Chalk Point Oil Spill of April 7, 2000 in Patuxent River, MD: Modeling of the Fates and Acute Biological Effects of the Spilled Oil on the Water Column

Appendices

by

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Report to:

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Columbia, SC

For Submission to:

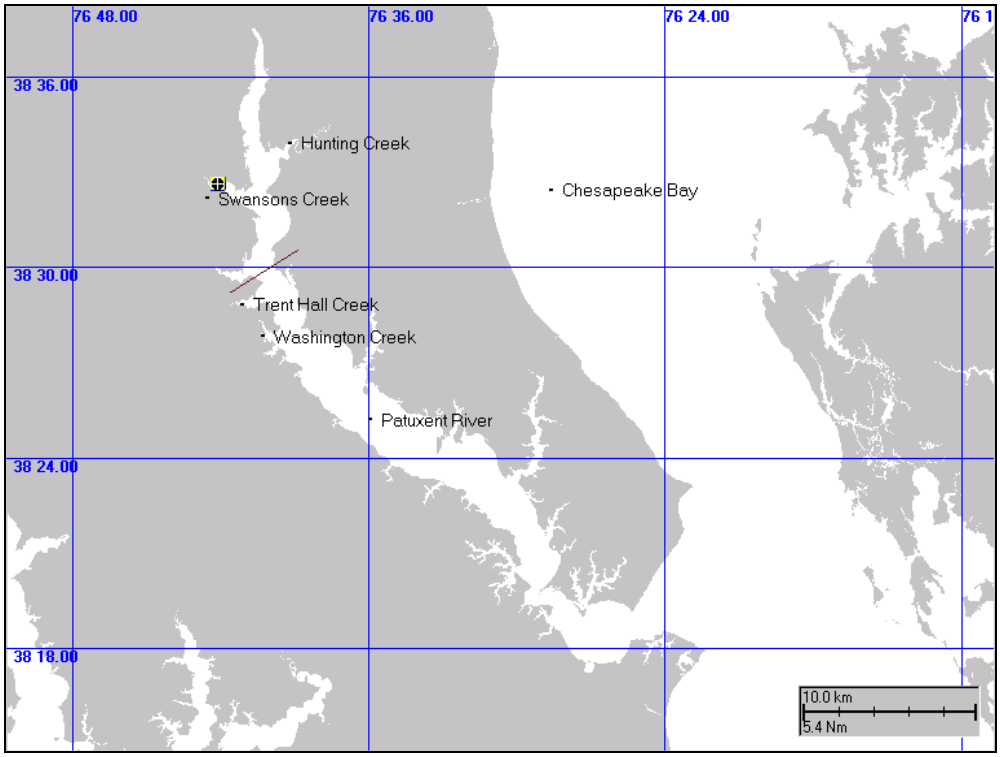
NOAA Damage Assessment Center
Silver Spring, MD

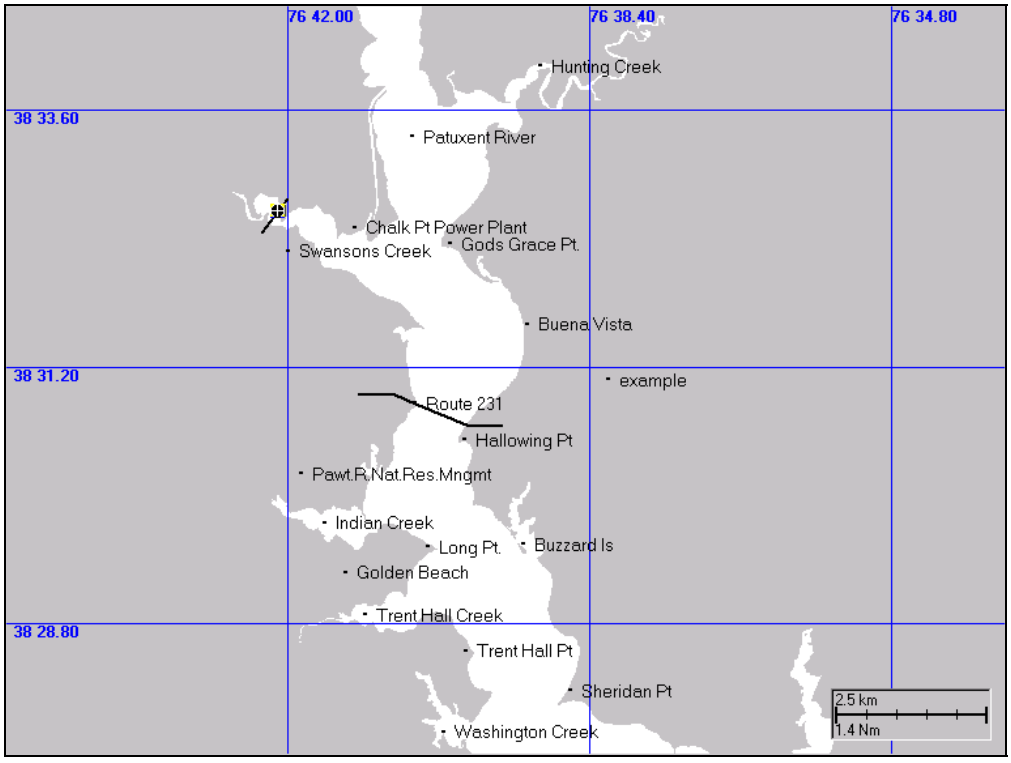
ASA 00-148

April 2002

Appendix A: Geographical Data

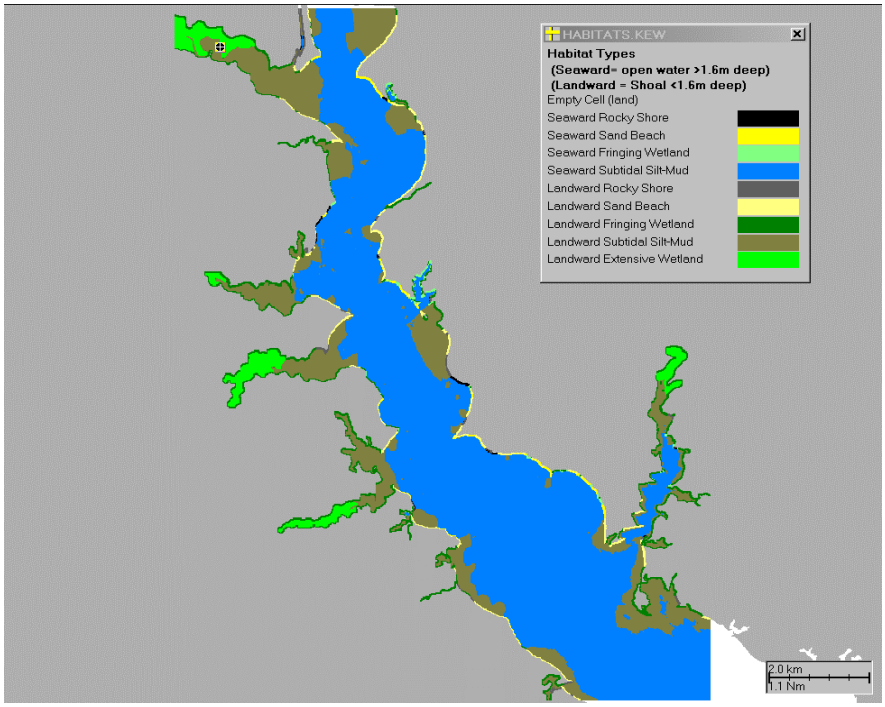
A-1. Map of the Vicinity of the Spill

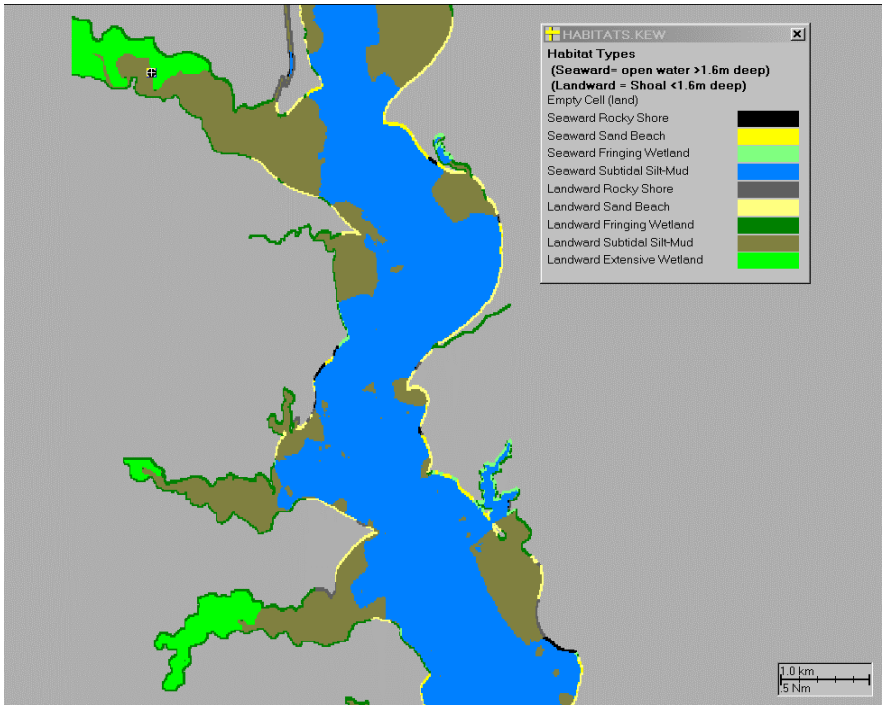




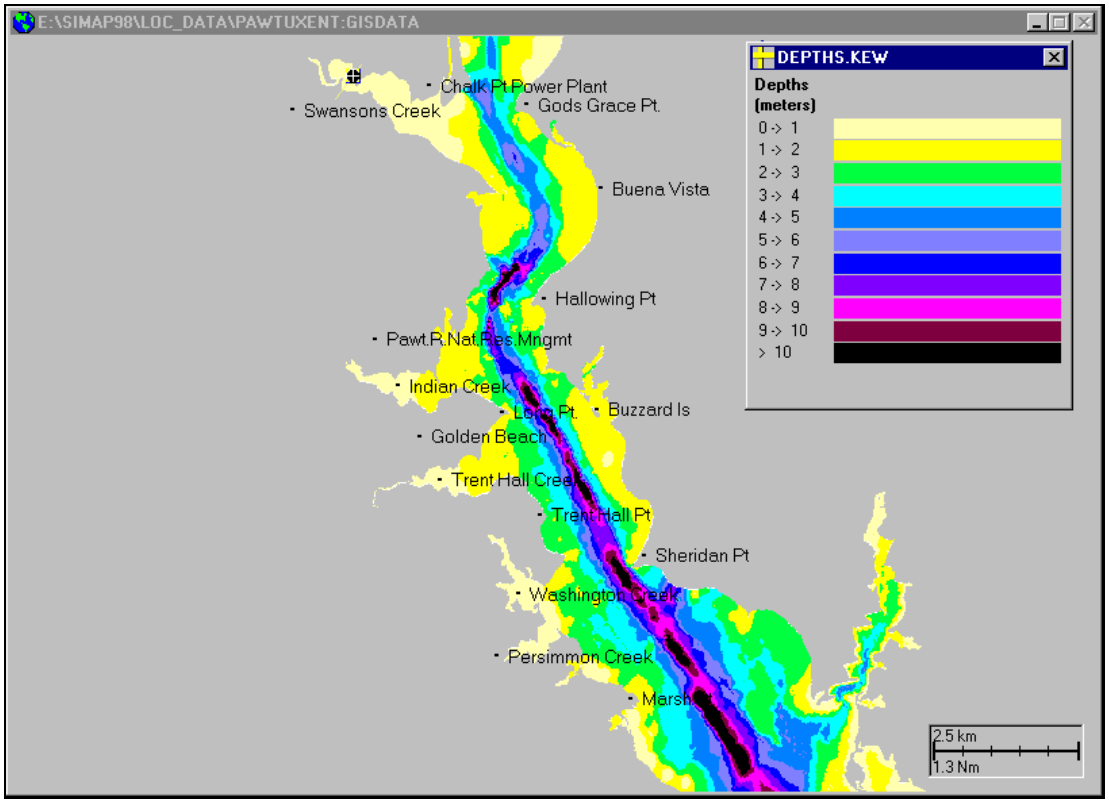
A-2. Gridded Habitat Mapping

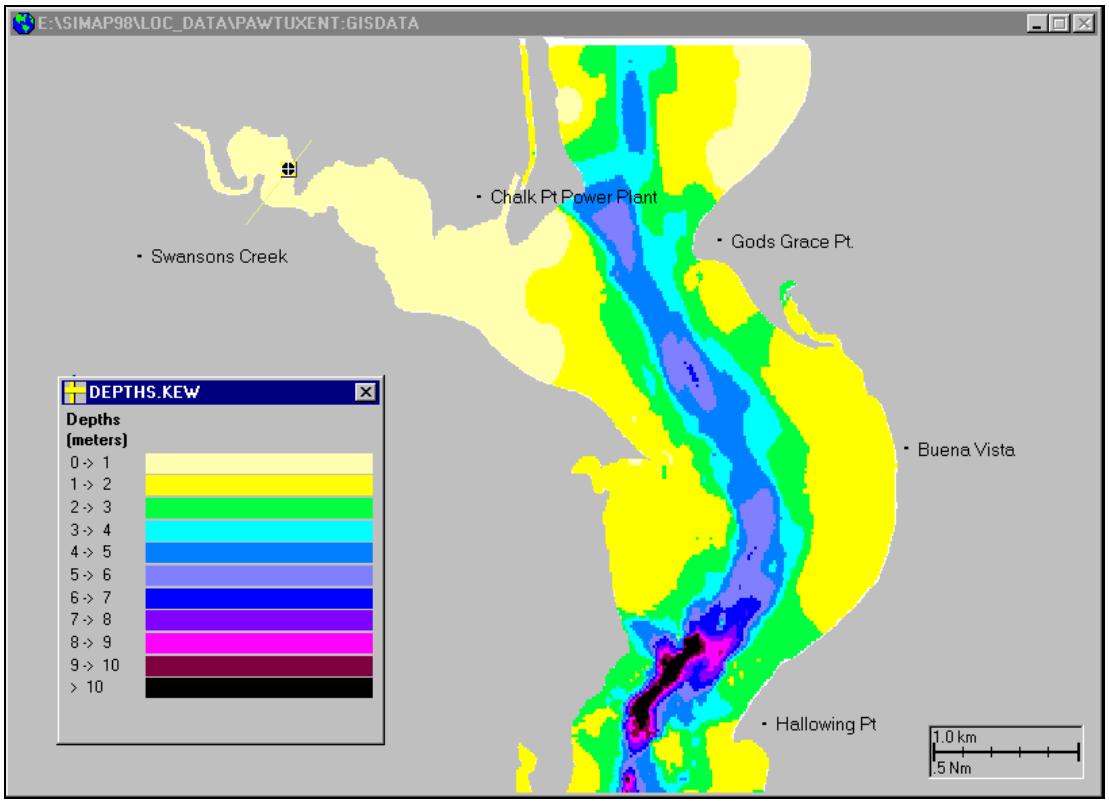
The figures show the mapping of shoreline and habitats used in the model simulations. Note that the shoreline shown in Appendix A and in model outputs are for visual reference only, whereas the habitat (and corresponding depth) grid defines the actual shoreline to the model.

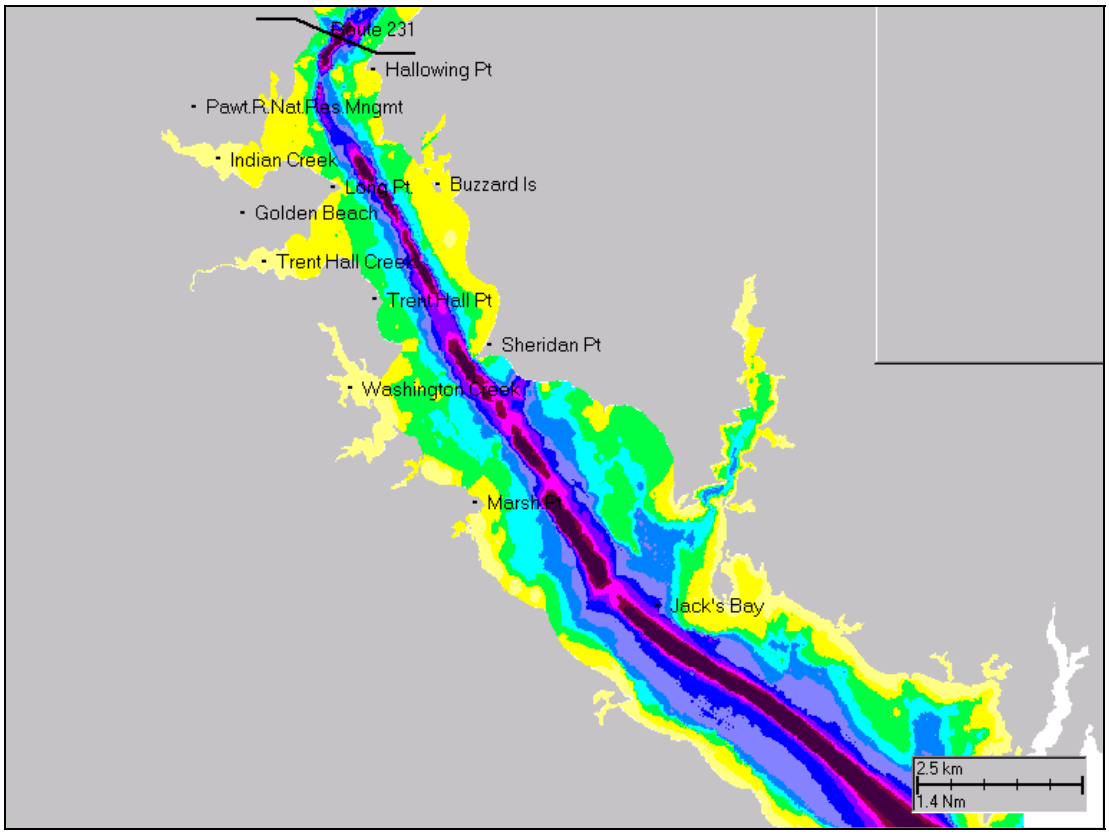




A-3. Gridded Depth Data





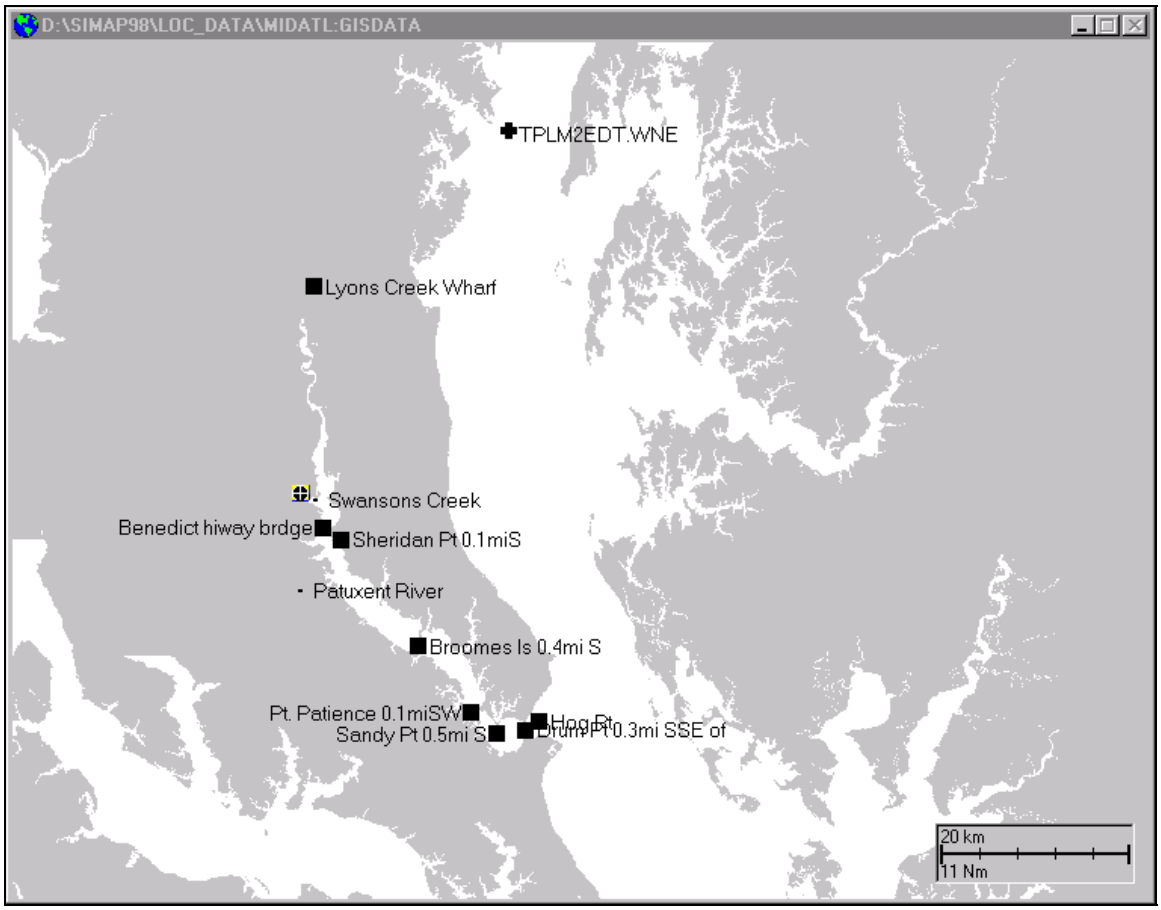

Route 231
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
2.5 km
1.4 Nm

Appendix B: Current Data for the Area and Time of the Spill Event

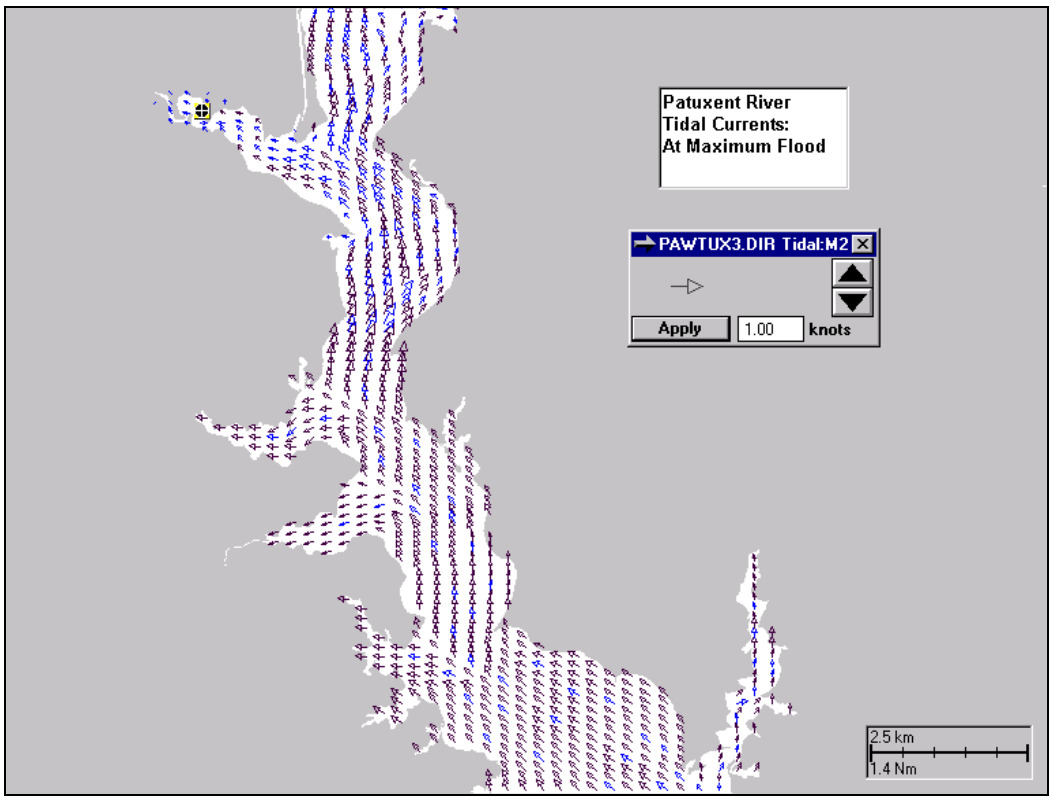
B-1. Tidal Current and Wind Stations

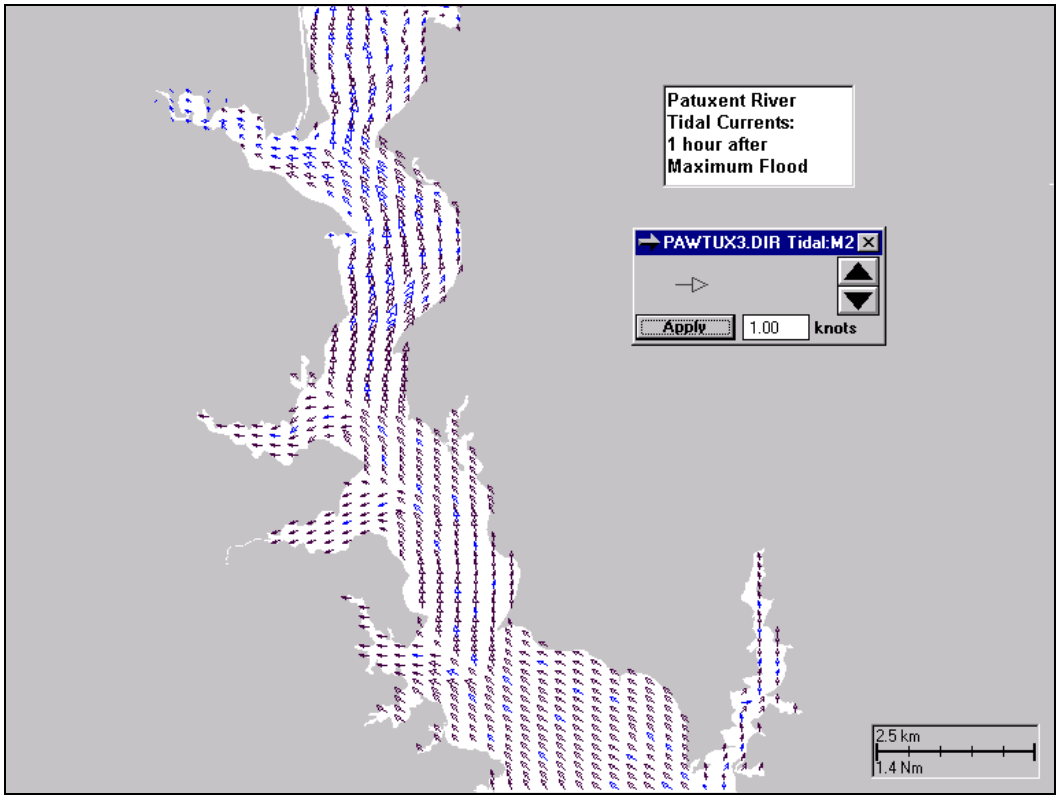
Vectors (speed and direction) of maximum flood currents are available from the commercially available Tides & Currents program at the stations mapped. These data were interpolated to develop a spatially complete map of maximum flood current in all areas of the Patuxent River. The model assumes that maximum ebb current is equal in speed and 180 degrees opposite. Speed changes proportionately between maximum flood and maximum ebb.

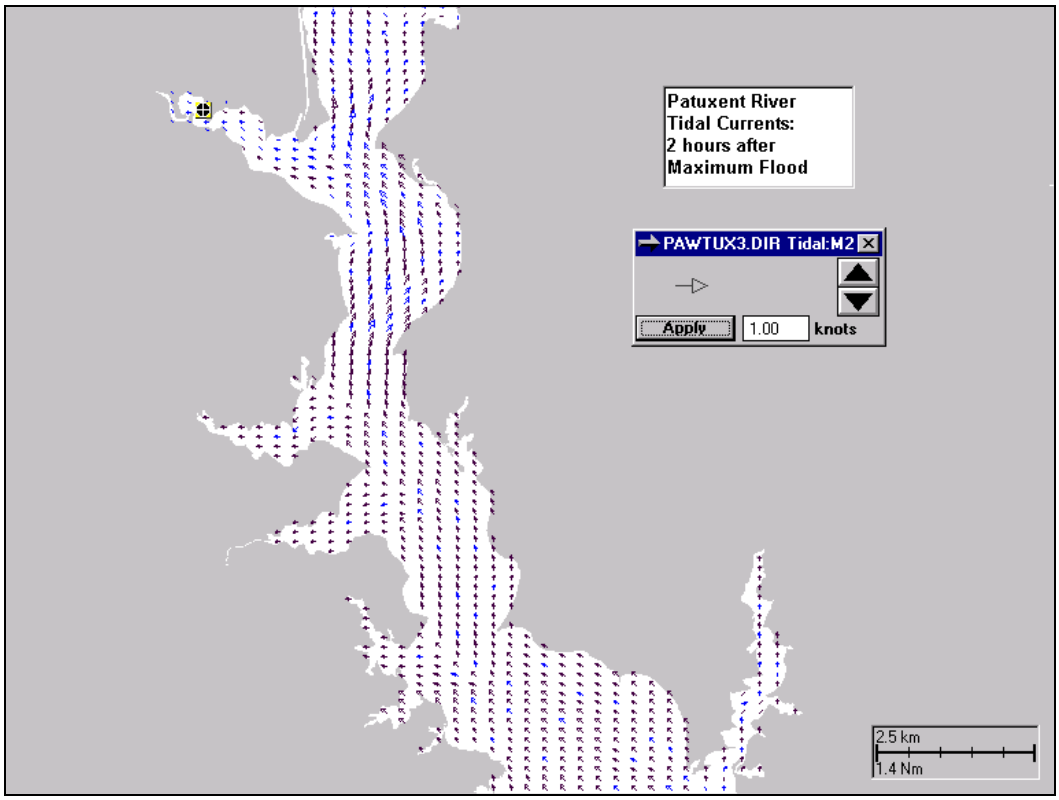
TPLM2EDT.WNE is the wind station where hourly wind speed and direction data were obtained (Appendix C).

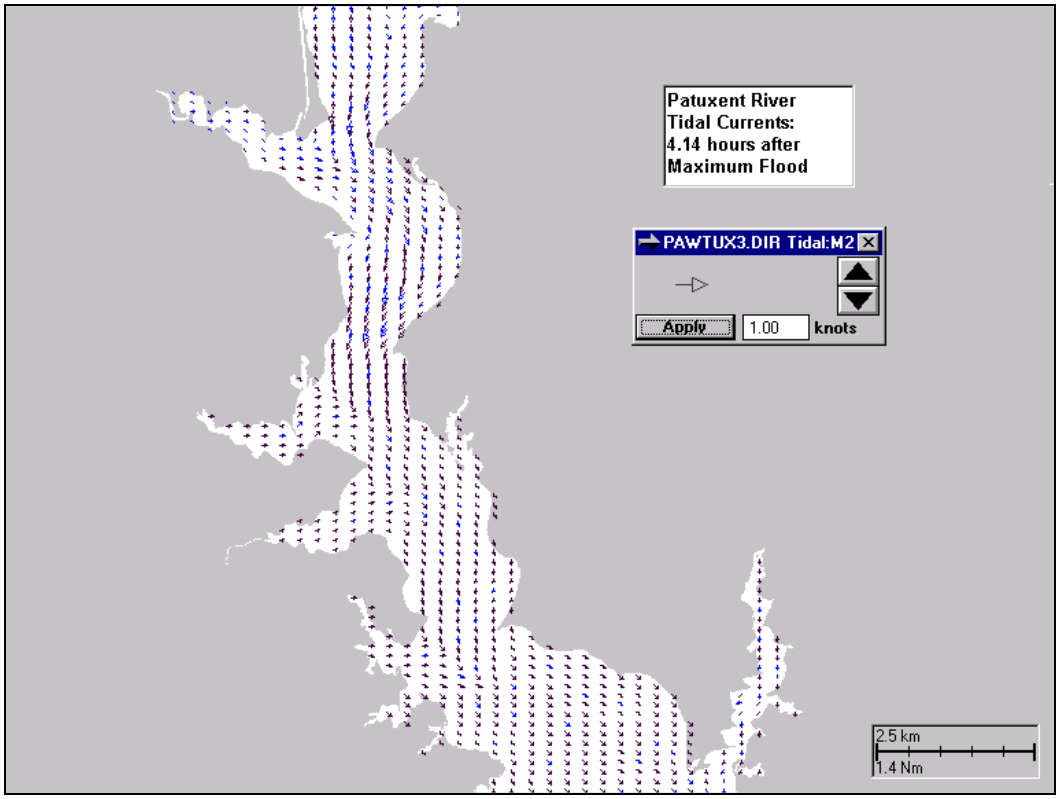


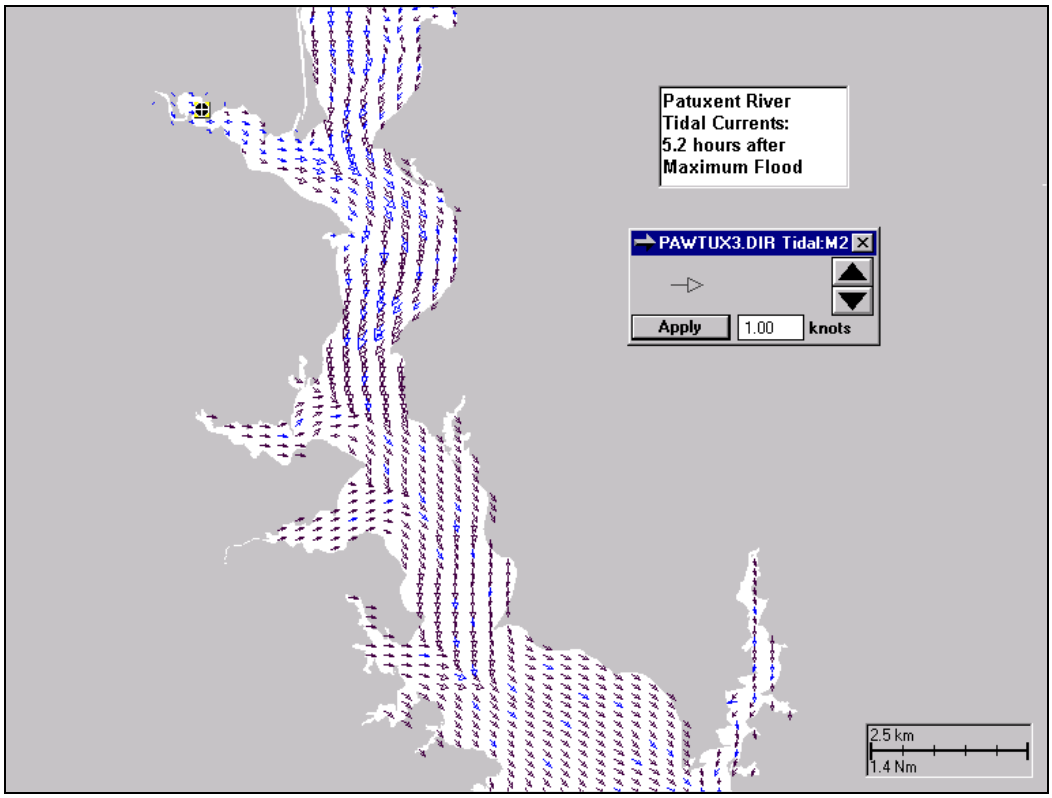
B-2. Current Vectors Used in the Simulations

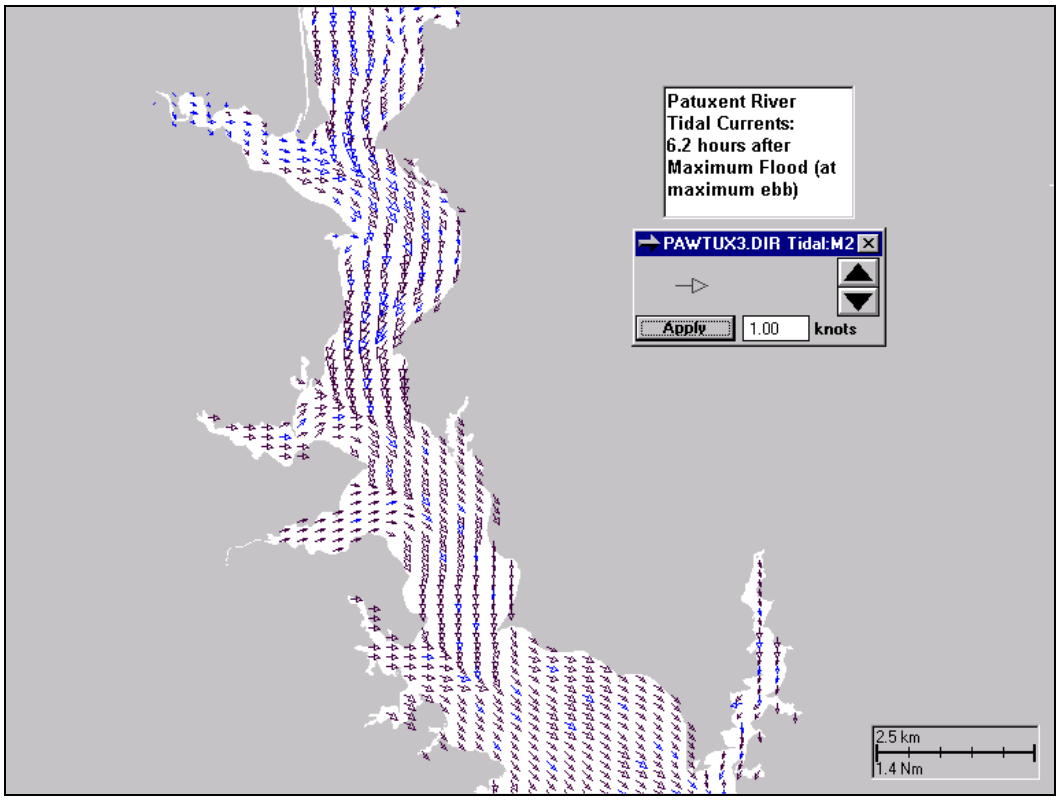


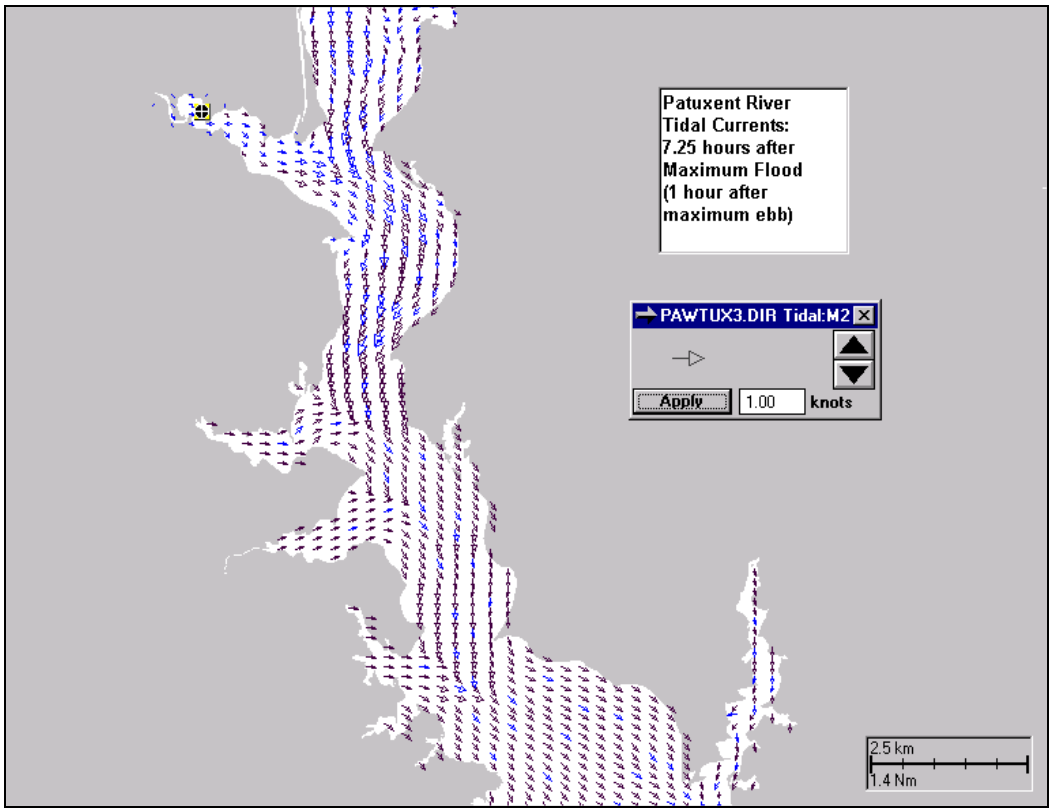


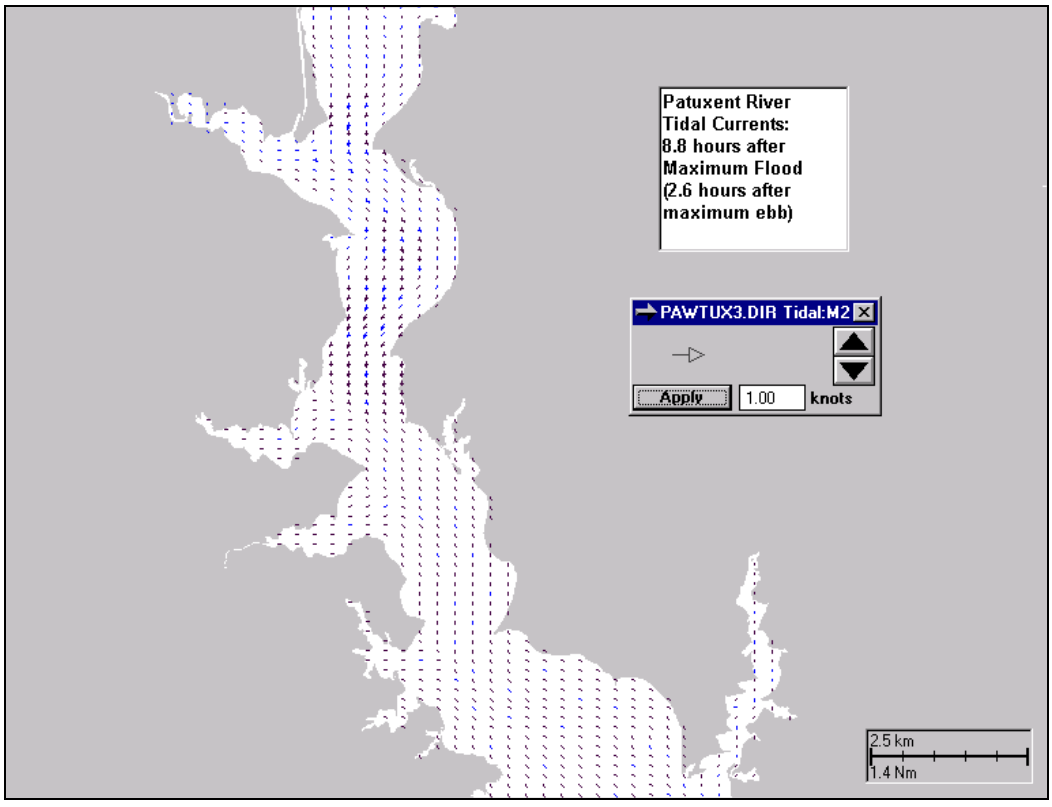

Patuxent River
Tidal Currents:
2 hours after
Maximum Flood
PAWTUX3.DIR Tidal:M2
Apply
1.00
knots
2.5 km
1.4 Nm


Patuxent River
Tidal Currents:
4.14 hours after
Maximum Flood
PAWTUX3.DIR Tidal:M2
Apply
1.00
knots
2.5 km
1.4 Nm


Patuxent River
Tidal Currents:
5.2 hours after
Maximum Flood
PAWTUX3.DIR Tidal:M2
Apply
1.00
knots
2.5 km
1.4 Nm


Patuxent River
Tidal Currents:
6.2 hours after
Maximum Flood (at
maximum ebb)
PAWTUX3.DIR Tidal:M2
Apply
1.00
knots
2.5 km
1.4 Nm


Patuxent River
Tidal Currents:
7.25 hours after
Maximum Flood
(1 hour after
maximum ebb)
PAWTUX3.DIR Tidal:M2
Apply
1.00
knots
2.5 km
1.4 Nm


Patuxent River
Tidal Currents:
8.8 hours after
Maximum Flood
(2.6 hours after
maximum ebb)
PAWTUX3.DIR Tidal:M2
Apply
1.00
knots
2.5 km
1.4 Nm

Appendix C: Hourly Wind Speed and Direction used for the Simulation.

38.90° N 76.44° W
TPLM2 - Thomas Point, MD
Eastern Daylight Time

Year	Month	Day	Hour	Dir.	m/sec
2000	4	7	0	314	9.8
2000	4	7	1	307	13.2
2000	4	7	2	313	8.6
2000	4	7	3	304	11.2
2000	4	7	4	311	6.4
2000	4	7	5	351	7.6
2000	4	7	6	16	3.6
2000	4	7	7	52	6.8
2000	4	7	8	62	9.2
2000	4	7	9	112	4.6
2000	4	7	10	119	9.6
2000	4	7	11	86	5
2000	4	7	12	251	2.6
2000	4	7	13	350	1.8
2000	4	7	14	149	6.4
2000	4	7	15	181	13.8
2000	4	7	16	184	16.6
2000	4	7	17	181	14.6
2000	4	7	19	134	10.4
2000	4	7	20	147	12.6
2000	4	7	21	141	10.6
2000	4	7	22	145	9.6
2000	4	7	23	150	19.6
2000	4	8	0	168	19.2
2000	4	8	1	167	23
2000	4	8	2	177	18
2000	4	8	3	186	19.8
2000	4	8	4	175	19
2000	4	8	5	178	18.2
2000	4	8	6	170	18.4
2000	4	8	7	175	23
2000	4	8	8	174	23
2000	4	8	9	164	24.4
2000	4	8	10	164	24.2
2000	4	8	11	165	25.6
2000	4	8	12	161	23.8

2000	4	8	13	159	23.2
2000	4	8	14	154	23.8
2000	4	8	15	164	20
2000	4	8	16	310	22.2
2000	4	8	17	318	22.2
2000	4	8	18	308	23.2
2000	4	8	19	307	18.2
2000	4	8	20	296	17.2
2000	4	8	21	309	20.8
2000	4	8	22	322	15.8
2000	4	8	23	328	21.8
2000	4	9	0	311	21
2000	4	9	1	297	24.8
2000	4	9	2	291	26.6
2000	4	9	3	300	28.2
2000	4	9	4	309	26.2
2000	4	9	5	287	22
2000	4	9	6	284	22.8
2000	4	9	7	290	33.6
2000	4	9	8	285	32
2000	4	9	9	292	34.2
2000	4	9	10	286	32.6
2000	4	9	11	283	25.4
2000	4	9	12	287	33.2
2000	4	9	13	276	31
2000	4	9	14	266	31.2
2000	4	9	15	286	25.8
2000	4	9	16	288	25.8
2000	4	9	17	283	33
2000	4	9	18	292	27.2
2000	4	9	19	278	27.4
2000	4	9	20	281	22.8
2000	4	9	21	275	16.2
2000	4	9	22	271	10.6
2000	4	9	23	262	21
2000	4	10	0	247	12
2000	4	10	1	256	6.6
2000	4	10	2	278	5.2
2000	4	10	3	271	7.8
2000	4	10	4	281	14.2
2000	4	10	5	293	10.8
2000	4	10	6	259	9.2

2000	4	10	7	274	16
2000	4	10	8	272	11.4
2000	4	10	9	278	15.6
2000	4	10	10	286	17
2000	4	10	11	269	17
2000	4	10	12	268	15.2
2000	4	10	13	284	12
2000	4	10	14	247	9.2
2000	4	10	15	246	5.6
2000	4	10	16	257	9.2
2000	4	10	17	264	2.8
2000	4	10	18	307	10.2
2000	4	10	19	188	11.4
2000	4	10	20	171	6.4
2000	4	10	21	158	4.2
2000	4	10	22	105	3.4
2000	4	10	23	106	2.4
2000	4	11	0	1	4.8
2000	4	11	1	35	13.6
2000	4	11	2	72	10
2000	4	11	3	49	9
2000	4	11	4	53	18
2000	4	11	5	81	11.8
2000	4	11	6	74	16.4
2000	4	11	8	74	12.2
2000	4	11	10	48	9.4
2000	4	11	11	16	10.4
2000	4	11	12	3	10.8
2000	4	11	13	354	9.8
2000	4	11	14	348	7.2
2000	4	11	15	5	7
2000	4	11	16	14	11.6
2000	4	11	17	12	9.6
2000	4	11	18	4	9.2
2000	4	11	19	336	6.2
2000	4	11	20	343	7.4
2000	4	11	21	350	8.4
2000	4	11	22	9	9.2
2000	4	11	23	51	5
2000	4	12	0	43	2.4
2000	4	12	1	148	6.4
2000	4	12	2	188	9.8

2000	4	12	3	205	7.8
2000	4	12	4	290	5.8
2000	4	12	5	312	11.6
2000	4	12	6	338	14.4
2000	4	12	7	344	13
2000	4	12	8	332	17
2000	4	12	9	342	18.8
2000	4	12	10	324	12
2000	4	12	11	287	16.6
2000	4	12	12	339	18.8
2000	4	12	13	316	19.6
2000	4	12	14	349	18.6
2000	4	12	15	325	15.4
2000	4	12	16	332	18.8
2000	4	12	17	337	19.4
2000	4	12	18	341	17.8
2000	4	12	19	335	17.2
2000	4	12	20	342	15
2000	4	12	21	344	13
2000	4	12	22	354	12.8
2000	4	12	23	347	9.6
2000	4	13	0	320	9.2
2000	4	13	1	315	8.6
2000	4	13	2	45	12.4
2000	4	13	3	60	12.4
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2000	4	13	5	72	8.6
2000	4	13	6	65	9.6
2000	4	13	7	57	17.6
2000	4	13	8	54	11
2000	4	13	9	60	9.2
2000	4	13	10	78	6.2
2000	4	13	11	84	1.8
2000	4	13	12	341	4.8
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2000	4	14	3	116	9.2
2000	4	14	4	118	9.6
2000	4	14	5	120	9.8
2000	4	14	6	87	8.8
2000	4	14	7	68	9.4
2000	4	14	8	75	8.4
2000	4	14	9	88	5
2000	4	14	10	61	5
2000	4	14	11	355	6
2000	4	14	12	343	5
2000	4	14	13	355	5
2000	4	14	14	345	4.6
2000	4	14	15	11	3.2
2000	4	14	16	33	2.8
2000	4	14	17	19	2.4
2000	4	14	18	49	4.2
2000	4	14	19	31	7
2000	4	14	20	38	5.6
2000	4	14	21	74	9
2000	4	14	22	62	8.2
2000	4	14	23	46	8.6
2000	4	15	0	42	6.6
2000	4	15	1	33	8.4
2000	4	15	2	27	9.2
2000	4	15	3	25	9
2000	4	15	4	25	7.8
2000	4	15	5	25	8.4
2000	4	15	6	18	9.6
2000	4	15	7	4	6.4
2000	4	15	8	0	4.2
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2000	4	15	10	79	5
2000	4	15	11	55	3.8
2000	4	15	12	38	3.8
2000	4	15	13	18	3.6
2000	4	15	14	1	6.4

2000	4	15	15	28	6.8
2000	4	15	16	16	7.8
2000	4	15	17	29	5.4
2000	4	15	18	18	8.8
2000	4	15	19	3	12.6
2000	4	15	20	6	9.4
2000	4	15	21	358	9.2
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2000	4	15	23	1	9.6
2000	4	16	0	356	8.8
2000	4	16	1	308	7.2
2000	4	16	2	302	6.2
2000	4	16	3	290	6.2
2000	4	16	4	283	7
2000	4	16	5	286	9.6
2000	4	16	6	286	5.4
2000	4	16	7	249	5
2000	4	16	8	290	6.2
2000	4	16	9	318	3.2
2000	4	16	10	250	2.4
2000	4	16	11	227	4
2000	4	16	12	149	8
2000	4	16	13	160	11
2000	4	16	14	166	12.4
2000	4	16	15	167	12.2
2000	4	16	16	179	10.4
2000	4	16	17	182	13.4
2000	4	16	18	175	14.6
2000	4	16	19	180	10.8
2000	4	16	20	164	14.6
2000	4	16	21	179	10
2000	4	16	22	164	9
2000	4	16	23	101	6.2
2000	4	17	0	47	12.2
2000	4	17	1	48	11.2
2000	4	17	2	66	10.2
2000	4	17	3	63	10.2
2000	4	17	4	97	4.2
2000	4	17	5	78	7.8
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2000	4	17	7	80	20
2000	4	17	8	73	16.2

2000	4	17	9	91	22.2
2000	4	17	10	69	14.4
2000	4	17	11	83	21
2000	4	17	12	77	19
2000	4	17	13	74	15
2000	4	17	14	62	13.8
2000	4	17	15	76	15.2
2000	4	17	16	69	18.8
2000	4	17	17	76	23.2
2000	4	17	18	69	20
2000	4	17	19	68	24.2
2000	4	17	20	61	18.4
2000	4	17	21	54	14.2
2000	4	17	22	48	13.6
2000	4	17	23	45	17
2000	4	18	0	49	23.2
2000	4	18	1	43	19
2000	4	18	2	44	15
2000	4	18	3	46	21
2000	4	18	4	49	22
2000	4	18	5	43	22.8
2000	4	18	6	48	19.6
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2000	4	18	10	35	25
2000	4	18	11	34	20.8
2000	4	18	12	45	23.2
2000	4	18	13	35	19
2000	4	18	14	19	20.8
2000	4	18	15	24	22.2
2000	4	18	16	21	19
2000	4	18	17	22	22.8
2000	4	18	18	28	22.8
2000	4	18	19	25	23.6
2000	4	18	20	13	22
2000	4	18	21	25	21
2000	4	18	22	19	19
2000	4	18	23	20	23
2000	4	19	0	9	21.2
2000	4	19	1	3	21.2
2000	4	19	2	8	22.4

2000	4	19	3	2	18
2000	4	19	4	7	19.8
2000	4	19	5	1	20.4
2000	4	19	6	18	20.6
2000	4	19	7	1	21.8
2000	4	19	8	0	19.2
2000	4	19	9	358	15.6
2000	4	19	10	12	19.4
2000	4	19	11	17	17
2000	4	19	12	21	15.6
2000	4	19	14	36	9.8
2000	4	19	15	44	8.2
2000	4	19	16	33	7.6
2000	4	19	17	31	8.4
2000	4	19	18	16	4.8
2000	4	19	19	24	3.6
2000	4	19	20	36	3.8
2000	4	19	21	116	11.4
2000	4	19	22	132	8.2
2000	4	19	23	169	6.2
2000	4	20	0	224	7.2
2000	4	20	1	279	5.4
2000	4	20	2	260	3.4
2000	4	20	3	267	0.8
2000	4	20	4	312	1.2
2000	4	20	5	119	1.4
2000	4	20	6	144	2.4
2000	4	20	7	147	4
2000	4	20	8	179	2.8
2000	4	20	9	180	5.2
2000	4	20	10	202	8
2000	4	20	11	198	6.4
2000	4	20	12	159	5.8
2000	4	20	13	152	8.2
2000	4	20	14	155	12.2
2000	4	20	15	165	16.8
2000	4	20	16	159	18.2
2000	4	20	17	164	16.8
2000	4	20	18	170	14.4
2000	4	20	19	176	12.2
2000	4	20	20	152	18
2000	4	20	21	152	22.4

2000	4	20	22	148	19.8
2000	4	20	23	153	20.2
2000	4	21	0	148	19.8
2000	4	21	1	143	19.6
2000	4	21	2	140	21.2
2000	4	21	3	144	17
2000	4	21	4	164	11.2
2000	4	21	5	154	17.6
2000	4	21	6	160	16.6
2000	4	21	7	158	15.2
2000	4	21	8	159	13
2000	4	21	9	166	13.2
2000	4	21	10	169	14.8
2000	4	21	11	171	12.6
2000	4	21	12	184	10.6
2000	4	21	13	143	9.2
2000	4	21	14	209	4.2
2000	4	21	15	310	12.4
2000	4	21	16	146	12.2
2000	4	21	17	347	9.4
2000	4	21	18	35	9.2
2000	4	21	19	20	18.4
2000	4	21	20	349	15.6
2000	4	21	21	347	15.2
2000	4	21	22	345	12.4
2000	4	21	23	353	15
2000	4	22	0	2	11.8
2000	4	22	1	356	13.2
2000	4	22	2	347	10.6
2000	4	22	3	310	9.6
2000	4	22	4	296	11.4
2000	4	22	5	312	11.6
2000	4	22	6	307	10.4
2000	4	22	7	302	13.8
2000	4	22	8	302	12
2000	4	22	9	305	17.2
2000	4	22	10	328	11.8
2000	4	22	11	340	15
2000	4	22	12	335	10.6
2000	4	22	13	290	9
2000	4	22	14	299	9
2000	4	22	15	288	11.4

2000	4	22	16	296	15.2
2000	4	22	17	300	13.4
2000	4	22	18	302	15.2
2000	4	22	19	331	13.6
2000	4	22	20	306	11.6
2000	4	22	21	300	14.2
2000	4	22	22	305	12
2000	4	22	23	326	13.6
2000	4	23	0	323	13.6
2000	4	23	1	333	15.6
2000	4	23	2	338	15.2
2000	4	23	3	332	15.4
2000	4	23	4	327	14.8
2000	4	23	5	311	12.8
2000	4	23	6	316	9.2
2000	4	23	7	318	13
2000	4	23	8	309	13.4
2000	4	23	9	334	16.8
2000	4	23	10	317	19
2000	4	23	11	302	19
2000	4	23	12	302	20
2000	4	23	13	310	15
2000	4	23	14	292	18.2
2000	4	23	15	291	22.4
2000	4	23	16	294	17.6
2000	4	23	17	294	17.2
2000	4	23	18	285	14.4
2000	4	23	19	275	12.2
2000	4	23	20	275	10.8
2000	4	23	21	283	10.2
2000	4	23	22	284	9.2
2000	4	23	23	288	7.6
2000	4	24	0	281	9.2
2000	4	24	1	278	10.8
2000	4	24	2	293	11.2
2000	4	24	3	293	11.4
2000	4	24	4	304	12.6
2000	4	24	5	302	11.4
2000	4	24	6	316	10.2
2000	4	24	7	306	10.2
2000	4	24	8	348	13.4
2000	4	24	9	2	9.6

2000	4	24	10	39	6.4
2000	4	24	11	69	5.2
2000	4	24	12	99	5.2
2000	4	24	13	122	6.4
2000	4	24	14	167	8
2000	4	24	15	175	9.2
2000	4	24	16	184	7.2
2000	4	24	17	181	8.2
2000	4	24	18	194	7.6
2000	4	24	19	174	8.6
2000	4	24	20	173	9.4
2000	4	24	21	165	8.8
2000	4	24	22	180	8.6
2000	4	24	23	181	9.4
2000	4	25	0	181	7.8
2000	4	25	1	222	7.4
2000	4	25	2	244	5.6
2000	4	25	3	336	4
2000	4	25	4	295	0.2
2000	4	25	5	70	7.4
2000	4	25	6	38	11.2
2000	4	25	7	29	12
2000	4	25	8	51	16.2
2000	4	25	9	50	17.2
2000	4	25	10	41	16.8
2000	4	25	11	37	19
2000	4	25	12	40	24.2
2000	4	25	13	32	22.2
2000	4	25	14	32	18.6
2000	4	25	15	35	19.4
2000	4	25	16	32	17.6
2000	4	25	17	36	15.8
2000	4	25	18	81	14.2
2000	4	25	19	35	11
2000	4	25	20	49	11.2
2000	4	25	21	55	10.2
2000	4	25	22	61	8.6
2000	4	25	23	39	12.4
2000	4	26	0	34	13
2000	4	26	1	60	12.4
2000	4	26	2	84	11.2
2000	4	26	3	32	6.8

2000	4	26	4	293	7.6
2000	4	26	5	301	3.2
2000	4	26	6	293	1.6
2000	4	26	7	298	5.4
2000	4	26	8	288	6
2000	4	26	9	355	2.4
2000	4	26	10	31	6
2000	4	26	11	22	3.6
2000	4	26	12	185	3.2
2000	4	26	13	230	0.2
2000	4	26	14	174	7
2000	4	26	15	160	7.8
2000	4	26	16	178	6.4
2000	4	26	17	201	4
2000	4	26	18	184	6.6
2000	4	26	19	176	10.2
2000	4	26	20	168	16.4
2000	4	26	21	159	19.8
2000	4	26	22	145	18.4
2000	4	26	23	142	14.6
2000	4	27	0	152	17.8
2000	4	27	1	124	13.4
2000	4	27	2	132	12
2000	4	27	3	134	11
2000	4	27	4	133	12.6
2000	4	27	5	126	12.4
2000	4	27	6	126	13.8
2000	4	27	7	120	15.2
2000	4	27	8	132	14
2000	4	27	9	134	13.4
2000	4	27	10	131	14.4
2000	4	27	11	144	17.8
2000	4	27	12	149	18
2000	4	27	13	146	18
2000	4	27	14	140	15.6
2000	4	27	15	137	12.2
2000	4	27	16	161	15.8
2000	4	27	17	147	13.4
2000	4	27	18	160	9.4
2000	4	27	19	159	12.6
2000	4	27	20	143	11.8
2000	4	27	21	153	11.2

2000	4	27	22	119	10.8
2000	4	27	23	137	14.2
2000	4	28	0	145	12.8
2000	4	28	1	147	14.4
2000	4	28	2	140	10.2
2000	4	28	3	136	8.4
2000	4	28	4	147	10
2000	4	28	5	135	8.2
2000	4	28	6	107	7.4
2000	4	28	7	103	7.2
2000	4	28	8	116	5
2000	4	28	9	121	4.6
2000	4	28	10	172	3.8
2000	4	28	11	47	1.2
2000	4	28	12	0	5.6
2000	4	28	13	357	5.6
2000	4	28	14	1	8.4
2000	4	28	15	18	5.8
2000	4	28	16	31	5.6
2000	4	28	17	25	6.6
2000	4	28	18	55	8.8
2000	4	28	19	110	13.8
2000	4	28	20	123	10.4
2000	4	28	21	102	5.8
2000	4	28	22	38	5.6
2000	4	28	23	48	7.2
2000	4	29	0	37	7.2
2000	4	29	1	44	8.4
2000	4	29	2	27	4
2000	4	29	3	17	7.6
2000	4	29	4	23	9.6
2000	4	29	5	7	10.2
2000	4	29	6	25	10.6
2000	4	29	7	8	10.8
2000	4	29	8	19	6.6
2000	4	29	9	18	6.2
2000	4	29	10	28	7.4
2000	4	29	11	26	6.2
2000	4	29	12	89	3.2
2000	4	29	13	173	4.8
2000	4	29	14	196	9.6
2000	4	29	15	196	8.8

2000	4	29	16	190	9.2
2000	4	29	17	193	10
2000	4	29	18	204	11.2
2000	4	29	19	198	10.6
2000	4	29	20	213	8.8
2000	4	29	21	234	8.2
2000	4	29	22	250	8.6
2000	4	29	23	263	10.8
2000	4	30	0	261	13
2000	4	30	1	261	14
2000	4	30	2	261	16.6
2000	4	30	3	276	15
2000	4	30	4	298	11.8
2000	4	30	5	293	13
2000	4	30	6	288	14.2
2000	4	30	7	298	13
2000	4	30	8	330	18.2
2000	4	30	9	342	21.6
2000	4	30	10	343	17.8
2000	4	30	11	358	19.4
2000	4	30	12	2	14.2
2000	4	30	13	355	23.6
2000	4	30	14	4	13.2
2000	4	30	15	55	10
2000	4	30	16	48	10
2000	4	30	17	51	9.4
2000	4	30	18	70	8.4

Appendix D. Inputs to the SIMAP Physical Fates Model and PAH Measurements Used to Estimate Toxicity

Table D-1. Assumed inputs to the SIMAP physical fates model.

Name	Description	Units	Source(s) of Information	Value(s)
Spill Site	Location of the spill site	-	Information supplied by Trustees	At PEPCO pipeline in Swansons Creek
Spill Latitude	Latitude of the spill site	Degrees	chart	38° 32.6555'N
Spill Longitude	Longitude of the spill site	Degrees	chart	76° 42.0969'W
Depth of release	Depth below the water surface of the release	m	Information supplied by Trustees	0 m
Start time and date	Date and time the release began	Date, hr,min	Information supplied by Trustees	7 April 2000 17:30 EDT
End time of release	Date and time the release ended	Date, hr,min	Information supplied by Trustees	(Instantaneous spill)
Total spill volume or mass	Total volume (or weight) released	bbl, gal., MT, kg, m^3	Information supplied by Trustees	120,000 gal.
Timing of release(s)	Timing or rate(s) of release over duration of the spill	(volume per time interval)	Information supplied by Trustees	One release, Instantaneous spill
Fraction in surf zone	Fraction of release occurring in surf zone	%	-	0 (not applicable)
Surf height	Height of waves in surf zone during release	m	-	(not applicable)
Duration of high surf	Time period during release in which surf is high	Hours (start, stop)	-	(not applicable)

Oil: name	Oil type or chemical released	(name)	Information supplied by Trustees	No. 5 fuel (mix of No. 6 and No. 2)
Oil: density	Density of the oil or chemical released	g/cm^3 or API	French et al. (1996)	0.93 g/cm^3
Oil: viscosity	Viscosity of the oil released	Centi-poise (cp)	French et al. (1996)	123 cp
Evaporation constants	A1 - Intercept Henry`s Law vs. T; B1 - Slope Henry`s Law v. T; To-- Init. Boiling Pt.(deg. K); Tg--Gradient Distillation Curve	deg. K	Data from Whiticar et al., (1992) for Bunker C	A1 = 27.5 B1 = 22.066 To = 582.3 Tg = 141.51
Other physical properties of the oil	(These have little influence on the model results)	-	French et al. (1996)	(refer to reference cited)
Oil: non-aromatic volatile fraction	Fraction of oil which is not aromatic and with boiling point <340^oC (will volatilize)	fraction	French et al. (1996)	23.4%
Oil: BTEX fraction	Fraction of oil which is monoaromatics (BTEX)	fraction	BTEX analysis of source oil(s)	0 (assumed, not measured)
Oil: PAH fraction	Fraction of oil which is 2-3 ring aromatics (PAHs)	fraction	analysis of source oil (ENTRIX)	3.35 %
Oil: initial water fraction	Fraction of initial spill volume which is water	fraction	(assumed)	0
Oil: water fraction in mousse	Fraction of oil mousse which is water	fraction	French et al. (1996)	0%

Salinity	Surface water salinity	ppt	Measurement Apr 4, 2000 east of Indian Creek	8ppt
Water Temper-ature	Surface water temperature	Deg.C	Measurement Apr 4, 2000 east of Indian Creek	14^{o}C
Air Temper-ature	Air water temperature at water surface	Deg.C	(assume = water temperature)	14^{o}C
Wind drift speed	Speed oil moves down wind relative to wind	% of wind speed	Youssef (1993); Youssef and Spaulding (1993)	Calculated in model using this algorithm
Wind drift angle	Angle to right of wind (in northern hemisphere) that oil drifts	Deg. to right of down wind	Youssef (1993); Youssef and Spaulding (1993)	Calculated in model using this algorithm
Horizontal dispersion coefficient	Randomized turbulent dispersion parameter in x & y	m^2/sec	French et al. (1996, 1999) based on Okubo (1971)	1 m^2/sec (estuaries and low energy coastal areas)
Vertical dispersion coefficient	Randomized turbulent dispersion parameter in z	m^2/sec	French et al. (1996, 1999) based on Okubo (1971)	0.0001 m^2/sec
Suspended sediment concentra-tion	Average suspended sediment concentration during spill period	mg/l	French et al. (1996)	10 mg/l
Suspended sediment settling rate	Net settling rate for suspended sediments	m/day	French et al. (1996)	1 m/day

Table D-2. PAH concentrations measured in the source oil (pipeline sampled April 19, 2000; data provided by ENTRIX, 2000) and dissolved in water if assumed partitioned at equilibrium between oil droplets and water. Oil-water partition coefficient (K_d) is estimated from K_{ow} using the regression in Lee et al (1992): $\log(K_d) = 0.93*\log(K_{ow})+0.68$. Estimates of $\log(K_{ow})$ are from Mackay et al. (1992) and Neff and Burns (1996).

Aromatic (PAHs)	Mol. Wt. (g/ mole)	Log(K_{ow})	Concentration in oil (mg/kg)	Dissolved Concentration at Equilibrium (mg/L)
naphthalene	128	3.37	922.0	0.1415
C1-naphthalenes	142	3.87	5740.0	0.3019
C2-naphthalenes	156	4.37	6330.0	0.1141
C3-naphthalenes	170	5.00	5090.0	0.0238
C4-naphthalenes	185	5.55	2970.0	0.0043
biphenyls	154	3.9	231.0	0.0114
acenaphthylene	152	4.07	0.9	0.0000
acenaphthene	154	3.92	154.0	0.0073
Fluorene	166	4.18	270.0	0.0073
C1-fluorenes	181	4.97	813.0	0.0041
C2-fluorenes	196	5.20	1430.0	0.0044
C3-fluorenes	211	5.50	1350.0	0.0022
phenanthrene	178	4.57	77.2	0.0009
anthracene	178	4.54	711.0	0.0089
C1-phenanthrenes/anthracenes	192	5.14	2330.0	0.0081
C2-phenanthrenes/anthracenes	207	5.25	3290.0	0.0090
C3-phenanthrenes/anthracenes	222	6.00	2880.0	0.0016
C4-phenanthrenes/anthracenes	237	6.51	1630.0	0.0003
dibenzothiophene	184	4.49	107.0	0.0015
C1-dibenzothiophene	199	4.86	428.0	0.0027
C2-dibenzothiophene	214	5.50	821.0	0.0013
C3-dibenzothiophene	228	5.73	756.0	0.0007
fluoranthene	202	5.22	66.3	0.0002
pyrene	202	5.18	348.0	0.0011
Total			33479.4	0.6558

Table D-3. Estimated LC50s for total dissolved aromatic mixture based on the source oil data in Table D-2, using literature data-derived QSARs from French McCay (2001) and including only aromatics with log(Kow) $\leq$ 5.6. The QSARs are:

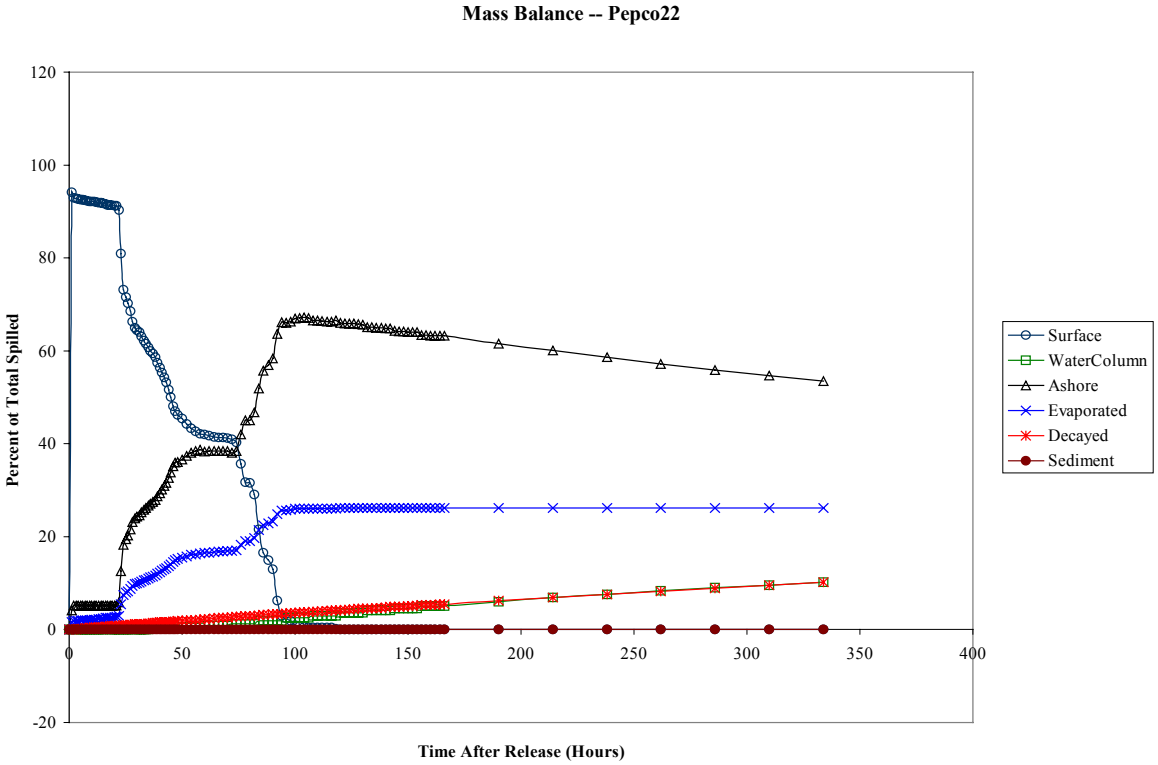
Average species: $\log(LC50_{\infty}) = 4.8926 - 1.0878*\log(K_{ow})$

Sensitive species: $\log(LC50_{\infty}) = 3.9704 - 1.0878*\log(K_{ow})$

Insensitive species: $\log(LC50_{\infty}) = 5.8147 - 1.0878*\log(K_{ow})$

Concentration in Water	Average species	Sensitive Species	Insensitive Species
Assumed equal to neat oil	45	5	378
Dissolved at equilibrium	223	27	1863

Appendix E. Mass Balance of the Fate of the Oil over Time



Modeled Percent of Spilled Mass over Time after the Spill

Time (hours)	Surface	Water Column	Ashore	Evapor-ated	Decayed	Sediment
0	0	0	0	0	0	0
1	94.2	0	4.2	1.6	0	0
2	92.9	0	5.2	1.9	0.1	0
3	92.8	0	5.2	1.9	0.1	0
4	92.7	0	5.2	1.9	0.2	0
5	92.6	0	5.2	2	0.2	0
6	92.5	0	5.2	2	0.2	0
7	92.4	0	5.2	2	0.3	0
8	92.3	0	5.2	2.1	0.3	0
9	92.2	0.1	5.2	2.1	0.4	0
10	92.2	0.1	5.2	2.2	0.4	0
11	92.1	0	5.2	2.2	0.4	0
12	92	0	5.2	2.2	0.5	0
13	91.9	0	5.2	2.3	0.5	0
14	91.9	0	5.2	2.3	0.6	0
15	91.7	0.1	5.2	2.4	0.6	0
16	91.6	0.1	5.2	2.5	0.7	0
17	91.4	0.2	5.2	2.5	0.7	0
18	91.4	0	5.2	2.6	0.7	0
19	91.4	0	5.2	2.6	0.8	0
20	91.3	0	5.2	2.7	0.8	0
21	91.2	0	5.2	2.8	0.9	0
22	90.3	0	5.8	3	0.9	0
23	81	0	12.6	5.5	0.9	0
24	73.2	0	18.3	7.5	1	0
25	71.6	0	19.4	8	1	0
26	70.3	0	20.3	8.3	1	0
27	68.6	0	21.5	8.8	1.1	0
28	66.3	0	23.1	9.4	1.1	0
29	65	0	24	9.8	1.2	0
30	64.5	0	24.3	9.9	1.2	0
31	64	0	24.6	10.1	1.2	0
32	63.1	0.1	25.2	10.3	1.3	0
33	62.2	0.1	25.8	10.6	1.3	0
34	61.6	0.1	26.2	10.8	1.3	0
35	60.8	0.1	26.7	11	1.4	0
36	60	0.2	27.1	11.3	1.4	0
37	59.4	0.2	27.5	11.4	1.5	0
38	58.7	0.2	27.9	11.7	1.5	0

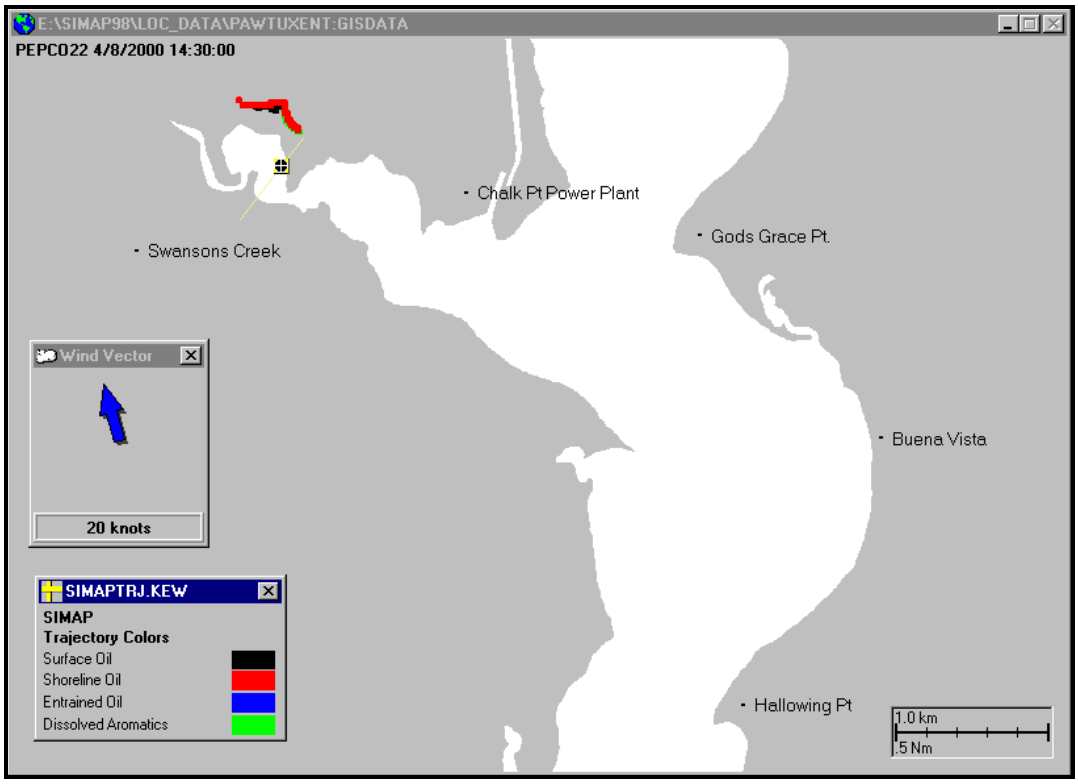
39	57.5	0.2	28.7	12	1.5	0
40	56.4	0.2	29.4	12.3	1.6	0
41	55.3	0.2	30.2	12.7	1.6	0
42	54.3	0.2	30.9	13	1.6	0
43	53.2	0.2	31.6	13.3	1.7	0
44	51.6	0.3	32.7	13.7	1.7	0
45	50.1	0.2	33.8	14.1	1.7	0
46	48.1	0.2	35.2	14.6	1.8	0
47	47	0.2	36	15	1.8	0
48	46.3	0.6	36.1	15.2	1.9	0
50	45.4	0.6	36.6	15.5	1.9	0
52	44.2	0.5	37.4	15.8	2	0
54	43.3	0.5	38	16.1	2.1	0
56	42.7	0.5	38.4	16.2	2.1	0
58	42.1	0.5	38.7	16.4	2.2	0
60	42	0.9	38.3	16.5	2.3	0
62	41.7	0.9	38.5	16.6	2.3	0
64	41.5	0.9	38.4	16.7	2.4	0
66	41.4	0.9	38.4	16.8	2.5	0
68	41.3	0.9	38.4	16.8	2.6	0
70	41.2	0.9	38.4	16.9	2.6	0
72	41	1.3	38	16.9	2.7	0
74	40.3	1.3	38.4	17.1	2.8	0
76	35.7	1.3	42	18.2	2.8	0
78	31.7	1.3	45	19.1	2.9	0
80	31.6	1.3	45	19.1	3	0
82	29.1	1.3	46.8	19.7	3	0
84	21.6	1.9	51.9	21.4	3.1	0
86	16.6	1.9	55.8	22.5	3.2	0
88	15	1.9	56.9	22.9	3.2	0
90	13	1.9	58.4	23.3	3.3	0
92	6.3	1.9	63.7	24.8	3.4	0
94	2.9	1.9	66.2	25.6	3.4	0
96	2.4	2.5	66	25.7	3.5	0
98	1.9	2.5	66.3	25.8	3.6	0
100	1	2.5	66.9	26	3.6	0
102	0.7	2.5	67.1	26	3.7	0
104	0.6	2.5	67.2	26.1	3.8	0
106	0.5	2.5	67.1	26.1	3.8	0
108	0.5	3	66.5	26.1	3.9	0
110	0.5	3	66.5	26.1	3.9	0
112	0.5	3	66.4	26.1	4	0

114	0.5	3	66.3	26.1	4	0
116	0.5	3	66.3	26.1	4.1	0
118	0.2	3	66.5	26.1	4.2	0
120	0.1	3.6	66	26.2	4.2	0
122	0	3.6	65.9	26.2	4.3	0
124	0	3.6	65.9	26.2	4.3	0
126	0	3.6	65.9	26.2	4.4	0
128	0	3.6	65.8	26.2	4.5	0
130	0	3.6	65.7	26.2	4.5	0
132	0	4.1	65.1	26.2	4.6	0
134	0	4.1	65.1	26.2	4.6	0
136	0	4.1	65	26.2	4.7	0
138	0	4.1	65	26.2	4.7	0
140	0	4.1	64.9	26.2	4.8	0
142	0	4.1	64.9	26.2	4.9	0
144	0	4.6	64.3	26.2	4.9	0
146	0	4.6	64.2	26.2	5	0
148	0	4.6	64.2	26.2	5	0
150	0	4.6	64.1	26.2	5.1	0
152	0	4.6	64.1	26.2	5.1	0
154	0	4.6	64	26.2	5.2	0
156	0	5.1	63.4	26.2	5.3	0
158	0	5.1	63.4	26.2	5.3	0
160	0	5.1	63.3	26.2	5.4	0
162	0	5.1	63.3	26.2	5.4	0
164	0	5.1	63.2	26.2	5.5	0
166	0	5.1	63.2	26.2	5.5	0
190	0	6	61.6	26.2	6.2	0
214	0	6.9	60.1	26.2	6.9	0
238	0	7.6	58.6	26.2	7.6	0
262	0	8.4	57.2	26.2	8.2	0
286	0	9	55.9	26.2	8.9	0
310	0	9.6	54.7	26.2	9.5	0
334	0	10.2	53.5	26.2	10.2	0

Appendix F. Modeled Oil Trajectory over Time

The following figures show the model trajectory for the spill. The points on the plots represent the center of mass for "spillets" used to simulate the spill. Each spillet is a sublot of the total mass spilled. The spillet is transported by currents and surface wind drift when in the top 5m of the water. The mass distribution around the spillet center spreads (for surface slicks) and disperses over time according to the horizontal and vertical dispersion coefficients. Concentrations at a given time are calculated from the mass distribution of all spillets.

Note that the shoreline shown in these model outputs are for visual reference only, whereas the habitat (and corresponding depth) grid (Appendices B and C) defines the actual shoreline to the model.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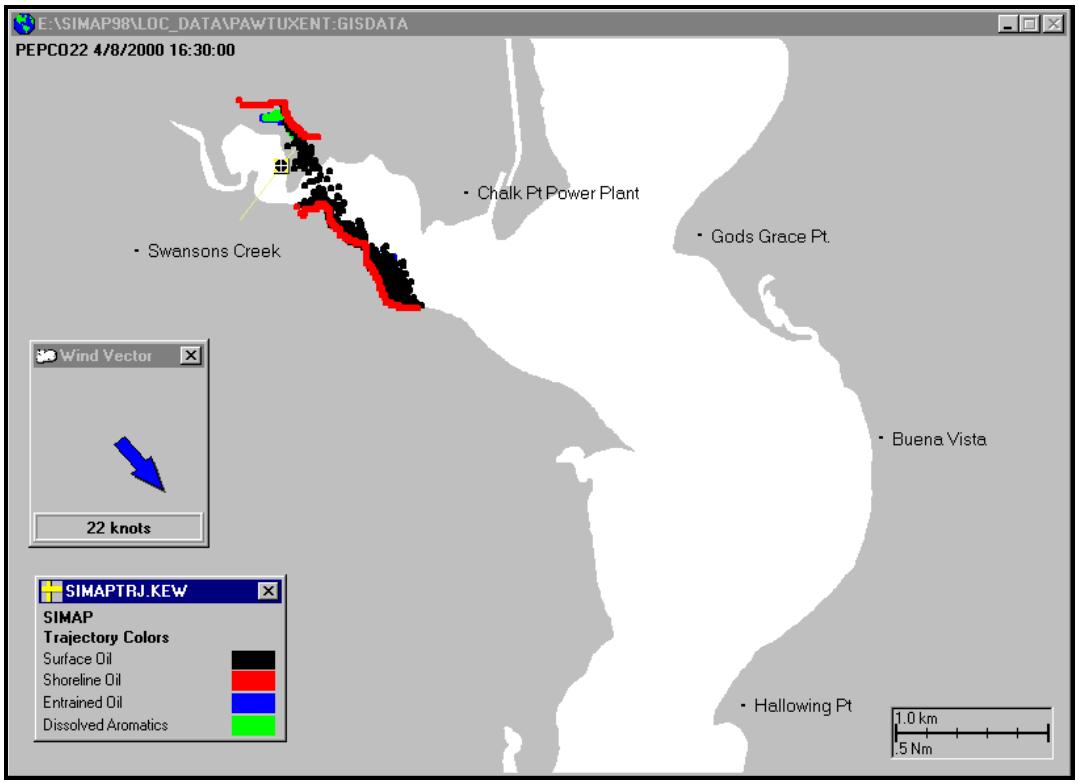
PEPCO22 4/8/2000 14:30:00
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
Wind Vector
20 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
1.0 km
.5 Nm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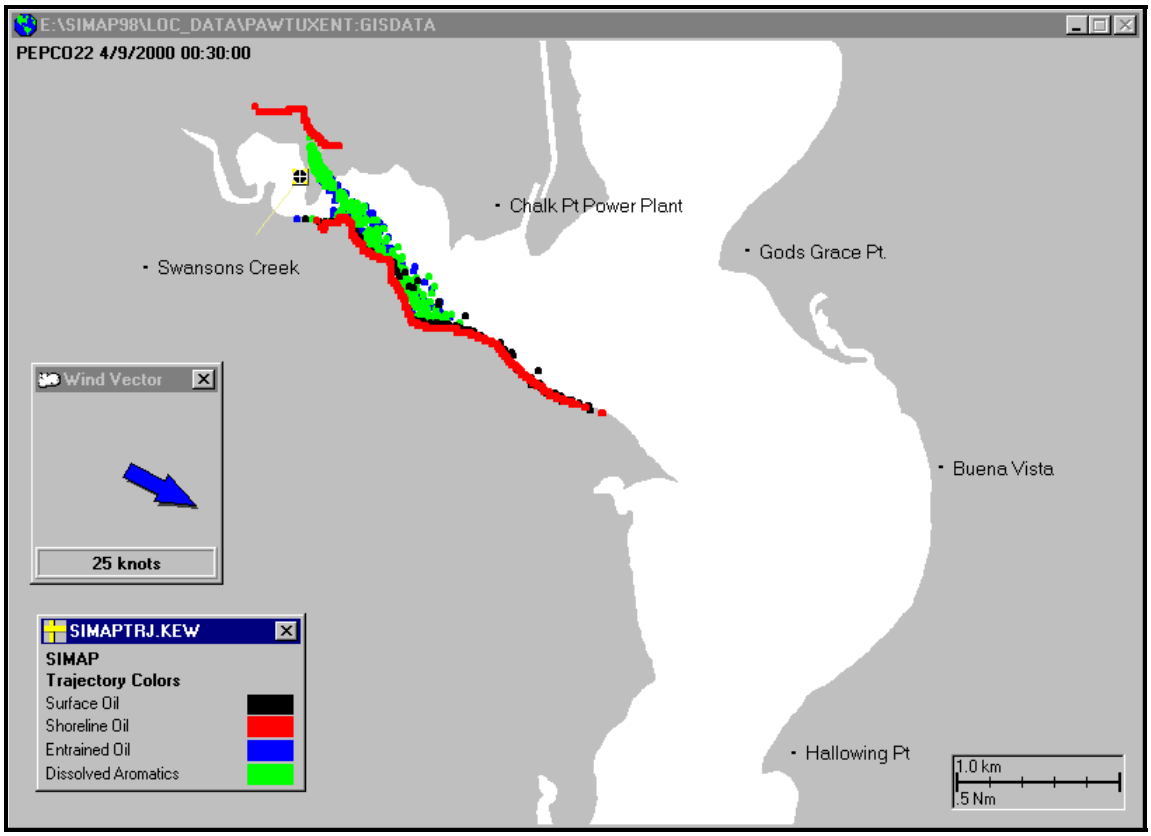
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
Wind Vector
22 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
1.0 km
.5 Nm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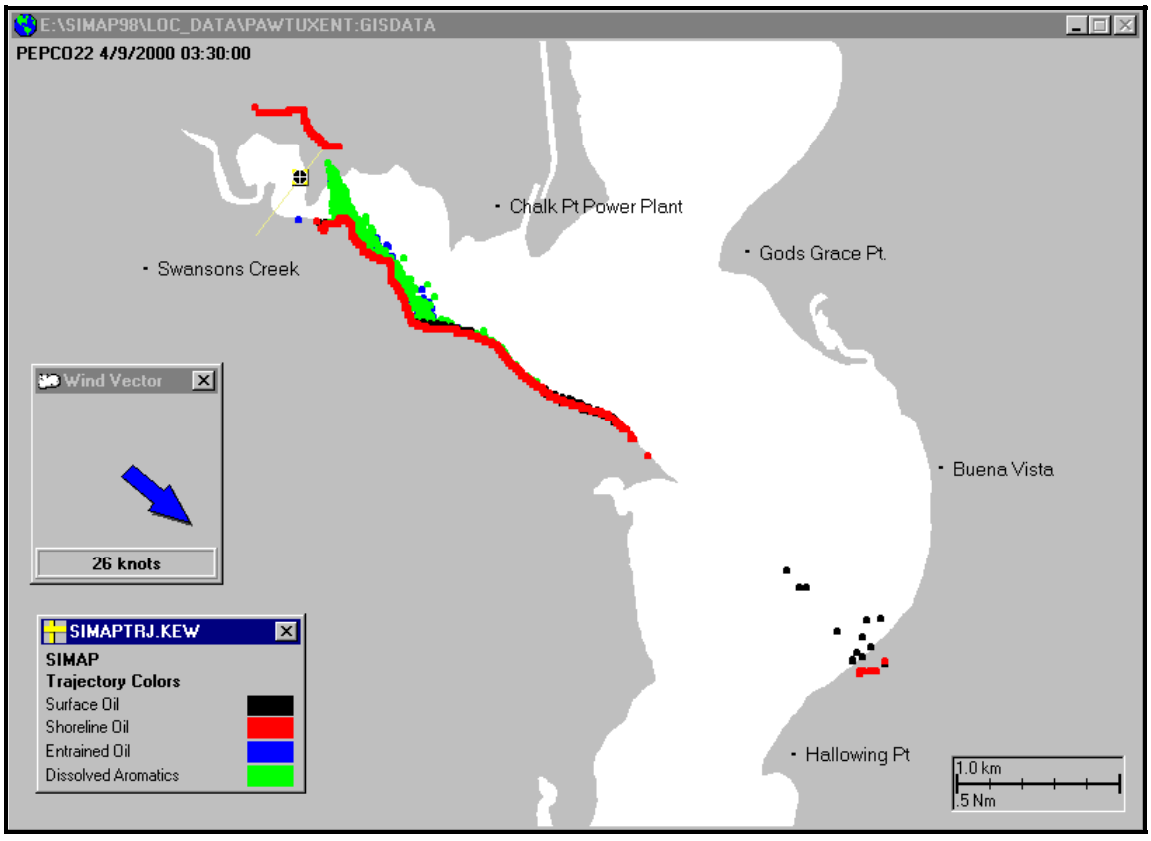
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
Wind Vector
25 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
1.0 km
.5 Nm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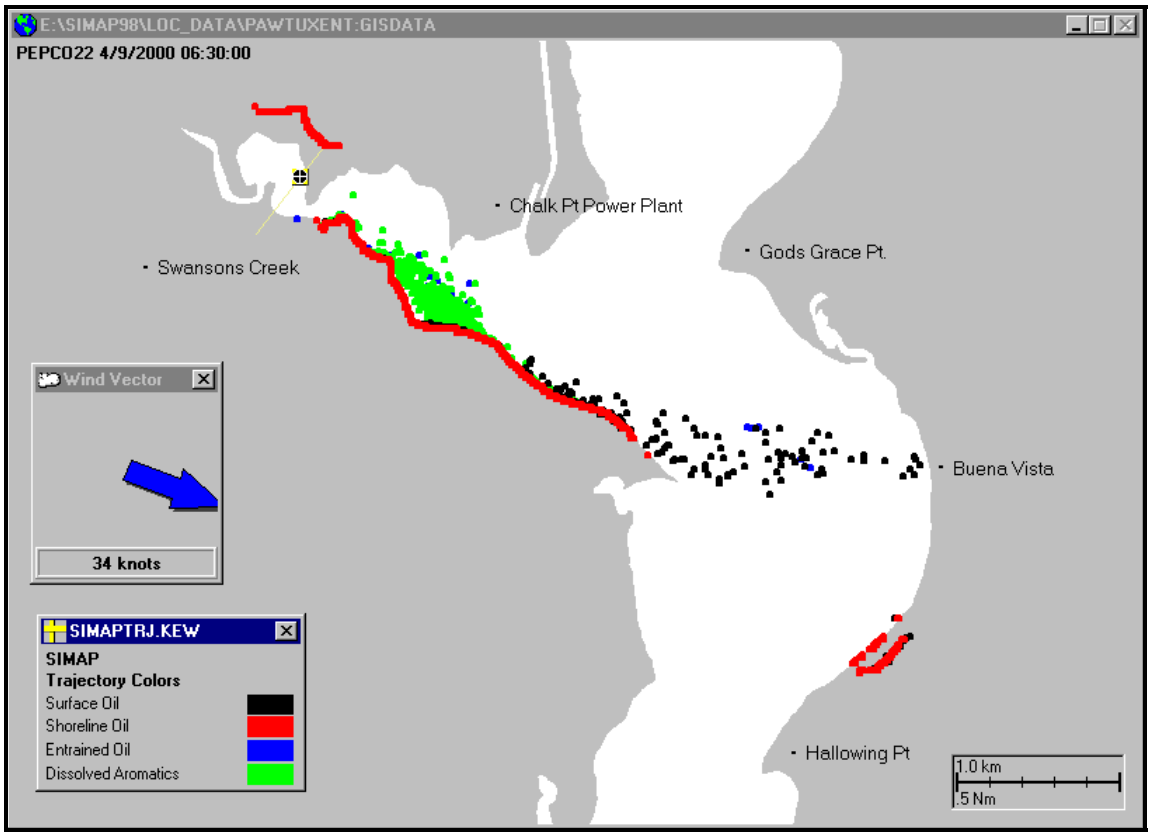
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
Wind Vector
26 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
1.0 km
.5 Nm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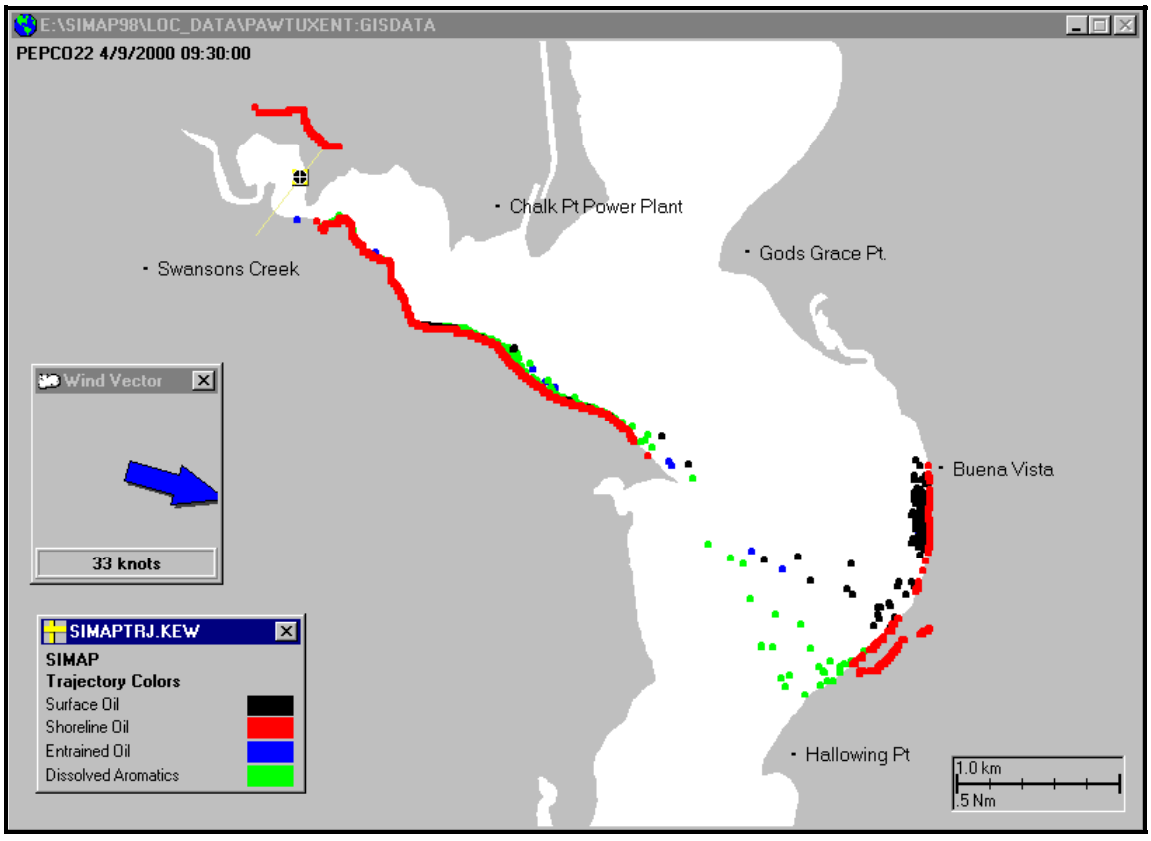
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
Wind Vector
34 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
1.0 km
.5 Nm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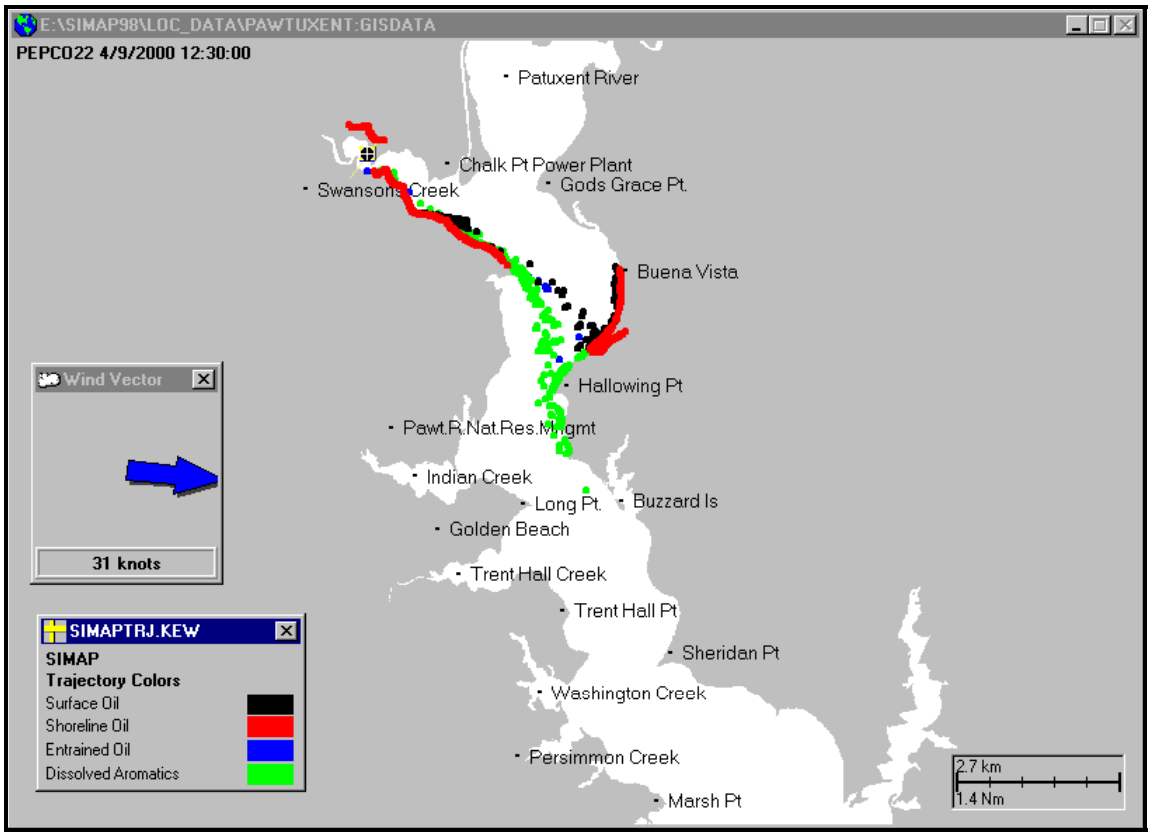
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
Wind Vector
33 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
1.0 km
.5 Nm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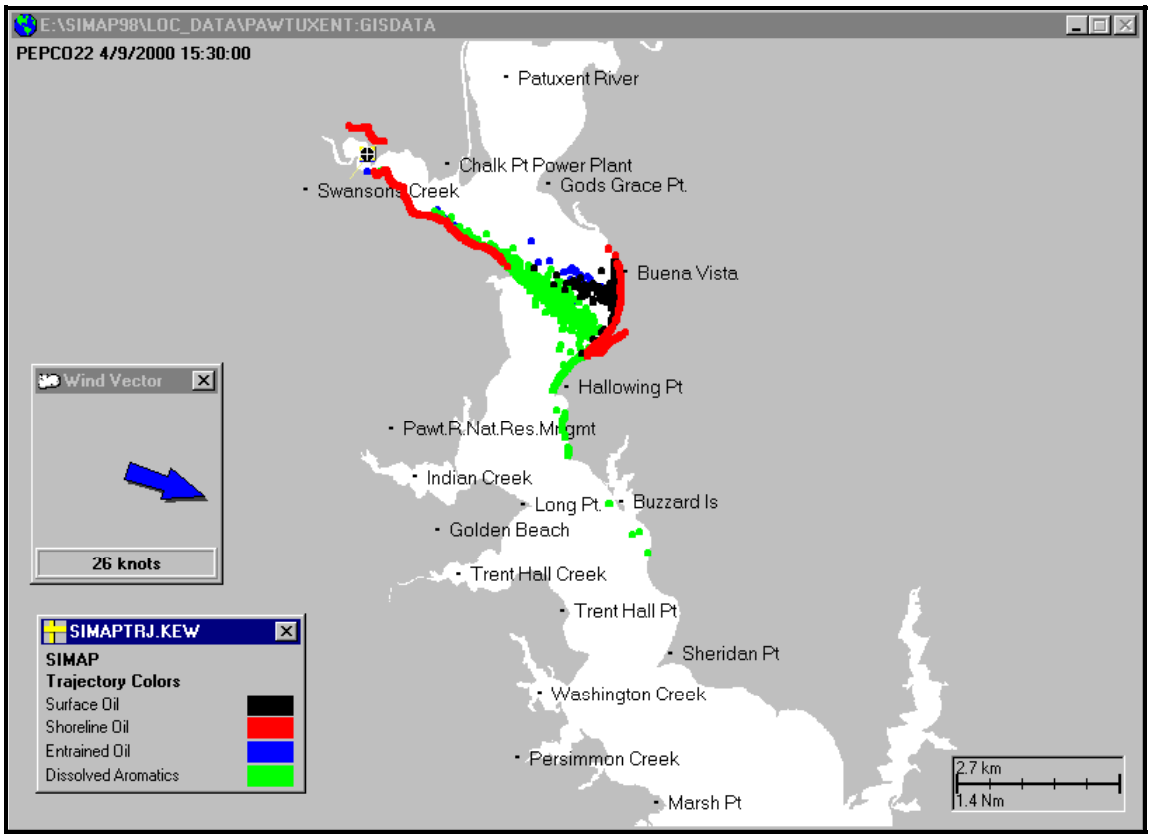
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Wind Vector
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
31 knots
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
Washington Creek
Persimmon Creek
Marsh Pt
2.7 km
1.4 Nm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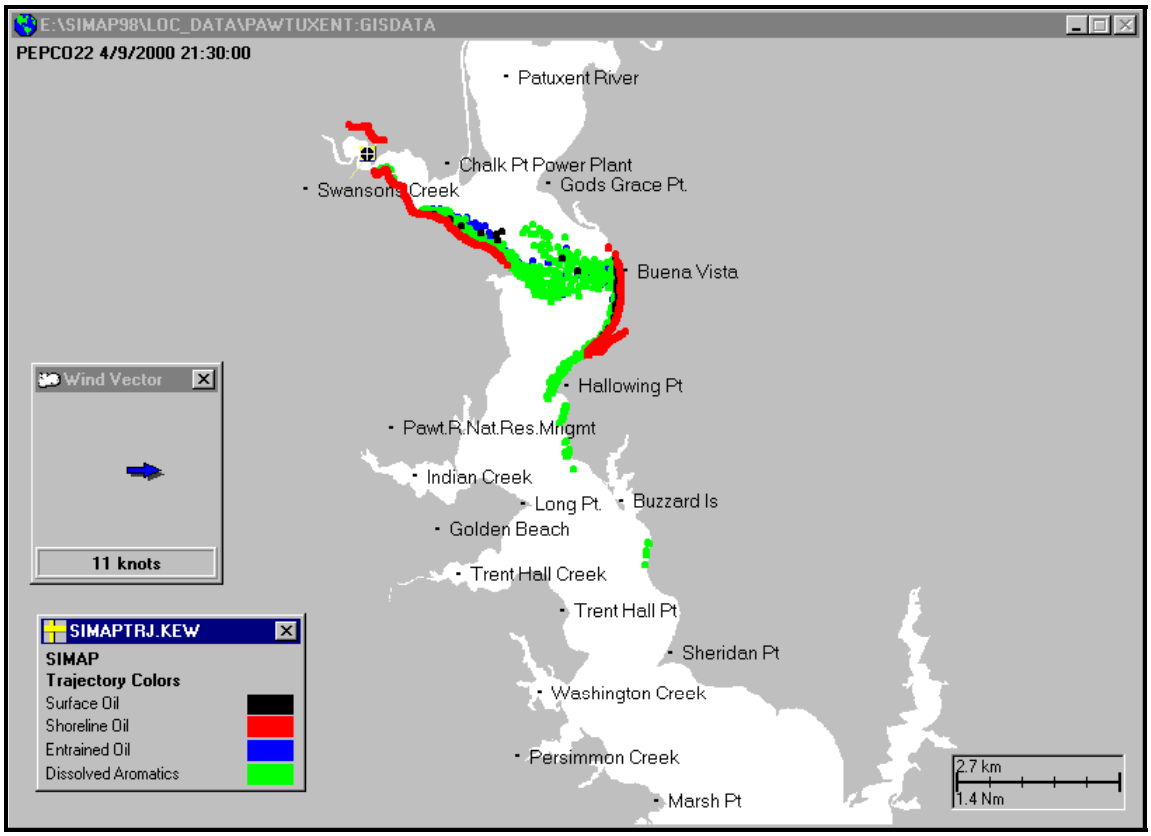
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Wind Vector
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
26 knots
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
Washington Creek
Persimmon Creek
Marsh Pt
2.7 km
1.4 Nm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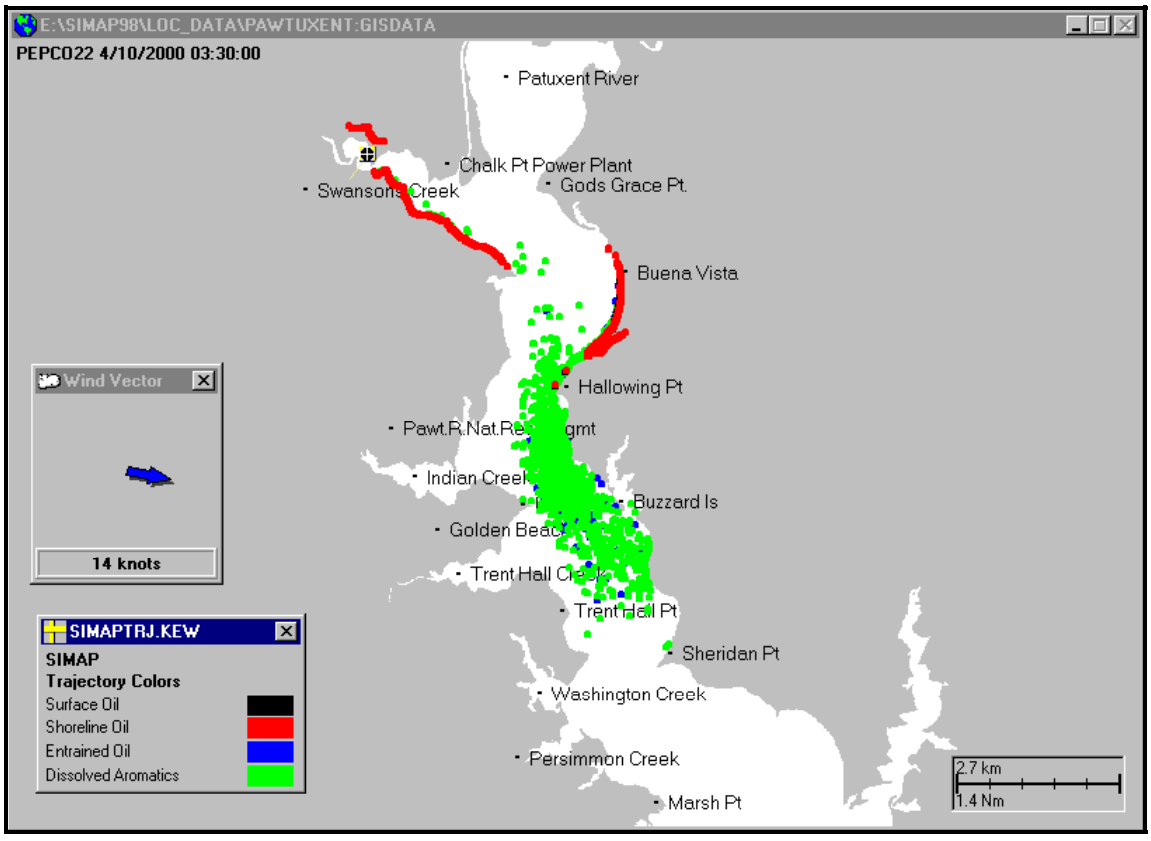
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Wind Vector
11 knots
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
Washington Creek
Persimmon Creek
Marsh Pt
2.7 km
1.4 Nm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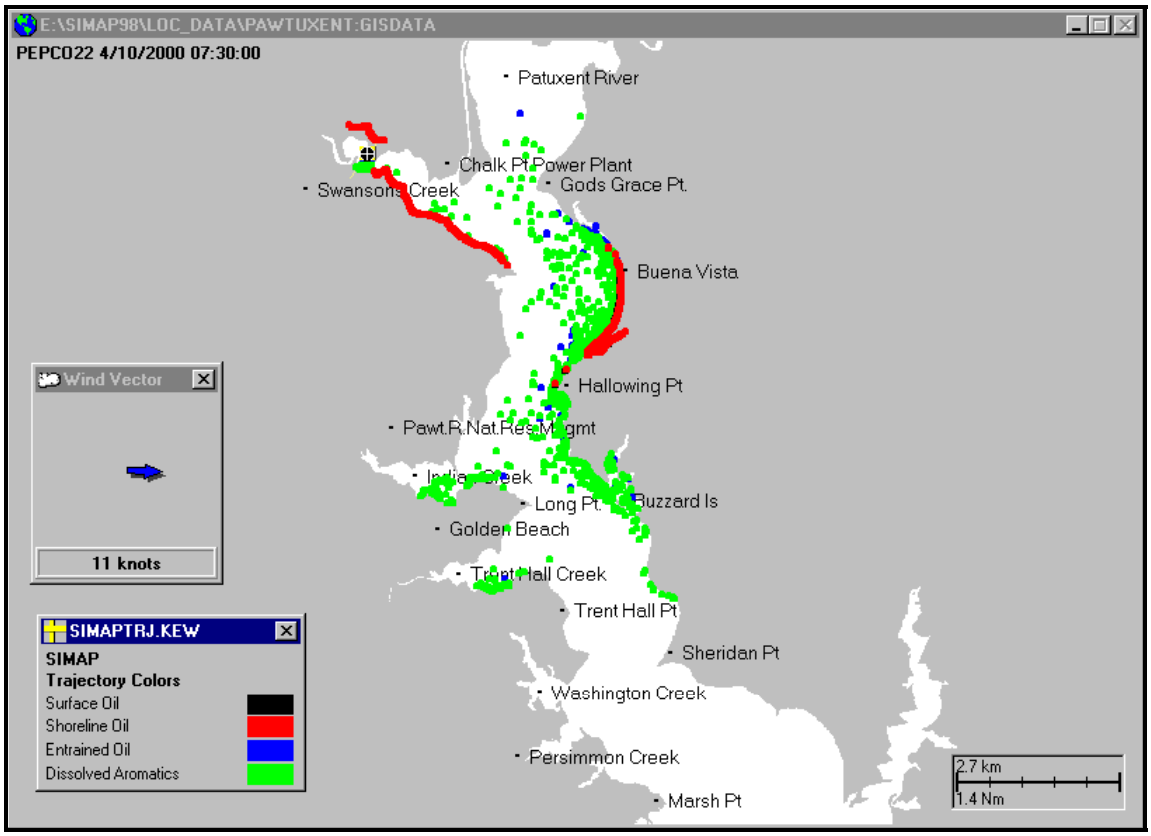
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Wind Vector
14 knots
Hallowing Pt
Indian Creek
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
Washington Creek
Persimmon Creek
Marsh Pt
2.7 km
1.4 Nm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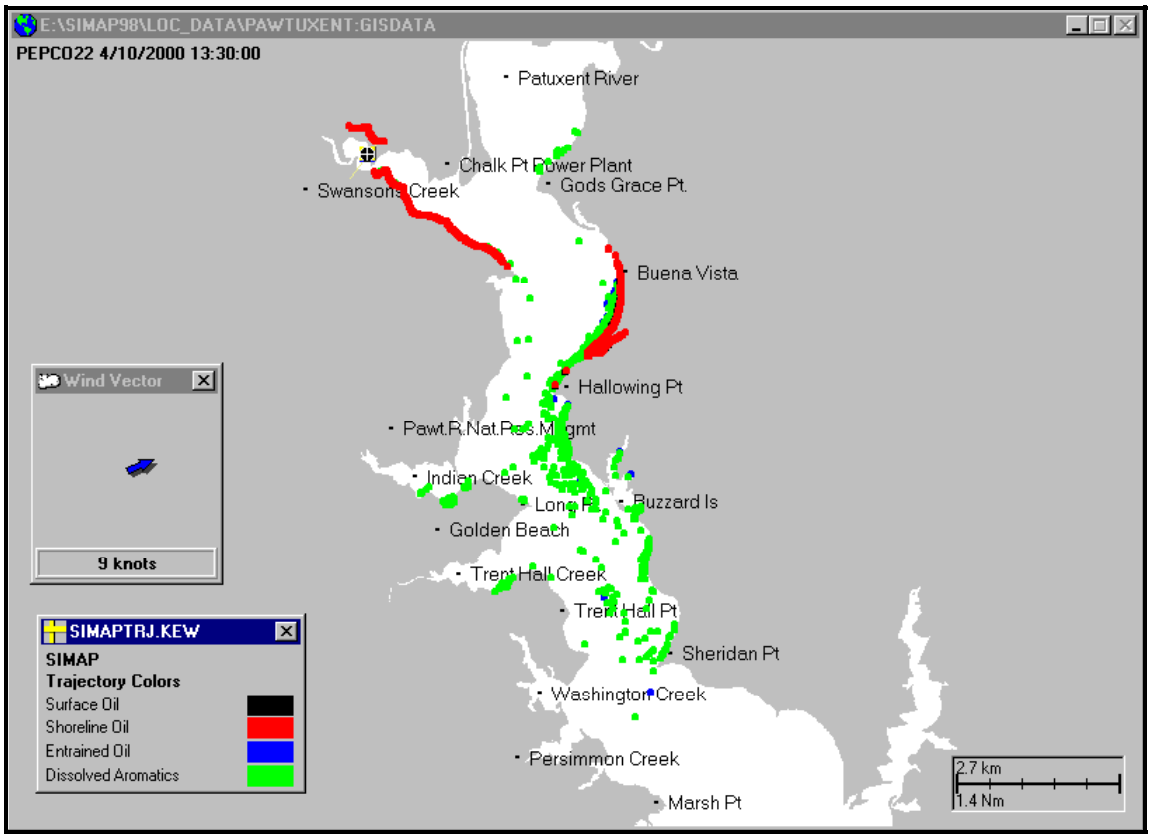
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mgmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
11 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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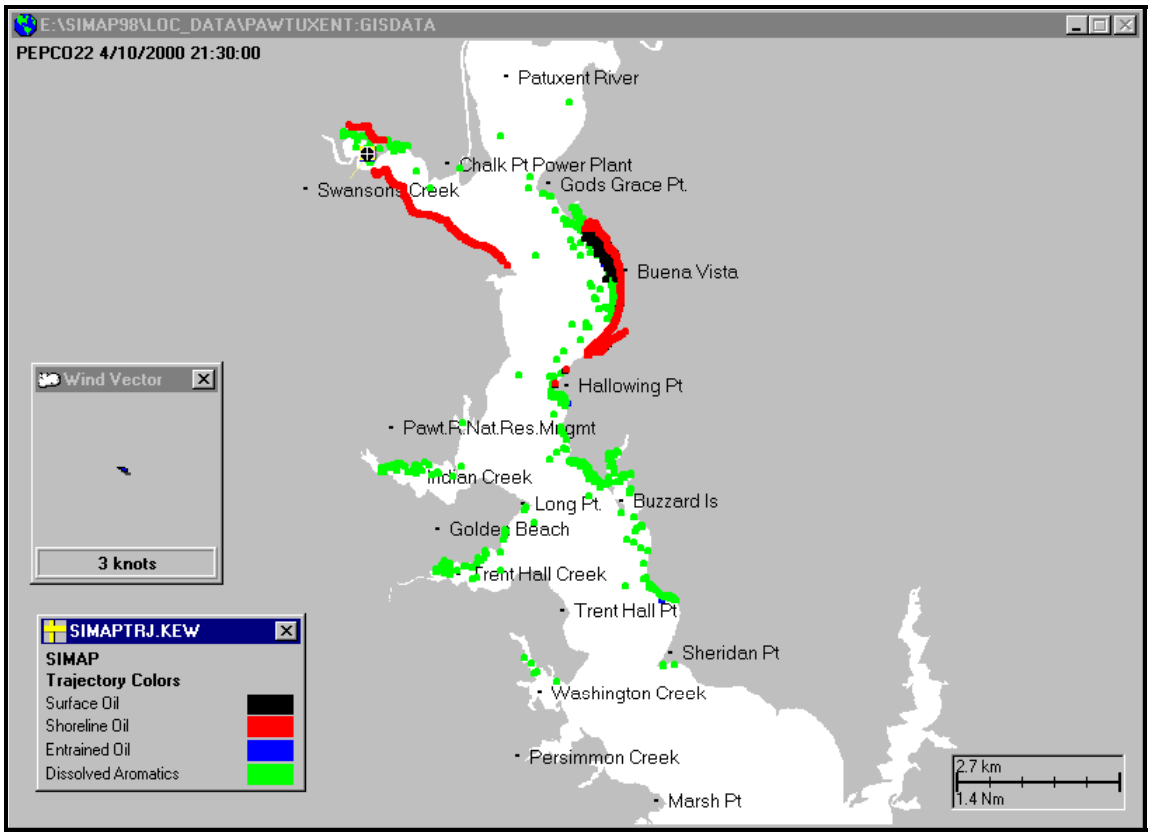
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mgmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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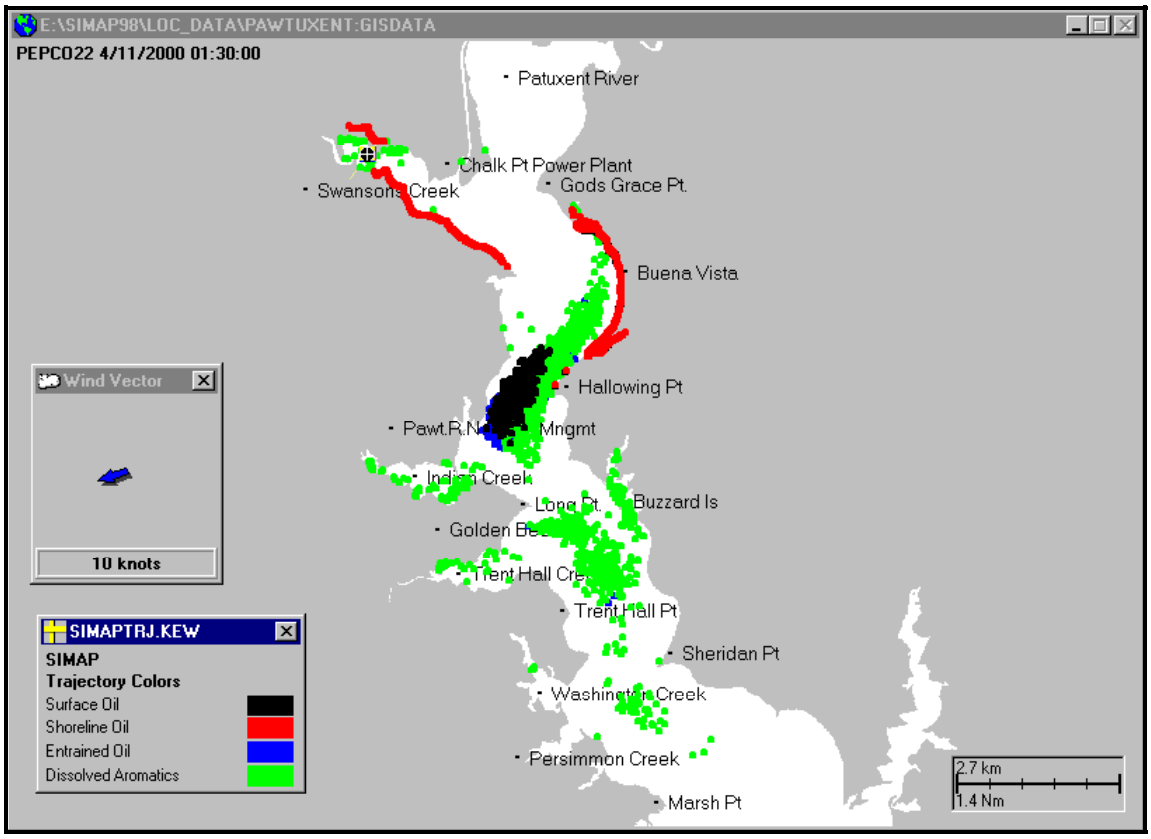
PEPCO22 4/10/2000 21:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
3 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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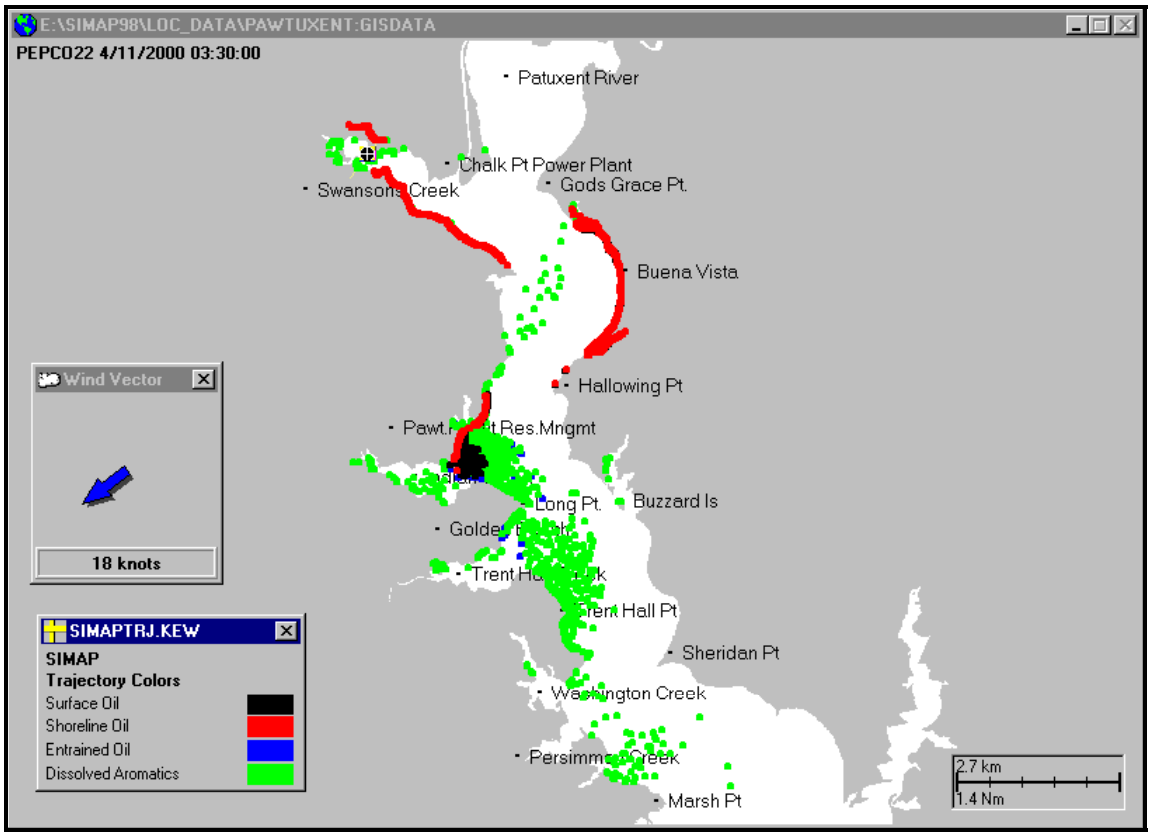
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Mngmt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Persimmon Creek
Marsh Pt
Wind Vector
10 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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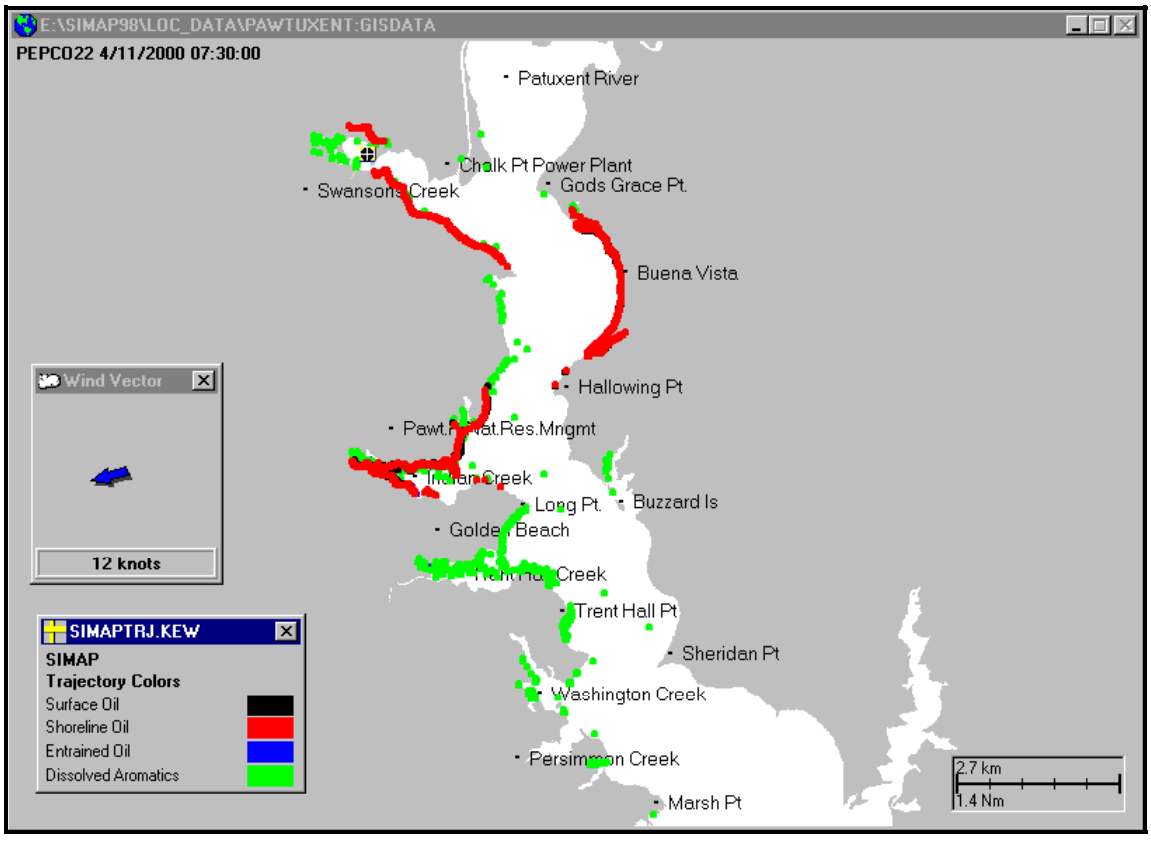
PEPCO22 4/11/2000 03:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Trent Hall Pt
Sheridan Pt
Marsh Pt
Wind Vector
18 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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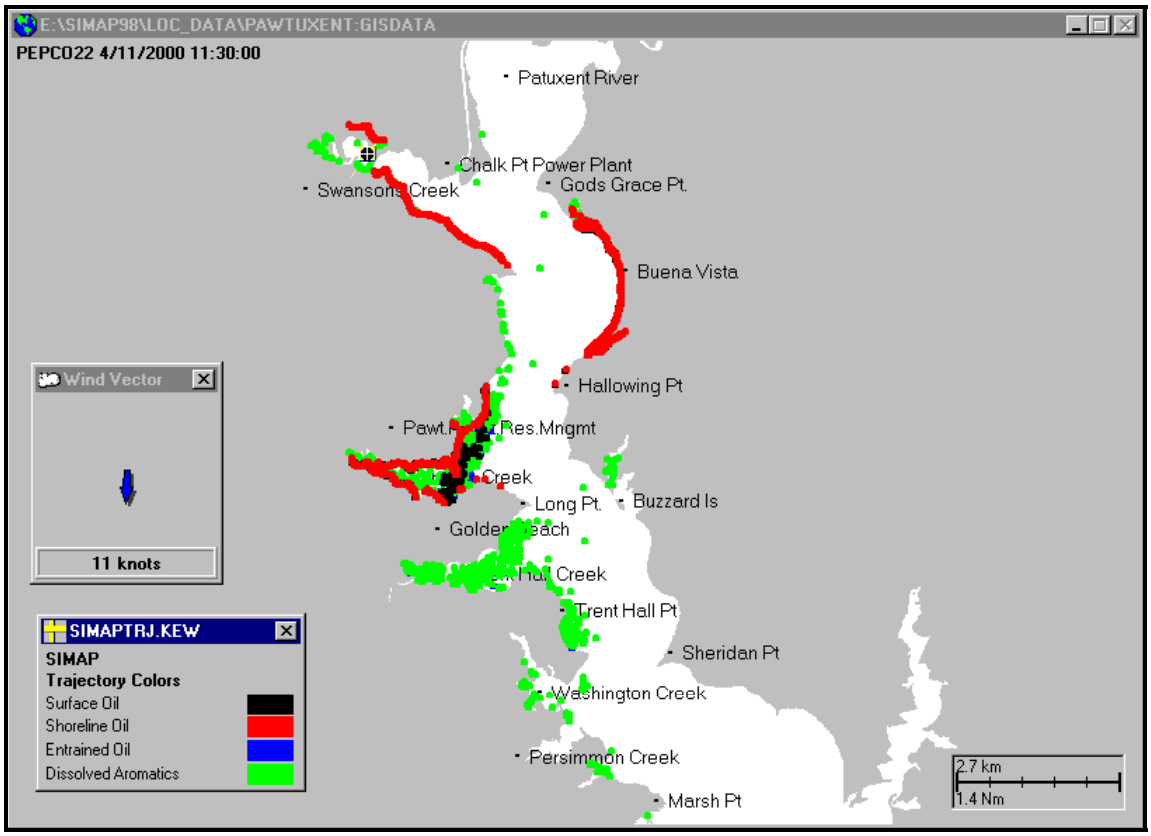
PEPCO22 4/11/2000 07:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Wind Vector
12 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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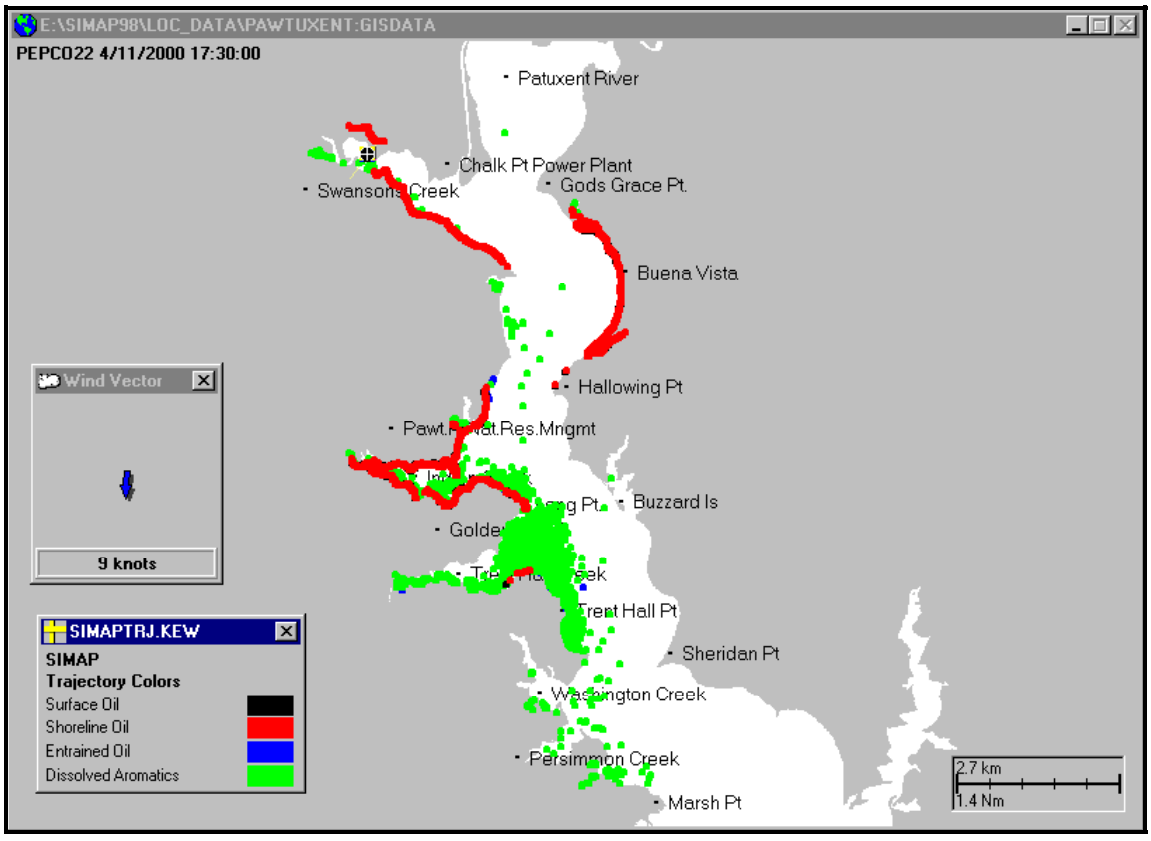
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
11 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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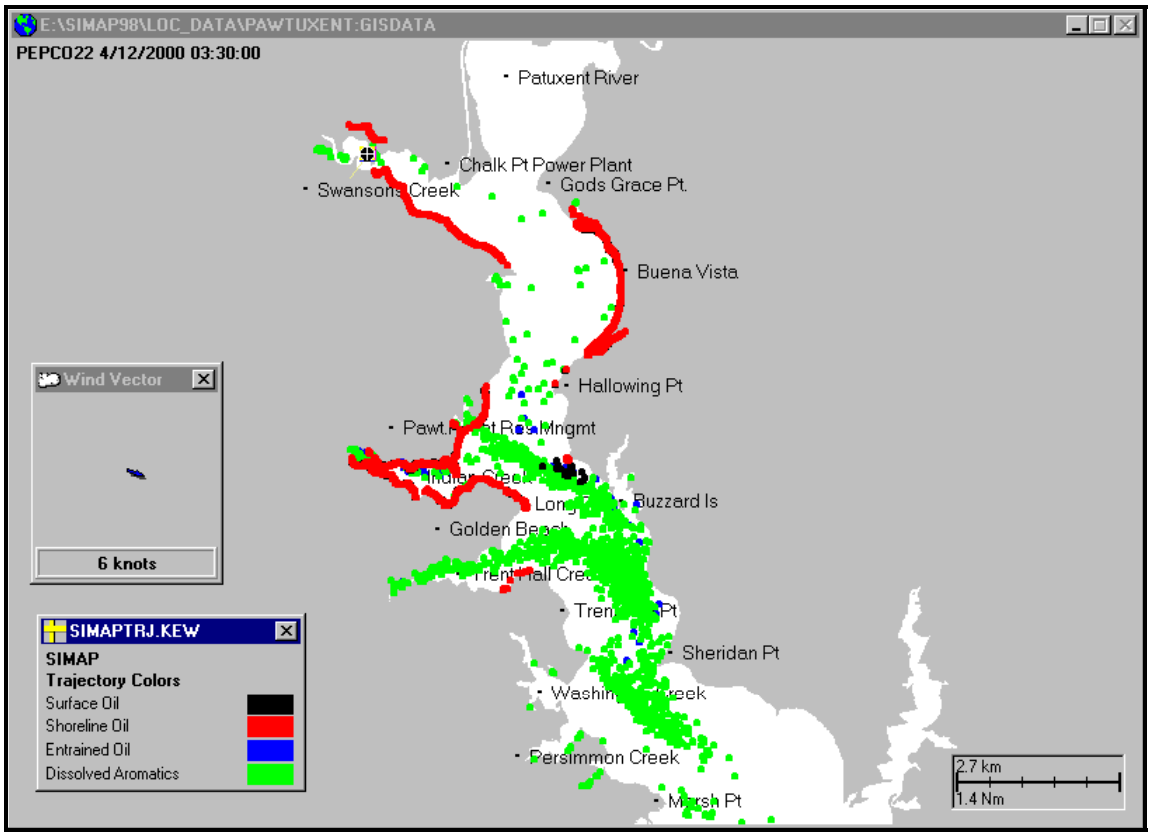
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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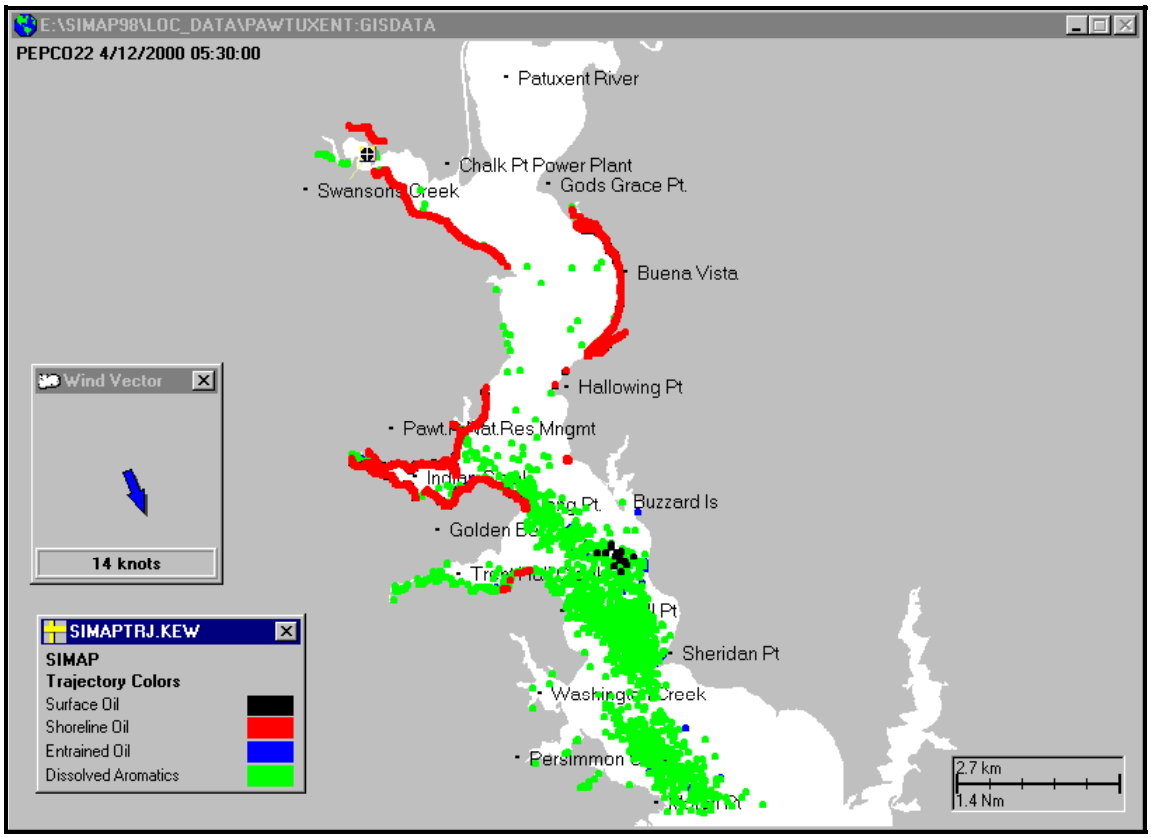
PEPCO22 4/12/2000 03:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Buzzard Is
Golden Beach
Sheridan Pt
Persimmon Creek
Wind Vector
6 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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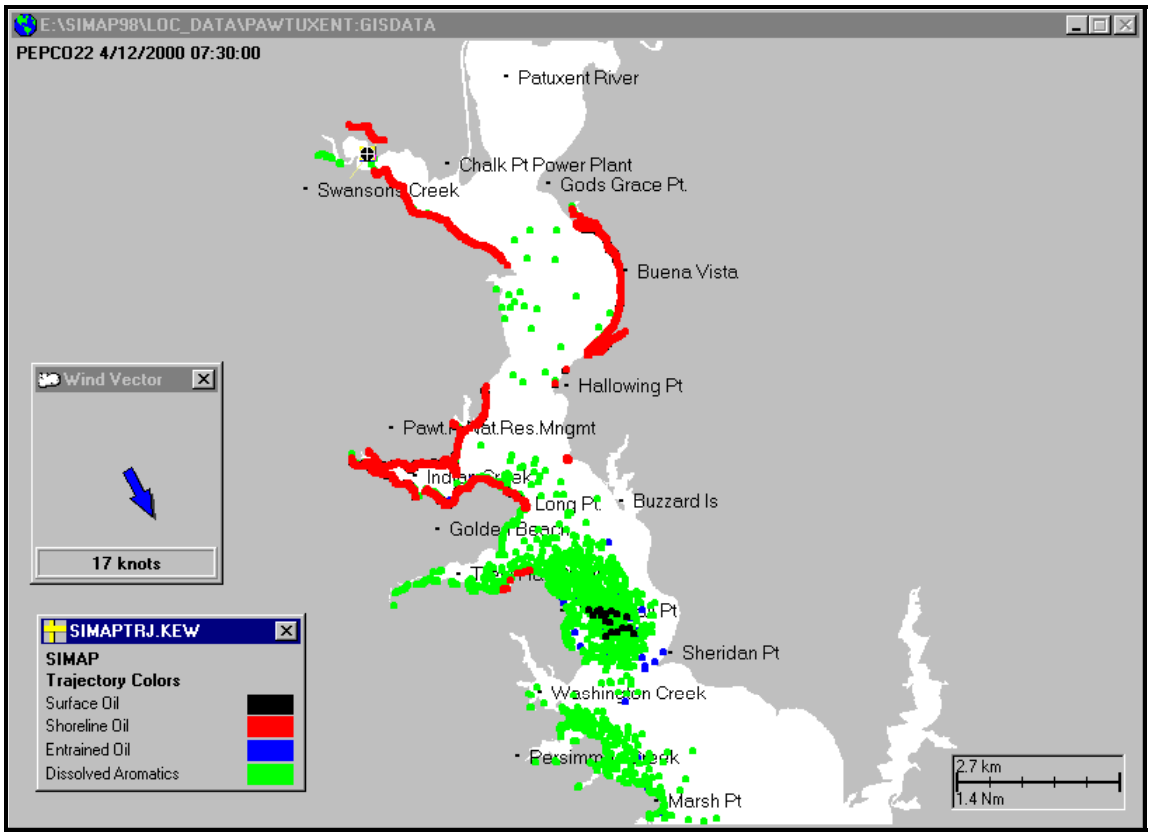
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Buzzard Is
Sheridan Pt
Wind Vector
14 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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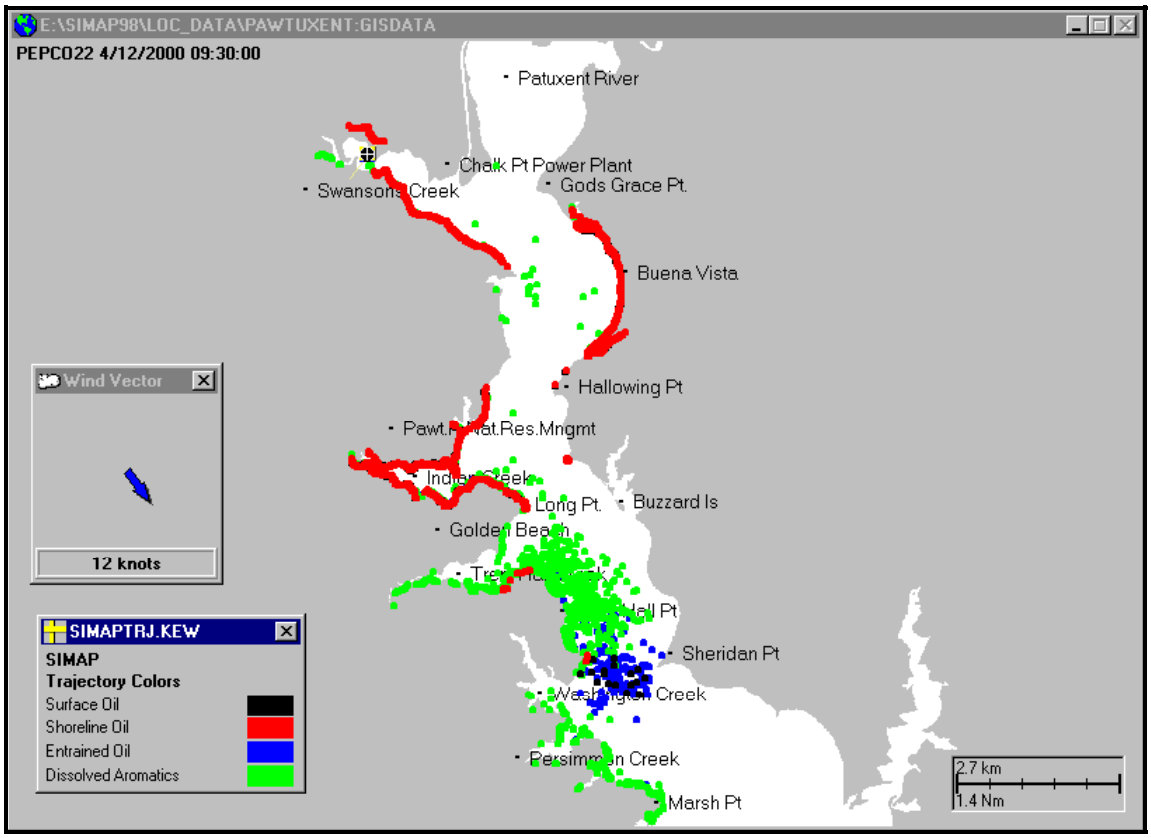
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Sheridan Pt
Marsh Pt
Wind Vector
17 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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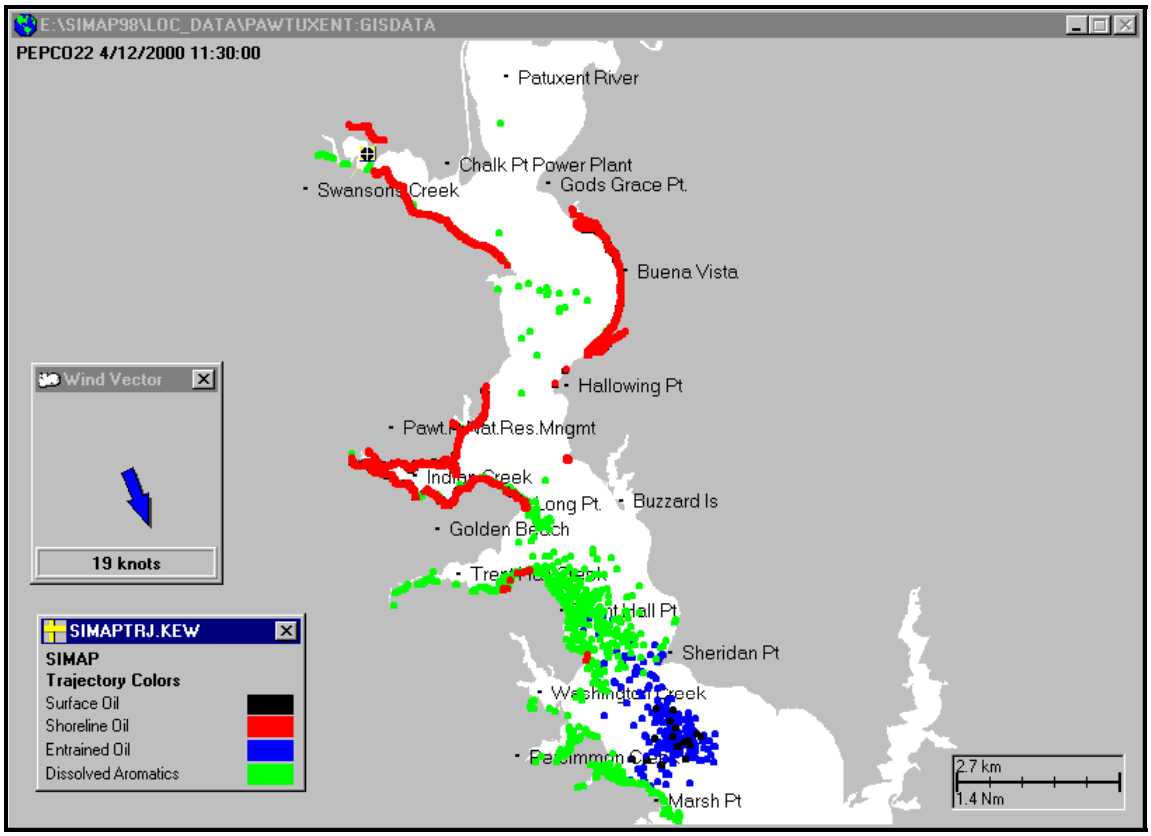
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Sheridan Pt
Marsh Pt
Wind Vector
12 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm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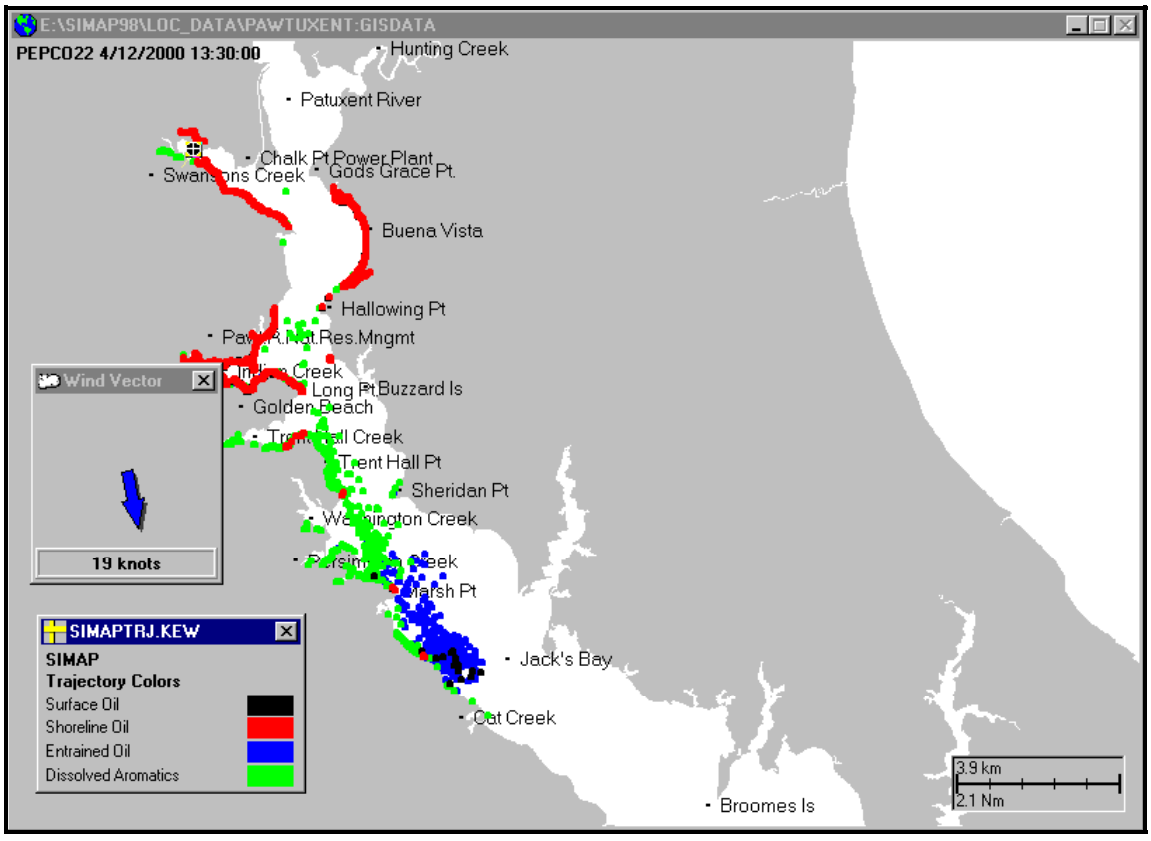
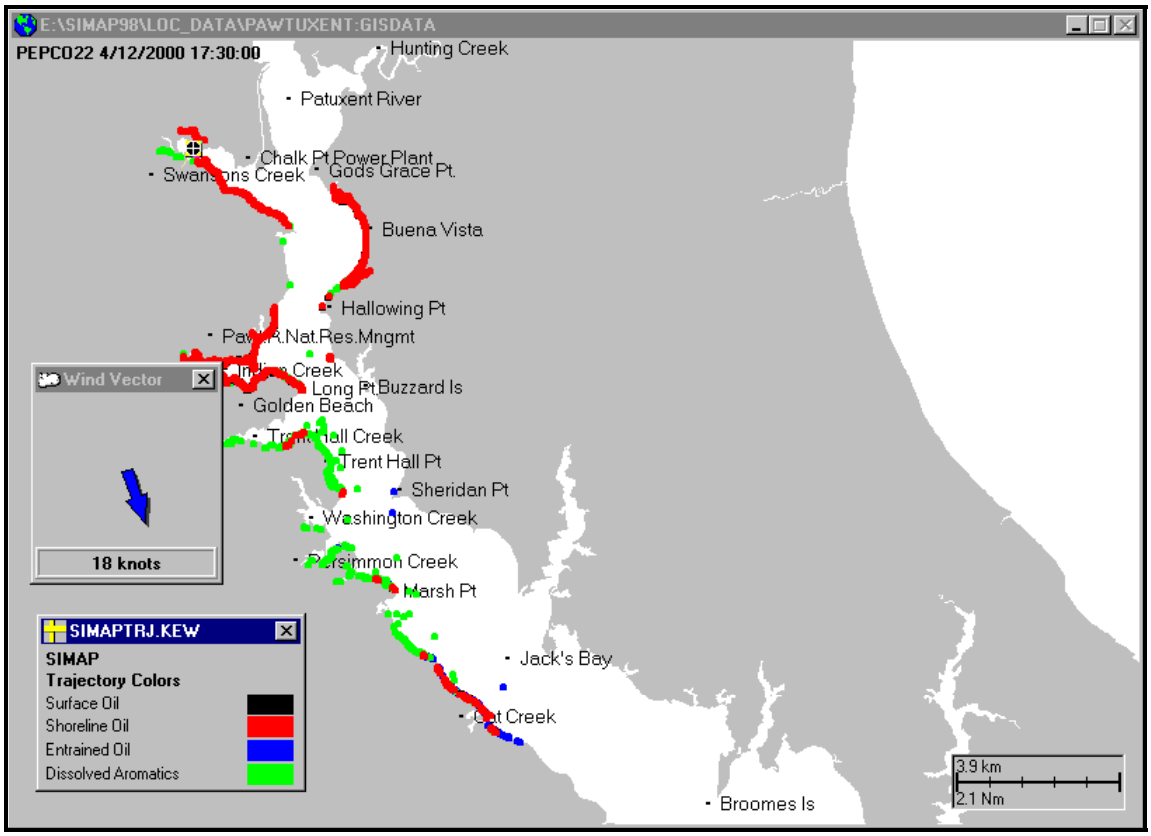
PEPCO22 4/12/2000 11:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Wind Vector
19 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
2.7 km
1.4 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 13:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Parsimmon Creek
Marsh Pt
Jack's Bay
Cat Creek
Broomes Is
Wind Vector
19 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm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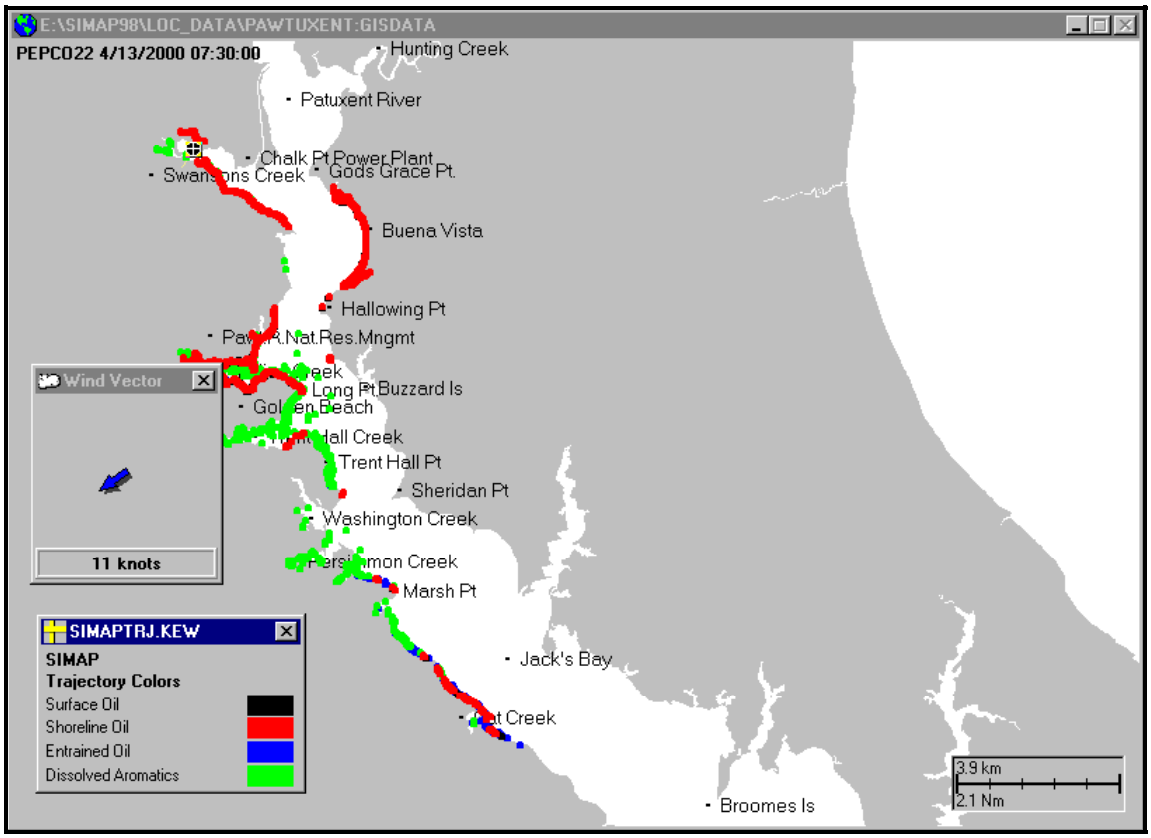
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
18 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm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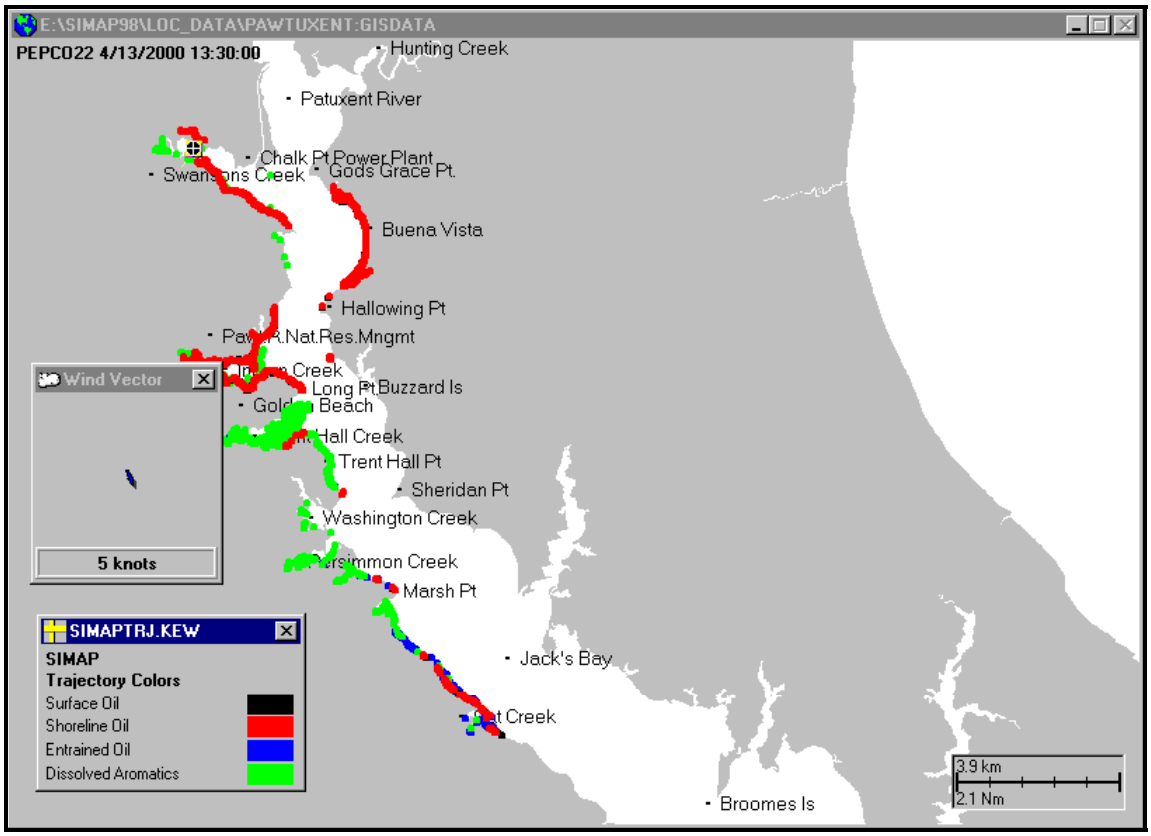
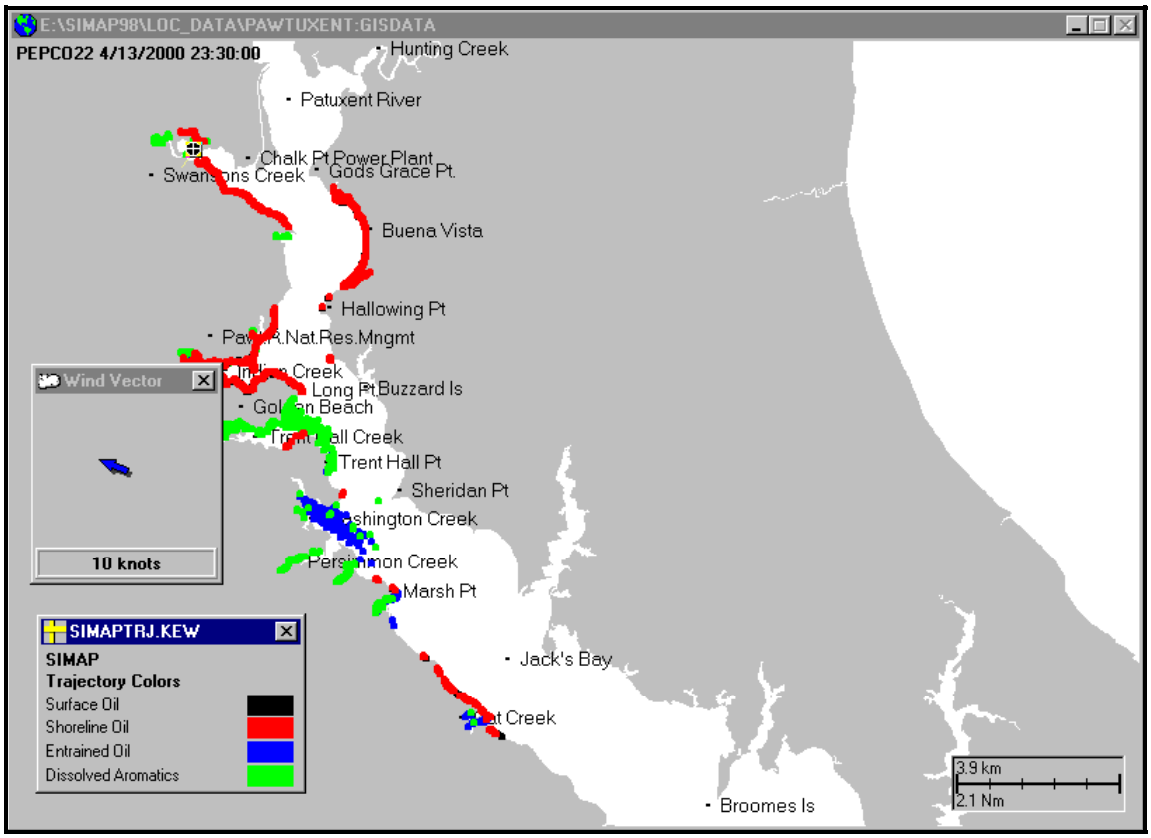
PEPCO22 4/13/2000 07:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
11 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 13:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
5 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm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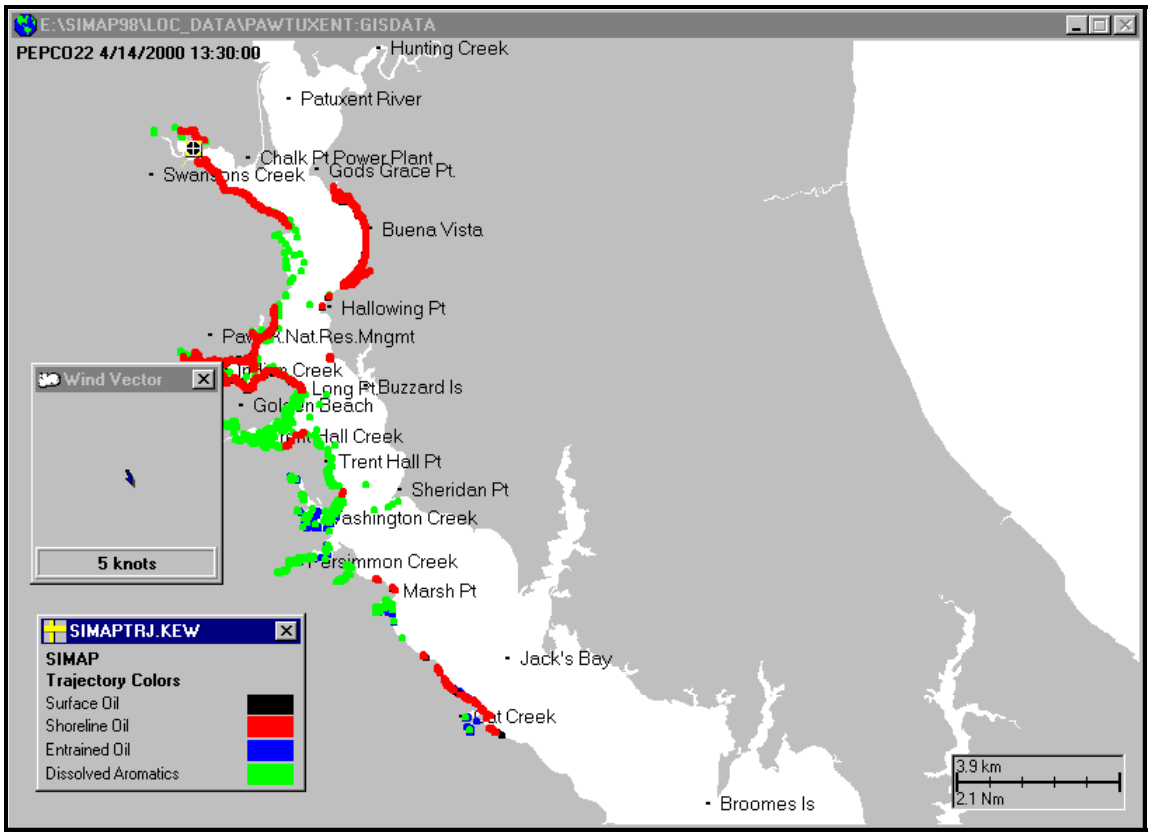
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
10 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm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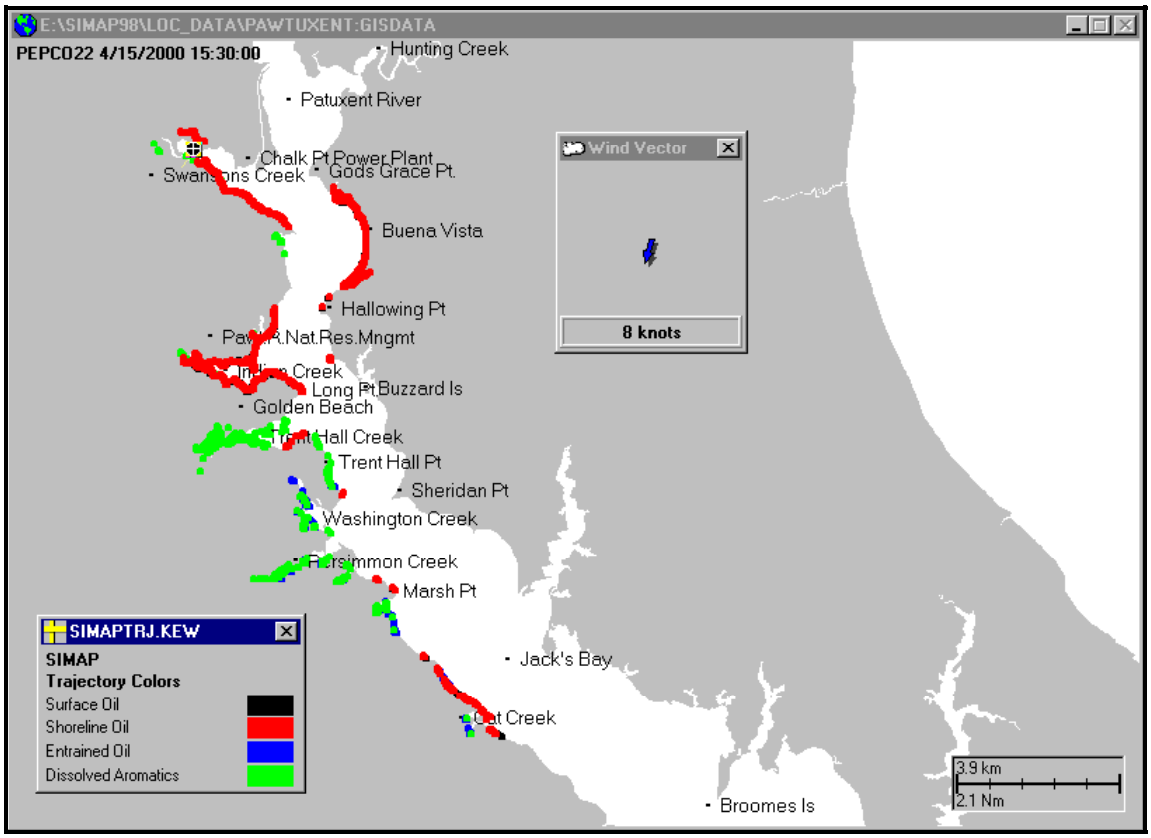
PEPCO22 4/14/2000 13:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
5 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm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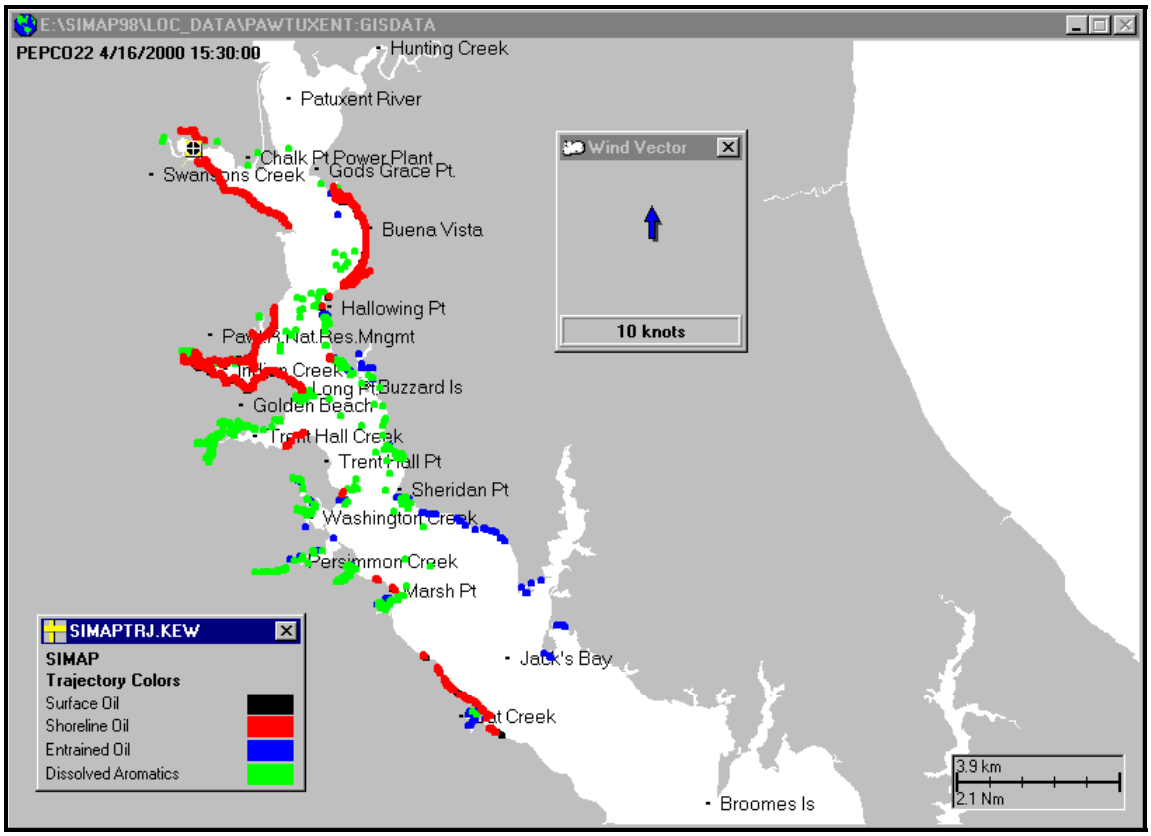
PEPCO22 4/15/2000 15:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
8 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm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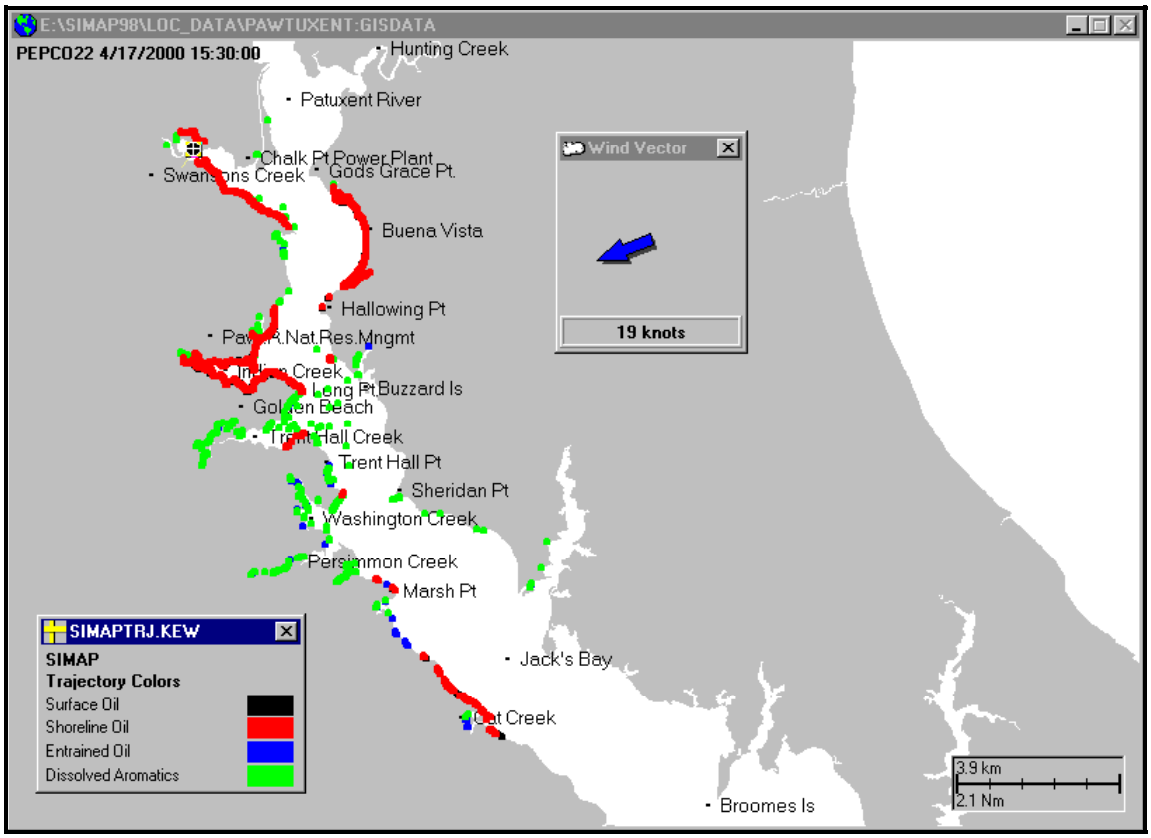
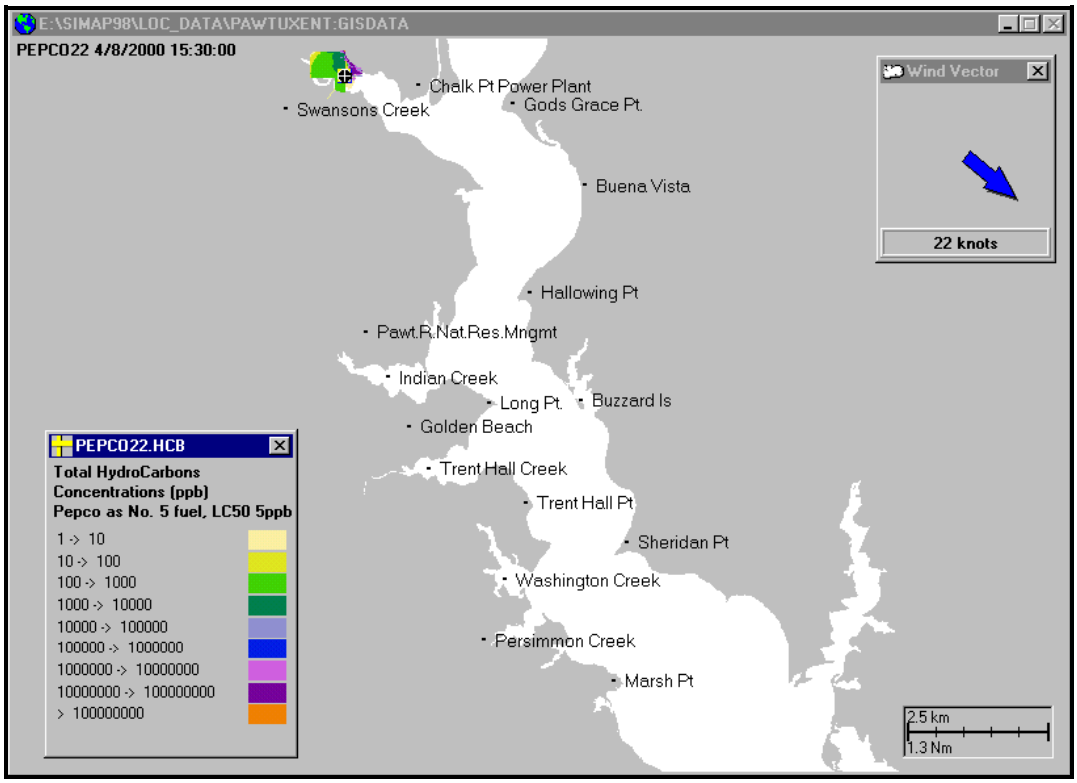
PEPCO22 4/16/2000 15:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swans ns Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pa R Nat Res Mngmt
Long Pt Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
10 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/17/2000 15:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swans ns Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pa R Nat Res Mngmt
Long Pt Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Jack's Bay
Broomes Is
Wind Vector
19 knots
SIMAPTRJ.KEW
SIMAP
Trajectory Colors
Surface Oil
Shoreline Oil
Entrained Oil
Dissolved Aromatics
3.9 km
2.1 Nm

Appendix G. Modeled Total Hydrocarbon Concentrations over Time

The following figures show concentrations of total hydrocarbons on and in the water after the spill. Concentrations are calculated for a grid (50 X 50 cells horizontally, 5 layers vertically) sized to just cover the plume at the time of the output. The surface layer of that grid contains the surface slicks and entrained oil immediately under the slick (near the water surface). The planar view shows vertical maximum concentration. Shoreline oiling is not shown in these figures.

Note that the shoreline shown in these model outputs are for visual reference only, whereas the habitat (and corresponding depth) grid (Appendices B and C) defines the actual shoreline to the model.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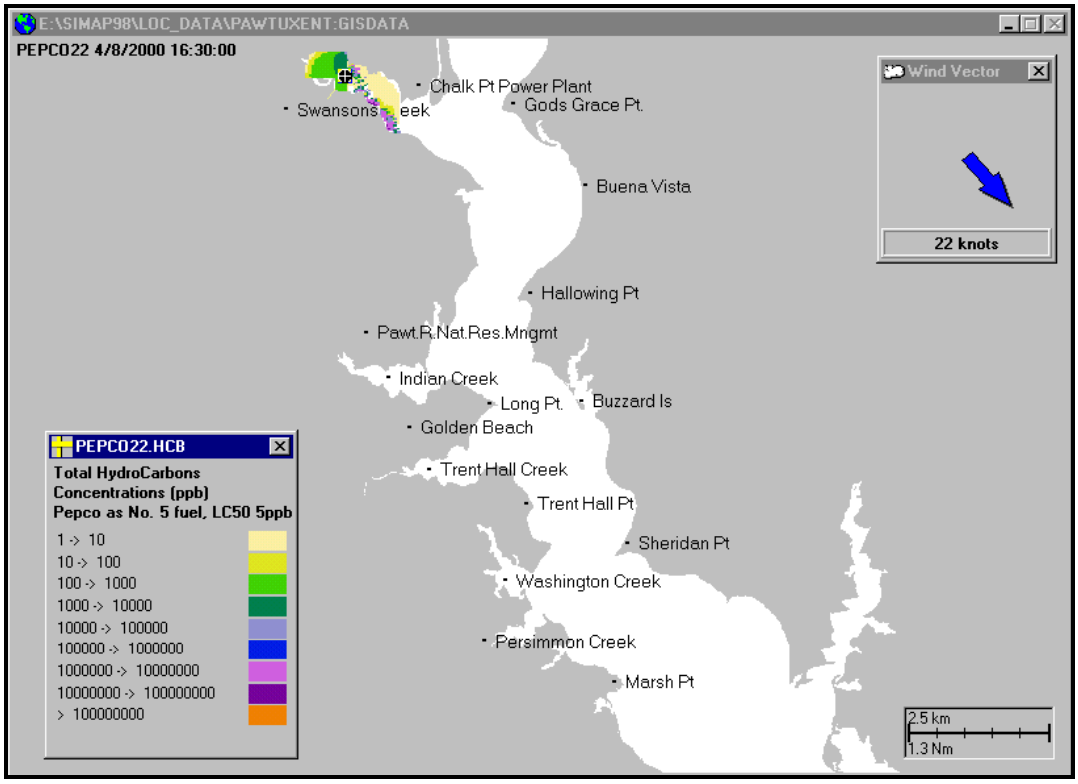
PEPCO22 4/8/2000 15:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
22 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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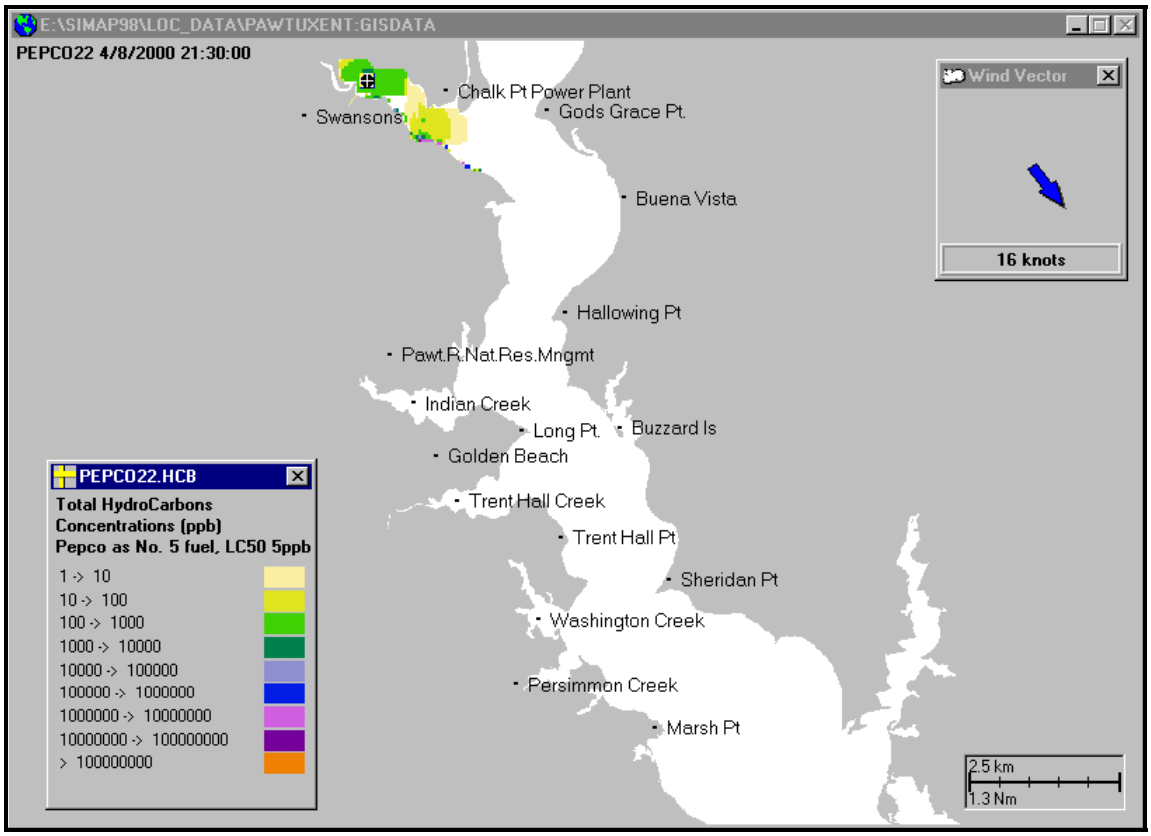
PEPCO22 4/8/2000 16:30:00
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
22 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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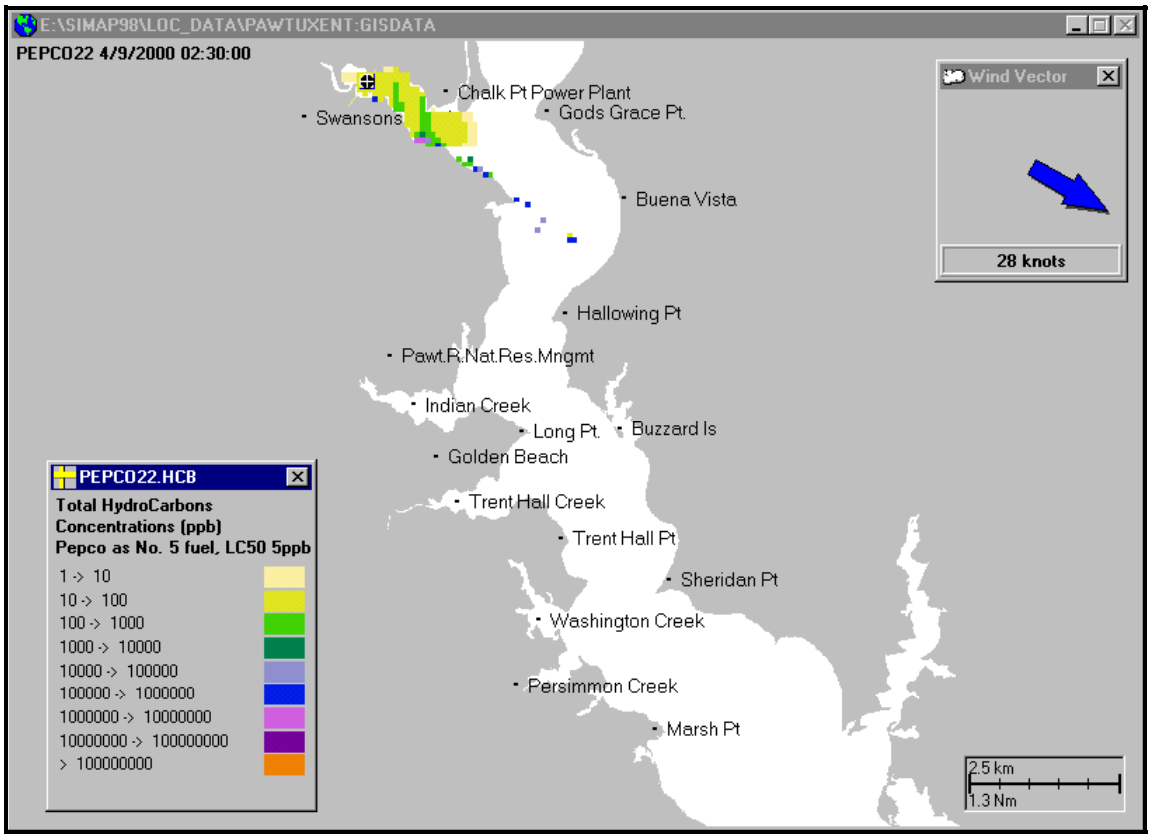
PEPCO22 4/8/2000 21:30:00
Chalk Pt Power Plant
Swansons
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
16 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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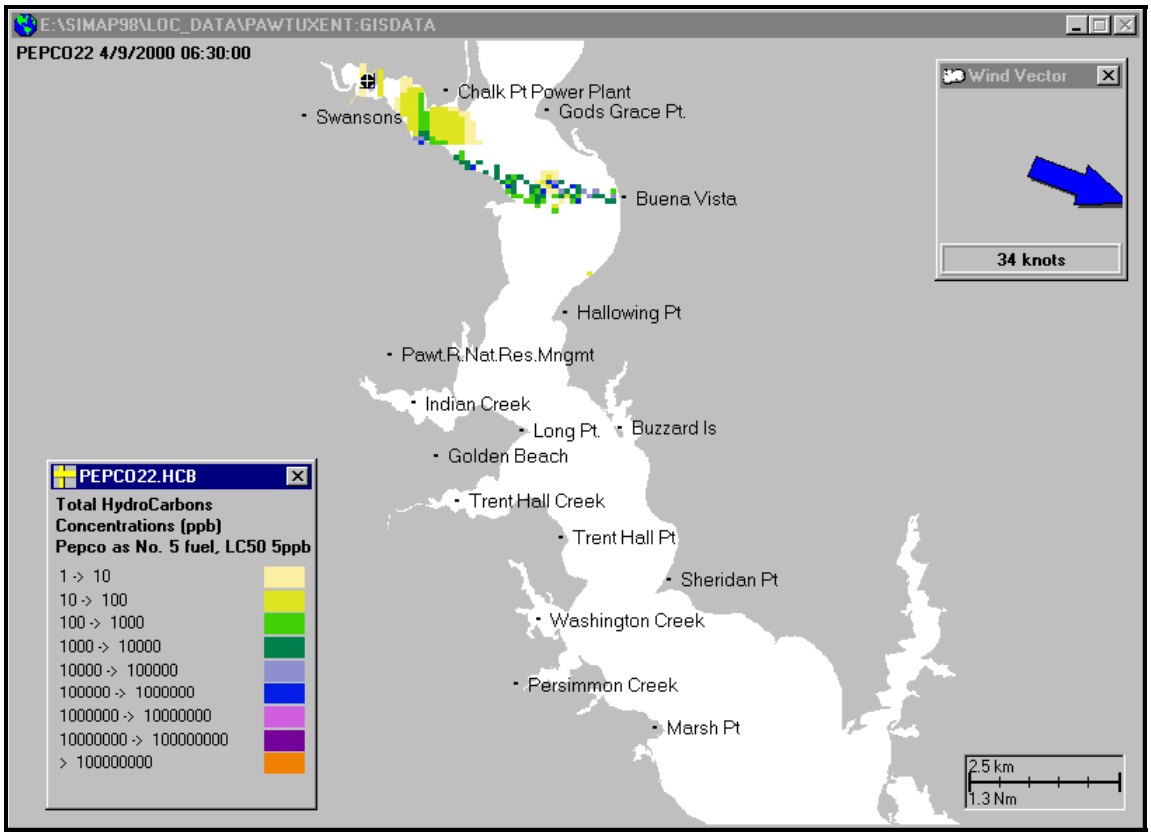
PEPCO22 4/9/2000 02:30:00
Chalk Pt Power Plant
Swansons
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
28 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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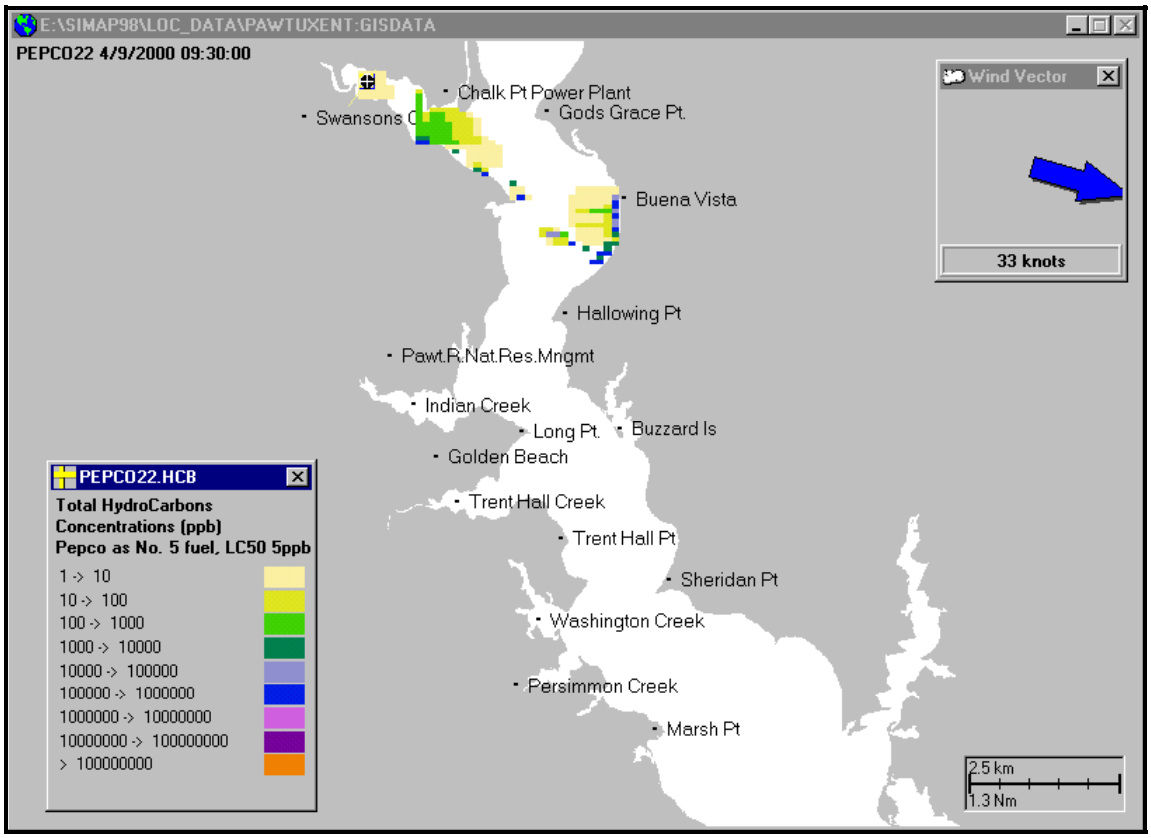
Chalk Pt Power Plant
Swansons
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
34 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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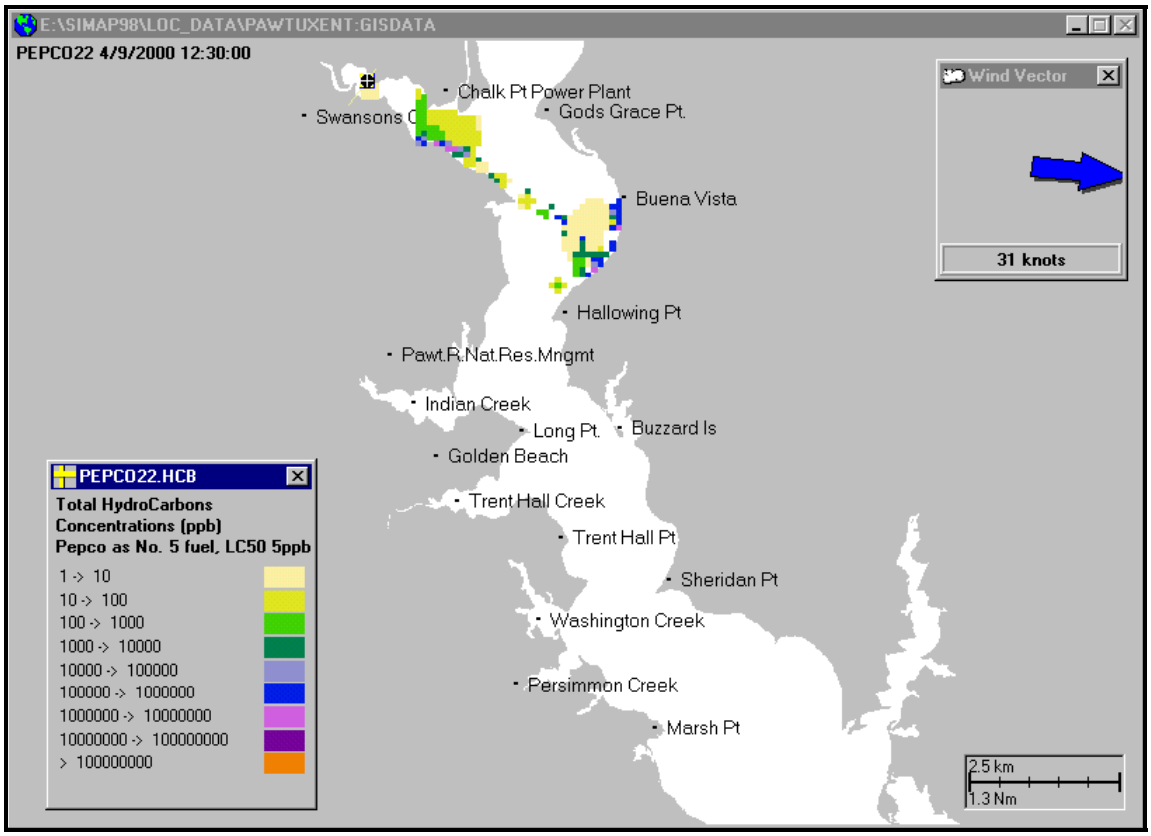
PEPCO22 4/9/2000 09:30:00
Chalk Pt Power Plant
Swansons
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
33 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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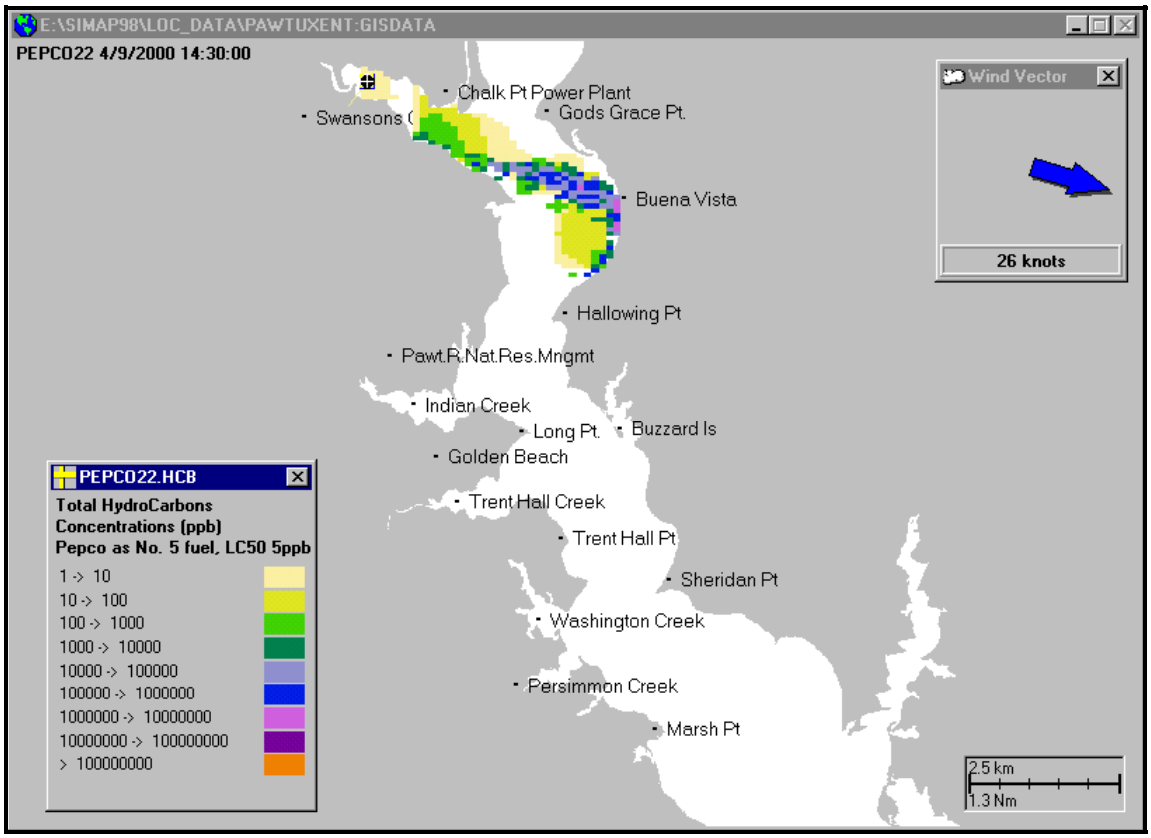
PEPCO22 4/9/2000 12:30:00
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
31 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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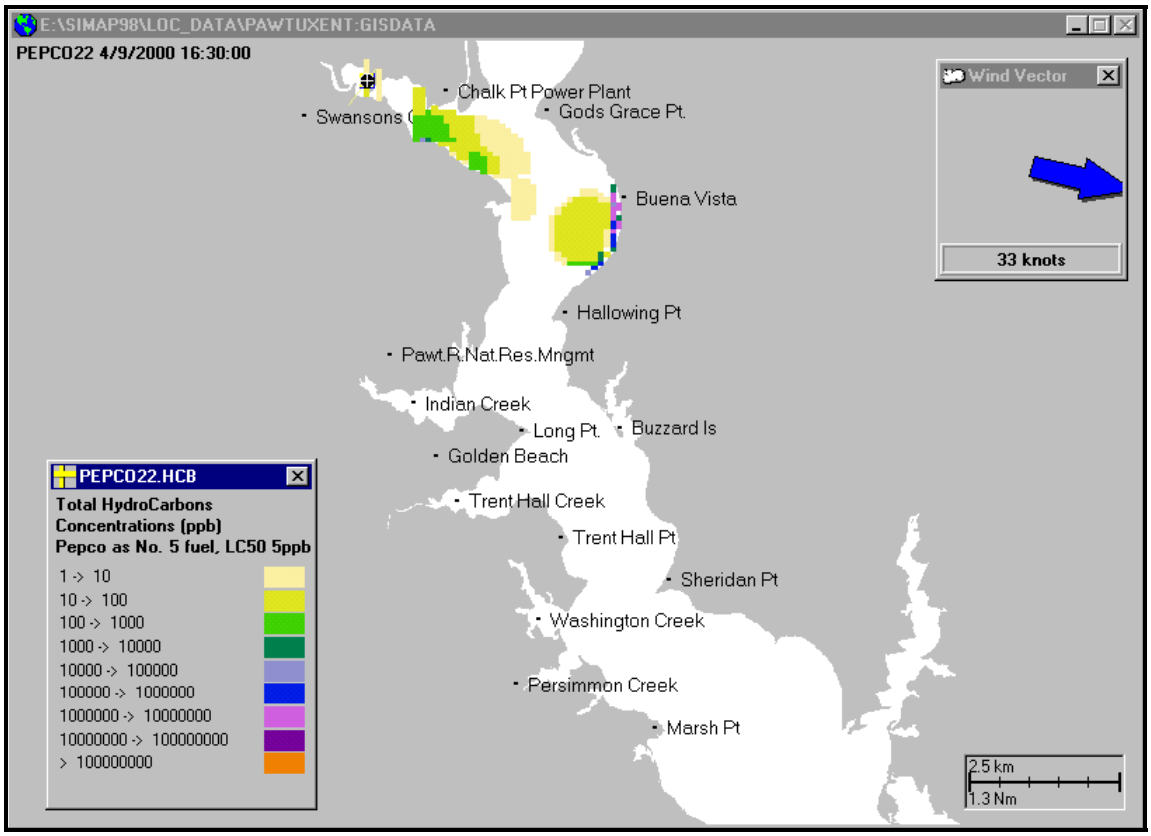
PEPCO22 4/9/2000 14:30:00
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
26 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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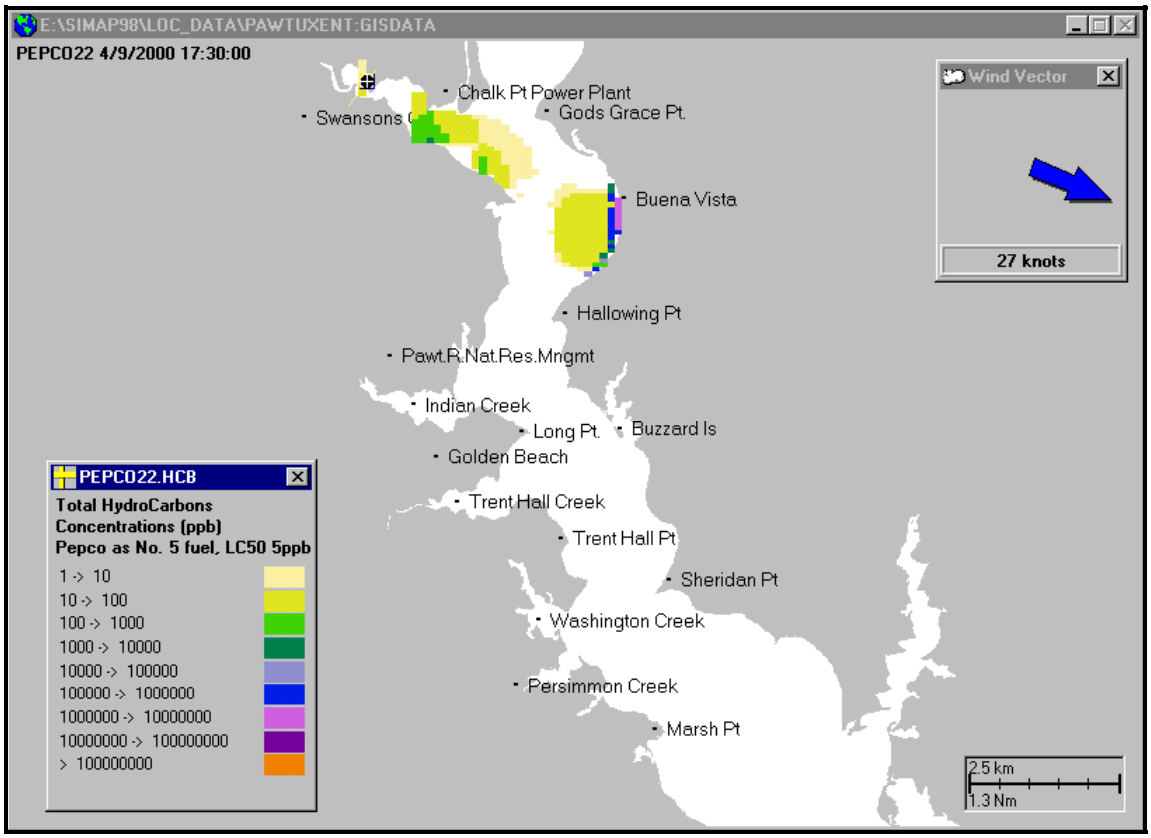
PEPCO22 4/9/2000 16:30:00
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
33 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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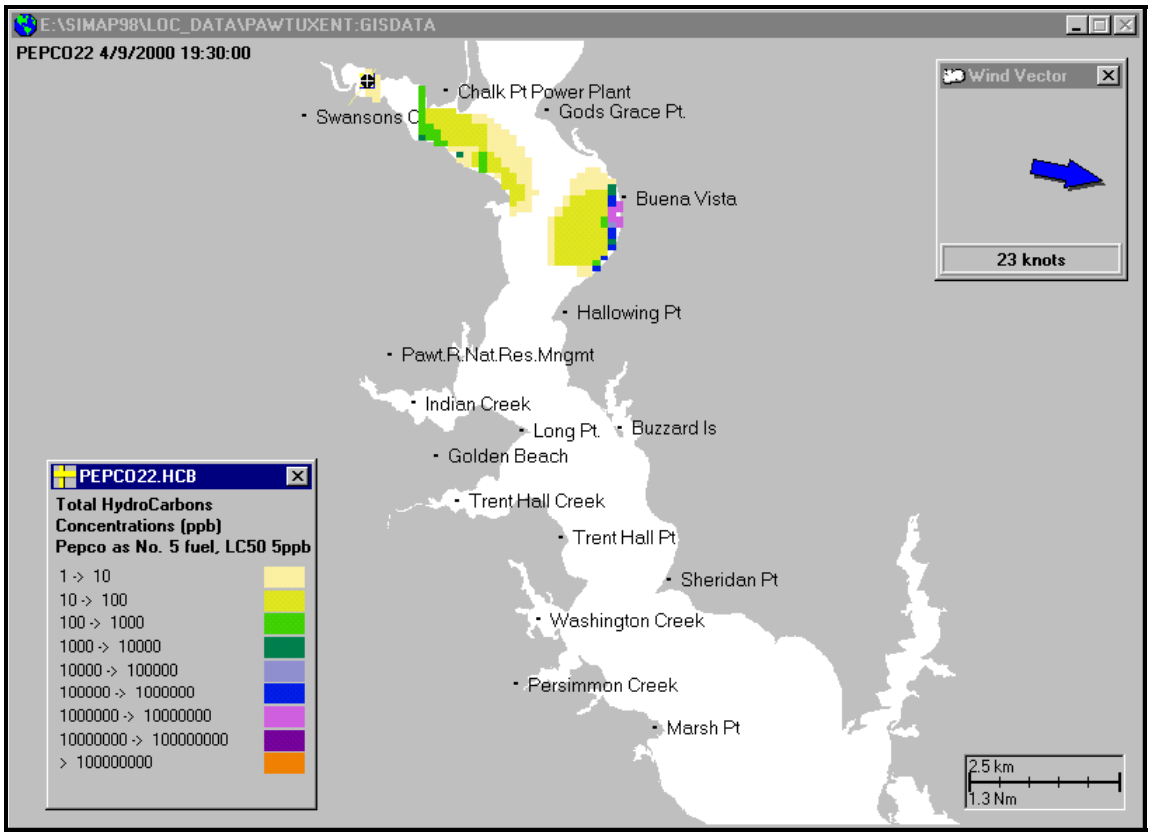
PEPCO22 4/9/2000 17:30:00
Chalk Pt Power Plant
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
27 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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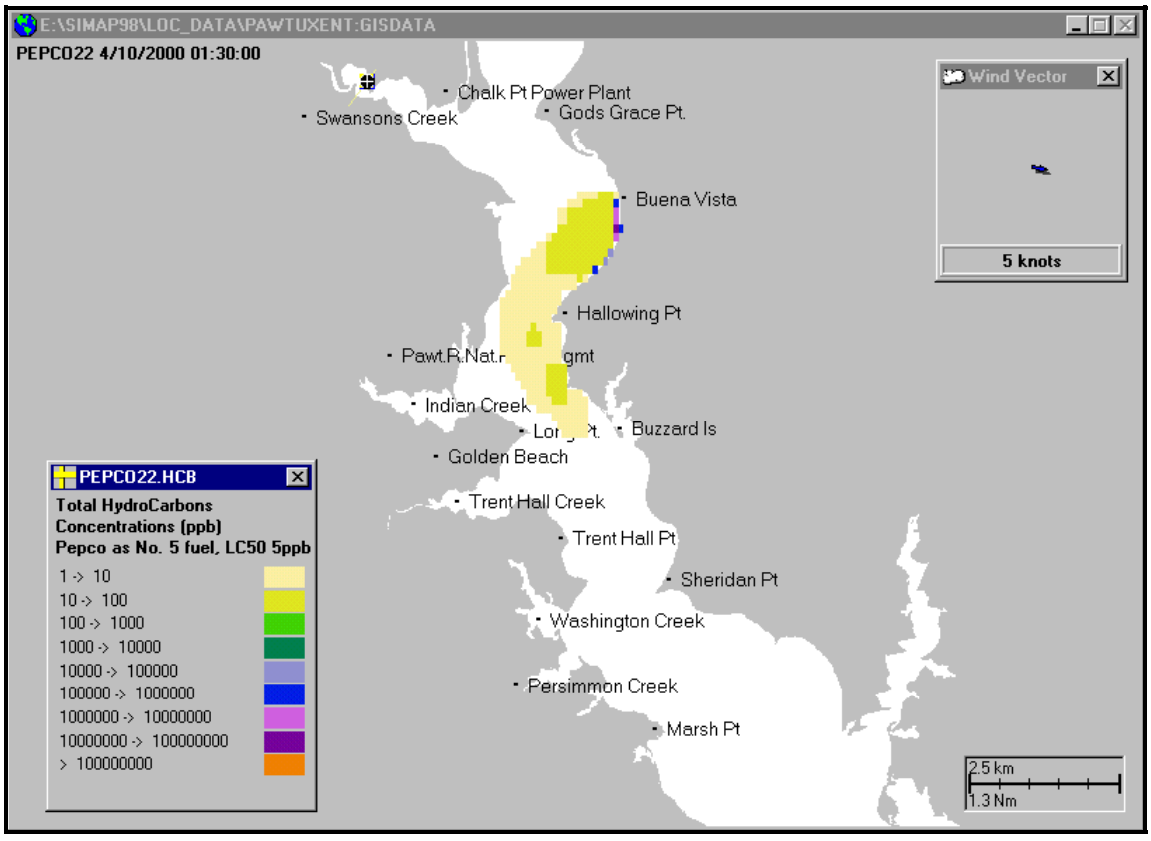
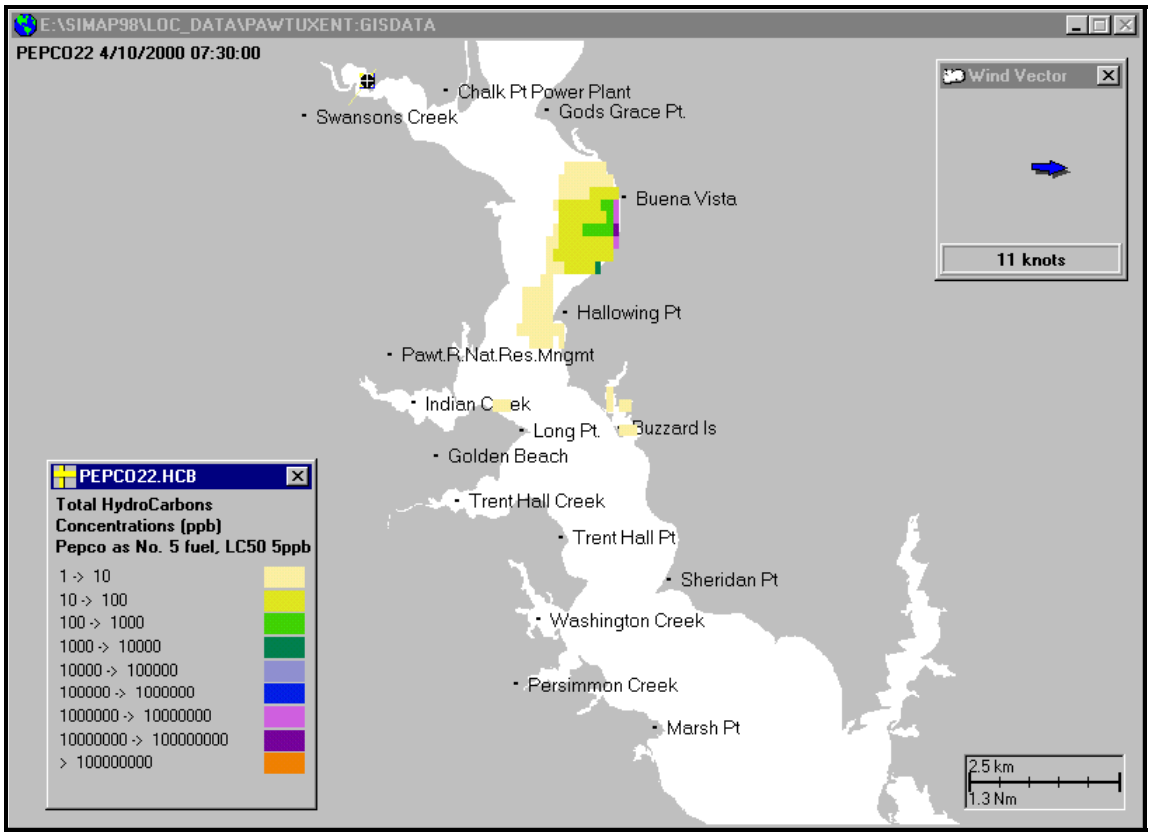
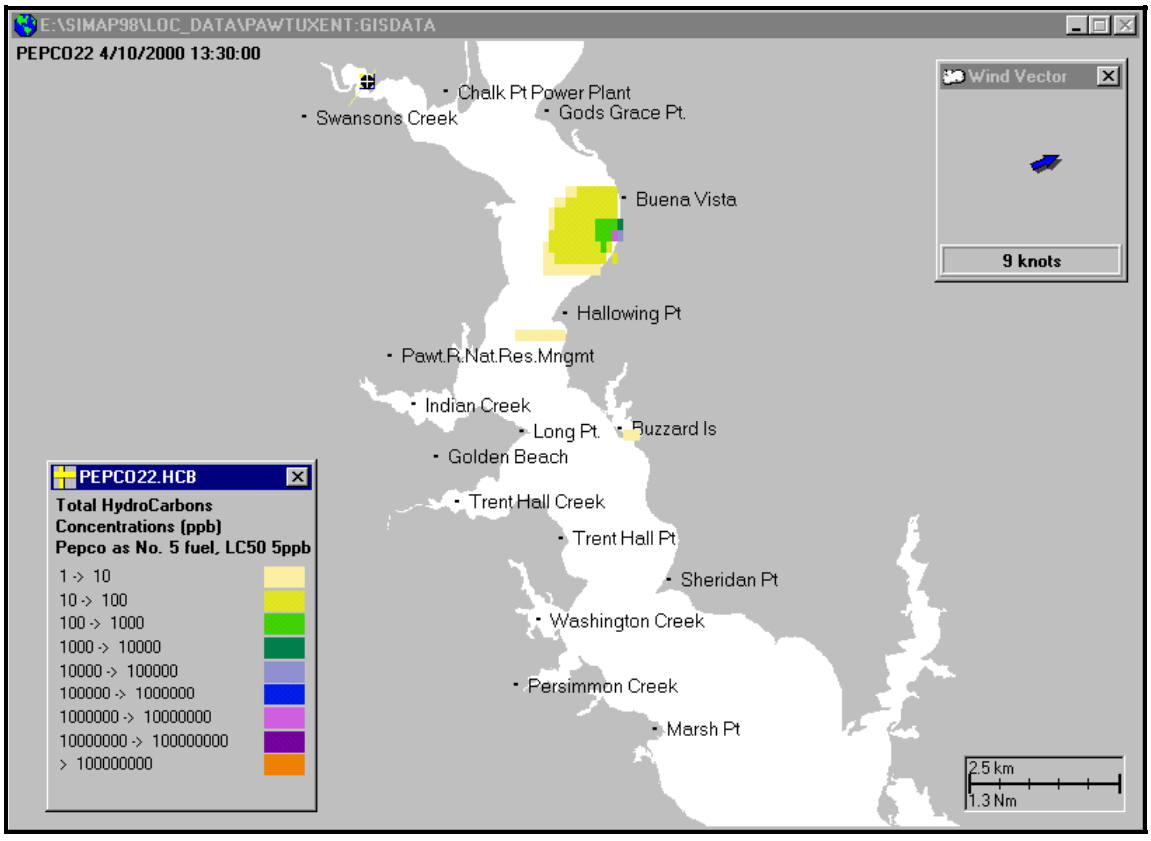
PEPCO22 4/9/2000 19:30:00
Chalk Pt Power Plant
Swansons C
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
23 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 01:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Indian Creek
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
5 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 07:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
11 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm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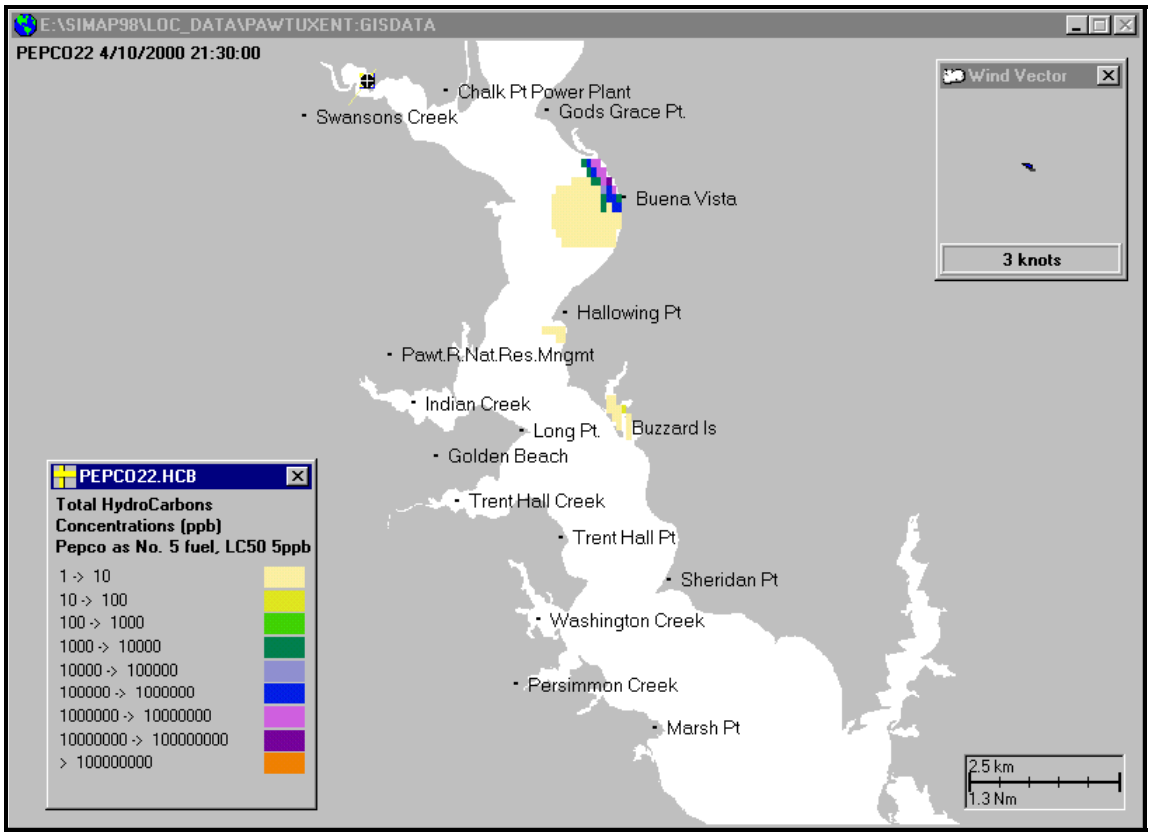
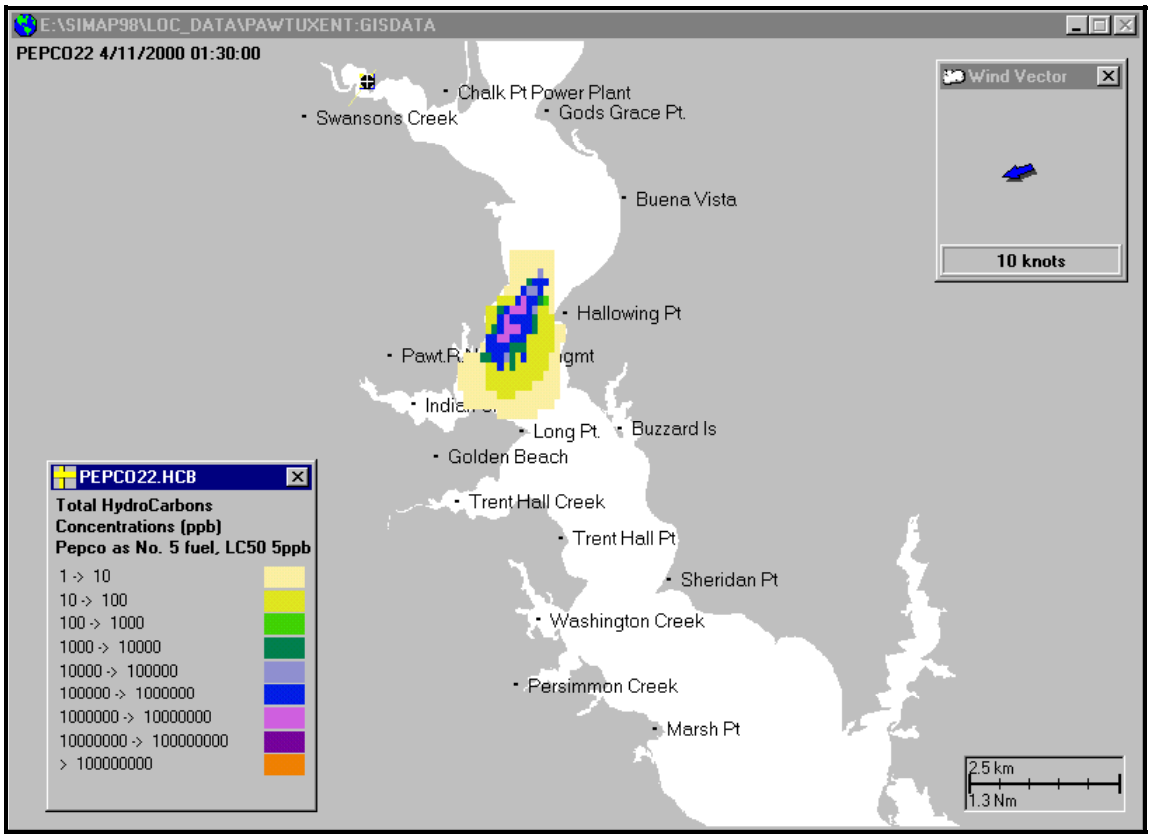
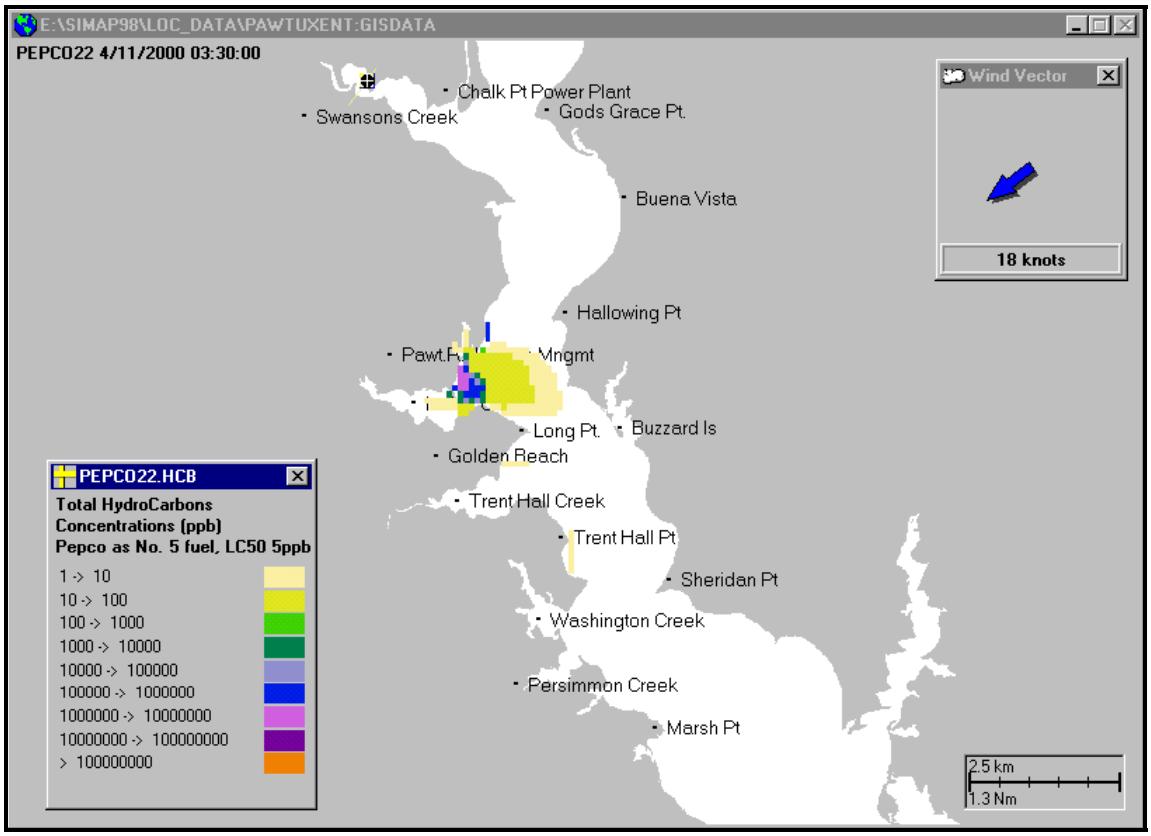
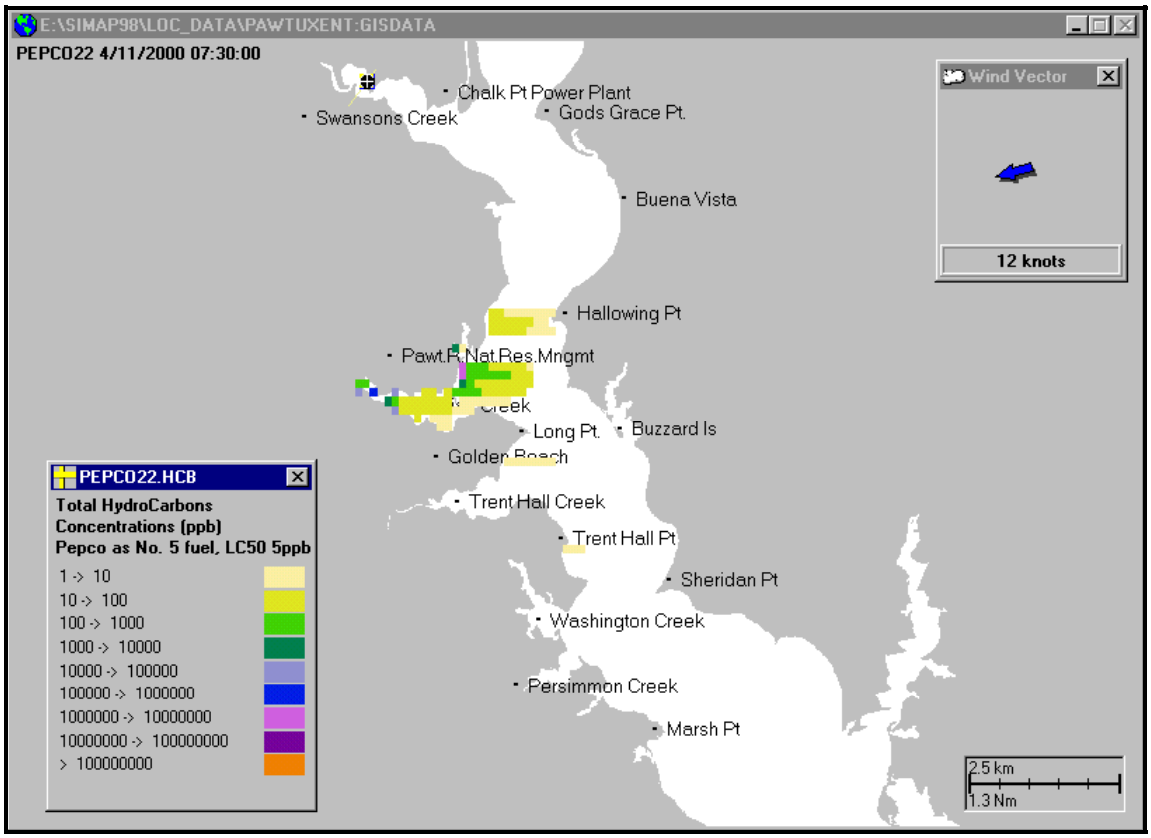
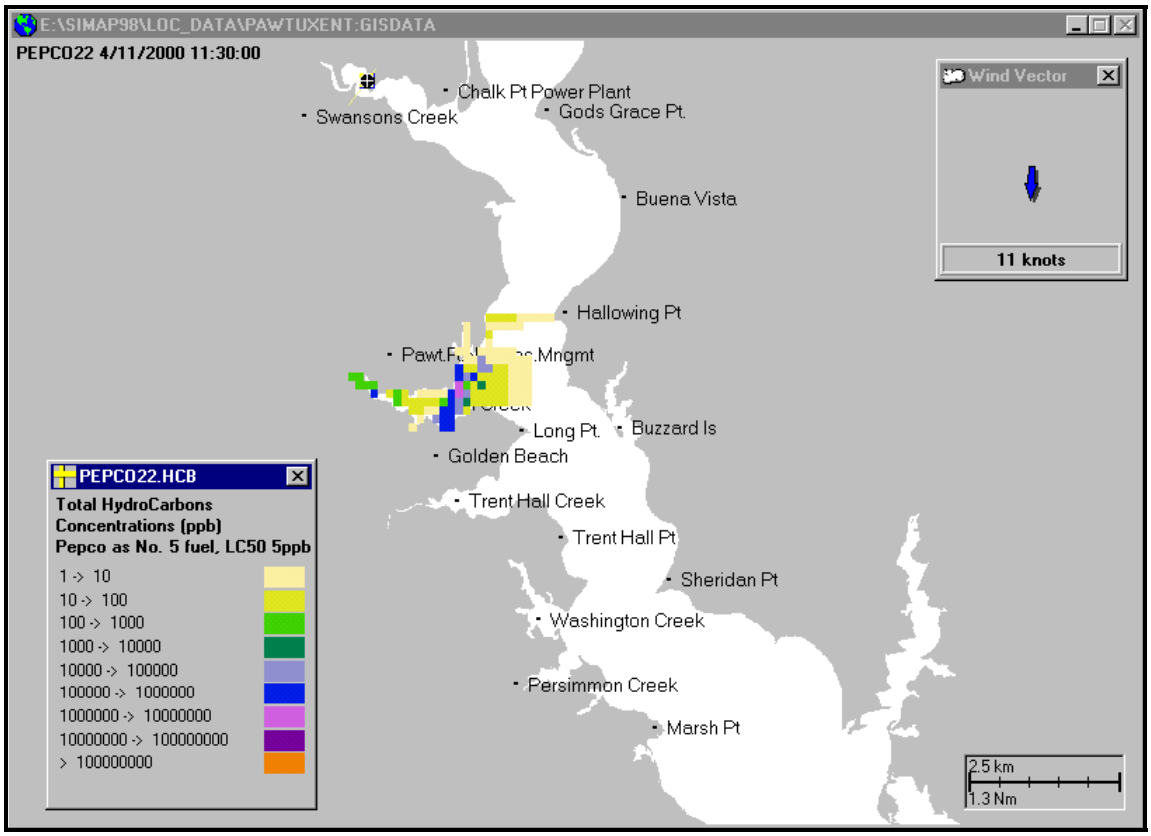
PEPCO22 4/10/2000 13:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

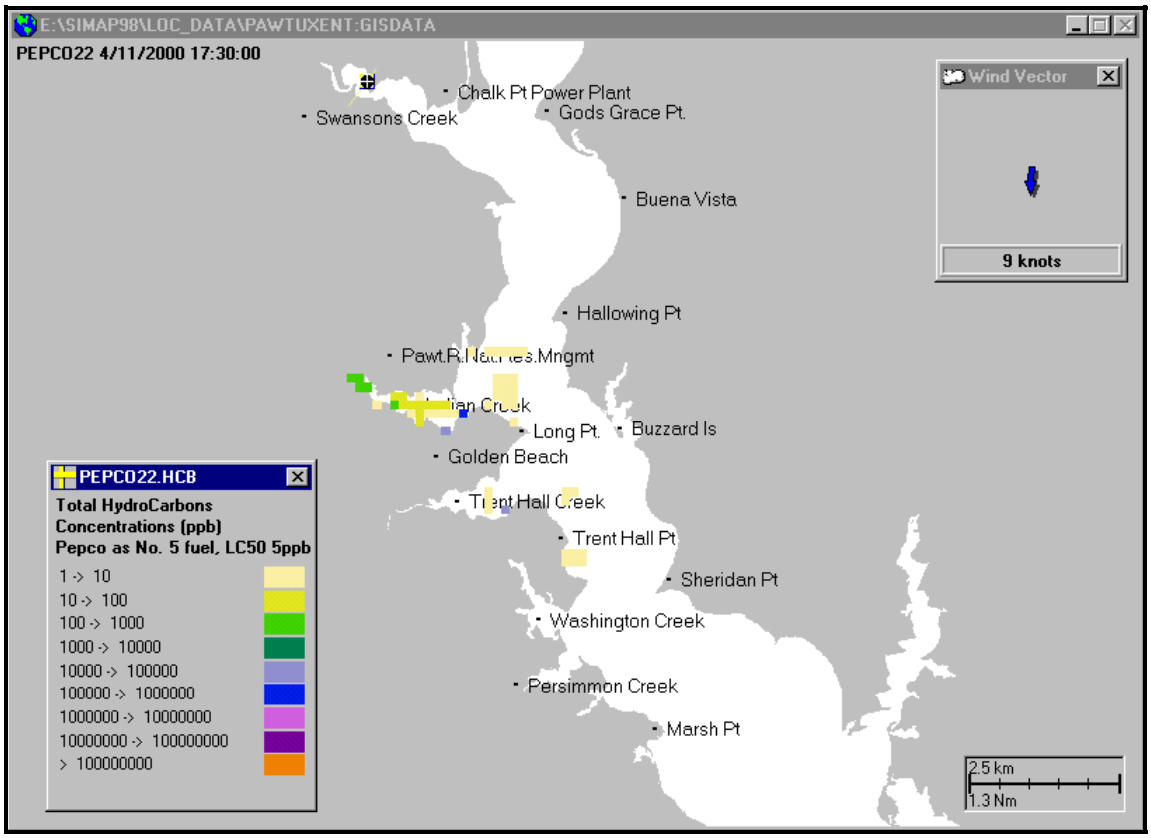

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 21:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Wind Vector
3 knots
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

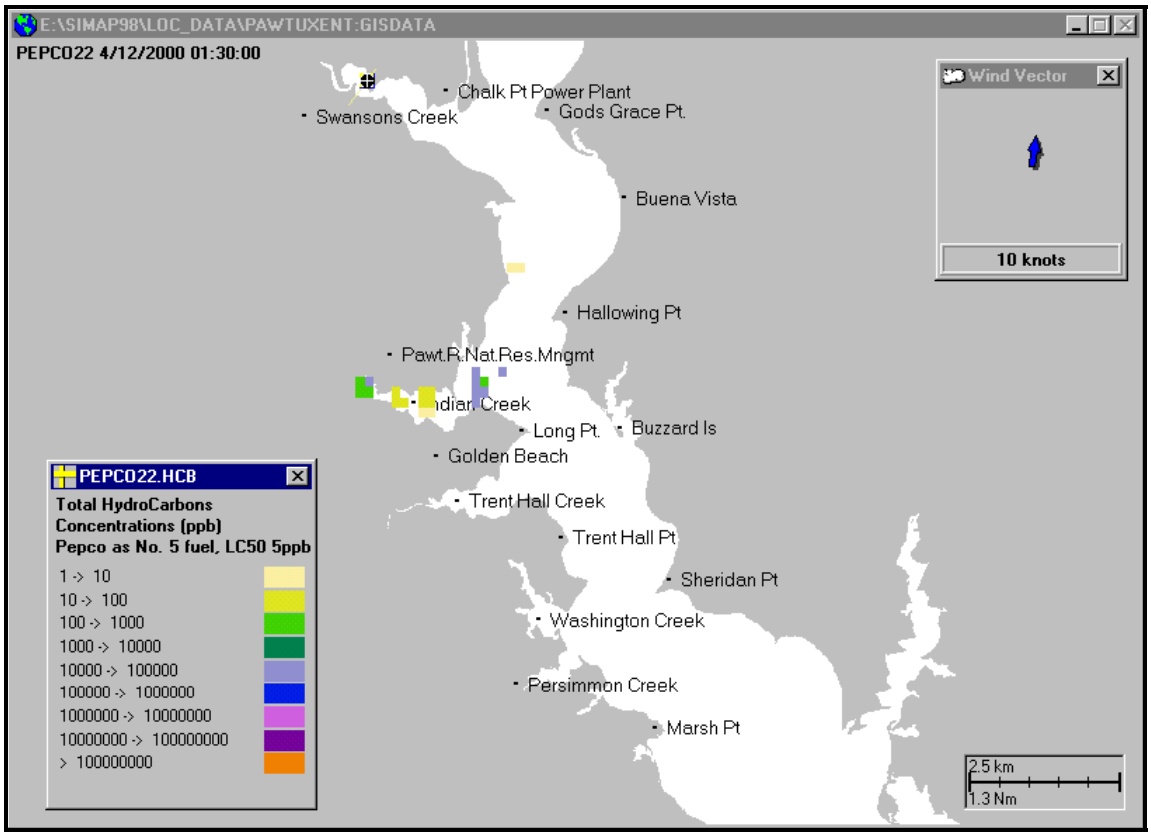

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 01:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Wind Vector
10 knots
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

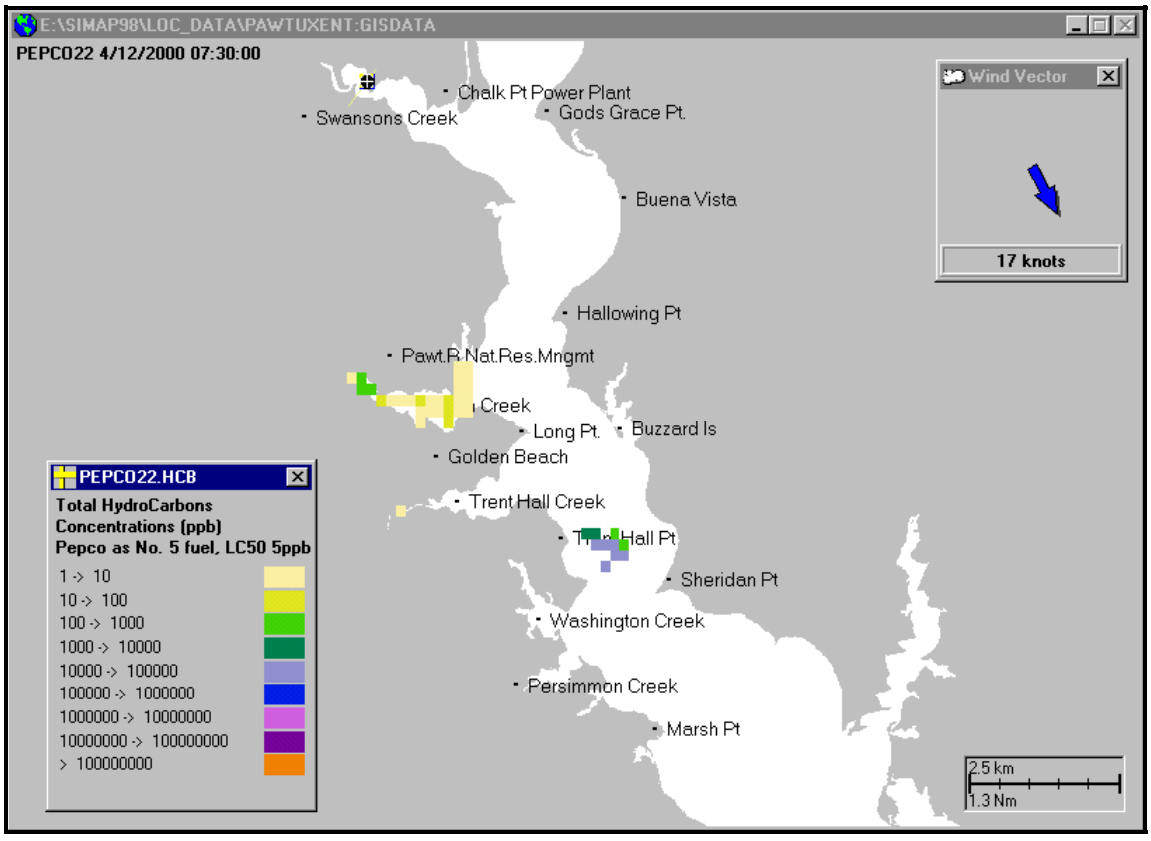

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 03:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R. Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
18 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

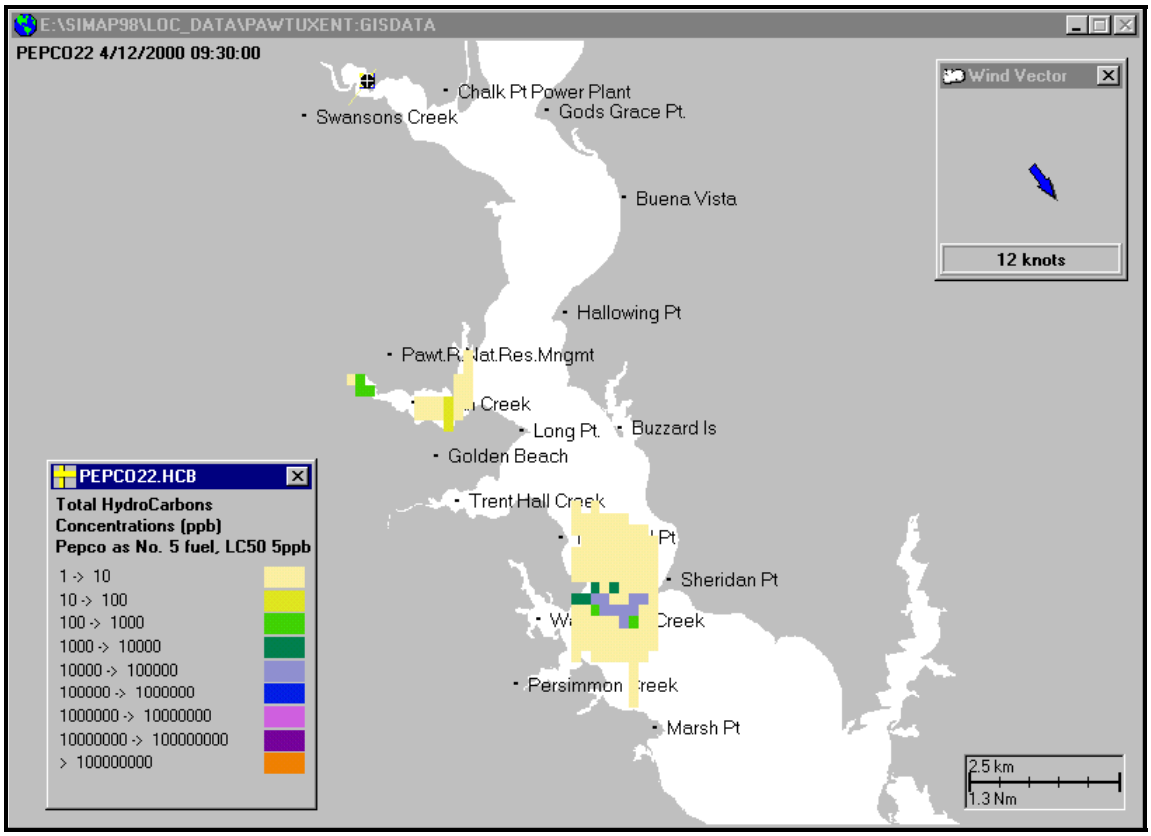

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 07:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
12 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

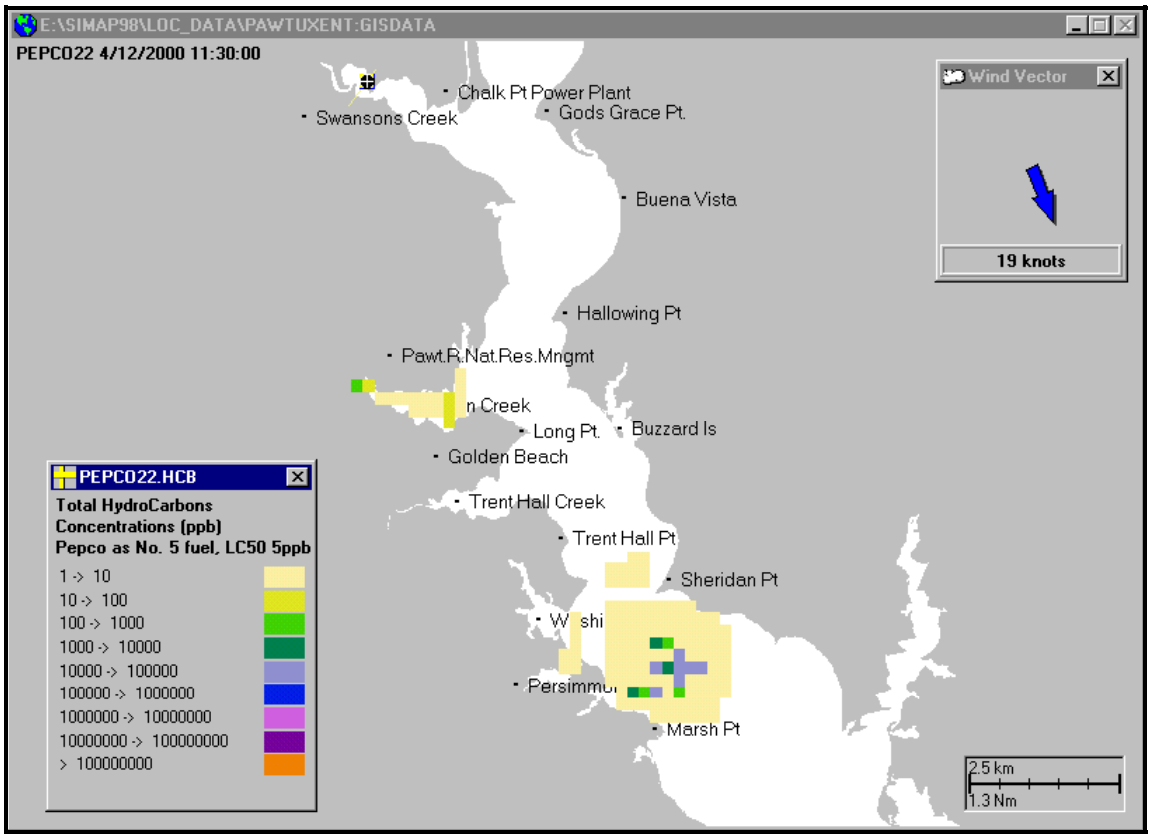

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 11:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
11 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

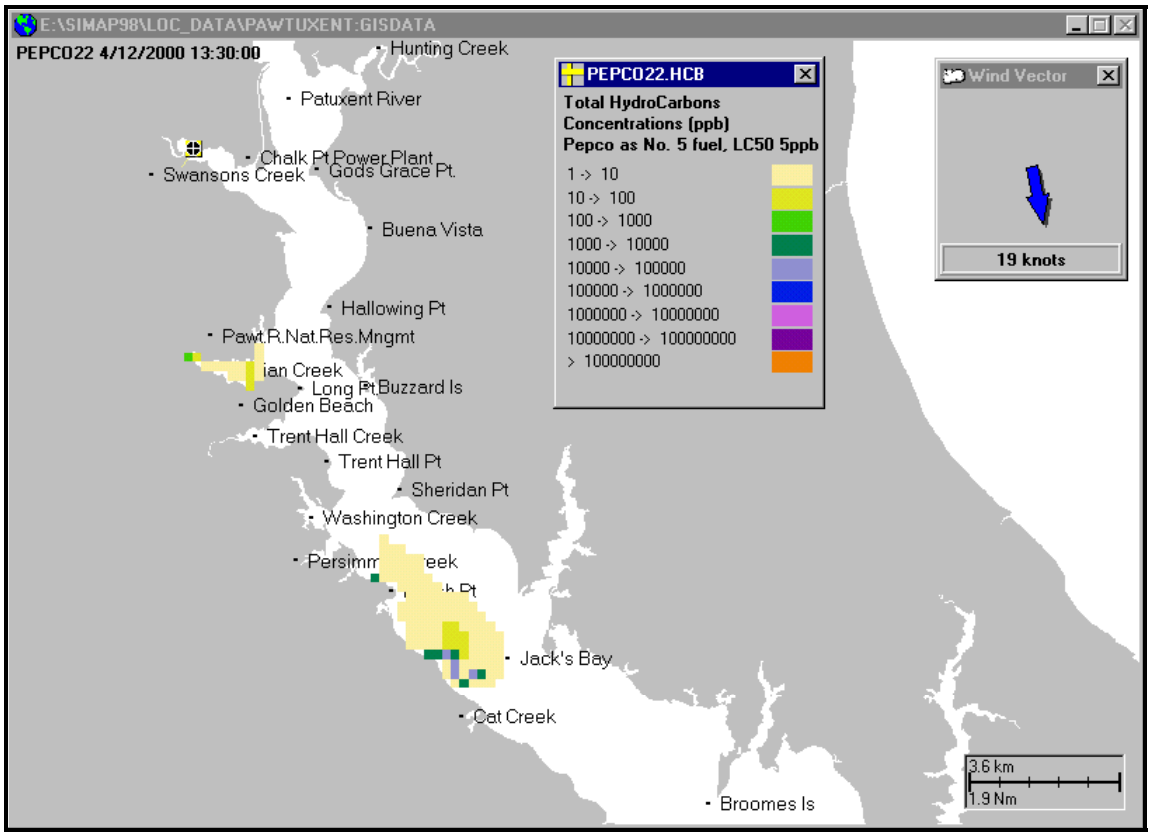

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 17:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

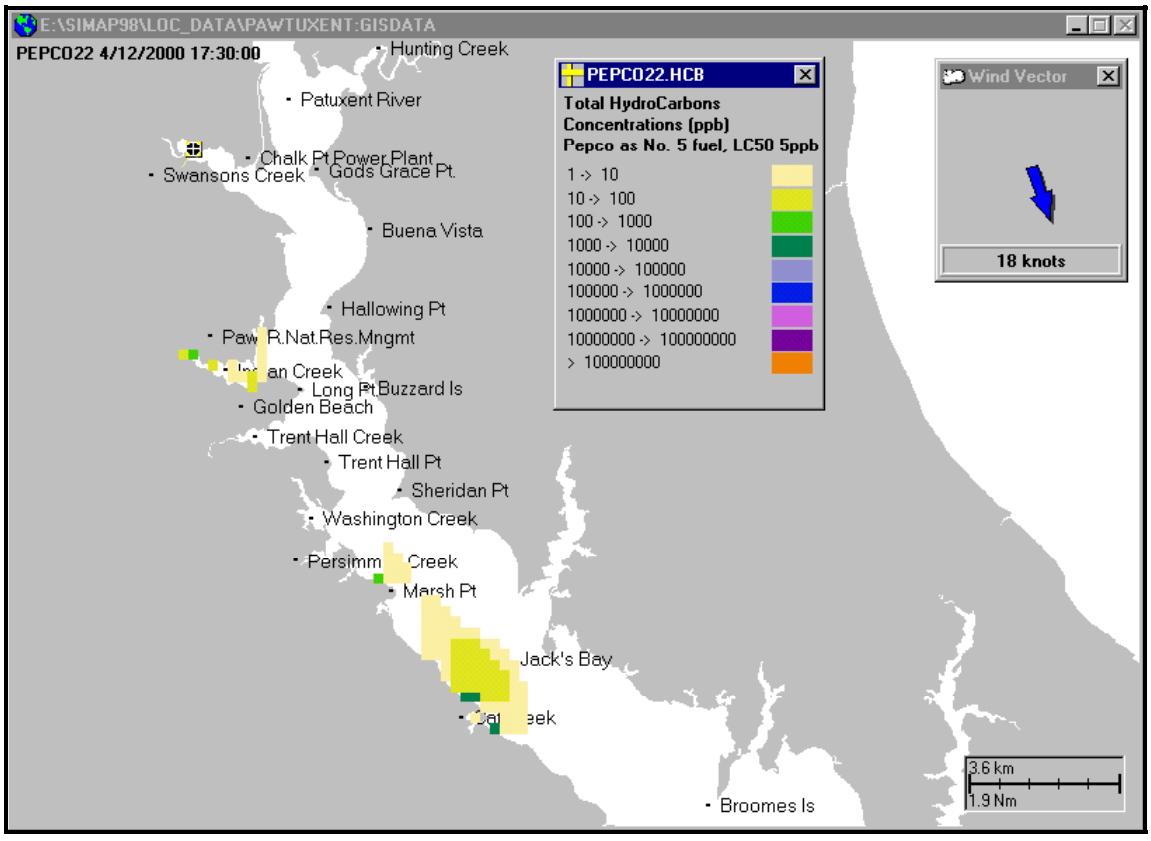

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 01:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
10 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

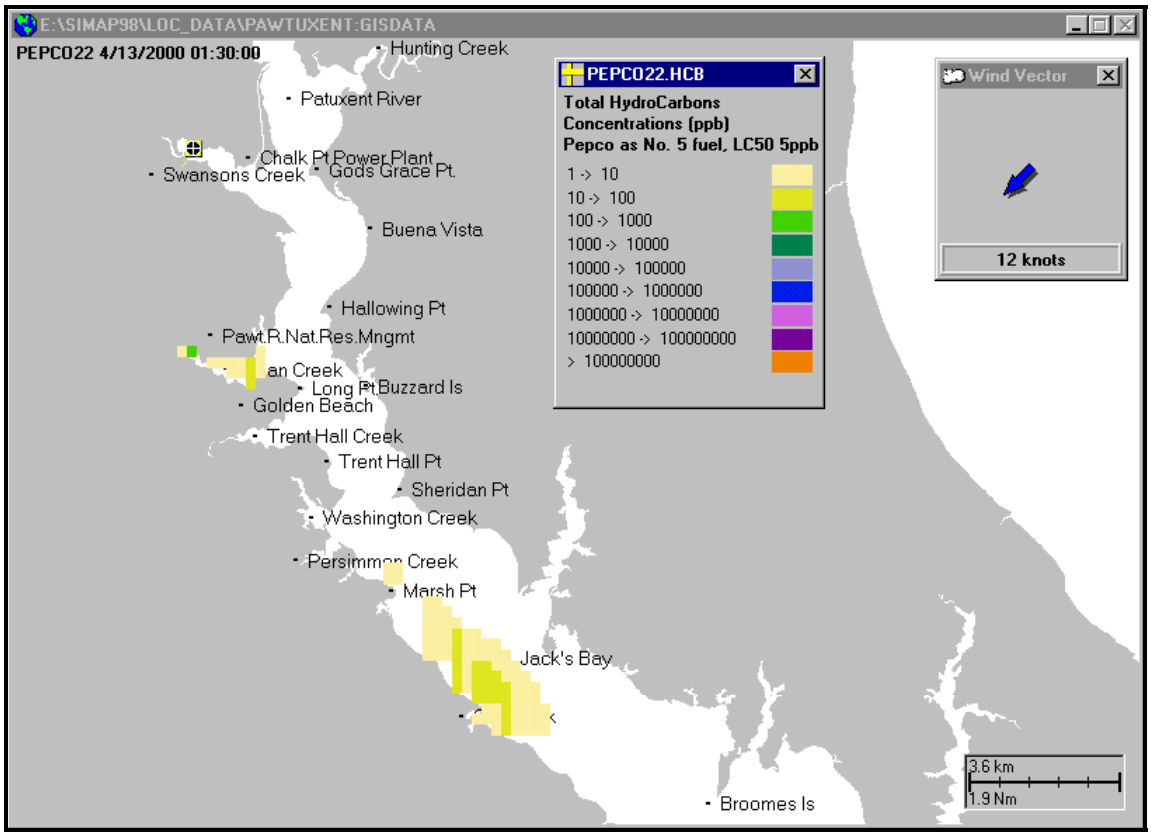

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 07:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
17 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

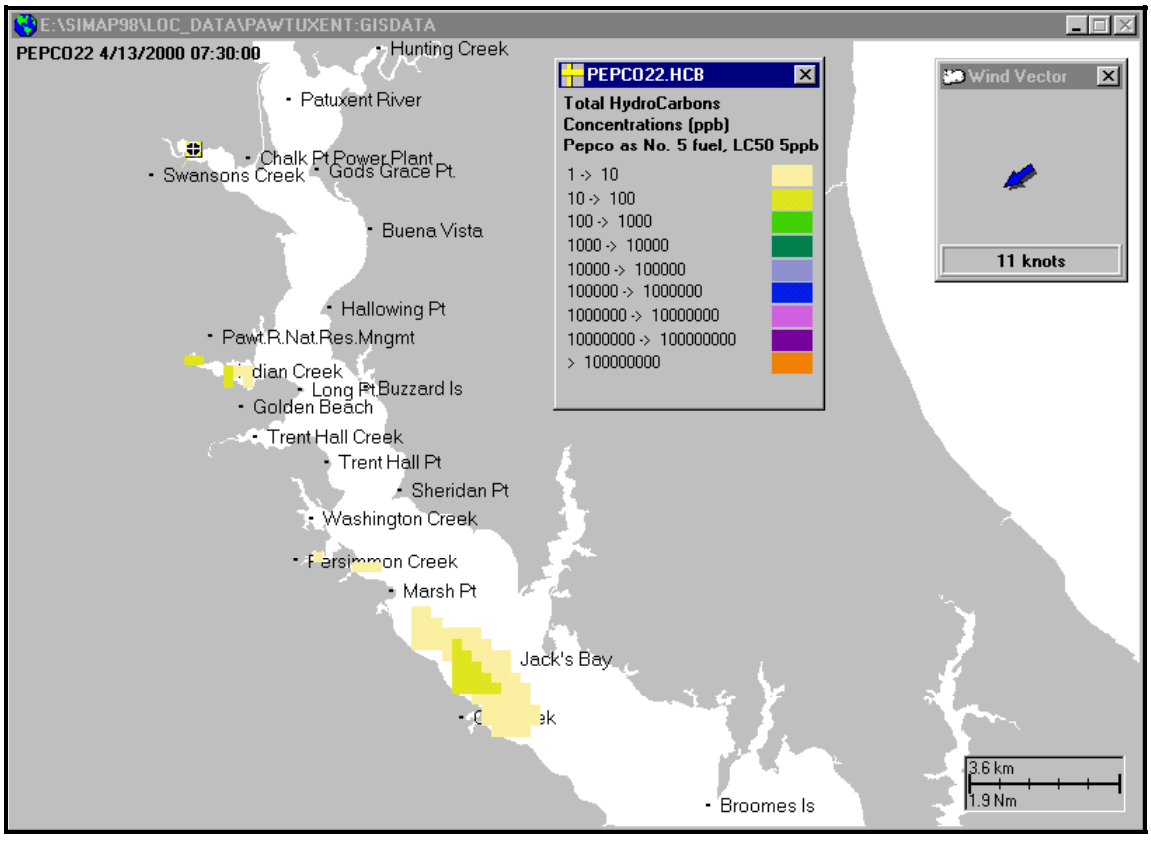

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 09:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R. Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Sheridan Pt
Persimmon reek
Marsh Pt
Wind Vector
12 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm

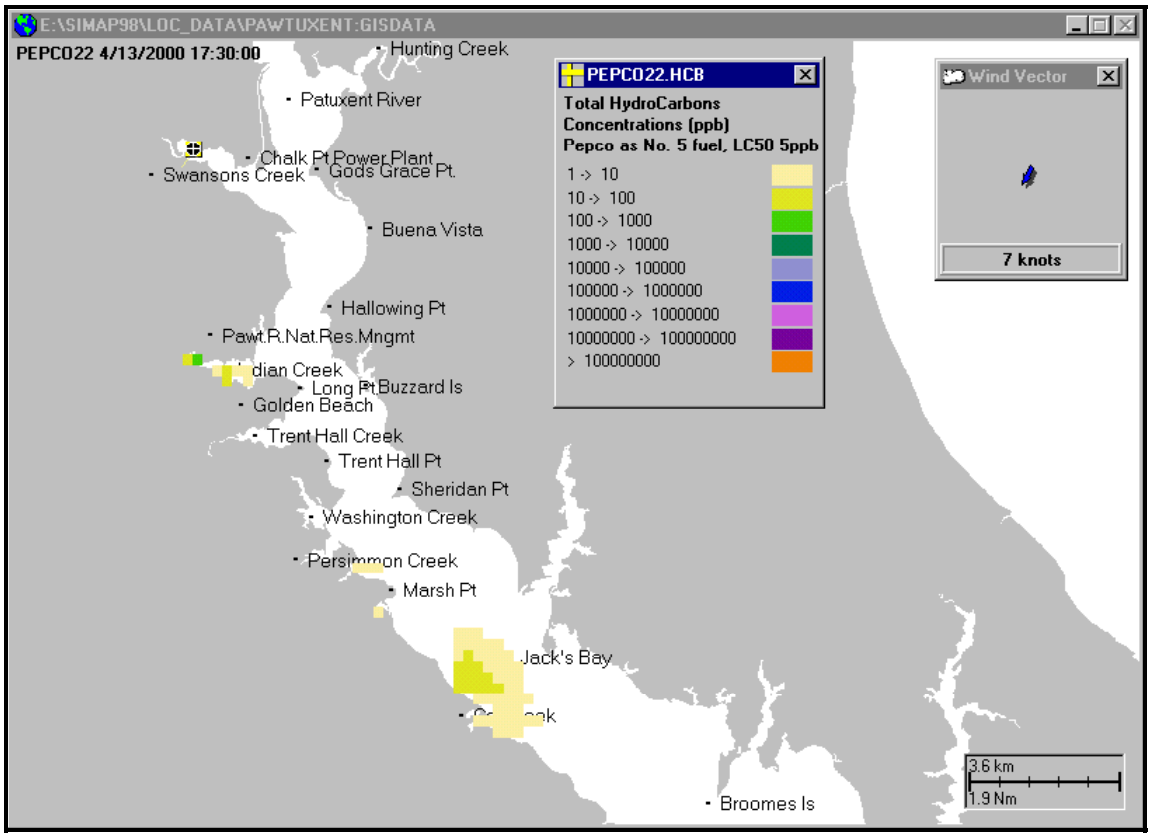

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 11:30:00
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Marsh Pt
Wind Vector
19 knots
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
2.5 km
1.3 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 13:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt R.Nat.Res.Mngmt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Jack's Bay
Cat Creek
Broomes Is
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
Wind Vector
19 knots
3.6 km
1.9 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 17:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
Wind Vector
18 knots
3.6 km
1.9 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 01:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
Wind Vector
12 knots
3.6 km
1.9 Nm

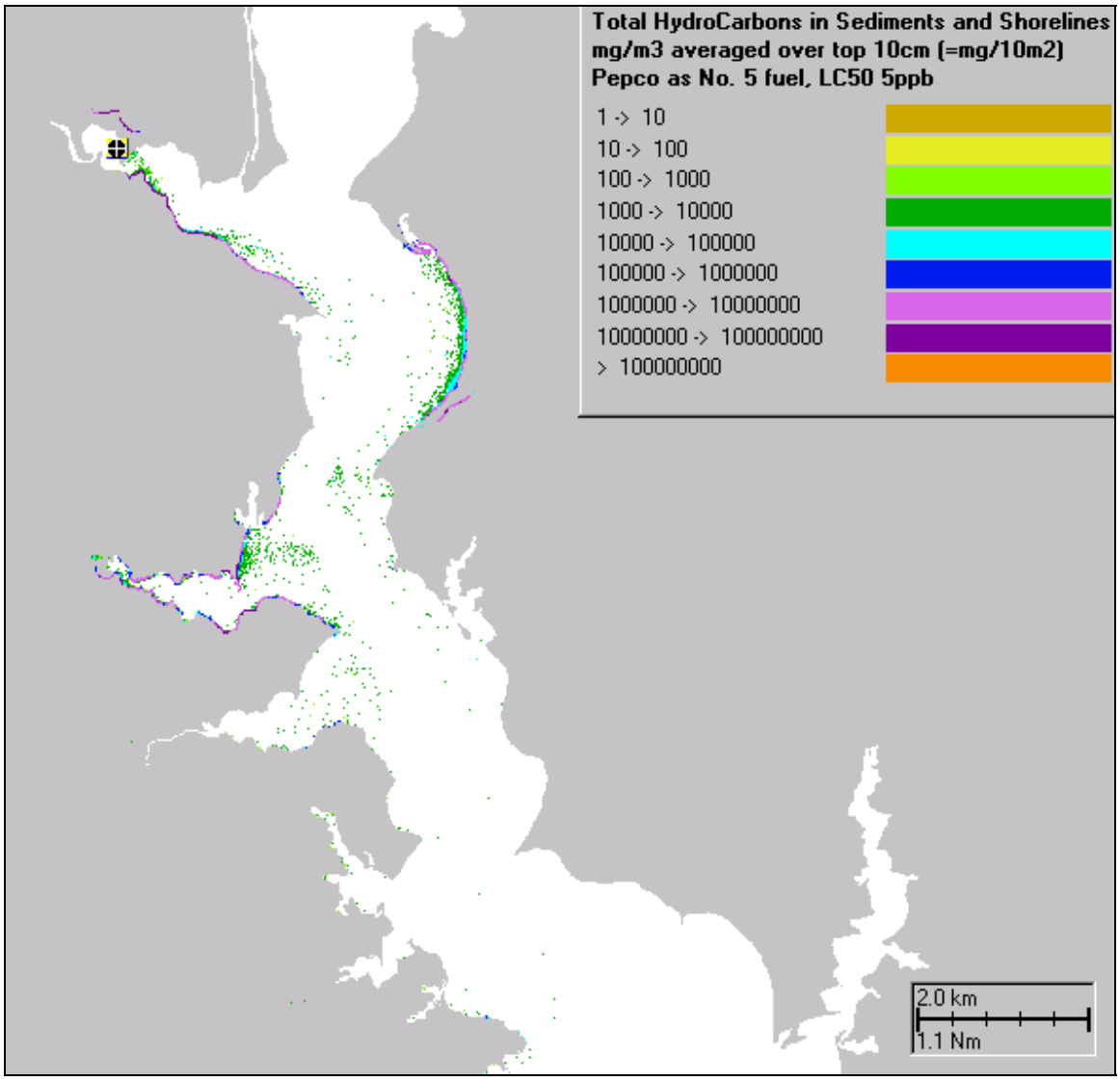

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 07:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Jack's Bay
Broomes Is
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
Wind Vector
11 knots
3.6 km
1.9 Nm

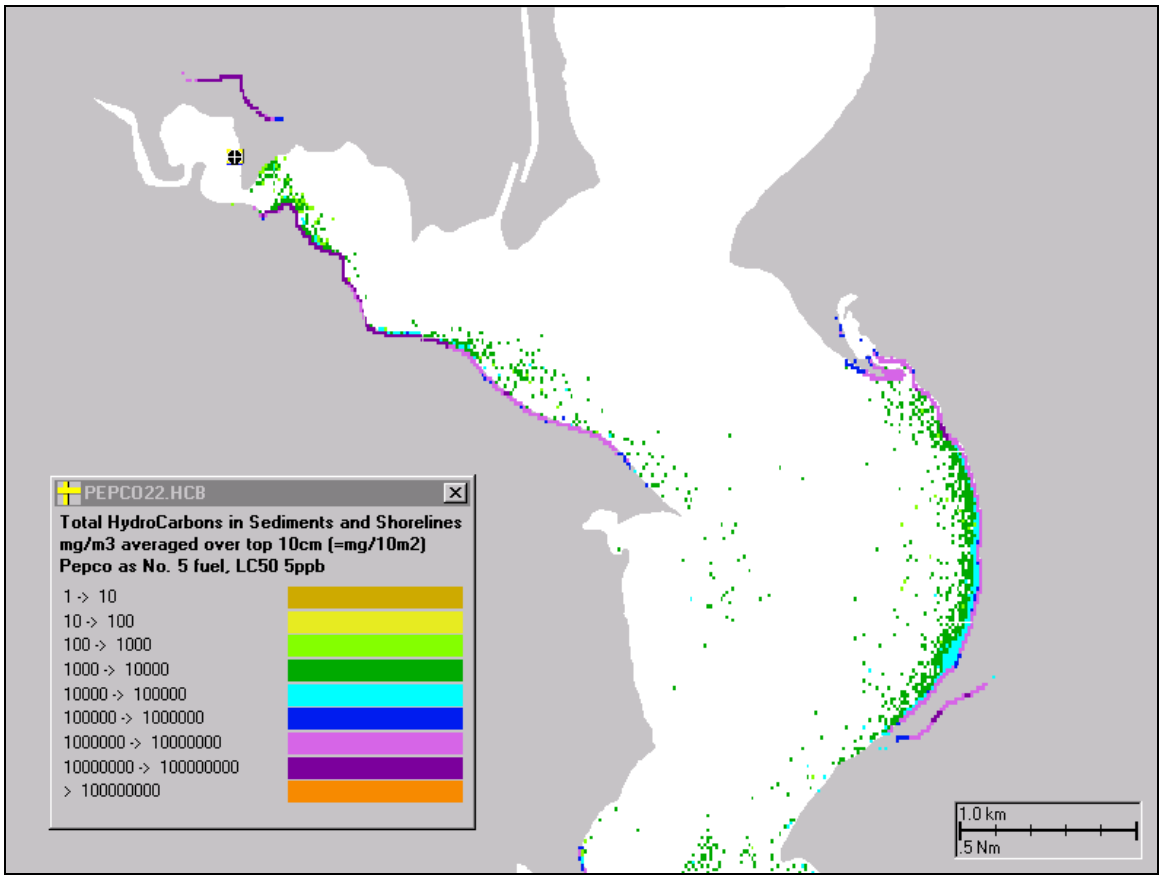

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 17:30:00
Hunting Creek
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Jack's Bay
Broomes Is
PEPCO22.HCB
Total HydroCarbons
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
Wind Vector
7 knots
3.6 km
1.9 Nm

Appendix H. Modeled Total Hydrocarbon Deposition on Sediments and Shorelines by Two Weeks after the Spill

The following figures show mass of total hydrocarbons in sediments and on shorelines at two weeks after the spill. No shoreline cleanup was simulated in the model. Thus, oil simply accumulates and remains on the shore.

Note that the shoreline shown in these model outputs are for visual reference only, whereas the habitat (and corresponding depth) grid (Appendices B and C) defines the actual shoreline to the model.

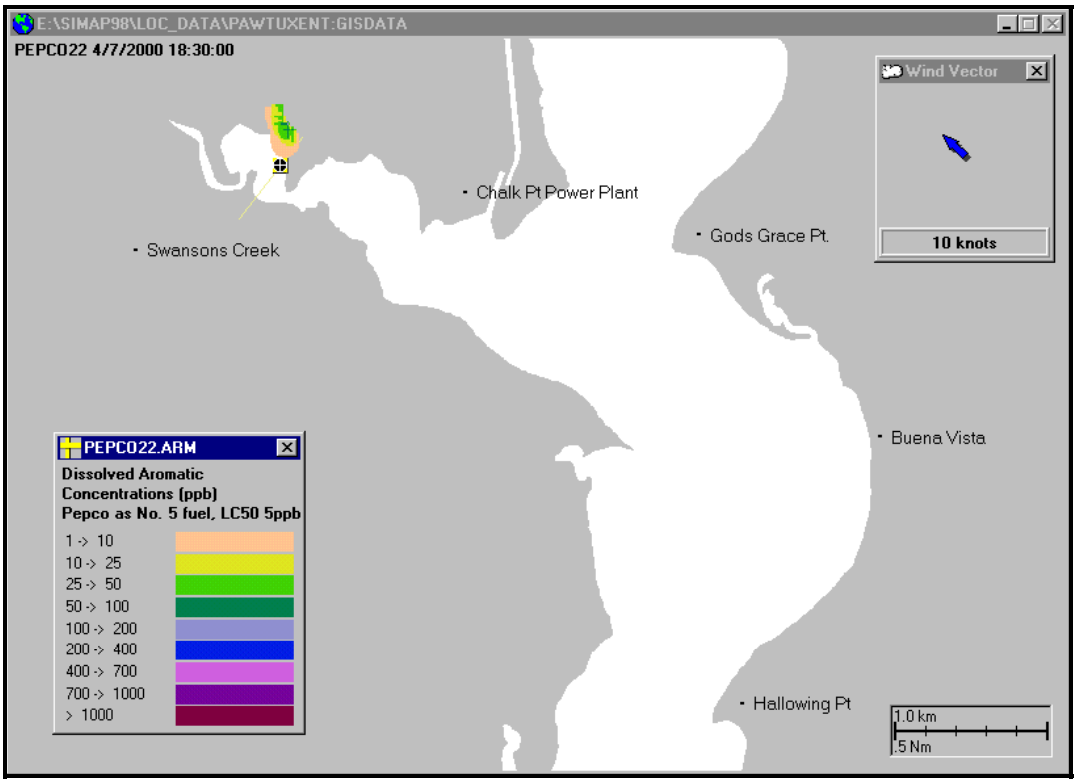


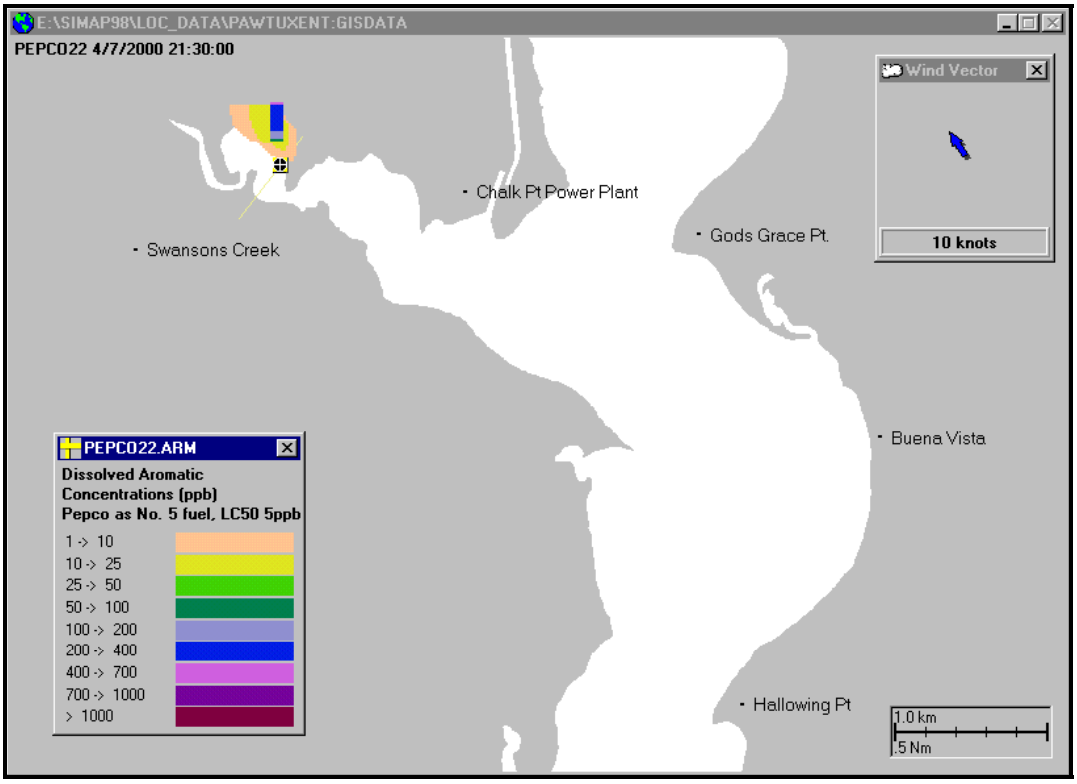

PEPCO22.HCB
Total HydroCarbons in Sediments and Shorelines
mg/m3 averaged over top 10cm (=mg/10m2)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 100
100 -> 1000
1000 -> 10000
10000 -> 100000
100000 -> 1000000
1000000 -> 10000000
10000000 -> 100000000
> 100000000
1.0 km
.5 Nm

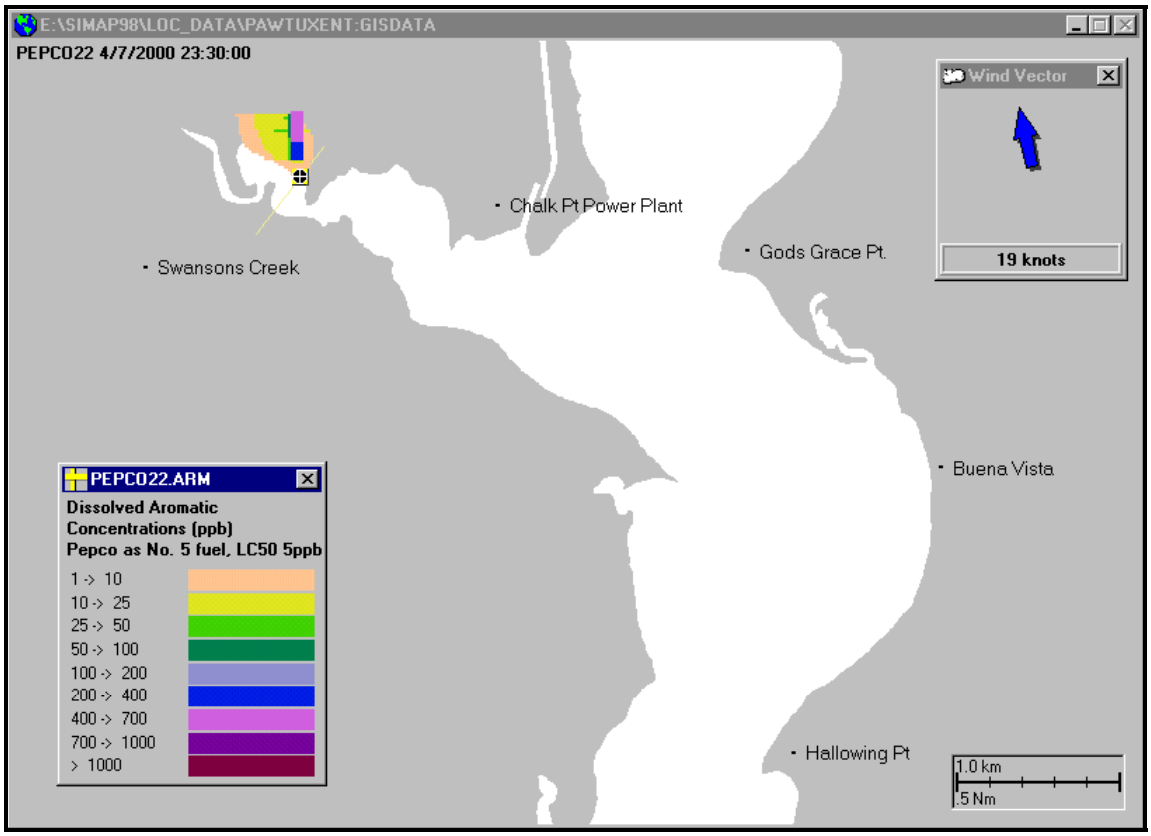
Appendix I. Modeled PAH Concentrations over Time

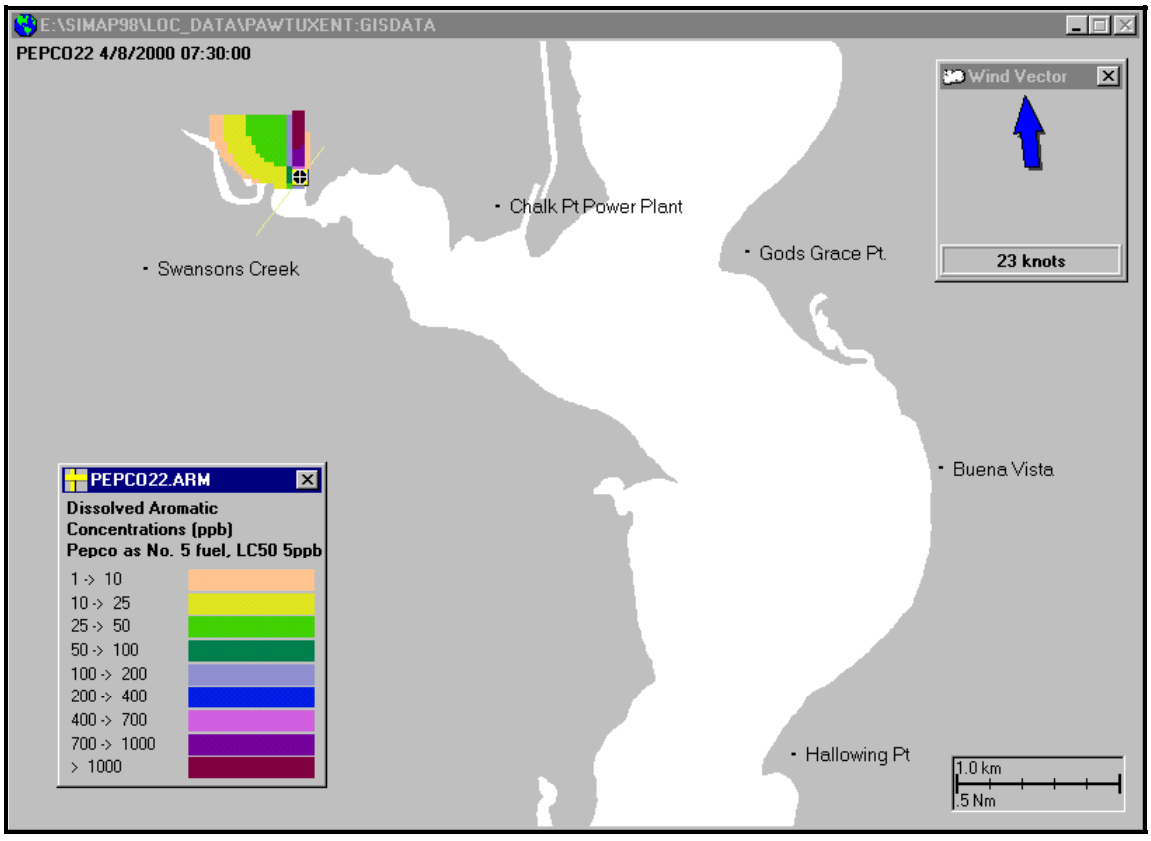
The following figures show concentrations of dissolved PAHs (2-4 ring) in the water after the spill. Concentrations are calculated for a grid (50 X 50 cells horizontally, 5 layers vertically) sized to just cover the plume at the time of the output. The planar view shows vertical maximum concentration.

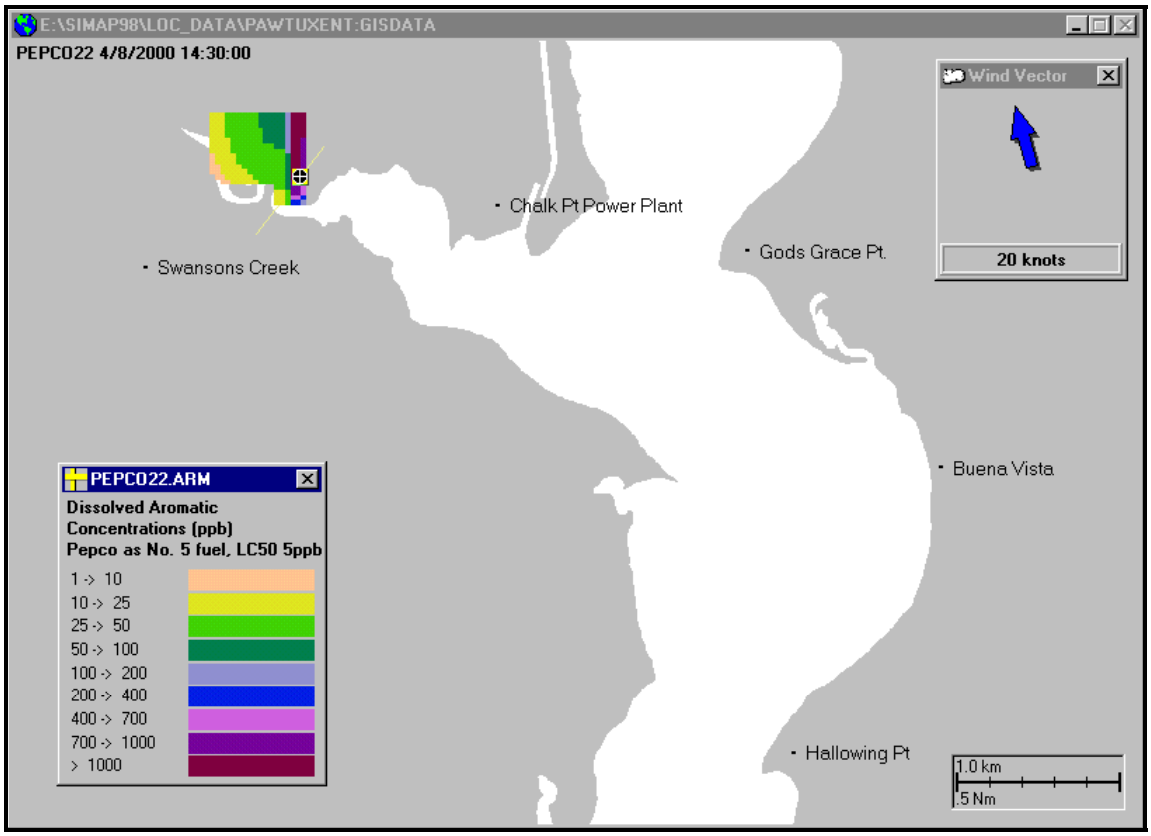
Note that the shoreline shown in these model outputs are for visual reference only, whereas the habitat (and corresponding depth) grid (Appendices B and C) defines the actual shoreline to the model.

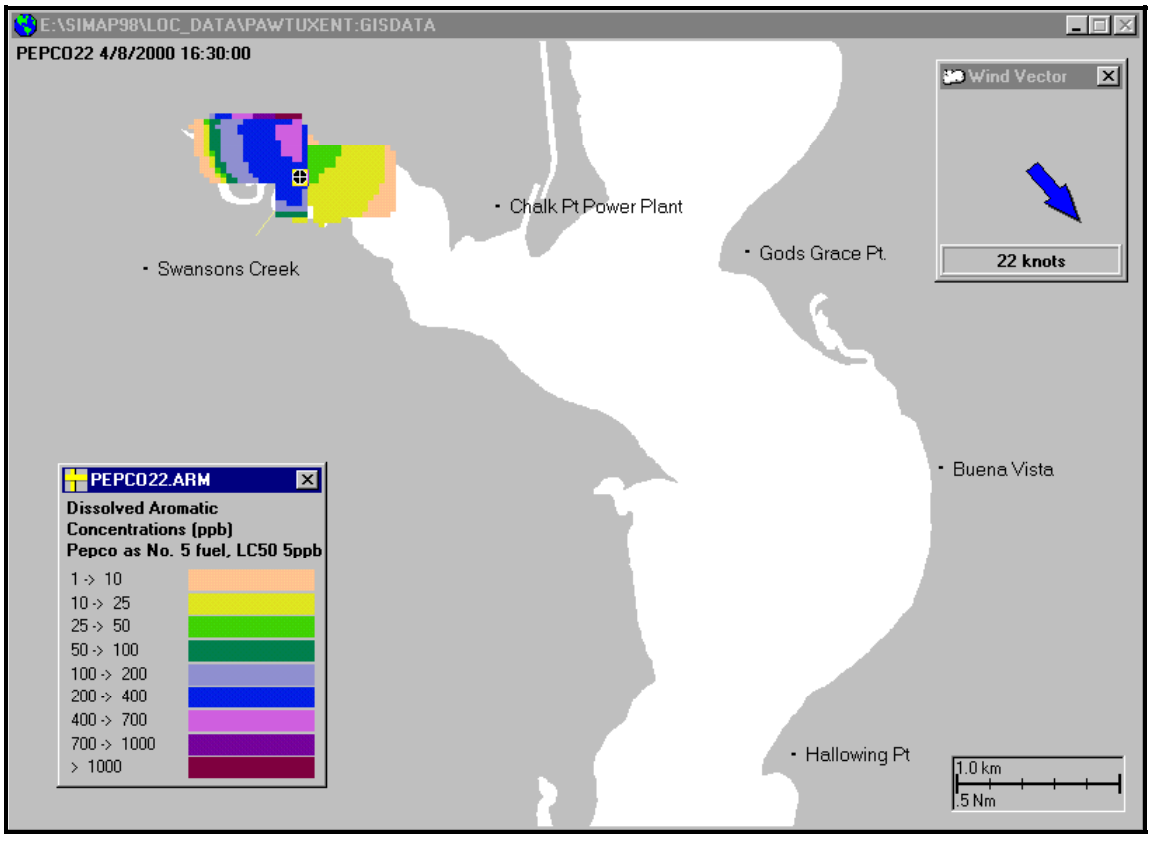

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/7/2000 18:30:00
Wind Vector
10 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

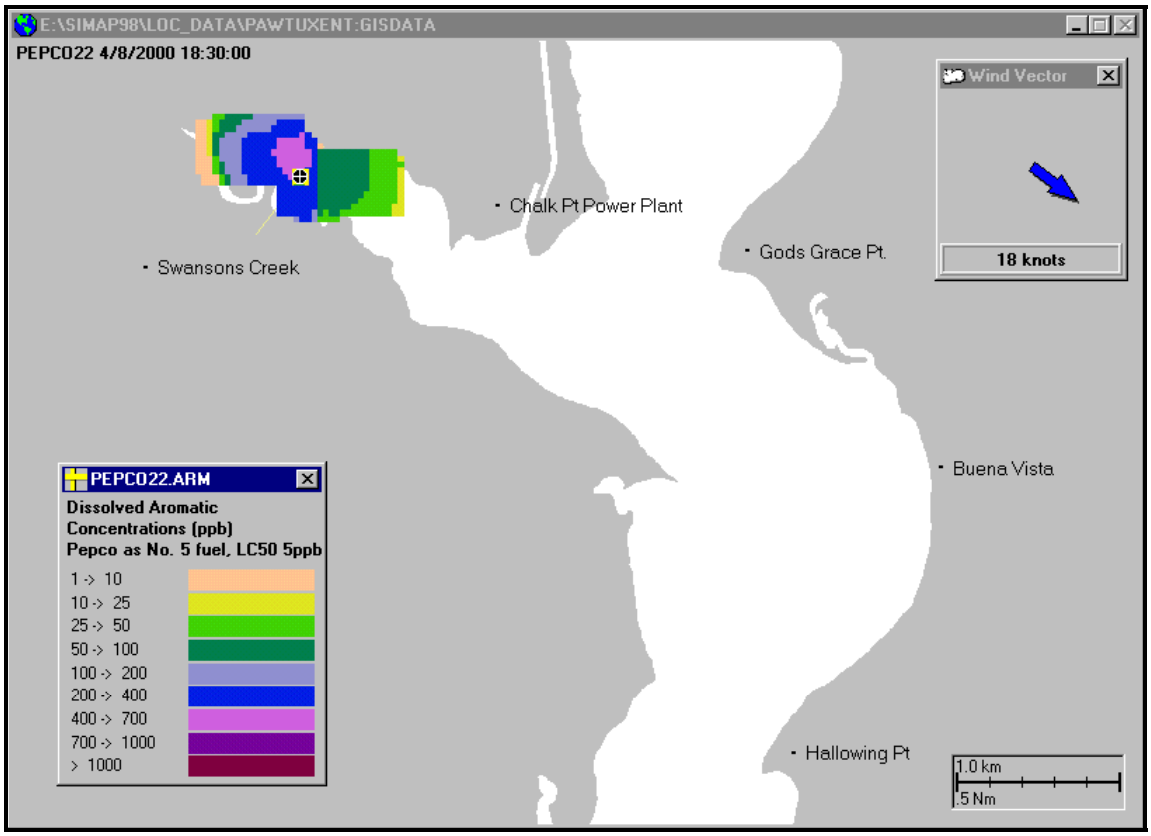

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/7/2000 21:30:00
Wind Vector
10 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

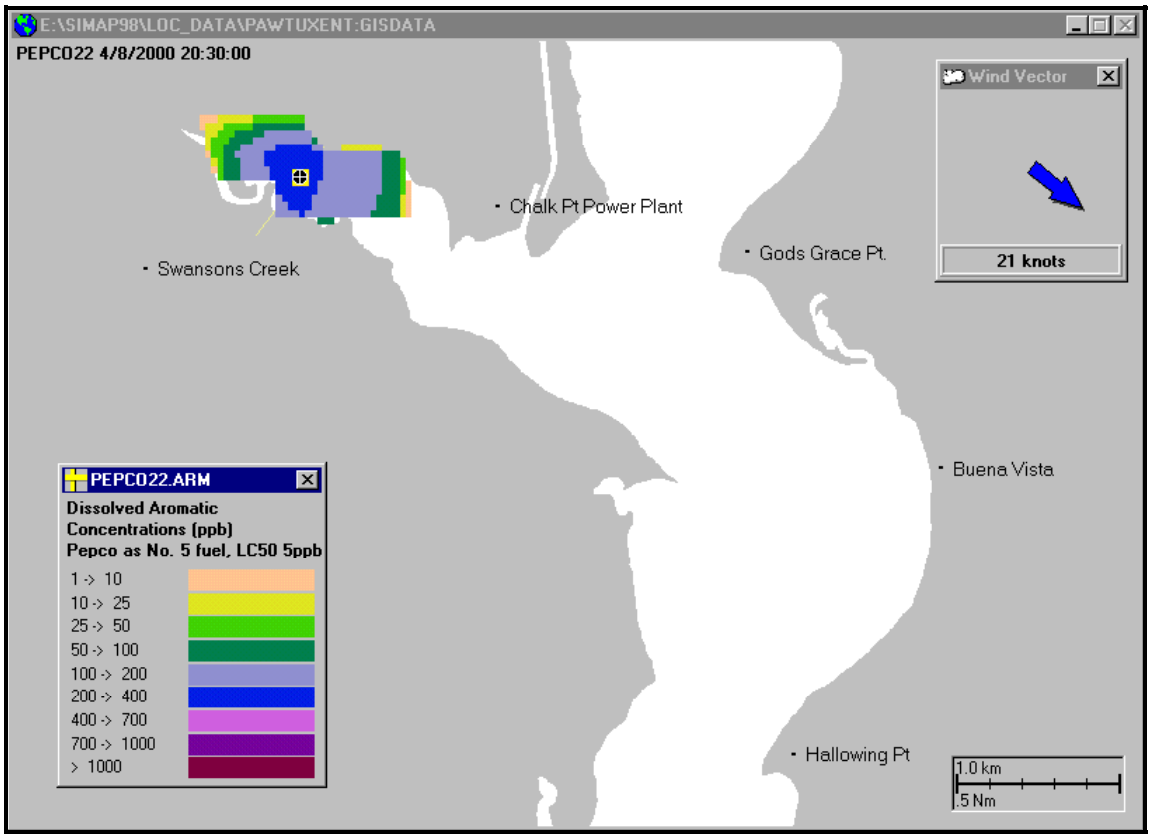

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/7/2000 23:30:00
Wind Vector
19 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

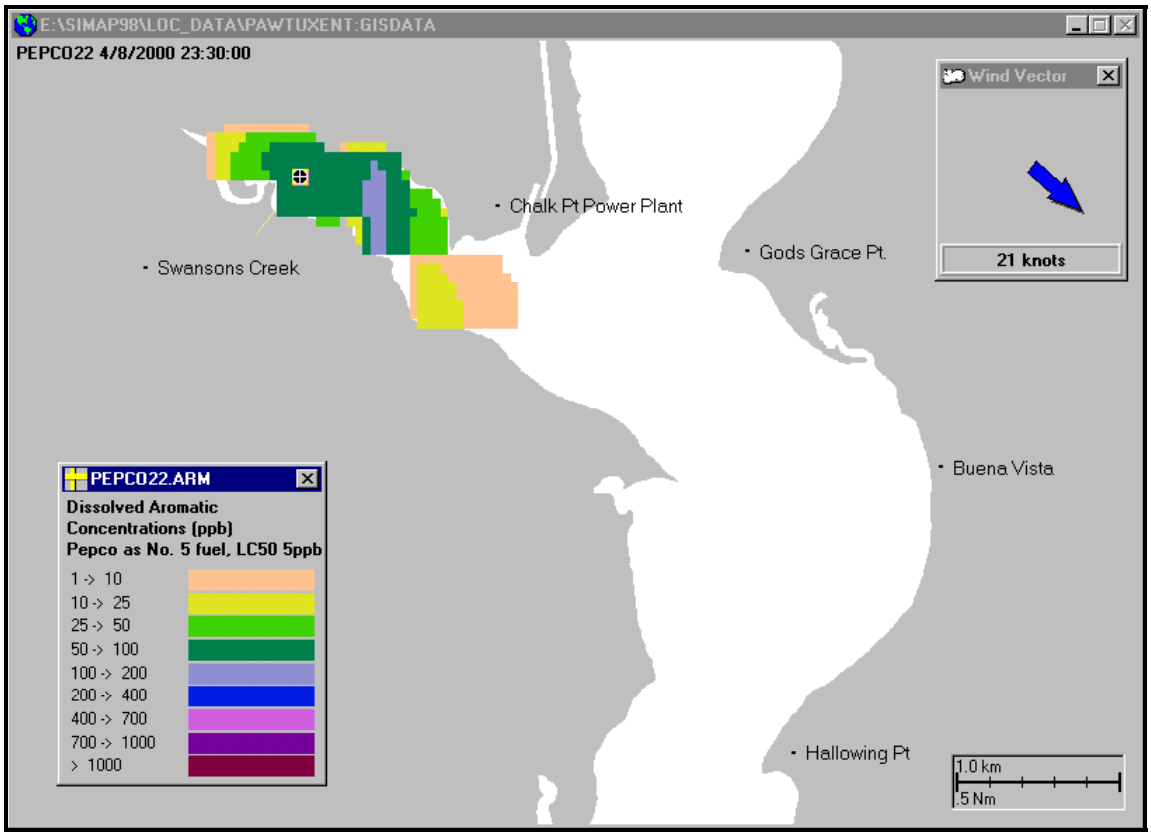

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/8/2000 07:30:00
Wind Vector
23 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

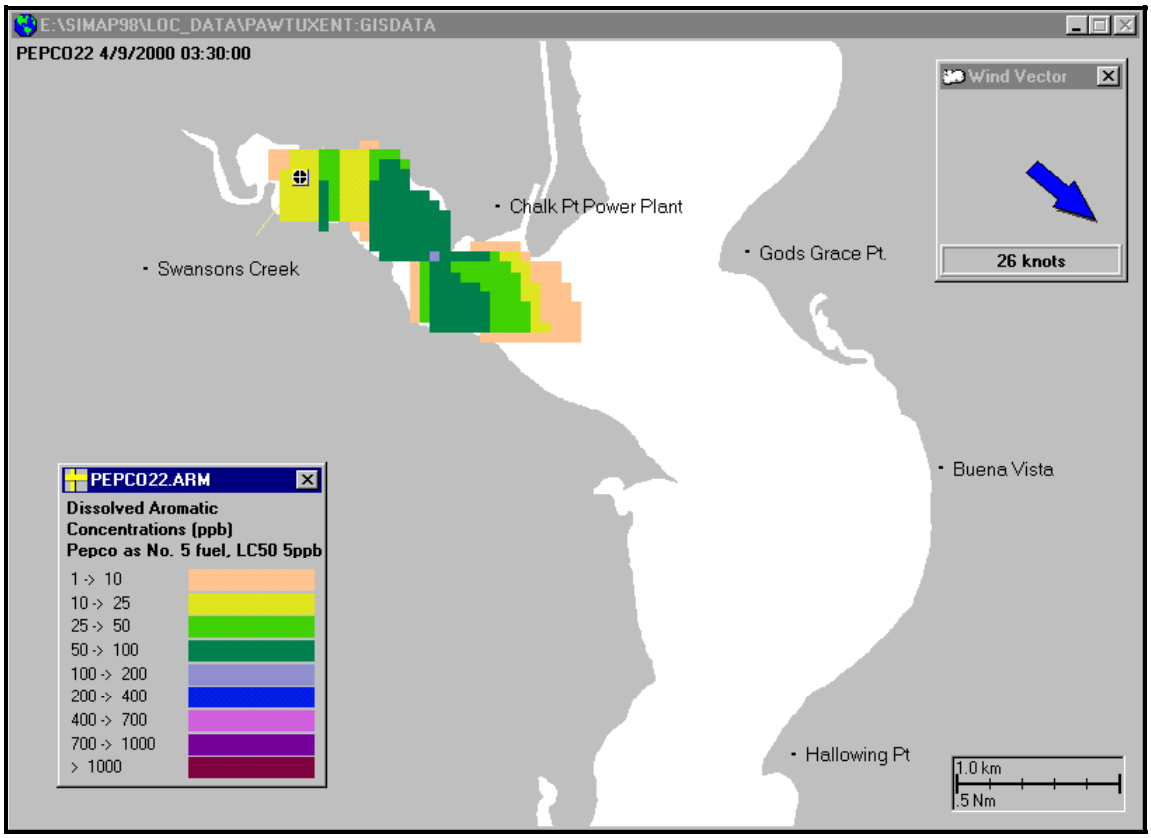

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/8/2000 14:30:00
Wind Vector
20 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

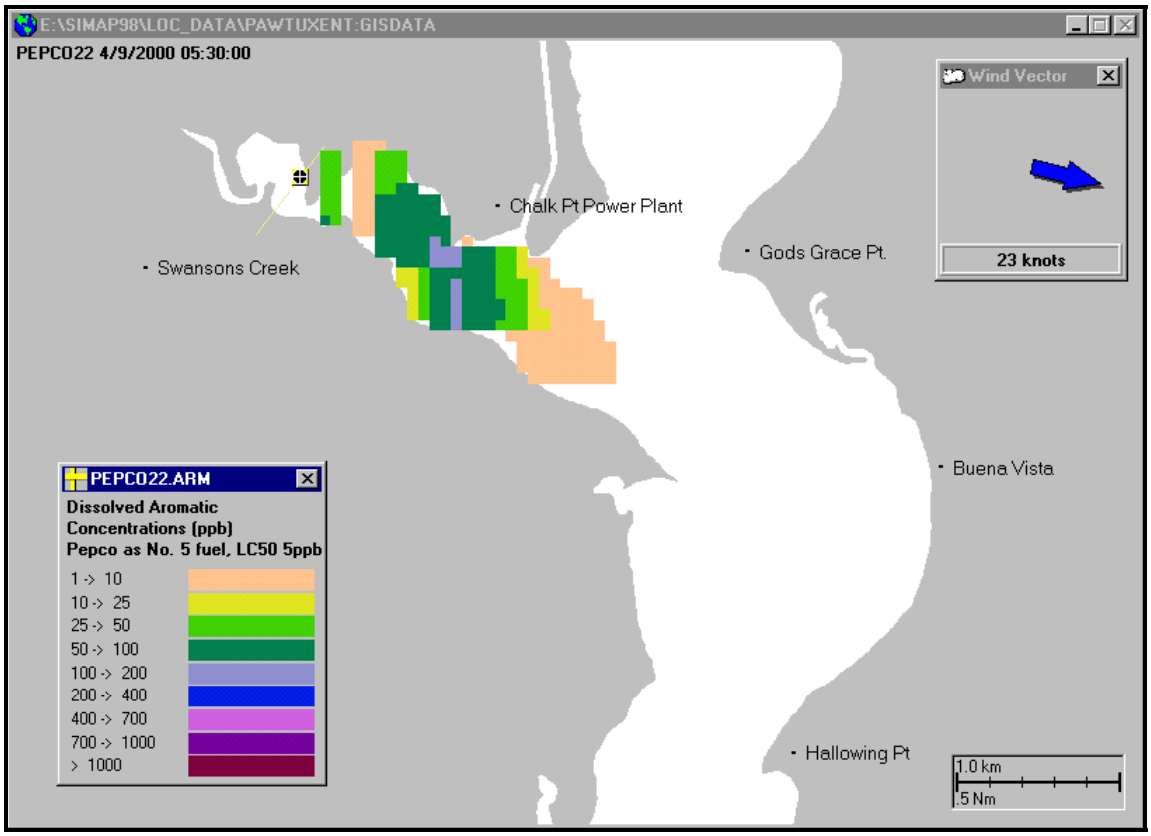

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/8/2000 16:30:00
Wind Vector
22 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

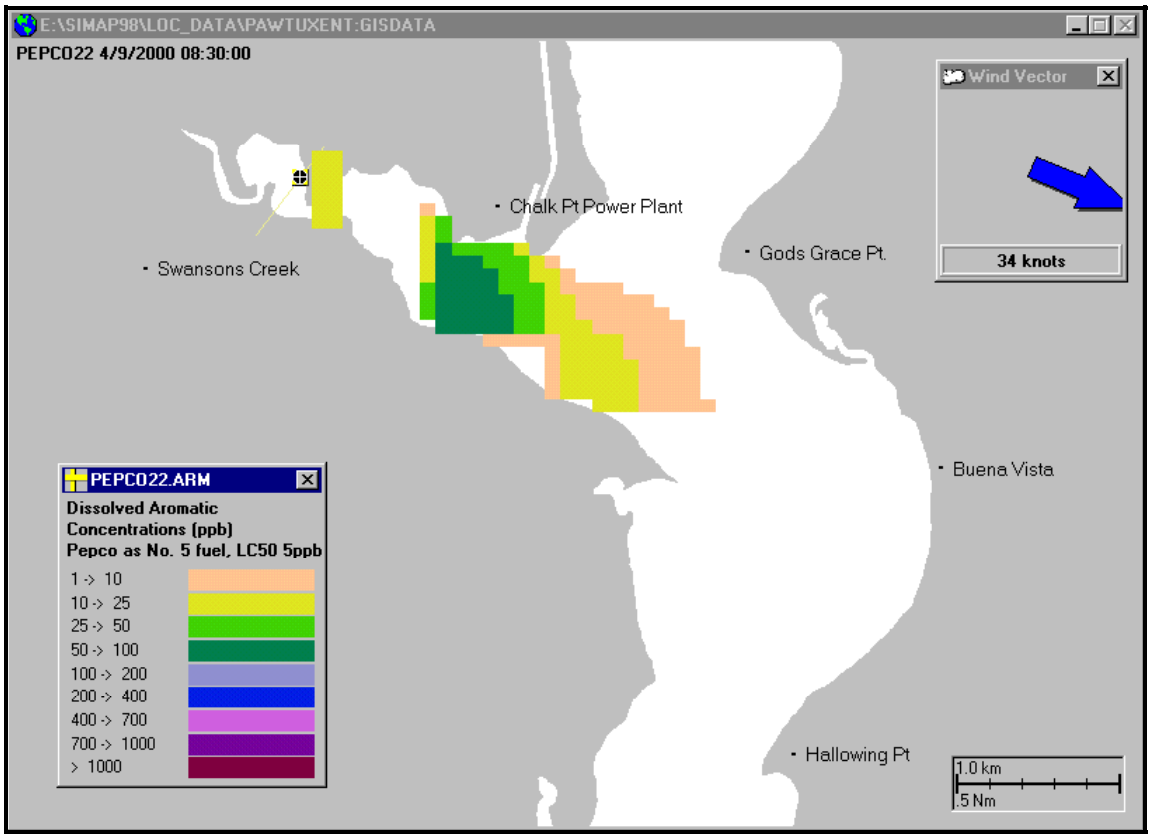

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/8/2000 18:30:00
Wind Vector
18 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

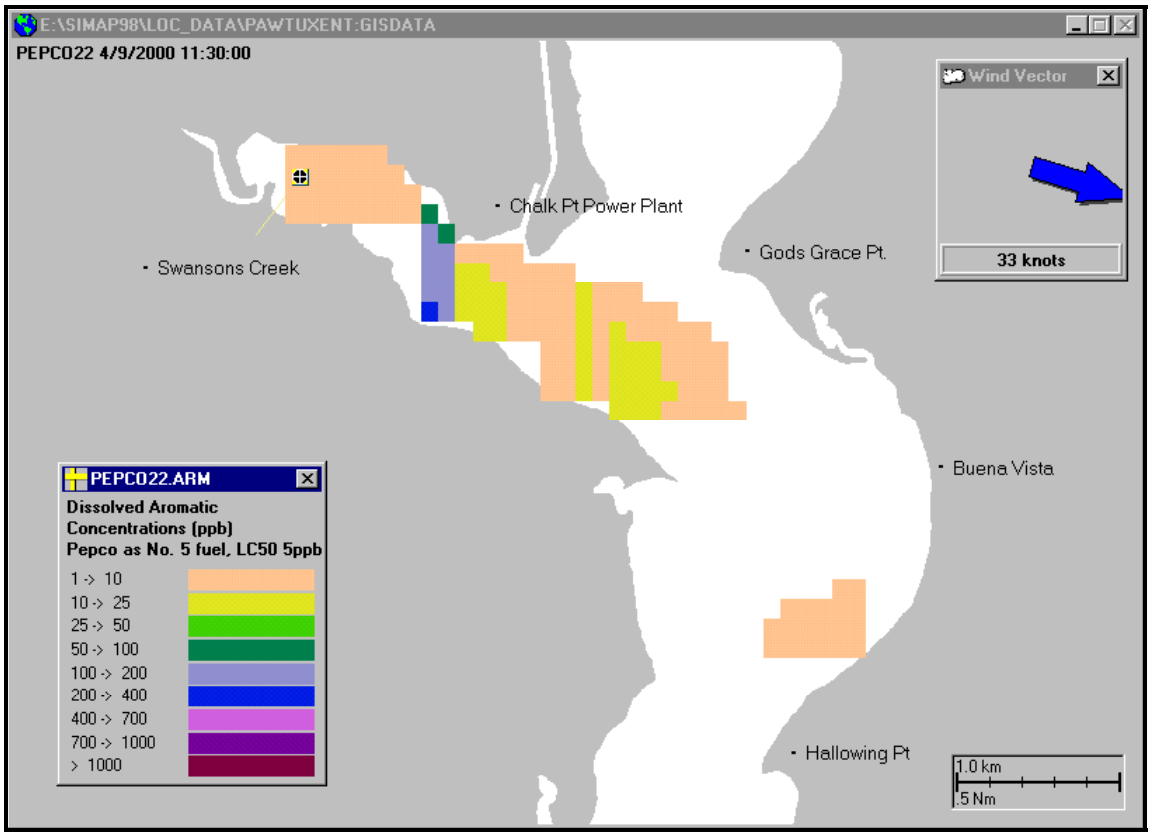

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/8/2000 20:30:00
Wind Vector
21 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

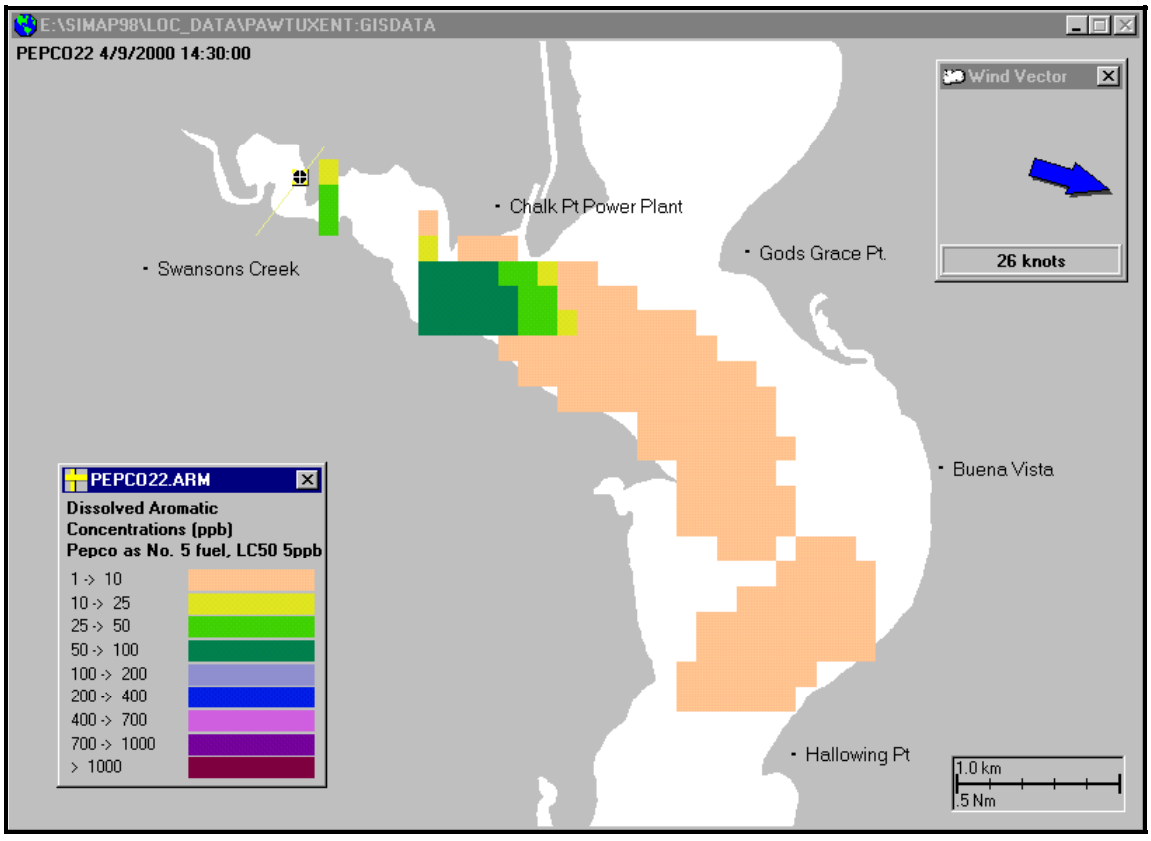

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/8/2000 23:30:00
Wind Vector
21 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

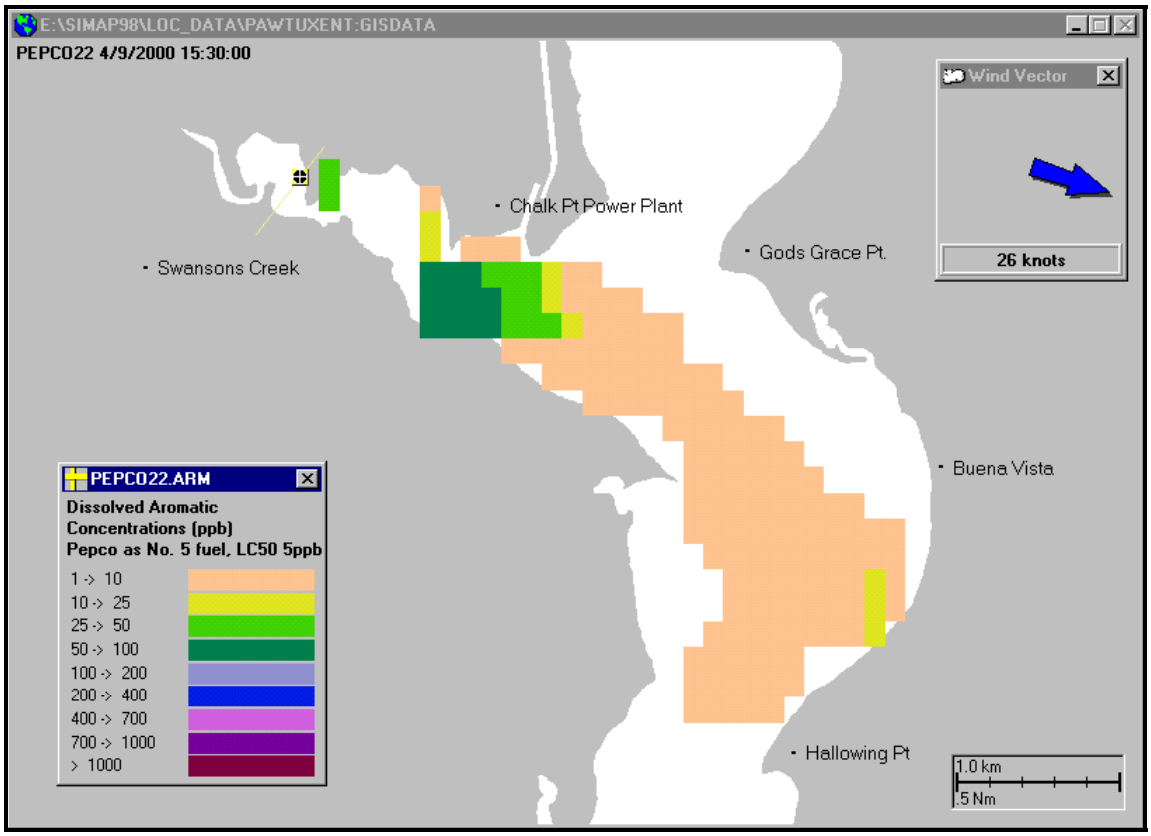

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 03:30:00
Wind Vector
26 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

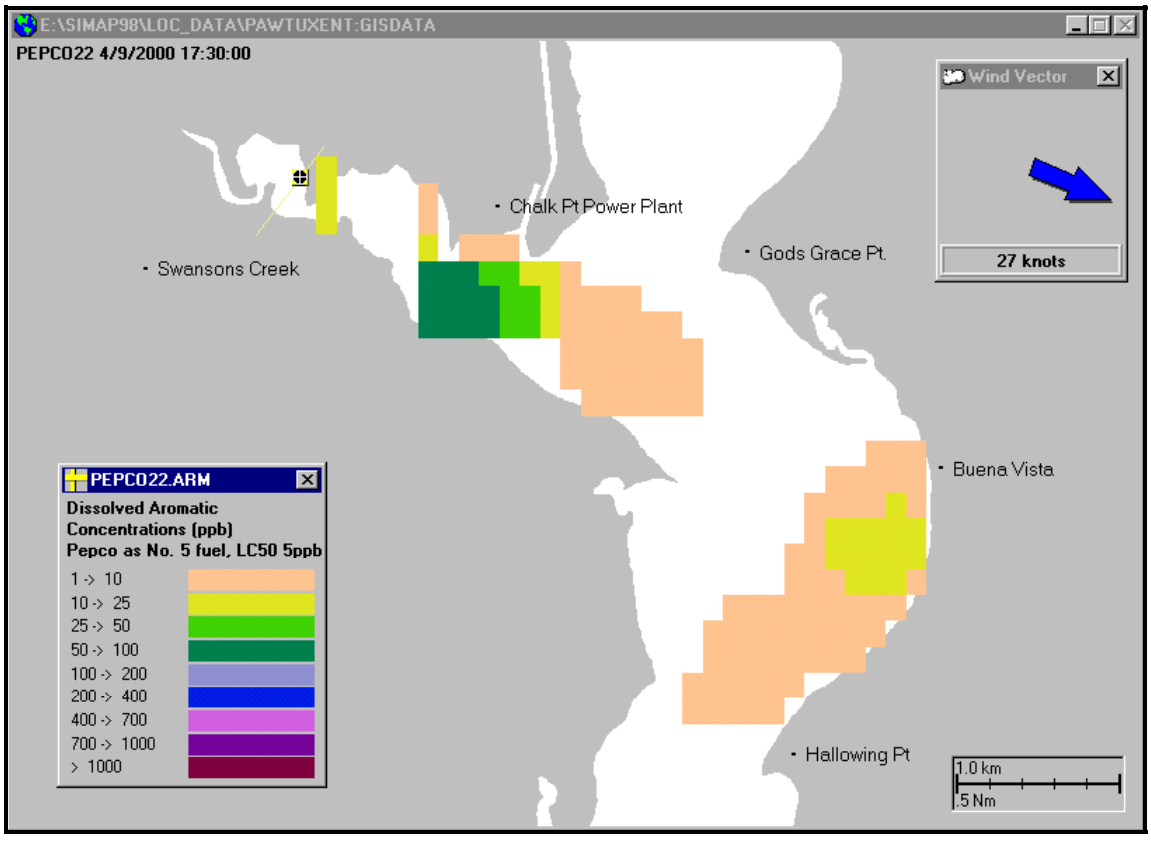

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 05:30:00
Wind Vector
23 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

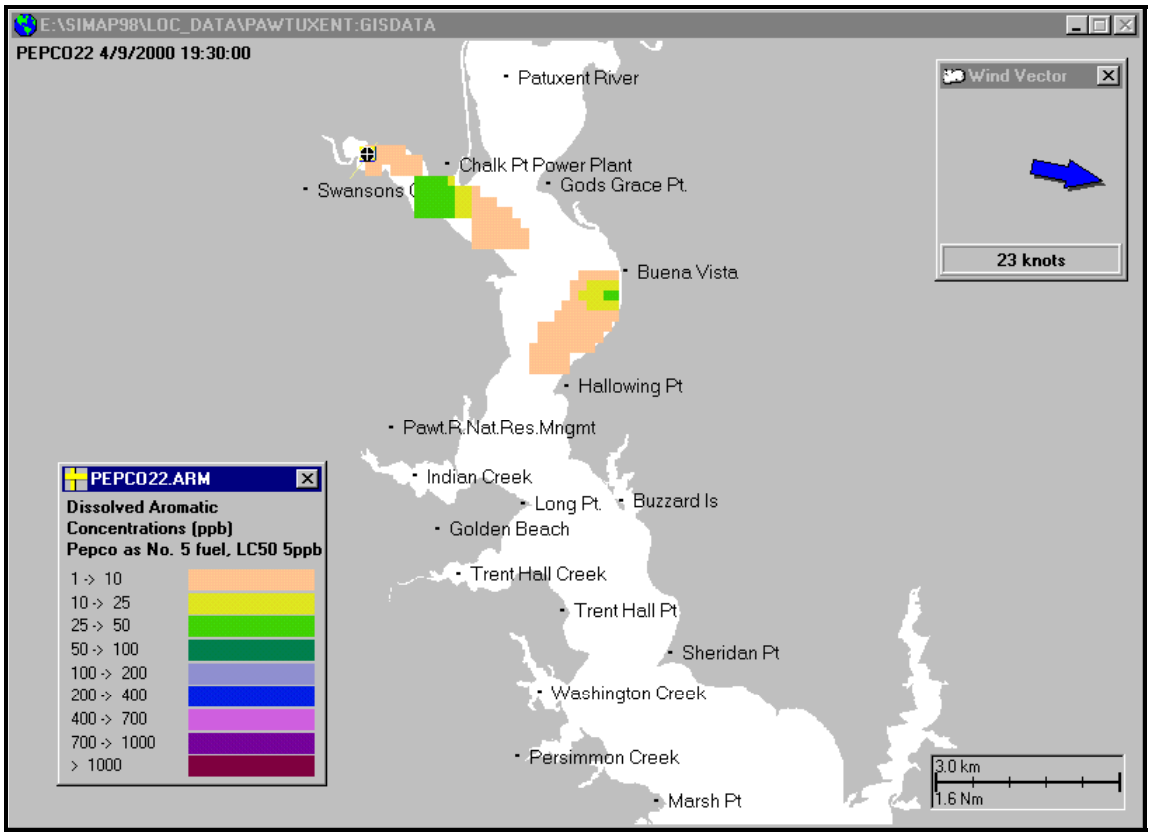

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 08:30:00
Wind Vector
34 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

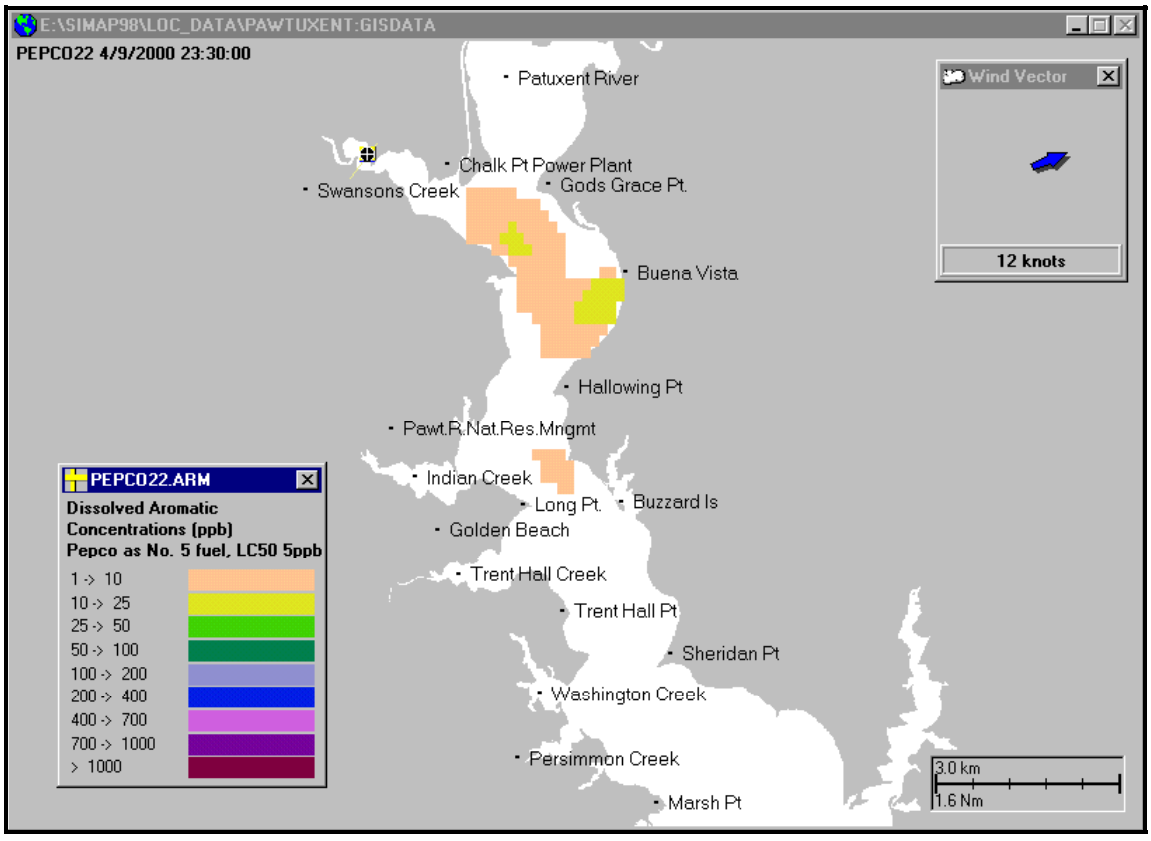

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 11:30:00
Wind Vector
33 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

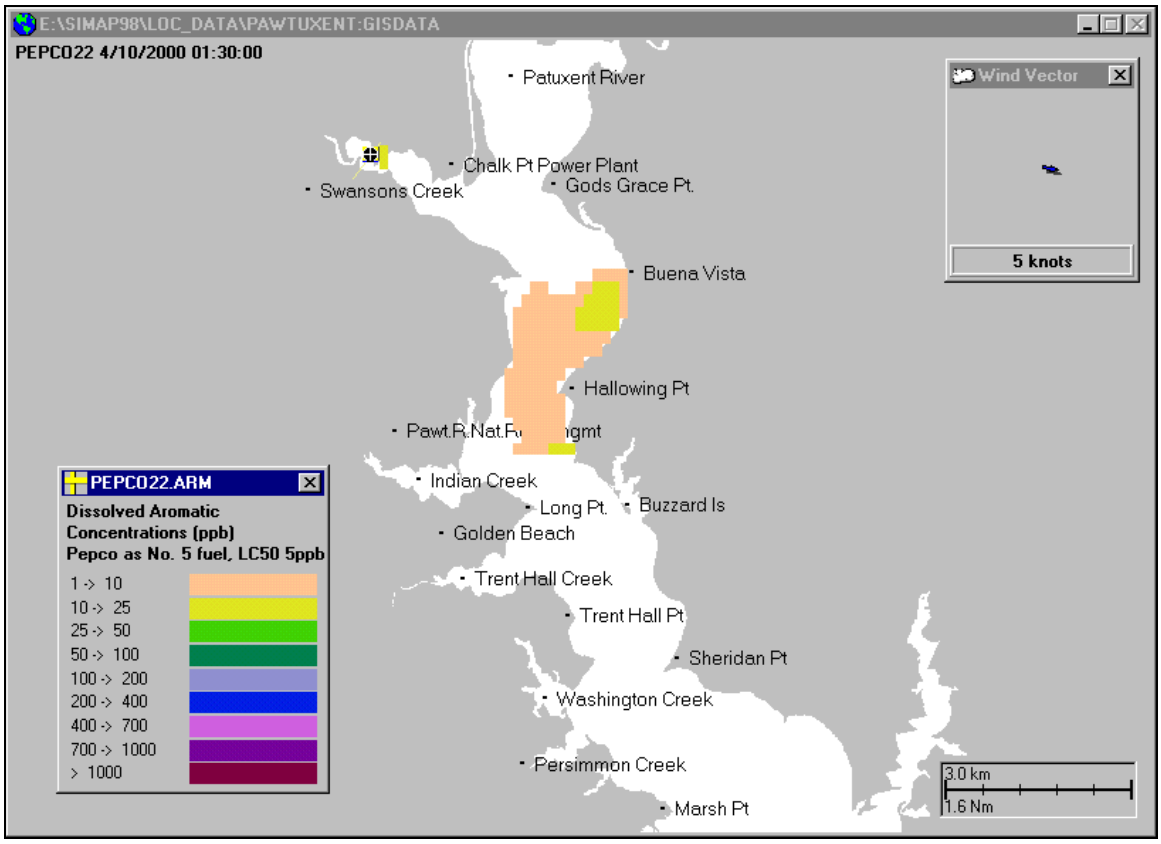

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 14:30:00
Wind Vector
26 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

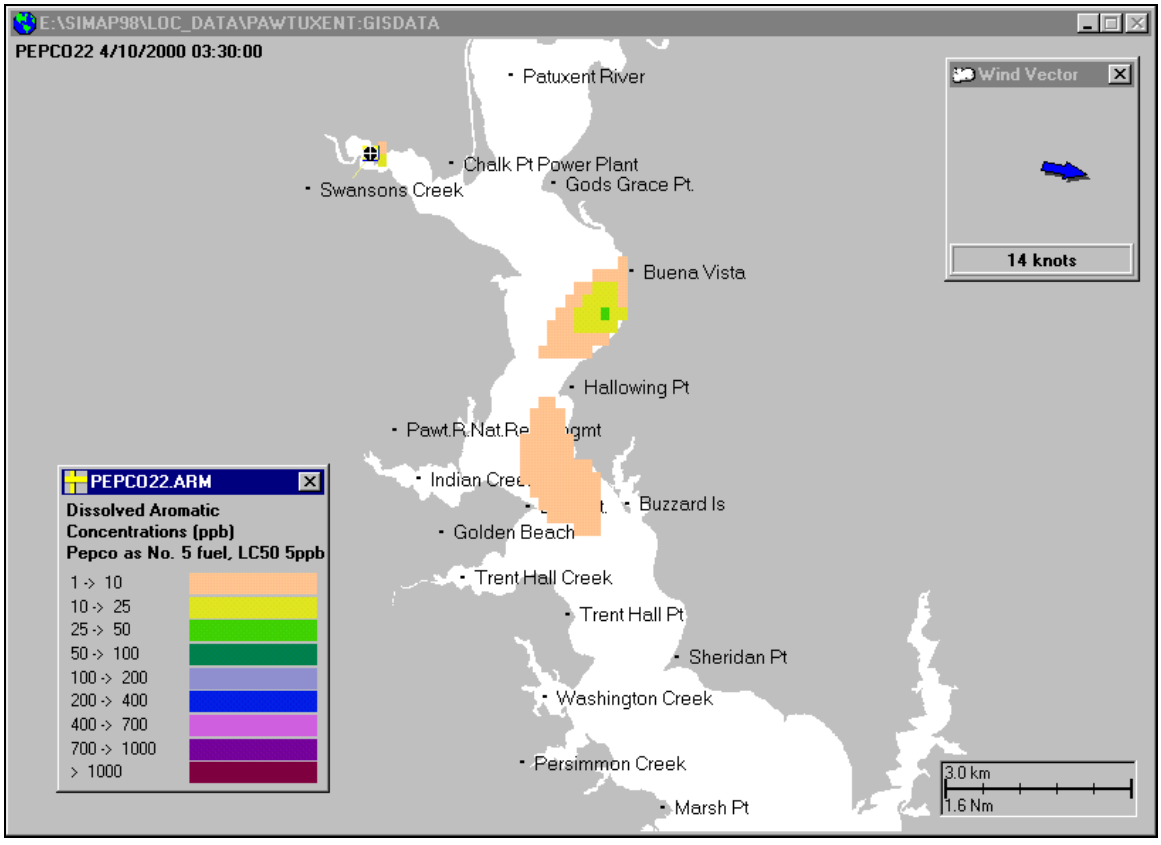

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 15:30:00
Wind Vector
26 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

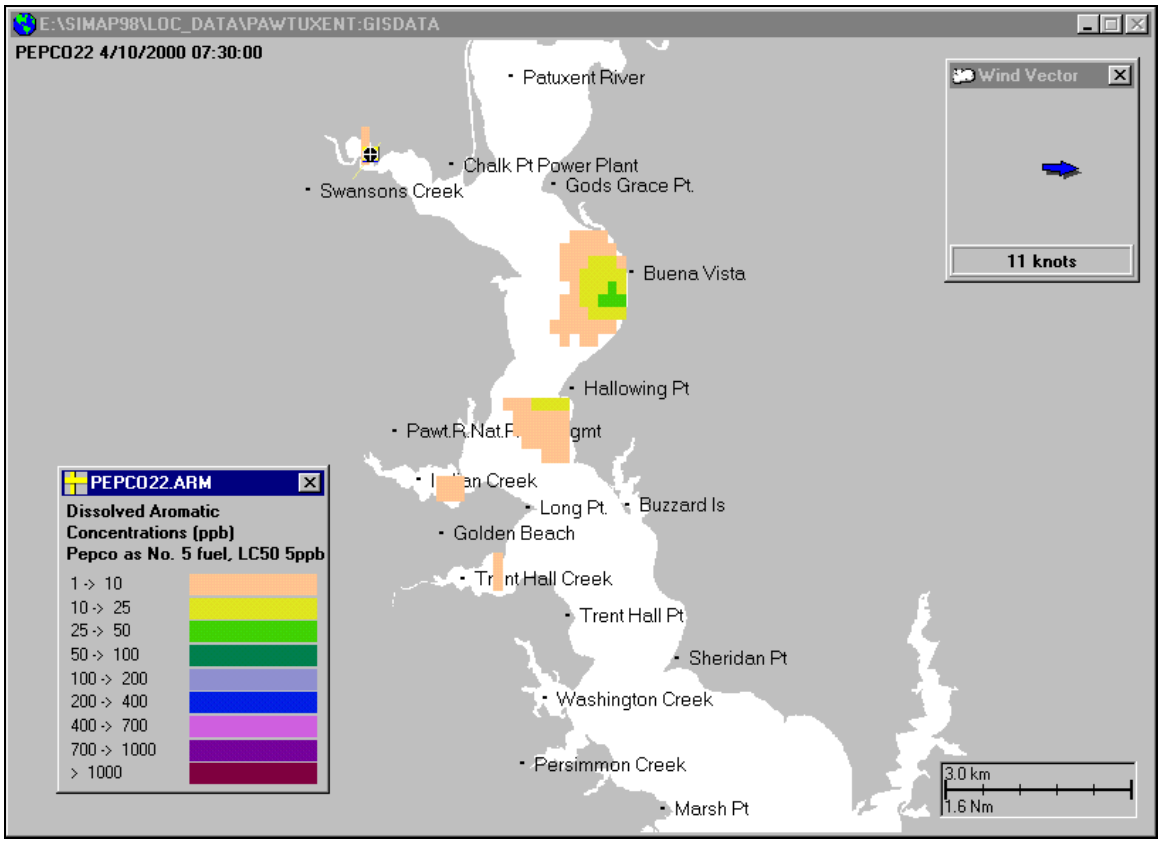

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 17:30:00
Wind Vector
27 knots
Chalk Pt Power Plant
Gods Grace Pt.
Swansons Creek
Buena Vista
Hallowing Pt
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

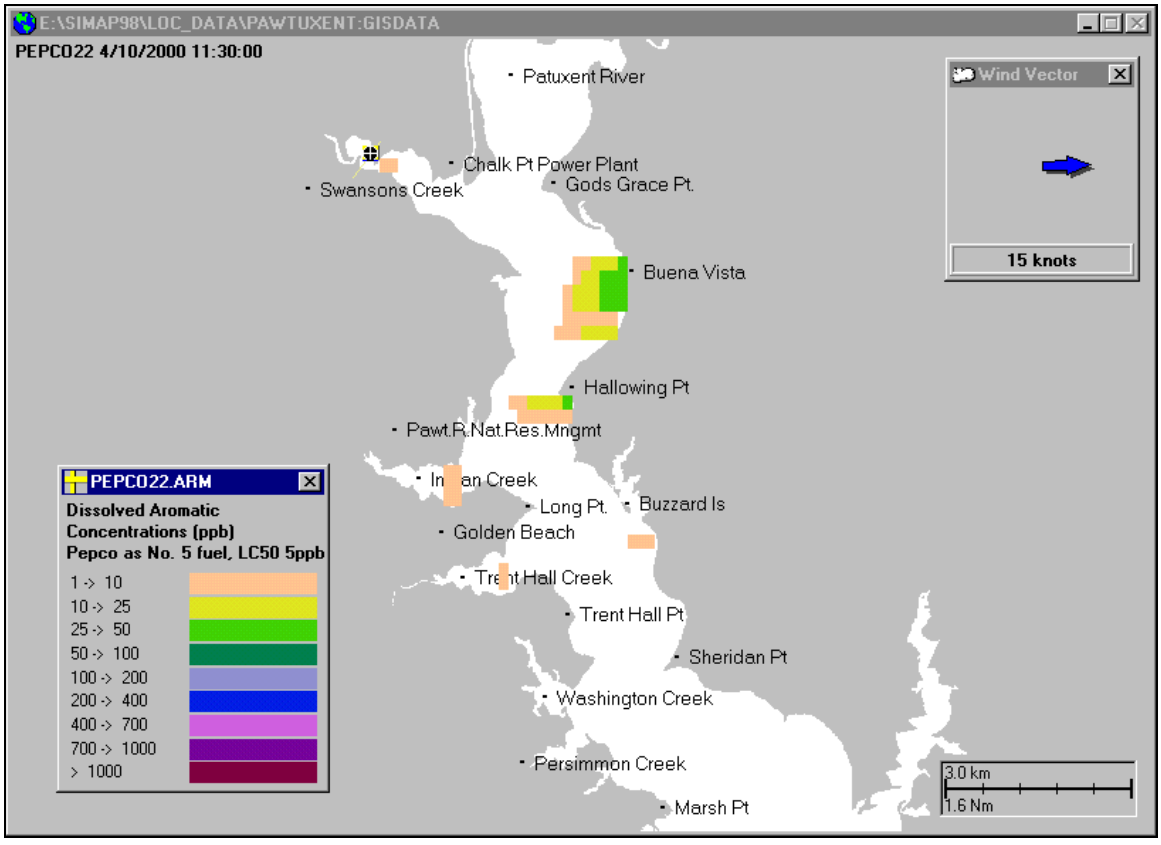

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 19:30:00
Patuxent River
Chalk Pt Power Plant
Swansons
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
23 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

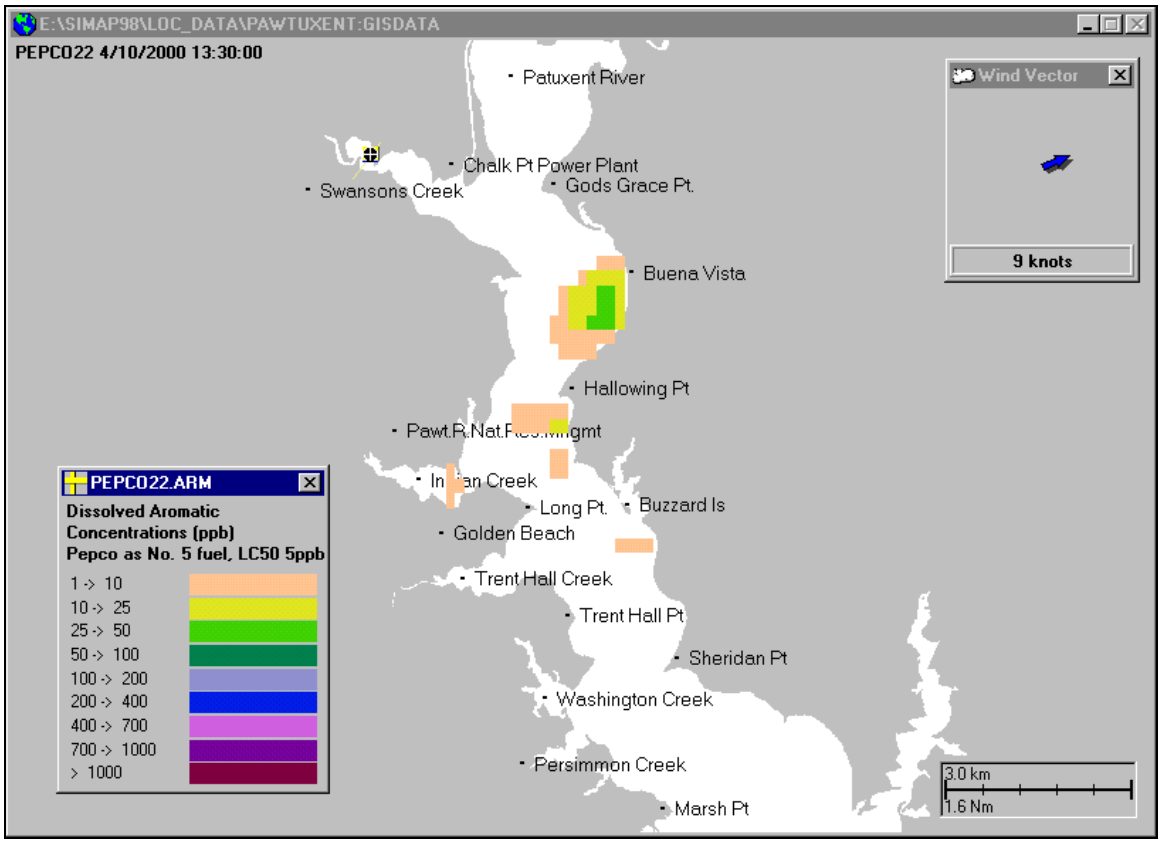

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/9/2000 23:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
12 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

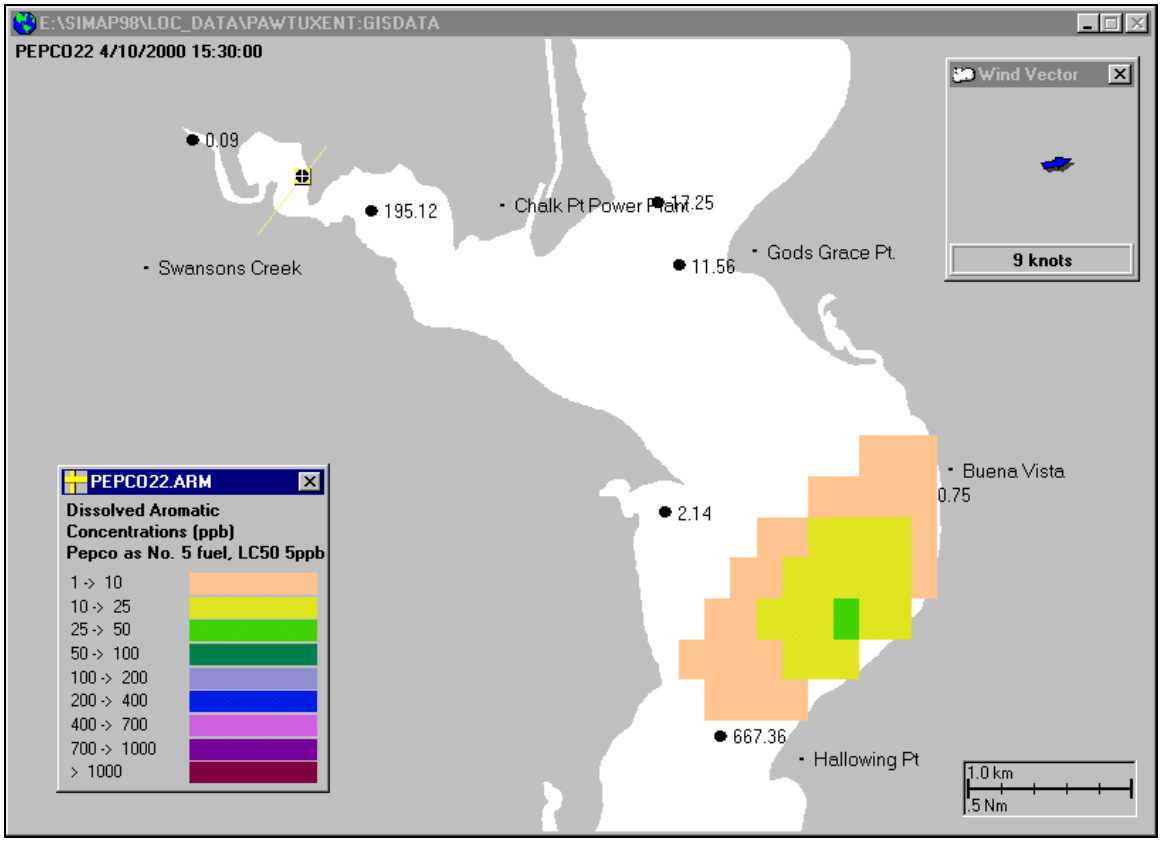

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 01:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
5 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

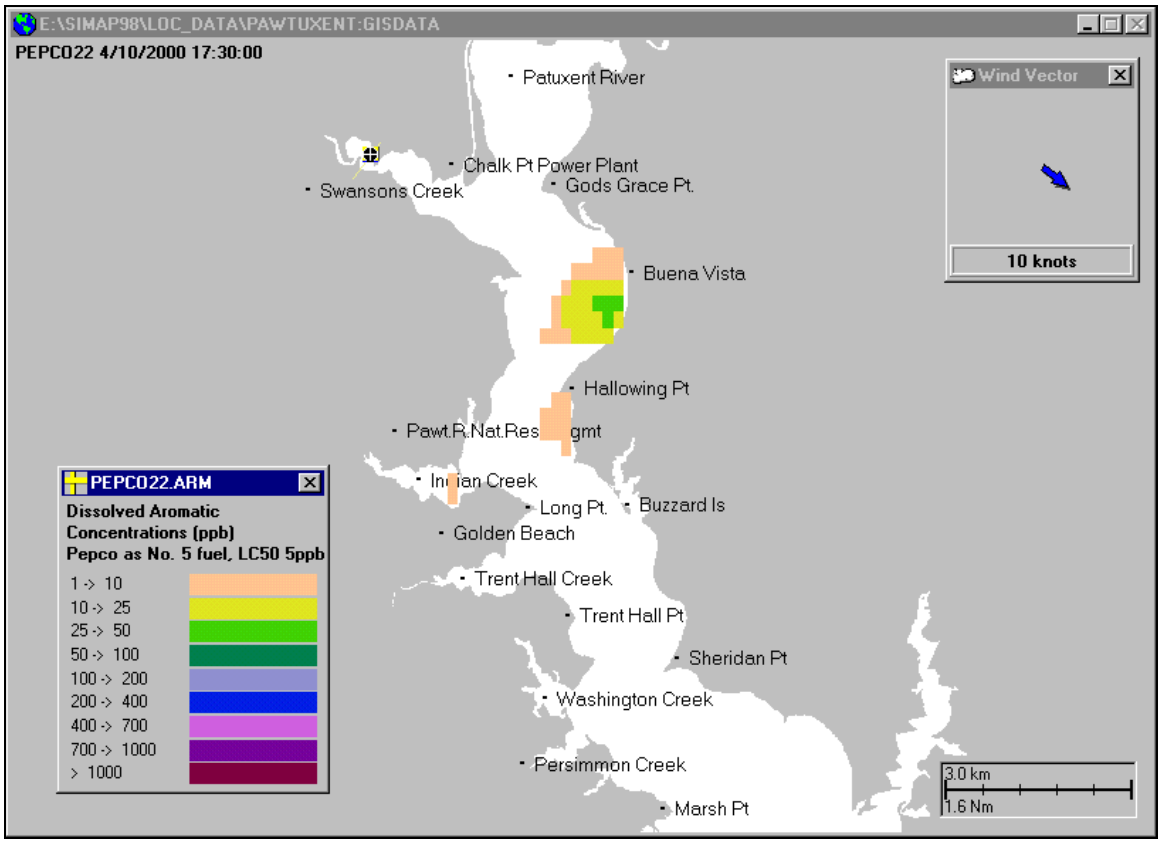

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 03:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
14 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

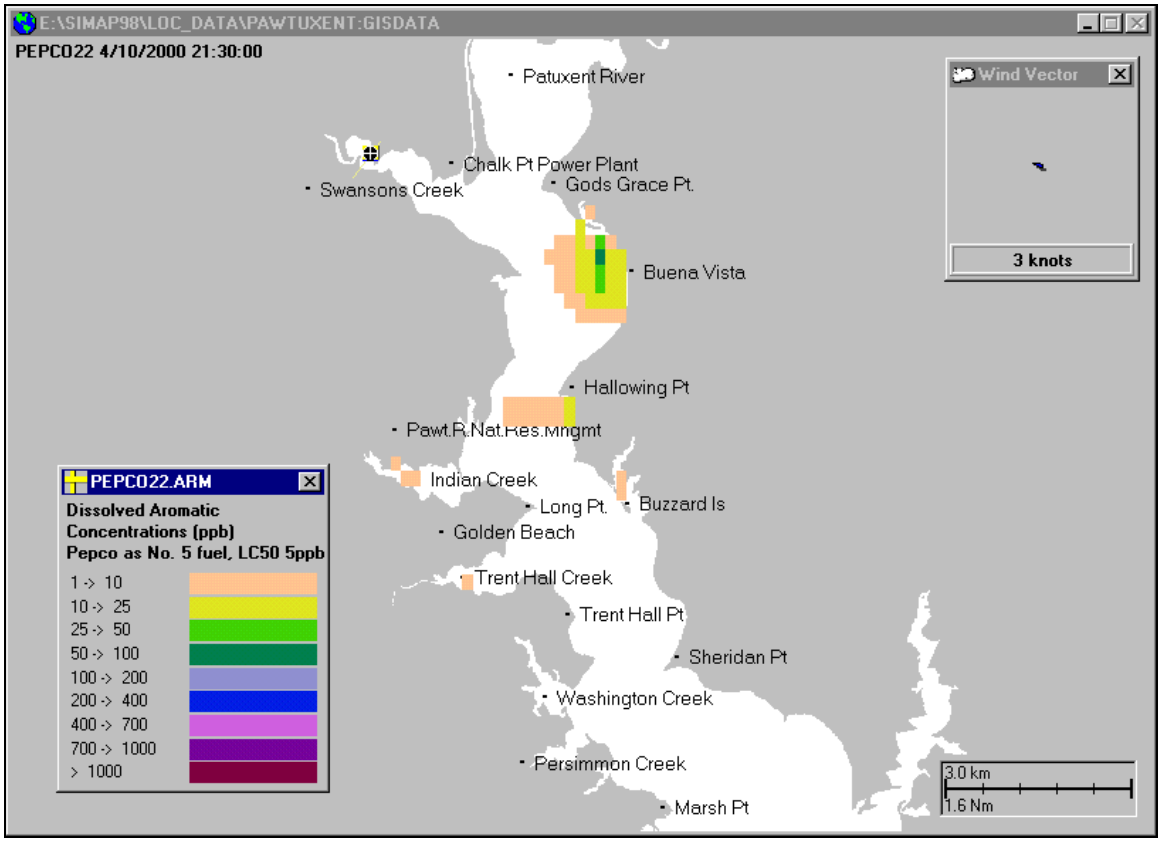

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 07:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.P
gmt
an Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
11 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

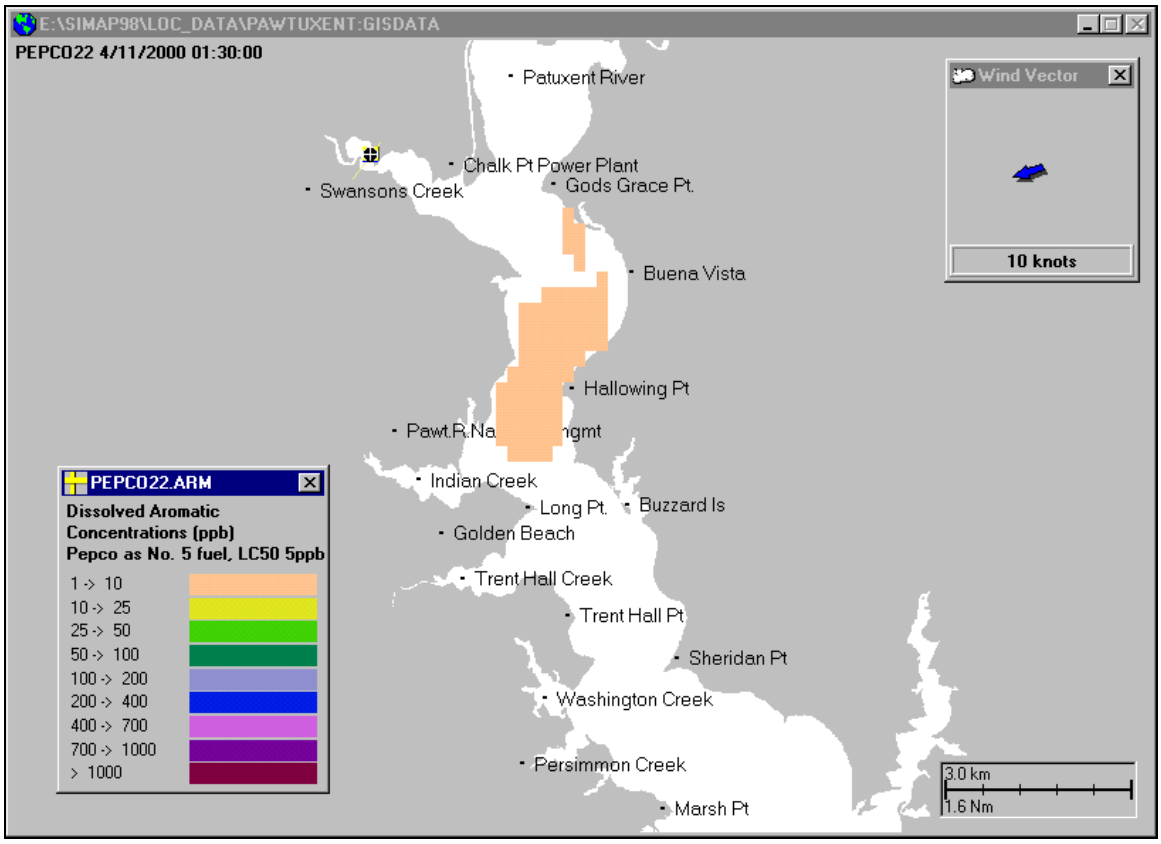

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 11:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
an Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
15 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

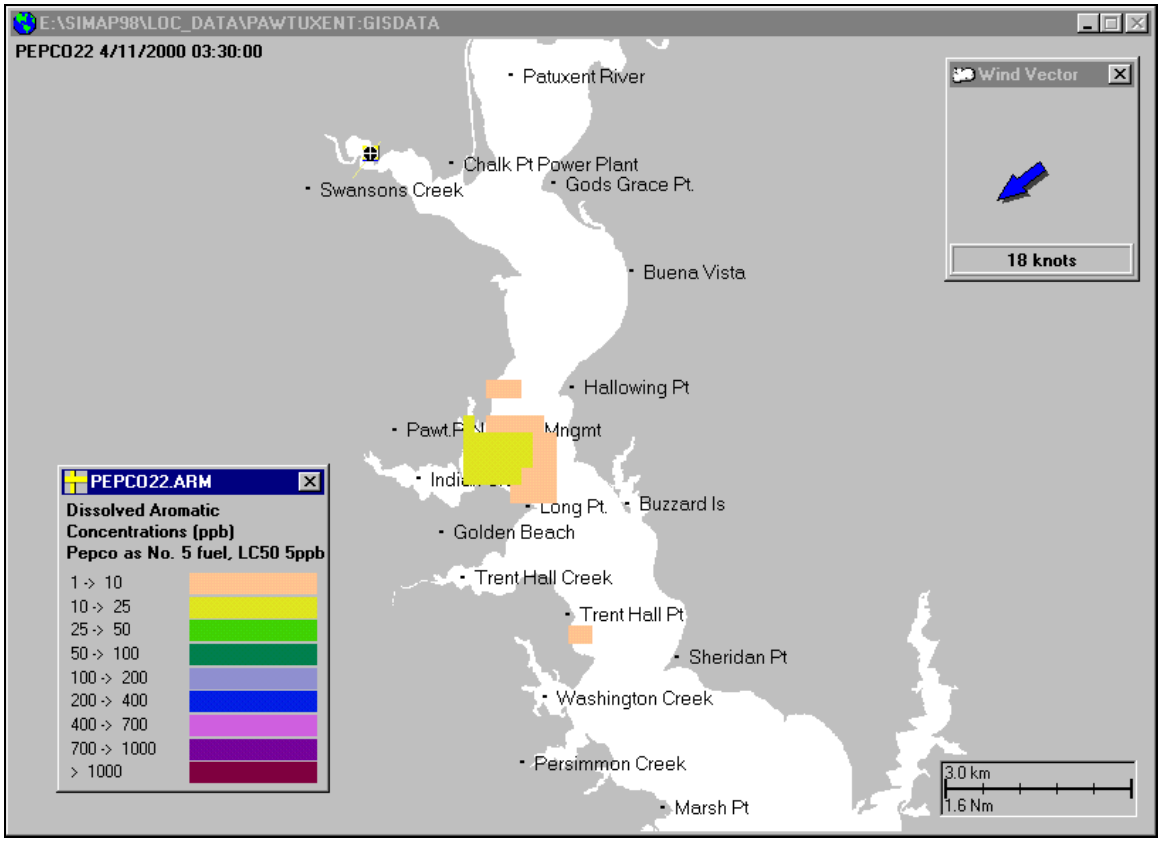

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 13:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

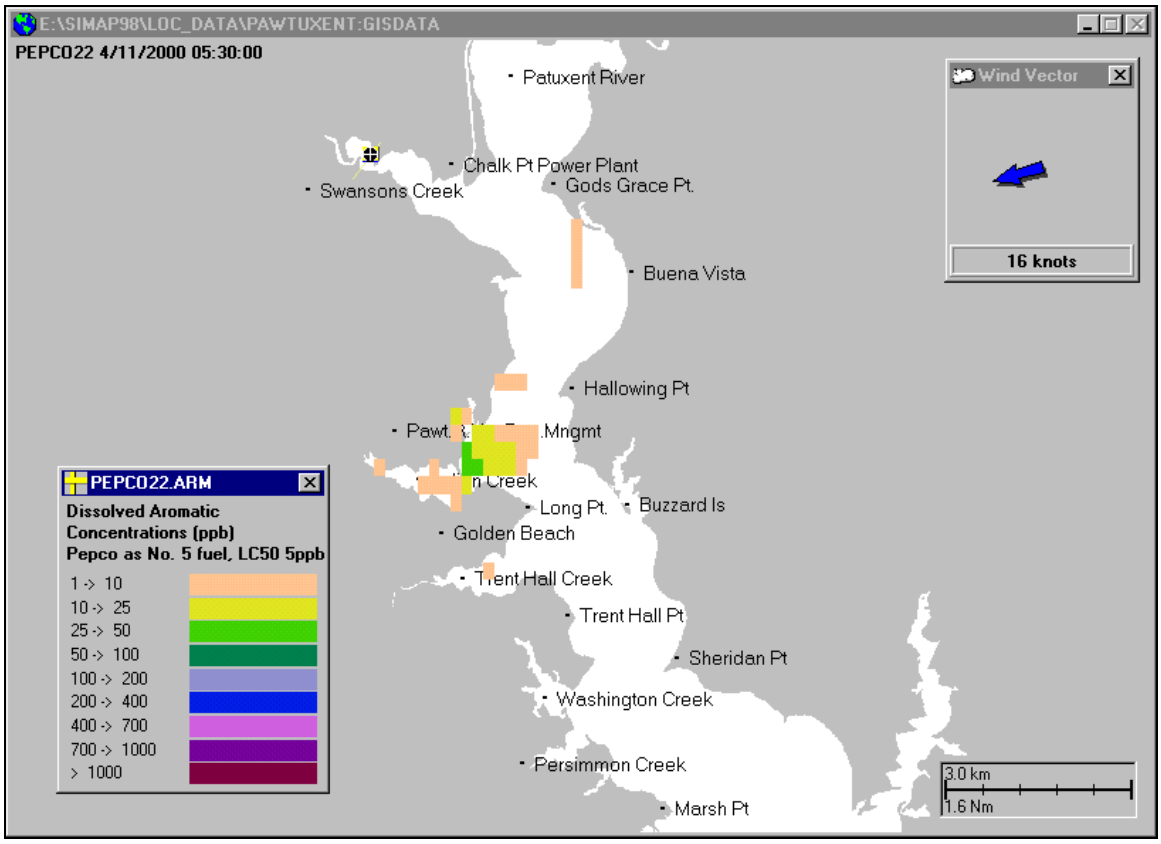

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 15:30:00
0.09
195.12
Chalk Pt Power Plant
17.25
Swansons Creek
11.56
Gods Grace Pt.
Buena Vista
0.75
2.14
667.36
Hallowing Pt
Wind Vector
9 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
1.0 km
.5 Nm

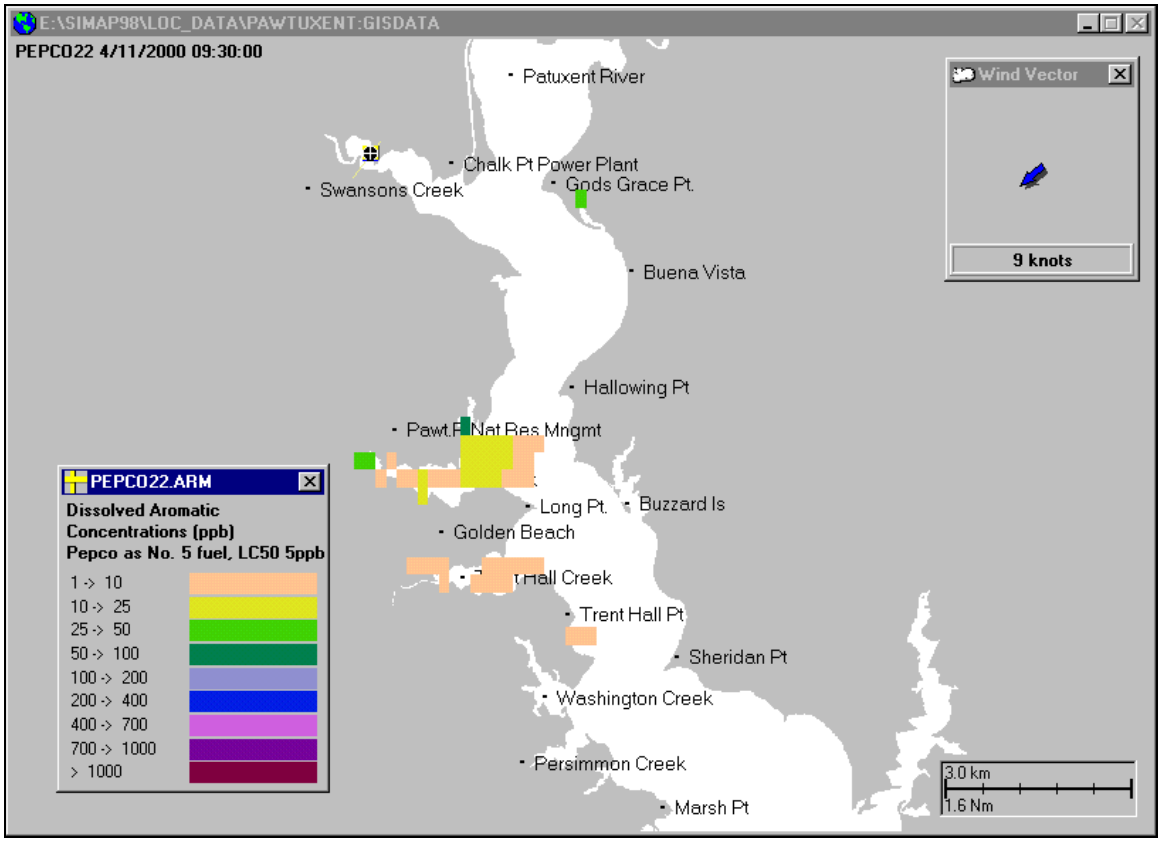

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 17:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res
gmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
10 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

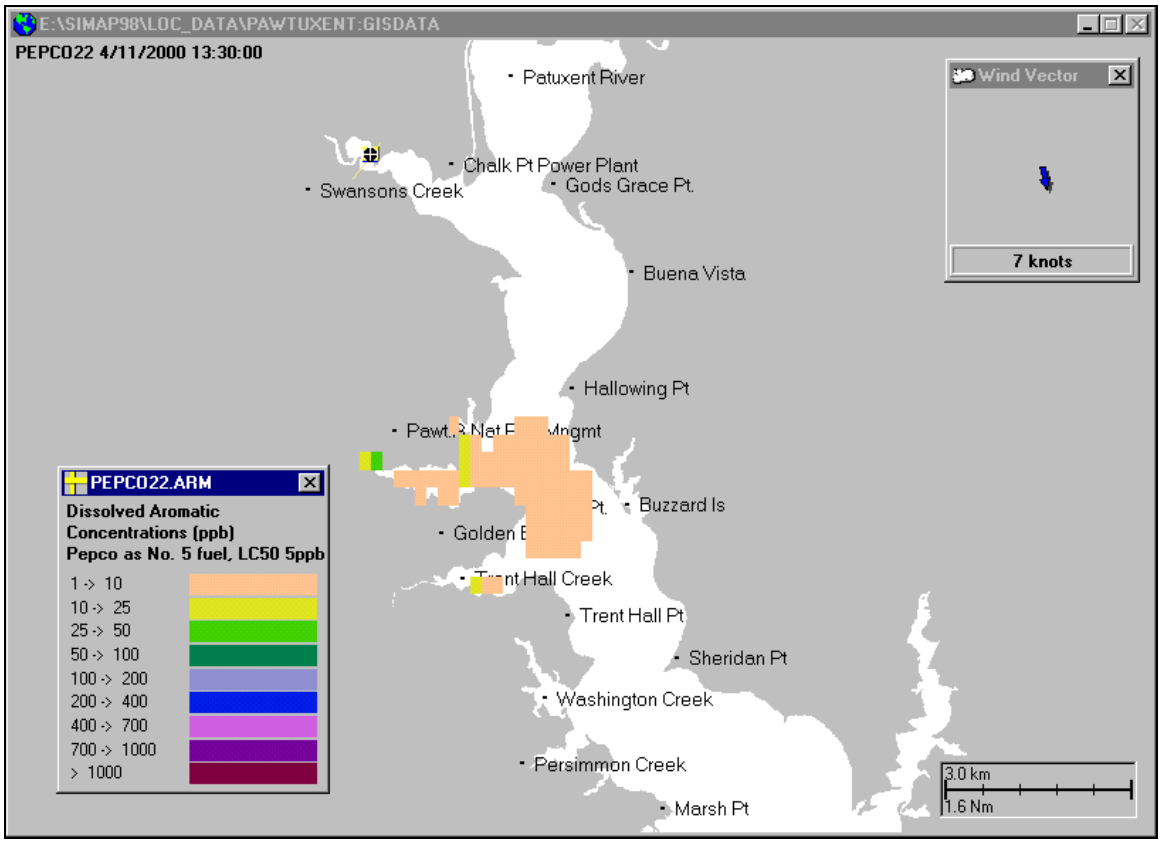

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/10/2000 21:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
3 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

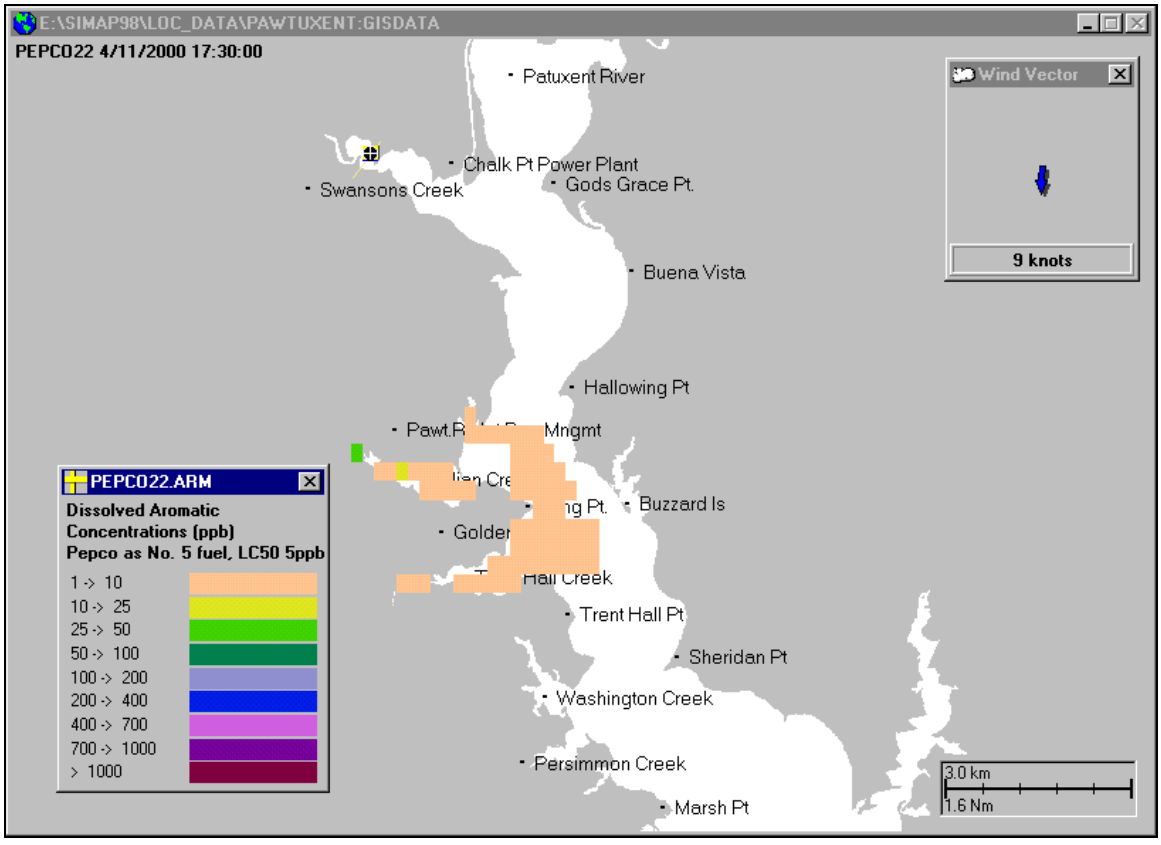

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 01:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
10 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

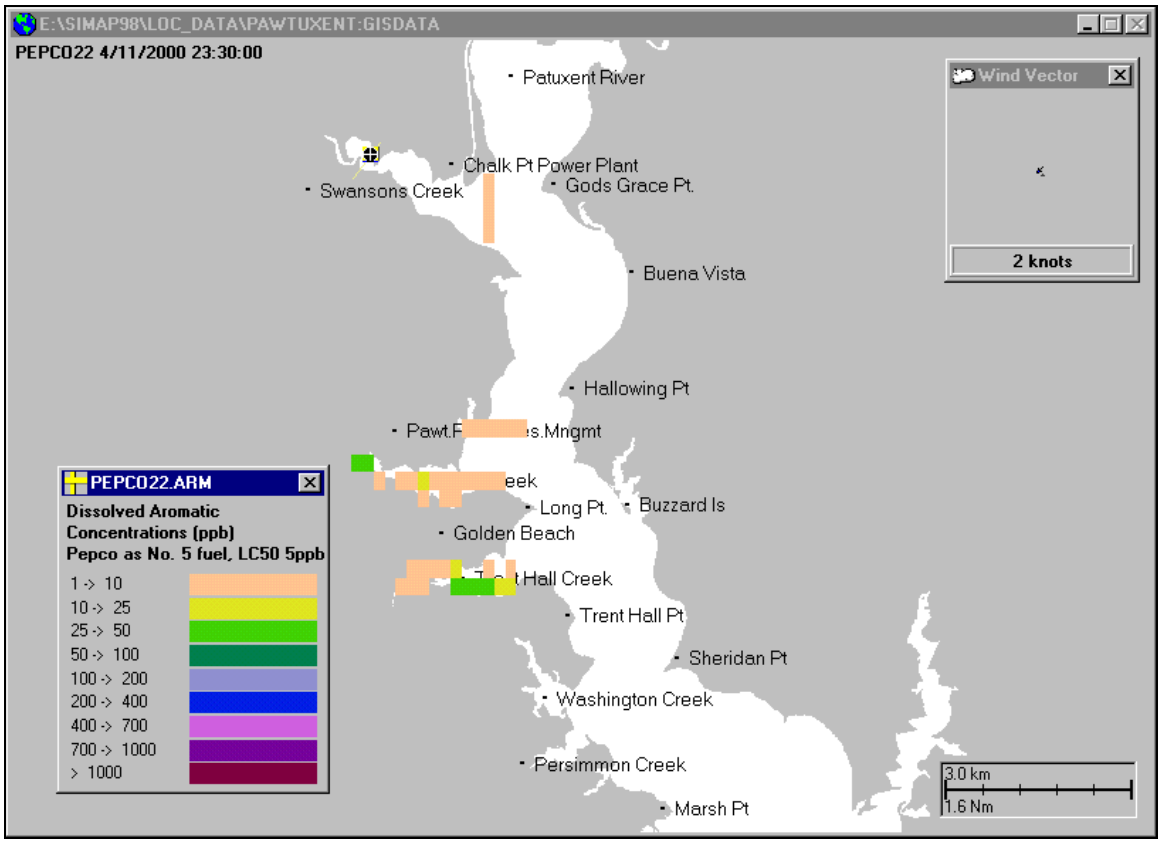

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 03:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
18 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

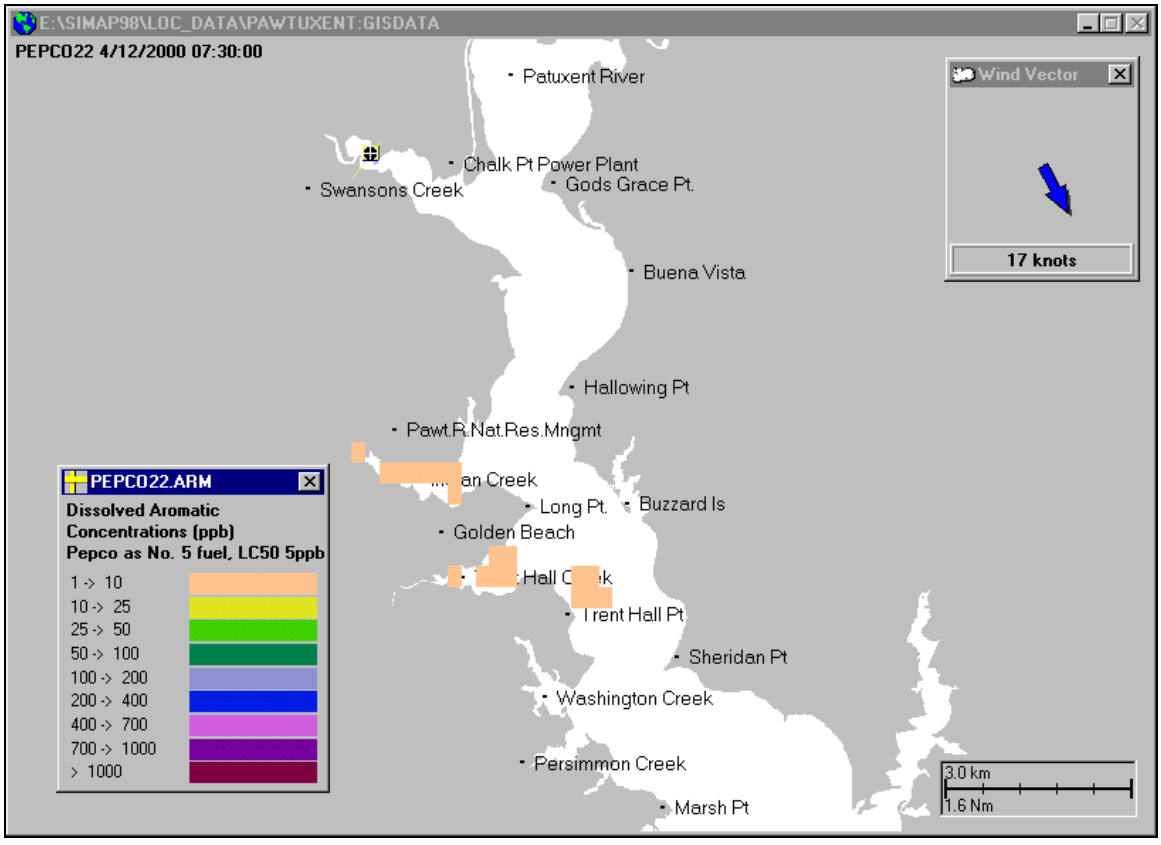

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 05:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt. Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
16 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

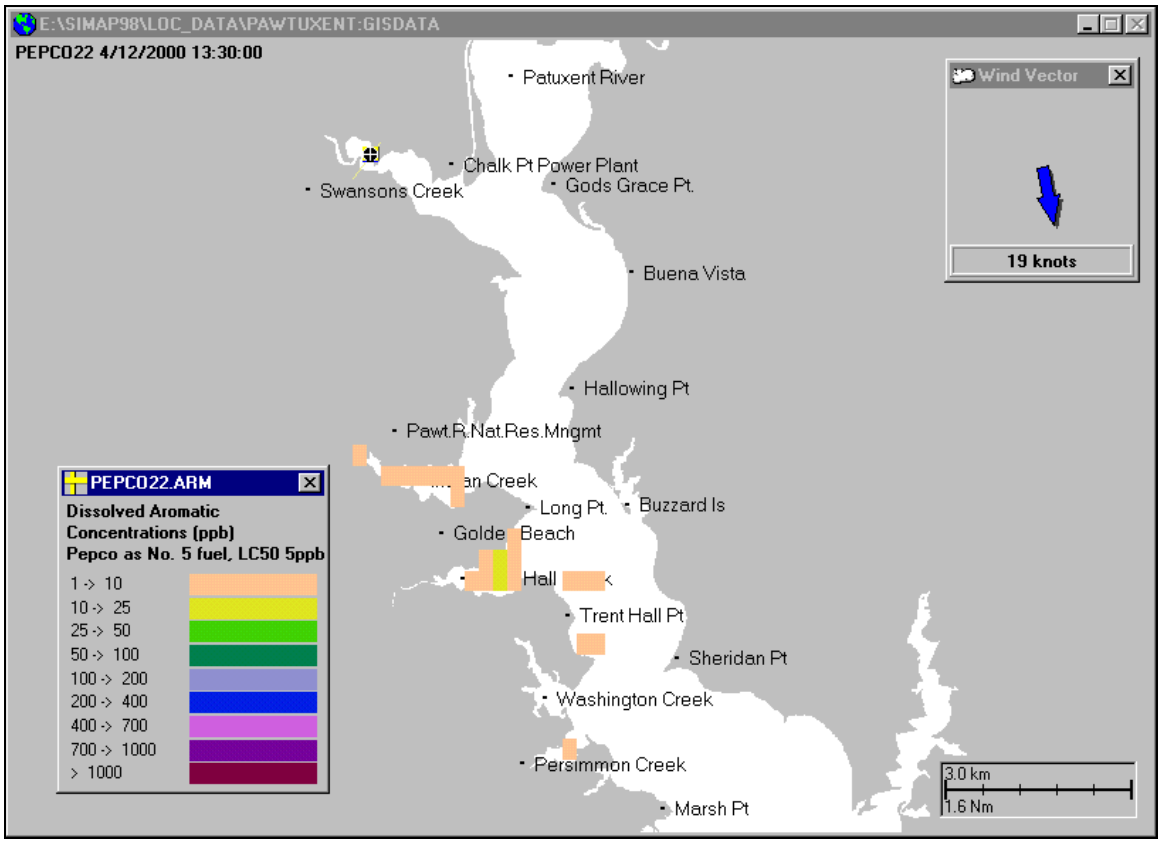

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 09:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

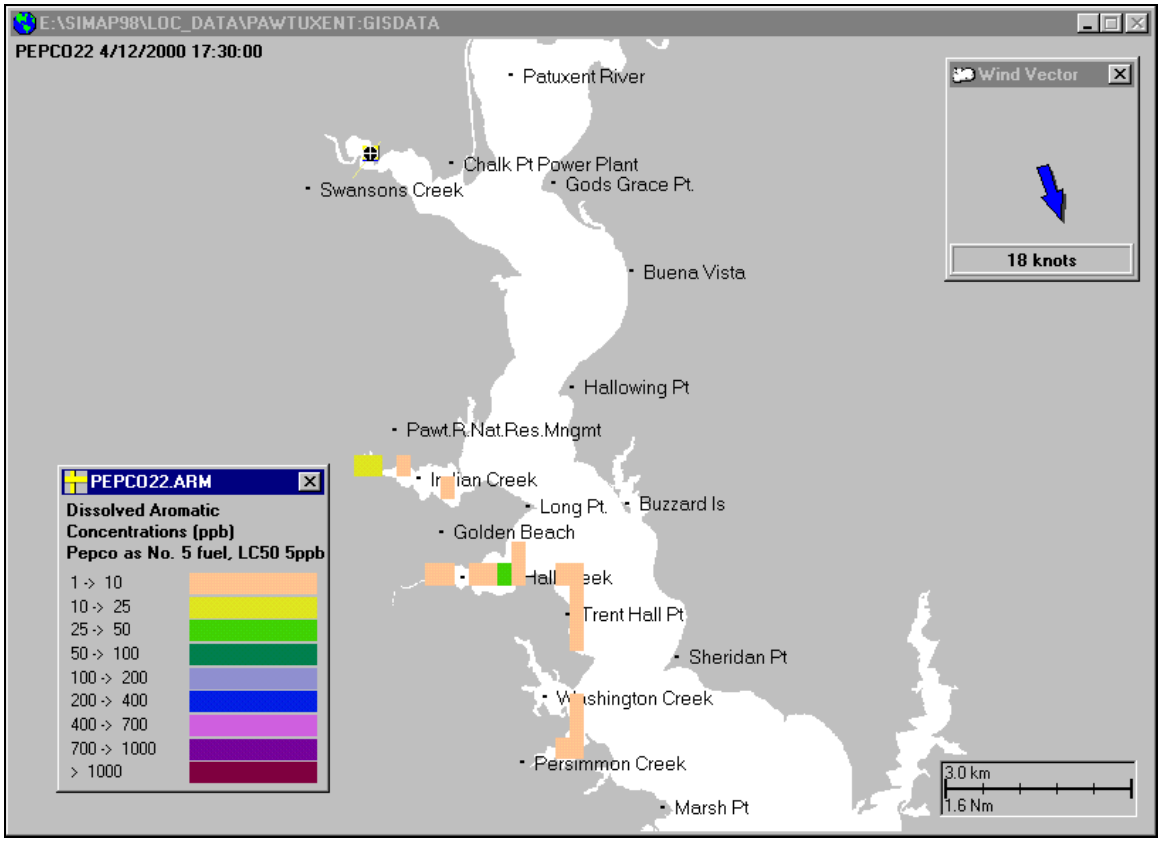

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 13:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
7 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

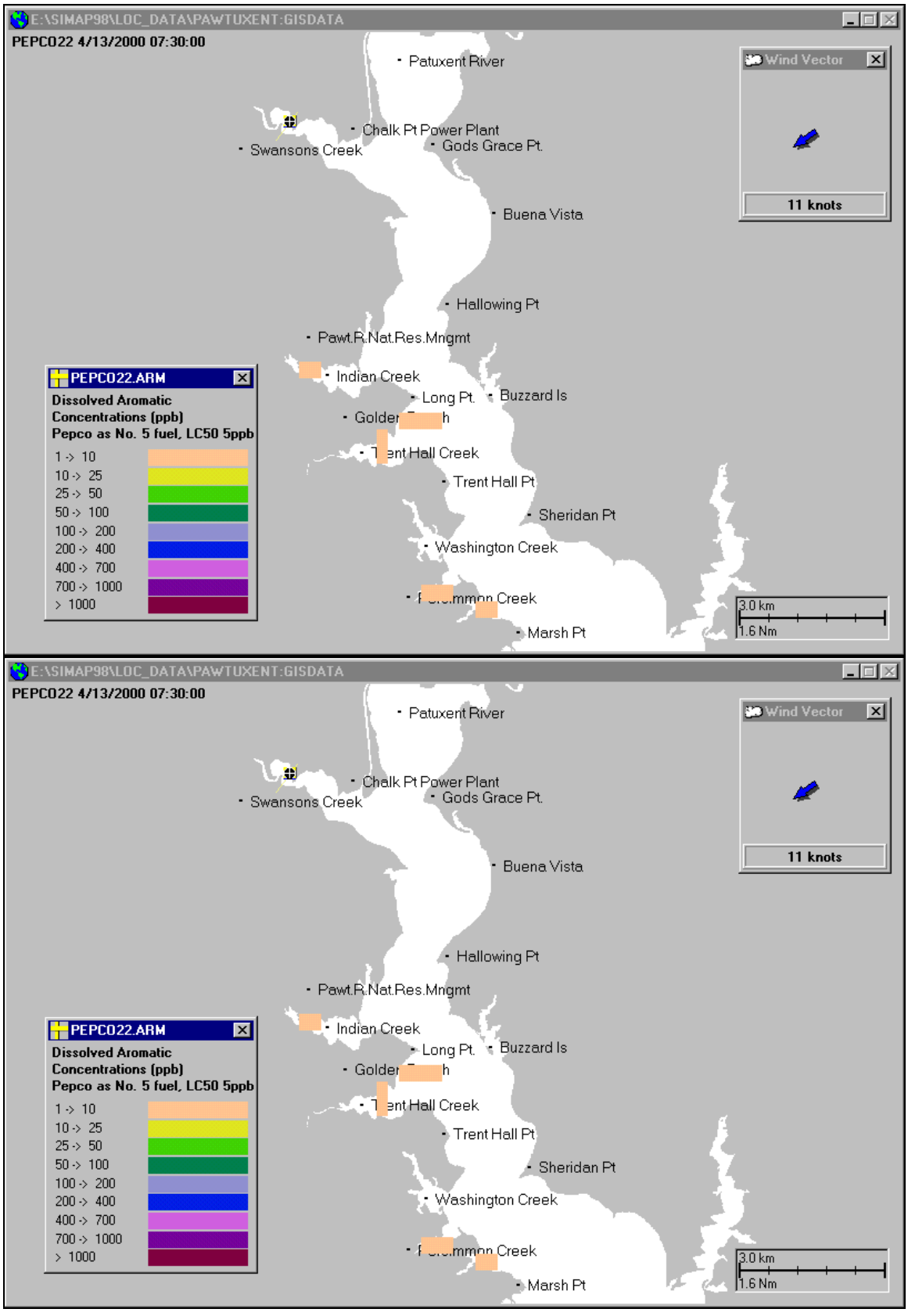

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 17:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Buzzard Is
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
9 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

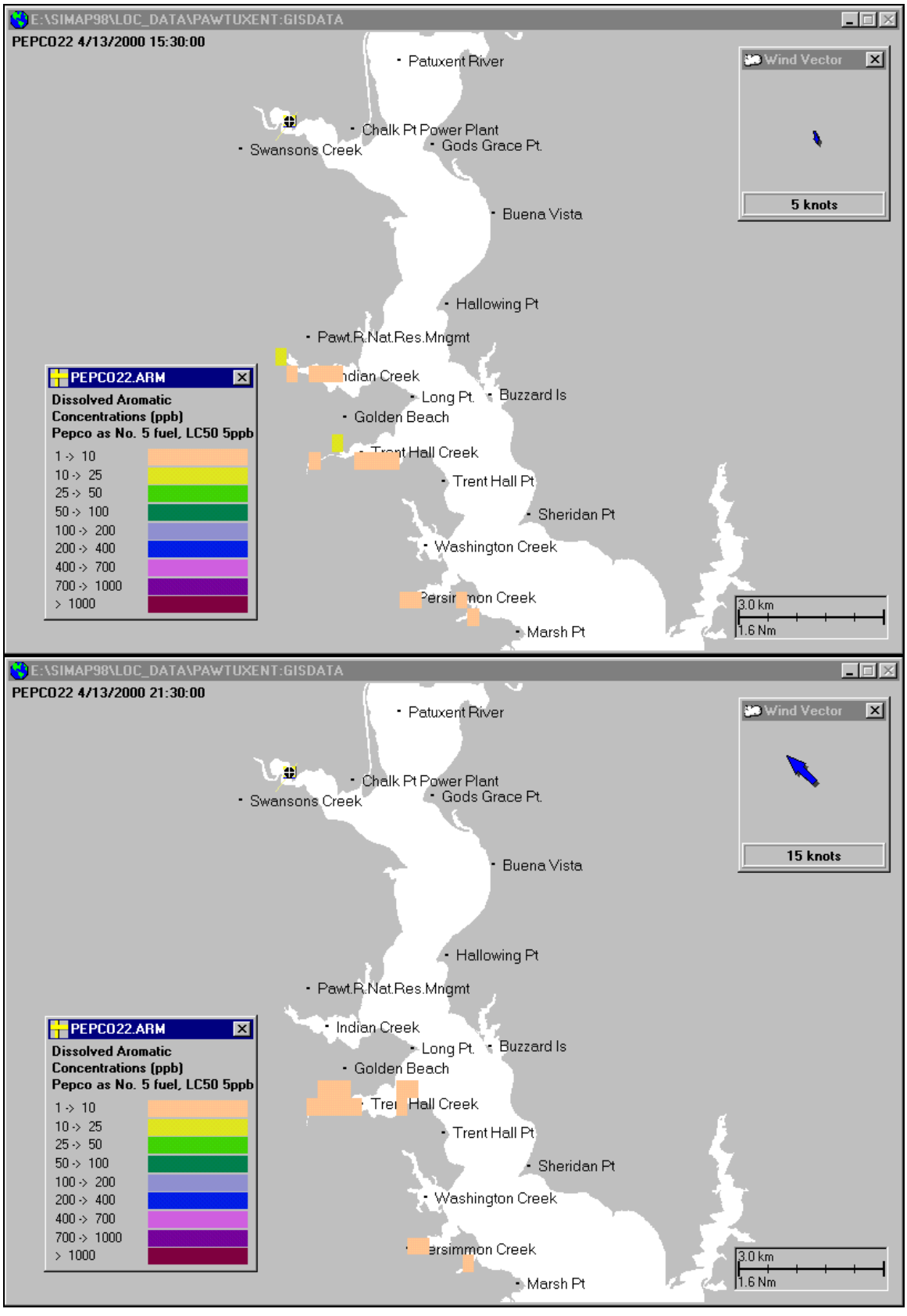

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/11/2000 23:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
2 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 07:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
17 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm


E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 13:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golde Beach
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
19 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

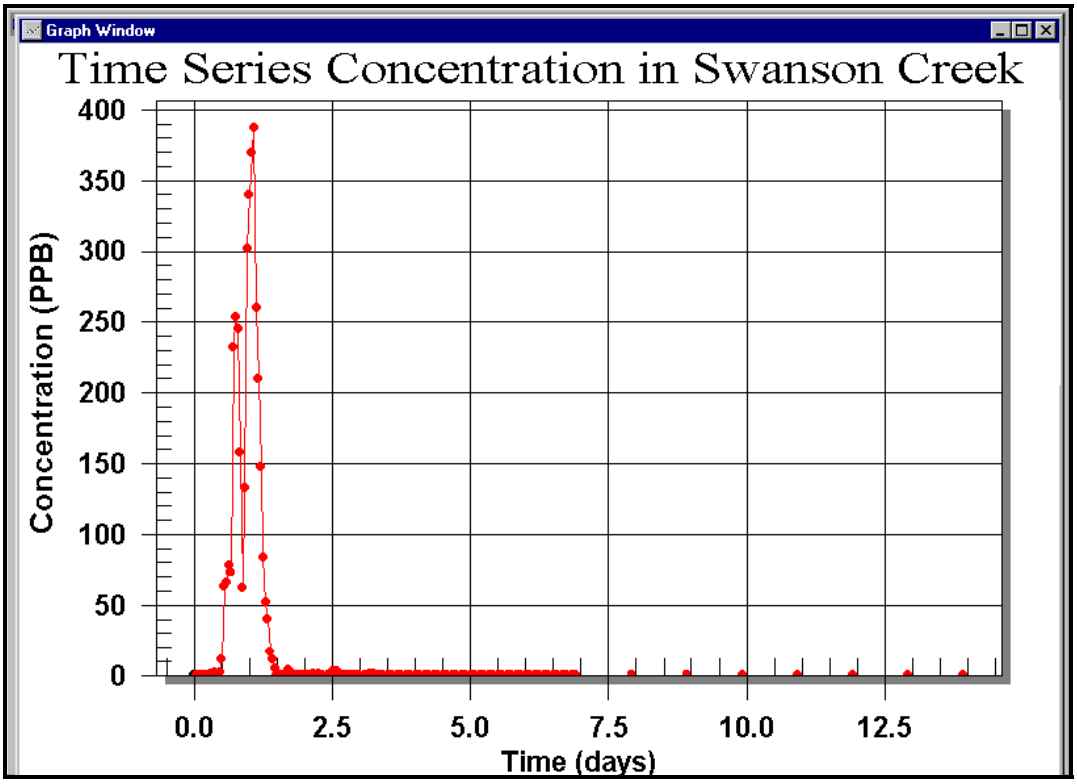

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/12/2000 17:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Pt
Sheridan Pt
Persimmon Creek
Marsh Pt
Wind Vector
18 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

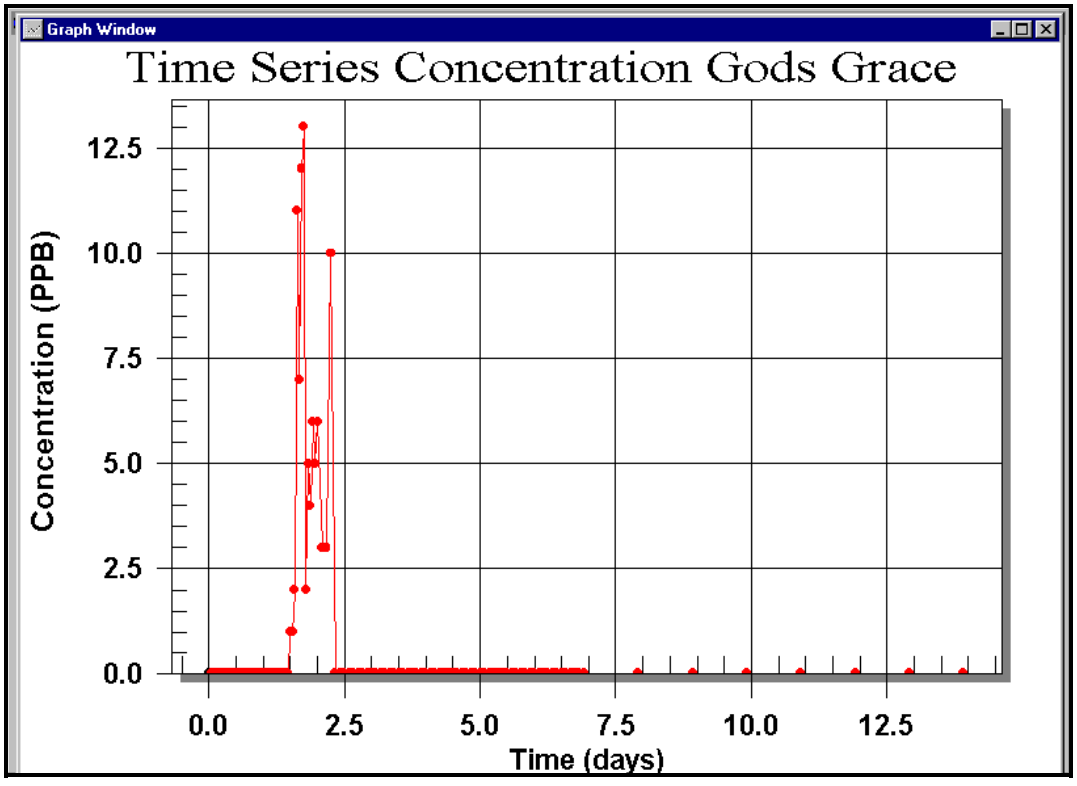

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 07:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Wind Vector
11 knots
3.0 km
1.6 Nm
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000

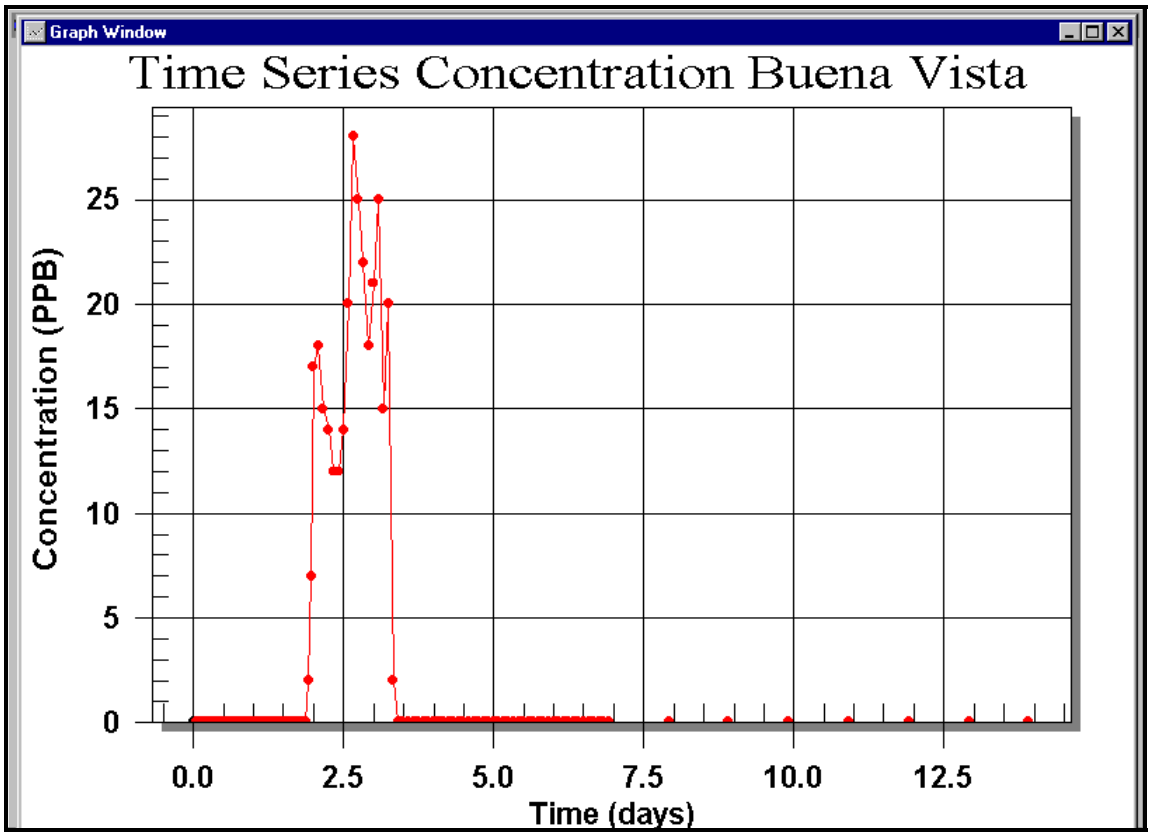

E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 15:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Persimmon Creek
Marsh Pt
Wind Vector
5 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm
E:\SIMAP98\LOC_DATA\PAWTUXENT:GISDATA
PEPCO22 4/13/2000 21:30:00
Patuxent River
Chalk Pt Power Plant
Swansons Creek
Gods Grace Pt.
Buena Vista
Hallowing Pt
Pawt.R.Nat.Res.Mngmt
Indian Creek
Long Pt.
Buzzard Is
Golden Beach
Trent Hall Creek
Trent Hall Pt
Sheridan Pt
Washington Creek
Marsh Pt
Wind Vector
15 knots
PEPCO22.ARM
Dissolved Aromatic
Concentrations (ppb)
Pepco as No. 5 fuel, LC50 5ppb
1 -> 10
10 -> 25
25 -> 50
50 -> 100
100 -> 200
200 -> 400
400 -> 700
700 -> 1000
> 1000
3.0 km
1.6 Nm

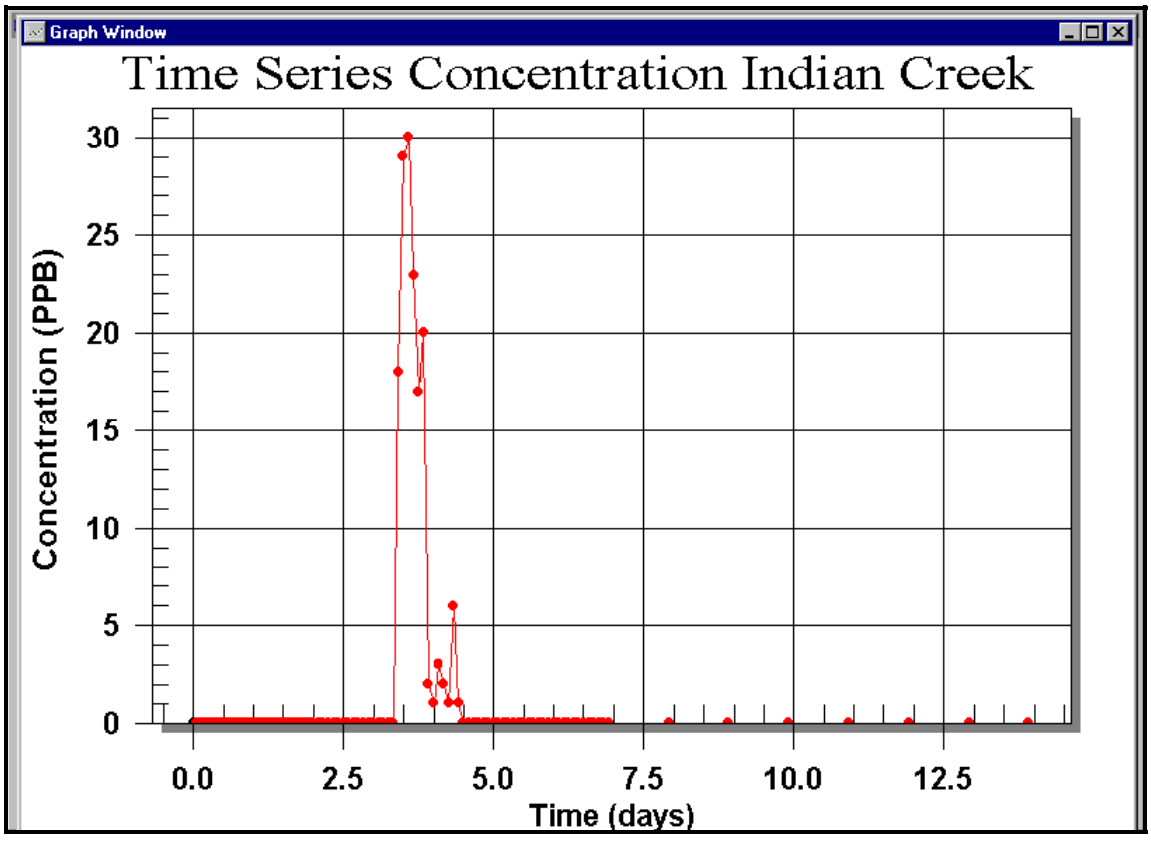
Appendix J. Modeled PAH Concentrations over Time

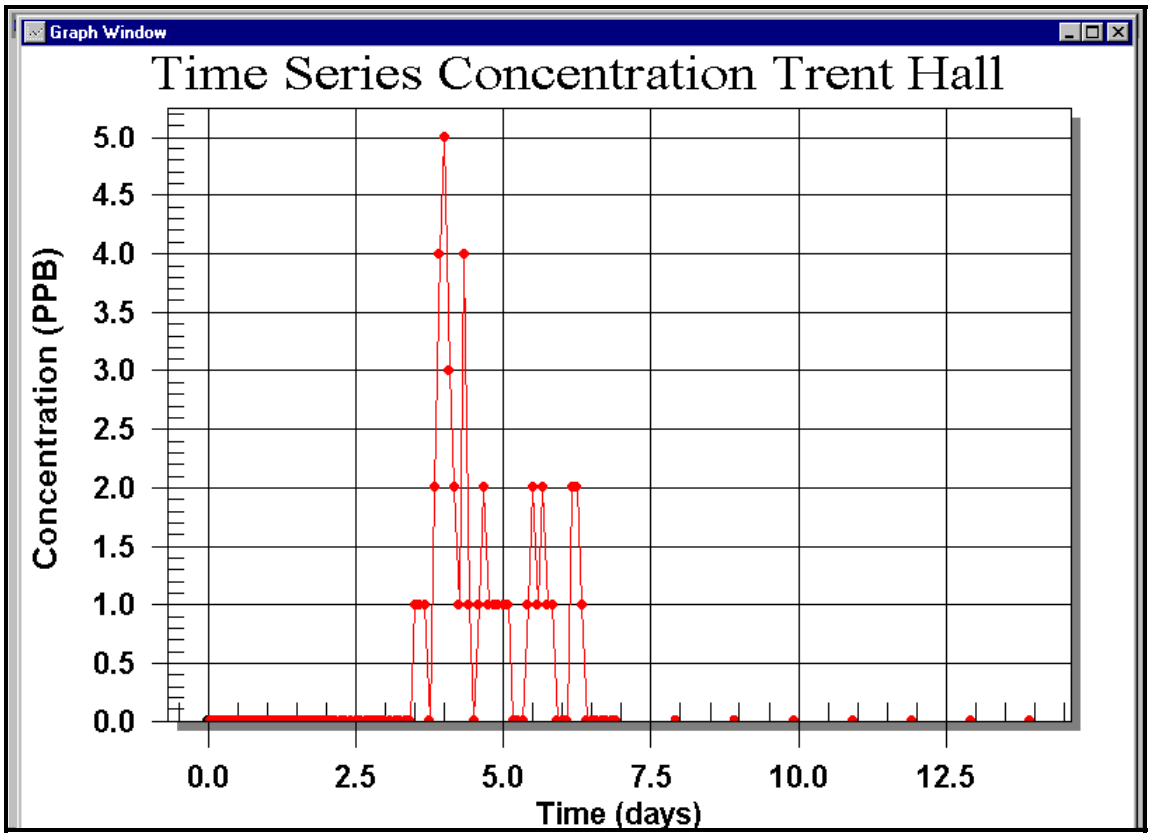
The following figures show plots of PAH concentrations (maximum vertically in the water column) as a function of time after the spill, for selected locations (as labeled).


Graph Window
Time Series Concentration in Swanson Creek
Concentration (PPB)
400
350
300
250
200
150
100
50
0
0.0
2.5
5.0
7.5
10.0
12.5
Time (days)


Graph Window
Time Series Concentration Gods Grace
Concentration (PPB)
12.5
10.0
7.5
5.0
2.5
0.0
0.0
2.5
5.0
7.5
10.0
12.5
Time (days)


Graph Window
Time Series Concentration Buena Vista
Concentration (PPB)
0
5
10
15
20
25
0.0
2.5
5.0
7.5
10.0
12.5
Time (days)


Graph Window
Time Series Concentration Indian Creek
Concentration (PPB)
0
5
10
15
20
25
30
0.0
2.5
5.0
7.5
10.0
12.5
Time (days)

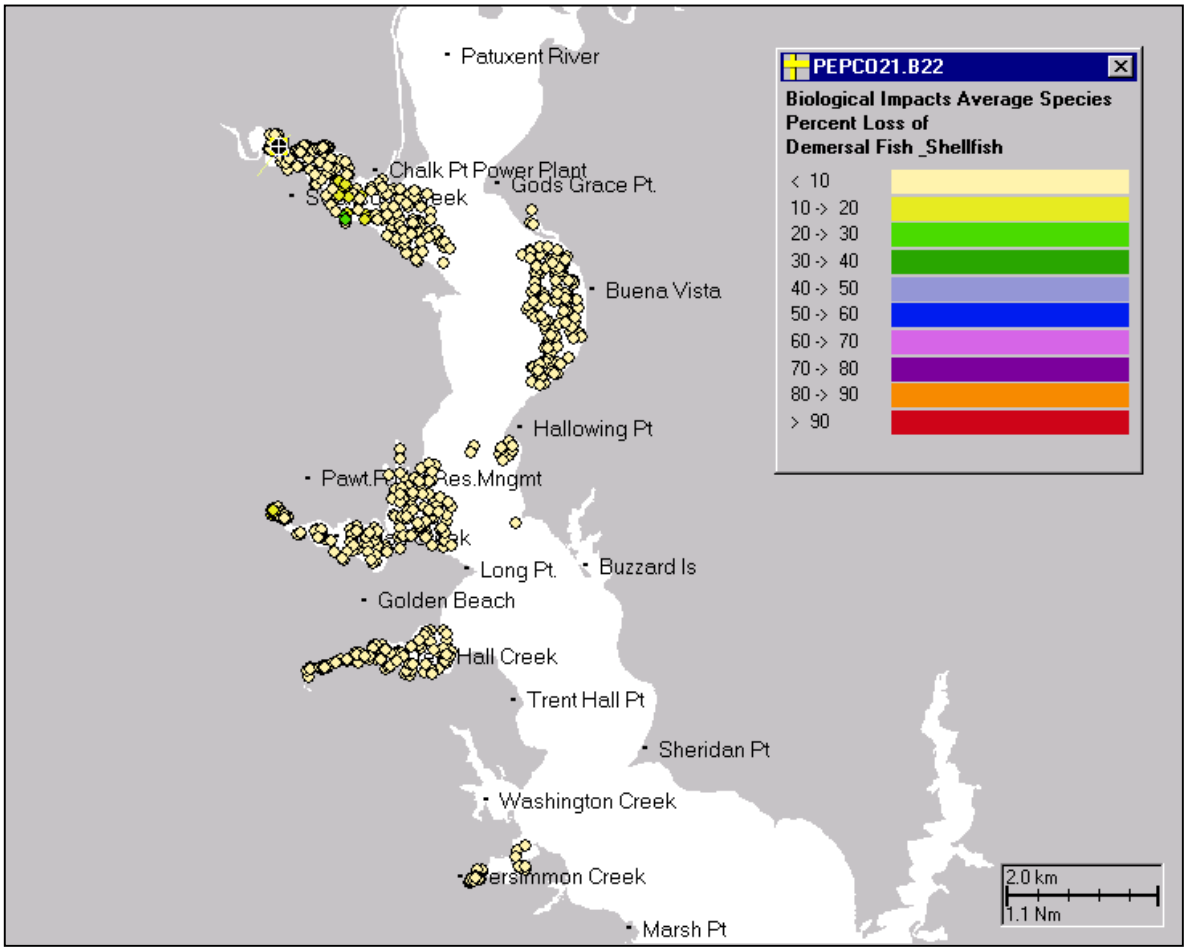
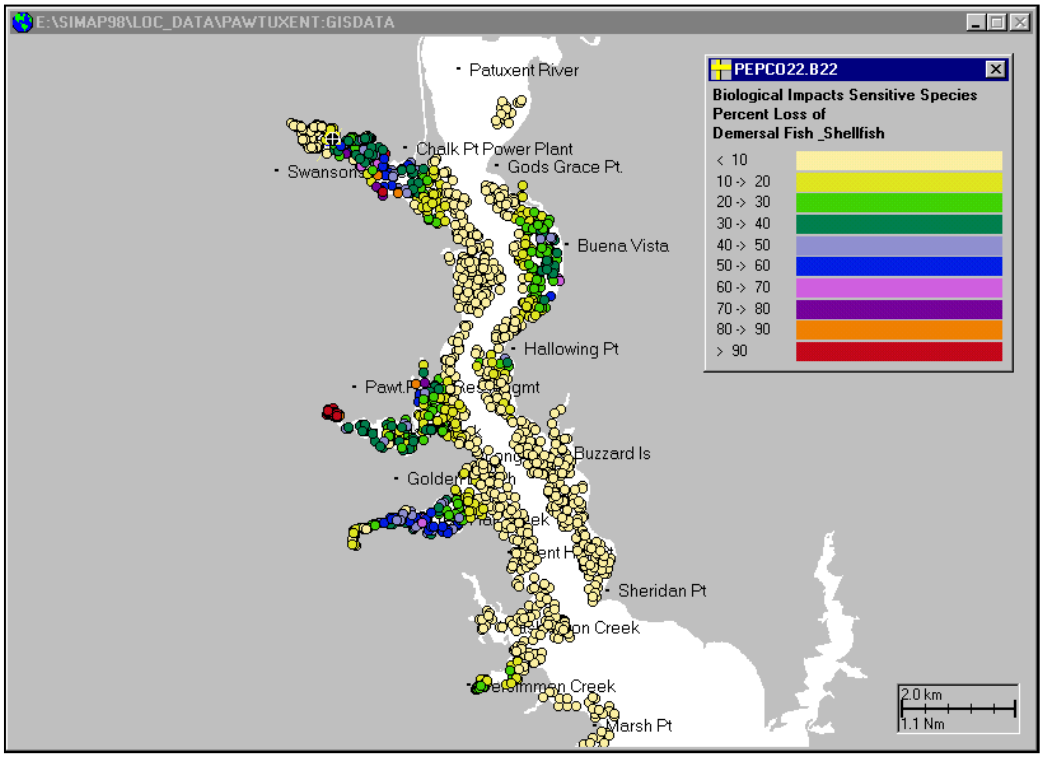
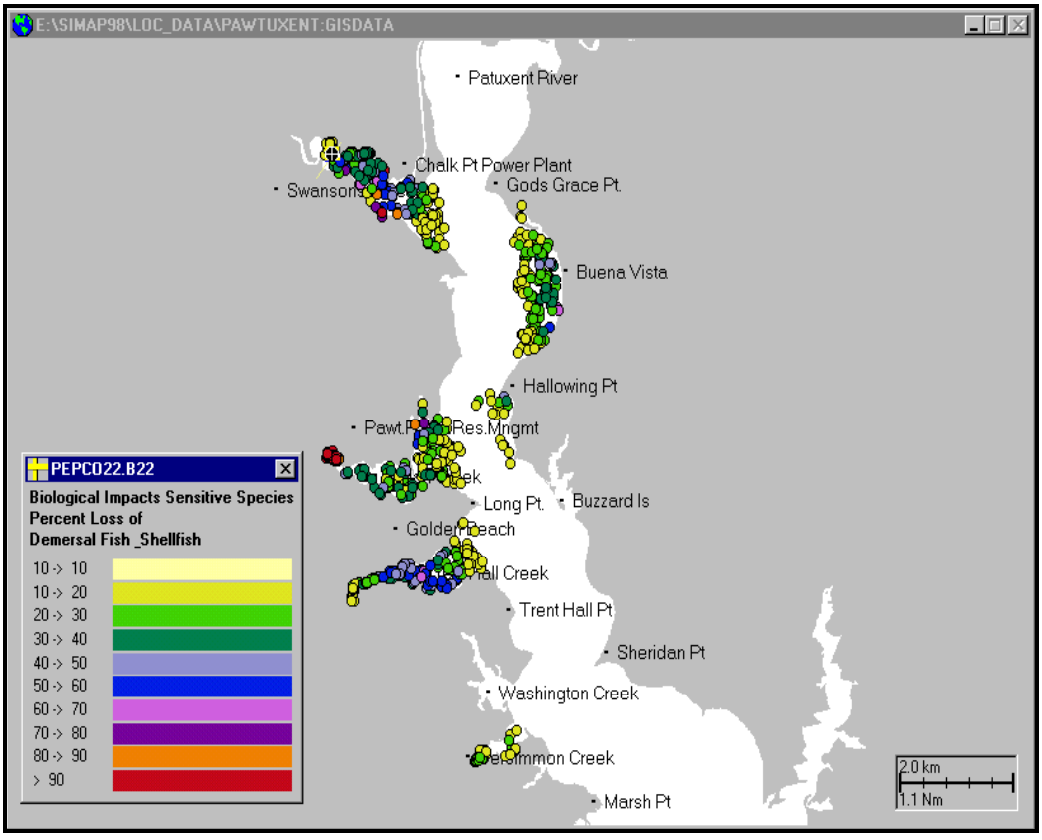

Graph Window
Time Series Concentration Trent Hall
Concentration (PPB)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.0
2.5
5.0
7.5
10.0
12.5
Time (days)

Appendix K. Modeled Percent Mortality

The following figures show maps of percent mortality for demersal fish and shellfish (exposed to near bottom water concentrations). Plots are included for two assumed LC50s: 75 µg/L for average species and 5 µg/L for sensitive species. (There are two plots for the sensitive species, one is a zoomed-in view with the <10% points removed for clarity.)

Note that the shoreline shown in these model outputs are for visual reference only, whereas the habitat (and corresponding depth) grid (Appendices B and C) defines the actual shoreline to the model.

Percent Loss for Species of Average Sensitivity (50th Percentile LC50 assumed)



Percent Loss for Sensitive Species (2.5th Percentile LC50 assumed)