

# *Technical Guide*

Well Surveillance Program  
Well Surveillance Program

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## ACRONYMS/ABBREVIATIONS

BACT = bacteriological Sample  
CHD = County Health Department  
CDV = cattle dip vat program  
DEP = Department of Environmental Protection  
DER = Department of Environmental Regulation  
DGPS = Differentially Global Positioning System  
DSCP = Drycleaner Solvent Cleanup Program  
DOH = Department of Health  
DWTP = Drinking Water Toxics Program  
EDB = ethylene dibromide  
F.A.C. = Florida Administrative Code  
FLUWID = Florida Unique Well Identification Number  
GAC = Granulated Activated Carbon  
GPS = Global Positioning System  
HAL = health advisory level  
HSEW = Health Services Environmental Water  
MCL = maximum contamination level  
mg/L = milligrams per liter  
NO<sub>2</sub> = Nitrite  
NO<sub>3</sub> = Nitrates  
P505 = Chlorinated Pesticides Analysis Method  
PWS = public supply well  
RS = Risk Source (RS)  
Semi-VOC = Semi-volatile Organics (method 525)  
SUPER Act. = State Underground Petroleum Environmental Response  
Toxics = Drinking Water Toxics Program  
ug/L = micrograms per liter  
VOC = Volatile Organic Chemicals  
WSTS = Well Surveillance Tracking System

## Chapter 1 - Introduction

The Well Surveillance Section within the Bureau of Water (Health Services Environmental Water (HSEW)) manages several programs to identify and monitor areas in Florida where contaminated drinking water is suspected and may pose a threat to public health. The Well Surveillance Section is composed of the State Underground Petroleum Environmental Response (SUPER) Act, Drinking Water Toxics Program (DWTP), Drycleaner Solvent Cleanup Program (DSCP) and other water programs beyond the scope of this Technical Guide. HSEW coordinates with the County Health Departments (CHDs) to locate potable wells and conduct water sampling for contaminants of concern. Chemical analysis of water samples is conducted at the Department's laboratory in Jacksonville. The data is maintained in a central spatial relationship database. Users can generate maps and reports summarizing water quality for individual wells or areas of interest.

This technical guide is prepared as a reference manual and training guide for HSEW and CHD staff. This guide is intended to define acceptable protocols and to facilitate practices consistent with the goals of the program. Compliance with these standard operating procedures will be evaluated at each County Health Department using the Well Surveillance Program Evaluation (see Chapter 10).

### **SUPER Act Program**

In 1986, the Florida Legislature created the SUPER Act Program in response to ground water contamination resulting from leaking underground petroleum storage tanks. The primary authority for the SUPER Act program was given to the Florida Department of Environmental Protection (DEP). The DEP oversees the clean-up activities around petroleum facilities that have had a loss of petroleum product. The Department of Health's SUPER Act program (per Chapter 376.3071(4)(g), Florida Statutes), was given authority to provide field and laboratory services, toxicological risk assessments, investigations of drinking water contamination complaints and education of the public. In July 2005, the DEP contracted with the DOH to conduct well surveys and sampling around known or suspected contaminated facilities. A major portion of the contract is dedicated to conducting investigations for the purpose of prioritizing cleanup funding in accordance with Chapter 62-771, Florida Administrative Code (Priority Ranking Rule). Funding for the SUPER Act is provided through the Inland Protection Trust Fund.

### **Drinking Water Toxics Program**

Discovery of extensive groundwater contamination of wells with the agricultural fumigant ethylene dibromide (EDB) in the early 1980's led to widespread public concern about the water quality of Florida's private potable wells. The Florida legislature enacted the Water Quality Assurance Trust Fund in 1983 to protect public health and the environment. This trust fund gave the Florida Department of Environmental Protection (DEP), then called the Florida Department of Environmental Resources (DER), the responsibility to investigate wells or areas that may be at risk due to chemical release and to provide an alternative water source to a homeowner whose well is found to contain contaminants above the primary maximum contamination level (MCL) or health advisory level (HAL). The program is limited to chemical contaminants that present an unacceptable risk to the homeowner by any source not already covered by another program (i.e., SUPER Act, drycleaner, lead, bacteria). In July 2005, the

DEP contracted with the DOH to perform sampling of residential potable wells and to provide information and support to the homeowner and the DEP.

## **Drycleaning Solvent Cleanup Program**

In 1994, The Florida Legislature established a state-funded program to cleanup properties that are contaminated as a result of the operations of a drycleaning facility or wholesale supply facility. The program is administered by the Florida Department of Environmental Protection. The statute was sponsored by the drycleaning industry to address environmental, economic, and liability issues resulting from drycleaning solvent contamination. The DEP is now requesting investigations of specific drycleaning facilities for scoring purposes at sites being considered for cleanup. While drycleaner solvents have been a problem at both private and public water systems, the physical properties of drycleaner solvents has lead to several public water system wells becoming contaminated above safe levels. Therefore, drycleaners close to public water systems (PWS) are more closely monitored and are awarded higher points in the priority scoring process.

## **Program Goals**

The objective of the well surveillance programs is to protect the health of Floridians and all visitors to the state from potential contaminants in their drinking water. Each CHD is responsible for implementing the SUPER Act, Toxics and Drycleaner programs for its county unless prior arrangements are made for other counties to assist. To achieve these goals, the CHD staff must be adequately trained in field methods, the use of software programs and use of Global Positioning System (GPS) equipment.

The well surveillance program is engaged in five activities: well surveys, complaint sampling, monitoring areas of concern due to known contamination, public information, and assisting DEP with remediation. These activities will be described in detail in the following chapters.



## Chapter 2 - Well Surveillance Overview

### Well Surveys

Well Surveys are primarily used to assist the DEP in a risk based prioritization system of petroleum and drycleaner sites to determine the order of cleanup. Well surveys may also be used to identify wells within an area that are potentially at risk and should be sampled. Well surveys represent the largest single function under the DEP/DOH contract.

The goal of a well survey is to identify potable wells within an area and to sample a sufficient number of representative wells to determine if contamination is present. The CHD receives weekly requests from HSEW to conduct a well survey around a specified facility, risk source or contaminated well. The CHDs are expected to complete the survey and any associated sampling within 28 days of the DEP request. Note that all CHD staff should complete the Basic Well Surveillance-GPS training prior to initiating a well survey or collecting water samples.

A well survey should locate the facility or risk source(s) and representative wells. The well survey should locate:

- 1 The facility or risk source requested;
- 2 All potable wells within 500 feet of the facility or risk source;
- 3 Ten potable wells, if present, within ¼ mile; and
- 4 All large (>100,000 gallon per day capacity) Public Water Supply (PWS) wells within 1/2 mile.

Samples should be collected from ten potable wells, if present, within ¼ mile (or ½ mile if PWS). Wells should be selected to provide surrounding coverage and priority should be given to wells closest to the source or PWS wells.

If one or more potable wells sampled around a requested facility or within an established well surveillance area are found to have over ½ the MCL/HAL for a contaminant, a confirmation sample should be collected within 30 days. In addition, if present, ten additional potable wells are authorized to be GPSed and sampled.

### Investigative Sampling

The CHDs are the main point of contact for residents having human health concerns about potable water. The Well Surveillance program provides funding for CHDs to pursue reasonable investigations. The program is not an extension of the mortgage industry or a subsidy for private homeowners. Also, the legislators have established funds specifically for investigating cattle dip vats (CDV) and sampling of newly installed potable wells within delineated zones (most delineated zones were designated because of ethylene dibromide (EDB) and are defined in 62-524 Florida Administrative Code).

For a citizen initiated complaint, the field sampler should try to determine if there is an observable water quality issue (i.e. odor, color, film, taste, etc.) that would indicate a potential problem. Interview the complainant to determine why they believe there is a problem. Investigate leads of potential problems in the neighborhood. Based on the interview, the field

sampler will determine if a sample should be collected and for what parameters. It is very important to document observations and conversations regarding a particular complaint in a DOH approved field notebook or other authorized recording device and to be sure to consult with HSEW staff prior to sampling to get approval.

A few counties have areas within designated “delineated zones” as defined by 62-524 F.A.C. All newly constructed wells within the zone must meet strict construction requirements and have a sample collected by the CHD as part of the permit process. To order bottles for these samples, call the laboratory (Amy Gardner at SC 866-1521 or 904-791-1521) and specify that the samples are for a newly constructed EDB well within a delineated area (charge to Task Assignment TOX-EDB-new). CHDs can obtain information about delineated zones using EHmapper at the Environmental Health intranet Sharepoint site. These tools can be useful in identifying areas needing additional sampling. CHDs may elect to sample additional areas near a delineated zone to ensure that EDB contaminants in groundwater have not moved into adjacent areas. EDB sampling for other than new EDB wells should be charged to Tox-EDB-invest.

CHDs can initiate an investigation based on their staff’s personal knowledge of their area and possible complaints. Examples where the CHD should be concerned would include areas near chemical plants, petroleum or drycleaner facilities, farming operations, and chemical spills. One or two samples collected from adjacent neighborhood potable wells could detect migrating plumes. This should be repeated every three to five years.

The field sampler needs to determine the most likely contaminant so that the correct analysis will be performed. All SUPER Act and Drycleaning well surveys will require water sample analyses for EPA Method 524.2 (also called VOCs or Purgeables). The Drinking Water Toxics Program has established blanket bottle orders for some of the more commonly requested chemical analysis (EDB, Nitrate, and VOC). The CHD may coordinate these bottle orders directly through the laboratory by calling Amy Gardner at (904) 791-1521 or SC 866-1521 or by leaving an e-mail message at Amy\_Gardner@doh.state.fl.us. Other parameters and combination of parameters are coordinated through HSEW (Charles Donahue at 850-245-4069 or SC 205-4069 or by e-mail at Charles\_Donahue@doh.state.fl.us).

## **Re-Sampling**

Re-sampling will be performed on potable wells with concentrations greater than ½ MCL/HAL (for nitrate it is greater than 8 mg/l and for arsenic it is greater than 8 ug/L). HSEW will establish and track these sites for the CHDs. HSEW has established a tracking program called the Well Surveillance Tracking System (WSTS) (formerly called CATS), which will identify these areas and recommend when these potable wells should be sampled. CHDs will receive this information two ways; on the Well Tracking list of wells that should be sampled and as an e-mail specially discussing the site as a group. HSEW needs the observations and the first hand knowledge of these sites to accurately design a sampling program. CHDs should respond to the HSEW e-mail if there are any changes or observations that may affect the interpretation of the site. For potable wells with trace levels of contaminants (under ½ the MCL/HAL) near a known petroleum or drycleaner facility, please sample 3-4 wells annually. The potable wells with detects will soon be incorporated in the well tracking system, but for now please collect these samples around facilities according to the above guidelines.

## **Public Information**

Public information, as it relates to the program, consists mainly of notifying the potable well owner of chemicals in their well and helping the owner understand what effects these chemicals could have on their health. CHDs must send a letter informing the property owner of the analytical results for each sampling event. There is an example of the letter in Appendix F. HSEW has developed a program that automatically generates these letters. HSEW can provide either the word version that a CHD can modify or the automated version. The word version is easier if you only have only a few letters to mail each year. CHDs can also develop their own letters to send to affected parties.

The CHD should include an explanation of how to read the laboratory report and some information on the potential toxicological effects of any detectable contaminants. Examples of Water Fact Sheets for select chemicals are provided in Appendix E and are kept updated at the intranet Sharepoint website. In addition to the Water Fact Sheets, the DOH keeps the latest Maximum Concentration Level (MCL) and Health Advisory Level (HAL) for all chemical contaminants at this web site.

If you have additional questions regarding public information or toxicology in general, you can direct them to Charles Donahue at (850) 245-4069 or SC 205-4069.

## **Support for the DEP**

Once a concentration greater than an MCL/HAL (excluding secondary MCLs, THMs and bacterial agents) has been confirmed, the DEP is responsible for arranging for an alternative water source. The DEP must get permission from the property owner before they can install a water filter system or connect to a public water system. If the property owner/resident does not respond to the DEP's letters, the CHD may be asked to revisit the property owner on behalf of the DEP or provide other types of support. The CHD staff should document in a field book or other authorized documentation device when the owner/resident does not respond to DEP's letters or refuses to have their contaminated well remediated.

Sometimes the DEP provides bottled drinking water coupons. The DEP may request that the CHD help distribute the bottled drinking water coupons. Distributing bottle water coupons should only be performed when there is a clear indication of who should receive the coupons.

## **Summary of Activities**

### **Well Surveys**

GPS designated facility or risk source.

Locate all potable wells within 500 feet of the facility or risk source.

Sample 10 potable wells, if present, within ¼ mile of facility or risk source.

Locate all PWS wells within ½ mile.

If any potable wells sampled around a requested facility/well surveillance area have over ½ the MCL/HAL, a confirmation sample should be collected. Ten additional potable wells are authorized to be GPSed/sampled.

### **Investigative Sampling**

Evaluate all citizen potable well complaints to determine if sampling is warranted.

Sample newly installed potable wells within delineate zones (62-524 program).

Sample near potential sources of contamination.

### **Re- Sampling**

Perform sampling within Well Surveillance Tracking areas as directed.

Communicate observations and suggestions about Well Surveillance Tracking areas.

Perform sampling at filter systems identified by the DEP.

Perform sampling of up to 3-4 potable wells annually around petroleum or drycleaner facility or risk source if a well has trace levels of contamination under ½ the MCL/HAL.

These wells will soon be included in our well tracking system, but for now, your CHD may collect samples based on the above recommendations.

### **Public Information**

Notify the property owner of the analytical results every time their well is sampled.

Notification letter should include analytical results, how to read lab reports, and Water Fact Sheets as needed.

### **Support for the DEP**

Contact the DEP to inform them when an MCL has been reached or exceeded.

Assist the DEP in getting permission to provide alternative water systems.

Distribute bottled water coupons or filled bottled water containers to affected parties.

## Chapter 3 - Locating Wells



### Preliminary Office Activities

The following preliminary office activities will help reduce the time in the field and greatly aid in completing an accurate well survey.

1. Determine the location of the facility, risk source or property using the address provided by HSEW. Use available map search engines (i.e., road atlas, Google etc.) to find the quickest way to the facility.
2. Use the EHWater mapping website (<http://dohsgis99/website/EHbasemapEHwater/HelpPage.htm>) to identify the DEP PWS wells within  $\frac{1}{2}$  mile of the facility. The CHD will need to confirm the location of each PWS well and be able to identify any discrepancy between the DEP's database and what is actually in the field (i.e., addition PWS wells).
3. Use available databases to help identify potential potable wells in the area. If the County has a well construction (permit) database, consult it to determine if there are any potable wells within  $\frac{1}{4}$  mile of the facility or risk source, otherwise, use the EHWater mapping website at: (<http://dohsgis99/website/EHbasemapEHwater/HelpPage.htm>). Check the "DOH DGPS well" layer to locate all wells sampled by DOH and confirm their location and proper tagging. Also, check the "DOH non-DGPS or non-Tagged well" layer to identify wells that have been sampled or located by the DOH but are not correctly located or tagged. If you are in the area of one of these wells, it would be valuable to the program if the necessary information was completed.
4. Some Water Management Districts have interactive websites with search tools to browse for well locations. These websites can be used to locate potential wells within  $\frac{1}{4}$  mile of site. The EHWater mapping website has some of the water management district well permit information. Using either source, the field person should understand that these locations are usually very rough and should only be used to suggest which properties may have wells.
5. Review aerial photographs and any other public and private water system databases to access additional well location information.
6. Search the DEP's Oculus website (<http://dwmedms.dep.state.fl.us/Oculus/servlet/login>) to find site histories including previous well survey submittals, facility site assessment reports or other documents. Determine whether or not Oculus contains past well surveys, site assessment reports and other documents. Pay particular attention to changes in the number of wells and their DGPS status. Review the site assessment reports regarding possible plume (s) and their flow direction. **Confirm the site location of the facility.**
7. Before going into the field, check all equipment that may be required. This will include a GPS unit with charged batteries, measuring device, maps, DEP FLUWID tags, sample

bottles, DOH authorized field notebook or other authorized recording system, and sample permission door hangers.

8. Request account address information from municipalities and utilities regarding addresses with no public water connection, indicating potable wells within areas with public water.



## Field Activities

1. You must contact all private potable well owner(s) to obtain permission to enter their property. Efforts to obtain permission may include attempts to contact the resident/owner in a field visit, placing door hangers, sending letters, and making phone calls. An example of a door hanger can be found in Appendix E. Ask the neighbors or consult the county tax collector's office (parcel maps) to get the name of property owners/residents so that you may contact them through the mail or by phone. EHmapper also has the parcel ID for most counties.
2. Keep a record of all permission or permission refusals. If your county already has a system, please continue using it. If you do not have a record keeping system, then please use a DOH approved field book as a central repository for the following information:
  - a. You talk to someone and they do or do not give permission: identify the person, the address and the time in your field book.
  - b. You left door hangers: record the address and date.
  - c. You follow-up with phone calls: identify the person, address, time, and phone number.
  - d. You return to the same address several times: record the time of each visit and the address.
3. You should record comments from the property owner about the site, such as unusual situations regarding the potable well (peculiar tastes, odors, changes in water quality) or in the neighborhood (unusual activities or potential discharges of contamination).
4. Use only the GPS unit approved by the Well Surveillance section. These units are differentially corrected GPS (DGPS) resulting in an accuracy of one to five meters, which complies with the DEP guidelines. The operator should be trained and certified by HSEW. Appendix B provides the Solo field manual. Gilbert Hoover at (850) 245-4444 ext 2868 or 205-4444 ext. 2868 can provide additional technical support.
5. Using the GPS equipment, locate the facility or risk source by recording a point at the tank fill ports for petroleum facilities, the back door for drycleaners. If no fill ports to the underground tanks are observed, try to locate the former tank area by looking for obvious signs of an excavation, monitoring wells or other indication of the location of former tanks. You may be able to find site maps showing former UST locations at the local petroleum storage tank program office or on the DEP's Oculus website (<http://dwmedms.dep.state.fl.us/Oculus/servlet/login>). For sites without a facility, use the contaminated well as the source and record the well's location.

6. All potable wells within 500 feet and all sample locations should be GPSed. If you can not get access to the well property within 21 days, assign a FLUWID number and GPS at the center of the property along the street. Store the FLUWID tag in your files until you can obtain permission. If there is no address for the property, use the parcel identification number. If you do not have access to parcel IDs, call Brett Anderson (850) 245-4444 ext 2159 or SC 205-4444 x2159 and he will try to locate one for you.
7. Public wells should be available from the DEP database or EHWater mapping website (<http://dohsgis99/website/EHwaterbasemap/HelpPage.htm>). It is recommended that a copy of these maps be taken into the field as you will be required to identify differences between the DEP PWS database and the field.



## Post Fieldwork Office Activities

Connect the GPS unit to a desktop computer using Microsoft ActiveSync. After uploading the .udf data into the SOLO Office Program, export the data files for each facility and well into separate text files for editing and submittal via e-mail to HSEW. The SOLO Office manual provided in Appendix B demonstrates how to use the “export to text” file feature of the software. (Contact Gilbert Hoover at 850-245-4444 ext 2868 or SC 205-4444 ext. 2868 if you have questions.)

Use the format examples 50RS011506.txt and 50W011506.txt for facilities and wells, respectively. In these examples, the first two digits of the file correspond to the county number, the letters indicate Risk Source (RS){the same as a facility} or well, and the last six digits signify the month, date and year collected. E-mail both .udf and .txt files to HSEW at the “Global” address ([HSE\\_gpsdata@doh.state.fl.us](mailto:HSE_gpsdata@doh.state.fl.us)) with a brief explanation for the files such as: “correction of file sent previously”, “three facilities”, “one well”, “files you requested for Toxics,” etc. **All CHD staff should complete Basic Well Surveillance - GPS training prior to initiating a well survey or collecting samples.**

## Web LaserFiche

LaserFiche is a document archiving and retrieval software that allows you to archive numerous types of documents electronically, and also permits you to add annotations to the archived documents. Web-based LaserFiche is a portal that gives certain CHD individuals access to these documents via the internet once he/she enters his/her user name and password. Appendix C contains the LaserFiche Web Access User Guide.

The HSEW uses LaserFiche primarily for two purposes: The first use is for archiving of important documents (well surveillance area maps/reports, county evaluations, old well surveys, etc...). The second use is for counties to view current well survey requests and annotate any information that is pertinent to completing the well survey. Both of these uses will be explained below. Prior to using LaserFiche, you will need to obtain a user name and password. Please contact Brett Anderson at 850-245-4444 ext 2159 or SC 205-4444 ext 2159.

### Using Web LaserFiche to access archived documents

1. In order to access archived LaserFiche documents, type the following address into your internet browser: <http://dohswapeh0001/laserfiche/login.asp>
2. Log in using your user name and password\*
3. Once logged in, you will see a list of folders on the left pane of the browser, and the same folders on the right pane of your browser. You should see the following folders:
  - Contamination Areas (archived maps/reports for Well Surveillance Areas)
  - County Evaluations (archived evaluations for each county)
  - County Working Files (where current requests are kept and annotated)
  - Facilities (archived requests) – these are the finalized well surveys sent to DEP which you can print out for your records
  - Draft Requests – Archived well surveys that the CHD has signed and annotated with sticky notes
4. State Working Files (where requests are QA'd and prepped for DEP) Double-click the folder you want to access on the left pane, and the contents of that folder will show up on the right pane.
5. Keep navigating through the file structure until you find the document that you are searching for.
6. Double-click the document on the right pane to open up the document.
7. If you want to save and/or print the document, click the “Download PDF” button at the bottom center of your browser. This will open up the document as a PDF, from which you can print or save to your local drive.

NOTE: Certain documents archived under the “Contamination Area” folders (such as Snapshot Reports and e-mails) will have to be opened differently than other documents. Once you double click these documents in the right pane, a new browser window will open up. At the top center of the browser window, there will be a “download electronic document” button. Click this button to download the document. A dialog box will pop up allowing you to open or save the document. Click “Open”, and the document will open up in its native format.

### Using Web LaserFiche to complete active Well Survey Requests

1. Browse to <http://dohswapeh0001/laserfiche/login.asp> and log in using your user name and password\*
2. Double-click the “County Working Files” folder, then double-click on your county folder (i.e. “Alachua”).
3. Double-click on the request that you want to complete. This will open the request up in a new browser window.
4. On the left of your new browser window, there will be a number of blank fields associated with the request. Fill those fields out. Change the “status” field to **“Completed by County”**.
5. Click on the sticky note button at the top center of your browser (it looks like a post-it note). Your mouse pointer will now look like a sticky note.
6. Click on the first well listed on your survey. On the left you will notice a blank text box with “sticky note 1” listed above it.
7. Type the date you sampled this well into that text box on the left. If you did not sample that well, type why you didn't sample into that text box (i.e. abandoned, inactive, unable

to obtain permission, etc...). If more than one individual sampled the well survey, be sure to say who did the sampling.

8. Click on the next well listed on the survey with the sticky note tool and repeat the process. **DO THIS FOR EVERY WELL LISTED ON THE SURVEY.**
9. Also use sticky notes if you notice that any information on the well survey is wrong (i.e. if a well address is incorrect, place a sticky note next to it and type the correct address into the corresponding text box on the left).
10. Once the fields on the left are filled out and sticky notes were applied to all of the wells, place your electronic signature on the "investigator signature" line on the survey. Reference Appendix C for instructions on how to create and use your electronic signature.
11. If you want a clean hard copy of the survey for your records, click the download PDF button at the bottom center of your browser. Keep in mind that your annotation (sticky notes) will not appear on the PDF copy, but you can fill it out manually.
12. Close the browser. Click "**YES**" when prompted to save your changes.

HSEW staff will periodically browse through all county folders looking for surveys that have been marked "Completed by County". They will be moved out of your county folder and into the QA process once they have been completed.

If you have any questions on how to use Web LaserFiche, please contact Brett Anderson at 850-245-4444 x2159 or SC: 205-4444 x2159. You can also send an e-mail to Brett\_Anderson@doh.state.fl.us

## Well Sample Tracking System (WSTS)

In October, 2005, the Well Surveillance Section of the Bureau of Water Programs began utilizing the new Well Sample Tracking System. Its function is to track individual potable wells regarding scheduling based on past and present levels of contamination of the wells and those nearby. Samples may be requested by HSEW for one or more annual, bi-annual, quarterly, monthly or other sample frequencies. Presently the System is still in the developmental stage and is being used only within Well Surveillance Areas to determine sampling schedules for all potable wells. You can find data regarding wells your CHD are responsible for sampling under the Well Sample Tracking system with receipt of a weekly e-mail. More will be written about this system and how CHDs will be able to access data real time on the DOH intranet Sharepoint site. Please call Charles Donahue or Lee Skornia if you have any questions regarding this System.

## GIS Mapping System

The Geographic Information System (GIS) computerized mapping process uses ESRI ArcMap 9.1 mapping software to create computer maps at the HSEW headquarters office. Well Survey and Well Surveillance Area maps are produced by HSEW staff using DGPS coordinates for facilities, risk sources and wells from your CHD DOH staff GPS equipment, DEP, Water Management districts and certain other sources. If data you send us appears in the wrong location or is missing, it is **YOUR RESPONSIBILITY** to make it accurately depicted on the map. Further information on GIS mapping will be forthcoming in a later draft of this Technical Guide.





## Chapter 4 –Sample Collection

### Guideline for Collecting Samples

There are a number of considerations that you should be aware of before commencing with sampling for the Well Surveillance (Petroleum, Drycleaner and Toxics) program.

A well cannot be sampled unless it has a FLUWID tag attached and has been GPSed. If the FLUWID tag appears to have been at the well for some time and you do not remember GPSing it, check with HSEW to see if it is in the database or download the Wells table from the <http://superact.org> internet site for your county. If it is not in the database, please DGPS the well.



To complete a well survey, collect samples from ten drinking water wells within ¼-mile radius of the requested facility or risk source within 28 days after the well survey is requested. For all public supply wells (PWS) (both >100,000 and <100,000 gpd), it is preferred that public wells be sampled if access is available. PWS often have security concerns that prevent the DOH from sampling their wells. Therefore, we have made some provisions so that the county samplers can get the well surveys completed in a reasonable time frame. Using PWS analytical results are less desirable than CHD collected samples because samples collected by the PWS are collected post-treatment while ours are collected directly from the well head. If the PWS well is within 500 feet of the potential or actual contamination source, then we ask that you make every effort to get a sample from the well. If the PWS is within a 1/4 mile and there is a known contaminant release, then we want you to sample if possible. If the PWS is greater than 1/4 mile or there is no known contaminants released, then we are less concerned with it, but we do ask that you make a one-time effort to sample it. Also, a good understanding of the geology helps. Talk to the PWS operators to see what they know about the geology and if they are concerned about a possible contamination problem.

Each type of analytical scan has a specific bottle(s), preservative and sample collection method. The laboratory provides a cooler with the sample bottles, preservatives and an instruction sheet unique to the type of sample. All sample bottles (unless opened) should be returned with the same cooler in which they were shipped.



Call the Lab to order sample bottles one to two weeks before you need them. Do not order too



There is a **three to six week** expiration date for Purgeable VOC sample bottles from the Jacksonville lab depending on when they are shipped from their storage area. Potential environmental contamination from fumes from the coolers is the main limiting factor and samples that exceed the three to six week expiration date risk having **false positives**. Check the expiration date before sampling.



**Three vials equal one VOC sample** (This is in case of breakage, accidents, double checks, etc.). For ten wells, you will need 30 bottles. Remember to use the packing and rubber band to protect each sample (3 vials) from breakage.



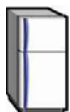
Everything in the cooler must stay together at **all times**. A trip blank is required for each VOC project. Samples from different sites may be shipped together using one trip blank. Make sure the sample bottles and trip blank are always together and clearly labeled.



Wells must be purged for **at least 5-10 minutes**. If the faucet is located after the tank and the tanks is greater than 50 gallons, then purge at least one minute for every 10 gallons that the tank holds. Purging is required to ensure that fresh water is collected. Fresh water will provide an accurate assessment of its chemical makeup.



At the time of collection, samples require preservation at or below 4°C and **MUST BE IMMEDIATELY COOLED ON WET ICE**. Seal VOC bottles inside the zip lock plastic bags provided to preserve the labels. After the initial cooling, samples must remain at 4°C (39°F). Be cautious where you get your ice to make sure no contamination is present from the water the ice was produced from. Store and produce your ice in clean refrigerator-freezers or ice makers.



Collected samples must be stored in a refrigerator overnight at or below 4° C if being held until the next shipping day. If you put the cooler in the refrigerator, keep bottles iced and make sure the cooler top is off. Do not place samples in a refrigerator with any chemicals or volatile products. Sample bottles must not be kept in refrigerators for more than four days.

For return shipment to the laboratory, re-pack the sampling kit with commercial freeze packs. To ensure that the preservation temperature of 4°C is maintained during shipment, use the same number/size of freeze packs initially provided by the laboratory.



Fill any empty cooler space in the cooler with bubble wrap (preferred) or packing paper to prevent breakage. Enclose the Environmental Chemistry Analysis Request Forms in a sealed plastic bag. If wet ice is used (avoid when possible), bottles should be placed in sealed plastic bags and suspended in the ice and the cooler should be thoroughly sealed with tape to prevent spillage during shipping to the lab. The present contract shipper will reject all future shipments from a CHD if there is spillage.



Samples must be shipped to the Jacksonville Lab via overnight delivery to ensure that the samples arrive at the lab properly cooled.



Samples must be received at the lab by **noon on Friday**. Usually this means that the samples should be shipped by Thursday afternoon. Samples should **not** be shipped on Fridays as the laboratory does not receive samples on the weekends. Samples collected on Friday **must** be refrigerated over the weekend and shipped overnight to the

lab on Monday morning. You must ship samples to the lab so that they can be fully analyzed within fourteen days of the collection date.

Make certain that each sample bottle from a single collection site has a unique identifier and that the IDs on the sample bottles match the IDs on the analysis request form(s). Always use the Florida Unique Well ID (FLUWID) for potable wells. Environmental Chemistry Analysis Request Forms must be filled out **completely**. See Chapter 4 for instructions on completing an Environmental Chemistry Analysis Request Form.

Guard against cross-contamination of water samples from gas fumes and other volatiles in the air during sampling or transit. **Do not gas up your vehicle while sample bottles (empty or full) are being transported!** Also be cautious about not contaminating your samples through your clothing and hands.



If a result is positive, HSEW will contact you by e-mail and/or phone to let you know the sample is above the MCL. If, for any reason, you are not notified and you observe an MCL violation on results when you receive them, please contact HSEW staff immediately. See Chapter 7 for more information regarding an MCL or HAL violation.



## Standard Operating Procedure For Collecting Volatile Organic Chemical (VOC) Samples

Because Volatile Organic Compounds (also known as VOCs or Purgeables) are collected more often than any other parameter in the Well Surveillance programs, this section is specific to collecting VOC samples. VOCs can easily move out of a water sample into the air, or vice versa. Please review the DEP's Standard Operating Procedures in Appendix E (FS 2300 Drinking Water Sampling) for collection of VOC samples. The following section provides additional information and should be used as additional guidance for compliance with laboratory requirements and the DEP SOP.

### Sample containers

1. Analysis of VOCs requires a glass sample vial, sealed with a teflon-coated septum.
2. Triplicate samples must be collected.
3. Visually inspect the glass vials to assure that there are no glass or septum defects (e.g. rim must have no nicks or visible depressions; septum must not be deformed, etc.). If defects are present and/or the sample container or septum does not appear to be clean, the vial must be discarded. NOTE: VIALS FOR VOCS MUST NOT BE RINSED WHEN SAMPLING.

### Preservation

All purgeable samples are collected as chlorinated samples. A dropper bottle containing 1:1 HCL will be in a secondary plastic container. After placing 6 drops of HCL solution in each of the three sample vials for a sample, return the dropper bottle to the plastic secondary container

when shipping back the cooler/container to the lab. Samples must be placed on wet ice immediately after sample collection. A temperature of 4°C must be maintained until the sample has arrived at the laboratory. Samples must be analyzed by the lab within fourteen days of collection.

### Sample collection protocols:

1. All fuel, solvents or exhaust sources that could cause VOC contamination must be situated away and downwind of the sampling site.
  - Fuels or solvents should not be stored in containers and transported in a vehicle with sample bottles.
  - All petroleum-fueled engines (including the vehicle) must be situated downwind of the sampling operations.
  - Cautiously GPS or sample around Drycleaner facilities making sure no volatile fumes from the facility contacts the sample bottles or cooler.
2. Samples shall not be aerated (allowed time to mix with air) during sample collection.
  - Extreme caution must be exercised when filling a vial to avoid any turbulence that could promote aeration.
  - Carefully pour the sample down the side of the vial to minimize turbulence. As a rule, it is best to gently pour the last few drops into the vial so that surface tension holds the water in a "convex meniscus".
  - Add six drops of 1:1 HCL solution to vials when the vial is about 90% full and then finish filling the vial to produce the "convex meniscus" as indicated above.
3. Do not allow anything to touch the rim of the sample container.
4. The sample must be collected so that there are no more than two pinhead sized air bubbles in the container after the screw cap and septum seal are applied. (The lab will generally accept these air bubbles).
  - The vial must be filled so that the sample surface is above the container rim (convex meniscus).
  - The cap with the septum is then quickly applied (make sure Teflon side of septum is down). Some samples may overflow, but air space in the bottle must be eliminated.
  - Tip the vial gently two or three times to distribute the preservative.
  - Turn the bottle over and tap it to check for bubbles. If any are present, remove the cap, add a few more drops of sample, recap and test for bubbles. REPEAT ONLY ONCE.
5. All vials must be labeled with the **FLUWID number and the sample date**. A suggested pen is an extra fine Sharpie which is waterproof and smudge proof. It is not necessary to provide any additional information on the sample bottle. Make note in the field notebook of any samples that appear highly contaminated or appear to effervesce.
6. Wrap each vial in paper-wrap or bubble wrap with a rubber band, then place each group of three vials in a small zip lock plastic bag, and immediately place on wet ice.
7. Complete an Environmental Chemistry Analysis Request Form for each sample remembering that YOU MUST include the following mandatory information: Relinquish Date, FLUWID number, Request number (if applicable) on each sample sheet.
8. Pack the cooler properly with sample vials in zip lock plastic bags, trip blanks, dropper bottle in a secondary container, packing material, frozen cool packs and Request forms (also in plastic bags). Protect samples from environmental contamination during storage and transport to the laboratory by placing the cooler in the original packing box it arrived in the field with.
9. Always make a copy of the Environmental Chemistry Analysis Request Form for your files before sending the originals to the lab.



## Other Analytical Methods

The following section briefly describes other drinking water analyses to be conducted by the Well Surveillance Section for the Drinking Water Toxics Program. The name of the analysis is given, along with any synonyms, the type of bottle used, the preservative if needed and any special instructions. The laboratory will provide sample bottles, preservatives, and sampling instructions.

### Semi-volatile organics (525); Extractable Solvents

- Bottle: 500 mL amber bottle (2 bottles required)
- Preservative: sodium sulfite (25 mg) in bottle; 7 mL 1:1 hydrochloric acid added in field
- Shipped chilled using ice packs

### Carbamates

- Bottle: 40 mL glass bottle
- Preservative: sodium thiosulfate in bottle; 1 ml monochloroacetic acid added in the field
- Shipped chilled using ice packs

### Fumigants – several gases pesticides including EDB

- Bottle: 40 mL amber vials (3 bottles required)
- Preservative: solution of sodium thiosulfate (40 mg/mL)
- Shipped chilled using ice packs

### Herbicides -

- Bottle: 500 mL amber bottle (2 bottles required)
- Preservative (Chlorinated): sodium thiosulfate (40 mg/mL)
- Shipped chilled using ice packs

### Metals – Primary and Secondary

- Bottle: 1 L plastic bottle
- Preservative: Nitric Acid
- Ice packs are not needed for shipment

### P505 – Chlorinated Pesticides

- Bottle: 40 mL amber vials (3 bottles required)
- Preservative: solution of sodium thiosulfate (40 mg/mL)
- Shipped chilled using ice packs

**Nitrates – NO<sub>2</sub> or NO<sub>2</sub>/NO<sub>3</sub> (Nitrates/Nitrites)** The sample must be analyzed within 48 hours- Therefore, the sample must be rushed back to the lab for analysis.

- Bottle: 60 mL plastic bottle
- Preservative: none
- Shipped chilled using ice packs

### Odor –

- Bottle: 250 mL glass bottle
- Preservative: none
- Shipped chilled using ice packs
- Must be analyzed within 12 hours – rush back to lab

### Bromacil – (includes Bromacil and Diuron)

- Bottle: 250 mL glass bottle
- Preservative: none
- Shipped chilled using ice packs

**Bacteriological Sample – BACT** (limited to a Granulated Activated Carbon (GAC) filter or special request by Toxics)

- Plastic Bottle or plastic sling bag – depends on laboratory

**CDV** – Suite of analytes specifically for the cattle dip vat program – arsenic and certain pesticides



## Chapter 5 - Filling out the Environmental Chemistry Analysis Request Form

The Environmental Chemistry Analysis Request Form is the most important form to fill out. Please print clearly and complete all lines. Also, before commencing with any sampling, please get verbal or written permission from the resident or owner and label the well with the FLUWID number. Please review the form on page 18 and follow these guidelines:

### **CUSTOMER INFORMATION:**

- County/Agency:** The county or agency that collected the sample.
- Project ID:** The program codes are **SUPER ACT, DSCP and TOX** for the SUPER Act, Drycleaner Solvent Cleanup (DSCP) and Toxics programs. Circle the appropriate project. Because Toxics has several tasks, fill in the box after TOX with one of the following: VOC, EDB-new, EDB-invest, Nitrate, CDV, Req or HSET.
- Address:** County Health Department mailing address.
- Collector:** Printed/typed name of the field sample collector.
- City, State, Zip:** The address of the County Health Department, City, State, and Zip Code. Using an accurate CHD stamp or mailing label is permissible.
- Signature:** Signature of the field sample collector.
- Phone:** Field sample collector's work phone number including area code or Suncom and the extension.
- Relinquish Date:** The date the sample is sent to the Laboratory (mm/dd/yy). This is a required field.

### **SAMPLE INFORMATION:**

- Date Collected:** Provide the Month, Day and Year (mm/dd/yy) the sample was collected.
- Time Collected:** Provide the Hour (HH) and Minute (MM) (using a 24-hour clock).
- Sample Vial ID:** This should be the FLUWID number you print on the bottle label. This is a required field.

**Purge Duration/  
Purge volume:** Provide the number of minutes the well water was purged before the initial sample container was filled. This should be a minimum of 5 minutes. If the faucet is located after the tank and the tank is greater than 50 gal, flush the tank at least one time and record the volume. Always check the raw (pre-tank) or raw (post-tank) box under treatment classification.

**Comments/Description:** This is the name associated with the location (i.e. Al's Shell Station) and can also include a description of unique conditions.

**Sample Type:** Use First Sample, Resample, Compliance, or Complaint if the sample is not collected from a filtered well. (definitions are provide below) For filtered samples (meaning a DEP installed Granular Activated Carbon (GAC) Filters, Ion Exchange, or Reverse Osmosis treatment devices) indicate which sample was collected. Filter samples should be collected in the following sequence: Post, Mid, Pre. (Also see guidance in Chapter 8)

**Definitions**

First Sample	The first time a sample has been collected under this program.
Resample	A revisit to a well. The revisit may be due to improper initial collection, assessment of contamination concentration changes over time, etc.
Compliance	Sample collected that will be used for regulatory compliance.
Complaint	Samples collected because of a citizen's complaint or at the CHD's initiative.
Pre-filter	These samples are collected before water flows into the filter device. They are samples coming directly from the well and are collected last.
Mid-filter	These samples are collected between the first and second GAC canisters and are collected second. Most Ion Exchange and Reverse Osmosis systems do not have mid-points so no mid-filter will be collected.
Post-filter	These samples are collected after the GAC filter treatment system and Ultraviolet light unit, or after all other treatments and are collected first.

**Treatment Classification:** The type of water treatment, if any, should be identified with a check the appropriate box:

<b>C</b>	Chlorinated*	<b>N</b>	Activated Carbon
<b>W</b>	Water Softener	<b>G</b>	Green Sand Filter

- |          |                 |          |                 |
|----------|-----------------|----------|-----------------|
| <b>A</b> | Aerated         | <b>O</b> | Reverse Osmosis |
| <b>R</b> | Raw (Pre-tank)  | <b>I</b> | Ion Exchange    |
| <b>P</b> | Raw (Post-tank) |          |                 |

**NOTE:** Permeation samples must have the chlorinated box checked.

**Drinking Water Source/  
Well Type:**

Check the appropriate box to identify the well type as defined in Chapter 62-550.200, F.A.C. and Chapter 64E-8.001, F.A.C.

- 40** Community Water System (> 100,000 gallons/day)
- 41** Non-Community Public Water System
- 42** Limited Use Public Water System (64E-8)
- 43** Private Water Well
- 45** Non Transient/Non Community Water System
- 46** Community Water System (< 100,000 gallons/day)
- 47** Multi-Family Well (3-4 living units)
- 50** Irrigation Well
- 60** Permeation
- 70** Non Well (2nd discharge from same well/other water source - describe)

Note: Codes 50, 60 and 70 are not reimbursable unless prior approval is obtained from HSEW.

**ANALYSES REQUESTED:** The laboratory can provide the following sample kits:

- |                  |            |                |
|------------------|------------|----------------|
| VOCs             | Semi- VOCs | Primary Metals |
| Secondary Metals | NO2/NO3    | Fumigants      |
| Pesticides       |            |                |

Please provide the type of analyses you are requesting here

**WELL SITE INFORMATION:**

- Address:** The physical address of the well in US Postal Service format. Avoid punctuation.
- City:** The city the well is located.
- Zip:** The zip code the well is located.
- County:** The two digit code for the county where the well is sampled
- Facility Number:** The associated facility or risk source seven digit DEP ID number. This number is required for EACH facility or risk source in order for CHDs to receive reimbursement under the SUPER Act or DSCP programs.
- Florida Unique Well ID:** Florida Unique Well ID (FLUWID). EVERY potable well must have a FLUWID attached and recorded. If the well has not previously

had a FLUWID number attached to it, place one of the three plastic FLUWID bar code stickers in the box. Otherwise, write the number in the appropriate location in the box.

**Well Survey Request (formerly called the Re-Score ID)**

**Number:** This ID number is used to track samples for requested DEP surveys and can be found on the well survey request form. If this is a SUPER Act request, the first two letters will be RE. If this is a TOX program request, the ID will start with the letters DOH or DEP followed with a sequential four digit number. An example for a SUPER Act rescore ID is RE06653. An example for a TOX request ID is DOH0005.

**Casing Material:** What is the casing made of? Check the appropriate box:  
 1-PVC  
 2-Galvanized  
 3-Cast Iron  
 4-Black Steel  
 5-Other

**Total Well Depth:** If known, give the total well depth.

**Well Diameter:** Determine from casing (if possible) the outside diameter of the well in inches.

**Casing Length:** If known, give the total casing depth in feet.

**CONTACT INFORMATION:**

**Name (Last, First):** Use full names, be consistent in spelling and ALWAYS get permission from the resident/owner prior to sampling. Check appropriate box to identify person as either:  
 Owner  
 Resident  
 Both (Owner/Resident)

**Address:** This is for mailing purposes. Do not abbreviate street names and always use US Postal Service abbreviations for street suffixes like St. or Ave.

**City:** Mailing address city.

**State:** Mailing address state.

**Zip:** Provide five -digit zip codes.

**Phone 1:** Home phone including area code

**Phone 2:** Work phone including area code.

***If a second contact is necessary, place the information in the Sample Information section in the blanks following "Comments/Description"***

**LABORATORY USE ONLY: DO NOT WRITE IN THE SHADED AREA**

STATE OF FLORIDA  
DEPARTMENT OF HEALTH  
BUREAU OF LABORATORIES



1217 PEARL STREET  
JACKSONVILLE, FLORIDA 32202  
SC 866-1523 (904) 791-1523

ENVIRONMENTAL CHEMISTRY ANALYSIS REQUEST FORM



<b>CUSTOMER INFORMATION</b>	
COUNTY/AGENCY: _____	PROJECT ID(Circle): <b>SUPER ACT</b> <b>DSCP</b> <b>TOX</b> : _____
ADDRESS: _____	COLLECTOR: _____
CITY, STATE, ZIP: _____	SIGNATURE: _____
PHONE: _____	RELINQUISH DATE: _____ <small>(REQUIRED FIELD)</small>
<b>SAMPLE INFORMATION</b>	
DATE COLLECTED: MM DD YY	TIME COLLECTED: HH MM SAMPLE VIAL ID: _____ <small>(PLU/WID - REQUIRED FIELD)</small>
PURGE DURATION: _____ min. or PURGE VOLUME: _____ gal.	
COMMENTS/DESCRIPTION: _____	
<b>SAMPLE TYPE (CHECK ONLY ONE):</b>	
<input type="checkbox"/> FIRST SAMPLE	<input type="checkbox"/> PRE-FILTER
<input type="checkbox"/> RESAMPLE	<input type="checkbox"/> MID-FILTER
<input type="checkbox"/> COMPLIANCE	<input type="checkbox"/> POST-FILTER
<input type="checkbox"/> COMPLAINT (Citizens or County Initiative)	
<b>TREATMENT CLASSIFICATION:</b>	
<input type="checkbox"/> C - CHLORINATED	<input type="checkbox"/> N - ACTIVATED CARBON
<input type="checkbox"/> W - WATER SOFTENER	<input type="checkbox"/> G - GREEN SAND FILTER
<input type="checkbox"/> A - AERATED	<input type="checkbox"/> O - REVERSE OSMOSIS
<input type="checkbox"/> R - RAW(Pre-tank)	<input type="checkbox"/> I - ION EXCHANGE
<input type="checkbox"/> P - RAW(Post-tank)	
<b>DRINKING WATER SOURCE / WELL TYPE (CHECK ONLY ONE):</b>	
<input type="checkbox"/> 40 - COMMUNITY WATER SYSTEM (>100,000 gallons/day)	<input type="checkbox"/> 46 - COMMUNITY WATER SYSTEM (<100,000 gallons/day)
<input type="checkbox"/> 41 - NON-COMMUNITY WATER SYSTEM	<input type="checkbox"/> 47 - MULTI-FAMILY WELL (3-4 Living Units)
<input type="checkbox"/> 42 - LIMITED USE PUBLIC WATER SYSTEM (64E-8)	<input type="checkbox"/> 50 - IRRIGATION WELL
<input type="checkbox"/> 43 - PRIVATE WELL	<input type="checkbox"/> 60 - PERMEATION
<input type="checkbox"/> 45 - NON-TRANSIENT/NON-COMMUNITY WATER SYSTEM	<input type="checkbox"/> 70 - NON-WELL (2nd Discharge From Same Well/Other Water Source)
<b>ANALYSES REQUESTED</b>	
<input type="checkbox"/> VOCs	<input type="checkbox"/> Semi-VOCs
<input type="checkbox"/> NO2/NO3	<input type="checkbox"/> Fungus
<input type="checkbox"/> Primary metals	<input type="checkbox"/> Secondary metals
<input type="checkbox"/> Pesticide	
<input type="checkbox"/> Other parameters: (list) _____	
<b>WELL SITE INFORMATION</b>	
ADDRESS: _____	CITY: _____ ZIP: _____
COUNTY: _____ <small>(REQUIRED FIELD)</small>	FACILITY NUMBER: _____ <small>(REQUIRED FOR SUPER ACT)</small>
WELL SURVEY REQUEST NUMBER: _____ <small>(REQUIRED FOR SUPER ACT)</small>	
<b>CASING MATERIAL</b>	
<input type="checkbox"/> 1 - PVC	TOTAL WELL DEPTH: _____ ft.
<input type="checkbox"/> 2 - GALVANIZED	WELL DIAMETER: _____ in.
<input type="checkbox"/> 3 - CAST IRON	
<input type="checkbox"/> 4 - BLACK STEEL	
<input type="checkbox"/> 5 - OTHER _____	CASING LENGTH: _____ ft.
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p><b>FLORIDA UNIQUE WELL ID</b></p> <p>PLACE TAG HERE</p> <p>If no tag is available, write number below:</p> <p>_____</p> </div>	
<b>CONTACT INFORMATION</b>	
NAME: (Last) _____ (First) _____ <input type="checkbox"/> OWNER <input type="checkbox"/> RESIDENT <input type="checkbox"/> BOTH (Owner/Resident)	
ADDRESS: _____	
CITY: _____	STATE: _____ ZIP: _____
PHONE 1: _____	PHONE 2: _____
<b>LABORATORY USE ONLY</b>	
SAMPLE ID: _____	JOB ID: _____
DATE & TIME RECEIVED: _____	RECEIPT TEMP: _____



## Chapter 6 - Reading the Laboratory Report

This chapter provides a brief explanation of the Bureau of Laboratory Services sample analyses results report. An example of the Purgeable organics/EPA 524.2 report is provided on the following page and briefly described. The results of the sample analyses are used to determine if there is a potential for adverse health effects in contamination. Each CHD field staff should be familiar with this report and be able to identify exceedence of MCLs and HALs and understand the list of qualifiers.

### Understanding the Laboratory Report

At first review, sample results may seem intimidating, but with a few simple guidelines, they can easily be understood. Please refer to the list below and the following pages to understand the data elements on the Laboratory Report.

- A - Job ID – Identifier of all samples submitted in the same cooler. It contains the submitting county name, the date the samples were logged into the laboratory in (mm/dd/yy) format, and a two digit sequential number.
- B - Each result begins with the printing date and time analyzed.
- C - The County Health Department that submitted the sample.
- D - Sample record number for this example, this is the 75,043<sup>rd</sup> sample in the laboratory's database. This number **should not be** used for identifying the sample.
- E - Sample ID. This is the number used to identify the sample (commonly called the "Sample Number"). It is made up of the login date (mm/dd/yy), a dash, and a 3-digit sequential number.
- F – Demographic information of where the sample was collected, who collected it, and any related information on why it was collected.
- G – Results – This is where the analytical values of the tests are found. The key to understanding the results is to understand the Qualifiers.
- H – Units – Units for Purgeable samples are in micrograms per liter (ug/L). This is the same as parts per billion (ppb). Milligrams per liter (mg/L), is the same as a part per million (ppm). For example, results of field chlorine will be reported in ppm.
- I – Qualifiers – The key to understanding Department of Health laboratory sample results is to understand the qualifiers. If there is a "U" qualifier, then the contaminant was not detected - the number in the results column represents the method detection level (MDL) for that analyte. Any other qualifier (except "S" which means the sample was not analyzed for that contaminant) or **no qualifier** means that the number in the results column is the **actual level the contaminant had upon analysis**. Additional qualifiers are listed and explained at the end of this section.

SAMPLE LABORATORY REPORT

**A** JOB ID: SARASOTA-050728-015 FOR SARASOTA CHD  
 SAMPLE ID: **D** 246393 / 050728-053 **E**  
 Group ID . . . . . JAX\_EC\_LAB  
 Project ID . . . . . SUPER  
 Charge Code . . . . . PREPAID  
 Matrix ID . . . . . WATER  
 Sample Priority . . . . . 5  
 Date/Time Received . . . . . 28-JUL-2005 09:40:00.00  
 Sample Temperature (C) . . . . . 5  
 Laboratory Remarks . . . . . NONE  
**F** Collector . . . . . M TUELL  
 Collector Phone . . . . . SC 549-6133  
**B** Date/Time Collected . . . . . 25-JUL-2005 12:45:00.00  
 Relinquish Date . . . . . 26-JUL-2005 00:00:00.00  
 Sample Types . . . . . RESAMPLE  
 Treatment . . . . . R - RAW  
 Well Type . . . . . 42 - LIMITED USE PUBLIC WATER SYSTEM (64E-8, F.A.C.)  
 Sample/System Name . . . . . Joe P. Public  
**F** Sample/System Street . . . . . 25 E Main Street  
 Sample/System City . . . . . NOKOMIS  
 Sample/System State . . . . . FL  
 Sample/System Zip . . . . . 32323  
**C** County Name . . . . . SARASOTA  
 County Code . . . . . 58  
 Facility Number . . . . . 8516504  
 Request ID . . . . . NONE GIVEN  
 Florida Unique Well ID . . . . . AAD1234  
 Casing Material . . . . . 2 - GALVANIZED  
 Well Diameter . . . . . 2  
 Contact 1 Type (O/R/B) . . . . . R - RESIDENT  
 Contact 1 Last Name . . . . . Public  
 Contact 1 First Name . . . . . Joe  
 Contact 1 Street . . . . . 25 E Main Street  
 Contact 1 City . . . . . NOKOMIS  
 Contact 1 State . . . . . FL  
 Contact 1 Zip . . . . . 32323  
 Contact 1 Phone 1 . . . . . 941-485-4099

=====

RESULTS UNITS QUALIF  
 -----

ANALYSIS: [Purgeable organics / EPA 524.2]  
 COMPONENTS: Date and time analyzed..... 29-JUL-2005 19:33  
 Analyst name..... G. BONKOSKI  
**G** DICHLORODIFLUOROMETHANE..... 0.38 ug/L U  
 CHLOROMETHANE..... 0.27 ug/L U  
 VINYL CHLORIDE..... 1.0 ug/L  
 BROMOMETHANE..... 0.30 ug/L U  
 CHLOROETHANE..... 0.25 ug/L U  
 TRICHLOROFLUOROMETHANE..... 0.17 ug/L U  
 1,1-DICHLOROETHYLENE..... 0.28 ug/L U

**H**

	DICHLOROMETHANE (METHYLENE CHLOR	0.29	ug/L	U
	T-1,2-DICHLOROETHYLENE.....	0.34	ug/L	U
	METHYL-TERT-BUTYL-ETHER (MTBE)..	0.31	ug/L	U
	1,1-DICHLOROETHANE.....	0.29	ug/L	U
	C-1,2-DICHLOROETHYLENE.....	0.30	ug/L	U
	BROMOCHLOROMETHANE.....	0.32	ug/L	U
	2,2-DICHLOROPROPANE.....	0.29	ug/L	E
	1,2-DICHLOROETHANE.....	0.23	ug/L	U
	1,1,1-TRICHLOROETHANE.....	0.20	ug/L	U
	1,1-DICHLOROPROPENE.....	0.20	ug/L	U
	CARBON TETRACHLORIDE.....	0.21	ug/L	U
	BENZENE.....	0.17	ug/L	U
	DIBROMOMETHANE.....	0.22	ug/L	U
	1,2-DICHLOROPROPANE.....	0.16	ug/L	U
<b>G</b>	<b>TRICHLOROETHYLENE.....</b>	<b>8.8</b>	<b>ug/L</b>	<b>C</b>
	C-1,3-DICHLOROPROPYLENE.....	0.19	ug/L	U
	T-1,3-DICHLOROPROPYLENE.....	0.22	ug/L	E
	1,1,2-TRICHLOROETHANE.....	0.19	ug/L	U
	TOLUENE.....	0.77	ug/L	
	1,3-DICHLOROPROPANE.....	0.19	ug/L	U
	ETHYLENE DIBROMIDE (EDB).....	0.25	ug/L	U
	TETRACHLOROETHYLENE.....	0.26	ug/L	U
	1,1,1,2-TETRACHLOROETHANE.....	0.19	ug/L	U
	MONOCHLOROBENZENE.....	0.21	ug/L	U
	ETHYLBENZENE.....	0.21	ug/L	U
	STYRENE.....	0.21	ug/L	U
	1,1,2,2-TETRACHLOROETHANE.....	0.31	ug/L	U
	1,2,3-TRICHLOROPROPANE.....	0.26	ug/L	U
	ISOPROPYLBENZENE (CUMENE).....	0.23	ug/L	U
	BROMOBENZENE.....	0.21	ug/L	U
	N-PROPYLBENZENE.....	0.25	ug/L	U
	O-CHLOROTOLUENE.....	0.22	ug/L	U
	P-CHLOROTOLUENE.....	0.21	ug/L	U
	1,3,5-TRIMETHYLBENZENE.....	0.23	ug/L	U
	TERT-BUTYLBENZENE.....	0.26	ug/L	U
	1,2,4-TRIMETHYLBENZENE.....	0.22	ug/L	U
	SEC-BUTYLBENZENE.....	0.25	ug/L	U
	M-DICHLOROBENZENE.....	0.23	ug/L	U
	P-DICHLOROBENZENE.....	0.24	ug/L	U
	4-ISOPROPYLTOLUENE (P-CYMENE)...	0.28	ug/L	U
	O-DICHLOROBENZENE.....	0.23	ug/L	U
	N-BUTYLBENZENE.....	0.24	ug/L	U
	DIBROMOCHLOROPROPANE (DBCP).....	0.38	ug/L	U
	1,2,4-TRICHLOROBENZENE.....	0.32	ug/L	U
	NAPHTHALENE.....	0.37	ug/L	U
	HEXACHLOROBUTADIENE.....	0.34	ug/L	U
	1,2,3-TRICHLOROBENZENE.....	0.31	ug/L	U
	M,P-XYLENES.....	0.23	ug/L	U
	O-XYLENE.....	0.20	ug/L	U
	XYLENES (TOTAL).....	0.20	ug/L	U
	CHLOROFORM (THM).....	0.27	ug/L	O,U
	BROMODICHLOROMETHANE (THM).....	0.19	ug/L	U
	DIBROMOCHLOROMETHANE (THM).....	0.23	ug/L	U

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JOB ID: SARASOTA-050728-015 FOR SARASOTA CHD

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SAMPLE ID: 246393 / 050728-053

BROMOFORM (THM).....	0.21	ug/L	U
THMS (TOTAL).....	0.19	ug/L	O,U

**Result Qualifier Key:**

- I** U - Analyte not detected; result reported is the MDL, if applicable.  
 C - Result exceeds Maximum Contaminant Level as in Chap. 62-550 or 520, F.A.C.  
 E - Analyte not detected; quality control out of range; result is the MDL.

**RESULT QUALIFIER KEY**

(REVISED September 1, 2005)

- A** Result based on countable colonies as indicated (TSA<sup>1</sup> only or MEA<sup>2</sup> only).  
**B** Potential lead risk to children; contact Joe Sekerke at 850-245-4248.  
**C** Result exceeds Maximum contamination level (MCL) as in Chap. 62-550 or 520, F.A.C.  
**D** Confirmation test performed beyond holding time; result is suspect.  
**E** Analyte not detected; quality control out of range; result is the method detection limit.  
**F** Result exceeds allowable level (Manual for the Certification of Labs, EPA 1991).  
**G** Result based on dissolved ions, i.e., the sample was filtered by the lab.  
**H** Value exceeds DOH Health Advisory Level (HAL).  
**I** Approximate result between method detection limit and practical quantification limit; supporting evidence for identity.  
**J** Approximate result; quality control out of range.  
**K** Approximate result; result out of calibrated range of instrument.  
**L** Wipe sample (such as a particle swab) included significant particles of debris.  
**M** Method approved only as a screen for this analyte.  
**N** Analyte not reported due to interference; result is the method detection limit.  
**O** Method not approved for this analyte; result for informational purposes only.  
**P** No valid trip blank result for this analyte; result is suspect.  
**Q** Method detection limit reflects sample dilution due to Matrix or interference effects  
**R** Result exceeds recommended lead level of 0.50% by weight.  
**S** Analyte not screened; result is the method detection limit.  
**T** Peak detected; supporting evidence for identity; result is the method detection limit.  
**U** Analyte not detected; result is the method detection limit, if applicable.  
**V** Analyte detected in the sample and laboratory reagent blank; result is suspect.  
**W** Result is the sum of three components.  
**X** Analyte detected in both the sample and the trip blank.  
**Y** Analysis from improperly preserved sample; result is suspect.  
**Z** Zero result with qualifier indicates colonies TNTC<sup>3</sup>.

- 1 *typticase soy agar*  
 2 *malt extract agar*  
 3 *too numerous to count*

The two most important qualifiers are "C" or "H". "C" stands for Maximum Contaminant Level (MCL), - indicating the sample does not meet drinking water standards. "H" qualifiers stand for Health Advisory Level (HAL). HALs have been established by the Department of Health for compounds without a regulatory standard. If a sample exceeds a HAL, it authorizes the water system for restoration, just as an MCL exceedence would.



## Guidance Concentrations

The following table lists the Maximum Contaminant Concentrations (MCLs) or DOH Health Advisory Levels (HALs) for Laboratory Analytes. The most current is available at 9/1/05

Chemical	Value	Units	MCL/HAL
1,1,1,2-TETRACHLOROETHANE	1	ug/L	HAL
1,1,1-TRICHLOROETHANE	200	ug/L	MCL
1,1,2,2-TETRACHLOROETHANE	1	ug/L	HAL
1,1,2-TRICHLOROETHANE	5	ug/L	MCL
1,1-DICHLOROETHANE	70	ug/L	HAL
1,1-DICHLOROETHYLENE	7	ug/L	MCL
1,2,3-TRICHLOROBENZENE	70	ug/L	HAL
1,2,3-TRICHLOROPROPANE	40	ug/L	HAL
1,2,4-TRICHLOROBENZENE	70	ug/L	MCL
1,2,4-TRIMETHYLBENZENE	35	ug/L	HAL
1,2-DICHLOROETHANE	3	ug/L	MCL
1,2-DICHLOROPROPANE	5	ug/L	MCL
1,3,5-TRIMETHYLBENZENE	35	ug/L	HAL
1-CHLOROBUTANE	2800	ug/L	HAL
2,4,5-T	70	ug/L	HAL
2,4,5-TP (SILVEX)	50	ug/L	MCL
2,4-D	70	ug/L	MCL
2,4-DB	56	ug/L	HAL
2,4-DINITROTOLUENE	0.05	ug/L	HAL
2,6-DINITROTOLUENE	0.05	ug/L	HAL
2-BUTANONE	4200	ug/L	HAL
2-HEXANONE	280	ug/L	HAL
4,4'-DDD	0.1	ug/L	HAL
4,4'-DDE	0.1	ug/L	HAL
4,4'-DDT	0.1	ug/L	HAL
4-NITROPHENOL	56	ug/L	HAL
ACENAPHTHYLENE	210	ug/L	HAL
A-CHLORDANE	2	ug/L	MCL
ACIFLUORFEN	1	ug/L	HAL
ALACHLOR	2	ug/L	MCL
ALDICARB	7	ug/L	HAL
ALDICARB SULFONE	7	ug/L	HAL
ALDRIN	0.002	ug/L	HAL
ALLYL CHLORIDE	35	ug/L	HAL
ALPHA-BHC	0.04	ug/L	HAL
AMETRYN	63	ug/L	HAL
ANTHRACENE	2100	ug/L	HAL
ANTIMONY	6	ug/L	MCL
ARSENIC	10	ug/L	MCL
ATRAZINE	3	ug/L	MCL
BARIUM	2000	ug/L	MCL
BENTAZON	210	ug/L	HAL
BENZENE	1	ug/L	MCL

Chemical	Value	Units	MCL/HAL
BENZO(A)ANTHRACENE	0.2	ug/L	HAL
BENZO(A)PYRENE	0.2	ug/L	MCL
BENZO(B)FLUORANTHENE	0.2	ug/L	HAL
BENZO(G,H,I)PERYLENE	210	ug/L	HAL
BENZO(K)FLUORANTHENE	0.5	ug/L	HAL
BERYLLIUM	4	ug/L	MCL
BETA-BHC	0.02	ug/L	HAL
BROMACIL	90	ug/L	HAL
BROMOBENZENE	4000	ug/L	HAL
BROMOCHLOROMETHANE	91	ug/L	HAL
BROMODICHLOROMETHANE	100	ug/L	MCL
BROMOFORM (as sum of THM)	80	ug/L	MCL
BROMOMETHANE	9.8	ug/L	HAL
BUTACHLOR	259	ug/L	HAL
BUTYL Benzyl Phthalate	140	ug/L	HAL
BUTYLATE	350	ug/L	HAL
C/T-1,3-DICHLOROPROPENE	0.4	ug/L	HAL
C-1,2-DICHLOROETHYLENE	70	ug/L	MCL
C-1,3-DICHLOROPROPYLENE	0.4	ug/L	HAL
CADMIUM	5	ug/L	MCL
CARBARYL	700	ug/L	HAL
CARBOFURAN	40	ug/L	MCL
CARBON DISULFIDE	700	ug/L	HAL
CARBON DISULFIDE	3	ug/L	MCL
CHLORAMBEN	110	ug/L	HAL
CHLORDANE, TECHNICAL	2	ug/L	MCL
CHLOROBENZILATE	0.1	ug/L	HAL
CHLOROETHANE	12	ug/L	HAL
CHLOROFORM (as sum of THM)	80	ug/L	MCL
CHLOROMETHANE	2.7	ug/L	HAL
CHLORONEB	91	ug/L	HAL
CHLOROPICRIN	7.3	ug/L	HAL
CHLOROTHALONIL	1.5	ug/L	HAL
CHLORPROPHAM	1400	ug/L	HAL
CHLORPYRIPHOS (DURSBAN)	21	ug/L	HAL
CHROMIUM	100	ug/L	MCL
CHRYSENE	4.8	ug/L	HAL
CIS-PERMETHRIN	350	ug/L	HAL
COPPER	1000	ug/L	MCL
CYANIDE	200	ug/L	MCL
CYCLOATE	35	ug/L	HAL
DACTHAL (DCPA)	70	ug/L	HAL
DALAPON	200	ug/L	MCL
DELTA-BHC	2.1	ug/L	HAL
DI(2-ETHYLHEXYL)ADIPATE	400	ug/L	MCL
DI(2-ETHYLHEXYL)PHTHALATE	6	ug/L	MCL
DIBENZ(A,H)ANTHRACENE	0.2	ug/L	HAL
DIBROMOCHLOROMETHANE	100	ug/L	MCL
DIBROMOCHLOROPROPANE	0.2	ug/L	MCL

Chemical	Value	Units	MCL/HAL
DIBROMOCHLOROPROPANE	0.2	ug/L	MCL
DIBROMOMETHANE	70	ug/L	HAL
DICAMBA	210	ug/L	HAL
DICHLORODIFLUOROMETHANE	1000	ug/L	HAL
DICHLOROMETHANE (MECL)	5	ug/L	MCL
DICHLORPROP	35	ug/L	HAL
DICHLORVOS	0.1	ug/L	HAL
DIELDRIN	0.002	ug/L	HAL
DIETHYLPHTHALATE	5600	ug/L	HAL
DIMETHYLPHTHALATE	70000	ug/L	HAL
DI-N-BUTYLPHTHALATE	700	ug/L	HAL
DINOSEB	7	ug/L	MCL
DIPHENAMID	210	ug/L	HAL
ENDOSULFAN I (total)	42	ug/L	HAL
ENDOSULFAN II (Total)	42	ug/L	HAL
ENDRIN	2	ug/L	MCL
EPTC	180	ug/L	HAL
ETHOPROP	0.7	ug/L	HAL
ETHYLBENZENE	700	ug/L	MCL
ETHYLENE DIBROMIDE (EDB)	0.02	ug/L	MCL
ETHYLMETHACRYLATE	630	ug/L	HAL
ETRIDIAZOLE	175	ug/L	HAL
FENARIMOL	455	ug/L	HAL
FLUORENE	500	ug/L	HAL
FLUORIDE	4000	ug/L	MCL
FLURIDONE	560	ug/L	HAL
G-CHLORDANE	2	ug/L	MCL
HEPTACHLOR	0.4	ug/L	MCL
HEPTACHLOR EPOXIDE	0.2	ug/L	MCL
HEXACHLORO BENZENE (HCB)	1	ug/L	MCL
HEXACHLOROBUTADIENE	0.5	ug/L	HAL
HEXACHLOROCYCLOPENTADIENE	50	ug/L	MCL
HEXACHLOROETHANE	1	ug/L	HAL
HEXAZINONE	230	ug/L	HAL
INDENO(1,2,3-CD)PYRENE	0.2	ug/L	HAL
ISOPHORONE	37	ug/L	HAL
ISOPROPYLBENZENE (CUMENE)	700	ug/L	HAL
LEAD	15	ug/L	MCL
LINDANE (G-BHC)	0.2	ug/L	MCL
M-DICHLOROBENZENE	600	ug/L	HAL
MERCURY	2	ug/L	MCL
METHACRYLONITRILE	5	ug/L	HAL
METHIOCARB	35	ug/L	HAL
METHOMYL	180	ug/L	HAL
METHOXYCHLOR	40	ug/L	MCL
METHYL ACRYLATE	210	ug/L	HAL
METHYLMETHACRYLATE	25	ug/L	HAL
METHYL-TERT-BUTYL-ETHER	35	ug/L	HAL
METOLACHLOR	110	ug/L	HAL

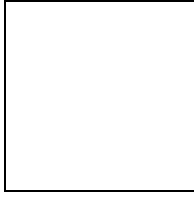
Chemical	Value	Units	MCL/HAL
METRIBUZIN	180	ug/L	HAL
MEVINPHOS	1.8	ug/L	HAL
MOLINATE	14	ug/L	HAL
MONOCHLOROENZENE	100	ug/L	MCL
NAPHTHALENE	100	ug/L	HAL
NAPROPAMIDE	700	ug/L	HAL
N-BUTYLBENZENE	280	ug/L	HAL
NICKEL	100	ug/L	MCL
NITRATE	10000	ug/L	MCL
NITRATE & NITRITE (TOTAL)	10000	ug/L	MCL
NITRITE	1000	ug/L	MCL
NORFLURAZON	280	ug/L	HAL
N-PROPYLBENZENE	280	ug/L	HAL
O-CHLOROTOLUENE	100	ug/L	HAL
O-DICHLOROENZENE	600	ug/L	MCL
OXAMYL	200	ug/L	MCL
PCB-AROCHLOR	0.5	ug/L	MCL
P-CHLOROTOLUENE	100	ug/L	HAL
P-DICHLOROENZENE	75	ug/L	MCL
PEBULATE	350	ug/L	HAL
PENTACHLOROPHENOL	1	ug/L	MCL
PHENANTHRENE	210	ug/L	HAL
PICLORAM	500	ug/L	MCL
PROMETRYN	28	ug/L	HAL
PRONAMIDE	53	ug/L	HAL
PROPACHLOR	91	ug/L	HAL
PROPazine	10	ug/L	HAL
PROPOXUR (BAYGON)	2.8	ug/L	HAL
PYRENE	210	ug/L	HAL
SEC-BUTYLBENZENE	280	ug/L	HAL
SELENIUM	50	ug/L	MCL
SIMAZINE	4	ug/L	MCL
SODIUM	160,000	ug/L	MCL
STIROFOS	1.5	ug/L	HAL
STYRENE	100	ug/L	MCL
T-1,2-DICHLOROETHYLENE	100	ug/L	MCL
T-1,3-DICHLOROPROPYLENE	0.4	ug/L	HAL
TEBUTHIURON	490	ug/L	HAL
TERBACIL	91	ug/L	HAL
TERBUTRYN	330	ug/L	HAL
TERT-BUTYLBENZENE	280	ug/L	HAL
TETRACHLOROETHYLENE	3	ug/L	MCL
TETRAHYDROFURAN	4.6	ug/L	HAL
THALLIUM	2	ug/L	MCL
TOLUENE	1000	ug/L	MCL
TOTAL PCBs	0.5	ug/L	MCL
TOXAPHENE	3	ug/L	MCL
TRANS-PERMETHRIN	350	ug/L	HAL
TRIADEMEFON	210	ug/L	HAL

<b>Chemical</b>	<b>Value</b>	<b>Units</b>	<b>MCL/HAL</b>
TRICHLOROETHYLENE	3	ug/L	MCL
TRICHLOROFLUOROMETHANE	2100	ug/L	HAL
TRIFLURALIN	4.5	ug/L	HAL
VERNOLATE	7	ug/L	HAL
VINYL CHLORIDE	1	ug/L	MCL
XYLENES (TOTAL)	10,000	ug/L	MCL

Last updated May 2005

**ug/L = micrograms per liter**

**mg/L = milligrams per liter**



## Chapter 7 – Notifying Owners of Sample Analysis Results

In addition to obtaining the owner's or resident's permission prior to sampling a private well, it is required that the well owner and/or resident user, be notified in writing of the laboratory results. Regardless of whether the laboratory results indicate detectable compounds or not, the laboratory report (or a summary of the results and a notice allowing them to request the lab report) must be sent to the user/owner of the well. CHDs have electronic access weekly to these results either through weekly e-mails from HSEW or from data on the DOH Sharepoint intranet site. Hard copies of the analyses are mailed to the CHDs daily by the Jacksonville lab. CHDs are expected to contact affected parties within 24 hours if an MCL or HAL is detected and to send out hard copies of the sample results (no matter what the sample result levels) in a timely manner, along with an explanatory letter regarding the analysis results. You may contact John Folsom at 850-245-4444 ext 2194 or SC 205-4444 ext. 2194 for assistance in preparing and conducting mail merges. Each CHD may also develop their own formats for letters to accomplish the written notification requirement.

In addition, once you recognize there is contamination in a well at or above an MCL or HAL, it is important to take the following steps to ensure that safe drinking water is provided to the affected party.

1. Notify the DEP Water Restoration program office (Charles Coultas at (850) 245-8369 or Suncom 205-8369) or e-mail him at [Charles.Coultas@dep.state.fl.us](mailto:Charles.Coultas@dep.state.fl.us) of the contamination. Be ready to provide the following information:
  - Type and amount of contamination
  - Owner names, phone numbers, and addresses (including zip code)
  - FLUWID number for well and the 7-digit facility or risk source ID is associated with
  - Address and phone number of the site
  - Sample ID
2. Notify the resident user, and/or well owner, within 24 hours after you receive the sample results and have determined that an MCL violation or HAL exceedance has occurred. Presently, HSEW sends out e-mail alerts to CHDs within 24 hours of the time an MCL/HAL is noted from the Jacksonville Laboratory Information Management System (LIMS) database in an MCL/HAL summary report downloaded daily. Once the resident owner or well owner is notified, you should document the date and time of the contact in your field notebook or some other recording instrument.
3. Please note that some residents have misunderstood the wording in the analysis report, thinking that if a standard is exceeded, it means that it is better than the standard; if the concentration is below the standard, some residents think it means that the water is bad because it did not meet the standard.

4. You may purchase bottled water from a grocery store. However, unless the concentrations of contaminants are significantly above the MCL or HAL levels, there is no immediate need to replace the drinking water source. (See also *DEP Mandatory Health Effects Language for Certain Contaminants Regulated in Chapter 62-550, 62-555, and 62-560, F.A.C.*) Future bottled water can be obtained by the affected parties through public water sources such as the CHD, a nearby school or other potable water facility. The CHD or resident/owner can also request bottled water coupons from the DEP (Thomas Montgomery @ 850-245-8358 or SC 205-8358 or his predecessor) to be used at any grocery store. Keep in mind that action levels are based on lifetime exposures. In most cases, the DEP Water Restoration program office will have a filter system installed within a few weeks of discovery or connect the owner/resident to public water within a reasonable length of time. MCL contamination of wells should be **confirmed** by re-sampling the well within 30 days and prior to proceeding with expensive well restoration projects such as a filter or connection to public water. If the well owner/resident is already using bottled water, please document.

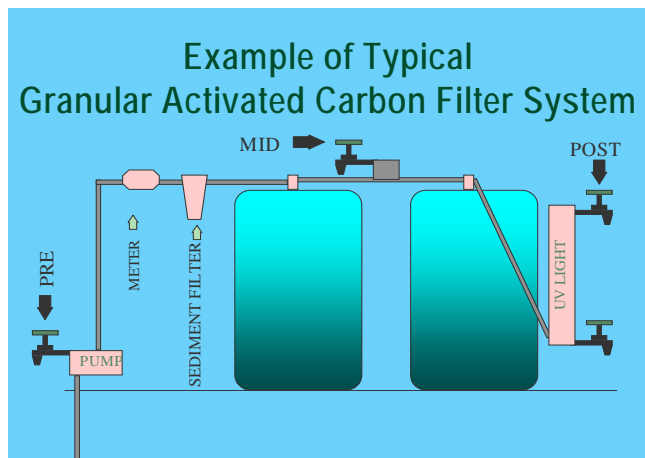
\*When Public Water System (PWS) wells regulated by the DEP are sampled and found to be contaminated, notify the System owner and the drinking water section at the local DEP district office within 24 hours. Document the date and time of this notification. Remember that HSEW will send preliminary well surveys and maps showing the public water systems and DEP results, if available. You should sample large public wells only if no samples have been collected within the past year. If a new discharge is suspected, CHDs should sample the public well if samples are older than six months.

It is important to convey to affected parties and the public that drinking water above a guidance concentration may increase a person's chance of getting cancer if the contaminant is ingested over the course of a lifetime. In addition, false positive detections can result when chlorinated water is sampled and the chlorine is not neutralized. Another instance when a positive finding is not significant in regards to health is when "I" or "T" qualifiers are listed on the laboratory report. These levels are generally considered too low to have any adverse affects on health. However, if there are multiple analytes with "I" or "T" qualifiers, Dr. Joe Sekerke should be contacted at (850) 245-4248 or SC 205-4248, to determine if there is a cumulative health risk due to multiple contaminants.



## Chapter 8 - Sampling Granular Activated Carbon (GAC) Filter Systems

The DEP determines the type of filter based on the contaminant present in the water. Granular activated carbon (GAC) filters are typically used to reduce VOC levels in contaminated drinking water wells. The illustration below shows a typical GAC filter setup. The effectiveness of carbon filters in removing VOCs is related to (1) the type and amount of contaminant, (2) the rate of water usage, and (3) the type of carbon being used. Large contaminant concentrations and high water use rates reduce the carbon life. Water entering and leaving the filter should be tested by the CHD as specified by the DEP to ensure that the treatment system is working properly.



In addition, bacteria may grow on the surface of a carbon filter. Water should be disinfected after it passes through the filter to ensure its safety. Many types of disinfection systems are available. Ultraviolet (UV) radiation is one type of system shown to work effectively and efficiently to eliminate bacteria problems in water. Another system uses a chlorinator (more common).

The following guidelines should be used for sampling GAC filter systems.

1. Record the water meter reading when collecting a bacteria sample on the BACT form.
2. Collect one VOC sample (three bottles) at the **post**-filter (end) spigot and a bacteriological (Bact) sample from the same spigot. Follow the sampling procedures in Chapter 3 for VOC testing. The post sample should be collected **first** so your hands will not contaminate the other samples.
3. Collect one VOC sample (three bottles) at the **mid**-filter source.
4. Collect one VOC sample (three bottles) at the **pre**-filter (raw) source.



## Chapter 9 - Reimbursement

During the first two weeks of every calendar quarter, each CHD will receive a report summarizing the reimbursable Well Surveillance activities completed in the previous quarter. Please review the reimbursement form you receive via e-mail for accuracy and report any problems to John Folsom at 850-245-4444 ext 2194 or SC 205-4444 ext. 2194. HSEW will try to resolve any issues regarding the reimbursement form as quickly as possible. The returned reimbursement form must contain a certification signature, title, and date by an Environmental Health Director, Environmental Engineering Director, CHD Director/Administrator, or Business Manager. Reimbursement will be provided for items approved by HSEW in accordance with the following schedule of payment:

- Each completed and approved well survey form and map will be reimbursed at a rate of **\$125** per well survey. The signed documents must be received by HSEW through our LaserFiche archiving system no later than one week prior to the end of the quarter to be eligible for reimbursement for that quarter. If a well is contaminated above  $\frac{1}{2}$  the MCL or HAL as a result of the Well Survey, then \$10 per well is authorized to be reimbursed to the CHD for additional GPSing of up to ten more potable wells.
- Each sample collected will be reimbursed at a rate of **\$70** per sample. A well where three or more different chemical scans are performed will be reimbursed \$85 for all samples collected at the well (i.e., \$15 extra is paid for collecting multiple bottles). The samples must be received and authorized by the laboratory and the DGPS information must be submitted to HSEW by the end of the quarter to qualify for reimbursement for that quarter. In some cases, samples collected in the final week of a quarter will not be reimbursed until the following quarter. If a well is contaminated above  $\frac{1}{2}$  the MCL or HAL as a result of the Well Survey, then \$70 per well is authorized to be reimbursed to the CHD for additional sampling of up to ten more potable wells.
- All standard filter system samples (pre-, mid-, post- and bacteriological) will be reimbursed at a rate of **\$85** per system. This breaks down to \$25 per pre-, mid- and post sample and \$10 for the BACT sample.

Only those items listed above will be reimbursed. GPS points and well samples unrelated to petroleum facilities or contaminated wells within well surveillance areas are not eligible.



## Chapter 10 – Well Surveillance Program Evaluation

All CHDs will be scheduled for a Well Surveillance Program Evaluation (this includes the SUPER Act, Drycleaner and Drinking water Toxics Programs) on a three-year cycle to determine if they are following the policies and procedures outlined in this technical guide. The evaluator(s) will review well survey, sample data and related information maintained in CHD files to adequately complete the evaluation (a minimum of one year's data to a maximum of three years data depending on the quantity of work accomplished). The administrative evaluation consists of three parts.

1. **Preliminary Activities** include evaluation of records kept in Tallahassee regarding timely completion of DEP well survey requests, water sampling, work on Well Surveillance Areas and other routine tasks.
2. **Office Activities** include a review of the recorded documents and file management procedures for eligible Well Surveillance facilities, wells and well surveillance areas.
3. **Field Activities** include onsite evaluation of the accuracy and completeness of well surveys, the competency of field staff in collecting drinking water samples for laboratory analysis, and the use of Global Positioning System (GPS) equipment to obtain location coordinates of facilities (Risk Sources) and wells and send them to HSEW.

These three activities are of equal importance and are evaluated in terms of acceptable standards that apply across the state. Objectivity is a fundamental goal in developing this evaluation. These standards are evaluated numerically and deal with both present and past activities. Scores are calculated by percent of possible points as follows:

Rating	Percent
Excellent	90 to 100
Good	80 to 89
Fair	70 to 79
Requires Corrective Action Plan	60 to 69
Requires Corrective Action Plan & Follow up Review	<60

## **Preliminary Activities**

### **A. Well Survey Request Response Time**

In general, the well surveys and sample results for the SUPER Act, Dry-Cleaning Solvent Surveillance and Drinking water Toxics programs are needed within a time-frame of approximately six weeks from initial request to final map and sample analysis summary. To achieve this, CHDs must complete the well surveys and sampling within four weeks (28 days) to allow two weeks for laboratory work. However, to ensure that CHDs are given ample time to complete the required tasks, no county shall be asked to complete more than five well surveys within any one week period. If a CHD has difficulty completing requested well surveys, or well surveillance areas due to scheduling, staffing, weather limitations or other difficulties, they should contact HSEW to arrange for another CHD to assist in completing within the designated period.

If all reasonable efforts have been made by the CHD to get permissions to tag, GPS and sample potable wells within the time-frame, then these difficulties shall be documented in the well survey within the 28-day time frame. Efforts should include attempts to contact the resident/owner in a field visit, placing door hangers or sending letters and making phone calls. GPSing and sampling of potable wells should occur once residents/owners give permission even after the 28 day time frame. However, CHDs will be exempt if prompt permission is not granted and is well documented.

If potable wells are found within ¼ mile of the facility or risk source and less than ten are accessible, the CHD should establish a road-side DGPS point of these wells. If no address for the property is visible, then a parcel number will identify the property for later.

### **B. Well Survey Sampling**

Potable wells around requested survey sites must be sampled within 28 days of the request. (See above.) If permission issues slow this process down, the CHDs may be given additional time to accomplish sampling with proper justification submitted to HSEW. Please contact either Brett Anderson or Ritha Mtenga at the HSEW Headquarters office regarding justification issues.

### **C. Quarterly Sampling**

If petroleum, solvent or other compounds are detected in a potable well at concentrations exceeding ½ of their respective Maximum Contaminant Level (MCL) or Health Advisory Level (HAL), (7 mg/l for nitrate or 7 ug/L for arsenic) the well will be sampled regularly at three month intervals for up to four quarters. Thereafter, with justification, the well may be sampled quarterly, bi-annually, annually or at other scheduled frequencies depending on mutual agreement and professional judgment of contract managers.

Nearby wells may be designated as “proximity threat wells” by HSEW due to their location with respect to a moving plume of ground water contamination. Quarterly sampling may continue until such time that the levels of contamination have dropped below ½ of these guidance concentrations for two quarters and the source of the contamination is known to have been removed by remediation or natural attenuation processes. After the two quarters, sample schedules may change to annual or biannual or some other scheduled frequency depending on professional judgement.

## D. CHD Initiated Sampling

If organic contaminants are detected in a potable well, the well should be sampled annually (subject to professional judgment). The CHD is encouraged to initiate sampling around a facility or risk source that they feel poses a threat of offsite migration even if there is no history of prior contamination. In general, three to four randomly selected wells nearest the facility or risk source can be sampled.

## E. Average Sample Temperature

The sample results database contains the laboratory-recorded temperature at which the sample was received. Samples that are not properly cooled with wet ice, or shipped without frozen ice packs may arrive at the laboratory with temperatures exceeding the required temperature of 4° Centigrade. For these reasons, the average temperature of all samples collected within the evaluation period must be less than 5°. This average temperature is acceptable by the Jacksonville Laboratory to account for quality assurance/quality control constraints.

The following table summarizes points available for items A through E above:

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
A. >=95% well surveys received since previous 1-3 years in 28 days or less (depends on CHD workload)	40	Yes/No
B. >=80% of required ten wells (or actual number if less than ten) sampled within 28 days of request date.	30	Yes/No
C. >=95% quarterly and re-sampling collected on schedule.	30	Yes/No
D. Conducted initiated sampling around facilities.	none	Yes/No
E. Average Sample Temperature <5° Celsius.	10	Yes/No

## II. Office Activities

### A. Office File System

Each CHD should have a filing system for keeping Well Surveillance (SUPER Act, Drycleaner and Toxics) records. Accuracy and accessibility of these files is the key to good organization. Each CHD should have Well Surveillance files available (either paper or electronic) for inspection by HSEW staff. If files are only available through LaserFiche, then the CHD must demonstrate their ability to query the files quickly.

#### 1. Sorting System

The key to accessibility is the ability to retrieve information from historic files. The sorting method for Well Surveillance files should be by the Stationary Tank Inventory (STI) or facility or risk source number for petroleum facilities and a similar Drycleaner number for drycleaner facilities. Toxics sites should be filed by well FLUWID numbers. Use of other systems (i.e. alphabetical or by area) is not recommended since facility/risk source/well names and addresses can change.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Sorting Method-STI Facility/risk source # for petroleum facilities or Drycleaner facility number. Toxics sites should be by well FLUWID number –	2	Paper or electronic archive copies are acceptable

## 2. Lab sample results

The analysis results of laboratory samples should be kept in the files for all facilities with drinking water wells or in separate well file folders. It is recommended that a copy of the Environmental Analysis Request Form, water analysis results forms and a letter to property owner about the results be kept in the respective facility/risk source file, or in a separate well file (which can be associated with a well complaint). In addition, written evidence regarding owner permission to GPS, tag and sampling of the well should also be available. These files should be kept for a minimum period of five years. In instances where annual monitoring is conducted due to contamination detected, files should be kept for up to ten years.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Lab sample results maintained and in file system relating to facilities or well FLUWID numbers for at least 5 years	2	Required

## 3. Reimbursement files

Quarterly Reimbursement file folders should be maintained in an easily accessible file location for a period of at least three years. Reimbursement files should be maintained in an archive location for the entirety of the Well Surveillance Program. If files are large, more than one file may be necessary. For our purposes, we will evaluate your reimbursement files based on the last three years' records as part of our internal auditing procedure.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Reimbursement files should be maintained for at least 3 years	2	Easily available

## 4. Filter System files

One of the methods for removing contaminants in drinking water wells is to install a filter, such as, a Granular Activated Carbon (GAC) filter system. It is very important to monitor these systems on an ongoing basis to make sure that consumers of the well water are not exposed to chemicals in the event a filter should fail. The DEP has a long history with these filters and will provide a list of filters that they want sampled.

All data for each DEP Well Surveillance GAC filter system should either be kept in an individual folder or be kept in the folder for the respective facility or risk source. Copies of the analyses results for PRE-, MID- and POST- filter samples should be maintained in addition to BACT results in these files. Again, all sample analysis results should be provided to the well user/owner in a notification letter that provides an explanation of the

lab analyses results (or the letter can be sent which states results will be sent upon request). GAC Filter system files should be maintained in separate file folders for a period of at least the past five years.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Filter system files maintained in separate files for last five years	2	Easily available

## 5. DARS Coding

This section is for information purposes only. It is to evaluate how you are charging your Well Surveillance (this includes SUPER Act, Drycleaner and Toxics) related time. (The original code 56 was for SUPER Act. only. This has been expanded to include Drycleaner and Toxics, but the title can not be changed.) The following are the activities we are interested in reviewing and the related service codes):

<u>Well Surveillance (56 - SUPER Act) Services</u>	<u>Service Code</u>
Direct Service Time (Time only)	0000
Annual sampling	1800
Complaints	2500
Well Surveys	3210
Public Information	7550
Clerical Support	9020
Professional Support	9080
Supervisory Support	9090

Please use 3210 for all well surveys, 1800 for all sample collection, 2500 for all complaints, 9080 for professional support and 9090 for supervisory support.

## B. Well Surveys

Well survey forms are good indicators of the CHD's understanding of the program and ability to attain program goals. A good well survey form should include a listing of all potable wells surveyed by GPS pursuant to the Well Surveillance priorities. In addition, if there are ten or more drinking water wells listed, then at least ten wells should have been sampled. If wells are not sampled, justification for the lack of samples should be documented on the well survey and in the CHD staff's field notebook (example of acceptable justifications are "resident refuses to permit access" or "resident can not be contacted"). Accordingly, the well sample results should be filed with the well survey form and map. Accurate information is critical for the determination of the facility/risk source score and its priority ranking for cleanup.

To evaluate the CHD's well survey accuracy and completeness, at least ten randomly selected facility/risk source file folders will be reviewed by the evaluator(s). These facilities or risk sources will be those requests completed within the past one, two or three years depending on the quantity of work the CHD accomplishes annually. An attempt will be made to select five to seven facilities with wells around them and three to five with no wells around them.

Well surveys, maps, the Environmental Analysis Request Form and lab analyses forms for each facility or risk source should either be found in paper form, an electronic archiving system or

otherwise readily accessible to the CHD. Data on the well surveys and maps should agree with the Environmental Analysis Request Forms. The final signed well survey form sent to the DEP should be available to review either in the file or archived. Preliminary maps and well surveys obtained from the HSEW LaserFiche system for initial review by the CHD staff are not acceptable for evaluation purposes. The CHD must be able to demonstrate their ability to obtain these documents. The following items are evaluated for each facility or risk source:

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Facility/Risk Source ID	Info only	Correct one in file
Well Survey Date	Info only	Date should be within 28 days of DEP request
Final Well Survey Form Available	1	Present/Absent
Final Site Map Available	1	Present/Absent
Number Wells	Info only	Number wells in Well Survey and Map agree
Written resident permission – either signed form or log sheet in file with verbal dated confirmation by CHD staff	10	Written record of property owner's response to sampling of their well
>=80% of the available wells (maximum of 10 wells per well survey request) were sampled within 28 days after DEP request or 6 months prior to it.	4	If the number of Lab Results found / number of Wells in Well Survey Form is >=80% total sampleable wells
Some wells were sampled within 28 days after DEP request or 6 months prior to it	1	If Sample Submission forms in File is > 0%
Results filed	1	Chemistry Analysis Request Forms & Analysis sheets found
Resident Notification in Writing	5	Analysis Results communicated to Resident In Writing

### C. GPS Office Evaluation

To ensure that staff is able to manage electronic GPS data, they are evaluated based on their ability to upload files from the data logger to the desktop computer, edit and quality control check the data, and send it to HSEW in Tallahassee. The ability to use DOH's intranet LaserFiche website, DEP's Oculus internet website and DOH's EH Water mapping intranet website are also key components of this portion of the evaluation. All well surveys and duties relating to well surveillance areas must be conducted by GPS certified CHD staff using GPS equipment issued or approved by HSEW office. The following items are addressed in the GPS Office Evaluation:

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Successfully connect data logger and computer	3	Yes/No
Locate, transfer to computer and then delete .udf files from data logger.	3	Yes/No
Open Solo Office program	3	Yes/No
Export facility (Risk Source) and well data from .udf files for text files	3	Yes/No
Edit udf files prior to exporting	5	Yes/No
Send text files and .udf files to HSEW via e-mail	3	Yes/No
Proficiency in use of LaserFiche intranet website for review and approval of well surveys and other documents.	2	Yes/No
Display DGPSed and Non-DGPSed wells for specific location using Well Surveillance ArcIMS website (EHWater mapper)	2	Yes/No
Locate and review facility and associated well data using DEP Oculus Website	5	Yes/No

#### D. Internal Monitoring

Based on recommendations from the Department of Health Inspector General's office, the CHD's procedures for internal monitoring and quality control will be evaluated. All supervisors over SUPER Act or Toxics funded staff must have the following text in their position description:

- "This position is responsible and accountable for the performance of the field staff under their position" and;
- "This position will review all inspection records and supporting documents generated by the staff under their supervision"

All supervisory performance standards must address supervisory responsibilities, including review of DAR forms, inspection reports, and satisfaction surveys. The CHD must have a written policy detailing how supervisors reconcile DARS and timesheets on a bi-weekly basis, verify mileage of investigators, and verify surveys/sampling conducted by the investigators. All supervisors must have access to Centrax and be able to generate reports to monitor and review employee activities. Client Satisfaction Surveys should be performed on a quarterly basis and results forwarded to the Bureau of Community Environmental Health (Padraic Juarez). See Interoffice Memorandum HSEF 2001-29 (November 1, 2001) for further detail.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
1. Did supervisors perform ride along evaluations with each of their inspection field staff on at least two separate occasions in a <b>calendar</b> year to observe them performing routine <b>well surveys</b> and document the visits either on a checklist or on a separate routine inspection form?	2	Yes/No
2. Over the past three years did the supervisor(s) observe their staff perform routine well surveys for the Well Surveillance program in which they work?	2	Yes/No
3. Do all supervisory position descriptions and performance standards	2	Yes/No

clearly address supervisory responsibilities and Well Survey reports (as stated in informational memo HSEF 2001-006)?		
4. Were at least 90% of well survey reports reviewed and initialed by supervisors or their designee?	2	Yes/No
5. Do supervisors reconcile field staff's DARS and timesheets at least biweekly?	2	Yes/No
6. Do supervisors verify field staff mileage accuracy prior to voucher approval?	2	Yes/No
7. All field staff is in compliance with the DOH 150-4 requirement of having to attend Basic EH Orientation within two years of commencing employment or have watched the videos.	2	Yes/No
8. Client Satisfaction Surveys are performed on a quarterly basis and the results are forwarded to the Bureau of Community Environmental Health?	2	Yes/No

### **III. Field Activities**

The field activities portion of the evaluation measures the competence of personnel to collect samples and conduct GPS work in the Well Surveillance program. Each staff member will be observed in the field performing actual Well Surveillance related activities. Field activities evaluated include sampling, FLUWID tags, well survey accuracy relating to facility (Risk Source) information and well survey accuracy relating to well data and GPS field work. In addition, if well surveillance areas are present in the county, the evaluator will check CHD work on sampling and GPSing of wells and GPSing of facilities according to HSEW recommendations.

#### **A. Sampling**

##### **1. Standard Procedures for Ordering Sample Kits**

The following procedures will be evaluated for sampling:

- a) Order sample kits and bottles as you need them for the SUPER Act and Drycleaner programs from the Jacksonville Laboratory and for the Toxics program from Charles Donahue. Remember that you should not stockpile bottles. Plan to order the sample bottles 7-14 days prior to the sampling event so sufficient time will be allowed for the laboratory personnel to ship the sample bottles to the CHD location.
- b) Standing orders should be based on the above schedule if you take a certain number samples weekly or monthly.
- c) Bottles will come with an expiration date. The laboratory will reject samples submitted after the expiration date.
- d) Be aware of holding times after collecting a sample in the field. Send sample bottles to the lab expeditiously so the total time from sample date to completion of analysis **does not** exceed 14 days.
- e) Order the correct analysis type for the sample(s) you intend to collect. Ordinarily, you will order VOCs samples, but under the Toxics program you may select from a variety of sample types (see list). Get permission from HSEW prior to collecting permeation samples if contamination is suspected. *Chlorinated water samples require addition of drops with a special preservative to neutralize the chlorine and prevent false positives for Trihalomethanes (THMs).*

## 2. Sample Equipment

Sample equipment and supplies such as a refrigerator, ice chests, ice, ice trays, and sample vials should be available to facilitate sampling, transport, storage, and shipping of water samples to the Department of Health Office of Laboratory Services in Jacksonville. Depending on how active a CHD is in the Well Surveillance program, 10-90 VOC sample bottles (vials) may be kept on hand. The evaluator(s) however will expect a minimum of ten samples (30 vials) in a cooler which are not expired to satisfy the evaluation standards and to be available for the field evaluation.

Wet ice should be kept on hand during sampling to chill bottles to 4° Celsius or below. Ice must be taken with the cooler during a sampling event. To ensure that samples are chilled sufficiently after collection, they should be stored in a refrigerator over night with the top off the cooler. Samples that are not cooled using wet ice in the field are subject to rejection when they arrive at the Jacksonville laboratory.

The following summarizes the scoring for sample equipment.

EVALUATION ITEM(S)	POSSIBLE PTS	COMMENTS
1. Correct number samples ordered - minimum one cooler with ten samples for evaluations (30 vials)	2	Yes/No
2. Date on used bottles prior to lab expiration date	3	Yes/No
3. Ice/ice packs on hand to chill bottles	3	Yes/No
4. Refrigerator available to store bottles	3	Yes/No
5. Current field (paper or electronic) copy of the Well Surveillance Technical Guide available	5	Yes/No

## 3. Sampling Method

Because of the number of VOC samples collected, the sampling method for VOC will be evaluated. Instructions for correct collection of a well water sample are provided in the sample kits on the back of the Environmental Chemistry Analysis Request Form. Key things to remember are:

1. Purge the well according to laboratory instructions. Normally, three well volumes are sufficient (a minimum of five minutes depending on pump flow).
2. One VOC sample = three vials.
3. Fill out labels in permanent ink with sample date and the unique well identifier (FLUWID #) clearly marked.
4. Unscrew the vial cap without touching the septum. (Teflon piece inside of cap)

5. Fill the vial at an angle so the meniscus bulges over the top rim. Do not fill the vial quickly since turbulence will rinse chemicals from the vial and air bubbles may remain.
6. **Do not** continue filling or rinsing a bottle since chemical preservative will wash out in the process.
7. Carefully replace the cap without touching it. Hand-tighten the cap.
8. Turn the bottle over, tap on the bottom and look for air bubbles. Bubbles indicate air is in the sample.
9. IF YOU SEE BUBBLES - very carefully remove the sample vial top, add a couple of drops of tap water to reform a convex meniscus, and then attempt to reseal it with no more than two air bubbles the size of a pin head present. Do not refill the bottle to remove bubbles more than once. Be sure to fill three vials per well and place rubber bands around the bottles to keep them all together.
10. To store vials, place them in coolers using regular wet ice and be sure to use zip lock plastic bags for each set of samples (three bottles banded together). Chill bottles to 4° Celsius or below. Be careful not to bring the coolers or vials in contact with any volatile fumes since this will likely contaminate the samples. This means do NOT fill your vehicle with fuel if you have coolers containing sample bottles .
11. Enclose field blank vials and completed Environmental Analysis Request Forms (in another zip lock bag) in the cooler. **Field Trip Blanks must accompany other sample vials at ALL times and be placed in the zip lock bag as well.** Keep sample bottles rubber banded together in three's.
12. Note that the FLUWID tags must be placed on the well pipe and two other locations close to the well (for instance the electric junction box or strapped to the well shaft or pipe using plastic ties and metal plates).

A representative ten wells should be sampled. If fewer wells are found during the well survey, sample all of them unless there are issues with permissions. For example - if ten wells exist within ¼ mile (<½ mile for high capacity public supply wells) and fewer than eight were sampled, points will be deducted if you have not maintained documentation regarding the reason for the missing samples.

Remember to refer to the latest version of the DEP's Standard Operating Procedure manual for detailed guidance and Quality Assurance/Quality Control requirements of DEP for sample collection. (See Appendices).

The following is the list of standards for Sampling Method:

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
A. Purge well according to laboratory instructions	2	Yes/No
B. Unscrew vial cap (without touching septum)	1	Yes/No
C. Bottle un-rinsed	10	Yes/No
D. Fill bottle at angle	1	Yes/No
E. Produce convex meniscus	1	Yes/No
F. Tap bottle to check for bubbles	1	Yes/No
G. Fill out label with date and FLUWID	2	Yes/No

identifier		
H. Fill three vials per well sample	2	Yes/No
I. Place vials in sealed plastic bags in ice	1	Yes/No
J. Chill bottles immediately in ice chest	2	Yes/No
K. Enclose field blank vials in cooler	2	Yes/No
L. Put Environmental Chemistry Analysis Request Form into cooler in plastic bag	2	Yes/No
M. No complaints regarding sampling permission.	20	Yes/No

#### 4. Analysis Request Form Completion

Accurate completion of the Environmental Analysis Request Form is critical. Data generated from these forms is used to track the sample and ensure reimbursement. If all fields are not accurately completed, the data will not be useful. All data entry blanks on the analysis request form must be completed, placed in a plastic bag and included with the vials so the lab can process the analytical request.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
A. Customer Information - County, Address, City, State, Zip, Phone	1	Yes/No
B. Project ID (Circle one of three), Collector, Signature, Relinquish Date	1	Yes/No
C. Sample Information- Date & Time Collected, Sample Vial ID Number, Purge Duration, Purge Volume, Comments/Description, SampleType, Treatment Classification.	2	Yes/No
D. Drinking Water Source - 40,41,42,43,etc.	2	Yes/No
E. Well Site Information - Name, Address, City, Zip, County	2	Yes/No
F. Casing Material, Total Well Depth, Well Diameter, Casing Length,	2	Yes/No
G. Well Site Information - FLUWID Tag , Facility ID and Well Survey Request Number	10	Yes/No
H. Contact Information - Name, Address, City, State, Zip, Phone, Resident, Owner or Both	2	Yes/No

#### 5. Filter Sampling

The DEP will identify filters that should be re-sampled. Purge the well five to ten minutes. The typical GAC filter requires three samples; a pre-, mid-, and post- filter

(total of 9 vials). This means that samples are collected prior to entering the two-cartridge filter system, between cartridges and after the cartridges and UV light or chlorinator. The first sample collected should be the least contaminated sample (i.e., collect post-filter sample first, then the mid- and finally the pre-filter sample). Some systems have multiple GAC filters, so all mid-filter samples should also be collected and will be reimbursed by HSEW at \$25 per mid-filter sample. Be sure that the Environmental Chemistry Analysis Request Form and BACT Form are completed and record the flow meter reading. The BACT sample should be collected at the same location as the post-filter sample. It should be collected according to instructions, making sure the plastic bag is filled to the marked line, without fingers touching the inside of the bag. Seal the bag by spinning the bag around and then folding over the metal tabs. Tie the metal tabs together and place into the cooler with the rubber banded sample vials. Some counties use plastic vials, which should be handled carefully so no contamination will occur by touching the vial to the faucet, hands or other objects.

EVALUATION ITEM(S)	POSSIBLE PTS	COMMENTS
A. Purge well a minimum of five minutes	2	Yes/No
B. Collect three samples (nine vials) – in the following order (post, mid and pre)	4	Yes/No
C. Record meter reading	4	Yes/No
D. BACT form filled out	2	Yes/No
E. BACT sample collected in sanitary manner	2	Yes/No
F. BACT sample sealed properly	2	Yes/No

## 6. Maps

Although no longer used to draw locations of facilities and wells, local maps are still needed to navigate during survey work to these facilities and wells. You will only be evaluated on the use of one type of map.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Street Atlas, County Map	1	Yes/No
GIS Map (i.e., EHmapper) with PWS wells	2	Yes/No
GIS Map (i.e., EHmapper) with Wells needing DGPSing	2	Yes/No

### B. Well Survey Accuracy - Facility Investigations

The field evaluation includes the evaluator's visual inspection of facilities, risk sources and wells in a survey for accuracy. Essentially, the well survey form and map must include accurate depictions of the actual locations, addresses and other required demographic information. This part of the evaluation also includes a test of the field staff's ability to navigate using GPS and determine well distance from the facility/risk source. The number of wells found on the survey is

compared to the number found on the ground. If the survey number is considerably different from what the evaluator(s) find, then the item relating to representative number wells will not include 20 points but rather no points. An example might be a facility with seven wells on the survey and 11 found on the ground. The CHD would lose all 20 potential points.

<b>EVALUATION ITEM</b>	<b>POSSIBLE PTS</b>	<b>COMMENTS</b>
# Wells found/Survey	Info only	# Well found versus # wells on well survey
Surveyed wells are representative of area	20	Yes/No
Address Accuracy	2	Yes/No
GPS Point Accuracy	2	Yes/No

**C. Well Survey Accuracy – Well Data**

The field evaluation also includes checking facilities/risk sources for accuracy of well information. The evaluator compares field observations with well information recorded on the Well Survey form and map. FLUWID numbers on the well survey are compared to the number on the tag on the ground if there is one. Other data checked include the well address, location of the well on the ground verses on the map and presence or absence of the FLUWID tag on the well. If many wells are found within ¼ mile of the facility/risk source and few can be GPSed because of permission issues, DGPSing at street-side may be completed.

<b>EVALUATION ITEM(S)</b>	<b>POSSIBLE PTS</b>	<b>COMMENTS</b>
GPS Address Accuracy	2	Yes/No
Point Accuracy	3	Yes/No
FLUWID # is Correct	4	Yes/No
FLUWID tag is Visible	1	Yes/No
Well Use	1	Type
Well Diameter	1	Diameter in inches
Case Material	1	Type material-PVC etc

**D. GPS Field Evaluation**

The Well Surveillance program has been greatly enhanced due to the addition of high quality data obtained with GPS equipment. CHD staff must be trained and tested on their ability to use the equipment before they are certified and can collect data with it. A “Certification of Completion” in SOLO GPS Basic Training must be obtained by all personnel who conduct SUPER Act, Drycleaner or Toxics GPS well surveys. HSEW will provide regular training seminars for those needing training or a refresher course.

Staff will be evaluated on their ability to use SoloField™ software to collect accurate point data for facilities and wells. Prior to testing, field personnel should be well instructed in offsets, navigational exercises, point collection, transferring data and file maintenance. The following is what is expected of field personnel for evaluation purposes:

EVALUATION ITEM(S)	POSSIBLE PTS	COMMENTS
Open SoloField™ program, create file, review settings and screen views.	3	Yes/No
Locate a facility (Risk Source), well location and log DGPS point	3	Yes/No
Locate facility well location and log 1 point offset	3	Yes/No
Determine the distance between 2 points (e.g. facility and well)	3	Yes/No
Navigate to an established DGPS point	3	Yes/No
Input data into facility/well feature tables	3	Yes/No
Edit the feature table	3	Yes/No

#### E. Equipment Functioning properly

The evaluator inputs the Data Logger serial number, the receiver model and serial number and the serial number for the Antenna if there is one. No points are assessed for this section.

EVALUATION ITEM	POSSIBLE PTS	COMMENTS
Data Logger serial number	Info only	Serial number
Receiver number	Info only	Serial number
Antenna number	Info only	Serial Number
Software version number	Info only	Version number
Cables	Info only	Present, functional

Note – If a specific activity does not apply to the CHD being evaluated, no evaluation points will be deducted for not doing it.

**APPENDIX A**  
**Sample Super Act Evaluation Summary Report**

**APPENDIX B**  
**Solo Office/ Solo Field Manuals**

**APPENDIX C**  
**Creating Laser Fiche Signatures & Laser Fiche Web Access User Guide**

**APPENDIX D**  
**DEP Standard Operating Procedures for**  
**Drinking Water Sampling**

**APPENDIX E**  
**Water Fact Sheets**

(The most current versions of these documents are located at the following intranet sharepoint website:

<http://def.sharepoint.doh.ad.state.fl.us/eh/contam/Shared%20Documents1/Forms/AllItems.aspx?RootFolder=%2feh%2fcontam%2fShared%20Documents1%2fWater%20Fact%20Sheets&View=%7b12706ADE%2d6578%2d4F6F%2dA5E5%2dDCE8FD%7d> )

**Current list of Water Fact Sheets**

Arsenic  
Benzene  
Di(2-ethylhexyl)phthalate  
Dibromochloropropane  
1,1-Dichloroethylene  
1,2-Dichloropropane  
Dieldrin  
EDB  
Iron  
Manganese  
MTBE  
Nitrate  
Sodium  
Tetrachloroethylene  
Thallium  
Toluene  
Trichloroethylene  
Vinyl Chloride  
Xylenes

**APPENDIX F  
Door Hangers  
Letter Template**

**The following is a template. Each CHD can modify as needed.**

Jeb Bush  
Govern

Rony Francois , M.D., M.S.P.H., PhD, Secretary

**County Health Department**

**Water Sample results**

Date

January 4, 2006

Mr. XXX  
or Current Resident  
Address  
City, FL

Sample  
FLUWID  
County:  
Sampler:

Dear Sir or Madam:

On December 5, 2005, a water sample was collected from your well by the local County Health Department (CHD) and sent to the Florida Department of Health (DOH) Laboratory for analyses. Your well was sampled as part of DOH's effort, together with the Florida Department of Environmental Protection, to ensure safe drinking water for all of its citizens.

This letter is to inform you of the sampling results. Attached is the laboratory summary report listing the analytical results from the physical and chemical tests performed and a brochure on How to Read the Laboratory Report.

The following chemical compounds were detected in concentrations greater than the Florida drinking water standards (Maximum Contaminant Level (MCL) or Health Advisory Levels (HAL)).

<b>Chemical</b>	<b>Concentration</b>	<b>MCL</b>	<b>HAL</b>	<b>units</b>
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The following chemical compounds were detected in concentrations greater than the Florida secondary drinking water standards. Secondary standards reflect non-health based concerns and are often referred to as nuisance constituents.

<b>Chemical</b>	<b>Concentration</b>	<b>MCL</b>	<b>HAL</b>	<b>units</b>
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The following chemical compounds were detected, but in concentrations less than Florida drinking water standards (Maximum Contaminant Level (MCL) or Health Advisory Levels (HAL)).

<b>Chemical</b>	<b>Concentration</b>	<b>MCL</b>	<b>HAL</b>	<b>units</b>
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(If no MCL violations)

If you have any questions please contact XXX County Health Department at (XXX) XXX-XXXX for more information.

(If MCL violations)

This advisory is based on health concerns and a representative from the County Health Department will contact you with information on obtaining a clean water supply. Additionally, DEP will send materials on water treatment options available to you at no charge. We recommend that your water supply not be used for drinking purposes for a prolonged period of time.

Thank you for allowing DOH to test your private well water.

Sincerely,

Signature  
Name of County Health Department

Enclosure(s)