.019	1.541	0.93;	1.85
80	41.99	0.311	2.322	20.51	4.874	-1.178	1.933	1.222;	2.26
90	41.9	0.311	2.646	16.83	5.941	-1.344	2.407	1.593;	2.76
100	41.81	0.311	2.999	13.8	7.242	-1.518	2.993	2.067;	3.36
110	41.72	0.311	3.383	11.32	8.828	-1.703	3.727	2.681;	4.10
120	41.61	0.311	3.801	9.289	10.76	-1.902	4.661	3.483;	5.03
130	41.5	0.311	4.257	7.62	13.12	-2.115	5.861	4.538;	6.23
140	41.37	0.311	4.754	6.251	15.99	-2.347	7.418	5.932;	7.78
150	41.23	0.311	5.298	5.128	19.49	-2.599	9.449	7.778;	9.80
160	41.08	0.311	5.893	4.207	23.76	-2.873	12.11	10.23;	12.45
170	40.91	0.311	6.545	3.451	28.97	-3.172	15.61	13.49;	15.93
180	40.72	0.311	7.262	2.831	35.31	-3.497	20.2	17.81;	20.50
187	40.57	0.311	7.805	2.465	40.56	-3.741	24.26	21.64;	24.55 acute zone;
190	40.5	0.311	8.049	2.323	43.04	-3.85	26.24	23.53;	26.52
200	40.26	0.311	8.915	1.905	52.47	-4.233	34.17	31.07;	34.43
210	39.98	0.311	9.868	1.563	63.96	-4.645	44.53	41.0;	44.77
220	39.65	0.311	10.92	1.282	77.96	-5.087	58.02	53.96;	58.24
227	39.39	0.311	11.72	1.116	89.55	-5.414	69.75	65.27;	69.96 merging;
230	39.19	0.311	12.12	1.052	95.04	-5.652	79.2	74.4;	79.40
240	38.25	0.311	13.85	0.863	115.8	-6.637	123.5	117.3;	123.68
250	37.06	0.311	16.17	0.708	141.2	-7.634	178.1	170.2;	178.26
260	35.6	0.311	19.06	0.581	171.2	-8.607	242.85	243.00	243.00 chronic zone; ne width at 163 feet
270	33.8	0.311	22.91	0.476	209.8	-9.644	244.9	235.1;	245.05
280	31.58	0.311	27.58	0.391	255.8	-10.65	326.5	314.4;	326.64
290	28.85	0.311	33.36	0.321	311.8	-11.66	425.9	411.4;	426.03
300	25.51	0.311	40.47	0.263	380.1	-12.67	547.3	529.7;	547.42
307	22.73	0.311	46.38	0.229	436.6	-13.38	695.1	674.0;	695.22
307	22.73	0.311	46.38	0.229	436.6	-13.38	817.5	793.6;	817.61 surface;

/ UM3.  
**Case 17;** ambient file \Plumes\sc7Q10\_ebb Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966
14	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.759	4.3	20	135	10	16	24.3	243	42.6	14.82	1.00E-03	22.7	100

Simulation:

Froude	number:	53.91;	effluent	density	(sigma-T)	-2.327;	effluent	velocity	1.545(m/s);
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time	
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)	
0	42.6	0.311	0.759	100	1	0	0	0.0;	0.00
10	42.51	0.311	0.904	82.03	1.219	-0.177	0.183	0.0586;	0.25
20	42.41	0.311	1.083	67.3	1.486	-0.366	0.394	0.135;	0.54



30	42.31	0.311	1.292	55.21	1.811	-0.572	0.64	0.237;	<b>0.86</b>		
40	42.19	0.311	1.534	45.29	2.208	-0.791	0.928	0.369;	<b>1.22</b>		
50	42.07	0.311	1.813	37.15	2.691	-1.02	1.258	0.536;	<b>1.62</b>		
60	41.95	0.311	2.13	30.48	3.28	-1.255	1.636	0.746;	<b>2.06</b>		
70	41.83	0.311	2.488	25	3.998	-1.496	2.071	1.008;	<b>2.55</b>		
80	41.7	0.311	2.887	20.51	4.874	-1.741	2.575	1.334;	<b>3.11</b>		
90	41.57	0.311	3.329	16.83	5.941	-1.993	3.167	1.742;	<b>3.74</b>		
100	41.43	0.311	3.815	13.8	7.242	-2.253	3.871	2.255;	<b>4.48</b>		
110	41.29	0.311	4.347	11.32	8.828	-2.524	4.725	2.907;	<b>5.36</b>		
120	41.14	0.311	4.927	9.289	10.76	-2.81	5.777	3.743;	<b>6.42</b>		
130	40.98	0.311	5.56	7.62	13.12	-3.113	7.093	4.826;	<b>7.75</b>		
140	40.81	0.311	6.25	6.251	15.99	-3.437	8.762	6.24;	<b>9.41</b>		
150	40.62	0.311	7.003	5.128	19.49	-3.787	10.9	8.098;	<b>11.54</b>		
160	40.41	0.311	7.824	4.207	23.76	-4.165	13.67	10.55;	<b>14.29</b>		
170	40.18	0.311	8.723	3.451	28.97	-4.576	17.26	13.79;	<b>17.86</b>		
180	39.93	0.311	9.707	2.831	35.31	-5.023	21.96	18.09;	<b>22.53</b>		
184	39.82	0.311	10.13	2.616	38.22	-5.212	24.22	20.18;	<b>24.77</b>	acute	zone;
190	39.65	0.311	10.79	2.323	43.04	-5.508	28.11	23.79;	<b>28.64</b>		
200	39.33	0.311	11.97	1.905	52.47	-6.035	36.16	31.32;	<b>36.66</b>		
201	39.29	0.311	12.1	1.868	53.52	-6.09	37.1	32.2;	<b>37.60</b>	merging;	
210	38.59	0.311	13.58	1.563	63.96	-7.163	57.2	51.17;	<b>57.65</b>		
220	37.55	0.311	15.86	1.282	77.96	-8.568	88.64	81.02;	<b>89.05</b>		
230	36.26	0.311	18.83	1.052	95.04	-10.08	129.5	120.1;	<b>129.89</b>		
240	34.66	0.311	22.6	0.863	115.8	-11.67	181.9	170.3;	<b>182.27</b>		

**26.92**      **139.1**      **-13.193**      **242.64**      **243.00**      chronic      zone;      ne width at N      **171**      feet

250	32.68	0.311	27.31	0.708	141.2	-13.33	248.1	234.1;	<b>248.46</b>		
260	30.23	0.311	33.15	0.581	172.1	-15.03	330.9	314.1;	<b>331.24</b>		
263	29.38	0.311	35.15	0.547	182.7	-15.55	359.5	341.7;	<b>359.84</b>	bottom	hit;
270	27.2	0.311	40.34	0.476	209.8	-16.77	433.6	413.5;	<b>433.92</b>		
279	23.88	0.311	48.2	0.399	250.8	-18.36	546.4	522.9;	<b>546.71</b>	surface;	

Outside chronic zone

/ UM3.  
**Case 28;**      ambient      file      \Plumes\sc7Q10\_ebb      Diffuser      table      record      3:00      -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966
14	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (I)	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.816	4.3	20	135	10	16	24.3	24.3	42.6	<b>20.30</b>	1.00E-03	22.7	100

Simulation: Froude number: 61.61; effleunt density (sigma-T) -2.327; effleunt velocity 1.831(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn (I)	x-posn (ft)	y-posn (ft)	Time (s)			
0	42.6	0.311	0.816	100	1	0	0	0.0;	<b>0.00</b>		
10	42.5	0.311	0.974	82.03	1.219	-0.202	0.208	0.0565;	<b>0.29</b>		
20	42.38	0.311	1.17	67.3	1.486	-0.422	0.448	0.132;	<b>0.62</b>		
30	42.26	0.311	1.4	55.21	1.811	-0.663	0.731	0.232;	<b>0.99</b>		
40	42.12	0.311	1.67	45.29	2.208	-0.925	1.061	0.365;	<b>1.41</b>		
50	41.98	0.311	1.982	37.15	2.691	-1.204	1.445	0.538;	<b>1.88</b>		
60	41.83	0.311	2.341	30.48	3.28	-1.495	1.886	0.757;	<b>2.41</b>		
70	41.67	0.311	2.749	25	3.998	-1.796	2.391	1.033;	<b>2.99</b>		
80	41.51	0.311	3.21	20.51	4.874	-2.104	2.972	1.378;	<b>3.64</b>		
90	41.35	0.311	3.723	16.83	5.941	-2.419	3.645	1.808;	<b>4.37</b>		
100	41.18	0.311	4.292	13.8	7.242	-2.742	4.434	2.346;	<b>5.21</b>		
110	41.01	0.311	4.919	11.32	8.828	-3.076	5.375	3.024;	<b>6.19</b>		
120	40.82	0.311	5.605	9.289	10.76	-3.425	6.514	3.886;	<b>7.36</b>		
130	40.63	0.311	6.354	7.62	13.12	-3.792	7.917	4.993;	<b>8.78</b>		
140	40.42	0.311	7.171	6.251	15.99	-4.182	9.67	6.427;	<b>10.54</b>		
150	40.2	0.311	8.062	5.128	19.49	-4.599	11.89	8.299;	<b>12.75</b>		
160	39.96	0.311	9.034	4.207	23.76	-5.049	14.73	10.76;	<b>15.57</b>		
170	39.69	0.311	10.1	3.451	28.97	-5.536	18.4	14.0;	<b>19.21</b>		
180	39.39	0.311	11.26	2.831	35.31	-6.064	23.17	18.29;	<b>23.95</b>		
181	39.36	0.311	11.38	2.776	36.01	-6.119	23.72	18.78;	<b>24.50</b>	acute	zone;
189	39.09	0.311	12.4	2.369	42.2	-6.599	28.94	23.55;	<b>29.68</b>	merging;	
190	39.02	0.311	12.54	2.323	43.04	-6.705	30.18	24.69;	<b>30.92</b>		
200	38.16	0.311	14.41	1.905	52.47	-8.128	48.8	41.9;	<b>49.47</b>		
210	37.07	0.311	17	1.563	63.96	-9.753	74.4	65.8;	<b>75.04</b>		
220	35.73	0.311	20.37	1.282	77.96	-11.55	108.6	97.98;	<b>109.21</b>		
230	34.06	0.311	24.63	1.052	95.04	-13.49	153.4	140.5;	<b>153.99</b>		

239	32.23	0.311	29.36	0.88	113.6	-15.35	204.8	189.5;	<b>205.37</b>	bottom	hit;
240	32.01	0.311	29.95	0.863	115.8	-15.56	211.2	195.7;	<b>211.77</b>		
			<b>32.75</b>		<b>126.7</b>	<b>-16.532</b>	<b>242.44</b>		<b>243.00</b>	chronic	zone; ne width at N <b>177 feet</b>
245	30.8	0.311	33.06	0.782	127.9	-16.64	245.9	228.8;	<b>246.46</b>		
250	29.46	0.311	36.53	0.708	141.2	-17.74	284.8	266.2;	<b>285.35</b>		
260	26.32	0.311	44.62	0.581	172.1	-19.98	377.2	355.1;	<b>377.73</b>		
265	24.49	0.311	49.34	0.526	190.1	-21.13	431.6	407.6;	<b>432.12</b>	surface;	

Outside chronic zone

/ UM3.  
**Case 39;**

ambient file \Plumes\sc7Q10\_ebb Diffuser table record 4:00 -----

Ambient

Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966
14	0.311	90	0	21.1	0	0	0.311	90	0.0003	-1.966

Diffuser

table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (I)	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.884</b>	4.3	20	135	10	16	24.3	243	42.6	<b>29.21</b>	1.00E-03	22.7	100

Simulation:

Froude number:	72.58;	effleunt	density	(sigma-T)	-2.327;	effleunt	velocity	2.244(m/s);				
Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time					
Step	(ft)	(m/s)	(ft)	(%)	(I)	(ft)	(ft)	(s)				
0	42.6	0.311	0.884	100	1	0	0	0.0;	<b>0.00</b>			
10	42.48	0.311	1.057	82.03	1.219	-0.233	0.239	0.0532;	<b>0.33</b>			
20	42.35	0.311	1.273	67.3	1.486	-0.491	0.516	0.125;	<b>0.71</b>			
30	42.2	0.311	1.529	55.21	1.811	-0.778	0.843	0.223;	<b>1.15</b>			
40	42.04	0.311	1.831	45.29	2.208	-1.093	1.226	0.353;	<b>1.64</b>			
50	41.86	0.311	2.184	37.15	2.691	-1.436	1.673	0.526;	<b>2.20</b>			
60	41.67	0.311	2.593	30.48	3.28	-1.803	2.194	0.752;	<b>2.84</b>			
70	41.47	0.311	3.064	25	3.998	-2.188	2.793	1.04;	<b>3.55</b>			
80	41.27	0.311	3.601	20.51	4.874	-2.585	3.478	1.404;	<b>4.33</b>			
90	41.05	0.311	4.206	16.83	5.941	-2.994	4.266	1.859;	<b>5.21</b>			
100	40.84	0.311	4.883	13.8	7.242	-3.413	5.178	2.427;	<b>6.20</b>			
110	40.61	0.311	5.635	11.32	8.828	-3.843	6.245	3.139;	<b>7.33</b>			
120	40.38	0.311	6.463	9.289	10.76	-4.288	7.512	4.036;	<b>8.65</b>			
130	40.14	0.311	7.371	7.62	13.12	-4.752	9.042	5.176;	<b>10.21</b>			
140	39.88	0.311	8.363	6.251	15.99	-5.239	10.92	6.638;	<b>12.11</b>			
150	39.6	0.311	9.447	5.128	19.49	-5.757	13.26	8.529;	<b>14.46</b>			
160	39.31	0.311	10.63	4.207	23.76	-6.31	16.21	10.99;	<b>17.39</b>			
170	38.98	0.311	11.92	3.451	28.97	-6.905	19.98	14.23;	<b>21.14</b>			
176	38.77	0.311	12.75	3.065	32.62	-7.285	22.75	16.64;	<b>23.89</b>	merging;		
177	38.72	0.311	12.89	3.004	33.27	-7.377	23.46	17.27;	<b>24.59</b>	acute	zone;	
180	38.49	0.311	13.41	2.831	35.31	-7.785	26.73	20.16;	<b>27.84</b>			
190	37.53	0.311	15.66	2.323	43.04	-9.454	41.82	33.65;	<b>42.88</b>			
200	36.35	0.311	18.75	1.905	52.47	-11.37	62.61	52.55;	<b>63.63</b>			
210	34.9	0.311	22.74	1.563	63.96	-13.54	90.89	78.57;	<b>91.89</b>			
219	33.32	0.311	27.23	1.308	76.43	-15.7	124.4	109.8;	<b>125.39</b>	bottom	hit;	
220	33.12	0.311	27.78	1.282	77.96	-15.95	128.7	113.8;	<b>129.68</b>			
230	30.94	0.311	34.07	1.052	95.04	-18.57	178.5	160.5;	<b>179.46</b>			
			<b>41.75</b>		<b>115.5</b>	<b>-21.343</b>	<b>242.06</b>		<b>243.00</b>	chronic	zone; ne width at N <b>186 feet</b>	
240	28.25	0.311	41.85	0.863	115.8	-21.38	242.9	221.5;	<b>243.84</b>			
250	24.94	0.311	51.42	0.708	141.2	-24.33	325.1	299.8;	<b>326.01</b>	surface;		

Outside chronic zone

9:50:30 AM.

amb fills: 2

/ UM3. 8/11/2016 9:53:33 AM  
**Case 07;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966
14	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.658	4.3	20	135	10	16	24.3	243	42.6	8.07	1.00E-03	22.7	100

Simulation:

Froude	number:	41.95;	effluent	density	(sigma-T)	-2.327;	effluent	velocity	1.119(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	42.6	0.155	0.658	100	1	0	0	0.0;	0.00
10	42.51	0.155	0.787	82.03	1.219	-0.173	0.178	0.0794;	0.25
20	42.41	0.155	0.948	67.3	1.486	-0.366	0.384	0.187;	0.53
30	42.3	0.155	1.138	55.21	1.811	-0.579	0.628	0.332;	0.85
40	42.18	0.155	1.363	45.29	2.208	-0.814	0.912	0.527;	1.22
50	42.05	0.155	1.625	37.15	2.691	-1.069	1.246	0.785;	1.64
60	41.91	0.155	1.93	30.48	3.28	-1.342	1.633	1.122;	2.11
70	41.76	0.155	2.28	25	3.998	-1.628	2.078	1.552;	2.64
80	41.6	0.155	2.679	20.51	4.874	-1.924	2.588	2.094;	3.22
90	41.44	0.155	3.13	16.83	5.941	-2.228	3.173	2.772;	3.88
100	41.28	0.155	3.634	13.8	7.242	-2.538	3.849	3.618;	4.61
110	41.11	0.155	4.193	11.32	8.828	-2.857	4.639	4.676;	5.45
120	40.93	0.155	4.809	9.289	10.76	-3.186	5.576	6.006;	6.42
130	40.74	0.155	5.485	7.62	13.12	-3.528	6.704	7.692;	7.58
140	40.54	0.155	6.224	6.251	15.99	-3.886	8.084	9.848;	8.97
150	40.33	0.155	7.03	5.128	19.49	-4.265	9.796	12.62;	10.68
160	40.09	0.155	7.91	4.207	23.76	-4.668	11.95	16.22;	12.83
170	39.84	0.155	8.87	3.451	28.97	-5.098	14.67	20.91;	15.53
180	39.55	0.155	9.92	2.831	35.31	-5.559	18.15	27.03;	18.98
190	39.22	0.155	11.07	2.323	43.04	-6.053	22.6	35.03;	23.40
192	39.15	0.155	11.31	2.232	44.78	-6.156	23.64	36.9;	24.43
200	38.85	0.155	12.32	1.905	52.47	-6.581	28.32	45.45;	29.07
210	37.98	0.155	14.09	1.563	63.96	-7.683	42.74	72.08;	43.43
220	36.83	0.155	16.57	1.282	77.96	-8.917	62.1	108.2;	62.74
230	35.38	0.155	19.81	1.052	95.04	-10.2	86.39	154.0;	86.99
240	33.59	0.155	23.93	0.863	115.8	-11.52	116.6	211.4;	117.17
250	31.35	0.155	29.08	0.708	141.2	-12.86	153.9	282.7;	154.44
260	28.58	0.155	35.46	0.581	172.1	-14.22	199.8	370.8;	200.31
268	25.9	0.155	41.42	0.496	201.7	-15.32	243.9	455.8;	244.38
270	25.16	0.155	43.31	0.476	209.8	-15.6	256.1	479.4;	256.57
273	23.98	0.155	46	0.449	222.7	-16.01	275.3	516.5;	275.77
275	23.16	0.155	47.88	0.431	231.7	-16.29	288.8	542.6;	289.26

chronic zone; plume width at MZB: 185 feet

acute zone; merging;

bottom hit; surface;

Outside chronic zone

/ UM3.  
**Case 18;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966
14	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.759	4.3	20	135	10	16	24.3	243	42.6	14.82	1.00E-03	22.7	100

Simulation:

Froude	number:	53.91;	effluent	density	(sigma-T)	-2.327;	effluent	velocity	1.545(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	42.6	0.155	0.759	100	1	0	0	0.0;	0.00
10	42.49	0.155	0.91	82.03	1.219	-0.217	0.22	0.072;	0.31
20	42.36	0.155	1.1	67.3	1.486	-0.462	0.48	0.171;	0.67
30	42.22	0.155	1.326	55.21	1.811	-0.74	0.786	0.309;	1.08
40	42.06	0.155	1.595	45.29	2.208	-1.052	1.146	0.497;	1.56
50	41.88	0.155	1.914	37.15	2.691	-1.398	1.569	0.75;	2.10
60	41.68	0.155	2.289	30.48	3.28	-1.778	2.064	1.09;	2.72
70	41.47	0.155	2.726	25	3.998	-2.189	2.641	1.538;	3.43
80	41.24	0.155	3.232	20.51	4.874	-2.629	3.31	2.121;	4.23

90	41	0.155	3.812	16.83	5.941	-3.088	4.078	2.864;	<b>5.12</b>	
100	40.75	0.155	4.473	13.8	7.242	-3.563	4.957	3.801;	<b>6.10</b>	
110	40.49	0.155	5.216	11.32	8.828	-4.05	5.967	4.973;	<b>7.21</b>	
120	40.22	0.155	6.046	9.289	10.76	-4.55	7.137	6.438;	<b>8.46</b>	
130	39.95	0.155	6.967	7.62	13.12	-5.064	8.508	8.275;	<b>9.90</b>	
140	39.66	0.155	7.981	6.251	15.99	-5.596	10.14	10.59;	<b>11.58</b>	
150	39.35	0.155	9.093	5.128	19.49	-6.15	12.1	13.53;	<b>13.57</b>	
160	39.02	0.155	10.31	4.207	23.76	-6.731	14.51	17.29;	<b>16.00</b>	
170	38.66	0.155	11.64	3.451	28.97	-7.346	17.5	22.15;	<b>18.98</b>	
180	38.27	0.155	13.09	2.831	35.31	-8	21.25	28.43;	<b>22.71</b>	merging;
183	38.05	0.155	13.6	2.668	37.47	-8.36	23.56	32.37;	<b>25.00</b>	acute zone;
190	37.33	0.155	15.16	2.323	43.04	-9.46	31.25	45.66;	<b>32.65</b>	
200	36.1	0.155	18.15	1.905	52.47	-11.19	45.29	70.38;	<b>46.65</b>	
210	34.58	0.155	22.1	1.563	63.96	-13.08	63.63	103.3;	<b>64.96</b>	
220	32.68	0.155	27.13	1.282	77.96	-15.11	87.26	146.4;	<b>88.56</b>	
229	30.58	0.155	32.76	1.073	93.17	-17.03	114	195.7;	<b>115.27</b>	bottom hit;
230	30.32	0.155	33.45	1.052	95.04	-17.25	117.3	201.9;	<b>118.56</b>	
240	27.38	0.155	41.29	0.863	115.8	-19.48	155.1	272.4;	<b>156.32</b>	
249	24.14	0.155	49.9	0.722	138.4	-21.56	196.9	351.3;	<b>198.08</b>	surface;
Const	Eddy conc (%)	Diffusivity dilutn	Farfield width (m)	dispersion distnce (m)	based time (hrs)	on (kg/kg)	wastefield (s-1)	width of (s)(m0.67/s2)	46.25	m
	0.71903	139	46.38	62	0.00289	0	0	0.155	3.00E-04	
	0.71968	138.9	46.55	64	0.00648	0	0	0.155	3.00E-04	
	0.72009	138.8	46.71	66	0.0101	0	0	0.155	3.00E-04	
	0.72036	138.8	46.88	68	0.0136	0	0	0.155	3.00E-04	
	0.72057	138.7	47.04	70	0.0172	0	0	0.155	3.00E-04	
	0.72073	138.7	47.21	72	0.0208	0	0	0.155	3.00E-04	
	<b>0.72086</b>	<b>138.7</b>	<b>47.37</b>	<b>74</b>	<b>0.0244</b>	<b>0</b>	<b>0</b>	<b>0.155</b>	<b>3.00E-04</b>	chronic zone;
	0.72096	138.7	47.53	76	0.028	0	0	0.155	3.00E-04	

plume width at MZB: **155 feet**

count: 8  
/ UM3.  
**Case 29;**

Ambient	Table:	Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
		m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
		0	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966
		14	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966

Diffuser	table:	P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
		(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
		0.816	4.3	20	135	10	16	24.3	243	42.6	<b>20.3</b>	1.00E-03	22.7	100

Simulation:	Froude number:	61.61;	effleunt	density	(sigma-T)	-2.327;	effleunt	velocity	1.831(m/s);					
	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time						
	Step	(ft)	(m/s)	(ft)	(%)	(ft)	(ft)	(s)						
	0	42.6	0.155	0.816	100	1	0	0.0;	<b>0.00</b>					
	10	42.48	0.155	0.979	82.03	1.219	-0.241	0.245	0.0676;	<b>0.34</b>				
	20	42.33	0.155	1.185	67.3	1.486	-0.517	0.533	0.162;	<b>0.74</b>				
	30	42.17	0.155	1.432	55.21	1.811	-0.832	0.875	0.293;	<b>1.21</b>				
	40	41.99	0.155	1.726	45.29	2.208	-1.189	1.279	0.475;	<b>1.75</b>				
	50	41.78	0.155	2.076	37.15	2.691	-1.59	1.754	0.722;	<b>2.37</b>				
	60	41.55	0.155	2.489	30.48	3.28	-2.033	2.311	1.057;	<b>3.08</b>				
	70	41.3	0.155	2.975	25	3.998	-2.519	2.963	1.504;	<b>3.89</b>				
	80	41.03	0.155	3.541	20.51	4.874	-3.046	3.723	2.094;	<b>4.81</b>				
	90	40.73	0.155	4.196	16.83	5.941	-3.607	4.603	2.861;	<b>5.85</b>				
	100	40.42	0.155	4.947	13.8	7.242	-4.194	5.611	3.838;	<b>7.01</b>				
	110	40.1	0.155	5.8	11.32	8.828	-4.801	6.767	5.069;	<b>8.30</b>				
	120	39.77	0.155	6.761	9.289	10.76	-5.424	8.094	6.61;	<b>9.74</b>				
	130	39.43	0.155	7.833	7.62	13.12	-6.064	9.633	8.538;	<b>11.38</b>				
	140	39.07	0.155	9.02	6.251	15.99	-6.722	11.44	10.96;	<b>13.27</b>				
	150	38.7	0.155	10.33	5.128	19.49	-7.403	13.58	14.01;	<b>15.47</b>				
	160	38.3	0.155	11.76	4.207	23.76	-8.113	16.18	17.89;	<b>18.10</b>				
	170	37.87	0.155	13.33	3.451	28.97	-8.859	19.35	22.85;	<b>21.28</b>				
	171	37.83	0.155	13.5	3.384	29.54	-8.936	19.71	23.42;	<b>21.64</b>				merging;
	175	37.49	0.155	14.26	3.126	31.98	-9.518	22.53	27.97;	<b>24.46</b>				acute zone;
	180	36.93	0.155	15.48	2.831	35.31	-10.43	27.28	35.74;	<b>29.21</b>				
	190	35.64	0.155	18.69	2.323	43.04	-12.44	39.13	55.6;	<b>41.06</b>				
	200	34.05	0.155	23	1.905	52.47	-14.67	54.78	82.56;	<b>56.71</b>				
	210	32.09	0.155	28.54	1.563	63.96	-17.11	75.21	118.5;	<b>77.13</b>				
	216	30.7	0.155	32.55	1.388	72.02	-18.67	90.2	145.3;	<b>92.11</b>				bottom hit;
	220	29.67	0.155	35.54	1.282	77.96	-19.75	101.5	165.7;	<b>103.40</b>				
	230	26.68	0.155	44.26	1.052	95.04	-22.54	134.9	226.7;	<b>136.77</b>				
	236	24.55	0.155	50.46	0.934	107	-24.27	159	271.1;	<b>160.84</b>				surface;
Const	Eddy conc	Diffusivity dilutn	Farfield width	dispersion distnce	based time	on	wastefield	width of	46.42	m				

(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	/s)(m0.67/s2)
0.92981	107.5	46.5	50	0.00173	0	0.155 3.00E-04
0.93075	107.4	46.66	52	0.00532	0	0.155 3.00E-04
0.93136	107.3	46.83	54	0.0089	0	0.155 3.00E-04
0.93176	107.3	46.99	56	0.0125	0	0.155 3.00E-04
0.93205	107.3	47.16	58	0.0161	0	0.155 3.00E-04
0.93227	107.2	47.32	60	0.0197	0	0.155 3.00E-04
0.93245	107.2	47.49	62	0.0232	0	0.155 3.00E-04
0.9326	107.2	47.65	64	0.0268	0	0.155 3.00E-04
0.93272	107.2	47.81	66	0.0304	0	0.155 3.00E-04
0.93282	107.2	47.97	68	0.034	0	0.155 3.00E-04
0.93292	107.2	48.14	70	0.0376	0	0.155 3.00E-04
0.933	107.1	48.3	72	0.0412	0	0.155 3.00E-04
<b>0.93307</b>	<b>107.1</b>	<b>48.46</b>	<b>74</b>	<b>0.0447</b>	<b>0</b>	<b>0.155 3.00E-04</b>
0.93313	107.1	48.62	76	0.0483	0	0.155 3.00E-04

chronic zone;

plume width at MZB: **159 feet**

count: 14

/ UM3.  
**Case 40;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 4:00 -----

Ambient

Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966
14	0.155	90	0	21.1	0	0	0.155	90	0.0003	-1.966

Diffuser

table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.884</b>	4.3	20	135	10	16	24.3	243	42.6	<b>29.21</b>	1.00E-03	22.7	100

Simulation:

Froude number: 72.58; effleunt density (sigma-T) -2.327; effleunt velocity 2.244(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	42.6	0.155	0.884	100	1	0	0	0.0;	<b>0.00</b>
10	42.46	0.155	1.062	82.03	1.219	-0.27	0.274	0.0618;	<b>0.38</b>
20	42.3	0.155	1.287	67.3	1.486	-0.583	0.598	0.149;	<b>0.84</b>
30	42.11	0.155	1.557	55.21	1.811	-0.944	0.984	0.272;	<b>1.36</b>
40	41.9	0.155	1.881	45.29	2.208	-1.357	1.441	0.443;	<b>1.98</b>
50	41.66	0.155	2.268	37.15	2.691	-1.825	1.981	0.679;	<b>2.69</b>
60	41.39	0.155	2.728	30.48	3.28	-2.35	2.616	1.003;	<b>3.52</b>
70	41.09	0.155	3.272	25	3.998	-2.933	3.36	1.44;	<b>4.46</b>
80	40.75	0.155	3.911	20.51	4.874	-3.572	4.23	2.024;	<b>5.54</b>
90	40.39	0.155	4.656	16.83	5.941	-4.266	5.245	2.797;	<b>6.76</b>
100	40.01	0.155	5.519	13.8	7.242	-5.007	6.422	3.804;	<b>8.14</b>
110	39.6	0.155	6.509	11.32	8.828	-5.784	7.771	5.09;	<b>9.69</b>
120	39.17	0.155	7.634	9.289	10.76	-6.588	9.317	6.712;	<b>11.41</b>
130	38.73	0.155	8.902	7.62	13.12	-7.415	11.09	8.745;	<b>13.34</b>
140	38.28	0.155	10.32	6.251	15.99	-8.265	13.15	11.29;	<b>15.53</b>
150	37.8	0.155	11.89	5.128	19.49	-9.138	15.55	14.48;	<b>18.04</b>
160	37.3	0.155	13.62	4.207	23.76	-10.04	18.41	18.51;	<b>20.97</b>
163	37.14	0.155	14.17	3.964	25.22	-10.32	19.37	19.91;	<b>21.95</b>
167	36.74	0.155	15.08	3.662	27.29	-11.04	22.02	23.84;	<b>24.63</b>
170	36.36	0.155	15.9	3.451	28.97	-11.7	24.56	27.68;	<b>27.20</b>
180	34.91	0.155	19.42	2.831	35.31	-14.12	34.88	43.71;	<b>37.63</b>
190	33.16	0.155	24.23	2.323	43.04	-16.85	48.54	65.77;	<b>51.38</b>
200	31.03	0.155	30.52	1.905	52.47	-19.88	66.41	95.57;	<b>69.32</b>
206	29.54	0.155	35.11	1.692	59.09	-21.83	79.57	118.0;	<b>82.51</b>
210	28.44	0.155	38.54	1.563	63.96	-23.18	89.51	135.2;	<b>92.46</b>
220	25.29	0.155	48.62	1.282	77.96	-26.73	119.1	187.0;	<b>122.06</b>
222	24.58	0.155	50.92	1.232	81.11	-27.46	125.9	199.1;	<b>128.86</b>

merging; acute zone;

bottom hit;

**128.86 surface;**

Const

Eddy Diffusivity. Farfield dispersion based on wastefield width of 46.56 m

(%)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	/s)(m0.67/s2)
1.22674	81.49	46.62	40	0.00131	0	0.155 3.00E-04
1.22798	81.41	46.78	42	0.0049	0	0.155 3.00E-04
1.22883	81.35	46.95	44	0.00848	0	0.155 3.00E-04
1.22938	81.31	47.11	46	0.0121	0	0.155 3.00E-04
1.22978	81.29	47.28	48	0.0157	0	0.155 3.00E-04
1.23008	81.27	47.44	50	0.0192	0	0.155 3.00E-04
1.23032	81.25	47.61	52	0.0228	0	0.155 3.00E-04
1.23052	81.24	47.77	54	0.0264	0	0.155 3.00E-04
1.23068	81.23	47.93	56	0.03	0	0.155 3.00E-04
1.23082	81.22	48.1	58	0.0336	0	0.155 3.00E-04
1.23095	81.21	48.26	60	0.0372	0	0.155 3.00E-04
1.23106	81.2	48.42	62	0.0407	0	0.155 3.00E-04
1.23115	81.2	48.58	64	0.0443	0	0.155 3.00E-04
1.23124	81.19	48.74	66	0.0479	0	0.155 3.00E-04
1.23132	81.18	48.9	68	0.0515	0	0.155 3.00E-04
1.23139	81.18	49.06	70	0.0551	0	0.155 3.00E-04

1.23145	81.18	49.21	72	0.0587	0	0	0.155	3.00E-04		
<b>1.23151</b>	<b>81.17</b>	<b>49.37</b>	<b>74</b>	<b>0.0622</b>	<b>0</b>	<b>0</b>	<b>0.155</b>	<b>3.00E-04</b>	<b>chronic zone;</b>	<b>plume width at MZB: 162 feet</b>
1.23157	81.17	49.53	76	0.0658	0	0	0.155	3.00E-04		

count: 19  
;  
9:53:33 AM. amb fills: 2

/ UM3. 8/11/2016 10:01:01 AM  
**Case 08;** ambient file \Plumes\sc\_7Q10\_ebb Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.703	4.3	20	135	10	16	24.3	243	43.2	10.73	1.00E-03	19.5	100

Simulation:

Froude	number:	24.64;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	1.304(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	43.2	0.344	0.703	100	1	0	0	0.0;	0.00
10	43.12	0.344	0.834	82.03	1.219	-0.146	0.152	0.0572;	0.21
20	43.05	0.344	0.993	67.3	1.485	-0.298	0.326	0.13;	0.44
30	42.96	0.344	1.177	55.21	1.81	-0.457	0.527	0.223;	0.70
40	42.88	0.344	1.387	45.29	2.206	-0.621	0.758	0.34;	0.98
50	42.79	0.344	1.625	37.15	2.689	-0.789	1.023	0.485;	1.29
60	42.7	0.344	1.891	30.48	3.278	-0.959	1.329	0.666;	1.64
70	42.61	0.344	2.186	25	3.995	-1.133	1.687	0.89;	2.03
80	42.52	0.344	2.511	20.51	4.87	-1.31	2.11	1.169;	2.48
90	42.42	0.344	2.867	16.83	5.936	-1.494	2.619	1.522;	3.02
100	42.32	0.344	3.256	13.8	7.236	-1.687	3.242	1.972;	3.65
110	42.21	0.344	3.678	11.32	8.82	-1.89	4.019	2.551;	4.44
120	42.09	0.344	4.138	9.289	10.75	-2.107	4.999	3.304;	5.42
130	41.96	0.344	4.64	7.62	13.11	-2.339	6.251	4.289;	6.67
140	41.82	0.344	5.187	6.251	15.98	-2.59	7.864	5.584;	8.28
150	41.66	0.344	5.784	5.128	19.47	-2.861	9.954	7.291;	10.36
160	41.48	0.344	6.438	4.207	23.74	-3.155	12.67	9.542;	13.06
170	41.28	0.344	7.155	3.451	28.94	-3.472	16.21	12.51;	16.58
180	41.06	0.344	7.942	2.831	35.27	-3.814	20.81	16.41;	21.16
186	40.9	0.344	8.45	2.514	39.72	-4.031	24.22	19.3;	24.55 acute zone;
190	40.8	0.344	8.806	2.323	43	-4.181	26.8	21.51;	27.12
200	40.49	0.344	9.756	1.905	52.42	-4.573	34.53	28.15;	34.83
210	40.14	0.344	10.8	1.563	63.89	-4.989	44.48	36.74;	44.76
218	39.82	0.344	11.71	1.334	74.86	-5.338	54.38	45.33;	54.64 merging;
220	39.69	0.344	11.96	1.282	77.89	-5.468	58.47	48.89;	58.73
230	38.74	0.344	13.63	1.052	94.94	-6.305	87.95	74.56;	88.18
240	37.56	0.344	15.89	0.863	115.7	-7.144	123.8	105.9;	124.01
250	36.09	0.344	18.81	0.708	141.1	-7.979	167.2	143.9;	167.39
260	34.29	0.344	22.49	0.581	172	-8.812	219.9	190.1;	220.08
264	33.45	0.344	24.13	0.536	186.2	-9.144	244	211.3;	243.00 chronic zone; plume width at MZB: 168 feet
270	32.06	0.344	27.08	0.476	209.6	-9.643	283.9	246.4;	244.17
280	29.34	0.344	32.76	0.391	255.5	-10.47	361.8	315.0;	284.06
290	25.99	0.344	39.75	0.321	311.5	-11.3	456.6	398.5;	361.95
298	22.78	0.344	46.47	0.274	365	-11.97	547	478.3;	456.74
									547.13 surface;

/ UM3.  
**Case 19;** ambient file \Plumes\sc\_7Q10\_ebb Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrncMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.807	4.3	20	135	10	16	24.3	243	43.2	19.36	1.00E-03	19.5	100

Simulation:

Froude	number:	31.49;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	1.785(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	43.2	0.344	0.807	100	1	0	0	0.0;	0.00
10	43.1	0.344	0.962	82.03	1.219	-0.191	0.197	0.0548;	0.27
20	43	0.344	1.153	67.3	1.485	-0.396	0.425	0.127;	0.58
30	42.88	0.344	1.376	55.21	1.81	-0.62	0.691	0.222;	0.93
40	42.76	0.344	1.636	45.29	2.206	-0.86	1.002	0.347;	1.32
50	42.63	0.344	1.936	37.15	2.689	-1.111	1.36	0.506;	1.76
60	42.49	0.344	2.277	30.48	3.278	-1.37	1.77	0.707;	2.24

70	42.35	0.344	2.663	25	3.995	-1.636	2.241	0.957;	<b>2.77</b>										
80	42.21	0.344	3.095	20.51	4.87	-1.907	2.785	1.268;	<b>3.38</b>										
90	42.06	0.344	3.575	16.83	5.936	-2.184	3.421	1.657;	<b>4.06</b>										
100	41.91	0.344	4.103	13.8	7.236	-2.47	4.174	2.144;	<b>4.85</b>										
110	41.75	0.344	4.681	11.32	8.82	-2.767	5.08	2.761;	<b>5.78</b>										
120	41.59	0.344	5.314	9.289	10.75	-3.077	6.191	3.55;	<b>6.91</b>										
130	41.41	0.344	6.003	7.62	13.11	-3.406	7.572	4.567;	<b>8.30</b>										
140	41.21	0.344	6.755	6.251	15.98	-3.757	9.312	5.888;	<b>10.04</b>										
150	41	0.344	7.575	5.128	19.47	-4.132	11.53	7.616;	<b>12.25</b>										
160	40.76	0.344	8.47	4.207	23.74	-4.537	14.38	9.883;	<b>15.08</b>										
170	40.5	0.344	9.448	3.451	28.94	-4.974	18.05	12.86;	<b>18.72</b>										
180	40.2	0.344	10.52	2.831	35.27	-5.444	22.81	16.79;	<b>23.45</b>										
182	40.14	0.344	10.75	2.721	36.7	-5.543	23.92	17.71;	<b>24.55</b>									acute zone;	
190	39.87	0.344	11.69	2.323	43	-5.952	28.98	21.93;	<b>29.58</b>										
194	39.72	0.344	12.2	2.146	46.54	-6.165	31.93	24.42;	<b>32.52</b>									merging;	
200	39.26	0.344	13.14	1.905	52.42	-6.797	41.59	32.57;	<b>42.14</b>										
210	38.24	0.344	15.26	1.563	63.89	-8.039	63.6	51.3;	<b>64.11</b>										
220	36.96	0.344	18.08	1.282	77.89	-9.343	91.57	75.26;	<b>92.05</b>										
230	35.37	0.344	21.69	1.052	94.94	-10.7	126.7	105.6;	<b>127.15</b>										
240	33.4	0.344	26.22	0.863	115.7	-12.09	170.6	143.5;	<b>171.03</b>										
250	30.96	0.344	31.84	0.708	141.1	-13.5	224.8	190.7;	<b>225.20</b>										
			<b>33.70</b>		<b>149.3</b>	<b>-13.912</b>	<b>242.60</b>		<b>243.00</b>	<b>chronic zone;</b>	<b>plume width at MZB:</b>	<b>178 feet</b>							

253	30.12	0.344	33.78	0.667	149.7	-13.93	243.4	206.9;	<b>243.80</b>										
260	27.94	0.344	38.78	0.581	172	-14.94	291.5	248.9;	<b>291.88</b>										
264	26.54	0.344	41.98	0.536	186.2	-15.52	322.3	275.8;	<b>322.67</b>									bottom hit;	
270	24.22	0.344	47.31	0.476	209.6	-16.39	373.4	320.6;	<b>373.76</b>										
271	23.8	0.344	48.26	0.467	213.8	-16.53	382.6	328.6;	<b>382.96</b>	<b>surface;</b>									

Outside chronic zone

/ UM3.

Case 30; ambient file \Plumes\sc7Q10\_ebb Diffuser table record 3:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.866	4.3	20	135	10	16	24.3	243	43.2	<b>26.53</b>	1.00E-03	19.5	100

Simulation:

Froude	number:	36.17;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	2.124(m/s);									
Step	Depth	(ft)	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time									
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)										
0	43.2	0.344	0.866	100	1	0	0	0.0;	<b>0.00</b>									
10	43.09	0.344	1.034	82.03	1.219	-0.217	0.224	0.0525;	<b>0.31</b>									
20	42.97	0.344	1.243	67.3	1.485	-0.455	0.483	0.123;	<b>0.66</b>									
30	42.83	0.344	1.489	55.21	1.81	-0.717	0.787	0.217;	<b>1.06</b>									
40	42.68	0.344	1.777	45.29	2.206	-1.002	1.143	0.341;	<b>1.52</b>									
50	42.52	0.344	2.111	37.15	2.689	-1.308	1.558	0.504;	<b>2.03</b>									
60	42.36	0.344	2.497	30.48	3.278	-1.628	2.035	0.712;	<b>2.61</b>									
70	42.19	0.344	2.937	25	3.995	-1.96	2.582	0.975;	<b>3.24</b>									
80	42.01	0.344	3.434	20.51	4.87	-2.3	3.21	1.303;	<b>3.95</b>									
90	41.82	0.344	3.99	16.83	5.936	-2.648	3.934	1.712;	<b>4.74</b>									
100	41.64	0.344	4.607	13.8	7.236	-3.004	4.781	2.223;	<b>5.65</b>									
110	41.44	0.344	5.288	11.32	8.82	-3.371	5.783	2.865;	<b>6.69</b>									
120	41.24	0.344	6.034	9.289	10.75	-3.753	6.99	3.679;	<b>7.93</b>									
130	41.02	0.344	6.851	7.62	13.11	-4.153	8.467	4.719;	<b>9.43</b>									
140	40.79	0.344	7.741	6.251	15.98	-4.576	10.3	6.06;	<b>11.27</b>									
150	40.53	0.344	8.712	5.128	19.47	-5.027	12.61	7.802;	<b>13.58</b>									
160	40.26	0.344	9.772	4.207	23.74	-5.511	15.54	10.08;	<b>16.49</b>									
170	39.95	0.344	10.93	3.451	28.94	-6.03	19.3	13.06;	<b>20.22</b>									
179	39.64	0.344	12.06	2.888	34.58	-6.532	23.6	16.54;	<b>24.49</b>	acute zone;								
180	39.61	0.344	12.19	2.831	35.27	-6.59	24.15	16.98;	<b>25.03</b>									
182	39.54	0.344	12.46	2.721	36.7	-6.707	25.27	17.9;	<b>26.14</b>	merging;								
190	38.89	0.344	13.84	2.323	43	-7.694	35.75	26.52;	<b>36.57</b>									
200	37.82	0.344	16.24	1.905	52.42	-9.161	54.08	41.78;	<b>54.85</b>									
210	36.5	0.344	19.43	1.563	63.89	-10.75	78	61.91;	<b>78.74</b>									
220	34.84	0.344	23.5	1.282	77.89	-12.44	108.8	88.06;	<b>109.51</b>									
230	32.79	0.344	28.6	1.052	94.94	-14.22	147.9	121.5;	<b>148.58</b>									
238	30.8	0.344	33.56	0.898	111.2	-15.69	186.2	154.5;	<b>186.86</b>	bottom hit;								
240	30.24	0.344	34.94	0.863	115.7	-16.06	196.9	163.7;	<b>197.55</b>									
			<b>40.75</b>		<b>134.6</b>	<b>-17.496</b>	<b>242.37</b>		<b>243.00</b>	<b>chronic zone;</b>	<b>plume width at MZB:</b>	<b>185 feet</b>						

248	27.77	0.344	41.05	0.736	135.6	-17.57	244.7	205.1;	<b>245.33</b>										
250	27.08	0.344	42.75	0.708	141.1	-17.95	258	216.6;	<b>258.62</b>										
257	24.44	0.344	49.25	0.616	162.1	-19.29	309.1	261.0;	<b>309.70</b>	<b>surface;</b>									

Outside chronic zone



/ UM3.

Case 41; ambient file \Plumes\sc\_7Q10\_ebb Diffuser table record 4:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3
14	0.344	90	0	10.7	0	0	0.344	90	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.935	4.3	20	135	10	16	24.3	243	43.2	38.17	1.00E-03	19.5	100

Simulation:

Froude	number:	42.96;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	2.622(m/s);			
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time				
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)				
0	43.2	0.344	0.935	100	1	0	0	0.0;	0.00			
10	43.07	0.344	1.119	82.03	1.219	-0.25	0.256	0.0489;	0.36			
20	42.93	0.344	1.348	67.3	1.485	-0.528	0.554	0.115;	0.77			
30	42.77	0.344	1.62	55.21	1.81	-0.838	0.905	0.205;	1.23			
40	42.59	0.344	1.941	45.29	2.206	-1.18	1.316	0.327;	1.77			
50	42.4	0.344	2.318	37.15	2.689	-1.553	1.797	0.488;	2.38			
60	42.19	0.344	2.756	30.48	3.278	-1.955	2.358	0.699;	3.06			
70	41.97	0.344	3.261	25	3.995	-2.379	3.005	0.971;	3.83			
80	41.74	0.344	3.838	20.51	4.87	-2.818	3.746	1.315;	4.69			
90	41.5	0.344	4.491	16.83	5.936	-3.27	4.595	1.746;	5.64			
100	41.26	0.344	5.224	13.8	7.236	-3.734	5.575	2.285;	6.71			
110	41.01	0.344	6.038	11.32	8.82	-4.209	6.716	2.958;	7.93			
120	40.75	0.344	6.938	9.289	10.75	-4.699	8.064	3.804;	9.33			
130	40.47	0.344	7.926	7.62	13.11	-5.207	9.68	4.874;	10.99			
140	40.18	0.344	9.008	6.251	15.98	-5.74	11.65	6.24;	12.99			
150	39.87	0.344	10.19	5.128	19.47	-6.302	14.09	7.999;	15.44			
160	39.54	0.344	11.48	4.207	23.74	-6.9	17.14	10.28;	18.48			
170	39.17	0.344	12.88	3.451	28.94	-7.54	21.01	13.26;	22.32			
171	39.13	0.344	13.03	3.384	29.52	-7.606	21.45	13.6;	22.76			
174	38.92	0.344	13.55	3.188	31.32	-7.968	23.95	15.55;	25.24			
180	38.33	0.344	14.84	2.831	35.27	-8.921	31.05	21.17;	32.31			
190	37.18	0.344	17.68	2.323	43	-10.69	46.26	33.39;	47.48			
200	35.76	0.344	21.43	1.905	52.42	-12.65	66.54	49.96;	67.73			
210	33.99	0.344	26.23	1.563	63.89	-14.81	93.2	72.05;	94.37			
216	32.74	0.344	29.68	1.388	71.96	-16.17	112.9	88.5;	114.05			
220	31.81	0.344	32.25	1.282	77.89	-17.12	127.7	101.0;	128.84			
230	29.1	0.344	39.72	1.052	94.94	-19.56	171.7	138.3;	172.81			
240	25.75	0.344	48.94	0.863	115.7	-22.11	227.2	185.6;	228.27			
242	24.99	0.344	51.02	0.829	120.4	-22.63	239.9	196.5;	240.96			
Const	Eddy	Diffusivity.	Farfield	dispersion	based	on	wastefield	width	of	46.59	m	
	conc	dilutn	width	distnce	time							
	(%)	(m)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	/s)(m0.67/s2)				
	0.8255	121.0	46.61	74	4.41E-04	0	0	0.344	3.00E-04	chronic	zone;	plume width at MZB: 153 feet
	0.82573	120.9	46.68	76	0.00206	0	0	0.344	3.00E-04			

count:

2

;

10:01:01

AM.

amb

fills:

2

/ UM3. 8/11/2016 10:04:29 AM  
**Case 09;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3
14	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.703	4.3	20	135	10	16	24.3	243	43.2	10.73	1.00E-03	19.5	100

Simulation:

Froude	number:	24.64;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	1.304(m/s);			
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)				
0	43.2	0.171	0.703	100	1	0	0	0.0;	0.00			
10	43.1	0.171	0.841	82.03	1.219	-0.188	0.192	0.0739;	0.27			
20	43	0.171	1.013	67.3	1.485	-0.397	0.416	0.174;	0.58			
30	42.87	0.171	1.218	55.21	1.81	-0.63	0.68	0.311;	0.93			
40	42.74	0.171	1.459	45.29	2.206	-0.887	0.989	0.494;	1.33			
50	42.59	0.171	1.742	37.15	2.689	-1.168	1.351	0.738;	1.79			
60	42.44	0.171	2.071	30.48	3.278	-1.469	1.772	1.057;	2.30			
70	42.27	0.171	2.45	25	3.995	-1.787	2.257	1.467;	2.88			
80	42.09	0.171	2.883	20.51	4.87	-2.116	2.812	1.985;	3.52			
90	41.91	0.171	3.373	16.83	5.936	-2.455	3.447	2.633;	4.23			
100	41.72	0.171	3.923	13.8	7.236	-2.8	4.178	3.441;	5.03			
110	41.52	0.171	4.535	11.32	8.82	-3.154	5.026	4.448;	5.93			
120	41.31	0.171	5.211	9.289	10.75	-3.516	6.024	5.707;	6.98			
130	41.09	0.171	5.953	7.62	13.11	-3.891	7.214	7.293;	8.20			
140	40.86	0.171	6.766	6.251	15.98	-4.281	8.655	9.304;	9.66			
150	40.6	0.171	7.653	5.128	19.47	-4.689	10.42	11.87;	11.43			
160	40.32	0.171	8.622	4.207	23.74	-5.118	12.62	15.17;	13.62			
170	40	0.171	9.679	3.451	28.94	-5.572	15.36	19.41;	16.34			
180	39.65	0.171	10.83	2.831	35.27	-6.051	18.81	24.87;	19.76			
190	39.24	0.171	12.1	2.323	43	-6.557	23.16	31.9;	24.07			
191	39.2	0.171	12.23	2.277	43.86	-6.609	23.65	32.7;	24.56 acute zone;			
193	39.11	0.171	12.5	2.189	45.63	-6.714	24.67	34.37;	25.57 merging;			
200	38.48	0.171	13.69	1.905	52.42	-7.388	31.83	46.16;	32.68			
210	37.32	0.171	16.05	1.563	63.89	-8.455	45.03	68.18;	45.82			
220	35.86	0.171	19.19	1.282	77.89	-9.543	61.25	95.53;	61.99			
230	34.05	0.171	23.2	1.052	94.94	-10.65	81.16	129.4;	81.86			
240	31.8	0.171	28.23	0.863	115.7	-11.77	105.5	171.3;	106.15			
250	29.01	0.171	34.48	0.708	141.1	-12.9	135.3	222.8;	135.91			
260	25.56	0.171	42.19	0.581	172	-14.04	171.7	286.0;	172.27			
266	23.11	0.171	47.64	0.516	193.7	-14.72	197.3	330.6;	197.85 surface;			
Const	Eddy conc (%)	Diffusivity. dilutn	Farfield width (m)	dispersion distnce (m)	based time (hrs)	on (kg/kg)	wastefield (s-1)	width (s)(m0.67/s2)	of (m)			
0.51349	194.5	45.69	62	0.00276	0	0	0.171	3.00E-04				
0.51393	194.3	45.84	64	0.00601	0	0	0.171	3.00E-04				
0.51421	194.2	45.98	66	0.00926	0	0	0.171	3.00E-04				
0.51441	194.1	46.13	68	0.0125	0	0	0.171	3.00E-04				
0.51455	194.1	46.28	70	0.0158	0	0	0.171	3.00E-04				
0.51467	194	46.43	72	0.019	0	0	0.171	3.00E-04				
0.51476	194	46.58	74	0.0223	0	0	0.171	3.00E-04	chronic zone;			plume width at MZB: 153 feet
0.51484	194	46.72	76	0.0255	0	0	0.171	3.00E-04				

count: 8

/ UM3.  
**Case 20;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3
14	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.807	4.3	20	135	10	16	24.3	243	43.2	19.36	1.00E-03	19.5	100

Simulation:

Froude	number:	31.49;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	1.785(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	43.2	0.171	0.807	100	1	0	0	0.0;	0.00

10	43.08	0.171	0.968	82.03	1.219	-0.232	0.236	0.0668;	<b>0.33</b>
20	42.94	0.171	1.17	67.3	1.485	-0.496	0.514	0.159;	<b>0.71</b>
30	42.79	0.171	1.411	55.21	1.81	-0.797	0.843	0.288;	<b>1.16</b>
40	42.61	0.171	1.698	45.29	2.206	-1.134	1.23	0.463;	<b>1.67</b>
50	42.42	0.171	2.039	37.15	2.689	-1.509	1.685	0.702;	<b>2.26</b>
60	42.2	0.171	2.439	30.48	3.278	-1.922	2.217	1.021;	<b>2.93</b>
70	41.97	0.171	2.908	25	3.995	-2.37	2.838	1.444;	<b>3.70</b>
80	41.71	0.171	3.451	20.51	4.87	-2.851	3.56	1.996;	<b>4.56</b>
90	41.44	0.171	4.076	16.83	5.936	-3.356	4.388	2.703;	<b>5.52</b>
100	41.16	0.171	4.788	13.8	7.236	-3.878	5.335	3.594;	<b>6.60</b>
110	40.87	0.171	5.591	11.32	8.82	-4.414	6.419	4.709;	<b>7.79</b>
120	40.56	0.171	6.491	9.289	10.75	-4.962	7.669	6.1;	<b>9.13</b>
130	40.24	0.171	7.49	7.62	13.11	-5.524	9.123	7.835;	<b>10.67</b>
140	39.9	0.171	8.592	6.251	15.98	-6.101	10.84	10.01;	<b>12.44</b>
150	39.54	0.171	9.803	5.128	19.47	-6.698	12.89	12.76;	<b>14.53</b>
160	39.15	0.171	11.13	4.207	23.74	-7.32	15.37	16.24;	<b>17.02</b>
170	38.73	0.171	12.57	3.451	28.94	-7.971	18.43	20.68;	<b>20.08</b>
175	38.5	0.171	13.35	3.126	31.95	-8.309	20.21	23.35;	<b>21.85</b>
179	38.14	0.171	14.11	2.888	34.58	-8.809	23.07	27.69;	<b>24.69</b>
180	38.03	0.171	14.33	2.831	35.27	-8.957	23.95	29.03;	<b>25.57</b>
190	36.8	0.171	17.02	2.323	43	-10.51	34.13	44.81;	<b>35.71</b>
200	35.27	0.171	20.68	1.905	52.42	-12.17	47.07	65.33;	<b>48.62</b>
210	33.37	0.171	25.43	1.563	63.89	-13.92	63.35	91.68;	<b>64.86</b>
220	30.99	0.171	31.44	1.282	77.89	-15.74	83.66	125.1;	<b>85.13</b>
230	28.02	0.171	38.93	1.052	94.94	-17.62	108.9	167.2;	<b>110.32</b>
232	27.35	0.171	40.64	1.011	98.78	-18	114.6	176.7;	<b>116.00</b>
240	24.34	0.171	48.21	0.863	115.7	-19.54	139.9	219.6;	<b>141.26</b>
241	23.93	0.171	49.25	0.846	118.1	-19.73	143.4	225.5;	<b>144.75</b>

merging;  
acute zone;  
bottom hit;

Const	Eddy conc (%)	Diffusivity dilutn	Farfield width (m)	dispersion distance (m)	based time (hrs)	on (kg/kg)	wastefield (s-1)	width of (s)/(m0.67/s2)	of 46.05 m
0.84251	118.5	46.19	46	0.00306	0	0	0.171	3.00E-04	
0.8432	118.4	46.34	48	0.00631	0	0	0.171	3.00E-04	
0.84364	118.4	46.49	50	0.00956	0	0	0.171	3.00E-04	
0.84396	118.3	46.64	52	0.0128	0	0	0.171	3.00E-04	
0.84419	118.3	46.79	54	0.0161	0	0	0.171	3.00E-04	
0.84438	118.3	46.94	56	0.0193	0	0	0.171	3.00E-04	
0.84453	118.3	47.08	58	0.0226	0	0	0.171	3.00E-04	
0.84465	118.2	47.23	60	0.0258	0	0	0.171	3.00E-04	
0.84476	118.2	47.38	62	0.029	0	0	0.171	3.00E-04	
0.84485	118.2	47.52	64	0.0323	0	0	0.171	3.00E-04	
0.84493	118.2	47.67	66	0.0355	0	0	0.171	3.00E-04	
0.845	118.2	47.82	68	0.0388	0	0	0.171	3.00E-04	
0.84507	118.2	47.96	70	0.042	0	0	0.171	3.00E-04	
0.84512	118.2	48.1	72	0.0453	0	0	0.171	3.00E-04	
<b>0.84518</b>	<b>118.2</b>	<b>48.25</b>	<b>74</b>	<b>0.0485</b>	<b>0</b>	<b>0</b>	<b>0.171</b>	<b>3.00E-04</b>	
0.84522	118.2	48.39	76	0.0518	0	0	0.171	3.00E-04	

chronic zone; plume width at MZB: 158 feet

count: 16

/ UM3.  
**Case 31;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 3:00 -----

Ambient	Table:	Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
		m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
		0	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3
		14	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3

Diffuser	table:	P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
		(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
		0.866	4.3	20	135	10	16	24.3	243	43.2	<b>26.53</b>	1.00E-03	19.5	100

Simulation:	Froude number:	36.17;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	2.124(m/s);
	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time	
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)	
	0	0.171	0.866	100	1	0	0	0.0;	<b>0.00</b>
	10	0.171	1.04	82.03	1.219	-0.258	0.262	0.0623;	<b>0.37</b>
	20	0.171	1.258	67.3	1.485	-0.554	0.571	0.15;	<b>0.80</b>
	30	0.171	1.52	55.21	1.81	-0.893	0.937	0.271;	<b>1.29</b>
	40	0.171	1.834	45.29	2.206	-1.278	1.37	0.44;	<b>1.87</b>
	50	0.171	2.206	37.15	2.689	-1.711	1.88	0.671;	<b>2.54</b>
	60	0.171	2.648	30.48	3.278	-2.192	2.478	0.984;	<b>3.31</b>
	70	0.171	3.167	25	3.995	-2.721	3.178	1.403;	<b>4.18</b>
	80	0.171	3.773	20.51	4.87	-3.296	3.995	1.958;	<b>5.18</b>
	90	0.171	4.476	16.83	5.936	-3.911	4.943	2.683;	<b>6.30</b>
	100	0.171	5.284	13.8	7.236	-4.557	6.03	3.609;	<b>7.56</b>
	110	0.171	6.204	11.32	8.82	-5.225	7.272	4.777;	<b>8.95</b>
	120	0.171	7.242	9.289	10.75	-5.911	8.695	6.239;	<b>10.51</b>
	130	0.171	8.403	7.62	13.11	-6.613	10.33	8.062;	<b>12.27</b>

140	39.26	0.171	9.693	6.251	15.98	-7.332	12.24	10.34;	<b>14.27</b>	
150	38.82	0.171	11.12	5.128	19.47	-8.072	14.5	13.2;	<b>16.60</b>	
160	38.36	0.171	12.68	4.207	23.74	-8.837	17.19	16.8;	<b>19.33</b>	
167	37.99	0.171	13.86	3.662	27.27	-9.423	19.54	20.06;	<b>21.69</b>	merging;
170	37.67	0.171	14.48	3.451	28.94	-9.898	21.59	22.98;	<b>23.75</b>	
171	37.56	0.171	14.71	3.384	29.52	-10.07	22.38	24.11;	<b>24.54</b>	acute zone;
180	36.37	0.171	17.29	2.831	35.27	-11.75	30.5	35.96;	<b>32.69</b>	
190	34.77	0.171	21.21	2.323	43	-13.78	41.96	53.22;	<b>44.16</b>	
200	32.78	0.171	26.37	1.905	52.42	-15.95	56.54	75.8;	<b>58.75</b>	
210	30.32	0.171	32.97	1.563	63.89	-18.24	74.89	104.9;	<b>77.08</b>	
219	27.6	0.171	40.34	1.308	76.36	-20.4	95.28	137.9;	<b>97.44</b>	bottom hit;
220	27.26	0.171	41.25	1.282	77.89	-20.65	97.8	142.0;	<b>99.96</b>	
228	24.3	0.171	49.31	1.094	91.26	-22.63	120	178.5;	<b>122.12</b>	surface;

Const	Eddy conc (%)	Diffusivity dilutn	Farfield width (m)	dispersion distnce (m)	based time (hrs)	on (kg/kg)	wastefield (s-1)	width of (/s)(m0.67/s2)	
1.08931	91.68	46.12	38	0.00124	0	0	0.171	3.00E-04	
1.09031	91.6	46.27	40	0.00449	0	0	0.171	3.00E-04	
1.09105	91.53	46.42	42	0.00774	0	0	0.171	3.00E-04	
1.09154	91.49	46.57	44	0.011	0	0	0.171	3.00E-04	
1.09189	91.46	46.72	46	0.0142	0	0	0.171	3.00E-04	
1.09217	91.44	46.87	48	0.0175	0	0	0.171	3.00E-04	
1.09238	91.42	47.02	50	0.0207	0	0	0.171	3.00E-04	
1.09256	91.41	47.17	52	0.024	0	0	0.171	3.00E-04	
1.09271	91.39	47.31	54	0.0272	0	0	0.171	3.00E-04	
1.09284	91.38	47.46	56	0.0305	0	0	0.171	3.00E-04	
1.09295	91.37	47.61	58	0.0337	0	0	0.171	3.00E-04	
1.09305	91.37	47.75	60	0.037	0	0	0.171	3.00E-04	
1.09314	91.36	47.9	62	0.0402	0	0	0.171	3.00E-04	
1.09322	91.35	48.04	64	0.0435	0	0	0.171	3.00E-04	
1.09329	91.35	48.19	66	0.0467	0	0	0.171	3.00E-04	
1.09335	91.34	48.33	68	0.05	0	0	0.171	3.00E-04	
1.09341	91.34	48.47	70	0.0532	0	0	0.171	3.00E-04	
1.09347	91.33	48.62	72	0.0565	0	0	0.171	3.00E-04	
<b>1.09352</b>	<b>91.33</b>	<b>48.76</b>	<b>74</b>	<b>0.0597</b>	<b>0</b>	<b>0</b>	<b>0.171</b>	<b>3.00E-04</b>	<b>chronic zone;</b>
1.09356	91.32	48.9	76	0.063	0	0	0.171	3.00E-04	

plume width at MZB: **160 feet**

count: 20

/ UM3.  
**Case 42;** ambient file \Plumes\sc7Q10\_floor Diffuser table record 4:00 -----

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3
14	0.171	90	0	10.7	0	0	0.171	90	0.0003	-0.3

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
<b>0.935</b>	4.3	20	135	10	24.3	243	43.2	<b>38.17</b>	1.00E-03	19.5	100

Simulation:

Froude	number:	42.96;	effleunt	density	(sigma-T)	-1.63;	effleunt	velocity	2.622(m/s);
Step	Depth	(ft)	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)	
0	43.2	0.171	0.935	100	1	0	0	0.0;	<b>0.00</b>
10	43.05	0.171	1.124	82.03	1.219	-0.288	0.291	0.0564;	<b>0.41</b>
20	42.88	0.171	1.362	67.3	1.485	-0.622	0.637	0.136;	<b>0.89</b>
30	42.68	0.171	1.648	55.21	1.81	-1.009	1.049	0.249;	<b>1.46</b>
40	42.45	0.171	1.992	45.29	2.206	-1.452	1.538	0.406;	<b>2.12</b>
50	42.19	0.171	2.402	37.15	2.689	-1.957	2.115	0.624;	<b>2.88</b>
60	41.89	0.171	2.891	30.48	3.278	-2.524	2.795	0.923;	<b>3.77</b>
70	41.56	0.171	3.47	25	3.995	-3.156	3.592	1.329;	<b>4.78</b>
80	41.2	0.171	4.152	20.51	4.87	-3.852	4.525	1.874;	<b>5.94</b>
90	40.8	0.171	4.949	16.83	5.936	-4.609	5.613	2.596;	<b>7.26</b>
100	40.37	0.171	5.873	13.8	7.236	-5.423	6.878	3.542;	<b>8.76</b>
110	39.91	0.171	6.937	11.32	8.82	-6.279	8.33	4.755;	<b>10.43</b>
120	39.42	0.171	8.149	9.289	10.75	-7.166	9.989	6.286;	<b>12.29</b>
130	38.92	0.171	9.518	7.62	13.11	-8.078	11.89	8.206;	<b>14.37</b>
140	38.39	0.171	11.05	6.251	15.98	-9.011	14.07	10.6;	<b>16.71</b>
150	37.84	0.171	12.76	5.128	19.47	-9.968	16.62	13.59;	<b>19.38</b>
158	37.37	0.171	14.25	4.377	22.82	-10.75	18.97	16.52;	<b>21.80</b>
160	37.18	0.171	14.66	4.207	23.74	-11.08	20.01	17.86;	<b>22.87</b>
			<b>15.15</b>	<b>24.69</b>	<b>-11.499</b>	<b>21.41</b>	<b>24.30</b>	<b>acute zone;</b>	
163	36.78	0.171	15.41	3.964	25.19	-11.72	22.14	20.63;	<b>25.05</b>
170	35.73	0.171	17.61	3.451	28.94	-13.35	28.01	28.47;	<b>31.03</b>
180	33.94	0.171	21.88	2.831	35.27	-15.92	38.49	43.02;	<b>41.65</b>
190	31.76	0.171	27.62	2.323	43	-18.72	51.86	62.35;	<b>55.14</b>
200	29.09	0.171	35.05	1.905	52.42	-21.71	68.72	87.59;	<b>72.07</b>

Const	Eddy conc (%)	Diffusivity dilutn	Farfield width (m)	dispersion distnce (m)	based time (hrs)	on (kg/kg)	wastefield (s-1)	width of /s)(m0.67/s2)	of	hit;
	209	26.18	0.171	43.45	1.594	62.64	-24.56	87.49	116.5;	90.87 bottom
	210	25.82	0.171	44.5	1.563	63.89	-24.88	89.81	120.1;	93.19
	215	23.91	0.171	50.09	1.416	70.54	-26.52	102.2	139.6;	105.58 surface;
									46.3	m
1.40982	70.84	46.44	34	0.00295	0	0	0.171	3.00E-04		
1.41098	70.78	46.59	36	0.0062	0	0	0.171	3.00E-04		
1.41174	70.74	46.74	38	0.00944	0	0	0.171	3.00E-04		
1.41227	70.71	46.89	40	0.0127	0	0	0.171	3.00E-04		
1.41267	70.69	47.04	42	0.0159	0	0	0.171	3.00E-04		
1.41298	70.68	47.19	44	0.0192	0	0	0.171	3.00E-04		
1.41323	70.67	47.34	46	0.0224	0	0	0.171	3.00E-04		
1.41344	70.66	47.48	48	0.0257	0	0	0.171	3.00E-04		
1.41362	70.65	47.63	50	0.0289	0	0	0.171	3.00E-04		
1.41378	70.64	47.78	52	0.0322	0	0	0.171	3.00E-04		
1.41391	70.63	47.92	54	0.0354	0	0	0.171	3.00E-04		
1.41403	70.63	48.07	56	0.0387	0	0	0.171	3.00E-04		
1.41414	70.62	48.22	58	0.0419	0	0	0.171	3.00E-04		
1.41424	70.62	48.36	60	0.0452	0	0	0.171	3.00E-04		
1.41433	70.61	48.5	62	0.0484	0	0	0.171	3.00E-04		
1.41441	70.61	48.65	64	0.0517	0	0	0.171	3.00E-04		
1.41448	70.6	48.79	66	0.0549	0	0	0.171	3.00E-04		
1.41455	70.6	48.94	68	0.0582	0	0	0.171	3.00E-04		
1.41461	70.6	49.08	70	0.0614	0	0	0.171	3.00E-04		
1.41467	70.59	49.22	72	0.0647	0	0	0.171	3.00E-04		
1.41472	70.59	49.36	74	0.0679	0	0	0.171	3.00E-04	chronic zone;	
1.41477	70.59	49.5	76	0.0712	0	0	0.171	3.00E-04		

plume width at MZB: 162 feet

count:

22

;

10:04:29

AM.

amb

fills:

2

/ UM3. 8/11/2016 10:11:23 AM  
**Case 10;** ambient file \Plumes\scal\_HM\_ebl Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485
14	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (I)	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.644	4.3	20	135	10	16	24.3	243	43.8	7.41	1.00E-03	17.8	100

Simulation:

Froude	number:	27.0;	effleunt	density	(sigma-T)	-1.303;	effleunt	velocity	1.073(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn (I)	x-posn (ft)	y-posn (ft)	Time (s)	
0	43.8	0.594	0.644	100	1	0	0	0.0;	0.00
10	43.76	0.594	0.75	82.03	1.219	-0.0779	0.0851	0.037;	0.12
20	43.72	0.594	0.871	67.3	1.485	-0.15	0.179	0.079;	0.23
30	43.69	0.594	1.003	55.21	1.811	-0.222	0.291	0.13;	0.37
40	43.65	0.594	1.146	45.29	2.207	-0.295	0.426	0.194;	0.52
50	43.61	0.594	1.3	37.15	2.69	-0.371	0.595	0.273;	0.70
60	43.57	0.594	1.466	30.48	3.279	-0.451	0.808	0.376;	0.93
70	43.52	0.594	1.645	25	3.997	-0.536	1.082	0.509;	1.21
80	43.48	0.594	1.839	20.51	4.872	-0.628	1.44	0.685;	1.57
90	43.42	0.594	2.048	16.83	5.939	-0.728	1.912	0.919;	2.05
100	43.37	0.594	2.277	13.8	7.239	-0.837	2.536	1.23;	2.67
110	43.3	0.594	2.527	11.32	8.825	-0.957	3.367	1.646;	3.50
120	43.23	0.594	2.801	9.289	10.76	-1.089	4.474	2.203;	4.60
130	43.15	0.594	3.101	7.62	13.11	-1.234	5.951	2.948;	6.08
140	43.07	0.594	3.432	6.251	15.98	-1.393	7.92	3.945;	8.04
150	42.97	0.594	3.796	5.128	19.48	-1.567	10.55	5.278;	10.67
160	42.86	0.594	4.196	4.207	23.75	-1.758	14.04	7.056;	14.15
170	42.74	0.594	4.638	3.451	28.95	-1.966	18.69	9.423;	18.79
180	42.6	0.594	5.125	2.831	35.29	-2.192	24.85	12.56;	24.95 acute zone;
190	42.44	0.594	5.662	2.323	43.02	-2.438	32.96	16.71;	33.05
200	42.26	0.594	6.254	1.905	52.44	-2.702	43.62	22.15;	43.70
210	42.04	0.594	6.908	1.563	63.93	-2.985	57.51	29.26;	57.59
220	41.8	0.594	7.629	1.282	77.93	-3.286	75.49	38.45;	75.56
230	41.51	0.594	8.425	1.052	94.99	-3.603	98.53	50.25;	98.60
240	41.17	0.594	9.304	0.863	115.8	-3.933	127.8	65.23;	127.86
250	40.76	0.594	10.27	0.708	141.2	-4.272	164.5	84.06;	164.56
260	40.29	0.594	11.35	0.581	172.1	-4.619	210.1	107.4;	210.15
261	40.24	0.594	11.46	0.569	175.5	-4.654	215.3	110.1;	215.35 merging;
265	39.91	0.594	11.90	0.526	188.1	-4.833	242.95	126.4;	243.00 chronic zone; plume width at MZB: 156 feet
270	39.41	0.594	12.75	0.476	190	-4.861	247.2	150.7;	247.25
280	38.25	0.594	14.71	0.391	209.7	-5.143	294.6	205.5;	294.64
290	36.85	0.594	17.26	0.321	255.7	-5.689	401.3	270.4;	401.34
300	35.13	0.594	20.48	0.263	311.7	-6.22	528	348.2;	528.04
310	33.03	0.594	24.51	0.216	379.9	-6.743	679.8	442.1;	679.83
320	30.48	0.594	29.51	0.177	463.1	-7.26	862.9	555.8;	862.93
330	27.36	0.594	35.67	0.145	564.5	-7.774	1084.5	693.7;	1084.53
340	23.56	0.594	43.23	0.119	688.2	-8.285	1353.3	861.3;	1353.33
343	22.26	0.594	45.82	0.112	838.9	-8.794	1680	918.4;	1680.02
343	22.26	0.594	45.82	0.112	890.2	-8.947	1791.2	918.4;	1791.22 surface;

/ UM3.  
**Case 21;** ambient file \Plumes\scal\_HM\_ebl Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485
14	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (I)	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
0.758	4.3	20	135	10	16	24.3	243	43.8	14.67	1.00E-03	17.8	100

Simulation:

Froude	number:	35.57;	effleunt	density	(sigma-T)	-1.303;	effleunt	velocity	1.533(m/s);
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn (I)	x-posn (ft)	y-posn (ft)	Time (s)	
0	43.8	0.594	0.758	100	1	0	0	0.0;	0.00
10	43.74	0.594	0.892	82.03	1.219	-0.125	0.133	0.0416;	0.18
20	43.67	0.594	1.051	67.3	1.485	-0.246	0.28	0.0911;	0.37

30	43.61	0.594	1.23	55.21	1.811	-0.369	0.45	0.152;	<b>0.58</b>										
40	43.55	0.594	1.43	45.29	2.207	-0.493	0.648	0.227;	<b>0.81</b>										
50	43.48	0.594	1.649	37.15	2.69	-0.618	0.88	0.32;	<b>1.08</b>										
60	43.41	0.594	1.89	30.48	3.279	-0.746	1.159	0.435;	<b>1.38</b>										
70	43.35	0.594	2.151	25	3.997	-0.879	1.498	0.581;	<b>1.74</b>										
80	43.27	0.594	2.435	20.51	4.872	-1.019	1.92	0.767;	<b>2.17</b>										
90	43.2	0.594	2.743	16.83	5.939	-1.167	2.454	1.009;	<b>2.72</b>										
100	43.11	0.594	3.077	13.8	7.239	-1.326	3.137	1.326;	<b>3.41</b>										
110	43.02	0.594	3.441	11.32	8.825	-1.499	4.023	1.744;	<b>4.29</b>										
120	42.92	0.594	3.837	9.289	10.76	-1.686	5.181	2.298;	<b>5.45</b>										
130	42.81	0.594	4.27	7.62	13.11	-1.891	6.702	3.034;	<b>6.96</b>										
140	42.69	0.594	4.745	6.251	15.98	-2.114	8.709	4.017;	<b>8.96</b>										
150	42.56	0.594	5.265	5.128	19.48	-2.359	11.36	5.327;	<b>11.60</b>										
160	42.41	0.594	5.836	4.207	23.75	-2.627	14.88	7.075;	<b>15.11</b>										
170	42.25	0.594	6.464	3.451	28.95	-2.92	19.54	9.404;	<b>19.76</b>										
178	42.1	0.594	7.012	2.946	33.92	-3.173	24.34	11.81;	<b>24.55</b>	acute	zone;								
180	42.06	0.594	7.155	2.831	35.29	-3.239	25.71	12.5;	<b>25.91</b>										
190	41.85	0.594	7.916	2.323	43.02	-3.587	33.87	16.61;	<b>34.06</b>										
200	41.61	0.594	8.755	1.905	52.44	-3.964	44.62	22.05;	<b>44.80</b>										
210	41.33	0.594	9.679	1.563	63.93	-4.371	58.72	29.2;	<b>58.88</b>										
220	41.01	0.594	10.7	1.282	77.93	-4.808	77.13	38.55;	<b>77.28</b>										
228	40.72	0.594	11.59	1.094	91.3	-5.178	95.72	48.01;	<b>95.86</b>	merging;									
230	40.6	0.594	11.84	1.052	94.99	-5.325	103.9	52.15;	<b>104.04</b>										
240	39.68	0.594	13.46	0.863	115.8	-6.299	164.6	83.13;	<b>164.72</b>										
250	38.53	0.594	15.65	0.708	141.2	-7.29	239.8	121.5;	<b>239.91</b>										
										<b>15.74</b>	<b>142.2</b>	<b>-7.326</b>	<b>242.89</b>	<b>243.00</b>	chronic	zone;	plume width at MZB:	<b>160</b>	feet

251	38.4	0.594	15.9	0.694	144	-7.389	248.2	125.8;	<b>248.31</b>		
260	37.11	0.594	18.47	0.581	172.1	-8.282	331.5	168.3;	<b>331.60</b>		
270	35.37	0.594	22.03	0.476	209.7	-9.276	443.4	225.5;	<b>443.50</b>		
280	33.23	0.594	26.46	0.391	255.7	-10.27	579.8	295.3;	<b>579.89</b>		
290	30.61	0.594	31.94	0.321	311.7	-11.27	746.1	380.4;	<b>746.19</b>		
300	27.41	0.594	38.7	0.263	379.9	-12.26	948.7	484.2;	<b>948.78</b>		
310	23.48	0.594	46.98	0.216	463.1	-13.26	1195.7	610.7;	<b>1195.77</b>	surface;	

Outside chronic zone

/ UM3.

Case 32; ambient file \Plumes\scal\_HM\_ebl Diffuser table record 3:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485
14	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.813	4.3	20	135	10	16	24.3	243	43.8	<b>20.1</b>	1.00E-03	17.8	100

Simulation:

Froude	number:	40.9;	effleunt	density	(sigma-T)	-1.303;	effleunt	velocity	1.826(m/s);		
Depth	Depth	(ft)	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time		
Step	(ft)	(m/s)	(ft)	(%)	(%)	(ft)	(ft)	(s)			
0	43.8	0.594	0.813	100	1	0	0	0.0;	<b>0.00</b>		
10	43.72	0.594	0.961	82.03	1.219	-0.151	0.159	0.0423;	<b>0.22</b>		
20	43.64	0.594	1.138	67.3	1.485	-0.302	0.338	0.0941;	<b>0.45</b>		
30	43.56	0.594	1.34	55.21	1.811	-0.457	0.543	0.159;	<b>0.71</b>		
40	43.48	0.594	1.568	45.29	2.207	-0.615	0.779	0.239;	<b>0.99</b>		
50	43.4	0.594	1.823	37.15	2.69	-0.774	1.053	0.337;	<b>1.31</b>		
60	43.32	0.594	2.104	30.48	3.279	-0.936	1.374	0.46;	<b>1.66</b>		
70	43.23	0.594	2.413	25	3.997	-1.102	1.757	0.613;	<b>2.07</b>		
80	43.14	0.594	2.749	20.51	4.872	-1.275	2.223	0.807;	<b>2.56</b>		
90	43.05	0.594	3.115	16.83	5.939	-1.456	2.798	1.054;	<b>3.15</b>		
100	42.95	0.594	3.513	13.8	7.239	-1.648	3.521	1.375;	<b>3.89</b>		
110	42.84	0.594	3.946	11.32	8.825	-1.854	4.443	1.794;	<b>4.81</b>		
120	42.72	0.594	4.417	9.289	10.76	-2.076	5.633	2.346;	<b>6.00</b>		
130	42.59	0.594	4.931	7.62	13.11	-2.318	7.18	3.077;	<b>7.54</b>		
140	42.45	0.594	5.492	6.251	15.98	-2.581	9.206	4.048;	<b>9.56</b>		
150	42.3	0.594	6.107	5.128	19.48	-2.869	11.87	5.34;	<b>12.21</b>		
160	42.13	0.594	6.781	4.207	23.75	-3.183	15.38	7.061;	<b>15.71</b>		
170	41.93	0.594	7.521	3.451	28.95	-3.526	20.03	9.354;	<b>20.34</b>		
177	41.79	0.594	8.082	3.004	33.26	-3.785	24.14	11.4;	<b>24.43</b>	acute	zone;
180	41.72	0.594	8.334	2.831	35.29	-3.901	26.17	12.41;	<b>26.46</b>		
190	41.48	0.594	9.229	2.323	43.02	-4.31	34.28	16.46;	<b>34.55</b>		
200	41.2	0.594	10.21	1.905	52.44	-4.754	44.98	21.84;	<b>45.23</b>		
210	40.89	0.594	11.3	1.563	63.93	-5.235	59.05	28.93;	<b>59.28</b>		
214	40.74	0.594	11.76	1.444	69.2	-5.455	66.44	32.67;	<b>66.66</b>	merging;	
220	40.27	0.594	12.63	1.282	77.93	-6.102	90.34	44.76;	<b>90.55</b>		
230	39.29	0.594	14.56	1.052	94.99	-7.299	142	70.96;	<b>142.19</b>		
240	38.07	0.594	17.09	0.863	115.8	-8.543	207.4	104.2;	<b>207.58</b>		

			<b>18.48</b>		<b>126.8</b>	<b>-9.126</b>	<b>242.83</b>		<b>243.00</b>	chronic zone;	plume width at MZB:	<b>162 feet</b>
245	37.36	0.594	18.61	0.782	127.8	-9.18	246.1	123.9;	<b>246.27</b>			
250	36.56	0.594	20.31	0.708	141.2	-9.824	289.2	145.8;	<b>289.37</b>			
260	34.71	0.594	24.36	0.581	172.1	-11.13	390.9	197.7;	<b>391.06</b>			
270	32.42	0.594	29.38	0.476	209.7	-12.46	516.3	261.7;	<b>516.45</b>			
280	29.61	0.594	35.58	0.391	255.7	-13.79	670.6	340.5;	<b>670.74</b>			
290	26.16	0.594	43.2	0.321	311.7	-15.14	859.6	437.1;	<b>859.73</b>			
296	23.73	0.594	48.57	0.285	351	-15.95	992.7	505.2;	<b>992.83</b>	surface;		

Outside chronic zone

/ UM3.

**Case 43;** ambient file \Plumes\scal\_HM\_ebl Diffuser table record 4:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485
14	0.594	90	0	12.4	0	0	0.594	90	0.0003	-0.485

Diffuser table:

P-dia (ft)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	Spacing (ft)	AcuteMZ (ft)	ChrcMZ (ft)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (%)
<b>0.882</b>	4.3	20	135	10	16	24.3	243	43.8	<b>28.92</b>	1.00E-03	17.8	100

Simulation:

Froude number:	48.01;	effleunt	density	(sigma-T)	-1.303;	effleunt	velocity	2.232(m/s);		
Step	Depth (ft)	Amb-cur (m/s)	P-dia (ft)	Polutnt (%)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)		
0	43.8	0.594	0.882	100	1	0	0	0.0;	<b>0.00</b>	
10	43.71	0.594	1.046	82.03	1.219	-0.182	0.191	0.0418;	<b>0.26</b>	
20	43.61	0.594	1.246	67.3	1.485	-0.372	0.408	0.0949;	<b>0.55</b>	
30	43.51	0.594	1.476	55.21	1.811	-0.571	0.659	0.163;	<b>0.87</b>	
40	43.4	0.594	1.74	45.29	2.207	-0.775	0.948	0.248;	<b>1.22</b>	
50	43.29	0.594	2.037	37.15	2.69	-0.984	1.279	0.354;	<b>1.61</b>	
60	43.18	0.594	2.37	30.48	3.279	-1.197	1.663	0.485;	<b>2.05</b>	
70	43.07	0.594	2.74	25	3.997	-1.413	2.111	0.648;	<b>2.54</b>	
80	42.96	0.594	3.146	20.51	4.872	-1.636	2.642	0.853;	<b>3.11</b>	
90	42.84	0.594	3.591	16.83	5.939	-1.866	3.283	1.111;	<b>3.78</b>	
100	42.71	0.594	4.076	13.8	7.239	-2.108	4.071	1.44;	<b>4.58</b>	
110	42.58	0.594	4.604	11.32	8.825	-2.364	5.055	1.866;	<b>5.58</b>	
120	42.43	0.594	5.178	9.289	10.76	-2.638	6.301	2.422;	<b>6.83</b>	
130	42.28	0.594	5.804	7.62	13.11	-2.932	7.9	3.151;	<b>8.43</b>	
140	42.11	0.594	6.488	6.251	15.98	-3.252	9.969	4.115;	<b>10.49</b>	
150	41.92	0.594	7.234	5.128	19.48	-3.599	12.67	5.393;	<b>13.17</b>	
160	41.72	0.594	8.051	4.207	23.75	-3.978	16.2	7.091;	<b>16.68</b>	
170	41.49	0.594	8.946	3.451	28.95	-4.392	20.86	9.351;	<b>21.32</b>	
176	41.34	0.594	9.525	3.065	32.6	-4.658	24.33	11.05;	<b>24.77</b>	acute zone;
180	41.23	0.594	9.929	2.831	35.29	-4.843	26.99	12.36;	<b>27.42</b>	
190	40.95	0.594	11.01	2.323	43.02	-5.336	35.07	16.36;	<b>35.47</b>	
198	40.7	0.594	11.95	1.982	50.41	-5.761	43.36	20.48;	<b>43.74</b>	merging;
200	40.59	0.594	12.22	1.905	52.44	-5.943	47.26	22.42;	<b>47.63</b>	
210	39.73	0.594	13.97	1.563	63.93	-7.269	79.27	38.44;	<b>79.60</b>	
220	38.65	0.594	16.36	1.282	77.93	-8.747	122.5	60.17;	<b>122.81</b>	
230	37.31	0.594	19.43	1.052	94.99	-10.34	179	88.68;	<b>179.30</b>	

			<b>22.83</b>		<b>113.2</b>	<b>-11.829</b>	<b>242.71</b>		<b>243.00</b>	chronic zone;	plume width at MZB:	<b>167 feet</b>
239	35.85	0.594	22.88	0.88	113.5	-11.85	243.6	121.4;	<b>243.89</b>			
240	35.67	0.594	23.31	0.863	115.8	-12.02	251.7	125.5;	<b>251.99</b>			
250	33.63	0.594	28.15	0.708	141.2	-13.78	343.8	172.2;	<b>344.08</b>			
259	31.4	0.594	33.47	0.592	168.7	-15.41	446.7	224.5;	<b>446.97</b>	bottom hit;		
260	31.12	0.594	34.13	0.581	172.1	-15.59	459.4	230.9;	<b>459.66</b>			
270	28.04	0.594	41.49	0.476	209.7	-17.44	603	304.1;	<b>603.25</b>			
279	24.66	0.594	49.53	0.399	250.7	-19.13	761.1	384.7;	<b>761.34</b>	surface;		

Outside chronic zone

; AM.

10:11:23 AM. amb fills: 2



/ UM3. 8/11/2016 10:29:48 AM  
**Case 11;** ambient file :\\Plumes\\scal\_30Q5\_eb Diffuser table record 1:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485
14	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.658	4.3	20	135	10	16	24.3	243	42.7	8.07	1.00E-03	17.8	100

Simulation:

Froude	number:	27.87;	effleunt	density	(sigma-T)	-1.303;	effleunt	velocity	1.119(m/s);		
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time			
(ft)	(m/s)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(s)			
0	42.7	0.32	0.658	100	1	0	0	0.0;	0.00		
10	42.63	0.32	0.779	82.03	1.219	-0.131	0.138	0.06;	0.19		
20	42.56	0.32	0.927	67.3	1.485	-0.266	0.294	0.135;	0.40		
30	42.49	0.32	1.096	55.21	1.811	-0.406	0.474	0.231;	0.62		
40	42.42	0.32	1.288	45.29	2.207	-0.55	0.68	0.35;	0.87		
50	42.34	0.32	1.504	37.15	2.69	-0.695	0.918	0.497;	1.15		
60	42.26	0.32	1.745	30.48	3.279	-0.843	1.194	0.679;	1.46		
70	42.18	0.32	2.012	25	3.997	-0.994	1.518	0.906;	1.81		
80	42.1	0.32	2.304	20.51	4.872	-1.15	1.905	1.191;	2.23		
90	42.02	0.32	2.623	16.83	5.939	-1.311	2.376	1.552;	2.71		
100	41.93	0.32	2.97	13.8	7.239	-1.481	2.958	2.014;	3.31		
110	41.83	0.32	3.347	11.32	8.825	-1.661	3.69	2.613;	4.05		
120	41.73	0.32	3.759	9.289	10.76	-1.855	4.621	3.395;	4.98		
130	41.61	0.32	4.207	7.62	13.11	-2.063	5.819	4.423;	6.17		
140	41.49	0.32	4.696	6.251	15.98	-2.288	7.37	5.778;	7.72		
150	41.35	0.32	5.23	5.128	19.48	-2.532	9.389	7.569;	9.72		
160	41.19	0.32	5.816	4.207	23.75	-2.797	12.03	9.937;	12.35		
170	41.01	0.32	6.458	3.451	28.95	-3.084	15.47	13.06;	15.77		
180	40.81	0.32	7.164	2.831	35.29	-3.395	19.98	17.18;	20.27		
188	40.63	0.32	7.778	2.416	41.35	-3.66	24.54	21.39;	24.81		
190	40.58	0.32	7.939	2.323	43.02	-3.729	25.84	22.59;	26.11		
200	40.31	0.32	8.792	1.905	52.44	-4.086	33.45	29.65;	33.70		
210	40.01	0.32	9.731	1.563	63.93	-4.467	43.27	38.79;	43.50		
220	39.64	0.32	10.77	1.282	77.93	-4.868	55.84	50.55;	56.05		
228	39.31	0.32	11.67	1.094	91.3	-5.202	68.3	62.24;	68.50		
230	39.17	0.32	11.92	1.052	94.99	-5.326	73.42	67.05;	73.61		
240	38.21	0.32	13.58	0.863	115.8	-6.099	109.2	100.7;	109.37		
250	37.02	0.32	15.81	0.708	141.2	-6.866	152.4	141.4;	152.55		
260	35.54	0.32	18.69	0.581	172.1	-7.625	204.3	190.4;	204.44		
			20.92		195.2	-8.102	242.86	243.00	chronic zone;	plume width at MZB;	165 feet
267	34.31	0.32	21.15	0.506	197.6	-8.152	246.9	230.8;	247.03		
270	33.73	0.32	22.32	0.476	209.7	-8.378	267	249.8;	267.13		
280	31.5	0.32	26.85	0.391	255.7	-9.127	343.1	321.8;	343.22		
290	28.77	0.32	32.46	0.321	311.7	-9.875	435.4	409.4;	435.51		
300	25.43	0.32	39.35	0.263	379.9	-10.62	547.6	515.9;	547.70		
308	22.22	0.32	45.98	0.224	445.1	-11.22	654.7	617.5;	654.80	surface;	

Outside chronic zone

/ UM3.  
**Case 22;** ambient file :\\Plumes\\scal\_30Q5\_eb Diffuser table record 2:00 -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485
14	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.759	4.3	20	135	10	16	24.3	243	42.7	14.82	1.00E-03	17.8	100

Simulation:

Froude	number:	35.81;	effleunt	density	(sigma-T)	-1.303;	effleunt	velocity	1.545(m/s);
Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time	
(ft)	(m/s)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(s)	
0	42.7	0.32	0.759	100	1	0	0	0.0;	0.00
10	42.61	0.32	0.904	82.03	1.219	-0.175	0.181	0.0579;	0.25
20	42.51	0.32	1.082	67.3	1.485	-0.362	0.389	0.134;	0.53
30	42.41	0.32	1.29	55.21	1.811	-0.564	0.633	0.233;	0.85
40	42.3	0.32	1.531	45.29	2.207	-0.779	0.917	0.363;	1.20
50	42.18	0.32	1.807	37.15	2.69	-1.002	1.242	0.526;	1.60
60	42.06	0.32	2.121	30.48	3.279	-1.231	1.615	0.731;	2.03
70	41.94	0.32	2.475	25	3.997	-1.465	2.043	0.986;	2.51
80	41.82	0.32	2.869	20.51	4.872	-1.705	2.541	1.303;	3.06
90	41.69	0.32	3.304	16.83	5.939	-1.95	3.126	1.7;	3.68
100	41.55	0.32	3.783	13.8	7.239	-2.203	3.825	2.199;	4.41
110	41.41	0.32	4.306	11.32	8.825	-2.467	4.673	2.834;	5.28
120	41.26	0.32	4.877	9.289	10.76	-2.745	5.72	3.649;	6.34

130	41.1	0.32	5.5	7.62	13.11	-3.04	7.031	4.704;	<b>7.66</b>				
140	40.93	0.32	6.178	6.251	15.98	-3.356	8.694	6.081;	<b>9.32</b>				
150	40.74	0.32	6.918	5.128	19.48	-3.696	10.82	7.887;	<b>11.43</b>				
160	40.53	0.32	7.727	4.207	23.75	-4.063	13.57	10.26;	<b>14.17</b>				
170	40.3	0.32	8.611	3.451	28.95	-4.46	17.14	13.4;	<b>17.71</b>				
180	40.03	0.32	9.58	2.831	35.29	-4.89	21.77	17.53;	<b>22.31</b>				
184	39.92	0.32	9.993	2.616	38.2	-5.071	23.99	19.53;	<b>24.52</b>		acute	zone;	
190	39.73	0.32	10.64	2.323	43.02	-5.353	27.8	22.97;	<b>28.31</b>				
200	39.39	0.32	11.81	1.905	52.44	-5.852	35.63	30.11;	<b>36.11</b>				
202	39.32	0.32	12.06	1.831	54.56	-5.956	37.46	31.78;	<b>37.93</b>		merging;		
210	38.68	0.32	13.34	1.563	63.93	-6.796	53.77	46.76;	<b>54.20</b>				
220	37.62	0.32	15.53	1.282	77.93	-7.99	81.2	72.1;	<b>81.59</b>				
230	36.29	0.32	18.39	1.052	94.99	-9.228	115.7	104.1;	<b>116.07</b>				
240	34.65	0.32	22.04	0.863	115.8	-10.5	158.7	144.2;	<b>159.05</b>				
250	32.61	0.32	26.61	0.708	141.2	-11.79	211.9	194.1;	<b>212.23</b>				
<b>255</b>	<b>31.42</b>	<b>0.32</b>	<b>29.29</b>	<b>0.641</b>	<b>155.8</b>	<b>-12.45</b>	<b>242.9</b>	<b>223.2;</b>	<b>243.22</b>	<b>chronic</b>	<b>zone;</b>	<b>plume width at MZB:</b>	<b>173 feet</b>
260	30.1	0.32	32.27	0.581	172.1	-13.11	277.3	255.6;	<b>277.61</b>				
270	26.99	0.32	39.25	0.476	209.7	-14.43	357.7	331.2;	<b>357.99</b>				
279	23.59	0.32	46.87	0.399	250.7	-15.63	445.3	413.9;	<b>445.57</b>		bottom	hit;	
280	23.18	0.32	47.81	0.391	255.7	-15.76	456	424.0;	<b>456.27</b>		surface;		

Outside chronic zone

/ UM3.  
**Case 33;** ambient file :\\Plumes\scal\_30Q5\_eb Diffuser table record 3:00 -----

Ambient	Table:												
	Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density		
	m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T		
	0	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485		
	14	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485		

Diffuser	table:												
	P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
	(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
	0.816	4.3	20	135	10	16	24.3	243	42.7	<b>20.3</b>	1.00E-03	17.8	100

Simulation:

Froude	number:	40.93;	effluent	density	(sigma-T)	-1.303;	effluent	velocity	1.831(m/s);					
	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time						
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)						
	0	42.7	0.32	0.816	100	1	0	0.0;	<b>0.00</b>					
	10	42.6	0.32	0.974	82.03	1.219	-0.2	0.206	0.0559;	<b>0.29</b>				
	20	42.49	0.32	1.169	67.3	1.485	-0.417	0.444	0.13;	<b>0.61</b>				
	30	42.36	0.32	1.398	55.21	1.811	-0.655	0.723	0.229;	<b>0.98</b>				
	40	42.23	0.32	1.666	45.29	2.207	-0.913	1.05	0.36;	<b>1.39</b>				
	50	42.09	0.32	1.976	37.15	2.69	-1.186	1.429	0.529;	<b>1.86</b>				
	60	41.94	0.32	2.332	30.48	3.279	-1.47	1.864	0.743;	<b>2.37</b>				
	70	41.79	0.32	2.737	25	3.997	-1.763	2.362	1.012;	<b>2.95</b>				
	80	41.63	0.32	3.191	20.51	4.872	-2.063	2.935	1.348;	<b>3.59</b>				
	90	41.47	0.32	3.698	16.83	5.939	-2.369	3.6	1.766;	<b>4.31</b>				
	100	41.31	0.32	4.259	13.8	7.239	-2.684	4.382	2.29;	<b>5.14</b>				
	110	41.13	0.32	4.876	11.32	8.825	-3.009	5.315	2.95;	<b>6.11</b>				
	120	40.95	0.32	5.551	9.289	10.76	-3.349	6.447	3.79;	<b>7.26</b>				
	130	40.76	0.32	6.288	7.62	13.11	-3.706	7.842	4.868;	<b>8.67</b>				
	140	40.55	0.32	7.092	6.251	15.98	-4.086	9.588	6.265;	<b>10.42</b>				
	150	40.33	0.32	7.968	5.128	19.48	-4.492	11.8	8.086;	<b>12.63</b>				
	160	40.08	0.32	8.925	4.207	23.75	-4.929	14.63	10.47;	<b>15.44</b>				
	170	39.81	0.32	9.97	3.451	28.95	-5.401	18.27	13.61;	<b>19.05</b>				
	180	39.5	0.32	11.11	2.831	35.29	-5.91	22.99	17.75;	<b>23.74</b>				
	182	39.44	0.32	11.35	2.721	36.72	-6.017	24.09	18.72;	<b>24.83</b>		acute	zone;	
	190	39.15	0.32	12.37	2.323	43.02	-6.48	29.36	23.41;	<b>30.07</b>		merging;		
	200	38.28	0.32	14.15	1.905	52.44	-7.749	46.41	38.77;	<b>47.05</b>				
	210	37.17	0.32	16.65	1.563	63.93	-9.176	69.49	59.75;	<b>70.09</b>				
	220	35.79	0.32	19.9	1.282	77.93	-10.7	99.34	87.11;	<b>99.91</b>				
	230	34.07	0.32	24.02	1.052	94.99	-12.31	137.4	122.2;	<b>137.95</b>				
	240	31.94	0.32	29.18	0.863	115.8	-13.98	185.3	166.7;	<b>185.83</b>				
	249	29.59	0.32	34.86	0.722	138.4	-15.52	238.5	216.2;	<b>239.00</b>		bottom	hit;	
				<b>35.29</b>		<b>140.1</b>	<b>-15.631</b>	<b>242.50</b>		<b>243.00</b>	<b>chronic</b>	<b>zone;</b>	<b>plume width at MZB:</b>	<b>179 feet</b>
	250	29.3	0.32	35.56	0.708	141.2	-15.7	245	222.4;	<b>245.50</b>				
	260	26.03	0.32	43.42	0.581	172.1	-17.45	319	291.6;	<b>319.48</b>				
	266	23.71	0.32	48.96	0.516	193.8	-18.51	371.4	340.8;	<b>371.86</b>		surface;		

Outside chronic zone

/ UM3.  
**Case 44;** ambient file :\\Plumes\scal\_30Q5\_eb Diffuser table record 4:00 -----

Ambient	Table:												
	Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density		
	m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T		
	0	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485		
	14	0.32	90	0	12.4	0	0	0.32	90	0.0003	-0.485		

Diffuser	table:												
	<b>P-dia</b>	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrcMZ	P-depth	<b>Ttl-flo</b>	Eff-sal	Temp	Polutnt
	<b>(ft)</b>	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(ft)	<b>(MGD)</b>	(psu)	(C)	(%)
	<b>0.884</b>	4.3	20	135	10	16	24.3	243	42.7	<b>29.21</b>	1.00E-03	17.8	100

