

# **Mason County's On-Site Sewage System Management Plan**

April 15, 2009

## **Progress Report**

Project Title: **Implementation Grant**

Department Address: Onsite Program  
Washington State Department of Health  
101 Israel Rd. SE, P.O. Box 47890  
Olympia, Washington, 98504-7890

Department Project Manager: Laura Homan  
Laura.Homan@DOH.WA.GOV

**Prepared by:**

**Mason County Public Health  
Environmental Health  
P O Box 1666  
Shelton WA 98584**

Cindy Waite, Onsite Septic Program Lead  
Penny Orth, Environmental Health Specialist

## Activities from January 1, 2009 to March 31, 2009

Our main accomplishments this quarter were establishing our On-site Sewage System GIS layer, developing our current draft of the O&M Program Procedures Manual, and preparing the documents for revised On-site Sewage System WEB pages.

### **Task 1:**

*Enhance Operation & Maintenance database management software (Carmody) to improve the functionality of searching and reporting features in the system, develop documentation and improve Operation and Maintenance Program activities and procedures.*

#### **Carmody Data Maintenance and Development**

##### *System Enhancement:*

Carmody staff is reviewing our request to enhance the Reporting features used by the Water Quality Program. Their use of Carmody data has increased in the past few months, which has helped us identify enhancements that will better, serve their data requirements.

##### *Updating Data:*

As mentioned in the previous quarterly report, we are developing a strategy for updating data in Carmody more efficiently than accessing individual records. For example, filling the data field "SSAS <100 ft from Surface Water" and "Records Available?" would be very time consuming to do by accessing each Carmody record individually. Now that we have the GIS layer developed for On-site Sewage Systems, we will be using GIS to identify parcels that are greater than 100 ft from Surface Water to eliminate those parcels for further research. In addition, errors in Watershed assignments and parcels within the boundaries of The Oakland Bay Clean Water District study area can be identified with GIS. An Excel file will be created from GIS that will be sent to Carmody to mass-update the database with this captured data. Parcels to be flagged for future water quality studies will be updated in Carmody by this same method.

##### *Duplicate Records*

As a result of uploading sewage system installations for 2008, duplicate records were created. System finals are extracted from our permitting software, TideMark. The search routine first checks for a *passed* final inspection. If none is found, the report routine checks for a *failed* final inspection. Most failed finals are waiting for Record Drawings or recordings for final approval. It is assumed these systems are in use and the maintenance will be tracked. The final approval, in some cases, does not occur until the next year. Final inspections for installations in Tidemark that "failed" one year and "passed" the next year are both would be added to the Carmody database when Finals or those years are uploaded. There were 208 new systems added to Carmody for 2008. Duplicate records in Carmody were edited after the Carmody data was updated.

##### *Community Drainfields:*

Community drainfields continue to be identified and added to Carmody. Work is planned to link community drainfields to the properties they serve so this relationship can be viewed in GIS mapping.

##### *Operation & Maintenance Program Standard Operating Procedures Manual*

A copy of the revised Operation & Maintenance Program Procedures Manual was planned for this report, however, we are continuing discussion about prioritizing activities and methods for accomplishing our O&M Program goals as we deal with limitations of staff and financial resources. The revised manual will be included in the final report with additions we have identified.

## **GIS Delivery of O&M Information**

The On-site Sewage System GIS layer has been created. By using the talent of a Water Quality program staff person, we have reduced the cost of quarterly maintenance services by the County GIS staff. Our GIS On-site Sewage System layer includes data on type of system and age of system for the entire county. The first task we have scheduled for the GIS layer is data editing as discussed above. The Color Schemes used to represent data will be evaluated and modified to enhance the clarity of the data displayed. Various projects will dictate specialized maps that can now be generated from GIS. Soon the data layer will be available to other county departments. The demand for access to this layer is developing from organizations outside of county government. It is likely; we will make it available once the above-mentioned data corrections are made.

## **Task 2:**

*Raise public awareness and understanding about onsite septic operation and maintenance and the positive effect ongoing maintenance has on the environment including health, water quality, local economy, and septic system longevity and viability.*

### **Maintenance Reminder Mailings**

Recent staff and budget reductions have compromised our plans for mailing reminders for maintenance this spring. We are evaluating our priorities and resources and hope to send out reminders to a limited but targeted population. The maintenance reminder mailings we have sent out over the past five years have been one of the most successful activities in our O&M program. Our goal is to continue to send reminders out to the extent our resources allow.

### **O&M Workshop**

In cooperation with WSU Extension, Mason County Public Health presented at two public O&M workshops this quarter on January 27, 2009 and March 23, 2009. . Septic System User Manuals were distributed.

### **O&M Activity with Local Realtors and Title Companies**

The revisions to the Mason County On-Site Regulations include the following statement:

*“Transfer of resident ownership shall require a current inspection service report on the status of the on-site sewage system, prior to closing, using the form prescribed by the Director.*

*Current shall mean within three years with a system consisting solely of a septic tank and drainfield and annually for all other on-site septic system.*

*Service for an on-site sewage system consisting solely of a septic tank and gravity drainfield shall be performed by a Mason County Certified Pumper or a Mason County Certified Operation and Maintenance Specialist. All other on-site sewage systems will require a report from a Mason County Certified Operation & Maintenance Specialist.”*

The Mason County Board of Commissioners approved and adopted these regulations on April 7<sup>th</sup>, 2009.

Public Health staff presented a summary of the new regulations to a group of realtors from Windermere Realty on February 24, 2009 and the Home Builders Association on 2/17/2009.

### **Educational Curriculum**

The development of curriculum for the 4<sup>th</sup> grade level will be addressed in the last quarter. We have a strategy for identifying school contacts and coordinating our development and delivery of a classroom activity related to septic operation and maintenance.

### **Web Page Development**

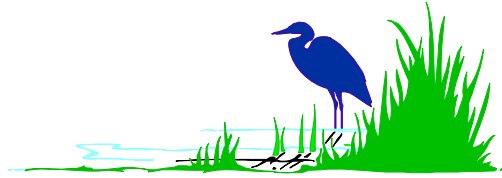
Much work was done to develop the Mason County On-site Sewage Program portion of the county WEB pages. Although there are some limitations in the structure of the current county WEB page, the goal of the enhancements was to correct errors and enhance the user interface. These changes will be loaded onto the WEB this month.

### ***Task 3:***

*Audit of Onsite Professionals certified in Mason County and administration on of grant activities.*

A strategy for auditing Mason County Certified Onsite Professionals is in the planning stage at this time.

# Mason County Public Health



Staff Report of Oakland Bay Activities 1/1/09 to 3/31/09

3/30/09  
Stephanie Kenny

Funded through Consolidated Contract # C14956

## Task 1-Coordination, Updates and Public Education on implementation work

During the 1st quarter of 2009 MCPH held three Oakland Bay Clean Water District Advisory Group meetings. Meeting notes and monthly updates on sampling activities were distributed at the meetings. Three verbal monthly updates were given to the group. One sanitary survey progress report was developed to hand out at the group meeting and one On-site Program report was handed out. The On-site report listed the numbers of complaints and repairs in the Oakland Bay area. In the first two months of the quarter two upland complaints were investigated and two septic repairs were finalized. One of the repairs was on a shoreline property in the Crestview area. The meeting notes have been attached to this report

MCPH worked with committee members this quarter to develop their written task list updates. This quarter is the first time written updates have been required. MCPH updated the Oakland Bay Action Plan Strategy from the task list updates. The Oakland Bay Action Plan Strategy functions as an overall work plan for Oakland Bay Action Plan. With some adjustment it will also be used by Ecology as the implementation plan for the Oakland Bay TMDL. The updated has now been divided into the current matrix and completed matrix. New tasks have been added to the current section and completed tasks have been moved into the completed section. The matrix has been attached to this report.

MCPH updated the Oakland Bay Clean Water District website this quarter to include meeting agendas, meeting minutes and more Oakland Bay reports. Links between pages were added to make it easier for the public to find Oakland Bay information.

Staff attended one Mason County Public Works mycoremediation project meeting. Mason County Public Health, Mason County Public Works, Mason County Utilities and the Mason Conservation District are working to make sure all stormwater implementation projects in the area complement each other. Staff is providing some assistance on water quality issues related to stormwater. This quarter additional mycoremediation sites and research needs were discussed.

Staff participated in writing a grant application to address unmet mycoremediation research needs. Initial testing of mycoremediation shows a promising reduction of fecal coliforms but we do not know if pathogenic organisms would have similar reductions. The proposal involves bench scale mycofiltration with a recirculating "stream" for direct pathogen testing in a laboratory setting. The organisms tested would be bacteria, viruses and protozoa and would be selected based on potential for resistance to treatment using mycoremediation. We have partnered with Scott Meschke at the University of Washington to propose this project. It was felt to be important to propose this research given the efforts by the Mason Conservation District to start the approval process for mycoremediation as a new Best Management Practice for fecal coliform pollution.

MCPH attended a sampling coordination meeting with Squaxin Island Tribe and DOH.

Staff also attended two all staff meetings, three environmental health meetings and two water Quality/On-site meetings.

Staff attended one Squaxin Island Tribe's Western Estuary project meetings and provided information about the progress of a septic riser and effluent filter rebate program that has been developed for the Oakland Bay area. The addition of risers and effluent filters to older septic systems will make O & M easier and/or add a feature that will help maintain healthy septic system function. One rebate was issued this quarter.

## Task 2-District Development

MCPH asked the Oakland Bay Committee to designate alternate members this quarter. The new alternate members were added to the membership roster. The nominations for alternates still need to be approved by the Board of the Oakland Bay Clean Water District. It is anticipated that approvals will happen in May. MCPH participated in developing or distributing advertisements for additional members. Advertisements

will go in the Chamber of Commerce newsletter and the Oakland Bay Watershed newsletter. Changes to the by-laws that make in possible to have excused absences in addition to the number of absences already allowed were approved by the committee this quarter.

### Task 3-Identifying On-site Sewage System Sources

Carol Spaulding was trained to become primary field person in the Oakland Bay Area. Carol was formerly our lab specialist and has done water quality fieldwork in the past. The lab was closed at the end of last quarter, resulting in reduced staffing to the water quality program since water quality staff are now responsible for doing all lab work associated with sampling. On-site staff will start assuming some of the water quality sampling duties in order to better distribute workload.

Figure 1 All shoreline and stream sample locations

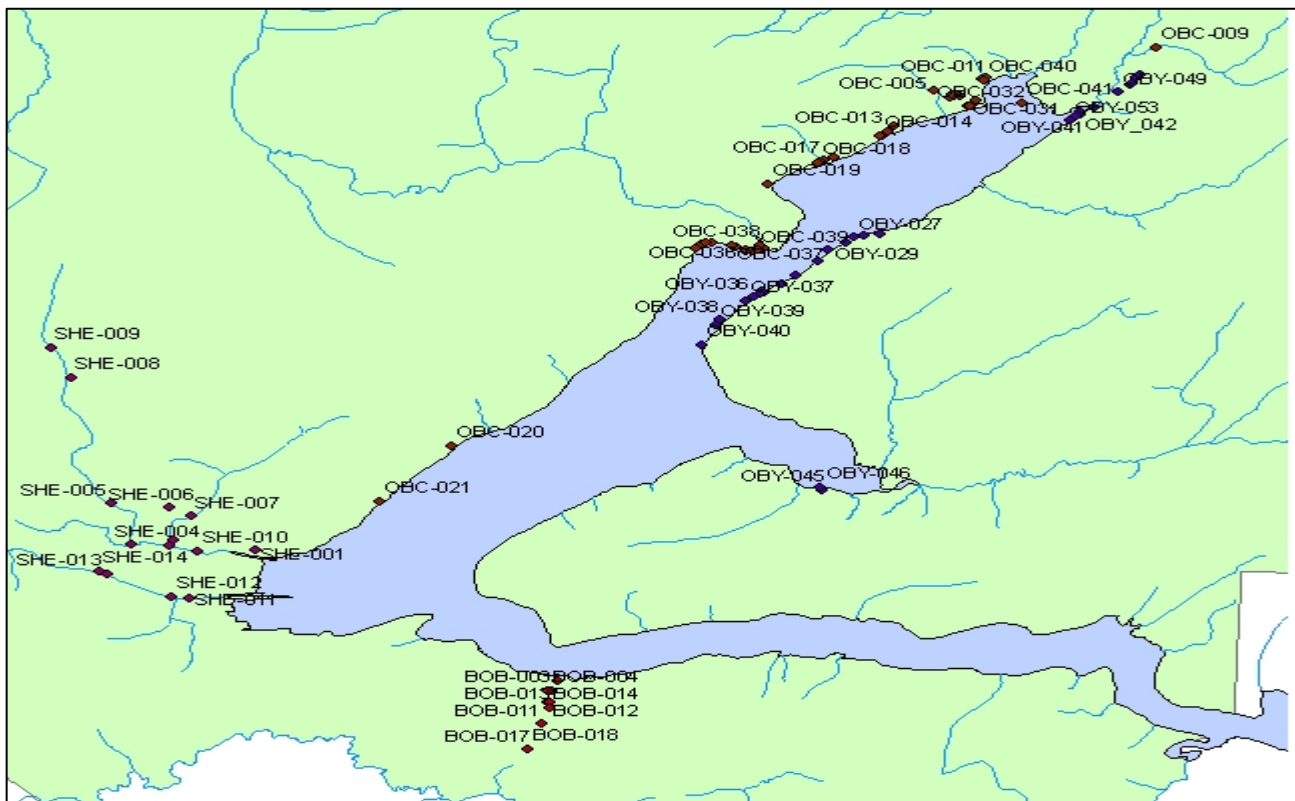
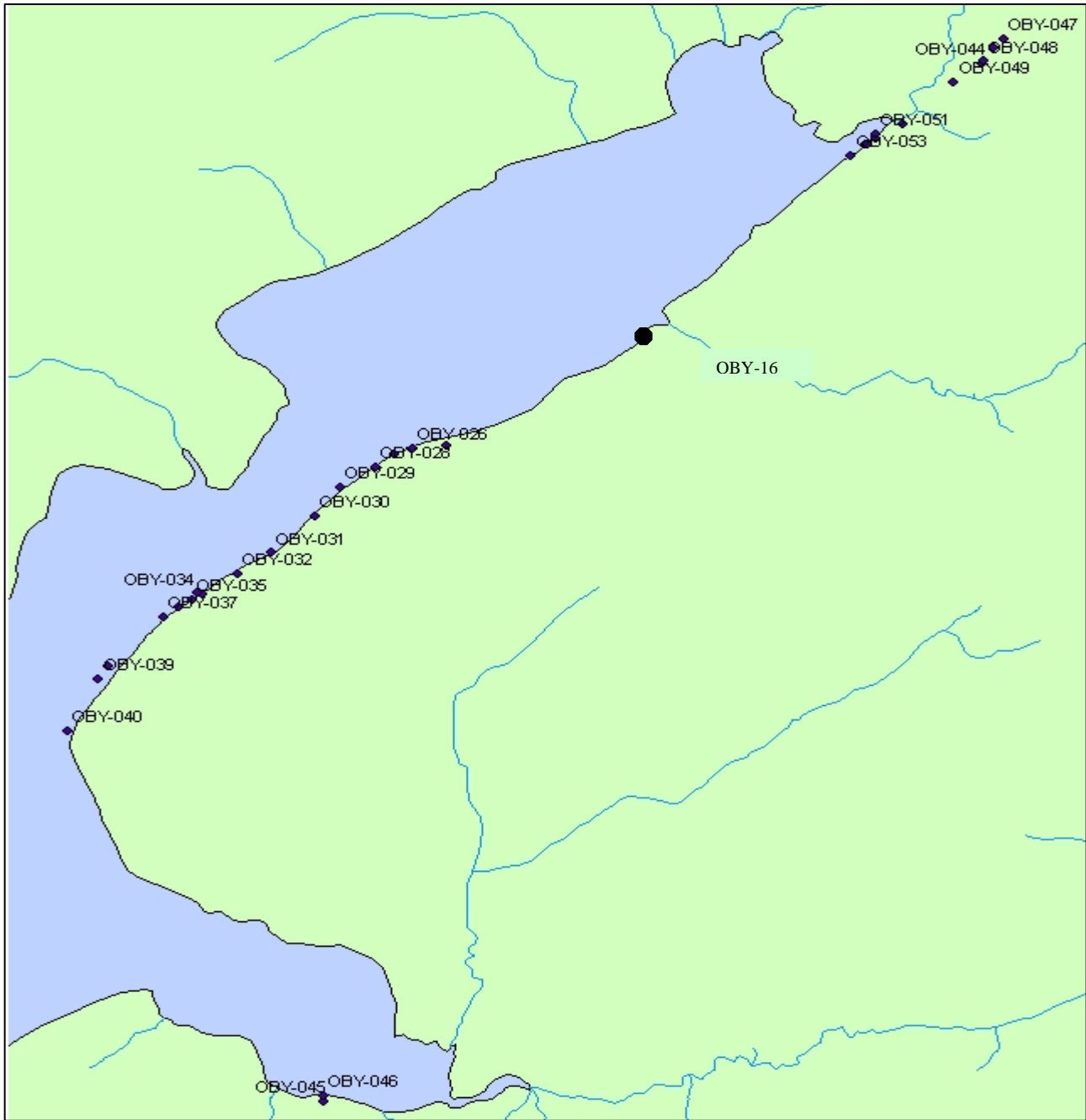


Figure 2- Yellow section sampling



Shoreline sampling for most of the yellow section was wrapped up in 2008. At the request of the Squaxin Island Tribe additional sampling along Gosser Road will be done monthly through the summer. Sampling at a mycoremediation site on the south shore of Chapman Cove has also commenced as through another grant.

Table 1 Quarterly results for the yellow section (in FC/100 mL)

Site		Geometric Mean	# samples	3/2/2009	03/19/09	03/24/09
				calc	calc	calc
OBY-016		7.00	1		7	
OBY-045		4.00	2	2		8
OBY-046		10.20	2	8		13
OBY-047		2.00	1		2	
OBY-048		1.90	1		1.9	
OBY-049		2.00	1		2	
OBY-050		2.00	1		2	
OBY-051		17.00	1		17	
OBY-052		1.90	1		1.9	
OBY-053		1.90	1		1.9	

No results are above the 100 FC/mL limit set in the QAPP. When a shoreline survey sample and a confirmation sample are above 100 FC/mL permission to do a sanitary survey of the upland area is sought.

Figure 3- Upper Cobalt Section Sampling



Table 2- Quarterly results for the Cobalt Section (in FC/100mL)

Site		Geometric Mean	# samples	02/12/09	03/17/09	03/19/09	03/24/09
				calc	calc	calc	calc
OBC-006		11.00	1			11	
OBC-012		50.00	1			50	
OBC-031		80.00	1				80
OBC-032		80.00	1				80
OBC-033		2.00	1	2			
OBC-034		1.90	2	1.9	1.9		
OBC-035		1.90	2	1.9	1.9		
OBC-036		2.00	1	2			
OBC-037		1.90	1		1.9		
OBC-038		240.00	1		240		
OBC-039		11.00	1		11		
OBC-040		11.00	1			11	
OBC-041		3.00	1			3	

One result is above the 100 FC/mL limit set in the QAPP. A confirmation sample for site OBC-038 will be taken next quarter. If the confirmation sample is also high permission for a sanitary survey will be sought. One septic failure was found in the Bayshore area. No high results sample results were found at the beach below the failure. Repairs are in process.

Figure 4- Shelton sampling sites

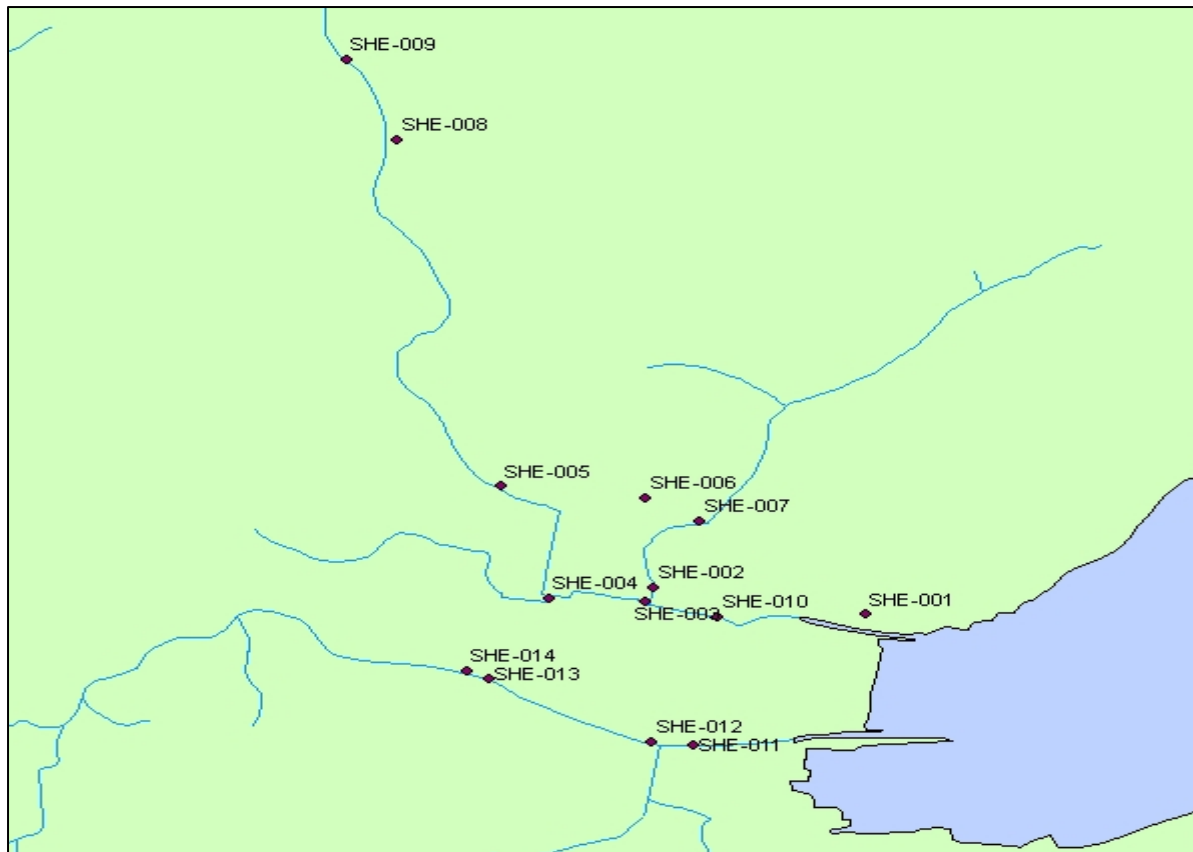


Table 3 Quarterly results for the Shelton Area (in FC/100mL)

Site	Geometric Mean	# samples	01/28/09	01/29/09	02/19/09	03/16/09
			calc	calc	calc	calc
SHE-002	6.21	3	2		4	30
SHE-003	8.20	3	3		8	23
SHE-004	16.39	3	8		11	50
SHE-005	1.97	3	1.9		2	2
SHE-006	20.47	3	30		13	22
SHE-007	4.23	3		1.9	1.9	21
SHE-008	1.95	2		1.9		2
SHE-010	17.19	3		13	17	23
SHE-011	8.89	3		2	13	27
SHE-012	11.21	3		8	8	22
SHE-013	5.92	3		2	8	13
SHE-014	9.08	3		4	17	11

No results are above the 100 FC/mL limit set in the QAPP

Figure 5- Walker Park Sample Sites

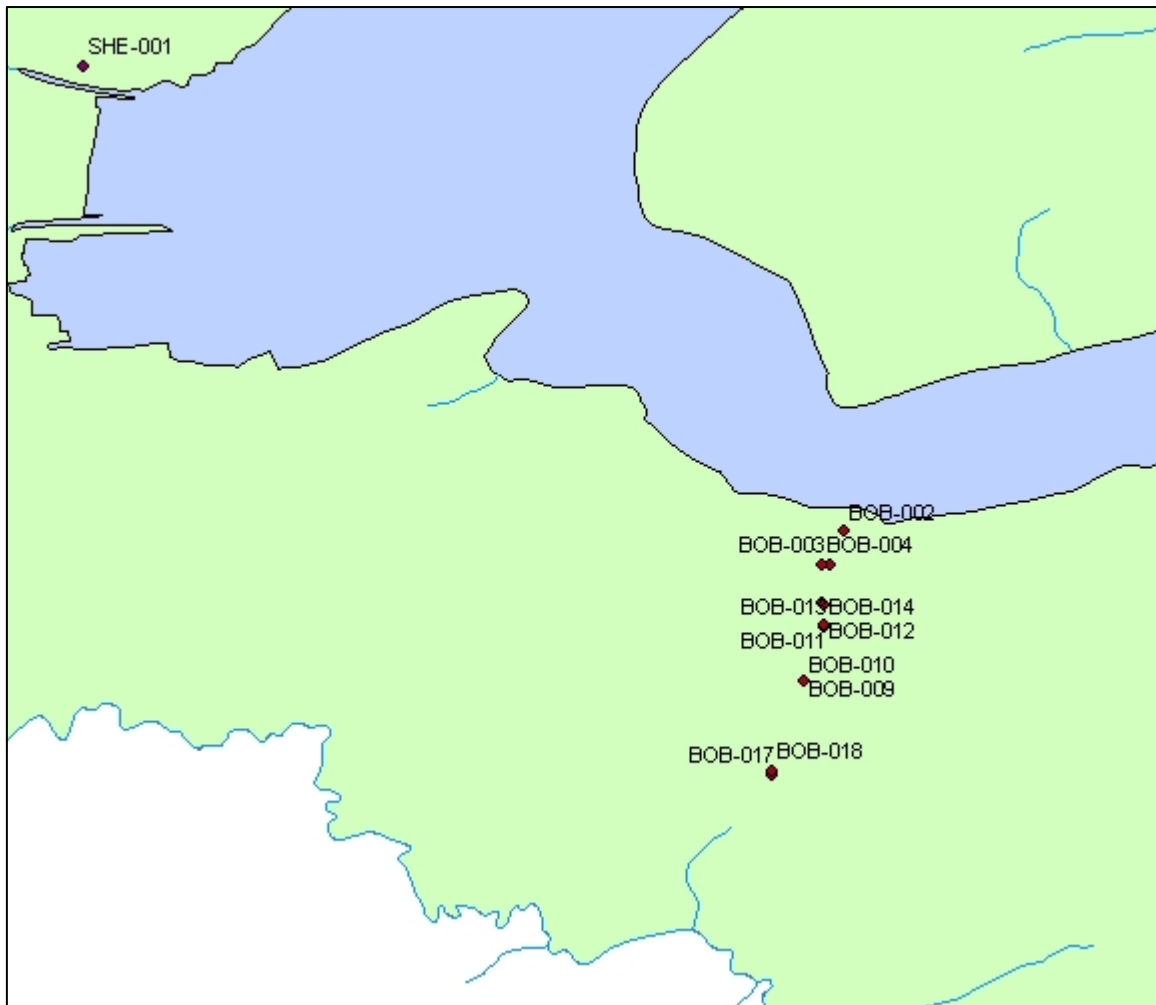


Table 4 Quarterly results for the Walker Park Area (in FC/100mL)

Site		Geometric Mean	# samples	03/11/09
				calc
BOB-001		4.00	1	4
BOB-002		2.00	1	2
BOB-003		4.00	1	4
BOB-004		2.00	1	2
BOB-005		2.00	1	2
BOB-006		1.90	1	1.9
BOB-007		1.90	1	1.9
BOB-015		1.90	1	1.9
BOB-011		1.90	1	1.9
BOB-012		1.90	1	1.9
BOB-013		1.90	1	1.9
BOB-014		2.00	1	2
BOB-016		2.00	1	2
BOB-017		1.90	1	1.9
BOB-008		1.90	1	1.9
BOB-009		1.90	1	1.9
BOB-010		2.00	1	2

No results are above the 100 FC/mL limit set in the QAPP .One dye trace was started in the Walker Park area this quarter.

In summary, during the first year of the Oakland Bay MRA grant the shoreline survey work was focused on the upper end of the bay, from Bayshore north on the west side and all shoreline development above Chapman cove on the east. We have been pleased with our progress. During the second year, while some project work continues in the upper area along Hwy 3, Ecler and Gosser Rd. the shoreline sample focus will be more on the middle section, roughly from Bayshore through Walker Park on the west side and Chapman cove to Miller Point on the east side. The residential shoreline of lower Hwy 3 will be sampled next quarter.

Task 4 -Water Quality Education-

Submitted by Emily Sanford, WSU

**Mason County Public Health and Mason County Extension  
“Oakland Bay Education and Outreach”  
January – December 2009**

1st Quarterly Report (Jan. 09 – Mar. 09)

**PARTNER** – Agrees to:

- a. *Provide to MCPH on a quarterly basis an invoice for their share of salary and benefits contribution.*
- b. *Provide to MCPH on a quarterly basis task reports on quarter progress. These reports will be due March 2009, June 2009, September 2009 and December 2009.*
- c. *Tasks and Activities are to include but are not limited the following:*

- ***Research-based assistance and education to residents in the form of outreach at community events in collaboration with MCPH:***
  - Staff attended a planning meeting for Earthday outreach events in collaboration with Olympic College Shelton and Mason County. There will be educational materials related to Oakland Bay at two community events during the week of April 20<sup>th</sup> and a Shoreline Living Workshop for residents on Sunday April 26<sup>th</sup>. In preparation for these community events staff is working on making a new publication to advertise the Friends of Oakland Bay Website.
- ***In collaboration with MCPH Mason County Extension will also provide a minimum of six Septic System Operation and Maintenance Workshops- in 2009.***
  - Two On-site Septic System Operation and Maintenance Workshops have been conducted with Mason County Public Health (January 26<sup>th</sup> and March 23rd). A total of 32 residents participated.
- ***Mason County Extension will continue facilitation of the Oakland Bay Shellfish Closure Response Education and Outreach Subcommittee. Activities associated with this will include but are not limited to: organization of community events, displays, and media coverage, coordination with community partners and the incorporation of social marketing techniques into public involvement and education programming.***
  - One Education Sub-Committee meeting was held on March 4<sup>th</sup>, facilitated by Extension staff. Two meetings related to the social marketing research / campaign were held (Jan 15<sup>th</sup>, and March 15<sup>th</sup>) These meetings, initiated by the Squaxin Island Tribe were attended by staff.
- ***Mason County Extension will work with the Water Resources Education for Real Estate Professionals and the Native Plant Salvage Project based at Thurston County Extension to bring a minimum of one Shoreline workshop to this area in 2009.***
  - A Shoreline Living Workshop is currently scheduled (as previously mentioned) for Sunday April 26<sup>th</sup> with Erica Guttman of the Native Plant Salvage Project presenting.
- ***Mason County Extension will compile content and coordinate with the Mason County Webmaster to expand, link, and market the Oakland Bay Clean Water District Website.***
  - Staff has coordinated with the Mason County Webmaster to add a comment box feature so that viewers of the website can ask questions and provide feedback. This is linked directly to staff email who will field comments and answer questions.
  - Staff is currently working with the Mason County Webmaster to design a web button which can be placed on the various organization websites involved in the Clean Water District that will link back to the Oakland Bay Website. This will help to encourage more traffic on the site.
- ***Mason County Extension will work with the Mason County Journal to develop relevant and interesting newspaper articles to educate residents about water quality issues and what they can do. These articles may focus on local history, natural history or local economic importance.***
  - This was discussed in some details at the February Advisory Committee Meeting and a few members of the committee had said they would approach community members to see if there was any local interest in taking on a regular column. At the Education Sub-committee meeting we also discussed the possibility of using the social marketing research and forthcoming campaign to design a couple of advertisements to use in the paper. This is a work in progress.