WELLHEAD PROTECTION PLAN

FOR

Onslow County Public Utilities

PWS ID # 04-67-035

December 14, 2002

Contact Name: Karen Wallace
Position: Operator in Responsible Charge
Phone: 910-455-0722
Fax: 910-455-2587
Address: 228 Georgetown Road
Jacksonville, NC 28540

NC RWA

BACKGROUND

In 1986, Safe Water Drinking Act (SWDA) amendments added Section 1428, "State Programs to Establish Wellhead Protection Areas", which requires each state to develop a program to "protect wellhead areas within their jurisdiction from contaminants which may have any adverse affects on the health of persons." The term wellhead protection area is defined in the law as "the surface and subsurface area surrounding, a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield." North Carolina's Environmental Protection Agency (EPA) approved Wellhead Protection Program (WHPP) provides technical support to local governments and public water supply systems in their endeavors to develop and implement their own Wellhead Protection Plans.

North Carolina's objective in developing a protection plan is to provide a process for public water system operators to learn more about their groundwater systems and how to protect them. Wellhead Protection Plans allow communities to take charge of protecting the quality of their drinking water by identifying and carefully managing areas that supply groundwater to their public wells.

Regulations of the **North Carolina Division of Environmental Health (NCDEH)** require wellhead protection measures for any public water supply wells to be used as a community or non-transient, non-community water system to meet the following requirements:

(1) The well shall be located on a lot so that the area within 100 feet of the well shall be owned or controlled by the person supplying the water. The supplier of water shall be able to protect the well lot from potential sources of pollution and to construct landscape features for drainage and diversion of pollution.

(2) The minimum horizontal separation between the well and known potential sources of pollution shall be as follows:

- (a) 100 feet from any sanitary sewage disposal system, sewer, or a sewer pipe unless the sewer is constructed of water main materials and joints, in which case the sewer pipe shall be at least 50 feet from the well;
- (b) 200 feet from a subsurface sanitary sewage treatment and disposal system designed for 3000 or more gallons of wastewater a day flows, unless it is determined that the well water source utilizes a confined aquifer;
- (c) 500 feet from a septage disposal site;
- (d) 100 feet from buildings, mobile homes, permanent structures, animal houses or lots, or cultivated areas to which chemicals are applied;
- (e) 100 feet from surface water;
- (f) 100 feet from a chemical or petroleum fuel underground storage tank with secondary containment;
- (g) 500 feet from a chemical or petroleum fuel underground storage tank without secondary containment;
- (h) 500 feet from the boundary of a ground water contamination area;
- (i) 500 feet from a sanitary landfill or non-permitted non-hazardous solid waste disposal site;
- (j) 1000 feet from a hazardous waste disposal site or in any location which conflicts with the North Carolina Hazardous Waste Management Rules cited as 15A NCAC 13A;
- (k) 300 feet from a cemetery or burial ground; and
- (l) 100 feet from any other potential source of pollution.

(2) The Department may require greater separation distances or impose other protective measures then necessary to protect the well from pollution; the Department shall consider as follows:

- (a) The hazard or health risk associated with the source of pollution;
- (b) The proximity of the potential source to the well;

(c) The type of material, facility or circumstance that poses the source or potential source of pollution;
(d) The volume or size of the source or potential source of pollution;
(e) Hydrogeological features of the site which could affect the movement of contaminants to the source water;
(f) The effect which well operation might have on the movement of contamination;
(g) The feasibility of providing additional separation distances or protective measures.

(3) The lot shall be graded or sloped so that surface water is diverted away from the wellhead. The lot shall not be subject to flooding.

(4) When the supplier of water is unable to locate water from any other approved source and when an existing well can no longer provide water that meets the requirement of this Subchapter, a representative of the Division may approve a smaller well lot and reduced separation distances for temporary use.

In addition to this delineation, communities are encouraged to establish wellhead protection plans, which include the following:

1) The formation of a wellhead protection committee to establish and implement the wellhead protection program whose role it is to conduct a potential contaminant source inventory, provide options for the management of the WHP area, seek public input into the creation of the WHP plan, seek approval of the WHP program and to implement the WHP program;

2) Development of a public education program;

3) Delineation of the contributing areas of the water sources;

4) Identification of potential contamination sources within the wellhead protection area;

5) Develop and implement wellhead protection area management actions to protect the water sources;

6) Develop an emergency contingency plan for alternative water supply sources in the event the groundwater supply becomes contaminated and emergency response planning for incidents that may impact water quality;

7) Conduct new water source planning to insure the protection of new water source locations and to augment current supplies.

Wellhead protection for public water supply wells is a voluntary program, but water systems across the state are encouraged to take the above steps in protecting all groundwater sources.

A copy of this plan should be forwarded to the Public Water Supply Section (PWSS) for their review and recommendations. The PWSS will provide the final approval for WHP Programs. Plans should be submitted to:

M. Gale Johnson, L.G.
Public Water Supply Section
1634 Mail Service Center
Raleigh, North Carolina 27699-1634
Phone 919-715-2853
Fax 919-715-4374

INTRODUCTION

Onslow County is located in the southeastern coastal area of North Carolina. According to the North Carolina Cooperative Extension website "Onslow County is rather unique, particularly for a coastal county, in that no water enters from another county. Onslow's New River….begins and ends within Onslow. Water in the western portion of Onslow flow west toward the Cape Fear River. Water in the eastern portion of Onslow flows east toward the White Oak River. The remainder of the county supplies water to the New River." Topography of the county is relatively flat with land surface elevations at well locations ranging from 29 to 92 feet above sea level. Camp Lejeune Marine Corps Base occupies a large portion of the county. Onslow County Public Utilities (OCPU), PWS ID # 04-67-035, operates twenty-one wells at present that are located throughout the county and provide water to 101,851 persons as of August 31, 2003, via approximately 36,523 connections. OCPU's wells currently withdraw water from the Black Creek, Pee Dee, Beaufort and Castle Hayne aquifers. There are plans underway to increase the number of wells at the Hubert and Dixon plants, which withdraw water from the Castle Hayne aquifer, in order to satisfy requirements of the Central Coastal Plain Capacity Use Area Rule. Average daily water usage of the system is 6,522,000 gallons per day and treatment of this water includes chlorination, fluoridation and iron and manganese removal. The Onslow County Department of Public Utilities (OCPU) consists of many interrelated system components that make up the water system. The major system components or infrastructure includes two (2) major treatment facilities, twenty-one (21) wellheads, four (4) booster stations, eight (8) elevated water storage tanks, two (2) clear wells, the OCPU Administration Building, approximately 1000 miles of transmission and distribution lines, a vehicle fleet, and associated field equipment currently operated by sixty-two (62) full-time employees and one (1) part-time employee. Four (4) full-time positions are currently vacant, making a total of sixty-six (66) full-time employees, as of August 31, 2003. Storage tanks and capacities for the system are provided below:

Tank	**Capacity (gallons)**
Hubert	300,000
Tiara Yacht	250,000
Pumpkin Ceneter	750,000
Catherine Lake	300,000
Gumbranch	300,000
South West	500,000
Sneads Ferry	750,000
Burton Park	500,000
Hubert & Dixon Ground	500,000
Total	**4,150,000**

THE PLANNING TEAM

The following people have been designated as Onslow County Public Utilities (OCPU) Wellhead Protection Committee (WPC).

Name	**Position**
Ms. Karen Wallace	Operator in Responsible Charge
Mr. Peter Deaver	Technical Director
Mr. Eddie Caron	Wells Supervisor
Ms. Debbie Maner	North Carolina Rural Water Association

The positions responsible for implementing the plan are the Board of Directors. They have accepted the recommendations made in the program by the WPC. Implementation of the plan will begin immediately following its approval by the Public Water Supply Section of NCDENR and will be completed within ninety (90) days. The Operator in Responsible Charge has been granted authority by the Board of Directors to implement the plan and to approve any changes that may be necessary in order to receive approval of the plan by the state. Documentation stating such is included with this plan.

DELINEATION OF THE WELLHEAD PROTECTION AREA

The proposed revisions to the delineation methods of North Carolina's Wellhead Protection Program were used to delineate OCPU's Wellhead Protection Areas (WHPAs). The revisions recommend that the aquifer-source volume method based upon a ten-year time of travel be used to delineate their WHPAs. This can be estimated by using (1) groundwater velocity, or (2) the volume of aquifer from which the withdrawals are derived. Lack of information precludes the determination of groundwater velocity, so a method that involves calculation of the volume of aquifer from which the withdrawals are derived is used. That calculation is as follows.

$$V=Q\{gal/min\}xT\{min/day\}x\{ft^3/7.48\ gal.\}x\{365.25\ days/year\}x\{P(years)/n\}$$

Where V = the volume of aquifer in ft^3 that supplies withdrawals for period P,
Q = well yield in gallons per minute,
T = the daily pumping periods in minutes per day,
P = period of withdrawals in years,
n = the estimated porosity, dimensionless

Using a daily pumping period T of 720 minutes per day, a period of withdrawal P of 10 years, and an estimated porosity of .18 for sandy soils, the above equation reduces to:

$$V = 1{,}953{,}209 \times Q$$

The radius of the Wellhead Protection Area is determined using the following equation:

$$r = \sqrt{V/\pi b}$$

The table below shows the radius used to delineate the WHPA around each of Onslow County's wells.

Well #	Q(gpm)	T(min/day)	P(yrs)	Porosity (n)	V(ft3)	b (length of screened interval)	WHPA Radius (ft)	
1	832	720	10	0.18	1625069555	40	3596.089875	
2	840	720	10	0.18	1640695224	130	2004.318969	
4	625	720	10	0.18	1220755375	100	1971.237164	
5	855	720	10	0.18	1669993353	150	1882.50569	
6	820	720	10	0.18	1601631052	100	2257.905679	
7	800	720	10	0.18	1562566880	116	2070.688963	
8	800	720	10	0.18	1562566880	100	2230.200266	
9	660	720	10	0.18	1289117676	100	2025.679988	
10	650	720	10	0.18	1269585590	21	4386.780464	
11	800	720	10	0.18	1562566880	92	2325.144508	
12	800	720	10	0.18	1562566880	129	1963.581845	
13	435	720	10	0.18	849645741	293	960.7484403	4715
14	150	720	10	0.18	292981290	260	598.9048435	2769
H1	1060	720	10	0.18	2070401116	70	3068.335059	
H2	1100	720	10	0.18	2148529460	67	3194.903985	
H3	700	720	10	0.18	1367246020	31	3746.856348	
H4	900	720	10	0.18	1757887740	34	4056.772616	
D1	1212	720	10	0.18	2367288823	21	5990.189097	

D2	750	720	10	0.18	1464906450	43	3293.026864	
D3	305	720	10	0.18	595728623	29	2557.112237	
D4	1300	720	10	0.18	2539171180	47	4146.881421	

OCPU operates a total of twenty-one (21) wells located throughout the county. In some cases the wells were located far enough away from each other so that the delineations resulted in individual circular WHPAs around each well, but wells 1 and 2, 10 and 11, the Hubert wells, and the Dixon wells, are in very close proximity to each other or are in clusters. In these cases, WHPAs were connected and delineated using the area that was the result of combining the pumping rates of those wells. Also taken into consideration were any hydrologic boundaries that might exist. The NCGS maps 1:12000 and 1:24000 scale on the following pages show Onslow County's WHPAs.

POTENTIAL CONTAMINANT SOURCE INVENTORY

Windshield Survey – The WPC conducted a windshield survey of the entire WHPA and identified each potential contamination source (PCS) facility or activity that might exist within the WHPA. Onsite visits were made and additional information was obtained regarding quantity and types of contaminants kept on site. The Potential Contaminant Source list shows the sources identified during the inventory along with quantities and types of contaminants found at the site. Each potential contaminant site was assigned a code that was used to locate it on the inventory map. The inventory maps in this section show the location of each of the potential contaminant sources within the WHPA. The code given each site is based on the following list:

01 Abandoned Wells
02 Aboveground Storage Tank
03 Airport
04 Agricultural Facilities
05 Animal Feedlot/Waste Storage
06 Asphalt Plant
07 Auto Repair
08 Body Shop/Salvage
09 Car Washes
10 Cemetery
11 Chemical Production
12 Chemical Mixing/Storage
13 Drainage Canal
14 Dumps
15 Electroplaters/Metal Finishers
16 Fertilizer/Pesticide Storage
17 Fertilizer/Pesticide Production
18 Fertilizer/Pesticide Mixing
19 Funeral Homes
20 Gas Stations
21 Golf Courses
22 Grain Storage Bin
23 Holding Pond/Lagoon
24 Inactive/Abandoned Hazardous Waste Sites
25 Injection Wells
26 Laboratories
27 Laundromat/Dry Cleaners
28 Lift Stations
29 Machine Shops
30 Major Highways
31 Major Railroads
32 Military Bases
33 Mining
34 Nurseries
35 Oil/Gas Pipeline
36 Oil Wells
37 Photo Processor
38 Printer
39 Power Lines
40 Other Wells
41 Refineries
42 Refinishing
43 Road Salt
44 Septic Systems
45 Substations
46 Surface Water
47 Sewage Plant
48 Underground Storage Tanks
49 Waste Piles
50 Wood Preserving

Other (Specify)
51 Groundwater Remediation Site
52 Transfer Station
53 Auto and Boat Storage
54 Concrete Manufacturing
55 Discharge

Several state and federal databases were searched. A list of those databases is included in the Appendix. Information about the incidents that occur within the WHPA is provided below:

Underground Storage Tank Section

When a site is recommended for State Lead it means that the state is not able to determine what party is responsible for the contamination at the site, and the site is put on a list of sites that the state will use the State Trust Fund monies that exist to clean up the contamination.

A Notice of No Further Action required means that a qualified Hydrogeologist has studied the conditions at the site and determined that any contamination has been remediated to groundwater standards below those found in NCAC Title 15A, Subchapter 2L Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina.

There were two incidents listed in the **Underground Storage Tank Section's PIRF** database that are located within Onslow County's WHPAs. They are GW Incidents #s 8116 and 23088 (Map Code 3A, within WHP Zone 1 & 2), and are both located on the Albert J. Ellis Airport property. According to the UST Section of the Wilmington Regional Office, incident # 23088 was issued a Notice of No Further Action Required with a Notice of Residual Petroleum and Deed Restrictions to groundwater and soil usage, after 2,300 tons of soil was removed from the site. A monitoring report submitted to the state in April of 1993, showed groundwater contamination at the incident 8116 site to be at 26 ppb. benzene, when the 2L standard for benzene is 1 ppb. The incident manager for the site is proposing to issue a Notice of No Further Action Required with a Notice of Residual Petroleum and Deed Restrictions for this incident also.

Division of Water Quality

S.T. Wooten Corp. – Jacksonville Ready Mix Plant (Map Code 54A, Hubert Zone)
117 Starling Road
Hubert, NC
Tier II Permit # 13C9262BD1BF63F385256A0700689FCA

Onslow County Water – Dixon Plant (Map Code 55A, Dixon Zone)
6661 Wilmington Highway
NPDES – NC0083551
Tier II - 2864FEAE6287E690852569EC004B0EC2

Onslow County Water – Hubert Plant (Map Code 55A, Hubert Zone)
374 Hubert Blvd
NPDES – NC0083321
Tier II - CCC49B25170ADC17852569EC004B0ECB

Martin Marietta – Onslow Quarry (Map Code 34A, Zone 10 & 11)
131 Duffy Field Road
NPDES Permit # NCG020255

POTENTIAL CONTAMINANT SOURCES

The tables below show the potential contaminant sources (PCSs) that were identified during a windshield survey of each of the Wellhead Protection Areas. Additional information such as quantity and types of contaminants that might be located at the site was also recorded by the Wellhead Protection Committee during the survey.

Well #	**Zone 1&2**				**Inventory By**	**Bobby Dail Alex Eleen Debbie Maner**
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
53A	Airport Rd. Mini Storage Catherine LkRd 347-9600	BJT Enterprise 1027 Harrels Loop Rd Jacksonville	Auto & Boat Storage	Small Amounts	34.83112	-77.58115
20A 49A	Scotchman #45 2347 Catherine Lk Rd Richlands 28574 324-5944	Worsley Co. POBox 3227 Wilmington,NC 28406-0227	UST ID 0-02-0164	1>3500 gals 2< 3500 gals	34.82816	-77.57820
47A	Floyds Pond Catherine Lk Rd	Ken Taylor PO Box 7544 Wilmington	Surface Water	3 Acres	34.82856	-77.57762
		Christopher Davis 2354 Catherine Lk RD Richlands 324-7932				
		Phylis Carter 104 Edgewatger Lane Richlands 324-5069				
		Richard Raymo 100 Edgewater Lane Richlands 324-6648				
		Vision Developers Po Box 1685 Jacksonville				
		Charles Fend 146 Township Line Butler PA				
47B	Unamed Pond 2341 Catherine Lk Rd	Lee Klimala 2341Catherine Lk Rd Richlands 324-4844	Surface Water	2 Acres	34.82791	-77.57745

10A	Willford Family Cemetary Old Fountain Rd	Dorthy McCabe 2464 Catherine Lk Rd Richlands	Unknown	1/2 Acre	34.83495	-77.58465
8A	134 Old Fountain Rd	Cecil Rose Jr 134 Old Fountain RD Richlands	Body Shop Salvage Yard	1/2 Acre	34.83984	-77.58575
3A	Albert J Ellis Airport 264 Albert Ellis Airport Rd	Onslow County 118 Old Bridge St Jacksonville 347-4717	Jet Fuel Spills Leech Field GW Incidents # 8116 And 23088	Small Amounts	34.82994	-77.60597

Well #	4				Inventory By	Bobby Dail Alex Eleen Debbie Maner
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
47A	148 Duck Pond Lane	Sheryl Snider 148 Duck Pond Lane Richlands	Surface Water	1/2 Acre	34.79288	-77.55052
47B	115 Duck Pond Lane	Aaron Fisher 513 Firetower Rd Richlands 346-3320	Surface Water	1/2 Acre	34.79264	-77.55315
47C	141 Duck Pond Lane	Jewel Bean 141 Duck Pond Lane Richlands 455-8977	Surface Water	1/2 Acre	34.79302	-77.55075

Well #	5				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
5A	Letroy Gurganus 380 Franktown Rd. Richlands, NC 324-4750	Letroy Gurganus 380 Franktown Rd. Richlands, NC 324-4750	Animal Waste	Small	34.89924	-77351354
21A	Steed Park 278 Franktown Rd. Richlands, NC	Onslow County 118 Old Bridge St. Jacksonville 347-4717	Herbicide Pesticide Fertilizer	150 Acres	34.8951	-7752096

47A	Cow Horn Creek		Surface Water	5 ft wide		

Well #	6				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
10A	Roland Turner Cemetery 664 Franktown Rd.	Betty Turner 201 Onslow St. PO Box 221 Richlands NC 324-6674	Unknown	1 Small Cemetery 1/2 Acre	34.91985	-77.5102

Well #	7				Inventory By	Bobby Dail Alex Eleen Debbie Maner
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
	No contamination sources at present time.					

Well #	8				Inventory By	Bobby Dail Alex Eleen Debbie Maner
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
23A	City of Jacksonville Spray Irrigation Waste Lagoon 716 Firetower Rd 938-5233	City of Jacksonville Po Box 128 Jacksonville 938-5233	Biological Waste Water	120 Acres	34.77371	-77.54984

Well #	9				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude

35A	Closed Green House/Nursery 5330 Gumbranch Rd	Charles Howard 5330 Gumbranch Rd Jacksonville 324-4736	Pesticides Herbicides	3 Acres	34.84466	-77.47702

Well #	Zone 10 &11				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
47A	New River	Old West Bridge Rd	Surface Water			
47B	131 Thomas Loop Rd	Gregory Steffne 131 Thomas Loop Rd Richlands	Surface Water	1 Acre	34.84067	-77.52679
8A	East Side Motors 6164 Richlands Hwy 324-3515	James Taylor PO Box 428 Richlands 324-4476	Oil Gas Lubricants	Small	34.8465	-77.53596
30A	Hwy 258		Chemical Spills			
34A	Onslow Quarry Martin Marietta 131 Duffy Field Rd 324-7430	Onslow Quarry Martin Marietta 131 Duffy Field Rd 324-7430	Lower Water Table Gas Oil NPDES Permit # NCG020255	40 Acres	34.84026	-77.53827
5A	TIC Farms 174 Thomas Loop Rd Richlands 324-1212	Willie Jarman 198 Thomas Loop Rd Richlands 324-1212	Animal Waste	Small	34.84517	-77.52139
5B	Northwest Bridge Rd Jacksonville	Billy Thomas 4024 Marshwood Lake Rd Fayetteville	Animal Waste	Small	34.84503	-77.5283
5C	261 Northwest Bridge Rd Jacksonville	Jerry Heath 175 Northwest Bridge Rd Jacksonville 324-2237	Animal Waste	Small	34.84804	-7752237

Well #	12				Inventory By	Debbie Maner Alex Eleen Bobby Dail
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude

7A	Tags Auto Repair 6940 Hwy 258 Richlands 324-5479	Thomas Gibson 828 Quail Lane Richlands 324-7640	Oil Lubricants	Small	34.87068	-7754863
4A	105 Gregory Fork Rd Richlands	Jerome Venters 1402 Cando Place Jacksonville 455-2354	Possible USTS		34.86795	-77.54797
30A	Hwy 258		Possible Spills			

Well #	13				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
5A	B&D Stables 1200 Ramsey Rd Jacksonville, NC 347-2009	Lemuel Hewitt 1200 Ramsey Rd 347-2009	Animal Waste	Small	34.82661	-77.43953
5B	173 Rustic Lane Jacksonville, NC	William Ginn 173 Rustic Lane Jacksonville, NC 455-5193	Animal Waste	Small	34.82278	77.44597
7	173 Goodson Rd	Bobby Goodson 173 Goodson Rd Jacksonville,NC 347-7919	Petroleum Products	Small	34.82135	77.44373
47A	173 Goodson Rd	Bobby Goodson 173 Goodson Rd Jacksonville,NC 347-7919	Surface Water	1 Acre	34.82135	77.44373

Well #	14				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
52A	Transfer Station 670 Ramsey Rd Jacksonville	Onslow County 118 Old Bridge St Jacksonville 347-4717	House Hold Waste Oil Paint	2 - 40 yd Dumpsters	34.81166	7740300

Well #	Dixon Zone				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quantity	Latitude	Longitude
55A	Onslow County Water Plant – Dixon 6661 Wilmington Hwy.	Onslow County Public Utilities 232 Georgetown Rd. Jacksonville, NC 28540 910-455-0722	NPDES – NC0083551 Tier II - 2864FEAE6287 E690852569EC0 04B0EC2			
20	Scotchman # 149 101 Hwy 210 Holly Ridge 478-0357	Worsley Co. PO Box 3227 Wilmington, NC 28406	UST ID 0-036157	3> 3,500	34.58979	77.47911
30	US Hwy 17		Spills			
47A	Pond Off Hwy17	The Nature Conservancy 1 University Pl Suite 290 4705 University Dr. Durham, NC 910-403-8558	Surface Water	6 Acres	34.57878	77.47331
47B	Pond Off Hwy17	The Nature Conservancy	Surface Water	6 Acres	34.57877	77.47659
47C	Pond Off Hwy17	The Nature Conservancy	Surface Water	6 Acres	34.57069	7748187
47D	Pond Off Hwy17	The Nature Conservancy	Surface Water	6 Acres	34.56354	77.4914
47E	Pond Off Hwy17	William Sullivan 109 Hwy 210 Holly Ridge 347-8817	Surface Water	12 Acres	34.55095	77.49233
47F	Pond 530 Hwy 210	Teresa & Pamela Dubrey 488 Hwy 210 Holly Ridge 327-7236	Surface Water	6 Acres	34.57515	77.45782

Well #	Hubert Zone				Inventory By	Bobby Dail Alex Eleen
Map Code	Location Address/Phone	Owner Contact Address/Phone	Potential Contaminant	Quanity	Latitude	Longitude
55A	Onslow County Water Plant – Hubert 374 Hubert	Onslow County Public Utilities 232 Georgetown Rd. Jacksonville, NC	NPDES – NC0083321 Tier II - CCC49B25170A			

	Boulevard	28540 910-455-0722	DC17852569EC 004B0ECB			
54A	Wooten Concrete 117 Starling Rd Hubert NC 577-5500	S T Wooten 3919 Hwy. 24 Newport, NC 252-393-2206	Tier II Permit # 13C9262BD1BF 63F385256A070 0689FCA Unknown	Unknown	34.70974	77.23678
20A	Scotchman # 139 101 Hwy 172 Hubert NC 353-1652	Worsley Co. PO Box 3227 Wilmington, NC 910-350-1612	UST ID 0-021332	5> 3,500 1> 3,500	34.71037	77.23321
20 B	Texaco Station 104 Hwy 172 Hubert NC	H & S Enterprise C/O J M Davis Industries Inc 201 Arendall St Moorehead City NC	UST ID 0-020429	4> 3,500	34.70992	77.23412
20 C	B P Station 461 Hubert Blvd Hubert NC 28539 353-7811	Marine Oil Co. PO Box 685 608 N.Center St. Warsaw, NC 28398	UST ID 0-022292	2> 3,500 1< 3,500	34.71517	77.22938
47 A	Queens Lake Fishing Nursery 511 Hubert Blvd Hubert NC	Frances Oakes C/O Francis Walker Johnson 511 Hubert Blvd Hubert NC	Surface Water	10 Acres	34.71586	77.22519
47 B	Unamed Pond 250 Riggs Rd Hubert NC	Land Mark Ventures Po Box 439 Hubert NC 353-2538	Surface Water	1 Acres	34.72516	77.23203
47 C	Unamed Pond 358 Riggs Rd Hubert NC	Keith DiVenincenzo 358 Riggs Rd Hubert NC	Surface Water	0.5 Acres	34.73178	77.23669
40	Electric Sub Station 114 Old NC 172 Rd Hubert NC	Jones Onslow EMC 259 Western Blvd Jacksonville NC 353-1940	Unknown		34.7119	77.23216
5	105 Lee Rogers Rd Hubert, NC	Ronald Carter 125 Lee Rogers RD Hubert NC 326-5355	Animal Waste	Small	34.7262	77.22011
8	Unamed Auto Salvage 137 Lee Rogers Rd Hubert, NC	Earnest Bright 137 Lee Rogers Rd. Hubert, NC 326-1553	Petroleum Products	Small	34.72781	77.22091

Risk Assessment - The following is an assessment of the risk posed to the wells by each of the potential contaminant sources (PCS). Quantity of contaminant, toxicity, and likelihood of occurrence were ranked higher, moderate, or lower risk, indicated by H, M and L respectively. The criteria in **Table 1**. were used to rank those risks. These three factors along with proximity to the well were taken into consideration when assessing the overall risk to each well. The proximity rank of each of the potential contaminant sources was arbitrarily assigned by the Wellhead Protection Committee. By studying the map and the PCS' proximity to each of the wells individually, the proximity rank was assigned. As explained earlier, there is some overlap in the Wellhead Protection Areas of some groups of wells. In theses incidences, a risk assessment was performed merging those wells into one assessment.

Risk	Low	Moderate	High
Quantity	0-499 gallons	500-1,000 gallons	>1,000 gallons
Toxicity	Chloride, acids, bases	Petroleum products, microbiological	Solvents, herbicides, pesticides
Likelihood of Occurrence	Subjective based on history of compliance with environmental rules		

Table 1. Risk Evaluation Criteria

Wells 1 and 2				**Likelihood Of Occurrence**	**Proximity**		**Overall Risk**	
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 1**	**Well 2**	**Well 1**	**Well 2**
Airport Rd. Mini-Storage	53A	L	M	M	L	H	L	M
Scotchman # 45	20A 49A	H	M	M	L	M	L	M
Floyd's Pond	47A	L	L	L	L	M	L	M
Unnamed Pond	47B	L	L	L	L	M	L	M
Willford Family Cemetery	10A	L	H	L	M	L	L	L
Cecil Rose Body Shop	8A	M	M	M	M	L	L	L
Albert J. Ellis Airport	3A	H	M	M	H	L	M	L

Well 4				**Likelihood Of Occurrence**	**Proximity**	**Overall Risk**
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 4**	**Well 4**
Surface Water	47A	L	L	L	L	L
Surface Water	47B	L	L	L	L	L
Surface Water	47C	L	L	L	L	L

Well 5				**Likelihood Of Occurrence**	**Proximity**	**Overall Risk**
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 5**	**Well 5**
Letroy Gurganus Property	5A	L	M	L	M	L
Steed Park	21A	M	H	M	M	M
Cow Horn Creek	47A	L	L	L	H	L

Well 6				Likelihood Of Occurrence	Proximity	Overall Risk
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 6**	**Well 6**
Roland Turner Cemetery	10A	L	H	L	M	L

Well 7				Likelihood Of Occurrence	Proximity	Overall Risk
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 7**	**Well 7**
No Contamination Sources Identified						

Well 8				Likelihood Of Occurrence	Proximity	Overall Risk
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 8**	**Well 8**
City of Jacksonville Spray Irrigation	23A	H	M	M	M	M

Well 9				Likelihood Of Occurrence	Proximity	Overall Risk
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 9**	**Well 9**
Greenhouse Nursery Closed	35A	M	M	L	L	L

Wells 10 and 11				Likelihood Of Occurrence	Proximity		Overall Risk	
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 10**	**Well 11**	**Well 10**	**Well 11**
New River	47A	H	L	L	M	L	L	L
Surface Water	47B	L	L	L	M	L	L	L
East Side Motors	8A	L	M	L	M	H	M	L
Highway 258	30A	M	M	M	M	H	M	H
Onslow Quarry	34A	L	M	M	M	L	M	L
TIC Farms	5A	L	M	L	M	L	M	L
Billy Thomas Property	5B	L	M	L	H	M	M	L
Jerry Heath Property	5C	L	M	L	M	L	M	L

Well 12				Likelihood Of Occurrence	Proximity	Overall Risk
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 12**	**Well 12**
Tags Auto Repair	7A	L	M	L	L	L
Jerome Venters Property	4A	?	M	M	L	L
Highway 258	30A	H	M	M	L	L

Well 13				**Likelihood Of Occurrence**	**Proximity**	**Overall Risk**
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 13**	**Well 13**
B & D Stables	5A	L	M	L	H	L
William Ginn Property	5B	L	M	L	L	L
Bobby Goodson Property	7	L	M	L	L	L
Surface Water	47A	L	L	L	L	L

Well 14				**Likelihood Of Occurrence**	**Proximity**	**Overall Risk**
Site	**Map Code**	**Quantity**	**Toxicity**		**Well 14**	**Well 14**
Onslow Co. Transfer Station	52A	M	M	M	H	M

Dixon Wells				Likelihood of Occurrence	Proximity				Overall Risk			
Site	Map Code	Quantity	Toxicity		D1	D2	D3	D5	D1	D2	D3	D5
Dixon WTP	55A	M	M	L	H	M	L	H	M	L	L	M
Scotchman # 149	20	H	M	H	M	L	L	M	M	L	L	M
US Highway 17	30	H	H	M	M	M	M	L	M	M	M	L
Surface Water	47A	M	M	L	M	L	L	M	L	L	L	L
Surface Water	47B	M	M	L	H	L	L	M	M	L	L	M
Surface Water	47C	M	M	L	H	H	L	H	M	M	L	M
Surface Water	47D	M	M	L	M	H	M	M	M	M	M	M
Surface Water	47E	M	M	L	L	L	M	L	L	L	L	M
Surface Water	47F	M	M	L	M	M	L	M	L	L	L	L

Hubert Wells				Likelihood of Occurrence	Proximity				Overall Risk			
Site	Map Code	Quantity	Toxicity		H1	H2	H3	H4	H1	H2	H3	H4
Hubert WTP	55A	M	M	L	H	L	L	L	M	L	L	L
Wooten Concrete	54A	L	L	L	H	L	L	L	M	L	L	L
Scotchman # 139	20A	H	M	H	H	M	L	L	H	L	L	L
Texaco Station	20B	H	M	H	H	M	L	L	H	L	L	L
BP Station	20C	H	M	H	H	M	L	L	H	L	L	L
Queens Lake Fishing Nursery	47A	M	M	L	H	M	L	L	M	L	L	L
Surface Water	47B	L	M	L	L	H	L	L	L	M	L	L
Surface Water	47C	L	M	L	L	L	H	M	L	L	M	L
Electric Substation	40	L	M	L	H	L	L	L	M	L	L	L
Ronald Carter Property	5	L	M	L	L	M	L	L	L	M	L	L
Unnamed Auto Salvage	8	L	M	L	L	M	M	L	L	L	L	L

Risk Assessment

Taking into consideration the nature and number of PCSs and the location of each PCS in relation to the well's location in each of the WHPAs, a ranking of the vulnerability of the water supply wells is as follows with the well at the highest risk being designated as number one:

Risk Assessment OCPU Wells	
HIGHER	1. Well 1
	2. Well 2
	3. Well 11
	4. Well 12
	5. Well H1
	6. Well D1
	7. Well H2
MODERATE	8. Well H3
	9. Well H4
	10. Well D2
	11. Well D3
	12. Well D5
	13. Well 5
	14. Well 8
LOWER	15. Well 13
	16. Well 12
	17. Well 14
	18. Well 9
	19. Well 6
	20. Well 4
	21. Well 7

MANAGEMENT OF THE WELLHEAD PROTECTION AREA

There are two methods of managing a Wellhead Protection Area. They are regulatory and non-regulatory. The Onslow County Public Utilities (OCPU) has chosen a non-regulatory approach, which will include the following:

A Wellhead Protection Brochure (tri-fold) will be delivered to each resident, business, agricultural operation and industry within the Wellhead Protection Area. Copies of this brochure will be made available at the Water Department and other locations deemed necessary for public education on Wellhead Protection. In general, the brochure will convey to each citizen/business the following information:

1- An explanation of what groundwater is and the number of wells in their particular system
2- An explanation of what a Wellhead Protection Program is
3- Sources of groundwater pollution
4- Tips on protecting their water supply
5- Phone numbers to contact for more information

The OCPU will provide information to each business, industry, and farm located within the WHPAs on waste handling practices, best management practices, standard operating procedures, and waste oil disposal methods which could be employed to reduce the potential for ground water contamination. OCPU will also provide information regarding the North Carolina Division of Pollution Prevention and Environmental Assistance (DPPEA) to each business, industry, and farm located within the WHPA. Owners/operators of potential contamination sources will be encouraged to contact the DPPEA. The DPPEA provides free technical and other non-regulatory assistance to reduce the amount of waste released into the air and water and on the land. The DPPEA serves as a central repository for waste reduction and pollution prevention information. The DPPEA emphasizes waste reduction through pollution prevention, encourages companies and government agencies to go beyond compliance, and provides information about the environmental permitting process. This information is provided at no charge to North Carolina businesses, industries, government agencies, and the general public upon request. For additional information, the DPPEA may be contacted at (919) 715-6500 or 800-763-0136.

Personnel at OCPU owned and/or operated facilities will be educated on Wellhead Protection and steps they can take to reduce the potential for contamination (e.g., information about best management practices, standard operating procedures, waste handling practices, etc.). OCPU will also contact the State Division of Pollution Prevention and Environmental Assistance (DPPEA) to investigate steps that the Utility can take to reduce the amount of waste released into the air and water and on the land at Utility owned and/or managed facilities.

Owners of improperly constructed/abandoned wells identified within the WHPAs will be provided information regarding the threat posed to the water supply by these wells. Owners of improperly constructed/abandoned wells will be encouraged to have these wells properly abandoned in accordance with N.C.'s well construction standards found at 15A NCAC 2C.0100, "Criteria and Standards Applicable to Water Supply and Certain Other Wells". If information exists that a well is improperly constructed or is contributing to the contamination of groundwater, the OCPU will notify the Groundwater Section, Division of Water Quality.

All owners/operators of regulated underground storage tanks (USTs) and other facilities subject to federal and/or state regulations located within the WHPA will be requested to supply documentation that their facility is in compliance with said regulations. Operators of UST's will be asked to supply OCPU with a copy of their UST permit. If any UST sites are found to be non-compliant, the Underground Storage Tank Section of the State Division of Waste Management will be notified.

If an abandoned UST site is found, OCPU will contact the North Carolina Division of Waste Management, UST Section, to determine if a closure report was submitted demonstrating that no soil or groundwater contamination was identified during the removal of UST's. If a closure report was not submitted, the

OCPU will notify the UST Section of the location of the facility within the WHPA and its proximity to a public water supply well.

For soil or ground-water contamination incidents occurring within the WHPA, the OCPU will contact the State agencies with oversight responsibilities for remediation to determine if remediation efforts are proceeding in a timely fashion and in accordance with any schedules established by these agencies. Through this process, OCPU will bring to the attention of the State agencies with oversight responsibilities for remediation any failures by the responsible parties to comply with required monitoring and corrective action. OCPU will also notify the State agencies with oversight responsibilities for remediation of the location of the facility within the WHPA and its proximity to a public water supply well.

The WPC feels that the Onslow County recycling site is adequate for household hazardous waste collection. Notification of this service will be made to those living within the WHPAs. The landfill site accepts up to 5 gallons of oil, tires, dried paint and other debris, though they do not accept liquid hazardous waste.

The North Carolina Department of Agriculture and Cooperative Extension Service periodically sponsors a pesticide collection day in Onslow County. Notification of this service will be made to residents and businesses within the WHPAs.

All farms, residents, businesses, and industries in the WHPAs with septic tanks and home heating oil tanks will be distributed a copy of the Wellhead Protection Brochure and any other information the OCPU can obtain from County and/or State agencies on proper septic tank and heating oil tank maintenance.

All businesses in the Wellhead Protection Area that produce auto wastes (oils, acids, anti-freeze, etc.) will be provided information on waste handling practices, best management practices, standard operating procedures, and waste oil disposal methods which could be employed to reduce the potential for ground water contamination. They will also be provided with information regarding the North Carolina Division of Pollution Prevention and Environmental Assistance (DPPEA). Owners/operators of these facilities will be encouraged to contact the DPPEA.

OCPU inspects its wastewater lift stations daily. The wastewater collection system is inspected on an as needed basis.

OCPU will contact all facilities or agricultural operations within the WHPAs with pesticide storage or otherwise involved with the application of pesticides to ensure that they are pesticide operators licensed by the State of North Carolina and that proper records are maintained to ensure that all NC Pesticide Laws are adhered to. OCPU will provide information to these facilities or agricultural operations on waste handling practices, best management practices, standard operating procedures, and proper waste disposal methods, which could be employed to reduce the potential for ground water contamination. These facilities will also be provided with information regarding the North Carolina Division of Pollution Prevention and Environmental Assistance (DPPEA).

OCPU will notify any individual, industry, business, or government agency installing or planning to install a regulated underground storage tank within the Town's wellhead protection area of the following regulation:
North Carolina Underground Storage Tank (UST) Regulation 15A NCAC 2N .0301 stipulates specific siting and secondary containment requirements for UST systems installed after January 1, 1991. The rule is summarized as follows:
(1) No UST system may be installed within 100 feet of a public water supply well or within 50 feet of any other well used for human consumption.
(2) Secondary containment is required for UST systems within 500 feet of a well serving a public water supply or within 100 feet of any other well used for human consumption.
Violations of this regulation will be reported to the Division of Waste Management, Underground Storage Tank Section. The UST Section will also be notified of the location of the facility within the WHPA and its proximity to a public water supply well or any other well used for human consumption.

A regulated UST system is any underground storage tank and associated piping that contains petroleum (including gasoline, diesel and used oil) or a hazardous substance as defined by the State rules (15A NCAC 2N). Tanks containing heating oil for use on the premises where stored are not regulated.

Facilities with an underground buried storage capacity of more than 42,000 gallons of oil, or an aggregate above ground storage capacity greater than 1320 gallons of oil, or an above ground storage capacity of a single container in excess of 660 gallons are subject to the Oil Pollution Prevention regulations contained in Federal Regulations found at 40 CFR 112. These facilities must prepare and implement a Spill Prevention Control and Countermeasures (SPCC) Plan. OCPU should verify the status of the SPCC Plan for each subject facility located within the WHPA. The North Carolina General Statutes require registration of any facilities storing more than 21,000 gallons of petroleum product. Subject facilities not in compliance with these regulations should be notified of their regulatory responsibility under this regulation. OCPU should also notify the Division of Water Quality, Groundwater Section if such facilities do not promptly come into compliance.

OCPU will contact the Division of Water Quality regarding facilities permitted to discharge wastewater to the land surface (Non-NPDES Permitted Facilities) to determine if any such operations located within the WHPA are in compliance with applicable regulatory and permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements. Notification will be made to the Division of Water Quality if it is determined that the facility has failed to maintain compliance with any regulatory and/or permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements.

OCPU will contact the Division of Water Quality regarding facilities with NPDES permits to determine it all such NPDES discharges are in compliance with applicable regulatory and permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements. Notification will be made to the Division of Water Quality if it is determined that the facility has failed to maintain compliance with any regulatory and/or permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements.

OCPU will contact the Division of Water Quality (DWQ) regarding any lagoon or hog farm located within its WHPAs. OCPU will inform the DWQ of the lagoon or hog farm's location within a WHPA and its proximity to a public water supply well. It will also determine if the facility is in compliance with any regulatory and permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements. Notification will be made to the Division of Water Quality if it is determined that the facility has failed to maintain compliance with any regulatory and/or permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements.

CONTINGENCY PLAN

The primary person responsible for implementing the emergency contingency plan is the Public Utilities Director. The back-up person responsible for implementation is the Assistant Director.

Should a major oil or chemical spill occur within the Wellhead Protection Area, appropriate emergency agencies would be notified. The first of these would include the Onslow County Fire Department and the Onslow County Emergency Coordinator.

Onslow County Fire Department

911

Onslow County Emergency Coordinator

911

Adminstration - (910) 347- 4270

OCPU relies on electric power to run most all of its facilities and processes to include well pumps and the treatment process at the treatment plants and Cretaceous Wells. The White Street Booster Station pump can also operate off a diesel fuel engine. Progress Energy and Jones-Onslow Electric Membership Association provide electric power for OCPU operations. Approximately 25 million KW hours of electricity was purchased from Progress Energy and Jones-Onslow in 2002. If power is lost to the wells there are emergency generators to supply power to the wells. Generator locations and sizes are listed below:

Well/Location	Generator Size
1	200 KW
2	200 KW
4	200 KW
5	200 KW
6	200 KW
7	200 KW
9	200 KW
11	200 KW
12	200 KW
13	200 KW
Hubert 1 & 3	80 KW
Dixon 2 & 3	80 KW
Hubert & Dixon Plants	230KW

If evidence exists that indicates that a well is contaminated, it will immediately be taken off line and not returned to service until it is determined that water quality from the impacted well is in compliance with standards governing public water supplies. If one of OCPU wells were to become contaminated, it would be isolated from the rest of the system by shut-off valves. If it were determined that contaminants had entered the distribution system, residents would be notified by radio, TV, newspaper, door-hangers,etc. not to drink the water until further notice. The regional office of the Public Water Supply Section would be notified immediately of the situation and asked for assistance. Sampling (i.e. bacteriological, VOCs, SOCs, etc.) would begin to determine the contaminant involved and the extent of contamination. A systematic flushing of the distribution system would begin with follow-up sampling conducted as needed until the system was determined to be free of contamination and in compliance with standards governing public water supplies. After consultation with the Public Water Supply Section, residents would be notified that OCPU water was once again safe for consumption.

Short and Long term contingency plan - OCPU has the capability to purchase water through a metered interconnect with the Town of Surf City Public Utilities located on Topsail Island in Pender County, and non-metered interconnects with the City of Jacksonville. This may occur during periods of peak demand, drought, or when lines are damaged and there is a significant loss of water and pressure that can be supplied from the other systems through the tie-ins.

During a dire emergency, when isolated to Onslow County, OCPU has the option of contracting with Marine Corps Base, Camp Lejeune, North Carolina to purchase water from its system of eighty (80) wells drilled into the Castle Hayne Aquifer, or other water systems in the surrounding area. The water can subsequently be distributed to citizens in critical need of drinking water at fixed sites through rented water tank trucks or water buffalo's. Additionally cases of bottled water can be purchased and distributed locally in limited quantities to critical customers.

Additionally, this past year a contract was drafted with the Commanding General, Marine Corps Base, Camp Lejeune for the sale of base potable water to surrounding communities. As of the date of the writing of this ERP, the contract has not yet been signed. There are however, plans to develop a metered interconnect capability with Camp Lejeune in the foreseeable future for that purpose.

Emergency Contact Numbers and resources:

Name	**Resource**
Primary person responsible for implementing emergency contingency plan Kerry Randall Public Utilities Director Work – 910-455-0722 Home – 910-327-3576 Cell – 910-389-3820	Emergency Response
Secondary person Reneé Maiorano Assistant Director Work – 910-455-0722 Home – 910-329-1818 Cell – 910-389-2029	Emergency Response
Public Water Supply Section 1634 Mail Service Center Raleigh, NC 27699-1634 919-715-2853	Technical Assistance Regulatory guidance
NC Department of Environment & Natural Resources, Wilmington Regional Office 127 Cardinal Drive Extension Wilmington, NC 28405 910-395-3900 Fax 910-350-2004	Regional Water Quality Section, Public Water Supply Section, UST Section, Groundwater Section, Hazardous Waste Section Spills, Regulatory information and technical assistance
Department of Transportation State Traffic Engineer Mr. Ken Ivey 1561 Mail Service Center Raleigh, North Carolina 27699-1561 252-733-3915	WHPA Signs, emergency spill notification
NC Army National Guard 142 Broadhurst Road Jacksonville, NC 28540 (910) 347-4352	Emergencies, as available: Generators, 400-gallon water trailers, bottled water, transportation

NC Rural Water Association Post Office Box 590 Welcome, NC 27374 336-731-6963	Technical assistance Education
North Carolina Cooperative Extension Service Campus Box 7602 North Carolina State University Raleigh, NC 27695-7602 919-515-2811 www.bae.ncsu.edu	Educational brochures, publications
US EPA Regional Office AST/SPCC Program Region IV 61 Forsyth Street Atlanta, GA 30365-3415 404-562-8761 www.epa.gov/oilspill	Above ground storage tank information
US EPA Regional Office GW & UIC Section Region IV Atlanta Federal Center 61 Forsythe St. Atlanta, GA 30303-8960 www.epa.gov	Educational brochures, publications
Division of Pollution Prevention and Environmental Assistance Ron Pridgeon 1639 Mail Service Center Raleigh, NC 27699-1639 919-715-6517 www.p2pays.org	Technical and non-regulatory assistance to reduce waste
National Small Flows Clearinghouse West Virginia University Post Office Box 6064 Morganton, WV 26506-6064 800-624-8301 www.nesc.wvu.edu/nsfc/nsfc_index.htm	Pamphlets, brochures, training aids

Additional Resources:

Service	Responsible Organization	Telephone Number
Ambulance	Onslow County EMS Emergency Medical Services	Emergency: 911 Admin: 347–4270
Animal Control	Onslow County	Emergency: 911 Working Hours: 455–0182 After Hours: 347–4270
American Red Cross	ARC Chapter Onslow County Jacksonville, NC	347-3581 After Hours: 376-1881

Bomb Dogs	MCB Camp Lejeune	Contact Jacksonville PD through 911
Building Code Enforcement	Onslow County Code Enforcement	347–6782
Building Maintenance	Onslow County Buildings and Grounds	Working Hours: 455–0334 After Hours: 330–6779
Chlorine (150 lb Tanks)	Water Guard Wilson, NC	252 237-5205 Fax: 252 237-7028
Chlorine (2000 lb container with 1000 lbs of chlorine)	Univar USA, INC Greensboro, NC	757 934-6311 Fax: 757 539-1806 Billing: 800 438-1119
Computers, Network, Email, and Internet	County ITS	455–3926
Custodial Service	Onslow County Buildings and Grounds	455–0334
Drug Sniffing Dogs	Onslow County Sheriff	Emergency: 911 Admin: 455–3113
Electric Repair	Onslow County Buildings and Grounds	Working Hours: 455–0334 After Hours: 330–6779
Electric Service	Jones-Onslow EMC	Emergency: 800 652-1515
	Progress Energy	Emergency: 800 419–6356 Admin: 800 452–2777
Emergency Information	Citizen's Phone Bank (When OC EOC is activated)	938-2059
Emergency Management	Onslow County Department of Emergency Services	Emergency 911 Admin 347–4270
Emergency Maintenance	Onslow County Buildings and Grounds	Working Hours: 455–0334 After Hours: 330–6779
Emergency Operations Center (EOC)	Onslow County EOC	347-4270
	OCPU EOC Infrastructure Liaison	938-2448/2424
	NC State EOC Raleigh	919 733-3868
Explosive Ordnance Disposal	MCB Camp Lejeune	Contact Jacksonville PD through 911
Fire Code Inspection	Jacksonville Fire Department	938-5242
	Onslow County Fire Marshal	347-4270
Firefighting	For Fire Emergency	911

	Jacksonville Fire Department	455–8080
	Onslow County Fire Marshal	347-4270
Hazardous Materials HAZMAT	For HAZMAT Emergency	911
	Jacksonville Fire Department	455–8080
	Onslow County Fire Marshal	347-4270
Human Resources	County: County Human Resources State: NC Human Resources	347–7600 919 733–4606
HVAC Service (Air Con/Heat)	Onslow County Buildings and Grounds	Working Hours: 455–0334 After Hours: 330–6779
Information Technology Services (ITS)	County Personnel: County ITS	455–3926
NIPC	Infrastructure Protection Information	888 585-9078
Law Enforcement	For Police Emergency	911
	Onslow County Sheriff Department	455-3113
	Holly Ridge Police Department	329-4076
	Jacksonville Police Department	455–1472
	NTB Police Department	328-0042
	Richlands Police Department	324-5777
	Swansboro Police Department	326-5151
	NC Highway Patrol800	334-7411 / 800 441-6127
	State Bureau of Investigation	704 377-9200
	Federal Bureau of Investigation Wilmington, NC	
Office Furniture	Onslow County Purchasing Department	455–1750
Office Supplies	County Personnel: County Purchasing State Personnel: State Purchasing	455–1750 919 733–6604 x170
Plumbing	Onslow County Buildings and Grounds	Working Hours: 455–0334 After Hours: 330–6779
Potassium Permanganate	Univar USA, INC Greensboro, NC	757 934-6311 Fax: 757 539-1806 Billing: 800 438-1119
Public Announcements (Internal to Building)	Onslow County Courthouse Switchboard Operator	455–4458 x284
Public Health	Onslow County Health Department	347–2154

Public Information (Media Relations)	Onslow County Public Information Officer	347–4717
Pumps	United Rentals of Jacksonville	577-0932 Fax 577-1649
Rescue Squad (Building Collapse)	Jacksonville Rescue Squad	Emergency 911 Admin 455–8997
Rental Equipment	United Rentals of Jacksonville	577-0932 Fax 910 577-1649
Road Closures	Department of Transportation	877 368-4968
Safety Officer	Onslow County Human Resources	347–7603 Pager 355–3481
Salt	Morton Salt Company Chicago, IL	800 828-4418 ext. 7 Fax: 312 807-2669
Security: OC PU Facility	Security and Safety Officer	455-0722
Snack Machine Service (OCPU Admin Bldg)	Acme Vending Jacksonville, NC	919 346-3581
Soda Machine (OCPU Admin Bldg)	Coca-Cola	800 309-2653
Telephone Service (OCPU)	Serviced by Sprint	877 904–7774 Repair: 800 682–1034 Admin: 347–9011
Terrorism Hotline	National Response Center & Terrorism Hotline	800 424-8802
Poison Control	Poison Control Center At Carolinas Medical Center	800 222-1222
Utility Command Center	Onslow County Public Utilities	455-0722
Vehicle Problems	Onslow County Vehicle Maintenance	455-0181
Water (OCPU Admin Building)	City of Jacksonville Public Utilities	Emergency: 938–5234 Admin: 938–5248
Water	Holly Ridge Utilities	329-7081
	Richlands Water	358-9291

	NTB Utilities	328-7125
	Northwest Onslow Water	324-4668
	Scientific Water	455-3743
	Swansboro Public Utilities	326-4819
Water Main Repair	Ferguson's of Jacksonville	353-9088 Fax 353-3576 800 340-9476
	Hughes Supply Kinston, NC	800 682-5737 Fax 252 527-9859
	National Waterworks Wilmington, NC	910 392-0855 800 829-5131 Fax: 910 392-4303
Water Quality	Public Water Supply Section NCDENR	919 733-2321

Some of the information contained in this contingency plan was taken from the Onslow County Public Utilities Emergency Response Plan. For additional information that plan has been distributed to the following locations:

OCPU Master Copy (OCPU Safety and Security Officer)
OCPU Director
OCPU Billing and Collections Supervisor
OCPU ORC Distribution/Distribution Supervisor
OCPU Meters Supervisor
OCPU ORC Wells
OCPU ORC Cross-connections/Technical Operations Supervisor
OCPU Wells Productions Supervisor (SCADA Room)
OCPU WTP – Dixon
OCPU WTP – Hubert
OC E-911 – County Warning Point
OC Emergency Services Department (EOC)
OC Fire Marshal
OC HazMat Coordinator (OC LEPC)
OC Emergency Medical Services
OC Health Department
OC Safety Officer
OC Sheriff's Office
Jacksonville Police Department
Jacksonville Fire Department
Jacksonville Volunteer Rescue Squad
Hubert VFD
Pumpkin Center VFD
Turkey Creek VFD

Public Participation

OCPU posted a notice in the local newspaper explaining to its citizens what a Wellhead Protection Program is and how they have the opportunity to review OCPU's WHPP and make comments. Any substantive comments received from the public will be incorporated into the final version of OCPU's WHPP. A copy of the public notification showing the date the notification was published is included with this document.

New Public Water Supply Wells

OCPU will amend its Wellhead Protection Plan to include any new well(s) added to its water system. The following steps will be taken to address any new wells added to the water system.

1. Develop a preliminary WHPA for the proposed well in order to determine the area of vulnerability.
2. Develop a contaminant source inventory for the preliminary WHPA.
3. Submit the information obtained in items 1 and 2 above to the WPC committee identified in Section 1. Any information required by the Public Water Supply Section (PWSS) relating to the development and construction of new public water supply (PWS) wells must also be submitted.
4. If the WPC committee grants provisional approval of the proposed WHP Plan and the PWSS grants approval to construct or expand the PWS well or well system, then work may proceed with well construction.
5. Finalize the WHPA delineation for the new well.
6. Finalize the contaminant source inventory for the WHPA.
7. Submit finalized WHPA and contaminant source inventory to the WPC committee.
8. Once approval is received, implement any necessary regulatory and or non-regulatory potential source management practices.
9. Submit the amended WHP Plan and all necessary supporting information to the PWSS for review and approval.

Future Wellhead Protection

OCPU is aware that an effective Wellhead Protection Program is an ongoing process. Public water system officials or planning team members will review public records available at hazardous waste and waste disposal facilities and potential contamination source sites located within the wellhead protection areas annually in order to ensure program compliance. Every three years, the contaminant source inventory will be updated using the same procedures used to develop the original contaminant source inventory.

Appendix

Federal and State Database Search

Non-Discharge Databases:

1) Animal Operations Database DWQ
2) Solid Waste Facilities DWM/SWS
   http://wastenot.ehnr.state.nc.us/swhome/permfr.htm
3) Pollution Incident Reporting Form (PIRF) DWQ/GWS
   http://gw.ehnr.state.nc.us/WebClass1.ASP
4) Underground Injection Control (UIC) DWQ/GWS
5) Pre-sanitary Landfills

A Multi-System Query at http://www.epa.gov/enviro/index_java.html provides information about all of the following:

6) National Pollutant Discharge Elimination System (NPDES). Identifies permitted facilities that discharge to surface waters.
7) Toxic Release Inventory (TRI)
8) Hazardous Waste Handler
9) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). EPA/DWM/Superfund Section.
10) Biennial Reporting System. EPA/DWM/Superfund Section. Information from Large Quantity Generators (LCG) and Treatment

References

Heath, Ralph C., Johnson, M. Gale, Proposed Revisions to the North Carolina Wellhead Protection Program, July 2001.

North Carolina Department of Environment and Natural Resources, Division of Water Quality, UST Section, Groundwater Section, Wilmington Regional Office Files, 127 Cardinal Drive Extension Wilmington, North Carolina

Onslow County Public Utilities Emergency Response Plan, August 31, 2003.

Smutko, L. Steven, Danielson, Leon E., Jennings, Gregory D., (1995). Protecting Local Underground Water Supplies, The North Carolina Wellhead Protection Guidebook, North Carolina Department of Environment, Health and Natural Resources, Division of Environmental Management, Groundwater Section, Raleigh, North Carolina, Approved March 20, 1995.

Winner, Jr. M. D., Coble, R.W. (1996). Hydrogeologic Framework of the North Carolina Coastal Plain. U.S. Geological Survey Professional Paper 1404-I. United States Government Printing Office, Washington.

Glossary of acronyms and abbreviations

EPA-Environmental Protection Agency
WaRO-Washington Regional Office
DWQ-Division of Water Quality
UST-Underground Storage Tank
AST-Above ground Storage Tank
VOC-Volatile Organic Compound
SOC-Semi-volatile Organic Compound
NCDEH-North Carolina Department of Environmental Health
PWS-Public Water Supply
PWSS-Public Water Supply Section
NCDENR-North Carolina Department of Environment and Natural Resources
WPC-Wellhead Protection Committee
WHPP-Wellhead Protection Program
WHPA-Wellhead Protection Area
Gpm-gallons per minute
GPD-gallons per day
Ppm-parts per million
Ppb-parts per billion
CAP-Corrective Action Plan
NOV-Notice of Violation
PCS-Potential Contamination Source
DWM-Division of Waste Management
NPDES-National Pollutant Discharge Elimination System
SPCC-Spill Prevention Control and Countermeasures
UIC-Underground Injection Control
DPPEA-Division of Pollution Prevention and Environmental Assistance