

DROUGHT MONITORING TASK FORCE

Drought Status Report

September 20, 2002

The Department of Environmental Quality compiled the following drought status report from information provided by the State Climatologist, the Virginia Departments of Agriculture and Consumer Services, Health, Forestry, Emergency Management, Game and Inland Fisheries; the Virginia Cooperative Extension Service, Farm Service Agency-USDA, the National Weather Service, and the U. S. Geological Survey.

OVERVIEW

Drought conditions temporarily improved due to rainfall during the last week of August and rainfall associated with tropical depression Hannah on September 15-16. Short term improvements generally occurred in Tidewater and the southeastern Piedmont with drought conditions deteriorating in the remainder of the state. The entire Commonwealth is currently experiencing severe to exceptional drought conditions. Statewide rainfall for the first half of the month of September was 92% of long term average rainfall for this period. Rainfall for the same period in the Northern and Central Mountain climatic divisions were 28% and 48% of average respectively. The long-range climatological outlook calls for below average precipitation through December 2002. Since May 24 Virginia has experienced 32 code orange (unhealthy for sensitive groups), 11 code red (unhealthy) and 2 code purple (very unhealthy) ground-level ozone advisories at one or more monitoring stations. Streamflows in the Shenandoah, Potomac, James, and Roanoke River Basins are generally below the normal range of flow observed during September but above monthly minimum levels. Streamflows in the Chowan, Kanawha, Big Sandy, and Tennessee River Basin are in the normal range of flow. These streamflows will rapidly decline without additional precipitation due to low levels of ground water storage. Ground water levels continue to decline. Levels of large reservoirs such as Smith Mountain Lake, Kerr Reservoir, and Philpott Reservoir continue to decline despite variances to required minimum discharges. Lake Moomaw is currently operating under a reduced release that is supplying less than one half of the flow measured in the James River near Richmond. Scattered rainfall during the last month did little to improve the agricultural conditions across the state. Short term wildfire threats have significantly decreased due to increased forest fuel moisture. These short term improvements do not eliminate the potential for an extreme fall wildfire season, especially in western and southwestern Virginia. Reservoir and stream levels that support public water supplies have improved slightly since the last report. The Town of Orange is anticipating a water shortage emergency within two weeks. The Albemarle/Charlottesville and Portsmouth public water supply reservoirs are approaching 50% capacity. Ground water based public water supplies in Amherst, Appomattox, Augusta, Botetourt, Caroline, Clarke, Fluvanna, Fauquier, Loudoun, Nottoway, Shenandoah, and Warren Counties have reported dropping ground water levels or reduced yields. Virginia Department of Health issued over 2900 private well replacement permits for private water supply wells that have failed since July 1. Average water conservation savings at large public water supplies of 6% to 12% have been reported since the implementation of the Governor's Executive Order #33 on August 30. The Department of Environmental Quality met with large users on the Roanoke River on September 19 to begin discussions regarding allocating the limited flow in this river. These discussions were initiated based on authority granted in Executive Order #33. The Department of Game and Inland Fisheries continue operations at all nine aquaculture facilities although increased stress and mortality are being reported. Many public boat ramps and fishing piers have decreased accessibility and approximately 15 are out of service due to low levels. Approximately one-third of the Department's 225 ramps are classified as at low water conditions and are marginally usable.

CLIMATOLOGICAL CONDITIONS

National Weather Service

Due to the localized nature of summer showers and thunderstorm, precipitation amounts varied across the state of Virginia. Widespread rain fell in the last 4 to 5 days of August into the first week of September. More scattered showers occurred through the 15th. A cold front will approach from the Plains states and

possibly affect the region by the weekend (20th and 21st) with showers and thunderstorms. At this time widespread rainfall is not expected.

The recent rainfall has provided short-term relief to the current drought situation; however the long term conditions continue to be a concern. Ground water has shown little response to this rain therefore more periodic and consistent rain throughout the fall and winter months are essential for overall improvement.

The 30-day outlook through the month of October 2002 calls for below average precipitation and equal chances of below average, average, and above average temperatures.

The 90-day outlook through the month of December 2002 calls for below average precipitation and equal chances of below average, average, or above average temperatures.

The latest NOAA drought monitor indicates a decrease in the coverage of exceptional drought in the Commonwealth but an increase in coverage of severe and extreme conditions since the last report on August 19. The drought monitor now indicates the entire Commonwealth is covered by severe to exceptional drought and is included as Appendix A. Appendix B contains information from the national drought monitor with only Virginia displayed. The NOAA seasonal drought outlook through December 2002 calls for potential significant improvement in drought conditions in the southern portion of the Virginia Coastal Plain and in a narrow strip along the North Carolina border due to potential tropical activity. The seasonal drought outlook calls for the drought to persist or intensify in the remainder of the state with chances of some spotty improvement. The seasonal drought outlook is included as Appendix C.

Report of the State Climatologist

The Tidewater and the southeastern Piedmont areas received above average precipitation over the last thirty days. As a result, near-term moisture conditions have improved in southeastern Virginia, roughly eastward of a line from Westmoreland County, through Richmond, and along I-85 to the North Carolina border. The remainder of the Piedmont, approximately to Route 29, received near normal rainfall during this period. The area of the state west of Route 29 received substantially below normal precipitation with the greatest deficits occurring in the central Shenandoah Valley. Portions of Rockbridge, Augusta and southern Rockingham County received less than 25% of long-term average rain for the last 30 days. A map depicting the percentage of normal precipitation for the period August 15 through September 15 is included as Appendix D.

Drought conditions in the area of the Piedmont that received normal rainfall have deteriorated slightly because normal evaporation at this time of year exceeds normal rainfall. As a result, regions that have been subjected to a pre-existing drought conditions can show little if any improvement with normal summer rainfall. In addition, we are still largely in the seasonal regime of scattered thunderstorms, so isolated pockets within these larger regions that localized thunderstorms miss can be much more severely stressed.

Appendix E contains a table detailing precipitation departures from normal for Virginia's six climatological divisions for selected periods. The most noteworthy aspect of this updated table is the very low figure (42% of normal rain) for the Central Mountain (Shenandoah Valley) Climatological Division since August 1. The near-term recovery on the Eastern Piedmont is also evident in this same period; note that there is roughly a west-to-east gradient in rain within this region.

Much of the above normal rain in southeastern Virginia resulted from moisture from the remnants of Tropical Storm Hanna on September 14-16. The amount of tropical cloudiness has increased some in recent days, although the intensity of activity (despite a normal number of named storms) remains far below normal for this time of the year. It is noteworthy that last year's hurricane season, which was the second consecutive year in which there was no landfalling hurricane on the Atlantic/Gulf Coast, was also characterized by a very late beginning. The lack of a landfalling hurricane for a third consecutive year would be a record event in the 132 years of the modern hurricane record.

Streamflows are normally near their seasonal lows at this time of the year. Consequently, the setting of a daily low record can well be the lowest absolute streamflow ever observed in some regions. Many gaged and unmonitored locations in northwestern Virginia, especially in the Shenandoah, Rapidan and Rappahannock River systems, continue to set daily lows.

Within the next month, evaporation rates will drop to below half of the peak values observed in the summer. Consequently, even slightly below normal rainfall should result in some near-term amelioration in the driest regions. However it should be noted that during the current three year drought the driest months have occurred during the fall.

There is no known dynamic explanation for the persistence of what is a rather circumscribed but clearly severe drought in the Mid-Atlantic. However, the lack of landfalling hurricanes predisposes the region to accentuated precipitation shortfalls in September and October.

As of this writing, there is no strong evidence that the climatological regime responsible for our prolonged drought is about to end. Weak El Niño conditions in the tropical Pacific only show a statistically significant correlation with lower-than-normal hurricane activity, and show no significant correlation with winter rainfall in Virginia. This is true here despite a demonstrable relationship between El Niño and winter rain elsewhere in the nation.

However, very strong El Niño conditions are associated with an increased frequency of winter coastal storms. If this particular El Niño became much stronger than anticipated, it might break the current regime. Therefore the development of this event in the tropical Pacific should be closely monitored.

PROVISIONAL ASSESSMENT OF HYDROLOGIC CONDITIONS IN VIRGINIA

United States Geological Survey

Precipitation during the past few days has increased flows slightly across much of the State. Only smaller basins in the Rappahannock and York River Basins are near monthly record minimums. Streamflows in the Shenandoah, Potomac, James, and Roanoke River Basins are generally below the normal range of flow observed during September, and above the monthly minimum flow. Increases in flow in these basins generally are because of minor amounts of precipitation, reduced evaporation, and slightly reduced transpiration. Streamflows in the Chowan, Kanawha, Big Sandy, and Tennessee River Basin are in the normal range of flow because the basins received greater precipitation amounts.

Minimum streamflows for the year normally are observed in August, September, or October.

Appendix F contains flow duration and current flow conditions for selected U.S. Geological Survey and Virginia Department of Environmental Quality surface-water gaging stations. Data are provisional and subject to revision. The normal range of flows is defined as flows in the middle two quartiles (between those flows equaled or exceeded 75 percent of the time and those flows equaled or exceeded 25 percent of the time).

Department of Environmental Quality, Status of Major Reservoirs

Smith Mountain Lake is 3.88 feet below full. It has fallen 0.58 feet since the last report. The lake continues to operate under a release variance. The current release is 350 cfs as compared to a normal release of 650 cfs.

The elevation of Kerr Reservoir is at 293.3 feet above mean sea level and falling. The lake only fell 0.3 feet since the last report thanks to Hannah and is 6.5 feet below the guide curve. Current releases are 2500 cfs and will likely be reduced to 2000 cfs as temperatures drop and conditions allow.

The elevation of Philpott Reservoir is 963.8 feet above mean sea level or 9.0 feet below normal. This is 0.5 feet lower than the last report. Minimum releases have been cut back to one fourth of their normal condition.

Lake Moomaw in western Virginia has 35% of the conservation pool remaining and has been operating under reduced releases since August 23rd. This is a reduction in storage of 7% from the last report. Inflow is 42 cfs and outflow is 194 cfs. If inflows don't increase, the conservation pool will be empty in mid-November. Current flows have resulted in marginal water quality below Covington, as temperatures cool water quality concerns will diminish and more aggressive release curtailments will be considered.

Lake Anna was 4.4 feet down at an elevation of 245.6 feet on September 12. This lake level does not include any rain from tropical depression Hannah that occurred on September 15-16. This is down only 0.2 feet from the last report. Design shutdown was scheduled at 244.0, which could happen in mid-November. Dominion is evaluating plant modifications that could allow operations to continue at reduced lake levels.

Claytor Lake on the New River is 3.6 feet below full. This is down 0.4 feet from last report. AEP has reduced releases to 600 cfs per an agreement with VDGIF.

VIRGINIA AGRICULTURAL SITUATION

Virginia Department of Agriculture and Consumer Services

Local Disaster Designation Requests

Seventy-three requests for federal drought disaster designation have been submitted to the Governor. This is up from thirty requests on August 16. These requests are from sixty separate counties with thirteen of the sixty submitting a second request for additional damages experienced since their original requests. The U.S. Secretary of Agriculture has approved primary disaster designation for 10 of the localities (Bedford, Brunswick, Buckingham, Cumberland, Fluvanna, Goochland, Louisa, Orange, Prince Edward, and Rockbridge counties) and has denied disaster designation for six localities (Augusta, Bland, Nelson, Page, Rockingham and Wythe counties) whose loss of production did not meet the 30% federal requirement. The Governor has requested federal designation for forty other localities whose approval is still pending (Appomattox, Augusta (2nd request), Bedford (2nd request), Bland (2nd request), Botetourt, Buckingham (2nd request), Campbell, Caroline, Craig, Cumberland (2nd request), Floyd, Franklin, Franklin (2nd request), Goochland (2nd request), Greene, Hanover, Henry, King and Queen, King George, King William, Lunenburg, Madison, Mecklenburg, Middlesex, Montgomery, Nelson (2nd request), New Kent, Nottoway, Page (2nd request), Pittsylvania, Powhatan, Prince William, Richmond, Rockingham (2nd request), Spotsylvania, Stafford, Suffolk, Surry, Westmoreland and Wythe (2nd request) counties). Damage assessment reports (DAR) are pending from USDA for seventeen localities (Albemarle, Alleghany, Amelia, Amherst, Campbell (2nd request), Charlotte, Chesterfield, Culpeper, Dinwiddie, Essex, Fauquier, Isle of Wight, Louisa (2nd request) Prince George, Pulaski, Scott, and Warren counties). Thirty-eight different localities have received secondary designation because they are contiguous to counties that have primary designation. In addition, eight localities who have received primary designation have also received secondary designation.

Soil/Crop Conditions

Most of Virginia received some passing showers during the month. The spotty rain seemed to help some pastures and hay fields, but water levels remain low. Fall vegetable planting has slowed down and even stopped in areas where there is no irrigation. Corn harvest continued this month with erratic yields reflecting the dry and hot weather effects. Tobacco is yellowing up. Some soybeans are still losing leaves, but trying to bloom again. Other activities for the month included feeding hay, marketing livestock, checking water supplies, planting some fall vegetable crops, scouting and spraying soybeans and peanuts, assessing corn damage, and preparing peanut equipment and drying facilities for peanut harvest.

Tables describing topsoil moisture, crop condition, and crop progress are contained in Appendix G.

Virginia Cooperative Extension Service

An August 19, 2002 survey of Virginia Cooperative Extension Agriculture and Natural Resource Agents indicates that agricultural conditions continue to deteriorate rapidly across the state. Scattered thundershowers have not provided enough moisture to remedy the dry conditions. Agricultural conditions are not quite as critical in the southwestern area of the state. Many agents have developed agriculture assessments for their counties and provided data for developing disaster declaration requests for county officials.

Livestock producers in numerous counties are feeding hay as a result of pasture growth being severely limited by lack of moisture. Some producers are hauling water to livestock. Many counties had no second or third cutting of hay and soybeans are being considered as a hay or silage crop to salvage the poor yield potential. Producers in some counties are selling cattle and calves to reduce stocking rates. Some pastures will require extensive renovation to return them to a good state of production. There will be limited stockpiled fescue pastures for winter feeding.

Row crops are drought stressed over most of the state. Corn growth is stunted and plants are shorter heights than in a normal year and harvest has begun early. Hot dry days significantly reduce the ability of corn to pollinate thus reducing yield potential. Corn is drying faster than silage harvest can keep up. Poor feed quality due to lack of grain and high dry matter will result. As a result of minimal shallow topsoil moisture some producers stopped planting soybeans. Soybeans that have been planted are showing little growth in most areas of the state. Some areas have soybeans with vegetative growth but little pod development or fill.

Pond levels remain low over much of the state. This poses a major problem for crops that require irrigation and livestock producers who rely on ponds for livestock water.

Without significant sustained rainfall soon, the agricultural situation in Virginia will continue to deteriorate creating major problems for farmers over most of the state. The lack of subsoil moisture may prevent the planting of many fall crops.

FOREST SITUATION IN VIRGINIA

Virginia Department of Forestry

Wildfire Conditions

Light rainfall during September has helped to minimize short-term wildfire activity across the state. In spite of the much-needed rain, drought indices remain higher than normal throughout the Commonwealth, and remain at extreme levels in western and southwestern parts of the state. Statewide conditions are again favorable for increased and extended wildfire activity.

It is important to note that in the areas that received the heavier rainfall amounts during the Labor Day weekend event, and with tropical storm Hanna, short-term conditions have improved enough where some forestry related controlled burning may take place. Prescribed burning is utilized during this time of the year to prepare harvested sites for the planting of tree seedlings later this winter. The Department of Forestry has cancelled all prescribed burning projects in support of the Governor's executive order, and is urging other concerns to follow suit. However, private contractors and industrial forestry concerns remain pressured by their clients to complete projects that have already been started. These types of projects already have money invested that could be lost if the necessary burning did not take place.

Through September 16, the DOF has responded to 1574 wildfires for over 12,512 acres this calendar year. This activity remains well above the normal five and ten year averages.

The Department of Forestry remains focused on preparing for an expected severe fall fire season. Communications with the National Guard have taken place following the Governor's Executive Order #33, and the training of both ground and helicopter forces is tentatively set for early October to ensure that these forces are ready to provide prompt assistance when needed.

PUBLIC WATER SUPPLY SYSTEMS

Virginia Department of Health

Mandatory water restrictions are in place in most of the Commonwealth due to Executive Order #33. Only southwest Virginia, parts of northern Virginia, and the Eastern Shore are not included in the order.

The Division of Drinking Water contacted community waterworks serving 10,000 or more customers and requested they provide a weekly report of the average daily water produced/purchased. In addition, VDH staff prepared baseline data for these waterworks which included the average daily water production data for each month in calendar year 2001 and for August 2002. The data obtained requires a cautious interpretation as there are many external factors such as some waterworks have been on various degrees of conservation for some time, water production facilities can be taken off-line for certain periods of time, many systems are highly interconnected with multiple suppliers, an expected lag between conservation orders and results, etc. An additional external factor that must be considered when examining these calculated conservation savings is the potential for reduced outdoor watering demands due to the significant rainfall that occurred in the last week of August and the significant rainfall that occurred due to tropical depression Hannah. During the week of September 2 the data indicates an average conservation savings of 9.33% (70,893,119 gallons per day) occurred as compared to August 2002 (just prior to EO 33) and 5.85% (53,352,608 gallons per day) as compared to August 2001. During the week of September 9 the data indicates an average conservation savings of 12.43% (79,350,410 gallons per day) occurred as compared to August 2002 (just prior to EO 33) and 9.50% (61,809,899 gallons per day) as compared to August 2001.

Conditions improved for some surface water waterworks as a result of the recent rains in late August and early September. Groundwater levels still remain low in many areas and spring discharges are dropping. Of the 126 waterworks included in this report, 48 report worsening conditions, 66 report stable/same conditions, and 12 report better conditions.

Four of the water supplies that were in danger of imminent failure prior to the late August rainfall are included in this report. The Town of Orange reports that conditions improved significantly due to late August rainfall but that conditions have already started to deteriorate in the Rapidan River. The Town has made emergency plans to pipe water about 20 miles from a location near Culpeper utilizing a surface laid pipeline. The Town of Gretna reported that their reservoir was overflowing on September 10. Amherst County reports that water supply conditions are deteriorating and expect that their emergency pipeline to the James River will be completed by September 13. The Town of Farmville reports that flow in the Appomattox River has improved and continues to support their needs without the operation of the siphon that was placed in Holliday Lake. Although not reported, it is anticipated that Holliday Lake refilled with the late August rainfall. It should be noted that these conditions will rapidly deteriorate without continued precipitation.

Approximately 20,000 gallons of water is being hauled daily from the Lake Monticello Public Water Supply to the Fluvanna Correctional Center. Approximately 160,000 gallons (25 truckloads of 6500 gallons) of water is being hauled daily from the James River Correctional Center (James River source) to the Nottoway Correctional Center. The normal supply for the Nottoway Correctional Center is the Town of Crewe. The daily allocation from the Town of Crewe to the Nottoway Correctional Center has been reduced from 270,000 gallons per day to 100,000 gallons per day.

Ground water based public water supplies in parts of Albemarle, Amherst, Appomattox, Augusta, Botetourt, Caroline, Clarke, Fluvanna, Fauquier, Loudoun, Nottoway, Shenandoah, and Warren County have reported dropping water levels or reduced yields from wells and springs.

Several areas have reported both public and private wells are going dry. County Health Departments from across the Commonwealth report the issuance of more than 2,900 replacement well permits since July 1, 2002.

Appendix H contains detailed reports of public water supply conditions in the six field offices as reported on September 13. Appendix I contains updated public water supply conditions for a few systems experiencing difficulties as reported on September 19.

FISHERIES AND RECREATIONAL IMPACTS

Virginia Department of Game and Inland Fisheries

Stream and lake levels continue to drop significantly throughout most of the state; access at boat ramps and fishing piers is increasingly limited and recreational opportunities are reduced. Of the Department's 225 public boat access sites 131 still support normal launching, 71 report low water but may be used, 19 report no water on ramp but hand launching of small boats is possible, and 4 are closed for repairs.

Flow variances remain in place for Leesville Reservoir (Roanoke River/Smith Mountain Lake), Lake Anna, Claytor Lake (New River) and Lake Moomaw (Jackson River). An additional flow decrease variance is being considered at Smith Mountain Lake.

There has been some increased fish mortality at one Department trout hatchery and fish stress levels have increased at all hatcheries. Flows at trout rearing facilities have decreased by 20% to 40% in the past eight weeks. There have been no drought-related fish kills reported in public waters; however, private pond owners have reported very low levels and some ponds have dried up resulting in loss of fish.

Coordination continues with local and state agencies as well as the private sector to best utilize the available resources. The Department is specifically coordinating with the Virginia County Extension Agents to provide water withdraw options for local livestock farmers. Increasing numbers of livestock owners are utilizing Department facilities. The short-term outlook is for increased chance of fish mortality in small ponds and decreasing recreational opportunities.

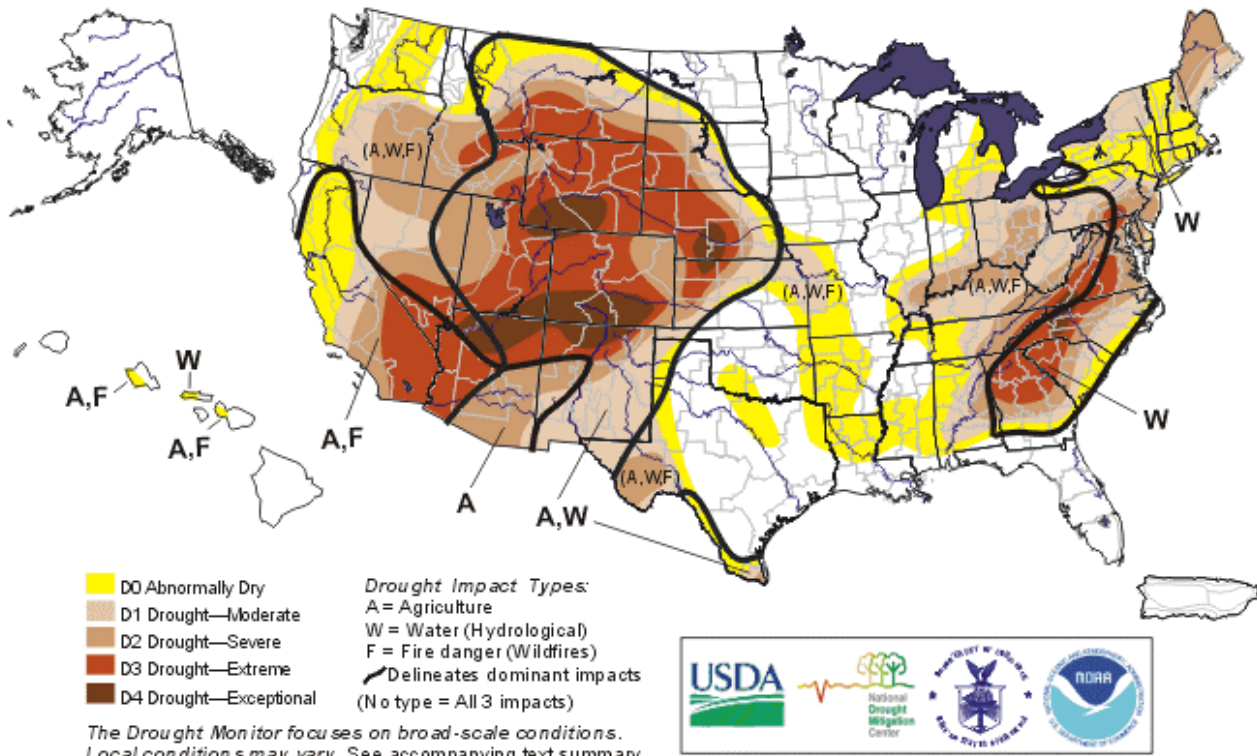
LOCAL EMERGENCY DECLARATIONS/REQUESTS FOR ASSISTANCE

Virginia Department of Emergency Management

The Towns of Orange, Gordonsville, and Gretna and Amherst County have all requested assistance under the Commonwealth's Emergency Relief to Localities program and are submitting cost data to VDEM.

APPENDIX A

U.S. Drought Monitor September 17, 2002 Valid 8 a.m. EDT



Released Thursday, September 19, 2002
 Author: Brad Rippey, USDA

<http://drought.unl.edu/dm>

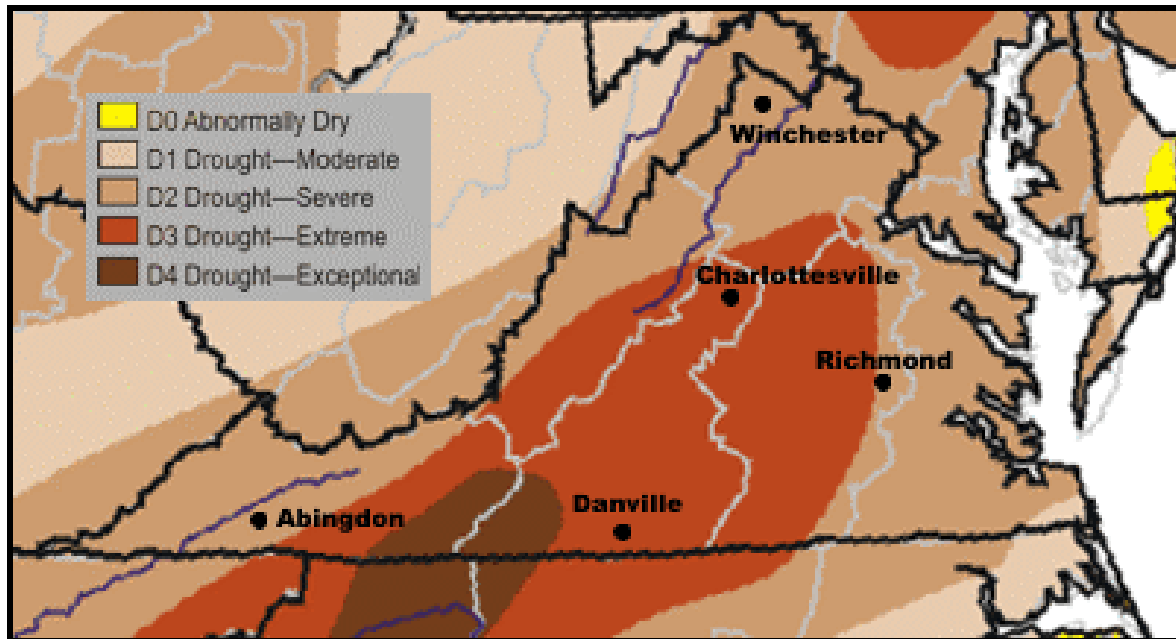
National Drought Summary – September 19, 2002

The East: Tropical Storm Hanna moved ashore near Mobile, Alabama, on September 14, sparking heavy rainfall across the Southeast. The heaviest rain (4 to 10 inches, with locally higher totals) fell from the central Panhandle of Florida northward to near the triple point between Georgia and the Carolinas. There was a general one- to locally two-category reduction in drought severity across the wettest areas, including much of Georgia, upstate South Carolina, and southwestern North Carolina. Farther north, tropical moisture interacted with an approaching front to produce a band of heavy rain (locally 2 inches or more) and provide as much as one category of drought reduction from central Ohio into the northern Mid-Atlantic region and parts of New England. In addition, recent soil moisture improvements eased stress on eastern pastures and curbed the threat of wildfire activity, leaving many areas with primarily hydrological drought concerns. Between the areas of heavy rain, only scattered, light showers dampened the central Appalachians and the remainder of the Mid-Atlantic region, allowing drought to remain undiminished or even slightly intensify. The area of exceptional drought (D4) diminished markedly but remains entrenched across portions of southern Virginia and western North Carolina. Extreme drought (D3) now stretches from the northern half of Georgia into central Virginia, and also includes parts of northern Maryland and southern Pennsylvania.

APPENDIX B

U.S. Drought Monitor - Virginia

September 17, 2002

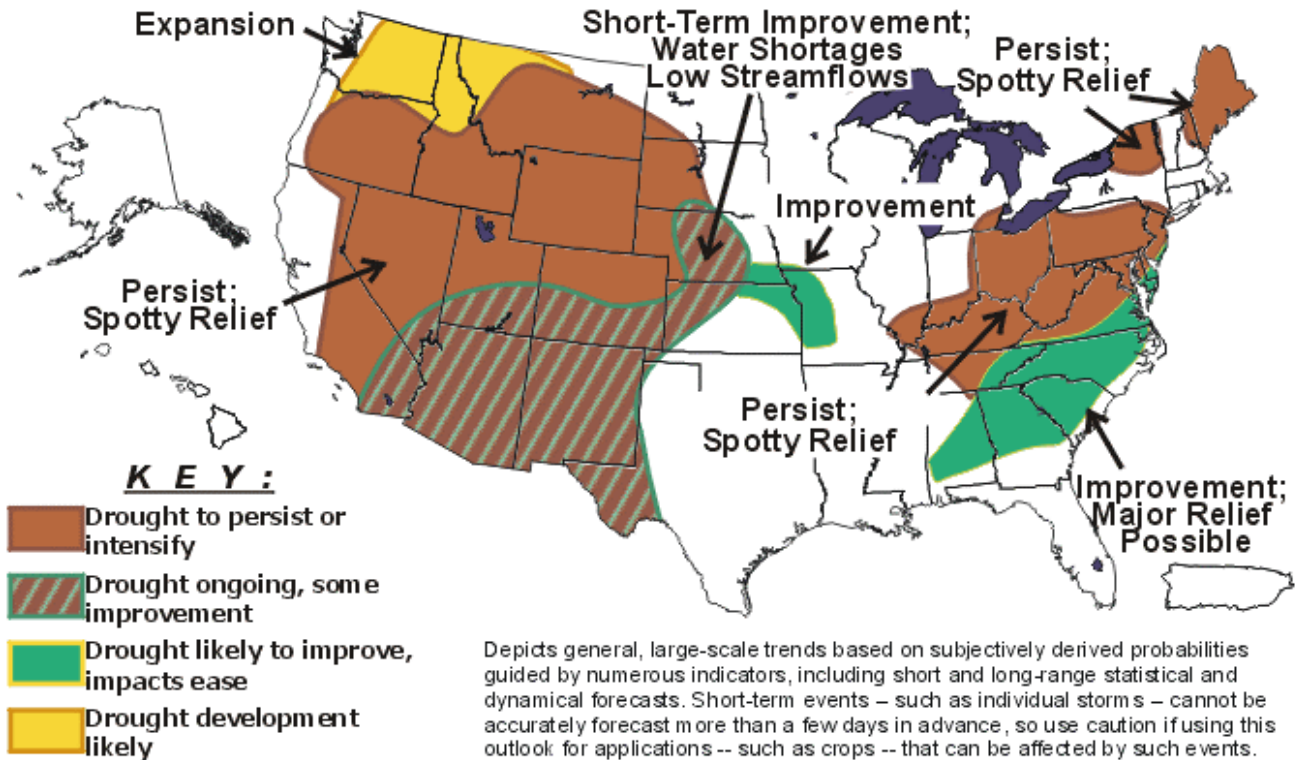


Note: The U.S. Drought Monitor focuses on broad-scale conditions. Local conditions may vary. Click on map to view complete U.S. Drought Monitor graphic.

APPENDIX C



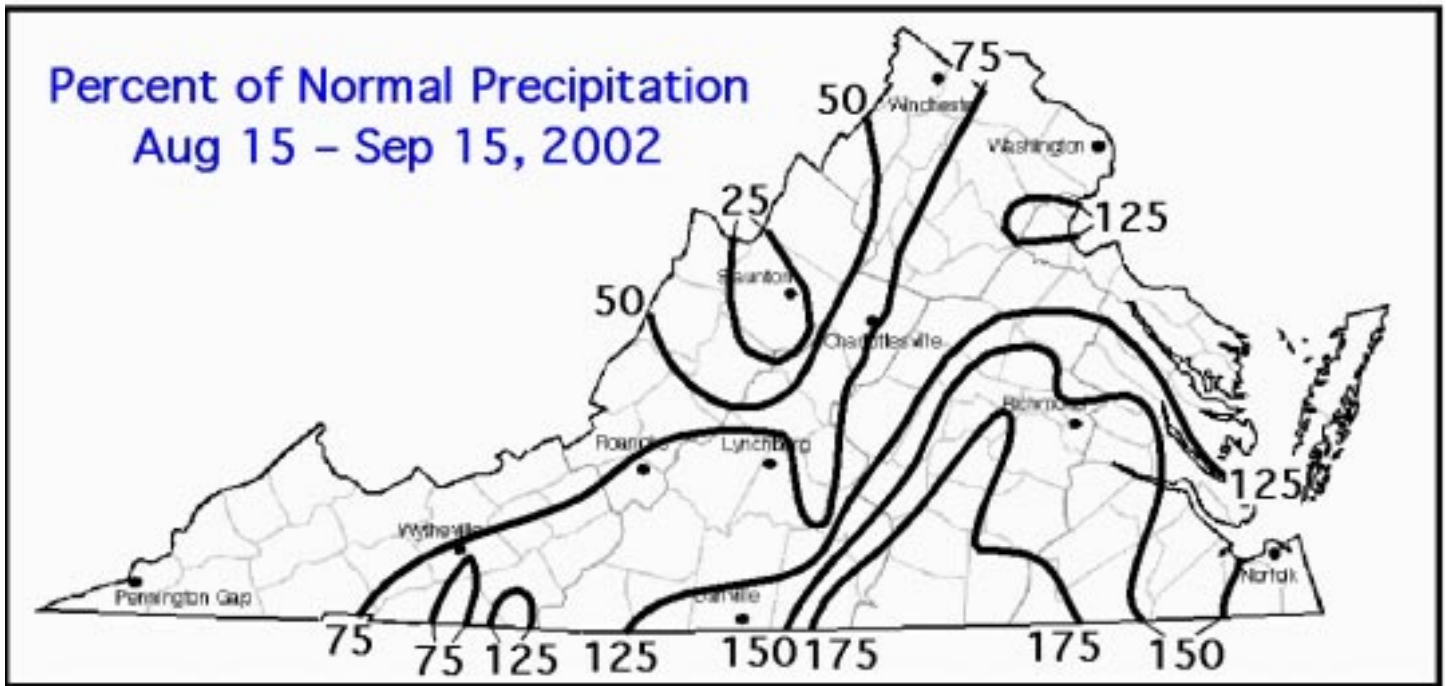
U. S. Seasonal Drought Outlook Through December 2002 Released September 19, 2002



Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short and long-range statistical and dynamical forecasts. Short-term events – such as individual storms – cannot be accurately forecast more than a few days in advance, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are schematically approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text.

Latest Seasonal Assessment - Recent rains along with cooler weather have eased drought conditions in many parts of the country, and this improving trend will continue in some areas but not in all areas. Best bet for drought-easing rains from now until December is in the Southeast, where tropical rains have already made a difference, and additional rains with or without tropical storms should bring more improvement to areas experiencing long-lasting drought. The wild card in the drought outlook is the path of TS Isidore which, as of September 19, is approaching the Gulf of Mexico and forecast to become a hurricane later in the day. The eventual track is not known at this time, but if the storm tracks up the Eastern Seaboard, very heavy rains would fall over areas that have been experiencing drought. Although getting enough rain to fill wells and reservoirs would be difficult given the size of the long-term rainfall deficits, Hurricane Floyd in September 1999 eradicated drought in coastal areas that had also been dealing with very large deficits. So one storm can make a difference. Taking into account the short-term and long-term forecasts, the best odds for drought improvement at this time cover the Southeastern states from the Carolinas to Alabama. With the seasonal precipitation outlook calling for below-normal precipitation from the Mid-Atlantic States westward into the Ohio Valley, drought is likely to persist over much of this region in coming months, although rains from Isidore or other storms could change this outlook. Even with tropical rains bringing improvement in September, this region could see a return to dry conditions by December if the expected dry pattern returns.

APPENDIX D



APPENDIX E

Precipitation departures by Climatological Division.

Two Week Precipitation Departures

Climatological Division	SEPT 1-16 2002	SEPT 1-16 NORMAL	SEPT 1-16 DEPARTURE	SEPT 1-16 % NORMAL
Tidewater	3.60	2.05	1.55	175%
Eastern Piedmont	1.90	1.84	0.06	103%
Western Piedmont	1.50	1.98	-0.48	76%
Northern	0.50	1.81	-1.31	28%
Central Mountain	0.80	1.68	-0.88	48%
Southwestern	1.20	1.64	-0.44	73%
Statewide	1.70	1.85	-0.15	92%

Six Week Precipitation Departures

Climatological Division	AUG-SEPT 16 2002	AUG-SEPT 16 NORMAL	AUG-SEPT 16 DEPARTURE	AUG-SEPT 16 % NORMAL
Tidewater	7.88	6.84	1.04	115%
Eastern Piedmont	6.72	6.17	0.55	109%
Western Piedmont	4.82	6.25	-1.43	77%
Northern	3.71	5.89	-2.18	63%
Central Mountain	2.35	5.63	-3.28	42%
Southwestern	3.58	5.57	-1.99	64%
Statewide	5.07	6.10	-1.03	83%

Ten Week Precipitation Departures

Climatological Division	JULY-SEPT 16 2002	JULY-SEPT 16 NORMAL	JULY-SEPT 16 DEPARTURE	JULY-SEPT 16 % NORMAL
Tidewater	10.62	11.86	-1.24	90%
Eastern Piedmont	9.92	10.83	-0.91	92%
Western Piedmont	9.16	10.88	-1.72	84%
Northern	7.58	9.96	-2.38	76%
Central Mountain	7.11	9.65	-2.54	74%
Southwestern	8.38	10.12	-1.74	83%
Statewide	8.98	10.64	-1.66	84%

Fourteen Week Precipitation Departures

Climatological Division	JUNE-SEPT 16 2002	JUNE-SEPT 16 NORMAL	JUNE-SEPT 16 DEPARTURE	JUNE-SEPT 16 % NORMAL
Tidewater	12.82	15.66	-2.84	82%
Eastern Piedmont	11.79	14.74	-2.95	80%
Western Piedmont	10.97	15.02	-4.05	73%
Northern	11.21	13.91	-2.70	81%
Central Mountain	9.25	13.51	-4.26	68%
Southwestern	11.39	14.16	-2.77	80%
Statewide	11.37	14.59	-3.22	78%

Thirty-four Week Precipitation Departures (Year to date)

Climatological Division	JAN-SEPT 16 2002	JAN- SEPT 16 NORMAL	JAN- SEPT 16 DEPARTURE	JAN- SEPT 16 % NORMAL
Tidewater	29.76	32.85	-3.09	91%
Eastern Piedmont	26.02	32.13	-6.11	81%
Western Piedmont	24.68	33.18	-8.50	74%
Northern	24.34	29.87	-5.53	81%
Central Mountain	22.83	29.38	-6.55	78%
Southwestern	30.08	32.63	-2.55	92%
Statewide	26.62	31.91	-5.29	83%

One Year Precipitation Departures

Climatological Division	OCT 2001- SEPT 16, 2002	OCT 2001- SEPT 16, 2002 NORMAL	OCT 2001- SEPT 16, 2002 DEPARTURE	OCT 2001- SEPT 16, 2002 % NORMAL
Tidewater	32.92	41.84	-8.92	79%
Eastern Piedmont	29.16	41.36	-12.20	71%
Western Piedmont	28.91	42.71	-13.80	68%
Northern	27.91	38.94	-11.03	72%
Central Mountain	26.60	38.02	-11.42	70%
Southwestern	34.52	41.58	-7.06	83%
Statewide	30.35	40.98	-10.63	74%

Two Year Precipitation Departures

Climatological Division	OCT 2000- SEPT 16, 2002	OCT 2000- SEPT 16, 2002 NORMAL	OCT 2000- SEPT 16, 2002 DEPARTURE	OCT 2000- SEPT 16, 2002 % NORMAL
Tidewater	68.20	85.47	-17.27	80%
Eastern Piedmont	63.64	84.32	-20.68	75%
Western Piedmont	61.91	87.14	-25.23	71%
Northern	63.60	79.47	-15.87	80%
Central Mountain	57.74	77.50	-19.76	75%
Southwestern	73.80	84.61	-10.81	87%
Statewide	65.34	83.56	-18.22	78%

Three Year Precipitation Departures

Climatological Division	OCT 1999- SEPT 16, 2002	OCT 1999- SEPT 16, 2002 NORMAL	OCT 1999- SEPT 16, 2002 DEPARTURE	OCT 1999- SEPT 16, 2002 % NORMAL
Tidewater	120.13	129.10	-8.97	93%
Eastern Piedmont	105.52	127.28	-21.76	83%
Western Piedmont	103.11	131.57	-28.46	78%
Northern	103.72	120.00	-16.28	86%
Central Mountain	100.98	116.98	-16.00	86%
Southwestern	113.94	127.64	-13.70	89%
Statewide	108.59	126.14	-17.55	86%

APPENDIX F

Flow duration and current flow conditions for selected U.S. Geological Survey and Virginia Department of Environmental Quality surface-water gaging stations

	MINIMUM DAILY FLOW, PERIOD OF RECORD (CFS)	MINIMUM SEPTEMBER FLOW, PERIOD OF RECORD (CFS)	7Q2 (CFS)	7Q10 (CFS)	PERCENT OF TIME FLOW EQUALED OR EXCEEDED FOR SEPTEMBER DAILY MEAN FLOWS (CUBIC FEET PER SECOND)			CURRENT CONDITIONS FLOW (CFS)/ DURATION (PERCENT)
					75%	50%	25%	
								September 17, 2002
<u>SHENANDOAH RIVER BASIN</u>								
South River near Waynesboro, Va.	17	17	30	24	33	39	58	14
South Fork Shenandoah River at Front Royal, Va.	107	140	344	235	387	506	774	236
North Fork Shenandoah River at Cootes Store, Va.	0.2	0.2	3.2	0.77	2.8	10.4	34	6.6
North Fork Shenandoah River near Strasburg, Va.	35	35	-	-	109	153	259	73
<u>POTOMAC RIVER BASIN</u>								
Goose Creek near Leesburg, Va.	0.4	0.4	12	2.5	11	33	96	11
<u>RAPPAHANNOCK RIVER BASIN</u>								
Rappahannock River at Remington, Va.	2.9	2.9	50	11	49	126	286	14
Rapidan River near Culpeper, Va.	2.2	2.5	-	-	69	138	280	2.9
Rappahannock River near Fredericksburg, Va.	5.0	6.2	189	48	180	360	750	27
<u>YORK RIVER BASIN</u>								
Pamunkey River near Hanover, Va.*	45	47	-	-	91	168	322	61
Mattaponi River near Beulahville, Va.	.78	6.3	48	14	45	105	222	5.2

	MINIMUM DAILY FLOW, PERIOD OF RECORD (CFS)	MINIMUM SEPTEMBER FLOW, PERIOD OF RECORD (CFS)	7Q2 (CFS)	7Q10 (CFS)	PERCENT OF TIME FLOW EQUALED OR EXCEEDED FOR SEPTEMBER DAILY MEAN FLOWS (CUBIC FEET PER SECOND)			CURRENT CONDITIONS FLOW (CFS)/ DURATION (PERCENT)
					75%	50%	25%	
September 17, 2002								
JAMES RIVER BASIN								
Jackson River near Bacova, Va.	13	13	26	20	26	31	47	18
Potts Creek near Covington, Va.	15	16	24	17	25	33	45	25
Cowpasture River near Clifton Forge, Va.	40	40	73	54	78	100	150	60
Craig Creek at Parr, Va.	25	25	43	31	44	59	91	34
James River at Buchanan, Va.*	207	207	378	271	413	560	782	398
Maury River near Buena Vista, Va.	22	39	89	62	99	136	232	49
Hardware River below Briery Run near Scottsville, Va	0.1	0.1	24	7.5	23	39	66	1.9
Rivanna River at Palmyra, Va.	5.2	5.2	-	-	90	168	327	21
James River at Cartersville, Va.	330	330	1,120	584	1,280	1,826	3,160	527
Appomattox River at Farmville, Va.	6.3	7.8	52	21	57	88	136	19
Appomattox River at Mattoax, Va.	13	15	86	30	95	164	281	59
Chickahominy River near Providence Forge, Va.	0.07	0.07	16	4.0	16	43	105	10
CHOWAN RIVER BASIN								
Nottoway River near Sebrell, Va.	14	18	82	24	76	165	412	110
Blackwater River near Franklin, Va.	0.07	0.08	-	-	8	31	197	20
Meherrin River near Lawrenceville, Va.	4.2	5.0	52	16	50	92	169	75

	MINIMUM DAILY FLOW, PERIOD OF RECORD (CFS)	MINIMUM SEPTEMBER FLOW, PERIOD OF RECORD (CFS)	7Q2 (CFS)	7Q10 (CFS)	PERCENT OF TIME FLOW EQUALED OR EXCEEDED FOR SEPTEMBER DAILY MEAN FLOWS (CUBIC FEET PER SECOND)			CURRENT CONDITIONS FLOW (CFS)/ DURATION (PERCENT)
					75%	50%	25%	
								September 17, 2002
ROANOKE RIVER BASIN								
Roanoke River at Roanoke, Va.*	19	32	58	35	71	99	158	50
Pigg River near Sandy Level, Va.	25	43	96	47	111	161	218	133
Roanoke River at Randolph, Va.*	179	179	847	426	928	1,225	1,673	423
Dan River at Paces, Va.	244	244	-	-	850	1,124	1,587	471
Hyc0 River near Denniston, Va.*	1.5	3.6	-	-	17	28	47	11
KANAWHA RIVER BASIN								
New River at Allisonia, Va.	453	453	1,040	725	1,071	1,396	1,970	1,290
Little River at Graysontown, Va.	47	48	109	69	123	166	226	220
Walker Creek at Bane, Va.	24	24	44	33	46	58	79	34
BIG SANDY RIVER BASIN								
Russell Fork at Haysi, Va.	0.2	0.5	8.7	1.0	13	27	54	22
TENNESSEE RIVER BASIN								
South Fork Holston River near Damascus, Va.	40	60	99	73	100	128	183	122
North Fork Holston River near Saltville, Va.	2.0	19	34	24	35	49	74	44
Clinch River at Cleveland, Va.	37	37	81	54	88	127	193	81
Powell River near Jonesville, Va.	18	18	42	24	47	71	118	45

* indicates some regulation

APPENDIX G

Virginia Agriculture Statistic Services report of topsoil moisture, crop condition and crop progress.

TOPSOIL MOISTURE PERCENT				
<i>Week Ending</i>	<i>Very Short</i>	<i>Short</i>	<i>Adequate</i>	<i>Surplus</i>
September 15	34	33	32	1
September 8	38	30	28	4
September 1	44	33	18	5
August 25	52	40	8	0
August 18	42	40	18	0

CROP CONDITION PERCENT					
Crop	Very Poor	Poor	Fair	Good	Excellent
Pastures	35	29	24	12	0
Livestock	2	16	35	43	4
Other Hay	35	32	23	10	0
Alfalfa Hay	16	31	36	17	0
Corn for Grain	27	40	21	11	1
Soybeans	28	31	25	14	2
Tobacco, Flue-Cured	3	14	35	48	0
Peanuts	5	24	29	28	4
Cotton	6	28	32	32	2
Apples, All	10	9	51	30	0

CROP PROGRESS PERCENT – WITH COMPARISONS				
Crop	This Week	Last Week	Last Year	5 Year Average
Corn Dent	97	92	88	84
Corn Mature	83	75	61	64
Corn Harvested for Grain	37	26	27	23
Corn Silage Harvested	75	61	54	53
Soybeans Setting Pods	97	90	99	92
Soybeans Dropping Leaves	20	14	13	11
Winter Wheat Seeded	4	1	2	1
Barley Seeded	5	3	NA	1
Flu Cured Tobacco Harvested	48	39	73	60
Burley Tobacco Harvested	78	51	76	66
Dark Fire Cured Tobacco Harvested	87	74	86	83
Sun Tobacco Harvested	99	88	84	84
Cotton Bolls Opening	66	48	29	48
Cotton Harvested	3	NA	NA	NA
Fall Apples Harvested	42	34	30	22
Winter Apples Harvested	23	17	9	2

APPENDIX H

Virginia Department of Health Field Office Reports for Public Water Systems (September 13, 2002)

(Note: The first digit in the PWSID number indicates the field office location of the waterworks. PWSID 2770650 is located in the Lexington Field Office, etc.)

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
2043629	Keystone Baptist Church	Drilled Wells	M	W: Well yields down significantly. Well 1 yield has fallen from 8 gpm to 1.5 gpm. Well 2 has yield of 1.5 gpm. Combined yields have periodically not meet demand. Instituted use of bottled water and increased emphasis to students and faculty to minimize water use. Currently investigating installation of storage and water hauling options. Estimated student/staff population 90.
6061580	Trinity Packaging Corp	Groundwater (1 well)	N	W: Well yield decreased significantly causing interruptions in plant production. New well being drilled to increase supply.
2023480	Rainbow Forest	Drilled wells	M	W: Well production is lower than usual; exporting water to AquaSource's Clearview Estates system (2023194) whose two wells are currently unusable
2023020	Apple Tree	Drilled wells	M	W: Well production is lower than usual; 2 wells not in service (Steeplechase 1 & 3); water imported from and exported to AquaSource's Highland Manor system (2023415)
6061411	Pete's Park and Eat	Groundwater (1 well)	N	W: Well has gone dry, temporarily closing business. New well being drilled.
6600100	City Of Fairfax	Goose Creek/Beaver Dam	N	W: Water Level Status: Goose Creek Reservoir is 2-3 inches below overflow, and Beaver Dam Reservoir is 5.9 feet below full.
2003725	Charlottesville/Albemarle County	South Rivanna (South Rivanna WTP)	M	W: Their main reservoir-South Rivanna (South Rivanna WTP) is 4.9 feet below full. Overall, source water availability is at 60.8% of "full available capacity" (this includes both the South Rivanna system and the Sugar Hollow/Ragged Mountain system).

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
3650150	Ft. Monroe	Big Bethel Reservoir System	M	W: The water plant came back on line on 7/1/02. The lower reservoir is currently 3 inches below spillway, upper reservoir 21.5 inches below spillway (as of Monday 9/9) (1 flash board still out). 208 MG for Lower Reservoir and 288 MG Upper Reservoir.
2003600	Charlottesville/Albemarle County	Sugar Hollow and Ragged Mountain Reservoirs (Observatory WTP)	M	W: The Sugar Hollow reservoir (Observatory WTP) is 8 feet below overflow. Ragged Mountain reservoir is 9.6 feet below normal. Overall, source water availability is at 60.8% of "full available capacity" (this includes both the South Rivanna system and the Sugar Hollow/Ragged Mountain system).
4041845	Swift Creek WTP (Chesterfield County)	Swift Creek Reservoir	M	W: The reservoir level is 174.2 feet. The level is 0.2 feet lower than it was a week ago and 2.8 feet below the top of the dam.
2065250	Fluvanna Correctional Center	Mechunk Creek	M	W: The raw water impoundment is approximately 42.0% full (17 MGD available, 40 MG full capacity) and dropping. The facility is using approximately 130,000 GPD of finished water and is currently unable to pump raw water from Mechunk Creek.
2065520	Oakland School	Drilled Wells	M	W: The Oakland School waterworks provides water to approximately 150 students and staff. Well production continues to drop steadily. Well sites have been evaluated and drilling will begin as soon as possible. Water hauling was initiated the first week of August.
2125910	NCSA - Wintergreen	Lake Monacan, Valley Ponds, Stoney Creek	M	W: The NCSA - Wintergreen waterworks source water is obtained from Lake Monacan and the Valley Ponds. Lake Monacan is 4 feet below normal; however, both Valley Ponds have been pumped down to the minimum level. The daily water demand is currently being met under mandatory restrictions that are in effect.
4073311	Gloucester	Beaverdam Reservoir	M	W: The Beaverdam Reservoir water overflow elevation is 40.5. The reservoir is not overflowing. The water level was 39.1 on September 10, 2002. This is .09 feet lower than it was a week ago. Note that about a million gallons of water is allowed to flow through the reservoir every day.
5019400	High Point Subdivision	Smith Mountain Lake	M	W: Smith Mountain Lake is 4.8' below full pond.
6179100, 6179775	Stafford County	Smith Lake and Abel Lake	M	W: Smith Lake is 77 inches below normal and Abel Lake is 74 inches below normal.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
6061320	Northwestern Elementary School	Groundwater (1 well)	M	W: Significant decline in well yield. Currently hauling water to meet demand.
2187406	Front Royal	South Fork Shenandoah River	M	W: Running 14-day average is well below 30% mean stream flow [18.72% with mean stream flow at 256 cfs (165.2 MGD) on 9/11].
2775300	Salem, City Of (Plant No. 1)	Roanoke River	M	W: River flow is lower than normal. River flow is 30.9 cfs.
2775400	Salem, City Of (Plant No. 2)	Roanoke River	M	W: River flow is lower than normal. River flow is 30.9 cfs.
2770650	Roanoke City - Carvins Cove	Carvins Cove Reservoir/Tinker Creek/Catawba Creek	M	W: Reservoir level 32.9' below spillway - situation steadily worsening (24% of supply remaining). Cutting back on reservoir use by water purchases from Roanoke County (3-4 MGD) and the City of Salem (1.5 MGD) and placing Crystal Spring (2.8 MGD) into service; imposition of civil penalties and surcharge applied to base water rates.
5515050	City Of Bedford	Stoney Creek Reservoir	M	W: Reservoir is 35 inches down - City is drawing from three wells to supplement reservoir. River is too low to draw from.
5111450	Town Of Kenbridge	Flat Rock Creek & reservoir	M	W: Reservoir has dropped about 4 inches slightly less than 16'; the estimate is ~ 105 days of available water. Flat Rock Creek is very low; they can pump 20,000 GPD (about a third of last weeks pump rate) from the creek to fill their reservoir. Their demand is holding steady (about 20,000 to 30,000 GPD less than normal).
5029085	Buckingham County Waterworks	Troublesome Creek Reservoir	M	W: Reservoir fell to 25.5-inches below spillway (~2-inch drop since last week). But appears to be stabilizing and not dropping as fast. They are still using a portable pump to transfer water into the raw water pump station from the reservoir. They noted that the 2 prisons are finally decreasing their usage.
6059500	FCWA-Lorton/Occoquan WTPs	Occoquan Reservoir	N	W: Reservoir 74% full, 5.96 billion gallons usable storage. All of FCWA service area is on "watch" status.
2023415	Highland Manor	Drilled wells	M	W: only two wells producing water (Rosemae and Carolyn); water exported to and imported from AquaSource's Apple Tree system (2023020)
2790600	Staunton	North River Dam, Middle River	M	W: Middle River is not in use, flow reduced last week from North River from 1.8 MGD to 1.0 MGD. No problems noted at Gardner Springs. Water level is approximately 47 inches lower than normal at the dam, but can drop to 17 feet below normal without much impact.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
6059501	FCWA-Corbalis WTP	Potomac River	N	W: Jennings Randolph and Little Seneca reservoirs on the Potomac River are at 75% full and 83% full, respectively, on 9/11/02. Flow In Potomac River at Little Falls (downstream of the Wash.Met.intakes) on 9/11/02 was 430 MGD. Releases from upstream Jennings Randolph Reservoir are at 375 MGD and releases from Little Seneca are at 125 MGD. All of FCWA service area is on "watch" status. Voluntary conservation will be instituted when the upstream reservoirs drop below 60% full. No releases were made from the reservoirs in 2000 or 2001, but 3.1 BG were released in summer of 1999. Reservoir storage is adequate to meet the water supply needs in the event the 1930-31 drought of record were to re-occur.
6107600	Purcellville	Hirst Reservoirs	N	W: Front reservoir 2.8 feet below full and dropping 0.1 feet per day; back reservoir 4.55 feet below full. Drought "watch" status still in effect.
2065480	Lake Monticello Service Company Aqua Source	Rivanna River	M	W: Flows in the Rivanna River at the Lake Monticello Water Treatment Plant are extremely low, however there is currently a sufficient quantity of raw water to meet daily demands.
2079625	Rapidan Service Authority	Rapidan River	M	W: Flows in the Rapidan river at the Greene Water Treatment Plant are extremely low, however there is currently a sufficient quantity of raw water to meet daily demands.
2003525	RWSA - North Rivanna WTP	North Fork Rivanna River	M	W: Flows in the North Fork Rivanna River at the WTP intake are extremely low, however there is currently a sufficient quantity of raw water to meet daily demands.
1195100	Town Of Big Stone Gap	Big Cherry Reservoir	N	W: down 8 inches since 9/5/02, alternate source is in use, no conservation measures. Worse than normal for this time of year.
1195050	Town Of Appalachia	reservoir	N	W: down 7.5 inches since 9/5/02, 62 MG and 120-125 days left, no alternate source, no conservation measures. Worse than normal for this time of year.
1195950	Town Of Wise	reservoir	N	W: down 4.5 inches since 9/5/02, 171 MG left, alternate is in use, no conservation measures. Better than normal for this time of year.
1720076	City Of Norton	reservoirs	V	W: down 2 ft or 5.5 MG since 9/3/02, 81 days left, alternate source is in use, voluntary conservation measures encouraged on public access TV channel. Worse than normal for this time of year.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
2023194	Clearview estates	Drilled wells	M	W: currently no production from the two Clearview Estates wells - importing water from AquaSource's Rainbow Forest system (2023480)
6630050	City Of Fredericksburg	Motts Run/Rappahannock River	M	W: City of Fredericksburg (consecutive system to Spotsylvania County).
2003250	RWSA - Crozet WTP	Beaver Creek Reservoir	M	W: Beaver Creek Reservoir is currently down 5.2 feet from normal "full". The previous all time low water level on record was 8 feet below normal "full". There is adequate water to meet normal daily demands and no problems are reported.
1071455	Giles County PSA Membrane WTP	well	V	W: As of about 8/12/02 well level was dropping. Standby sources were placed on line and the well was pumped at a lower rate and less per day. Well level very sensitive to pumping. Appears to definitely be related to drought and the level of adjacent New River.
3550051	Chesapeake - NW River System	NW River system	M	W: As of 9/5, chloride levels in the Northwest River are above average (347-1096 ppm). Monitoring well levels are at 96.6 % of normal levels. They were at 89.5 % on 8/20/02 an increase of 7.1%. Plant production averaged 8.391 MGD for August. The ASR facility use has declined. Water from the plant has been injected in the aquifer several times during the past two weeks. Chesapeake wants to keep production high and inject surplus water.
3800805	City Of Suffolk	Central System	M	W: As of 9/11, reservoir system is 40.48% full in Crumps Mill. This is a 1% decrease from the last report. Lone Star Lakes is at 68.24% full, a 1.76 % decrease. Lone Star makes up the majority of the Northern Lakes. The Southern Lakes were at 30%. This is a 1% decrease from the last report. The surface water treatment plant averaged 4.419 MGD for August and the EDR production was 2.815 MGD. The city also purchase finished water from Portsmouth, which enters the central system in downtown Suffolk.
3830850	Williamsburg	Waller Mill Reservoir	M	W: As of 09/11/02, Waller Mill reservoir is 32 inches below the primary spillway (in the previous report it was 31 inches). Continuing to purchase 2 MGD raw water from Newport News. Supplemental well (335 gpm/0.48 MGD) has been pumping to the reservoir for about 20 months.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
3700500	Newport News	Little Creek, Diascund, Skiffes Creek, Harwoods Mill and Lee Hall Reservoirs	M	W: As of 09/09/02, the reservoirs were 61% full (in the previous report, the reservoirs were 63% full). Have been able to start four pumps at Chickahominy. Max demand since the Governor's EO 33 has been 48 MGD. This is down from normal usage. They predict that with out more rain in the Chickahominy basin levels will start to drop again.
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	M	W: As of 09/09, reservoirs are at 80% of total capacity. This is a 3% drop since 08/05. Historic reservoir capacity at this time of year is 85%. Avg. pumping from Lake Gaston = 31.8 MGD; Blackwater River = 0 MGD (pump off 08/02); Nottoway River = 21.7 MGD. Deep wells = 16 MGD (pumps on 08/27).
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	M	W: As of 09/09, reservoirs are at 57% of useful capacity. This is a 5 % drop since 08/05. Historic capacity for this time of year is 88% and 94%. Both emergency wells are ON, pumping an average of 7.5 MGD, but reservoir levels continue to drop. Approximately 130 days of capacity remain at current pumpage and little rainfall.
5019250	Eagle Eyrie	Unnamed Reservoir	M	W: 8'5" - Using second intake.
5009250	Amherst County Service Authority	Graham Creek Res., Harris Creek	M	W: Drawing from creek as much as possible (a few hours a day), but almost entirely from reservoir, which is 73.75" down. Emergency line from the James River should be completed by 9/13.
2171250	Stoney Creek Sanitary District	well	M	S: Well yield is off. Authority has reduced pumping capacity by 40% based on lower water table levels. Consumers have been asked to conserve water since February. Process of developing new 250 gpm well and water treatment plant.
5011050	Town Of Appomattox	Wells	M	S: Well levels have stabilized. Well outputs have dropped to 78 % of safe yield. New well was put on line.
2163550	Maury Service Authority	Maury River	M	S: Water level approximately 6 ft above the intake.
6153675	Quantico- Mainside	Lunga Reservoir/ Breckenridge reservoir	V	S: Water Level - Lunga 20 inches below overflow; Breckenridge 27 inches below overflow.
5009050	Town Of Amherst	Buffalo River	M	S: Water is being released from a County-owned upstream reservoir into the Buffalo River to provide water for the Town. Town is planning to drill well to supplement supply.
3800787	City Of Suffolk	Route 17 Corridor	M	S: This system is consecutive to (purchases water from) the Portsmouth system.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
3550050	Chesapeake - Western Branch System	Western Branch system	M	S: This portion of the city is consecutive to (receives water from) the city of Portsmouth. Purchased water from Portsmouth at the beginning of August was averaging 3.4 MGD. After reducing the service area on 8/14/02 purchased water averaged 2.15 MGD. A decrease of 1.25 MGD.
3550052	Chesapeake - South Norfolk System	South Norfolk system	M	S: This portion of the city is consecutive to (receives water from) the city of Norfolk. Purchases from Norfolk increased from 3.8 MGD to 4.3 MGD after the service area was enlarged to lessen the burden on Portsmouth. The normal average purchased water from Norfolk was 3.6 MGD. This volume should decrease once the service area decreases.
5147450	Town Of Farmville	Appomattox River	M	S: The river is holding steady at about 35-inches. The short term appears stable. They have reevaluated the average reduction in usage, and noted that it fluctuates more than originally indicated. Usage has dropped approximately 50,000 to 100,000 GPD less than normal. They still aren't using the Holiday Lake siphon. The 2 emergency wells are awaiting the completion of analyses.
2003675	RWSA - Scottsville WTP	Totier Creek Reservoir	M	S: The Rivanna Water and Sewer Authority's Totier Creek Reservoir is approximately 2 feet below full. There is adequate water to meet normal daily demands and no problems are reported.
3595250	Emporia	Meherrin River	M	S: The reservoir is full.
2125650	Nelson County Service Authority - Schuyler	Johnson's Branch	M	S: The NCSA - Schuyler waterworks source water is obtained from Johnson's Branch. The flow is currently approximately 10 gpm (normal treatment capacity is 70 to 90 gpm). Withdrawal from Rockfish River has been initiated to supplement the flow from Johnson's Branch. They are currently meeting the normal daily demand with water from the Rockfish River.
2125325	Nelson County Service Authority - Lovingston	Drilled wells	M	S: The NCSA - Lovingston waterworks source water is obtained from 10 drilled wells. They are currently operating at approximately 65% of normal available production. Available production is equal to or slightly below the daily demand and tank levels are dropping. The Authority has brought an additional well on line to increase production. Supplemental water hauling has been necessary.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
2125202	Johnson's Senior Center	Drilled Wells	M	S: The Johnson's Senior Center waterworks provides water to 35 nursing home residents in Nelson County. Over the past several weeks, the well production has not met the normal daily demand. Sufficient water is available for flushing toilets and bathing but bottled water is being brought in for drinking and cooking.
4075735	James River Correctional Center	Beaverdam Creek and the James River	M	S: The flow in the primary source of water (Beaverdam Creek) is now overflowing the dam without being augmented by water pumped from the James River. As of September 10, the flow over the dam was minimal, so this condition may not last much longer (meaning they would have to resume pumping from the river).
5780600	Town Of South Boston	Dan River	M	S: The Dan River rose ~15-inches above that of 2 weeks ago. It fluctuates based on upstream activity. They are utilizing the Governor's conservation guidelines, but noted that little reduction in demand has been observed. The Town has no problem withdrawing water, but is considering addition sources such as wells or a modification in there raw water intake structure should conditions worsen.
4760100	City Of Richmond	James River	M	S: The current flow in the James River has fallen since the recent rains. Flow rates are currently about 560 cfs per USGS. Richmond is having no problems with water withdrawals.
4075630	Pagebrook (Goochland)	Groundwater	M	S: Sydnor continues to haul 2 tanker loads of water per week (5,000 gallons).
6113200	Town Of Madison	White Oak Run	M	S: Stream flow is below normal, but no adverse impact on water treatment plant to this point.
6137500	Wilderness WTP	Rapidan River	M	S: Stream flow is below normal and continues to drop. Level being monitored daily. No impact on water treatment plant to this point.
2171750	Strasburg, Town Of	North Fork Shenandoah River	M	S: Stream flow continues to drop - at 60 cfs (38.7 MGD) on 9/11; intake exposed but water level still above 1999 drought levels; considering measures to raise intake water levels; maintaining normal pumping rates.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
2043250	Boyce-Millwood	Prospect Hill Spring	M	S: Spring yield is down from normal historical levels. Grouting of the outside area around the spring enclosure has stopped some of the water loss. Development of additional water sources is being investigated
1071525	Marville Subdivision	spring	N	S: Spring is low to dry; Giles County is hauling water to residents.
6177280, 6177300	Spotsylvania County	Ni River Reservoir and Motts Run/Rappahannock River	M	S: Spotsylvania County declared a water emergency in mid November 2001 and instituted mandatory conservation (vehicle washing at homes not allowed). Ni River Reservoir is 60% full (below normal for this time of year). Motts Run Reservoir is 76% full (below normal for this time of year). Flow in Rappahannock River is at 4% mean annual flow.
2840500	Winchester, City Of	North Fork Shenandoah River	M	S: River levels below normal; not noticeable impact; normal pumping rates being maintained; steam flow in excess of 65 cfs at intake.
2043634	Mount Weather	Shenandoah River (Main Branch)	M	S: River levels below normal but not having noticeable impact; sufficient water over intakes; maintaining normal pumping rates.
2171850	Woodstock, Town Of	North Fork Shenandoah River	M	S: River levels below but are adequate; not yet having noticeable impact; intake has sufficient water available.
2043125	Berryville, Town Of	Shenandoah River (Main Branch)	M	S: River levels are 1/2 normally expected levels but not having noticeable impact as intakes have sufficient water over them; are maintaining normal pumping rates; level still above 1999 drought level.
5083550	Town Of Halifax	Banister River	M	S: Reservoir has no overflow but is near full and holding steady.
5690400	City Of Martinsville	Beaver Creek Reservoir	M	S: Reservoir has held steady for last week or so--in order to help reduce loss in reservoir (at one point was ~0.1" every two days), the City continues to use Leatherwood source along with reservoir and pumping at ~2 MGD from this source--has been holding up since recent rainfall
5117800	Town Of South Hill	Meherrin River	M	S: Overflow of dam occurred this past weekend after last weeks' rain; water is now slightly below top of dam. Conservation measures and the return to wells at the Towns of Brodnax and LaCross has reduced the demand on this water plant by ~130,000 GPD. The new Roanoke River Service Authority plant is scheduled for completion in the next couple of days. Once in operation the South Hill plant will be shut down.

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5135110	Town Of Burkeville	7 wells	M	S: One well has lost production others showed signs of stress. Water conservation in place for ~2 months. At reduced output wells seem to be working satisfactorily.
5135100	Town Of Blackstone	Nottoway River Reservoir	M	S: Nottoway Reservoir is full with some overflow.
2560100	Clifton Forge Town Of	SMITH CREEK	M	S: Normal for this time of the year. Reservoir level is 40 feet (Full Pond).
2580100	Covington City Of	JACKSON RIVER	M	S: Normal for this time of the year. Jackson River flow is 276 cfs.
3095490	James City Service Authority Central System		M	S: No significant impact on water levels in wells.
3183550	Jarratt	Nottoway River	M	S: No quality or quantity problems noted. The river level is slightly higher after the recent rains.
3670800	Virginia-American, Hopewell	Appomattox River/James River	M	S: No problems with water quantity. Dissolved minerals have increased slightly, with some effect on industrial consumers. Water quality is still fluctuating with changes in the tide.
6061600	Town Of Warrenton	Warrenton Reservoir	M	S: Main reservoir is near normal level for this time of year. Town has upstream reservoir that is still at overflow.
6047500	Town Of Culpeper	Lake Pelham	M	S: No problems at this time. Reservoir is near overflow.
2165060	Broadway, Town Of	North Fork Of Shenandoah, Linville Creek	M	S: N. Fork and Linville approximately 1 foot above the intakes. Are using Linville creek only at this time.
2165045	Bridgewater, Town Of	North River	M	S: Lowest observed in 25 years, several feet above the intake, approximately 11 MGD at the intake.
6033425	Lake Caroline	Lake Caroline	M	S: Lake Caroline is 20 inches below normal level.
6033100	Caroline	Campbell's Creek (groundwater)	M	S: Hauling water (approx. 10,000 GPD) from county system. New well sites approved in March and July 2002. Waterline extension from county being considered.
5143114	Town Of Chatham	Cherrystone Creek	M	S: For 1st day since recent rainfall received, noted drop in creek flow on 9/10/02 and have reduced flow rate through plant.
5089376	Fieldcrest Cannon WTP	Smith River	M	S: Flow subject to release from Philpott Dam.
5089852	Upper Smith River WTP	Smith River	M	S: Flow subject to release from Philpott Dam.
5007030	Amelia Academy	Well No.1(bored)	M	S: Existing well is very low.
2069250	Frederick County Sanitation Authority	Diehl WTP - Stephens City Quarry Northern WTP - Clearbrook Quarry (Pit 2)	M	S: Diehl WTP - Stephens City quarry levels have remained steady - level fluctuating 1-2 feet; continue to purchase water from Winchester (>50% daily use). Northern WTP - Clear Brook Quarry (Pit 2) not in use as WTP not yet in operation.

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6685100	City Of Manassas	Lake Manassas (Broad Run)	N	S: Current Water Level - 285.43 feet; Max is 290 feet. Stage 1 conservation (voluntary starts at reservoir elevation 281.49 feet).
6107300	Leesburg	Potomac River	V	S: Current river level at 187.0 feet. Normal level is 187.50 feet. Leesburg intake is located upstream of the FCWA and Wash. Met. Intakes. Signs requesting voluntary conservation have been placed around town and on town website.
5089487	Marrowbone Cr. WTP	Marrowbone Creek	M	S: Creek is flowing over check dam and plant operating at design capacity of 1 MGD. Have not pumped from upstream reservoir since before rain received in area last week; using interconnections with City of Martinsville to supplement system.
5031050	Town Of Altavista	Staunton River, Reed Creek	M	S: Creek intake not in use because water level is too low; The two springs have lost capacity.
5590100	City Of Danville	Dan River, Schofield Dam	M	S: City is having no problems meeting their average demand of 7.0 MGD.
1077240	Town Of Fries	Eagle Bottom Creek & New River	N	S: As of 8/7/02 began the unusual practice of pumping from New River due to low creek level.
5141640	Town Of Stuart	South Mayo River	M	S: About 1.5 inches overflowing spillway.
5067840	Town Of Rocky Mount	Blackwater Creek	M	S: .5 inches overflow at the check dam. If necessary the plant could cut back pumping rate and extend operating hours to maintain flow.
2660345	Harrisonburg, City Of	Riven Rock_Dry River, North River, Silver Lake	M	S: Sufficient water over the intakes, Silver Lake and Dry River not in use. Switzer, Riven Rock, and North River in use.
2165300	Food Processors	North Fork Shen	M	S: Several feet above the intake, water is approximately at the level of the dam with very little flowing over the spillway.
5031150	CCUSA	Otter River	M	S: River is 32" down only 16" above intake screen; terminal reservoir is full.
5031175	Town Of Brookneal	Phelps Creek Reservoir	M	S: Reservoir overflow 75,000 GPD. Estimated reserve below spillway 287 days.
5037300	Town Of Keysville	Spring Creek Impoundment	M	S: Reservoir is still a few inches down but holding steady.
5031200	Dan River, Inc. - Brookneal Plant	Falling River	M	S: Less than 1 inch of water over spillway, though intakes still adequately covered.
5025450	Town Of Lawrenceville	Great Creek	M	S: Great Creek Reservoir is still below normal but is holding steady.
4085398	Hanover County	North Anna River , wells, and purchased water from the City of Richmond	M	S:
4999999	Henrico County	purchased from the City of Richmond	M	S:

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5111800	Town Of Victoria	Nottoway Falls & Lunenburg Lake	M	B: Water is flowing over dam slightly after 4-inches of rain last week
4041035	Appomattox River Water Authority	Lake Chesdin	M	B: The water level is 52 inches below the top of the dam. A week ago, the level was 58 inches below the top of the dam.
2003263	Forest Lodge Water Company	Drilled Well	M	B: The Forest Lodge Water Company provides water to 37 single-family residences in Albemarle County. Over the past several weeks, the well production has not met the normal daily demand. A new well has been drilled and is online - all indications are the problem has been solved.
2015200	Augusta County Service Authority-Deerfield	Deerfield Spring	M	B: The Deerfield Spring is drying up and reduced to a small pool in the reservoir. The new suction intake is not adequately located to maximize water collection and is being adjusted. The reservoir housing leaks and the owner (USFS) has denied requests for previous repairs that would allow for the capture and retaining of additional waters. A supplemental well has been drilled and is in the process of being tested.
6137500	Town Of Orange	Rapidan River	M	B: Stream flow is below normal, and dam repair is underway to reduce lost water. Water currently overflowing check dam.
6107200	Town Of Hillsboro	GWUDISW (Spring)	V	B: Spring flow has declined to approx. 3.25 gpm. New well site approved several months ago and well drilled July 6-8, 2002, using DWSRF planning grant money; yield approx. 8 gpm. Well temporarily connected to system. Culpeper Field Office continues to work with town to get well permanently connected ASAP.
5135160	Town Of Crewe	Lazerretto Creek/Crystal Lake	M	B: Reservoir is full but doesn't overflow the spillway when operating the water treatment plant; They have lifted some restrictions on water use but are still utilizing the Governor's guidance criteria. They will return to more restrictive conservation measures if the reservoir falls more than 6-inches below the overflow. They plan to study the possible construction of a secondary reservoir and a waterline between Blackstone and Crewe.
5680200	City Of Lynchburg	Pedlar Reservoir	M	B: Pedlar Reservoir is 140.5" down - Drawing 100% of water from James River. No water flowing into the reservoir.
5117310	Town Of Clarksville	Kerr Lake	M	B: Kerr Lake is approximately 6 feet below normal pool. Expected to drop due to dam discharge.

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2015150	Craigsville	spring	M	B: Craigsville spring production off/well production off. Construction completed for interconnecting water line with Augusta Springs.
2015575	South River S.D. (ACSA)	Coles Run	M	B: Coles Run reservoir level is reported to be almost full. No impact on system due to multiple sources.
5143210	Town Of Gretna	Georges Creek Reservoir	M	B: As of 9/10/02, the Town reservoir flowing over spillway; Pumping from temporary impoundment of tributary to Whitethorn Creek, south of the Town suspended on 9/6/02. Town started pumping water from a spring into the reservoir but was drawn down and so this was suspended for now.

APPENDIX I

Virginia Department of Health Field Office Reports for Public Water Systems (September 19, 2002)

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N:No M:Mandatory V:Voluntary	Situation B:Better, S:Same, W:Worse
6137500	Town of Orange	Rapidan River	M	W: Stream flow is very low, and temporary raw water pumps are again being used to get water to intake. Dam repair halted due to permitting issues, but town hopes to resume soon. Emergency raw water source near Culpeper has been sampled and no adverse contamination revealed. Emergency plans being made to pump raw water through surface-laid pipe 20 miles to town's WTP.
4075735	James River Correctional Center	Beaverdam Creek and the James River	M	W: The flow in the primary source of water (Beaverdam Creek) must now be augmented by water pumped from the James River. Besides supplying water to its normal customers, this WTP is now supplementing the water supply at Nottoway Correctional Center in Nottoway County. Approximately 25 truckloads of water @ 6500 gallons per load are being hauled daily. This has been going on for about 3 weeks. Hauling is necessary because the Town of Crewe has reduced its allocation to the Nottoway Correctional Center from 270,000 GPD to 100,000 GPD. Mandatory water conservation is in effect for the correctional units. They are on "code yellow".
4127115	The Colonies	Groundwater	M	W: The groundwater level has decreased markedly over the past weeks. A few weeks ago, it was 40 feet over the well pumps in both wells. As of 9/18/02, it was 11 feet over the well pump in one well and 6.5 feet over the well pump in the other well. Voluntary water conservation was instituted today (9/18/02) that goes beyond EO 33 restrictions.
2003600	Charlottesville/Albemarle County	Sugar Hollow and Ragged Mountain Reservoirs (Observatory WTP)	M	W: The Sugar Hollow reservoir (Observatory WTP) is 10.1 feet below overflow. Ragged Mountain reservoir is 10.1 feet below normal. Overall, source water availability is at 56.8% of "full available capacity" (this includes both the South Rivanna system and the Sugar

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				Hollow/Ragged Mountain system).
2003725	Charlottesville/Albemarle County	South Rivanna (South Rivanna WTP)	M	W: Their main reservoir-South Rivanna (South Rivanna WTP) is 5.4 feet below full. Overall, source water availability is at 56.8% of "full available capacity" (this includes both the South Rivanna system and the Sugar Hollow/Ragged Mountain system).
2065250	Fluvanna Correctional Center	Mechunk Creek	V	W: The raw water impoundment is approximately 40.0% full (16 MGD available, 40 MG full capacity) and dropping. The facility is using approximately 120,000 GPD of finished water and is currently unable to pump raw water from Mechunk Creek. The DOC began to haul 20,000 GPD of treated water from Lake Monticello Water Company on September 17, 2002
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	M	W: As of 09/16, reservoirs are at 56% of useful capacity. This is a 1 % drop since 09/03. Historic avg. capacity for this time of year is 88%. Both emergency wells are ON, pumping an average of 7.5 MGD. City Council voted to establish Mandatory Conservation (Condition II) at meeting of 07/09/02. An interim conservation step, before going to Condition III, will be brought before City Council should the reservoir capacity drop to 50%. Interim conservation step imposes a 25% surcharge on all customers who exceed 600 cu. ft. (avg. 74 GPD) per bimonthly billing cycle. Condition III trigger occurs when reservoir capacity reaches 40%. Condition III imposes a more severe rate penalty. Both the interim step and Condition III must be passed by City Council prior to implementation.
5111450	Town of Kenbridge	Flat Rock Creek & reservoir	M	W: The reservoir continues to drop in level. The 1.5 inches of recent rain did not help much due to recent fire demands and related problems. The estimate is < 95 days of available water. Flat Rock Creek is flowing full with a good overflow of the dam, however, no water can be pumped into reservoir until contaminates from a fire last Friday at a door finishing plant can be flushed from the creek. They used ~250,000 gallons putting out the fire. Additional samples will be collected early tomorrow to see if pumping from the creek can resume Wednesday.

