

APPENDIX 3-A

**USGS Groundwater Level Sites in
Kent County with Greater Than 10 Readings**

USGS Groundwater Levels for Kent County with Greater than 10 Readings

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	<u>390626076083301</u>	KE Dc 89	10/21/1991	9/20/2005	144
USGS	<u>390626076083302</u>	KE Dc 91	10/21/1991	9/14/2007	141
USGS	<u>390837076140401</u>	KE Db 40	12/4/1978	4/23/2008	84
USGS	<u>391124076101001</u>	KE Cb 97	10/24/1991	4/23/2008	148
USGS	<u>391124076101002</u>	KE Cb 98	10/24/1991	9/20/2005	143
USGS	<u>391124076101003</u>	KE Cb 99	10/24/1991	2/19/2004	138
USGS	<u>391124076101004</u>	KE Cb	10/24/1991	4/23/2008	103
USGS	<u>391124076101005</u>	KE Cb	12/9/1991	4/23/2008	145
USGS	<u>391245076034801</u>	KE Cd 53	9/21/1990	11/12/1997	41
USGS	<u>391251076142201</u>	KE Cb	10/23/1991	4/15/2004	78
USGS	<u>391252076135701</u>	KE Cb 32	4/10/1963	4/22/1992	151
USGS	<u>391400076101401</u>	KE Cb 36	4/25/1978	4/23/2008	118
USGS	<u>391432076015501</u>	KE Cd 44	9/18/1959	4/23/2008	503
USGS	<u>391608075594301</u>	KE Be 65	5/22/1989	4/20/1992	14
USGS	<u>391643075550901</u>	KE Be 171	10/24/1991	2/19/2004	61
USGS	<u>391643076002101</u>	KE Bd 181	11/6/2003	10/3/2005	15
USGS	<u>391645076035001</u>	KE Bd 39	5/22/1989	7/16/1991	12
USGS	<u>391650076050402</u>	KE Bc 185	10/23/1991	5/28/2008	183
USGS	<u>391650076050403</u>	KE Bc 186	12/2/1991	2/19/2004	93
USGS	<u>391651076002901</u>	KE Bd 187	11/6/2003	10/3/2005	15
USGS	<u>391652076004301</u>	KE Bd 190	2/4/2004	10/3/2005	13
USGS	<u>391653076003701</u>	KE Bd 186	11/6/2003	10/3/2005	15
USGS	<u>391654076000901</u>	KE Bd 182	11/6/2003	10/3/2005	15
USGS	<u>391654076000902</u>	KE Bd 188	11/6/2003	10/3/2005	15
USGS	<u>391657076003601</u>	KE Bd 154	2/25/2004	10/3/2005	12
USGS	<u>391657076003602</u>	KE Bd 180	2/25/2004	10/3/2005	16
USGS	<u>391657076003701</u>	KE Bd 153	2/25/2004	10/3/2005	15
USGS	<u>391657076003801</u>	KE Bd 152	2/25/2004	10/3/2005	13
USGS	<u>391657076003901</u>	KE Bd 151	2/25/2004	10/3/2005	14
USGS	<u>391657076004001</u>	KE Bd 150	2/25/2004	10/3/2005	13
USGS	<u>391658076003701</u>	KE Bd 191	11/6/2003	10/3/2005	13
USGS	<u>391659075552401</u>	KE Be 212	5/6/1998	10/22/1999	16
USGS	<u>391659076001701</u>	KE Bd 171	12/16/2003	10/3/2005	19
USGS	<u>391659076001702</u>	KE Bd 172	12/16/2003	10/3/2005	20
USGS	<u>391659076001703</u>	KE Bd 173	12/16/2003	10/3/2005	20
USGS	<u>391700076001701</u>	KE Bd 183	11/6/2003	10/3/2005	17
USGS	<u>391700076002401</u>	KE Bd 174	12/16/2003	10/3/2005	20
USGS	<u>391700076002402</u>	KE Bd 175	12/16/2003	10/3/2005	19
USGS	<u>391700076002403</u>	KE Bd 176	12/16/2003	10/3/2005	19
USGS	<u>391701076003601</u>	KE Bd 159	2/4/2004	10/3/2005	14
USGS	<u>391701076003602</u>	KE Bd 160	2/4/2004	10/3/2005	17
USGS	<u>391701076003701</u>	KE Bd 158	2/4/2004	10/3/2005	15
USGS	<u>391702076003301</u>	KE Bd 177	12/16/2003	10/3/2005	18
USGS	<u>391702076003302</u>	KE Bd 178	12/16/2003	10/3/2005	18
USGS	<u>391702076003303</u>	KE Bd 179	12/16/2003	10/3/2005	20
USGS	<u>391702076003401</u>	KE Bd 165	12/16/2003	10/3/2005	20
USGS	<u>391702076003402</u>	KE Bd 166	12/16/2003	10/3/2005	20

USGS Groundwater Levels for Kent County with Greater than 10 Readings

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	391702076003403	KE Bd 167	12/16/2003	10/3/2005	20
USGS	391702076003404	KE Bd 168	12/16/2003	10/3/2005	20
USGS	391702076003701	KE Bd 157	2/25/2004	10/3/2005	13
USGS	391702076003801	KE Bd 156	2/25/2004	10/3/2005	15
USGS	391702076003901	KE Bd 155	2/25/2004	10/3/2005	13
USGS	391703076003201	KE Bd 185	11/6/2003	10/3/2005	15
USGS	391703076003401	KE Bd 164	2/4/2004	10/3/2005	16
USGS	391703076003501	KE Bd 163	2/25/2004	10/3/2005	16
USGS	391703076003601	KE Bd 162	2/25/2004	10/3/2005	16
USGS	391703076003701	KE Bd 161	2/25/2004	10/3/2005	13
USGS	391704076003401	KE Bd 169	2/4/2004	10/3/2005	14
USGS	391704076003402	KE Bd 170	2/4/2004	10/3/2005	16
USGS	391707076002801	KE Bd 189	11/6/2003	10/3/2005	14
USGS	391710075584001	KE Be 218	2/25/2004	10/3/2005	16
USGS	391710075584002	KE Be 219	2/25/2004	10/3/2005	15
USGS	391711076001901	KE Bd 184	11/6/2003	10/3/2005	15
USGS	391713075562101	KE Be 203	5/6/1998	10/22/1999	15
USGS	391715075554201	KE Be 211	5/6/1998	10/22/1999	16
USGS	391717075571001	KE Be 194	5/6/1998	9/27/2004	20
USGS	391717075571002	KE Be 195	5/6/1998	5/20/2004	18
USGS	391720075554601	KE Be 159	11/14/1990	10/22/1999	43
USGS	391720075554602	KE Be 160	11/14/1990	10/22/1999	45
USGS	391720075554603	KE Be 161	11/14/1990	10/22/1999	47
USGS	391721075554501	KE Be 63	5/26/1989	10/22/1999	59
USGS	391721075554502	KE Be 64	5/26/1989	10/22/1999	62
USGS	391727075550901	KE Be 216	5/6/1998	10/22/1999	16
USGS	391742075554801	KE Be 62	5/26/1989	10/22/1999	64
USGS	391742075554802	KE Be 162	11/14/1990	10/22/1999	36
USGS	391742075554803	KE Be 163	11/14/1990	10/22/1999	36
USGS	391751076061101	KE Bc 50	6/21/1990	10/6/1993	32
USGS	391752075523901	KE Bf 93	1/11/1990	10/6/1993	37
USGS	391755075532701	KE Bf 154	3/15/1990	10/22/1999	56
USGS	391755075532702	KE Bf 155	8/6/1986	10/22/1999	18
USGS	391810075555801	KE Be 52	11/23/1988	10/22/1999	85
USGS	391810075555802	KE Be 53	4/27/1989	10/22/1999	68
USGS	391810075555803	KE Be 61	5/26/1989	10/22/1999	66
USGS	391811075564901	KE Be 60	5/26/1989	10/22/1999	50
USGS	391813075575202	KE Be 192	5/6/1998	10/22/1999	16
USGS	391814075575501	KE Be 158	11/14/1990	10/22/1999	27
USGS	391815075472101	KE Bg 33	10/26/1978	4/23/2008	166
USGS	391815075472102	KE Bg 34	11/1/1977	4/23/2008	165
USGS	391818075560901	KE Be 157	11/14/1990	10/22/1999	28
USGS	391819075580901	KE Be 156	11/14/1990	10/22/1999	27
USGS	391820075580201	KE Be 189	5/6/1998	5/20/2004	18
USGS	391823075594701	KE Be 43	2/6/1979	4/23/2008	194
USGS	391832075552701	KE Be 214	5/6/1998	10/22/1999	16
USGS	391832075552702	KE Be 215	5/6/1998	10/22/1999	16

USGS Groundwater Levels for Kent County with Greater than 10 Readings

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	<u>391832075560802</u>	KE Be 47	7/13/1988	6/28/1993	3
USGS	<u>391832075560803</u>	KE Be 59	5/26/1989	10/22/1999	53
USGS	<u>391832075560804</u>	KE Be 164	11/14/1990	10/22/1999	29
USGS	<u>391838075560901</u>	KE Be 165	11/14/1990	10/22/1999	29
USGS	<u>391838075560902</u>	KE Be 166	11/14/1990	10/22/1999	29
USGS	<u>391838075560903</u>	KE Be 167	11/14/1990	10/22/1999	29
USGS	<u>391846075561701</u>	KE Be 55	2/9/1989	6/11/1993	30
USGS	<u>391849075561601</u>	KE Be 207	5/6/1998	9/30/2004	19
USGS	<u>391849075561602</u>	KE Be 208	5/6/1998	10/22/1999	16
USGS	<u>391851075554401</u>	KE Be 51	10/2/1988	10/22/1999	66
USGS	<u>391851075561701</u>	KE Be 210	5/6/1998	10/22/1999	16
USGS	<u>391851075561702</u>	KE Be 206	5/6/1998	10/22/1999	16
USGS	<u>391851075561801</u>	KE Be 50	10/2/1988	10/22/1999	81
USGS	<u>391907075554401</u>	KE Be 57	5/26/1989	7/8/1992	27
USGS	<u>391907075554402</u>	KE Be 58	5/26/1989	7/8/1992	28
USGS	<u>391923075564301</u>	KE Be 49	11/24/1988	9/11/1991	49
USGS	<u>391923075565001</u>	KE Be 56	5/26/1989	4/21/1992	30
USGS	<u>391941075570102</u>	KE Be 199	5/6/1998	10/22/1999	16
USGS	<u>391941075570103</u>	KE Be 200	5/6/1998	10/22/1999	16
USGS	<u>391957075490601</u>	KE Bg 35	10/15/1987	7/16/1991	24
USGS	<u>391957075490602</u>	KE Bg 36	11/1/1989	4/20/1992	11
USGS	<u>392004075472701</u>	KE Ag 14	10/2/1988	4/2/1991	35
USGS	<u>392006075464601</u>	KE Ag 15	10/2/1988	4/2/1991	36
USGS	<u>392007076075501</u>	KE Ac 20	12/16/1977	4/23/2008	182

There are a total of 503 wells in Kent County where USGS groundwater level readings have been taken.

URL: <http://waterdata.usgs.gov/md/nwis/gwlevels?>

Page Contact Information:

[Maryland NWISWeb Maintainer](#)

Page Last Modified: 2008-08-19 09:24:22 EDT

APPENDIX 3-B

Source Water Assessment Wellhead Protection Area (WHPA) Delineation Maps

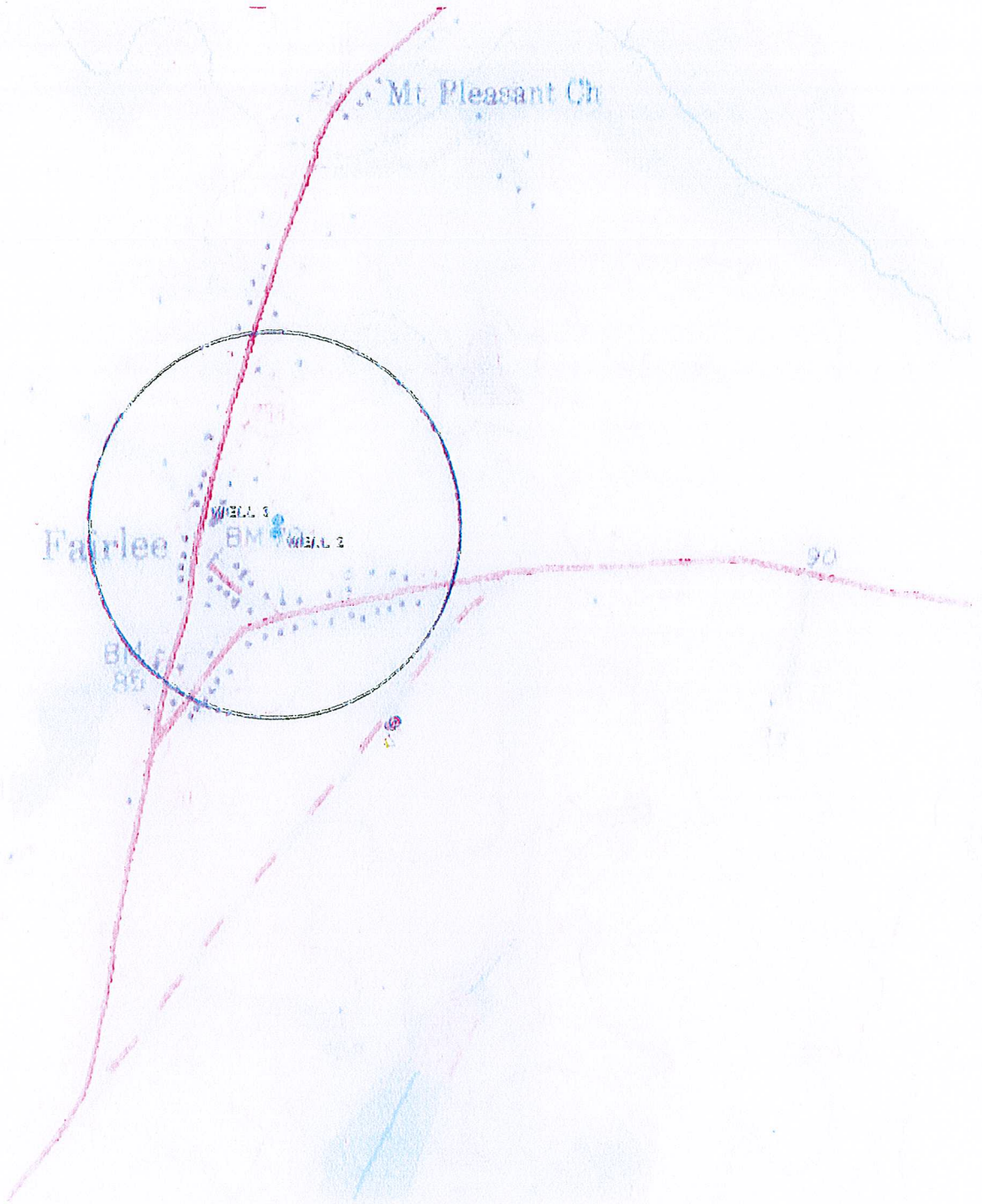
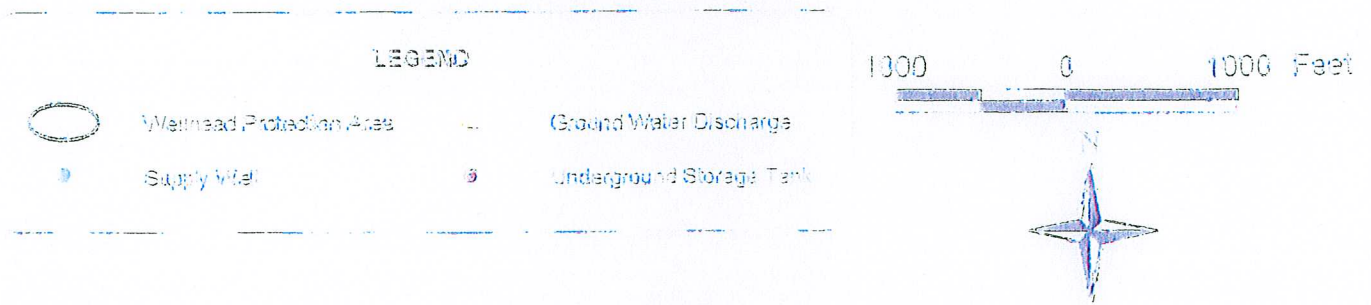


Figure 2. Fairlee Wethead Protection Area with Potential Contaminant Sites



Base Map: USGS Topographic 7.5 Minute Quadrangle - Rock Hall, MD

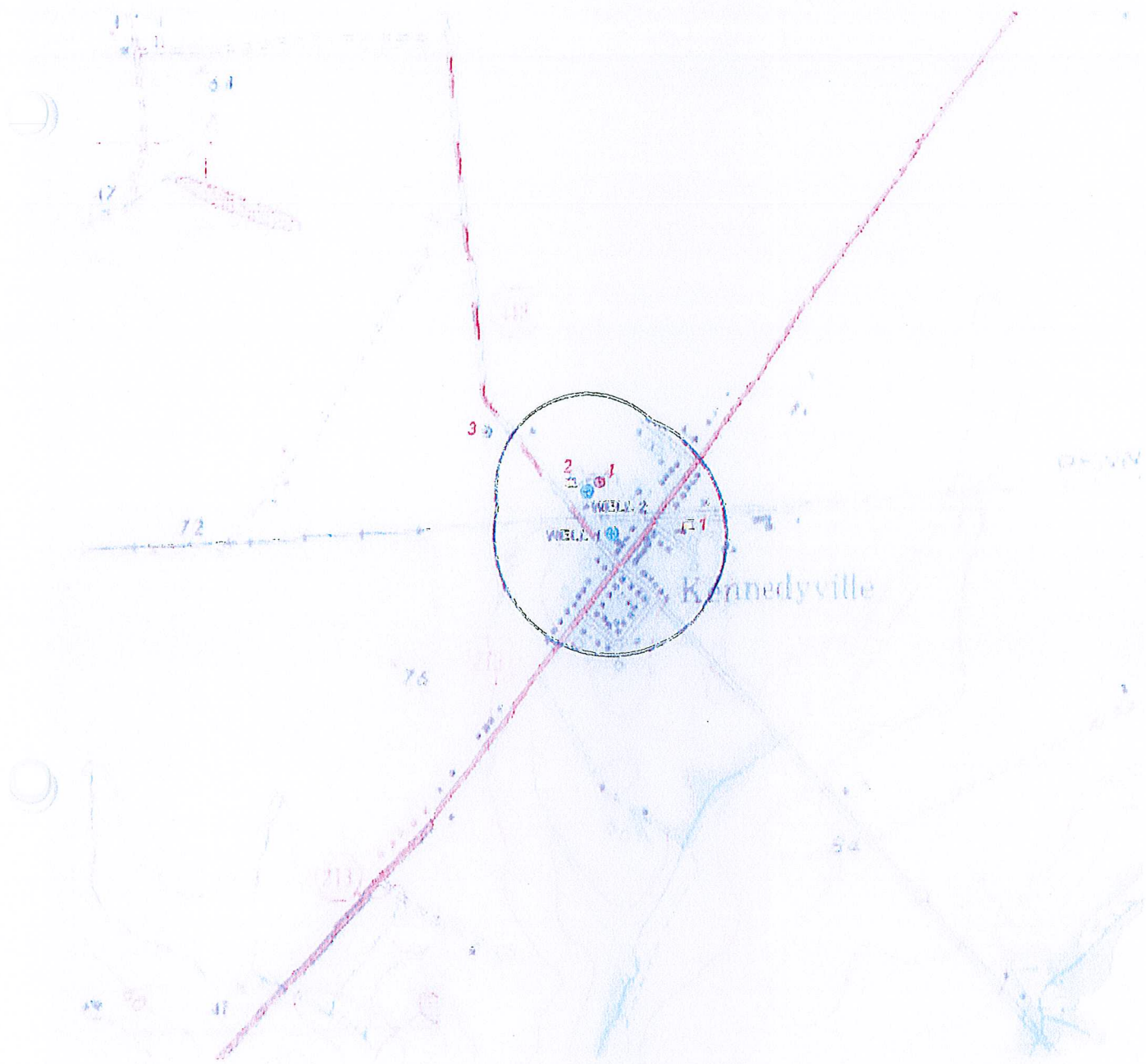


Figure 2. Kennedyville Wellhead Protection Area with Potential Contaminant Sites

LEGEND	
	Pesticide dealer
	Supply Well
	Dry well
	Underground Storage Tank
	Wellhead Protection Area



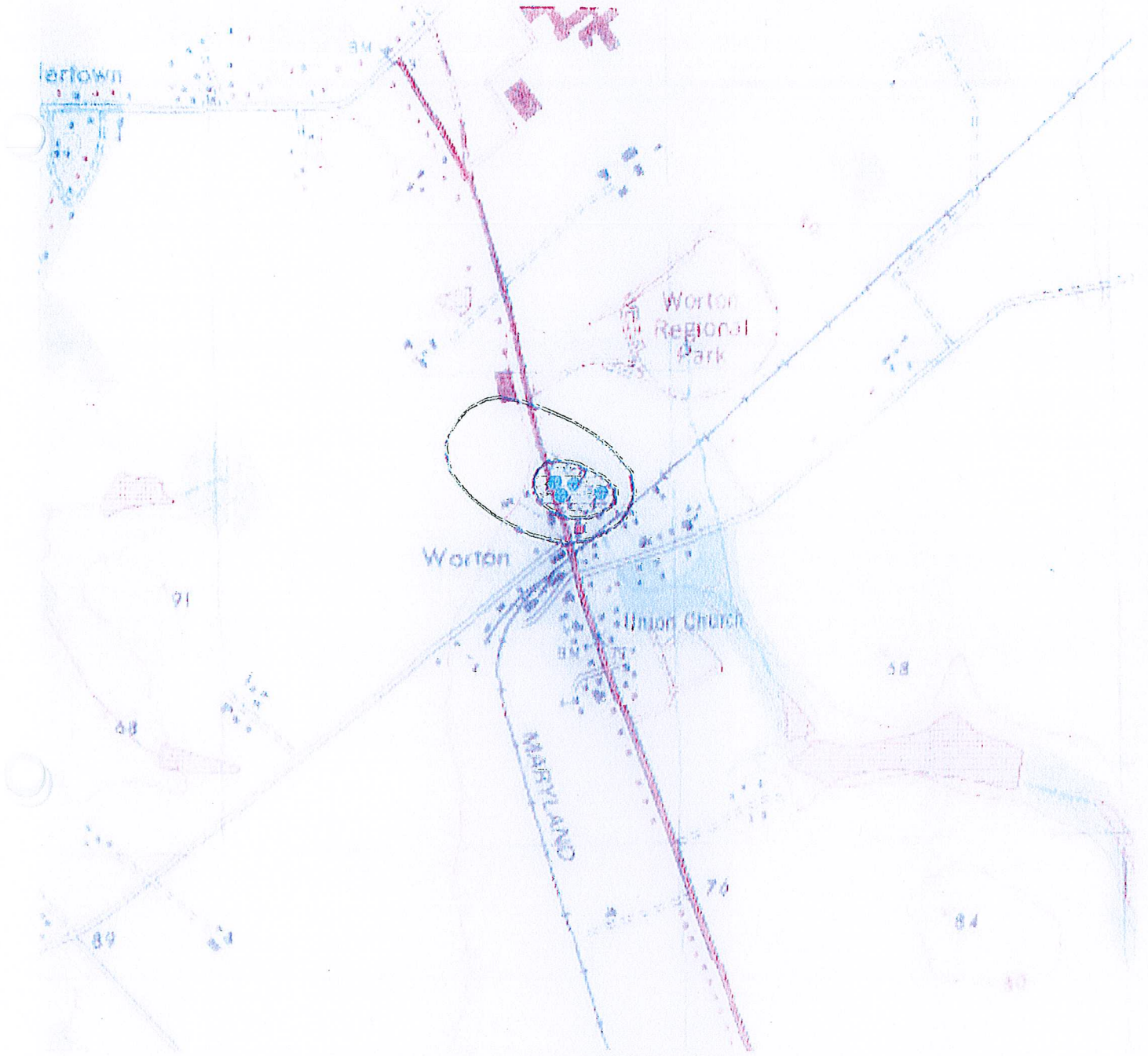
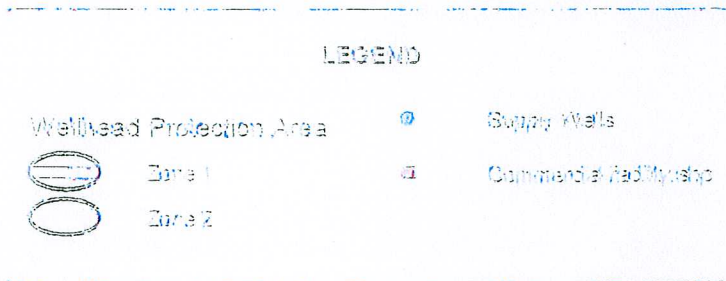


Figure 2. Worton Wellhead Protection Area with Potential Contaminant Sites



Base Map: USGS Topographic 7.5 Minute Quadrangle - Beltsville, MD

APPENDIX 3-C

Potentiometric Surface Map of the Aquia Aquifer

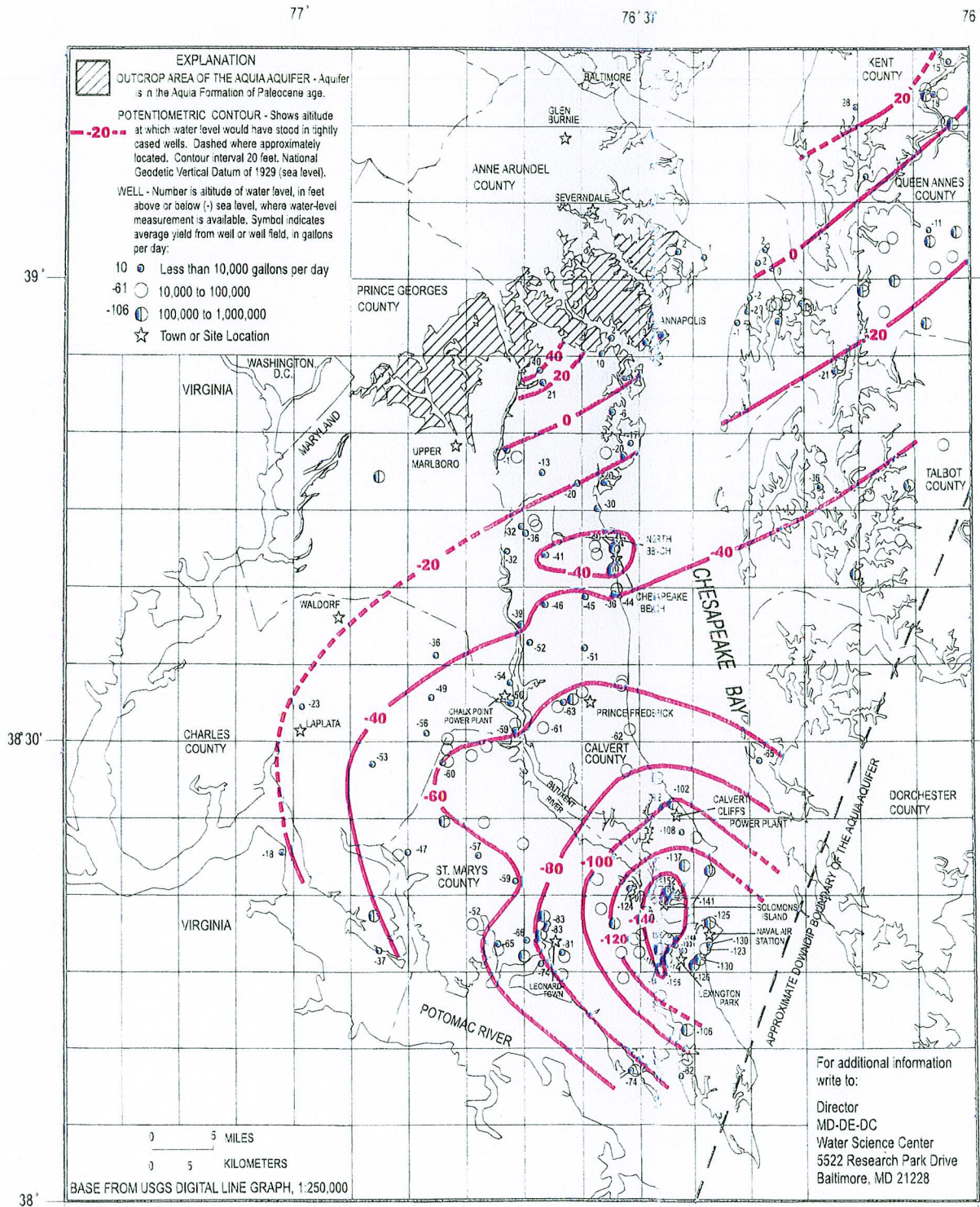


Figure 6. Potentiometric surface of the Aquia aquifer in southern Maryland, September 2003 (modified from Curtin and others, 2005).

APPENDIX 3-D

Water Supply Capacity Management Plan Worksheet (Blank)

WATER SUPPLY CAPACITY MANAGEMENT PLAN

Worksheets and Summary

SYSTEM AND PLAN SUBMITTAL INFORMATION

Name of the water supply system _____
County and municipality, if applicable _____
Population served _____
Number of connections _____
Date of plan submittal to MDE _____

IV. ELEMENTS OF A WATER SUPPLY CAPACITY MANAGEMENT PLAN

Please refer to the appropriate sections of the *Guidance Document for Water Supply Capacity Management Plans*, pages 10 through 15.

NOTE: gpd = gallons per day; gpcd = gallons per capita per day

A. DETERMINE THE EXISTING WATER DEMAND

(See page 11 of the *Guidance Document*)

If **better records are not available** for items A-3, A-6 and A-8, please use the **suggested estimations for these items.**

1) Determine the **Annual Average Daily Demand** (gpd)

for each of the previous five years.

2005 _____
2004 _____
2003 _____
2002 _____
2001 _____

2) Enter the **greatest Annual Average Daily Demand** (gpd) _____ A-2
from A-1.

3) **Annual Average Daily Drought Demand** (gpd), _____ A-3
or value in A-2 + 10%.

4) Determine the **Average Daily Demand (gpd) During the Month of Maximum Use** in the previous 5 years. Also enter the month of maximum use for each year.

<u>Month</u>	
_____	2005 _____
_____	2004 _____
_____	2003 _____
_____	2002 _____
_____	2001 _____

5) Enter the **greatest Average Daily Demand (gpd)** During the Month of Maximum Use from A-4. _____ A-5

6) **Avg. Daily - Max. Month Drought Demand (gpd)**, or value in A-5 + 10%. _____ A-6

7) **Maximum Day Demand (gpd)** for the previous five years _____ A-7
and date of Maximum Day Demand. _____

8) **Maximum Day Drought Demand**, or value in A-7 + 10%. _____ A-8

9) If available, peak hour demand (gph). _____

10) If available, water usage per capita per day (gpcd). _____

11) If available, water usage per connection (gpd/connection). _____

12) If available, water demand (gpd or %) attributable to uses:
 residential _____
 commercial _____
 industrial _____

13) If available, approximate amount of water (gpd) lost to:
 system losses (leaks) _____
 transfers _____
 meter error _____
 other _____

14) If available, percentage of customers that are metered. _____

B. ESTIMATE THE POTENTIAL WATER DEMAND OF APPROVED BUT UNDEVELOPED SUBDIVISIONS AND BUILDING PERMITS

(See page 12 of the *Guidance Document*)

Estimate the **Annual Average Daily Water Demand** (gpd) for approved but undeveloped lots and building permits; and then calculate the **Average Daily Demand During the Maximum Month** and the **Maximum Day Demand** by using peaking factors.

- 1) **Residential Demand (gpd)** _____ **B-1**
If better records are not available, use
(250 gpd per household) x (Number of approved households)
to estimate the residential water demand.
- 2) **Commercial Demand (gpd)** _____ **B-2**
- 3) **Industrial Demand (gpd)** _____ **B-3**
- 4) **POTENTIAL ADDITIONAL DEMAND (gpd) - Annual Average Daily Water Demand**
for undeveloped lots and building permits.
Add B-1, B-2, and B-3. _____ **B-4**
- 5) **POTENTIAL ADDITIONAL DEMAND (gpd) - Avg. Daily Demand During the Month of Max. Use**
for undeveloped lots and building permits.
Multiply B-4 by (1.3 to 1.5 peaking factor) _____ **B-5**
- 6) **POTENTIAL ADDITIONAL DEMAND (gpd) - Maximum Day Demand**
for undeveloped lots and building permits.
Multiply B-4 by (1.6 to 2.0 peaking factor). _____ **B-6**
- 7) **Total Allocations Granted to Date (gpd)**
for undeveloped lots and building permits. _____ **B-7**

8) **Projected Future Allocations (gpd)**

for undeveloped lots and building permits.

Subtract B-7 from B-4 and enter as B-8.

_____ **B-8**

9) **Project the allocation schedule for B-8.** (or similar phasing schedule)

When do you anticipate that allocations (gpd) will be requested for approved but undeveloped lots and building permits?

Year 1 _____	Year 6 _____
Year 2 _____	Year 7 _____
Year 3 _____	Year 8 _____
Year 4 _____	Year 9 _____
Year 5 _____	Year 10 _____

C. DETERMINE THE CAPACITY OF THE WATER SUPPLY SYSTEM

(See pages 13 and 14 of the *Guidance Document*)

These simplified worksheets are included to aid in the capacity evaluation of a typical small water supply system. If your water supply system has a more complex arrangement, please call the **Water Supply Program at 410-537-3702** for assistance in completing the capacity evaluation.

1) **List all Water Appropriation Permits, permit limits (gpd), and indicate if there are Special Conditions.**

<u>Permit Number</u>	<u>Well Numbers or Source Name</u>	<u>Annual Average</u>	<u>Avg.Day-Max.Month or Maximum Day</u>	<u>Spec. Conditions YES/NO</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

2) **Water Appropriation Permit Limitations.**

For the **groundwater permits** listed above, add the Annual Average Daily permit limits and enter the sum in the space provided; and add the permit limits for the Daily Averages During the Month of Maximum Use and enter the sum in the space provided. For the **surface water permits** listed above, add the Annual Average Daily permit limits and enter the sum in the space provided; and add the Maximum Day permit limits and enter the sum in the space provided.

- a. Ground Water Sum of Ann. Avg. Daily permit limits (gpd) _____ **2-a**
- b. Ground Water Sum of Avg. Daily - Max. Month permit limits _____ **2-b**
- c. Surface Water Sum of Ann. Avg. Daily permit limits (gpd) _____ **2-c**
- d. Surface Water Sum of Max. Day permit limits (gpd) _____ **2-d**

3) Do any of the Appropriation Permits include **Special Conditions** that limit the ability of the water system to withdraw the permitted quantities of water? YES NO

If yes, please explain: _____

4) **Total permitted Annual Average Daily Appropriations (gpd)**

Add 2-a + 2-c above and then reduce the sum if there are any limits required by the Special Conditions. _____ **C-4**

5) **Surface water only: Total permitted Max. Day Appropriations (gpd)**

Item 2-d reduced by any limits required by the Special Conditions. _____ **C-5**

6) **Ground water only: Total permitted Avg. Daily - Max. Month Appropriations (gpd).** Item 2-b reduced by any limits required

by the Special Conditions. _____ **C-6**

7) Are future modifications to your Appropriation Permits planned or necessary? YES NO

If yes, please explain: _____

8) **Total well-field capacity of the water system during drought - Average Daily Demand During the Month of Maximum Use (gpd).**

Enter the well-field production for the water system with the best-producing well not in operation (gpd).

_____ C-8

9) **Safe-yield of the reservoir system.**

_____ C-9

10) Enter the total **treatment capacity** of the water plant (gpd).

_____ C-10

11) Enter the **pump capacity** (lowest value of either the well pump or high service pump) of the water plant (gpd).

_____ C-11

12) Enter the **total system storage capacity** in gallons.

13) If available, enter the **Fire Flow** (gpm) and duration (hours).

14) If available, enter the **storage for Fire Flow** (gallons).

15) How were the Fire Flow and storage for Fire Flow determined? What was the date (year) of the most recent evaluation for Fire Flow and Fire Storage? _____

16) Discuss the frequency of power outages: _____

17) Is there a back-up power source for treatment and pumping? YES NO
If yes, please describe: _____

18) Identify the wastewater treatment system for the service area of the water supply system and enter its average day capacity (gpd). Is capacity available at this wastewater plant?

D. ESTIMATE THE EXCESS WATER SUPPLY CAPACITY AVAILABLE FOR ALLOCATION

(See page 15 of the *Guidance Document*)

Copy the indicated items from the previous sections/pages.

Average Day Capacity Limitation (gpd)	(NOTE: PF = Peaking Factor)
C-4 - Total permitted Annual Avg. Daily Appropriations	_____
C-8 - Well-field capacity during drought ÷ (1.3 to 1.5 PF)	_____
C-9 - Safe-yield of the reservoir system	_____
C-10 - Treatment capacity	_____
C-11 - Pump capacity	_____
Average Day Capacity Limitation. Of the five factors listed above, enter the most limiting factor (in gpd):	_____ D-1
Excess Average Day Capacity (gpd)	
D-1 - Average Day Capacity Limitation	_____ D-1
A-3 - Average Day Drought Demand	_____ A-3
<u>EXCESS AVERAGE DAY CAPACITY</u>	
D-1 minus A-3.	_____ D-2

Avg. Daily - Maximum Month Capacity Limitation (gpd) (only for ground water systems)	
C-6 - Total permitted Avg. Day-Max. Month Appropriations	_____
C-8 - Well-field capacity during drought	_____
C-10 - Treatment capacity	_____
C-11 - Pump capacity	_____
Avg. Daily - Max. Month Capacity Limitation. Of the 4 factors listed above, enter the most limiting factor.	_____ D-3
Excess Avg. Daily - Maximum Month Capacity (gpd)	
D-3 - Avg. Daily-Max. Month Capacity Limitation	_____ D-3
A-6 - Avg. Daily-Max. Month Drought Demand	_____ A-6
<u>EXCESS AVG. DAILY - MAX. MONTH CAPACITY</u>	
D-3 minus A-6.	_____ D-4

Maximum Day Capacity Limitation (gpd)

C-5 - Total permitted Max. Day Appropriations (only for surface water systems) _____

C-10 - Treatment capacity _____

C-11 - Pump capacity _____

Max. Day Capacity Limitation. Of the three factors listed above, enter the most limiting factor (in gpd): _____ **D-5**

Excess Maximum Day Capacity (gpd)

D-5 - Max. Day Capacity Limitation _____ **D-5**

A-8 - Max. Day Drought Demand _____ **A-8**

EXCESS MAXIMUM DAY CAPACITY

D-5 minus A-8. _____ **D-6**

SUMMARY OF EXCESS CAPACITY (GPD)

(Copy the indicated items from the previous sections/pages.)

D-2 Excess Average Day Capacity _____ **D-2**

D-4 Excess Avg. Daily-Maximum Month Capacity _____ **D-4**

D-6 Excess Maximum Day Capacity _____ **D-6**

SUMMARY OF POTENTIAL ADDITIONAL DEMAND (GPD) FROM APPROVED BUT UNDEVELOPED SUBDIVISIONS AND BUILDING PERMITS

B-4 Potential Annual Average Daily Demand _____ **B-4**

B-5 Potential Avg. Daily Demand During the Max. Month _____ **B-5**

B-6 Potential Maximum Day Demand _____ **B-6**

NET EXCESS CAPACITY AVAILABLE FOR ALLOCATION TO NEW GROWTH

The three net excess values calculated below indicate the **approximate excess capacity (gpd)** available for new growth. If an excess capacity value is a negative number, there is a capacity deficit for that demand category.

NAME OF THE WATER SUPPLY SYSTEM: _____

COUNTY AND MUNICIPALITY, IF APPLICABLE: _____

ANNUAL AVERAGE DAILY CAPACITY

D-2 Excess Average Day Capacity _____ D-2
B-4 Potential Annual Avg. Daily Demand _____ B-4
(from approved but undevel. subdivisions/permits)
NET EXCESS: (D-2 minus B-4) _____ gpd

AVERAGE DAILY CAPACITY DURING THE MAX. MONTH

D-4 Excess Avg. Daily-Max. Month Capacity _____ D-4
B-5 Potential Avg. Daily Demand During Max. Month _____ B-5
(from approved but undevel. subdivisions/permits)
NET EXCESS: (D-4 minus B-5) _____ gpd

MAXIMUM DAY CAPACITY

D-6 Excess Maximum Day Capacity _____ D-6
B-6 Potential Maximum Day Demand _____ B-6
(from approved but undevel. subdivisions/permits)
NET EXCESS: (D-6 minus B-6) _____ gpd

E. CONTROL THE ALLOCATION OF NEW CONNECTIONS TO THE WATER SUPPLY SYSTEM

(See page 15 of the *Guidance Document*)

- 1) Describe your jurisdiction's Adequate Public Facilities Ordinance (APFO) or comparable statute. (Attach a copy of the APFO regulations or comparable regulations)

- 2) Describe your jurisdiction's allocation procedures. (Attach a copy of the procedures)

- 3) How frequently are periodic allocation tracking reports produced?

- 4) To whom are these reports distributed?

- 5) During the plat approval process, which agency (or official) ensures that the water supply system has adequate capacity to serve the proposed development?

- 6) During the building permit approval process, which agency (or official) ensures that the water supply system has adequate capacity to serve the proposed development?

- 7) Which agency (or official) controls the allocation of connections to the water supply system?

NAME OF THE WATER SUPPLY SYSTEM: _____

COUNTY AND MUNICIPALITY, IF APPLICABLE: _____

CONTACT INFORMATION

List the name, title, address, phone number, fax number, and email address of the elected official or water supply system owner completing this Capacity Management Plan.

Name: _____

Title: _____

Address: _____

Telephone: _____

Fax: _____

Email: _____

CERTIFICATION

I, _____, hereby certify that to the best of my knowledge, the attached Water Supply Capacity Management Plan for *(provide system name)* _____ is accurate and complete.

Signature: _____

Date: _____

Printed Name: _____

APPENDIX 3-E

Water Supply Demand Projections for Public Water Treatment Plants (Reserved)

APPENDIX 3-F

Water Treatment Plant Summary Tables

APPENDIX 3-F: WATER PLANT SUMMARY TABLES

Table 3.5.1 CHESTERTOWN WATER PLANT

A. Raw Water Sources

7 Aquia-Monmouth Aquifer & 2 Magothy Aquifer Groundwater Wells.

B. Treatment

1. Aeration, fluoride treatment, iron removal, and sand filtration.

B. Storage

1. 100,000 gallon elevated storage tank

3. 450,000 gallon underground reservoir

2. 1,000,000 gallon standpipe

C. Permits

1. Permit No.: KE KE1970G004 and KE1992G011

2. Daily Average / Year: 975,000 GPD

3. Daily Average / Max Month: 1,300,000 GPD

D. Service

1. Chestertown

2. No. of connections: 2,100

3. Approximately 5000 persons served

E. Actual Production Flow

1. Average Daily Flow: 713,000 GPD (2007)

2. Maximum Month Flow: 1,023,000 GPD (2007)

F. Distribution System

1. Composed of 12, 8 and 6 inch mains with 2 -600 gpm pumps and one 1200 gpm variable flow pump.

Table 3.5.2 ROCK HALL WATER PLANT

B. Raw Water Sources

3 Magothy Aquifer Groundwater Wells

1. Well # 1
2. Well # 2
3. Well # 3 (new in 2003)

C. Treatment

1. Aeration, chlorination, lime and alum addition in conjunction with sand filtration.

D. Storage

1. Two 125,000 gallon elevated storage tanks
2. 100,000 gallon elevated storage tank (Edesville, 2008) – County owned and operated

E. Permits

1. Permit No.: KE197G004
2. Daily Average / Year: 230,000 GPD (2007)
3. Daily Average / Max Month: 300,000 GPD

F. Service

1. Rock Hall, Edesville county service area, Wesley Chapel Corridor county service area
2. No. of connections
 - a. Rock Hall town limits: 1,183
 - b. Edesville service area: 98
 - c. Wesley Chapel service area: 2
3. Approximately 3,208 persons served

G. Actual Production Flow

1. Average Daily Flow: 220,000 GPD (2007)

H. Distribution System

1. Water mains ranging in size from 2-inch to 12-inch diameter.

Table 3.5.3 GALENA WATER PLANT

A. Raw Water Sources

2 Patapsco Aquifer Groundwater Wells & 1 Aquifer Groundwater Well (new in 2003)

4. Well # 1
5. Well # 2
6. Well # 3
 - has a safe yield of 300 GPM
 - 8-inch diameter
 - drilled to a depth of 470 FT.
7. Well # 4 (new in 2003)
 - has a safe yield of 300 GPM
 - 8-inch diameter
 - drilled to a depth of 500 FT.

B. Treatment

1. Addition of sodium silicate for corrosion control and chlorination.

C. Storage

1. 50,000 gallon elevated storage tank
2. 100,000 gallon elevated storage tank

D. Permits

1. Permit No.: KE1971G003 06 (amended on November 19, 2003)
2. Daily Average / Year: 90,000 GPD
3. Daily Average / Max Month: 120,000 GPD

E. Service

1. Galena town limits and service area includes 16 residential lots outside the town limits (owned and operated by Town of Galena)
2. No. of connections: 306
3. Approximately 550 persons served

F. Actual Production Flow

1. Average Daily Flow: 33,000 GPD (2007)
2. Maximum Peak Flow: 40,000 GPD (2007)

G. Distribution System

1. Consists of 6, 8 and 10-inch diameter mains.

Table 3.5.4 BETTERTON WATER PLANT

A. Raw Water Sources

2 Magothy Aquifer Groundwater Wells (1969)

1. Well # 1
 - has a safe yield of 80-90 GPM (tested 1987, upgraded 1991)
 - 8 inch diameter
2. Well # 2

B. Treatment

1. Water is treated by a calcite neutralizer and caustic soda solution injection for pH adjustment, a polyphosphate solution as a sequestrant agent and calcium hypochlorite solution injection for disinfection.

C. Storage

1. 125,000 gallon elevated storage tank (1969)

D. Permits

1. Permit No.: KE1979G002
2. Daily Average / Year: 50,000 GPD
3. Daily Average / Max Month: 60,000 GPD

E. Service

1. Betterton
2. No. of connections: 326

F. Actual Production Flow

1. Average Daily Flow: 37,000 GPD [winter] (2007)
2. Average Daily Flow: 41,000 GPD [summer] (2007)

G. Distribution System

1. Consists of approximately 3.5 miles of piping. The total of 3.5 miles consists of: 13,240 feet of 6 inch transite pipe; 4,197 feet of 2, 4 and 6 inch plastic pipe; 629 feet of 6 inch ductile iron pipe and approximately 400 feet of copper pipe.

Table 3.5.5 MILLINGTON WATER PLANT

B. Raw Water Sources:

3 Aquia Aquifer Groundwater Wells

1. Well # 1
 - has a safe yield of 190 GPM
 - 10 inch diameter PVC casing
 - 0.03 slot size 6 inch diameter SS screen- 30 FT.
 - drilled to a depth of 200 FT.
 - grouted to approx. 100 FT. depth
2. Well # 2
 - same as Well # 1
3. Well # 3
 - has a yield of 190 GPM
 - 8 inch diameter steel casing – 100 FT.
 - 60 FT. of SS screen
 - Depth of well is 190 FT.
 - grouted to approx. 60 FT. depth

C. Treatment

1. Softening of Water & Disinfection.
2. Raw Water is conditioned by Two (2) alternating Softener Treatment Vessels.
3. On-site Hypochlorite generation is used as a Disinfectant.

D. Storage

1. 125,000 gallon elevated storage tank

E. Permits

1. Permit No.: KE2003G001
2. Daily Average / Year: 137,000 GPD
3. Daily Average / Max Month: 160,000 GPD

F. Service

1. No. of connections: 381
1. Approximately 950 persons served

G. Actual Production Flow

1. Average Daily Flow: 65,425 GPD (year 2007)
2. Maximum Peak Flow: 78,000 GPD (year 2007)

H. Distribution System

1. Consists of 12, 10, 8 and 6-inch diameter HDPE pipe.

Table 3.5.6 KENNEDYVILLE WATER PLANT

A. Raw Water Sources

2 Monmouth Aquifer Wells

1. Well # 1 (near fire station)
 - Permit No. KE670132
 - has a safe yield of 80 GPM
 - 8 inch diameter steel casing
 - 0.03 slot size SS screen- 25 FT.
 - drilled to a depth of 181 FT.
2. Well # 2 (near water treatment plant)
 - Permit No. KE920136
 - has a yield of 110 GPM
 - 8 inch diameter steel casing
 - 20 FT. of SS screen
3. Well # 3 - yield of 90 GPM
4. Scheduled upgrade**: new well pump
5. Well # 1 and Well # 2 are pumped on alternate months.
6. An older well that was also near the fire station was abandoned several years ago.

B. Treatment

1. Pre-chlorination, sand filtration, pH adjustment, polymer addition, Mixing, continuous sand filtration.
2. The main water treatment component is a Continuous Backwashing Sand Filtration Unit which is capable of producing 115 GPM. This unit is manufactured by Andritz – Ruthner, Inc. Model # HSF-19F-SB-SBCS.
3. Upgrade*:
 - Remove existing Hydra-Sand continuously cleaned filter, chlorine contact tank, clearwell, and existing chemical feed equipment that was not in use (i.e. polymer, gas chlorine, and caustic soda). The liquid chlorine system remains in operation.
 - Install new ion exchange water treatment equipment to remove iron and hardness. The ion exchange treatment equipment has a throughput rating of 135 GPM.

C. Storage

1. 75,000 gallon elevated storage tank (1997)
2. Future: 50,000 gallon ground storage tank (construction scheduled**)
3. Future: two 215 GPM high service pumps to pump treated water from the ground storage tank into the distribution system or existing elevated water storage tank (construction scheduled**)

D. Permits

1. Permit No.: KE67G008(06)
2. Daily Average / Year: 51,800 GPD
3. Daily Average / Max Month: 83,000 GPD

E. Service

1. No. of connections: 113
2. Approximately 290 persons served

F. Actual Production Flow

1. Average Daily Flow: 22,000 GPD (year 2004)
2. Maximum Peak Flow: 91,000 (year 2004)

G. Distribution System

1. Consists of approximately 2-1/2 miles of 6” pipe.

* Phase 1 of “The Village of Kennedyville developer’s Agreement”

** Phase 2 of “The Village of Kennedyville developer’s Agreement”

Table 3.5.7 WORTON-BUTLERTOWN WATER PLANT

A. Raw Water Sources

4 Aquia Formation Groundwater Wells (old / out of service) – shallow / in unconfined aquifer

- | | |
|---|--|
| 1. Well # 1
- Permit No. KE731164
- Not in service due to drop in yield | 3. Well # 3
- Permit No. KE731166
- 65 FT deep, 40 FT casing |
| 2. Well # 2
- Permit No. KE731165
- 65 FT deep, 40 FT casing | 4. Well # 4
- Permit No. KE920022
63 FT deep, 40 FT casing |

1 Magothy Aquifer Groundwater Wells (new / in service) – deep / in confined aquifer

- | | |
|--|---|
| 5. Well # 5
- has a safe yield of 125 GPM
- 8 inch diameter PVC casing – 250 FT. | - 6 inch diameter SS screen- 57 FT.
- drilled to a depth of 327 FT.
- pump installed at 235 FT. |
|--|---|

B. Treatment

1. Aeration, Chlorination, Flocculation, Tube Clarification, and Green Sand Filtration.
2. Pre-Treatment by Aeration is performed by a Vulcan Industries Inc. Model L-42 rated for 200 GPM. Chemical addition of Sodium Hypo-Chlorite, Caustic, and Polymer are performed. A FTC-100H by Microfloc Products is used for flocculation & settling. Final Treatment is performed by manganese green sand filters.
3. Existing treatment facility scheduled for upgrade and expansion in 2008.

C. Storage

1. 125,000-gallon elevated storage tank
2. 250,000-gallon elevated storage tank (scheduled for construction in winter 2008-2009)

D. Permits

1. Permit No.: KE1979G105/1
2. Daily Average / Year: 71,000 GPD
3. Daily Average / Max Month: 112,000 GPD

E. Service

1. Service area includes Kent County High and Elementary Schools
2. No. of connections: 384
3. Approximately 1065 persons served

F. Actual Production Flow

1. Average Daily Flow: 60,386 GPD (year 2008)
2. Maximum Peak Flow: 86,341 GPD (year 2008)

G. Distribution System

1. Composed of 2, 6 and 8 inch diameter water mains.

Table 3.5.8 FAIRLEE WATER PLANT

A. Raw Water Sources

2 Groundwater Wells located in the Upper Patopsco Aquifer (Potomac Group)

1. Well # 3
 - Permit No. KE88409
 - has a safe yield of 250 GPM
 - 8 inch diameter steel casing, depth 350 FT.
 - drilled to a depth of 655 FT.
 - Gould's Pump installed at 189 FT.
2. Well # 2
 - Permit No. KE810726
 - has a yield of 165 GPM
 - 8 inch diameter steel casing, depth 320 FT.
 - drilled to a depth of 650 FT.
 - Emergency/ Back-up well has same water quality as well #3
3. Well # 1, an older shallower well, has been abandoned.

B. Treatment

1. Aerator, Chemical injection, Mixing, FTC Unit, Clear Well, and Filtration.
2. Pre-Treatment- Induced Aerator by Vulcan Industries - Model # I-42 AP rated for 250 GPM.
3. Chemical Injection- Sodium Hypochlorite Generation System is used. Also a LMI Metering Pump are used to Supply Polymer, KMNO₄, and NaOH.
4. Static Mixer by Koch
5. Flocculator/Clarifier : FTC- 150H (Microfloc)
6. Final Treatment by Green Sand Filters

C. Storage

1. 100,000-gallon elevated storage tank at Fairlee
2. 100,000-gallon elevation storage tank at Georgetown

D. Permits

1. Permit No.: KE79G104(01)
2. Daily Average / Year: 146,000 GPD
3. Daily Average / Max Month: 200,000 GPD

E. Service

1. Service includes residences along Caulks Field Road and Woods Edge Apartments
2. No. of connections: 324
3. Approximately 820 persons served

F. Actual Production Flow

1. Average Daily Flow: 67,784 GPD (year 2008)
2. Maximum Peak Flow: 76,616 (year 2008)

G. Distribution System

1. Consists of 28,300 feet of 6-inch and 8-inch diameter water mains.

APPENDIX 3-G

Annual Drinking Water Quality Reports

ANNUAL DRINKING WATER QUALITY REPORT FOR 2006

KENT COUNTY DEPARTMENT OF WATER & WASTEWATER

EDESVILLE SUBDISTRICT

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER
(PWSID) 0140009

May 23, 2007

We are pleased to provide our customers with our *Annual Water Quality Report*. This report is also available at our office, located on the second floor, Suite 201, of the Kent County Public Works Complex at 709 Morgnac Rd. or on our new Web Page at www.kentcounty.com; click on **Government** then **Water & Waste Department**. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water source for the *Edesville Subdistrict* is one (1) groundwater well, located at the Edesville Water Treatment Plant site. This well draws from the **MONMOUTH FORMATION**.

I am pleased to report our drinking water is safe and meets all **Federal and State requirements for safe drinking water.**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/ AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

Source Water Assessment: A completed source water assessment is available at Department of Water and Wastewater for review, upon a request. The susceptibility analysis for the Edesville water supply is based on a review of the water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It has been determined from recent evaluations completed by the Maryland Department of the Environment that the Edesville water supply is not susceptible to microbiological contaminants and / or additional inorganic / volatile / synthetic and radiological compounds.

If you should have any questions regarding this report or concerning your water utility, please contact Mr. Wayne L. Morris at (410) 778-3287. You may also schedule to attend any of the Kent County Commissioners Meetings held on Tuesdays to voice any comments or concerns you might have. Their meetings are held in the Commissioners hearing room located on the first floor in the Government Center located at 400 High Street. You can call the Commissioners office at 410-778-7435, to receive a copy of the agenda and schedule a time to discuss any issues you might have.

The tables below show the results for the various contaminants that were detected during the monitoring period from January 1 through December 31, 2006 unless other indicated.

In this report, you will find many terms and abbreviations with which you might not be familiar. To help you better understand these terms we have provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Maximum Contaminant Level (MCL) - is the Maximum Allowed level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants						
Copper (2005)	N	0.29	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (2005)	N	6	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Fluoride (2005)	N	0.743	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Volatile Organic Contaminants						
THM (Distribution) (2004) [Total trihalomethanes]	N	11.29	ppb	0	80	By-product of drinking water chlorination
HAA5 (Haloacetic Acids) (Distribution) (2004)	N	3.98	ppb	0	60	By-product of drinking water chlorination
Ethyl benzene	N	0.5	ppb	700	700	Discharge from petroleum refineries
Toluene	N	0.0015	ppm	1	1	Discharge from petroleum factories
Synthetic Organic Contaminants including Pesticides and Herbicides						
Di(2-ethylhexyl) phthalate	N	1.0	ppb	0	6	Discharge from rubber and chemical factories
Unregulated Contaminants						
Sodium (2005)	N	46	ppm	N/A	N/A	Erosion of natural deposits
Chloroform	N	2.3	ppb	N/A	N/A	By-product of disinfection
Bromodichloromethane	N	1.9	ppb	N/A	N/A	By-product of disinfection
Dibromochloromethane	N	0.8	ppb	N/A	N/A	By-product of disinfection

Note: Test results are for year 2006 unless otherwise noted, not all tests are required annually.

As you can see by the table, our system had no violations. We are proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

We at the Department of Water & Wastewater are committed to providing our users with a safe and dependable water supply. We have three Maryland certified operators on staff that provides around the clock service to insure our water supply meets all EPA and State requirements. In order to keep up with the new regulations, technologies and remain board certified these operators are required to attend, at a minimum, 30 hours of training before they can renew their license every three years. If you should have any questions regarding this report or like to visit the water treatment plant in your district, please don't hesitate to call Mr. Wayne L. Morris at 410 - 778- 3287.

Security Statement:

Due to the events of September 11, 2001 the Kent County Department of Water and Wastewater has provided an increase in the security of all the facilities within the County. These changes include:

- improved lighting around all the buildings and grounds
- request for increased patrols by local law enforcement agencies
- ensuring employees have proper identification
- providing employee training in safeguarding our water systems and protection against terrorist acts
- improving the security of our water sources by providing security locks on all well heads
- increased operator evaluations and testing
- water quality assurances of all the facilities

Drought Evaluations:

To ensure a consistent supply of fresh, clean, and safe drinking water to our consumers, the Department has performed several evaluations of the facilities source waters to ensure the production wells have a safe yield and / or supply of natural water. The Department does encourage that all consumers practice conservation on a routine basis, and to report any major leaks, or needed repairs to the appropriate departments as soon as possible.

ANNUAL DRINKING WATER QUALITY REPORT FOR 2006

KENT COUNTY DEPARTMENT WATER & WASTEWATER

MILLINGTON WATER SYSTEM

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER
(PWSID) 0140010

May 23, 2007

We are pleased to provide our customers with our Annual *Water Quality Report*. This report is also available at our office, located on the second floor, Suite 201, of the Kent County Public Works Complex at 709 Morgnac Rd. or on our new Web Page at www.kentcounty.com; click *Government*, then *Water & Waste Department*. This report is designed to inform you about the water quality and services we deliver to you every day. Our constant goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water sources for the Town of Millington are three (3) groundwater wells, located at the Water Treatment Plant, which draw from the *Aquia Aquifer*.

I am pleased to report our drinking water is safe and meets all Federal and State requirements for safe drinking water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/ AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

We have a source water protection plan available from our office that provides more information such as potential sources of contamination. This plan is also available at the Kent County Public Library or from Maryland Department of the Environment.

If you should have any questions regarding this report or concerning your water utility, please contact either, Mr. Wayne Morris at (410) -778-3287. In addition, any resident may obtain a copy at the main office Monday thru Friday during normal business hours.

The tables below show the results for the various contaminants that were detected during the monitoring period from January 1 through December 31, 2006 unless other indicated..

In this report you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we have provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Maximum Contaminant Level (MCL) - is the Maximum Allowed level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants						
Copper	N	0.82	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Barium	N	0.13	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	N	0.134	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Unregulated Contaminants						
Sodium	N	32	ppm	N/A	N/A	Erosion of natural deposits

Note: Test results are for year 2006 unless otherwise noted; all tests are not required annually.

As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

We at the Department of Water & Wastewater are committed to providing our users with a safe and dependable water supply. We have two Maryland certified operators on staff that provides around the clock service to insure our water supply meets all EPA and State requirements. In order to keep up with the new regulations, technologies and remain board certified these operators are required to attend, at a minimum, 30 hours of training before they can renew their license every three years. If you should have any questions regarding this report or like to visit the water treatment plant in your district, please do not hesitate to call Mr. Wayne Morris at (410) 778-3287.

Security Statement: Due to the events of September 11, 2001 the Kent County Department of Water and Wastewater has provided a increase in the security of all the facilities within the Park such as, improved lighting around all the buildings and grounds, have requested increased patrols by local law enforcement agencies, ensuring employees have proper identifications, provided employee training in safeguarding our water systems, and protection against terrorist acts, and improving the security of our water sources by providing security locks on all well heads, and operator evaluations, testing, and water quality assurances of all the facilities.

Drought Evaluations: To ensure a consistent supply of fresh, clean, and safe drinking water to our consumers, the Department has performed several evaluations of the facilities source waters to ensure the production wells have a safe yield and / or supply of natural water. The Department does encourage that all consumers practice conservation on a routine basis, and to report any major leaks, or needed repairs to the appropriate departments as soon as possible.

ANNUAL DRINKING WATER QUALITY REPORT FOR 2006

KENT COUNTY DEPARTMENT OF WATER & WASTEWATER

WORTON SUBDISTRICT

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER
(PWSID) 0140007

May 23, 2007

We are pleased to provide our customers with our Annual *Water Quality Report*. This report is also available at our office, located on the second floor, Suite 201, of the Kent County Public Works Complex at 709 Morgnec Rd. or on our new Web Page at www.kentcounty.com click on *Government* then *Water & Waste Department*. This report is designed to inform you about the water quality and services we deliver to you every day. Our constant goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water source for the *Worton Subdistrict* are two new (2) groundwater wells, well #5, and well #6, located at the Worton Water Treatment Plant site, and draw from the *AQUIA FORMATION*. The old wells #1, #2, #3 and #4 had been abandoned.

I am pleased to report our drinking water is safe and meets all Federal and State requirements for safe drinking water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/ AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

Source Water Assessment: We have a source water protection plan available from our office that provides more information such as potential sources of contamination. This plan is also available at the Kent County Public Library or from Maryland Department of the Environment. The susceptibility analysis for the Worton water supply is based on a review of the water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It has been determined from evaluations completed by Maryland Department of the Environment (MDE) that the Worton water supply is not susceptible to microbiological contaminants and additional inorganic / volatile / synthetic and / or radiological compounds.

If you should have any questions regarding this report or concerning your water utility, please contact Mr. Wayne L. Morris at (410) 778-3287. You may also schedule to attend any of the Kent County Commissioners Meetings held on Tuesdays to voice any comments or concerns you might have. Their meetings are held in the Commissioners hearing room located on the first floor in the Government Center located at 400 High Street. You can call the Commissioners office at 410-778-7435, to receive a copy of the agenda and schedule a time to discuss any issues you might have.

The tables below show the results for the various contaminants that were detected during the monitoring period from January 1 through December 31, 2006 unless other indicated.

In this report, you will find many terms and abbreviations with which you might not be familiar. To help you better understand these terms we have provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Maximum Contaminant Level (MCL) - is the Maximum Allowed level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants						
Copper (2005)	N	0.13	ppm	1.3	AL= 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride (2005)	N	0.307	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Volatile Organic Contaminants						
TTHM (Distribution) (2004) [Total trihalomethanes]	N	1.99	ppb	0	80	By-product of drinking water chlorination
HAAS (Haloacetic Acids) (Distribution) (2004)	N	0.75	ppb	0	60	By-product of drinking water chlorination
Synthetic Organic Contaminants including Pesticides and Herbicides						
Di(2-ethylhexyl) phthalate (2004)	N	0.6	ppb	0	6	Discharge from rubber and chemical factories
Unregulated Contaminants						
Sodium (2005)	N	60	ppm	N/A	N/A	Erosion of natural deposits
Chloroform (2004)	N	0.8	ppb	N/A	N/A	By-product of disinfection

Note: Test results are for year 2006 unless otherwise noted; not all tests are required annually.

As you can see by the table, our system had no violations. We are proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information

about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

We at the Department of Water & Wastewater are committed to providing our users with a safe and dependable water supply. We have three Maryland certified operators on staff that provides around the clock service to insure our water supply meets all EPA and State requirements. In order to keep up with the new regulations, technologies and remain board certified these operators are required to attend, at a minimum, 30 hours of training before they can renew their license every three years. If you should have any questions regarding this report or like to visit the water treatment plant in your district, please don't hesitate to call Mr. Wayne L. Morris at 410 - 778- 3287.

Security Statement:

Due to the events of September 11, 2001 the Kent County Department of Water and Wastewater has provided an increase in the security of all the facilities within the County. These changes include:

- improved lighting around all the buildings and grounds
- request for increased patrols by local law enforcement agencies
- ensuring employees have proper identification
- providing employee training in safeguarding our water systems and protection against terrorist acts
- improving the security of our water sources by providing security locks on all well heads
- increased operator evaluations and testing
- water quality assurances of all the facilities

Drought Evaluations: To ensure a consistent supply of fresh, clean, and safe drinking water to our consumers, the Department has performed several evaluations of the facilities source waters to ensure the production wells have a safe yield and / or supply of natural water. The Department does encourage that all consumers practice conservation on a routine basis, and to report any major leaks, or needed repairs to the appropriate departments as soon as possible.

Introduction of a new well (# 6): In November 2006, a new well was introduced for the Worton water treatment facility. This new well is much deeper than the previous wells, and produces twice the normal rate of the shallow wells at more than 100 gallons per minute. In evaluation of the water quality data, the new well should require less chemical conditioning, be more appealing to the taste, and have a higher clarity than the old wells, as the amount of iron concentration has been reduced with the introduction of the new well.

ANNUAL DRINKING WATER QUALITY REPORT FOR 2006

KENT COUNTY DEPARTMENT WATER & WASTEWATER

FAIRLEE SUBDISTRICT

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER
(PWSID) 0140003

May 23, 2007

We are pleased to provide our customers with our *Annual Water Quality Report*. This report is also available at our office, located on the second floor of the Kent County Public Works Complex, 709 Morgneec Road, Suite 201, Chestertown, MD or on our new Web Page at www.kentcounty.com; click on *Government*, then *Water & Waste Department*. This report is designed to inform you about the water quality and services we deliver to you every day. Our constant goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water sources for the Fairlee/Georgetown Sub district are two (2) groundwater wells, located at the Fairlee Water Treatment Plant, and draw from the Upper *Patapsco Aquifer* within the *Potomac Group* formation.

I am pleased to report our drinking water is safe and meets all Federal and State requirements for safe drinking water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/ AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

We have a source water protection plan available from our office that provides more information such as potential sources of contamination. This plan is also available at the Kent County Public Library or from Maryland Department of the Environment. The susceptibility analysis for the Fairlee/Georgetown Subdistrict water supply is based on a review of the water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It has been determined from recent evaluations completed by the Maryland Department of the Environment that the Fairlee/Georgetown District water supply is not susceptible to microbiological contaminants and / or additional inorganic / volatile / synthetic, and radiological compounds.

If you should have any questions regarding this report or concerning your water utility, please contact either, Mr. Wayne Morris at (410) -778-3287. In addition, any resident may obtain a copy at the main office Monday thru Friday during normal business hours.

The tables below show the results for the various contaminants that were detected during the reporting period from January 1 through December 31, 2006 unless other indicated.

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Pico curies per liter (pCi/l) - Pico curies per liter are a measure of radioactivity in a liter of water.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants						
Beta/photon emitters (2002)	N	6	pCi/l	0	50	Decay of natural and man-made deposits
Alpha emitters (2002)	N	2	pCi/l	0	15	Erosion of natural deposits
Inorganic Contaminants						
Copper (2005)	N	0.11	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Barium (2003)	N	0.09	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	N	1.2	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Volatile Organic Contaminants						
TTHM (Distribution) (2004) [Total trihalomethanes]	N	2.47	ppb	0	80	By-product of drinking water chlorination
HAA5 S (distribution) (Haloacetic Acids) (2004)	N	2.85	ppb	0	60	By-product of drinking water chlorination
Synthetic Organic Contaminants including Pesticides and Herbicides						
Di(2-ethylhexyl) phthalate	N	1.0	ppb	0	6	Discharge from rubber and chemical factories
Unregulated Contaminants						
Sodium	N	36	ppm	N/A	N/A	Erosion of natural deposits
Chloroform	N	0.9	ppb	N/A	N/A	By-product of disinfection
Bromodichloromethane	N	0.9	ppb	N/A	N/A	By-product of disinfection
Trichloromethane	N	2.6	ppb	N/A	N/A	By-product of disinfection

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