

BP Amoco



ENVIRONMENTAL
PROTECTION

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May 30, 2000

Alameda County Health Care Services Agency
Attention Mr. Larry Seto - Sr. Hazardous Materials Specialist
1131 Harbor Bay Parkway, STE 250
Alameda, CA 94502-6577

RE: Former BP Oil Site No. 11270
3255 McCartney Road (at Island)
Alameda, CA

Dear Mr. Seto:

This responds to the March 21, 2000 letter from the Alameda County Health Care Services Agency (HCSA). In brief, the HCSA letter requests additional groundwater monitoring data, and downgradient sampling to define the subsurface extent of MTBE.

BP can appreciate the need to address releases of gasoline products containing MTBE, particularly in areas where groundwater is a current drinking water resource, or may become a source of drinking water at some future time. This concern does not appear to apply at this particular site, so the potential benefit associated with obtaining the information requested by HCSA is unclear.

The groundwater beneath this site has been sampled for total dissolved solids (TDS), and concentration data show that groundwater in the vicinity of the site should not be considered to be of present or future beneficial use. ~~You will note that the averaged TDS concentrations (including upgradient well XW-1) are over two times higher than the 3,000 mg/l TDS ceiling that defines a present or future beneficial use aquifer.~~ It seems reasonable, then, to conclude that the petroleum release at this site has not affected groundwater with a present or future beneficial use.

In this context, it is difficult to appreciate the purpose that would be served by collecting the data requested in the March 31, 2000 AHCSA letter. Given the impacts that have already occurred to drinking water sources in California, adverse affects of MTBE releases are primarily (if not entirely) aesthetic. Since groundwater beneath this site is not designated a future or potential future source of potable water, aesthetic criteria do not seem relevant. While perhaps this need not be said, I want to emphasize BP's commitment to cooperate with the HCSA and the Regional Board so that this matter is resolved with due dispatch. Having a common understanding will go a long way toward allowing BP to

make a proposal responsive to the requirements of the HCSA, while moving forward with final project objectives in clear focus.

Please contact me at (425) 251-0689 to discuss this matter in further detail.

Sincerely,



Scott Hooton

attachment

cc: site file
D. Camille - Tosco

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**East Bay Plain Groundwater Basin
Beneficial Use Evaluation**



San Francisco Bay Regional Water
Quality Control Board
Groundwater Committee

**East Bay Plain Pilot Project
includes staff from:**

- Regional Board
- East Bay Municipal Utility District
- Alameda County Flood Control and Water Conservation District
- Port of Oakland
- DTSC
- U.S. Navy
- City of Oakland
- City of San Leandro

Project Goals

- The main goal is to better define groundwater beneficial uses in the East Bay Plain.
- What are the current and planned future groundwater beneficial uses of the basin?
- Where is the use of the Basin limited?
- Can the shallow and deeper zones have different designations?
- Should any current beneficial use designations change?
- Are there areas requiring special protection programs?

Why do it?

- Test and refine methodology developed for San Francisco Peninsula.
- The current blanket drinking water designation is overly conservative.
- Define Areas of Concern.
- Maximize use of limited resources.
- Make better cleanup decision.
- Respond to local initiatives.
- New emphasis on watershed assessments.
- Prioritization of cases.

Methods

- Participation by a broad base of interests
- Compile best information
 - Historic, Current and Future Uses
 - Locations of Pollution Sites
 - Hydrogeology
 - Water Quality

**Groundwater is used for a wide
range of existing purposes**

- Number of permitted drinking water wells: 6 (serving 200 users)
- Number of back yard wells: 4000
- Number of active Industrial Process Supply wells: 10
- Number of agricultural wells (Irrigation/non-residential): <100

Historical use was greater than current use

- Number of private and public drinking water wells in 1911: 3400.
- Most less than 50 ft deep, but many were 200 to 500 feet deep.
- Virtually none of these wells were properly destroyed.
- Highest ratio of historical wells >200 feet deep
 - City of Alameda: 10 deep wells/mi²
 - City of Oakland : 6 deep wells/mi²

Groundwater Use 1911 vs 1998

East Bay Plain Water Usage in 1911

- Population: 230,000
- Total Water Use: 19,000 acft/yr
- Local Groundwater: 8,000 acft/yr

East Bay Plain Water Usage in 1998

- Population: 900,000
- Total water use: 162,000 acft/yr
- Local Groundwater: 3,400 acft/yr

Shallow groundwater has been degraded locally in much of the East Bay Plain and regionally in the Cities of Emeryville and San Leandro. Deeper groundwater is of good quality, based on limited data but is at risk given the number of abandoned wells.

Active Fuel Sites:	1310
Active Regional Board SLIC Sites:	32
DTSC Sites:	59
Department of Defense (EPA):	5
Permitted Landfills:	11
Identified plumes longer than 1000':	12

East Bay Municipal Utilities District is considering using portions of the East Bay Plain for conjunctive use

- Using injection/extraction wells to store excess Sierra water supply underground.
- Bank water for future use during a drought or earthquake.
- Status: Two test wells installed. Results from first well were favorable, second well detected TCE.

Innovative remedial approaches are being developed to manage soil and groundwater pollution

- Closing Military Bases and Conversion to Civilian Uses.
- City of Oakland Urban Land Redevelopment Program.
- US EPA's Brownfields Economic Redevelopment Initiatives for Emeryville, Oakland, and Richmond.
- Port of Oakland's Vision 2000 Project.

Several databases on well location information exist, but are not widely utilized

- Primary Resource: Alameda County Flood Control and Water Conservation District.
- Other less known data bases are maintained by: City of Berkeley, Contra Costa County, East Bay Municipal Utilities District, and the Regional Board.

**East Bay Plain
Recommendations:**

- Regulatory - Proposed Basin Plan Amendments.
- Coordination - Monitoring, data availability, etc.
- Prioritization - Proposed groundwater management zones.

Regulatory:

- Subdivide East Bay Plain into Sub-Areas and recognize their differing existing beneficial uses.
- Dedicinate the municipal beneficial use for groundwater in shallow deposits with high TDS (>3000 mg/l)
 - Port of Oakland
 - Alameda Point
 - Chevron Refinery
- Revise method for dedesignating beneficial uses.

**Improve Coordination between the
Various East Bay Regulatory Agencies**

- Encourage the establishment of a basin-wide groundwater management program.
- Make GIS information available over the Internet and update it regularly.
- Regional Board, EBMUD, Contra Costa County and City of Berkeley should make their well databases more accessible to the public.

**Improve Coordination between the Various
East Bay Regulatory Agencies (continued)**

- The Regional Board should develop methods for conducting Vertical Conduit Studies and encourage Contra Costa and Alameda Counties to establish a vertical conduit location and abandonment program.
- Encourage the use of aquifers in the East Bay Plain for groundwater storage.
- Expand the existing groundwater monitoring network.

**Prioritization -
Recommend Management Zones**

- Zone A - Significant municipal groundwater resource; either an area of historic or current municipal use.
- Zone B - Meets broad definition of "Source of Drinking Water" however, no historical, current or planned municipal use.
- Zone C - Dedicinate areas. Areas of brackish groundwater, that do not meet Sources of Drinking Water Policy.

**Proposal to allow Less Aggressive / Passive
Remediation**

- Site Specific determination, likely examples:
 - restricting groundwater remediation to source area only
 - allowing monitored natural attenuation
 - or implementing pump-and-treat solely to limit plume migration.

**Criteria for Less Aggressive /
Passive Remediation:**

- 1) applies to pre-existing pollution,
- 2) plumes defined both laterally and vertically,
- 3) the source is reasonably removed or remediated,
- 4) pollutant concentrations are stable or declining,
- 5) plume separated from the deeper aquifer by an aquitard,

**Criteria for Less Aggressive /
Passive Remediation (Continued):**

- 6) potential vertical conduits are properly destroyed,
- 7) no existing beneficial uses are impacted,
- 8) the proposal is consistent with any local groundwater management plans and well head protection areas (current and future),
- 9) approval is granted by Regional Board following a 30-day public notice period.

Next steps:

- Finalize report and prepare Basin Plan Amendment package for both East Bay Plain and San Francisco Peninsula.
- Prepare CEQA Analysis.
- Route for public review and comment in late April 1999.
- Hold public workshop on groundwater basin plan amendments in May 1999.
- Hold first Board Hearing in June 1999.

**Table 12. Summary of Proposed East Bay Plain
Groundwater Management Zones**

Zone		Historical Public Water Supply	Historical Domestic Water Supply	Existing, Probable or Potential MUN	Remediation Strategy	Location
A – Areas of Basin that have moderate to significant deep MUN ground water resource	Shallow	Yes, but limited	Y	Potential	For shallow pollution, goal is to maintain and restore MUN and actively prevent migration into deeper zones. Target areas of Special Concern shown on Table 13.	All of San Leandro and San Lorenzo Subareas; Bulk of Central, Oakland and Richmond Sub Areas.
	Deep	Y	Y	Existing or Probable	For deeper aquifers require active remediation and hydraulic control to maintain and restore MUN.	
B – Areas of basin that are unlikely to be used as a MUN groundwater resource		N	Y	Potential	Passive Remediation to restore MUN as a long-term strategy while actively protecting private irrigation wells, human health and ecological receptors. Utilize risk based corrective action in establishing groundwater cleanup standards.	Berkeley Sub Area and Emeryville.
C - Not a MUN groundwater resource		N	N	Neither Existing, Probable or Potential	Protect human health and ecological receptors. Ddesignate MUN in Zone C. Utilize risk based corrective action in establishing groundwater cleanup standards. Locate and seal vertical conduits that extend into deeper portions of Zone B.	Shallow high TDS aquifers along Oakland and Alameda Shoreline and at Chevron Refinery.

MUN - Municipal Beneficial Use

Shallow Zone - Groundwater within shallow deposits above the Yerba Buena Mud or its lateral equivalent.

Deep Zone - Groundwater below the Yerba Buena Mud or its lateral equivalent within the Alameda Formation or Santa Clara Formation as defined by Figuers (1998) .

Table 13. Proposed Strategy by Sub-Area for Addressing Groundwater Contamination in the East Bay Plain

Sub-Area	Vertical Subdivisions	Areas of special concern	Areas proposed for less aggressive or passive remediation.	Areas proposed for dedesignation
Richmond	None	Areas with a have high density of back yard irrigation wells in east central Richmond and western San Pablo (See Figure 17). North-central portion is deepest and potentially most productive (See Figure 10).	None defined, however, portions of Richmond Inner Harbor/ South Shore Area may qualify. Bedrock is less than 200 feet deep in this area (See Figure 10).	Chevron Richmond Refinery
Central	SHALLOW	Area on Alameda Island with a high density of existing back yard irrigation wells pumping from Merritt Formation (See Figure 17). Bay front groundwater with potential to impact San Francisco Bay.	Shallow brackish artificial fill areas on a case-by-case basis (See Figure 17).	Portion of Alameda Point, Oakland Army Base and Port of Oakland
	DEEP	Area south of the Bay Bridge where basin is deepest and potentially most productive (See Figure 10). High % of deep historic wells in City of Alameda (See Fig. 2 and Table 4).	None	None
Berkeley	None	Areas with moderate density of back yard irrigation wells (see Figure 17).	Berkeley/ Albany Groundwater Management Zone. Emeryville Brownfields Groundwater Management Zone (see Figure 19).	None
Oakland	SHALLOW	Areas with moderate density of back yard irrigation wells (See Figure 17).	Regional Board will consider applicability of City of Oakland's Urban Land Redevelopment Protocol once it is finalized (see Section 14.1).	None
	DEEP	Area south of Lake Merritt is deepest and historically most productive portion of the Oakland Sub-Area (See Figure 3). SWPZ for EBMUD aquifer storage and recovery test well near Oakland Coliseum (See Figure 14). High % of deep historic wells in City of Oakland (See Fig. 2 and Table 4).	None	None
San Leandro	SHALLOW	Areas with a high density of back yard irrigation wells (See Figure 17).	Shallow groundwater pollution sites that meet remediation and investigation criteria on a case-by-case basis (See Section 17.11).	None
	DEEP	SWPZ for 2 small DHS Permitted Drinking Water Systems (See Figure 14).	None	None
San Lorenzo	SHALLOW	Areas with a high density of back yard irrigation wells (Figure 17).	Shallow groundwater pollution sites that meet remediation and investigation criteria on a case-by-case basis (See Section 17.11).	None
	DEEP	SWPZ for 2 small DHS Permitted Drinking Water Systems, 5 City of Hayward Emergency Supply Wells, and EBMUD aquifer storage and recovery test well near Ora Loma Waste Water Treatment Plant.	None	None

SWPZ – Source Water Protection Zone

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For agency review purposes only

Important: See section 17.11 and Tables 12 and 13 for additional details

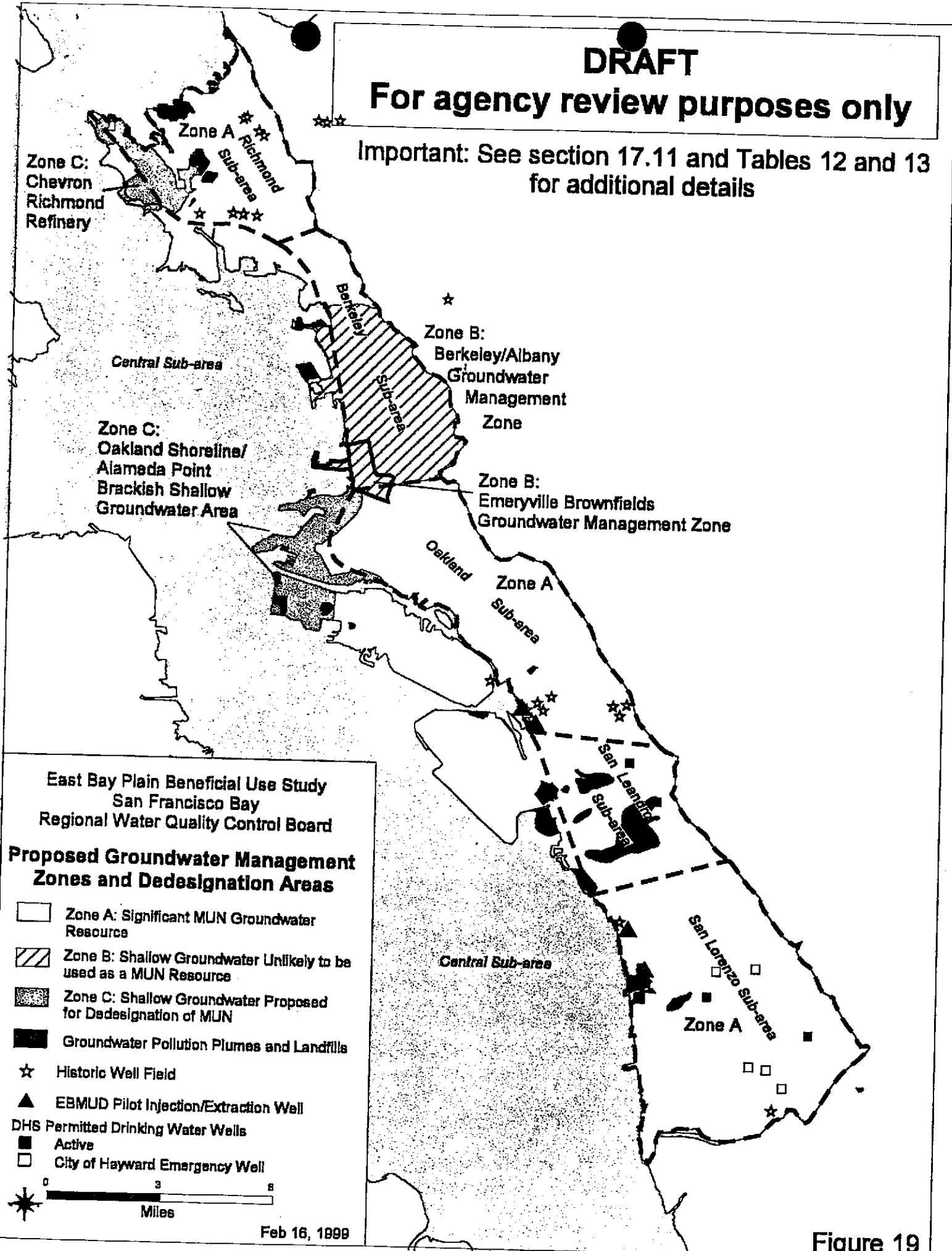


Figure 19