California Regional Water Quality Control Board
San Francisco Bay Region

EXECUTIVE OFFICER'S REPORT

A Monthly Report to the Board and Public

August 2007

The next regular scheduled Board meeting is August 8, 2007.
*See **http://www.waterboards.ca.gov/sanfranciscobay/** for latest details and agenda*

Items in this Report (Author[s])

****

****

State Water Board approves Mercury TMDL (Dyan Whyte)

On July 17, the State Board unanimously approved the TMDL for mercury in San Francisco Bay, part of a Basin Plan amendment that also establishes new fish tissue mercury objectives for the Bay. The full amendment now awaits approval by the state Office of Administrative Law and U.S. EPA. Chair Muller and I spoke in favor of approval at the State Board hearing, as did EPA Region 9 Water Division Director Alexis Strauss, and representatives of the Bay Area Clean Water Agencies, the Western States Petroleum Association, and the San Francisco BayKeeper.

While the TMDL addresses all the sources of mercury to the Bay, much of the discussion at the hearing focused on the TMDL's implementation requirements for wastewater dischargers. To clarify how we propose implementing the TMDL for wastewater, Dyan Whyte presented an overview of the draft wastewater watershed mercury NPDES permit we recently circulated for public comment, and discussed how we intend to modify the draft watershed permit to be consistent with the TMDL and the State Board resolution adopting the TMDL. In order to enhance individual discharger accountability, we propose that the watershed permit include individual concentration effluent limits, that will "backstop" group and individual mass-based limits, early warning triggers, and narrative requirements. These "backstop" limits will be similar to the performance limits included in many of the wastewater dischargers' existing permits. We plan to bring the watershed permit to the Board for its consideration in the fall.

Refineries contest request for mercury information (Dyan Whyte)

As with many of our TMDLs awaiting final approval, staff strongly encourage early implementation actions by dischargers. The mercury TMDL originally adopted by the Board in 2004 stated that additional information is needed to assess the significance of Bay Area petroleum refineries as sources of mercury to the Bay. As Richard Looker explained to the Board at its April 2007 meeting, staff estimate that about 1700 kg/yr of mercury enters the refineries in crude oil, but we have reliable data accounting for the fate of less than 10 kg/yr of this amount, in automobile fuels and wastewater. Because it is possible that a very large amount of mercury is entering Bay Area petroleum refineries, but that only a fraction of it can be accurately accounted for, we need further information both on the amount of mercury entering and leaving the refineries.

On May 7, 2007, acting under Section 13267 of the California Water Code, I formally required the refineries to submit technical reports quantifying both the amounts of mercury in crude oil that they process, and the "fate and transport" of that mercury. This "13267 letter" to the refineries is available at http://www.waterboards.ca.gov/sanfranciscobay/TMDL/SFBayMercury/refineries050707.pdf

The refineries have since petitioned the State Board to review the technical and legal basis of the 13267 letter and have requested a stay of the requirements of the 13267 letter pending the State Board's review of the petition on its merits. The State Board will hold a hearing on the request for a stay on July 31. As stated on the State Board's hearing notice, "A stay…may be granted only if petitioners allege facts and produce proof of 1) substantial harm to itself or to the public interest if a stay is not granted, 2) a lack of substantial harm to other interested parties or to the public interest if a stay is granted, and 3) substantial questions of fact or law regarding the permit." The hearing notice is available at http://www.waterboards.ca.gov/workshops/chevron_a1851/pn_stayhearing.pdf .

Richard Looker, Yuri Won, and I plan to testify at the stay hearing. I will update you on the outcome of the hearing at the Board meeting.

Marshall Community Wastewater System (Farhad Ghodrati)

In March 2007, the County of Marin sought approval to construct and operate a community wastewater facility to serve up to 38 developed lots in the Town of Marshall (called the Phase 1 Service Area) with possible future expansion and service for an additional 20 developed properties located to the south of the Phase 1 Service Area. The County has also established a new Onsite Wastewater Disposal Zone (Zone) to provide for operation and maintenance of the community wastewater facility. The Zone would initially encompass all parcels in the Marshall Phase 1 Service Area, with the possibility for future expansion to include onsite wastewater management services for other properties along the East Shore area of Tomales Bay. We have issued an authorization letter to provide the County coverage under the State Board's General Waste Discharge Requirements for

Discharges to Land by Small Domestic Wastewater Treatment Systems. The community wastewater facility will be constructed in the summer and fall of 2007.

The focus of this project is the development of sanitary wastewater facility improvements for the East Shore area of Tomales Bay, in western Marin County. The area is comprised mainly of large agricultural parcels used for grazing purposes; however, it also contains a number of residential and commercial properties located along the shoreline, with the greatest concentration around the town of Marshall. There are presently nearly 100 residences situated on generally very small parcels immediately adjacent to the Bay, or located a short distance away along tributary drainages. There are no community sewerage facilities in the area; all properties are dependent on individual onsite systems (i.e., septic systems) for treatment and disposal of sanitary wastes. Most of the onsite systems are old, noncompliant with respect to current codes, and a continuing source of public health and water quality concern. Many of the systems are in need of replacement or major repair. A recent sanitary survey of a portion of the area documented leakage of partially treated sewage into the Bay, and an overall failure rate of about 24 percent.

Tomales Bay is an impaired water body for pathogens. Faulty onsite wastewater systems, especially for properties along the shoreline, have been identified as one of the sources contributing to the water quality impairment.

Over the past few years, the Marin County Community Development Agency has undertaken various activities to improve onsite wastewater system management practices throughout the County, and particularly in the Tomales Bay watershed. The East Shore area has been a high priority. Recently, the County received grant funds from the State Board to be used specifically to correct faulty septic systems along the East Shore area. Septic system problems are planned to be addressed as part of a multi-phased program, with the current grant funds being used for an initial project covering a minimum of 20 to 35 homes.

While the long-term goal for the Tomales Bay East Shore area is to achieve a suitable level of performance and improvement for all of the existing onsite wastewater systems in the project area, this project is limited in scope at this time due to the limited amount of available funding. Improvements for other properties will be addressed in subsequent phases as time and financial resources permit. Subsequent efforts will be guided by the approach and outcome of the first phase of work covered by this current project.

Selenium TMDL for North San Francisco Bay (Barbara Baginska)

A new TMDL project is underway to address selenium toxicity in North San Francisco Bay. Selenium is an essential trace element that occurs naturally in the environment, but it is also highly bioaccumulative and can cause both acute and chronic toxicity to higher level aquatic life and waterfowl. Bioaccumulation of selenium in diving ducks has led to recurring health advisories for local hunters. Monitoring of selenium in ducks, fish and invertebrates in the northern part of the Bay and Delta has revealed levels that could cause health risks to people and wildlife.

Although the entire Bay is listed as impaired by selenium, the TMDL will focus on the North Bay (including a portion of the Sacrament/San Joaquin Delta, Suisun Bay, Carquinez Strait, San Pablo Bay, and the Central Bay) because sources there are significantly different from sources in the South Bay.

In 2005 we participated in a Clean Estuary Partnership-hosted roundtable discussion that was attended by representatives from public agencies, environmental organizations, industry, and members of the public. As a follow-up to this roundtable, we have prepared a detailed Project Plan for development of a selenium TMDL and a fish tissue-based numeric target that will apply to North San Francisco Bay segments. Our intention is to develop this TMDL in a collaborative manner. We are already working closely with public agencies such as USGS, U.S. EPA, and the State Board. The Center for Collaborative Policy (CCP), a group associated with California State University at Sacramento that specializes in facilitating public participation programs related to complex environmental issues, will facilitate a public involvement process and assist staff in communicating the scientific basis of our project to the broader community. The Western States Petroleum Association has provided funding support for engagement of both CCP and a consultant, which will perform technical work on the project under Board staff direction.

For more information and to download a copy of the project plan, please see the Selenium TMDL page on our website,
http://www.waterboards.ca.gov/sanfranciscobay/TMDL/seleniumtmdl.htm

Surface Water Ambient Monitoring Program (SWAMP) (Karen Taberski)

The Board's Surface Water Ambient Monitoring Program (SWAMP) has released two reports on the first three years of monitoring in Bay Area watersheds. The reports assess water quality in 13 watersheds in our region: Walker Creek, Lagunitas Creek, San Leandro Creek, Wildcat/San Pablo Creek, Suisun Creek, Arroyo Las Positas, Pescadero/Butano Creek, San Gregorio Creek, and Stevens/Permanente Creek in the 2001-2003 report; and Kirker Creek, Mt. Diablo Creek, Petaluma River, and San Mateo Creek in the 2003-2004 report. These reports are available on our web site at http://www.waterboards.ca.gov/sanfranciscobay/monitoring.html. Staff will use the findings in these reports to develop our region's 303(d)/305(b) Integrated Report, which we anticipate bringing to the Board for approval this winter.

The reports include assessments of the health of "communities" of organisms that live in stream bed sediments. We document that stream sites receiving runoff from open space and rural residential areas have the healthiest communities, while sites draining urban areas have the most degraded communities. Healthy riparian habitat and intact stream channels, particularly, are associated with healthy communities of sediment-dwelling organisms. In our studies, Pescadero/Butano and San Gregorio Creeks had the highest water quality and most undisturbed benthic communities of the watersheds surveyed. The sediment TMDL now in development for these creeks aims to keep these delicate habitats intact and supportive of sustainable salmonid populations.

In general, concentrations of contaminants were below regulatory thresholds. However, urban areas tended to have the highest concentrations. This was particularly true of PAHs (polynuclear aromatic hydrocarbons). Stevens Creek and Kirker Creek had the highest aquatic toxicity; San Leandro, Kirker, and San Mateo creeks had the highest sediment toxicity. In general, relationships between toxicity and individual chemicals were not clear. Pyrethroid pesticides may have played a role in causing sediment toxicity, but were not measured until 2005.

Elevated temperatures and low concentrations of dissolved oxygen, conditions outside of ranges that are healthy for salmonid fish species as well as other aquatic life, were common throughout the watersheds surveyed. Lower temperatures and higher dissolved oxygen levels were observed where riparian habitat was intact. Arroyo Las Positas and Kirker Creek had the most temperature and dissolved oxygen measurements indicating unhealthy conditions for salmonids and other aquatic life.

Nutrients were often elevated in urban areas. Nitrate levels in urban streams were twice as high as in streams that drain agricultural areas and nearly ten times higher than streams in open space areas. Arroyo Las Positas and San Leandro Creek had very high nitrate concentrations when compared to criteria developed to protect aquatic life.

Staff is working on forming a Bay Area watershed monitoring coalition, including SWAMP and stormwater programs, to support development of meaningful watershed information throughout the region, and to maximize resource efficiency.

Sonoma Creek Pathogens TMDL Update (Tina Low)

In June 2006, the Board adopted a Basin Plan amendment establishing a TMDL for pathogens in Sonoma Creek. State Board staff, as part of their review of the administrative record in preparation for an approval hearing in Sacramento this fall, identified some minor editorial changes to the amendment that will improve clarity and consistency with other documents. These include changing terminology in the Sources section from "Sanitary Sewer Lines" to "Sanitary Sewer Systems"; and revising a table in the Load Allocations section. As revised, Table 7-j now lists permittees regulated under the municipal runoff permit, and includes load allocations for dairies, which we inadvertently omitted in the final version of the amendment. I have made these minor changes and sent the revised Basin Plan amendment to the State Board.

San Pablo Brownfield Restoration (Chuck Headlee)

On July 16, Bruce Wolfe and Chuck Headlee attended the East Bay Asian Land Development Corporation (EBALDC) dedication ceremony for the completion of its low-income housing project in San Pablo. In the fall of 2004, EBALDC purchased 7 acres of former industrial property on Giant Road in San Pablo. Board staff oversaw the investigation and cleanup of the site, including the removal of 6,800 tons of soil contaminated with petroleum hydrocarbons, lead, chromium, PCE, and arsenic (and replacement with clean imported fill). Six buildings and several underground storage tanks were also removed from the site. Oxygen releasing compounds were placed in the

excavations prior to backfilling to enhance the naturally occurring biodegradation of the residual petroleum contaminants in soil and groundwater. The site investigation and remediation cost approximately $850,000. With the help of Board staff, EBALDC was able to combine some of the site construction activities with the soil removal project to reduce overall costs.

Once cleanup was complete, EBALDC sold 4 acres to Pulte Homes for the construction of 74 market rate condominiums. EBALDC leveraged the proceeds, along with other grant monies, to construct 87 low-income rental units, a community center, and a day care center. In addition to the long-term benefits to the City of San Pablo from this development, the surrounding neighborhood is already benefiting from this project by no longer having contaminated former industrial property adjacent to the nearby elementary school. Paul Morris, the mayor of San Pablo, various San Pablo and Contra Costa County civic leaders, and a representative from Assemblywoman Hancock's office were all on hand for the ceremony.

San Leandro Brownfield Restoration (Kent Aue)

On July 12, Board staff completed an expedited review and approval of a cleanup plan for a San Leandro Brownfield site, thereby allowing the project sponsor to compete for federal funding in an annual grant cycle. Eden Housing, Inc., (Eden) a nonprofit developer and manager of affordable housing, intends to purchase and redevelop a one-acre property at 2103 and 2121 East 14th Street in San Leandro for affordable senior housing. The site was converted from a commercial orchard in the early 1950's for use as an auto sales and repair facility, and is currently vacant. Based on existing site data, the environmental concerns at the site include residual petroleum hydrocarbon contamination in soil gas and potential soil impacts from petroleum hydrocarbons, chlorinated solvents, and agricultural pesticides.

In late May, Eden requested that the Board assume oversight of this project under the terms of the Cal/EPA Brownfields Memorandum of Agreement, and agreed to reimburse the Board for project oversight costs. Eden planned to request more than six million dollars from the U.S. Department of Housing and Urban Development (HUD) to help pay for the development. The HUD application required agency verification of an approved cleanup plan for the property. Eden and the City of San Leandro requested that the Board expedite project review to facilitate submittal of the funding request before the July 16, 2007, application deadline.

Under the guidance and direction of Board staff, the consultant for Eden developed a cleanup plan, and prepared and distributed a fact sheet to nearby residents and property owners. Board staff approved the cleanup plan for this project, following a 20-day public review and comment period to solicit input on the cleanup plan from the community. Eden was able to submit its completed funding application to HUD by the specified deadline. Because the cleanup does not have to wait until the HUD funding is approved, we expect that the cleanup plan will be implemented at the site during August. We will update the Board once cleanup work is completed.

Cleanup Update for 2690 Casey Avenue (Adriana Constantinescu)

I approved a June 2007 remedial investigation work plan submitted by Applera for the 2690 Casey Avenue site in Mountain View. Applera submitted the work plan in response to a site cleanup order adopted by the Board at its May 2007 meeting. Applera also petitioned the cleanup order to the State Board, but asked that the petition be held in abeyance pending the outcome of the investigation work. The investigation will include collecting soil and groundwater samples to fill remaining data gaps. The investigation will use innovative techniques including a membrane interface probe, soil conductivity probe, and down-hole geophysical logging of monitoring wells. Following completion of the investigation, the next task in the cleanup order is submittal of an interim remedial action work plan due in December 2007.

Tesoro Amorco Terminal MTBE Cleanup (Vic Pal)

Last December, the Board adopted Site Cleanup Requirements to address MTBE-impacted groundwater at the Tesoro Amorco Terminal in Martinez. The site is located near the southerly end of the Benicia Bridge. MTBE levels up to 100 times greater than ambient water quality criteria were found approximately 175 feet from the Bay. The pollution is presumed to come from either an above ground tank (Figure 1) or pressurized pipelines leading to the tanks.

Tesoro responded quickly to the cleanup order and initiated operation of a groundwater extraction system before the end of January 2007. Since system startup, significant amounts of MTBE have been captured. In the first seventy-five days of operation, approximately 155,000 gallons of groundwater were removed by the extraction system and approximately 1700 pounds of MTBE was recovered. The extraction system continues to operate, effectively preventing MTBE-contaminated groundwater from reaching the Bay.

Additional work is planned to assess potential impacts to the wetlands downgradient from the site. This assessment is to determine the lateral extent of MTBE and evaluate whether any MTBE reached the wetlands and the Bay. The work being performed by Tesoro is a good example of rapid and effective response to address a groundwater pollution condition that could also have impacts to the Bay.

Figure 1: Past MTBE storage resulted in leakage from this tank and/or underground piping

Figure 2: Remediating the release of MTBE will protect wetlands at the southern banks of the Bay

West Winton Landfill (Lindsay Whalin)

The significance of the Title 27 landfill regulations requirement for monitoring and inspection of closed landfills was recently demonstrated. During a routine staff inspection of the closed West Winton Landfill in Hayward, staff observed exposed refuse along the shoreline to an unnamed slough. In addition, a small scale subsurface investigation revealed that portions of the landfill are currently without the Title 27 prescriptive cap. These issues are of special concern because the landfill, which closed in 1974, is located on the shore of the San Francisco Bay. In July staff sent a letter to the landfill owner, the City of Hayward, requiring a technical report to evaluate the potential impacts from uncapped and exposed waste at the landfill, pursuant to California Water Code Section 13267. After more than 30 years, significant water quality impacts are unlikely; however, the investigation is necessary to ensure beneficial uses of the Bay are being protected.

ABAG's Priority Development Areas and Priority Conservation Areas (Ben Livsey, Shin-Roei Lee)

At the May Board Meeting, Kenneth Kirkey, Planning Director of ABAG, provided an overview on FOCUS. FOCUS is a regional planning effort that encourages future growth near transit and in existing communities. FOCUS will complement the Board's permitting and planning efforts including the municipal regional stormwater permit and the Stream and Wetland System Protection Policy Basin Plan amendment. Staff has continued to coordinate with key ABAG staff to align our efforts with this regional planning initiative.

As part of the FOCUS process, regional regulatory agencies are working together with local governments to create a specific and shared concept of where growth can best be accommodated (Priority Development Areas) and where important habitats and open space should be protected (Priority Conservation Areas). Together, these areas will inform regional regulatory agencies where incentives and assistance are needed to support local efforts to accommodate population growth, including low income housing, and to protect important habitats and open space. In July, ABAG received an overwhelming number of applications from local governments for designating Priority Development Areas—over 100 applications from 51 jurisdictions. ABAG has now posted the nomination guidelines for designating Priority Conservation Areas (due August 17). Local governments, utility districts, resource conservation districts, park and open space districts, land trusts, and other land/resource non-profits can all nominate such conservation areas.

Bay Area Hydrology Model (Sue Ma)

Our current municipal stormwater permits require cities and counties to size appropriate hydromodification controls so as to match pre- and post-construction runoff rate and duration patterns from new and redevelopment projects. Without such controls, increases in runoff from development projects are likely to increase creek erosion, silt pollution, or other impacts to beneficial uses.

The necessary analytical methods for hydromodification controls require specialized expertise and present a challenge to developers and municipal staff reviewing development projects. In anticipation of these difficulties, three countywide stormwater programs, Santa Clara, Alameda, and San Mateo, have jointly funded the development of a computer model to simplify the analysis of hydromodification effects and aid in the design of the necessary hydromodification controls. The computer model, known as the Bay Area Hydrology Model (BAHM), is a Bay Area version of the Western Washington Hydrology Model and was calibrated with site-specific soil, rainfall and stream flow data from the three counties. It is a user-friendly tool to size the hydromodification controls to meet the Board-adopted standards.

BAHM is ready for use. The three counties have made BAHM available free of charge to consultants, developers, local planning staff and Board staff to design and review hydromodification controls in Santa Clara, Alameda, and San Mateo counties. With site specific data from other Bay Area counties, BAHM could be used in those counties as well.

Board staff attended a hands-on training session along with local staff and consultants for BAHM in July. We are very excited about its capabilities and user-friendly format. It will be an invaluable tool both in the design and review of hydromodification controls.

Low Impact Development (Shin-Roei Lee)

The State Board Training Academy held three Low Impact Development (LID) workshops at Folsom, Marina Del Rey and Sonoma in June and July. A number of our staff from the grants, stormwater, wetland protection, planning, and TMDL programs along with Coastal Commission staff, consultants, developers, local planners and city officials attended the very interactive workshop in Sonoma.

LID represents an innovative approach to stormwater management that can more effectively maintain or restore the ecological integrity of receiving waters, and provide additional environmental and economic benefits. LID is a general term used to describe a comprehensive array of techniques for site planning (e.g., high density, mixed use developments close to public transits) and design (e.g., pervious pavement, rain garden, grassy swales, green roofs, riparian buffer, pedestrian and bike trails, etc.) that when combined create a more economically sustainable and ecologically functional urban landscape. LID uses a decentralized site level approach where small-scale distributed water management and pollution prevention techniques are integrated into every aspect of the urban landscape and its infrastructure to mimic predevelopment watershed hydrology and water quality. The workshops offered case studies and site visits of LID in California (and elsewhere) in different contexts and with various types and densities of development to provide the technical and institutional framework for addressing resource protection and regulatory programs using LID and related techniques. We support LID implementation and will work with local agencies to broaden its use in our region.

Monitored Natural Attenuation Training (Elizabeth Wells)

Three staff from the Groundwater Protectio Division, Erich Simon, Linda Rao, and Elizabeth Wells, attended a 2-day training seminar on Monitored Natural Attenuation in Sacramento. The seminar was put on by the Northwest Environmental Training Center of Seattle. The objectives of the training seminar were to provide attendees with a basic understanding of natural attenuation (NA) processes and the lines of evidence to evaluate the feasibility of NA implementation at both petroleum and chlorinated hydrocarbon groundwater cleanup sites. The course curriculum included the science behind NA, how to recognize when NA is occurring, what data to collect, and how to analyze the data to determine whether NA is likely to be an effective cleanup remedy. The training seminar received high marks from staff who attended.

NA is the process by which naturally-occurring microorganisms present in the subsurface degrade contaminants (such as petroleum hydrocarbons or solvents) to reduce mass and toxicity such that human health and the environment are protected and groundwater has been returned to beneficial use. Monitored NA (MNA) is a remedial "technology" that implements NA and tracks its progress through groundwater sampling and data evaluation

(i.e., "monitoring"). MNA may be an appropriate remedial alternative at a cleanup site based on site-specific conditions, including hydrogeology, type of contaminant, proximity to sensitive receptors, and cost considerations. Because many dischargers are proposing MNA, the training provided information that is applicable to many cleanup cases overseen by the Board.

Examples of cleanup cases that potentially could implement MNA include solvent sites, such as former dry cleaners or computer chip manufacturers, and petroleum hydrocarbon sites, such as former gasoline service stations and petroleum storage facilities. If subsurface conditions are favorable at a solvent site, the contaminants of concern are degraded through a series of daughter products to non-toxic end-products (e.g., tetrachloroethene to trichloroethene to dichloroethene to vinyl chloride to ethene to carbon dioxide). If subsurface conditions are favorable at a petroleum hydrocarbon site, the contaminants of concern will be consumed by microorganisms and thus removed from the groundwater.

In-house Training

As part of our in-house training program, we invited representatives of the Oakland and BART police departments to make presentations to staff on July 12, as part of our ongoing violence prevention training. Brownbag seminars included a July 19 session by Wil Bruhns on the literary perceptions of science and technology in Western culture and how that potentially could impact staff's public relations. There was also a July 25 session organized by Kevin Brown on various innovative groundwater investigation methods (including static and dynamic profiling of wells). Our in-house training program will be "on vacation" in August.

Staff Presentations

On July 26, I spoke on TMDL development and implementation at the California Council for Environmental and Economic Balance's (CCEEB's) Summer Issues Seminar. I focused my remarks on the need to move forward on adaptive implementation of all water quality attainment strategies, including TMDLs, even before completing their development and adoption processes. I described stakeholder partnerships, such as the East Bay MUD and Save the Bay partnership on mercury thermometer collection, which help implement TMDLs before their full adoption, and innovative regulatory tools, such as our pending wastewater watershed permit for mercury, that more efficiently and effectively implement TMDLs, as examples from our region that move implementation forward. CCEEB members from around the state were very interested in these examples, especially the watershed permit.