



# HBDIC Recharge Project Water Quality Monitoring Plan For 2008-9 Recharge Season

11/1/2008 to 5/15/2009

Prepared: Bob Bower, Hydrologist  
10/20/2008

## Overview:

As was set up for the 2007-8 Recharge season, the WWBWC will collect water quality samples at two designated periods during the operation window. They are:

1. Within a week from the beginning of the first extended operating period, samples will be collected at the HBDIC Intake facility (surface water) and the HBDIC OBS Well #1 (primary obs well, showing groundwater conditions). (TWO SAMPLES TOTAL)
2. Within a 7-14 days after the recharge project is turned off for the season, a water quality sample will be collected at HBDIC OBS Well #1 (ONE SAMPLE TOTAL).

Additional sampling may be conducted if either there are detections of any of the analytes (listed below) or an event or issue arises on or related to the operation of the HBDIC recharge project. Additional samples may also be collected if requested by Oregon Department of Environmental Quality. ODEQ consultation should be sought with Pendleton, ODEQ and the contact information:

**Phil Richerson**  
Nonpoint Source Hydrogeologist  
Oregon Dept of Environmental Quality  
700 SE Emigrant, Suite 330  
Pendleton, OR 97801  
(541) 278-4604  
(541) 278-0168 fax  
Richerson.Phil@deq.state.or.us

## What will be collected:

1. Fecal E. Coli (plate count method) for concentrations
2. Baseline Chemistry:
  - a. Chemical Oxygen Demand
  - b. TKN as Nitrogen
  - c. Nitrate as Nitrogen
  - d. Chloride
  - e. Total Dissolved Solids (TDS)
  - f. Orthophosphate
3. Soluble Organic Compounds Tested to the Environmental Protection Agencies Drinking Water Standards using methods 515.1, 525.2, and 531.1. (E.G. Pesticides, Herbicides, Fungicides, etc.). Through a process co-developed by ODEQ, WWBWC and Edge Analytical the EPA Standards have been refined to focal list of compounds. The 2008-9 season will be the first year where this focal list will be used (Table 1).

Chemical (common name)	Chemical (trade name)	Currently being reported by EPA Method
2,4 D acid	Dacamine	515.1
Dimethoate	Cygon	525.2
Metalaxyl	Ridomil	525.2
Napropamide	Devrinol	525.2
Simazine	Princep, Aquazine	525.2
1-Naphthaleneacetamide	Amid-thin	525.2
Diazinon	Diazinon	525.2
Fenarimol	Rubigan	525.2
Lindane	Lindane	525.2
Methidathinon	Supracide	525.2
Mevinphos	Phosdrin	525.2
Myclobutanil	Systhane, Rally	525.2
Triflumizole	Procure	525.2
Azinphos-methyl	Guthion	525.2
Carbaryl	Sevin	531.1
Chlorpyrifos	Dursban, Lorsban	525.2
DDD (TDE)	Rhotane, DDD	525.2
DDE	degradation product	525.2
DDT	Anofex, Gesarol	525.2
Dicofol	Kelthane	525.2
Malathion	Cythion	525.2
Methyl Parathion	Penncap	525.2
Phosmet	Imidan	525.2
Propargite	Omite, Comit	525.2
Triadimefon Dimethoate	Bayleton	525.2
Oxamyl	Vydate	531.1
Hexazinone	DPX 3674, Pronone, and Velpar	525.2
Parathion-Ethyl	Niran, Phoskil (56)	525.2

\*Additional Fecal E. Coli sampling may be conducted if routine testing show values above drinking water standard. In the first two seasons of the project, fecal hits in surrounding wells have suggested a background presence of fecal bacteria in the groundwater.

#### Materials and Methodology:



**Surface Samples:** Will be collected by the technician after he/she sterilizes his/hers hands with disinfectant soap. Opening the bottle cap, making sure to keep cap in hand as a sample is collected as near to the thalweg of the intake flow as possible. Field notes will be taken identifying the:

1. Time
2. Location
3. Water Temperature
4. Specific Conductivity
5. Turbidity
6. Weather conditions
7. Recharge Project Notes (e.g. operating at 20 cfs, overflow at 2 cfs)

All sample bottles are labeled with location, time, and the samplers' name.

**Observation Well Samples:** Will be collected by the technician opening the well head protection and removing all obstacles around the well head that may touch the sampling equipment. The caps for all the sample bottles are then to be removed and set in a clean place (bottle side up). A well sampling pump and tubing will be used to evaluate 2 well volumes (approximately 10 minutes of pumping prior to sample extraction). After all the bottles are full (making sure not to overfill the sample bottles), caps are replaced on the sample bottles. All sample bottles are labeled with location, time, and the samplers name. Technician will then secure the well head protection.

### **FIELD TECHS NEED TO KEEP GOOD FIELD NOTE BOOKS OF SAMPLING EVENTS.**

#### **Laboratory Delivery and Processing:**

Unlike the 2004-5 seasons, samples will be processed by different certified labs. This move will save a dramatic amount of money and hopefully decrease the time between collection and processing.

**Remember to pre-order the bottles at least two week prior to sampling to allow time to arrive at WWBWC offices.** They samples will be processed as follows:

#### **Baseline Chemicals and Soluble Organic Compounds:**

Edge Analytical  
11525 Knudsen Road  
Burlington, WA 98233  
Tel: 360.757.1400  
Tel: 800.755.9295  
Fax: 360.757.1402

Our contact there is:

Cindy O'Toole  
Chemist-EDGE LABS  
Edge Analytical, Inc  
(800)755-9295

#### **Fecal E. Coli Samples:**

City of Walla Walla Water Plant, Contact: Tom Krebs (Phone 522-3775).  
Where: Walla Walla Water Plant 581 Mill Creek Road, Walla Walla WA. 99362



Coming up Mill Creek road (left side) (call Tom Krebs for directions)

\* Call for bottles at least 4 days prior to sampling. **Sampling best done on Tuesday, Wednesday or Thursday for laboratory needs.** Fecal E. Coli samples need to get to the laboratory **within 8 hours** from the sample is collected to insure accurate values in the results. **Coordination with Walla Walla City Water Plant lab technicians** is key for this portion of the water quality sampling to go smoothly.

### **QA/QC for HBDIC Recharge Sampling**

The WWBWC ODEQ Water Quality Monitoring plan (Approved 1999) discusses a general 10% repeatability for all WWBWC sampling. This means that for every 10 samples collected, an extra sample is also collected to test for repeatability and lab quality control. For the HBDIC Recharge project we implement that 10% rule on the Fecal E. Coli as well as the baseline chemistry sampling. However, due to the high cost of the SOC sampling, the WWBWC will rely on the EDGE Analytical in-house QA/QC protocols and certification process to insure our samples are accurate and representative of what we are measuring.