

**CONSENSUS RECOMMENDATIONS
FOR IMPLEMENTING THE
OAKLAND URBAN LAND REDEVELOPMENT
PROGRAM**



Report of the Community Review Panel
to the
Urban Land Redevelopment Program
Oversight Committee

The Community Review Panel of the Urban Land Redevelopment (ULR) Program was formed with the stated goal of assisting the Oversight Committee in implementing the ULR in a manner that is responsive to the concerns of Oakland residents. Selection of Panel members was based on an open application process designed to achieve a representative cross-section of the Oakland community.

Members of the Panel included individuals from: African American Development Association, GEI Consultants, People United for a Better Oakland (PUEBLO), Northern California Minority Business Opportunity Committee, Sierra Club, Urban Habitat, and Uribe & Associates Environmental Consulting Services. The members of the Panel participated as individuals, not as official representatives of their respective organizations. Their additional experience has included participation with: Alameda Naval Air Station Restoration Advisory Board, Chevron USA Refinery Community Advisory Panel, City of Oakland Planning Commission, Community Assistance Panel for Verdese Carter Park, Regional Brownfields Working Group, Oakland Army Base Restoration Advisory Board, Oakland Sharing the Vision, Oakland General Plan Congress and United Parents Against Lead.

The Panel met twelve times between September 1996 and July 1997. Representatives from the United States Environmental Protection Agency, the San Francisco Bay Regional Water Quality Control Board, the City of Oakland Public Works Agency - Environmental Services Division and the City of Oakland Mayor's Office attended the meetings and were available to answer questions and provide guidance. Additional support in facilitating the meetings and disseminating information was received from the Technical Outreach Services for Communities (TOSC) Program, an independent organization based at Stanford and Oregon State Universities.

The recommendations of this report reflect a consensus of the individuals serving on the Panel. The Panel hopes that the Oversight Committee will strongly consider these recommendations and that they will be implemented with a philosophy of inclusiveness, openness and accountability.

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**August 7, 1997
ACRONYMS**

ASTM: American Society for Testing and Materials
BMP: Best Management Practices
Cal-EPA: California Environmental Protection Agency
CBO: Community Based Organization
CCR: California Code of Regulations
CEDA: Community and Economic Development Agency (City of Oakland)
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
COC: Chemical of Concern
DTSC: Department of Toxic Substances Control, Cal-EPA
EBMUD: East Bay Municipal Utility District
FSA: Fire Services Agency (City of Oakland)
NCP: National Oil and Hazardous Substances Pollution Contingency Plan
PTS: Permit Tracking System
RBCA: Risk-Based Corrective Action
RBSL: Risk-Based Screening Level
RWQCB: Regional Water Quality Control Board, San Francisco Bay
SARA: Superfund Amendments and Reauthorization Act
SLICs: Spills, Leaks, Investigations and Cleanups
SMP: Site Management Plan
TOSC: Technical Outreach Services for Communities
ULR: Urban Land Redevelopment
US EPA: United States Environmental Protection Agency
UST: Underground Storage Tank

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EXECUTIVE SUMMARY

SECTION 1: INTRODUCTION

The Urban Land Redevelopment (ULR) Program is an innovative program that seeks to clarify investigation requirements, standardize the regulatory process and establish pre-approved cleanup standards for qualifying sites based on physical and chemical characteristics, land and water use, and potential for contaminant migration. The goals of the ULR are to continue to protect human health and the environment while:

- minimizing the amount of investigation required to determine cleanup levels;
- allowing developers and lenders to better estimate project costs;
- assisting developers in obtaining quicker approval of corrective action plans;
- providing the community with better information regarding cleanup of sites.

SECTION 2: PROBLEM STATEMENT

Contaminated properties in Oakland pose not only a public health threat, but also affect the social and economic health of communities. Frequently, contaminated sites remain vacant, unremediated, and undeveloped because remediation and redevelopment efforts are stunted by liability issues, confusing regulatory frameworks, and the uncertainty surrounding cleanup costs. Impacted communities are ultimately left to bear the environmental, social and economic costs associated with contamination.

Cleanup strategies are inextricably linked to a community's economic development, future land use, public health, education, transportation, housing and cultural development. Priorities for cleanup activities must take into account the complexity of environmental contamination, resource limitations and community concerns. All too often, communities are neither fully aware nor fully involved in the planning and remediation processes at contaminated sites in their neighborhoods.

SECTION 3: RECOMMENDATIONS¹

The Panel was asked to review and comment on four principal issues related to the ULR Program: (1) determination of an "acceptable" cancer risk level for calculating cleanup standards at contaminated sites; (2) public notification requirements; (3) institutional controls designed to ensure compliance with regulatory agency decisions; and (4) the future "beneficial uses" of groundwater in Oakland.

Acceptable Risk

Ideally, the Panel would like to see the danger to the Oakland community from contaminants entirely eliminated. However, the Panel recognizes that risk-based assessment is an effective tool in achieving the cleanup and redevelopment of contaminated sites. Therefore, in the application of the ULR Program Tier 1 approach, the Panel recommends that:

¹ Please refer to the body of this report for the full language of the Panel's recommendations.

- < a cancer risk level not to exceed 10^{-5} be employed to calculate cleanup levels, provided that: (1) the site is adequately-characterized, (2) the conservatism of the assumptions in the model are maintained, (3) whenever possible, engineering controls are implemented to block exposure pathways, (4) a management plan is prepared, implemented and enforced;
- < sites where *aggregate* risk from the presence of multiple chemicals of concern may raise the cancer risk level to greater than 10^{-5} be precluded from the Tier 1 process;
- < risk from past exposure to the presence of one or more chemicals be considered;
- < regulatory agencies actively and fully participate in explaining the concept of risk and how it is applied in determining cleanup levels.

Public Notification

The Panel feels strongly that there is need for improvement in the area of public notification. The regulatory agencies should resolve to: (1) give the community more time to comment on impending work at contaminated sites; (2) be more sensitive to the cultural and linguistic diversity of Oakland's residents; (3) be more responsive to inquiries; and (4) provide a primary regulatory agency contact for information.

The City and regulatory agencies should work closely with Oakland's extensive network of community based organizations (CBOs) to improve communication with the public regarding contaminated sites. Toward this end, they should:

- < identify CBOs which are interested and able to assist in the dissemination of information about contaminated sites;
- < create a master list of CBOs to be contacted based on their proximity to and/or interest in a contaminated site;
- < in non-emergency situations, notify concerned CBOs, as well as neighborhood schools and other interested parties, by letter 21 days in advance of impending corrective action work;
- < notify concerned CBOs, neighborhood schools and other interested parties by letter of the completion of corrective action work;
- < mail letters regarding contaminated sites in an easily-distinguishable envelope.

The regulatory agencies should ensure that better precautions are taken to prevent human exposure to potentially hazardous chemicals. Toward this end, they should:

- < require fencing around all sites that are contaminated or suspected to be contaminated;
- < require that "DO NOT ENTER" signs be posted around the perimeter of all such sites.

Institutional Controls

The Panel strongly supports the efforts of the ULR Program to improve and innovate the institutional controls used to ensure that human health and the environment are protected into the future when some contamination is allowed to remain. To ensure that these new

institutional controls are maximally effective, the City and regulatory agencies should follow several guidelines laid out by the Panel.

The “no further action” letter or accompanying documentation should allow for regulatory flexibility to reopen a case if:

- < the site conditions (e.g., the land use or the stability of the chemicals of concern) change or if new information about the site becomes available;
- < better scientific information about the toxicity of the chemical(s) of concern or the efficacy of the engineering controls becomes available, especially if this impacts on the cleanup numbers originally applied to the site to achieve closure.

A Site Management Plan (SMP) should discourage future pollution by:

- < ensuring not only protection from existing contamination but that new contamination is not created;
- < ensuring that the presence of an engineering control is not used as a rationale for permitting new contamination to occur.

The Panel strongly supports the efforts of the ULR Program to utilize the City Permit Tracking System (PTS) to ensure that unauthorized or unsafe work is not performed at sites where some contamination remains. With the PTS innovation as an example, the Panel recommends that:

- < the City and regulatory agencies continue to explore new ways of applying technology to ensure compliance with the conditions of case closure and to improve the dissemination of information about contaminated sites.

To attain better document storage, the ULR Program should ensure that:

- < responsibility for handling, storing and communicating information on contaminated sites is centralized within one City division;
- < the City division charged with storing information on contaminated sites serves as a repository that is easily accessible to the public;
- < the City and regulatory agencies explore additional methods of quality assurance/quality control that will improve document storage and maintenance.

Future Beneficial Uses of Groundwater

In January, 1997, the Regional Water Quality Control Board (RWQCB) initiated a two-year study of the beneficial uses of groundwater in the East Bay Plain, which includes Oakland. Currently, most groundwater in Oakland is considered a potential source of drinking water. This has a direct impact on the determination of groundwater cleanup levels and, therefore, on development costs and the prospects for economic revitalization in the Downtown and other commercial/industrial areas of the city.

The Panel supports the current study on the beneficial uses of groundwater in the East Bay Plain, but cautions that before any redesignation is implemented, the appropriate entity (either the RWQCB, the City or East Bay Municipal Utility District) must:

- < ensure that the redesignation is based on sound hydrogeologic data;
- < show that it will have a positive impact;
- < demonstrate that it will have an equitable impact on the various socio-economic and ethnic groups within Oakland;
- < ensure that a viable plan exists for providing drinking water to Oakland residents in the case of any foreseeable emergency;
- < demonstrate an openness to innovative technologies for providing clean, fresh water;
- < undertake a public education campaign to inform Oakland residents of the potential health hazards associated with the use of groundwater from private wells;
- < increase the minimum well sanitary seal depth required to obtain a well construction permit;
- < ensure that standards for *future* polluting activities will not be relaxed based on the redesignation of the beneficial uses.

SECTION 4: CONCLUSIONS

The Panel supports the efforts of the ULR Program to address the myriad of issues associated with “brownfields” in Oakland by using sound science and providing additional safeguards to ensure the protection of Oakland’s residents.

The Panel commends the efforts of the ULR Program Oversight Committee to elicit feedback from concerned Oakland residents and hopes that these efforts will continue as the Program is implemented, analyzed and refined. The Panel believes that the City of Oakland and the agencies charged with enforcing environmental regulations in Oakland have an ethical and moral responsibility to work with impacted communities to develop effective strategies for dealing with contaminated properties. These entities must seek to improve institutional relationships, balance cleanup goals with redevelopment efforts, and adequately address contamination in a manner that satisfies community concerns.

Toward these goals, the Oversight Committee should consider: (1) establishing a permanent place on the Oversight Committee for a community representative; (2) convening a special meeting of the Community Review Panel to review the results of the upcoming pilot site testing of the Program; and (3) creating a City liaison for community-regulatory agency communication.

Finally, the Panel urges that, as creative solutions for addressing past contamination are implemented, the discouragement and prevention of future pollution remains an equally important consideration.

SECTION 1: INTRODUCTION

The Urban Land Redevelopment (ULR) Program is an innovative program designed to facilitate the cleanup and redevelopment of contaminated properties by clarifying investigation requirements, standardizing the regulatory process and establishing pre-approved cleanup standards for qualifying sites based on physical and chemical characteristics, land and water use, and potential for contaminant migration. Members of the Oversight Committee in charge of creating the ULR Program include representatives from U.S. EPA Region 9, State of California Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board, Cal-EPA Department of Toxic Substances Control, Alameda County Environmental Health, volunteer consulting firms and the City of Oakland.

The ULR Program employs a two-tiered decision-making approach for evaluating sites that contain or are suspected to contain soil or groundwater contamination. The first tier consists of comparing site concentrations of chemicals of concern with a look-up table containing conservative, risk-based cleanup levels (RBSLs). If site concentrations are below these Tier 1 cleanup levels, then no further corrective action is required. If the Tier 1 cleanup levels are exceeded, then the property owner/developer has three options:

- (1) clean up to the Tier 1 cleanup levels;
- (2) implement engineering controls which effectively block exposure pathways of concern; or
- (3) undertake more site-specific analysis (Tier 2).

Only well-characterized sites that meet specified basic qualifications (such as no preferential channels for off-site contaminant migration and no nearby sensitive ecological receptors) are eligible for the ULR Tier 1 process.

The goals of the ULR Program are to continue to protect human health and the environment while:

- minimizing the amount of investigation required to determine cleanup levels;
- allowing developers and lenders to better estimate project costs;
- assisting developers in obtaining quicker approval of corrective action plans;
- providing the community with better information regarding cleanup of sites.

The purpose of this report is to identify those aspects of the ULR which are of specific importance to Oakland residents and to recommend strategies for implementation that address the concerns of all members of the Oakland community.

SECTION 2: PROBLEM STATEMENT

Contaminated properties in Oakland pose not only a public health threat, but also affect the social and economic health of communities. All too often, contaminated sites remain vacant, unremediated, and undeveloped because remediation and redevelopment efforts are stunted by liability issues, confusing regulatory frameworks, and the uncertainty surrounding cleanup costs. The perception of a cumbersome remediation and redevelopment process often deters or hampers any cleanup and reuse of these sites. Compounding the problem is the fact that local, state and federal regulatory agencies are hampered by overlapping responsibilities and limited resources. Impacted communities are ultimately left to bear the environmental, social and economic costs associated with contamination.

Oakland has more than its share of contaminated sites. Many have been contaminated as a result of normal industrial processes; others were contaminated before current environmental laws were enacted; still others were contaminated by legally negligent property owners. Due to the complexity of environmental regulations and the uncertainty of associated cleanup costs, interested parties often shy away from cleaning up and redeveloping these sites. A significant portion of these sites remain idled or abandoned.

Cleanup strategies are inextricably linked to a community's economic development, future land use, public health, education, transportation, housing and cultural development. Priorities for cleanup activities must take into account the complexity of environmental contamination, resource limitations and community concerns. All too often, communities are neither fully aware nor fully involved in the planning and remediation processes at contaminated sites in their neighborhoods.

SECTION 3: RECOMMENDATIONS

The Panel was asked to review and comment on four principal issues related to the ULR Program: (1) determination of an “acceptable” cancer risk level for calculating cleanup standards at contaminated sites; (2) public notification requirements; (3) institutional controls designed to ensure compliance with regulatory agency decisions; and (4) the future “beneficial uses” of groundwater in Oakland. The following subsections constitute the Panel’s recommendations with respect to each of these issues. Each section begins with a brief summary of the issue and then moves into a set of recommendations.

3.1 DETERMINING ACCEPTABLE RISK

The ULR Program employs the American Society for Testing and Materials Risk-Based Corrective Action (RBCA) model to calculate cleanup levels for carcinogenic health risks. (*Note:* the method employed by the Program for determining cleanup levels for *non-carcinogenic* health risks¹ was discussed by the Panel and determined to be a well-studied and widely-accepted approach that did not warrant lengthy discussion in this report.). Put simply, risk-based assessment involves inserting various quantitative assumptions into a mathematical model and calculating a cleanup level that is considered safe. The assumptions used to calculate the ULR Program Tier 1 cleanup levels include:

- the toxicity of the chemicals of concern;
- the potential pathways of exposure;
- whether adults or children are being exposed;
- the land use of the site in question (residential or commercial/industrial); and
- an “acceptable” cancer risk level.

Determining a “safe” or “acceptable” cancer risk level is a value judgment--there is no “right” answer. Nevertheless, the Panel recognizes the importance of understanding precisely what is meant by risk when reaching a determination

How do we perceive risk?

A person’s perception of risk tends to be based on more than just the numbers. Studies show that people’s perception of risk is also influenced by whether the risky behavior/exposure is voluntary or involuntary, equitable or inequitable, avoidable or unavoidable, natural or artificial.

Common life-long risks that we generally accept include:

Death from home accidents	1 in 10,000
Death from car accident	1 in 4,000
Death from cigarette smoking (1 pack per day)	1 in 278

¹ The ULR estimates the likelihood of non-carcinogenic health effects (e.g., temporary respiratory difficulties or liver toxicity) by use of the threshold/hazard index method. Unlike the method used for carcinogenic risk estimation, non-cancer toxicity risk is not based on a probability of occurrence. Rather, the likelihood of an adverse health effect is estimated by establishing a threshold of exposure below which even the most sensitive members of a population will not suffer adverse health effects. This threshold, or “safe” level of exposure, is established experimentally by research on laboratory animals or humans participating in epidemiological investigations. If the hazard index ratio is less than 1 (i.e., if the estimated exposure to contaminant concentrations is below the safe thresholds for those contaminants), then it is assumed that no adverse health effects occur.

that is both practical and protective of human health and the environment.

Regulatory agencies typically apply risk levels for carcinogenic chemicals in the range of 10^{-4} (one in ten thousand) to 10^{-6} (one in one million). This risk level predicts the probability that an individual will develop cancer at some point in life as a result of exposure to the chemical. (A 10^{-5} risk level, which the ULR Program proposes to employ, suggests that, out of one-hundred thousand people exposed to a carcinogen at the levels and for the duration assumed in the model, one additional occurrence of cancer may result from that exposure.) This probability is in addition to the “background” risk of developing cancer. (The background cancer incidence in the United States is somewhere in the range of 20-33%, meaning that between one-fifth and one-third of all people living in the U.S. will develop cancer at some time during their lives.)

The acceptable risk range provides a conservative estimate of the likelihood of developing cancer from exposure to a carcinogen given the unique exposure conditions assumed in the model. In evaluating risk, regulatory agencies generally incorporate several redundant and overlapping conservative assumptions. These assumptions are designed to make the resultant risk estimate an upper bound of the actual risk; that is, the actual risk: (1) should not exceed the estimate; (2) is likely to be lower; and (3) may even be zero in some cases. The ULR Program Tier 1 model incorporates several conservative assumptions that model worst-case and high-end exposure conditions. Less than one percent of the effected population will actually be exposed at the assumed levels.

The Panel believes strongly in a “zero tolerance” policy for contamination in Oakland. Ideally, the Panel would like to see the danger to the Oakland community from contaminants entirely eliminated. However, the Panel realizes that the level of resources needed to achieve such a goal simply does not exist. Furthermore, the Panel recognizes that facilitating the *redevelopment* of contaminated properties is the most effective way of attaining the *cleanup* of contaminated properties, thereby reducing the human health risks. With the goal of “zero tolerance” in mind, the Panel recommends the following:

What precedents exist for a 10^{-5} risk level?

Several states across the nation, including Kansas, Minnesota, New Mexico, Oregon, Texas, Washington and Wisconsin, have chosen 10^{-5} (1 in 100,000) as a state-wide risk level for determining cleanup standards.

The Safe Drinking Water and Toxic Enforcement Act of 1986 (State Proposition 65) requires the Governor of California to publish annually a list of chemicals known to the State to cause cancer or reproductive toxicity. All persons who operate a business which might expose individuals to a listed chemical must give a clear and reasonable warning to such individuals, unless there is “no significant risk” from the carcinogen(s) in question. “No significant risk” has been defined by the State as less than one excess case of cancer per 100,000 individuals (*i.e.*, a 10^{-5} risk level).

< **A cancer risk level not to exceed 10^{-5} should be employed to calculate cleanup levels², provided that the following conditions are met:**

² The Panel had extended discussions regarding an acceptable risk level over the span of several meetings. Although most members of the Panel supported a 10^{-5} risk level, some members of the Panel raised

- (1) the chemicals of concern at the site in question are well-known and well-characterized;**
- (2) the conservatism of the assumptions that are proposed for use in the ULR cleanup calculations (such as those for exposure duration, soil ingestion and drinking water consumption) are maintained, thereby effectively reducing the risk further;**
- (3) whenever possible, engineering controls (such as vapor barriers or asphalt caps) are considered to eliminate exposure through certain pathways; and**
- (4) a comprehensive and effective plan for protecting the public from any remaining concentrations of contaminants is prepared, implemented and enforced.**

- < Sites where the *aggregate* risk following cleanup from the presence of multiple residual chemicals of concern may raise the cancer risk level to greater than 10^{-5} should not be eligible for Tier 1 cleanup levels. Such properties should undergo more site-specific analysis to determine appropriate cleanup levels that take into consideration the effects of exposure to multiple contaminants.**
- < Risk from past exposure to the presence of one or more chemicals at a site should be taken into consideration if additional exposure under the ULR Tier 1 assumptions significantly alters the overall long-term risk to the exposed individual(s).**
- < Regulatory agencies must actively and fully participate in explaining the concept of risk and how it is applied in determining cleanup levels. A standard handout explaining risk assessment in plain language should be created by the regulatory agencies and made easily accessible to the community.**

3.2 PUBLIC NOTIFICATION

Receiving sufficient information about contaminated sites and sufficient time to review such information is a long-standing issue for Oakland residents. The Panel recognizes that the ability of the regulatory agencies to communicate information to residents is limited by both the amount of resources available and the expediency with which emergency remediation situations must be dealt. Nevertheless, the Panel feels strongly that there is need for improvement in the area of public notification.

The regulatory agencies should resolve to: (1) give the community more time to comment on impending work at contaminated sites; (2) be more sensitive to the cultural and linguistic diversity of Oakland's residents (3) be more responsive to inquiries; and (4) provide a primary regulatory agency contact for information.

concerns regarding this level. The recommendation here represents a consensus; some individual Panel members preferred a more conservative risk level.

Towards achieving these goals, the Panel recommends that the ULR standardize the public notification requirements recommended in the following two subsections.

3.2.1 Communication with Community Based Organizations

The regulatory agencies should work closely with Oakland’s extensive network of community based organizations (CBOs) to improve communication to the public regarding contaminated sites. CBOs are better equipped to contact interested parties, communicate information to non-English-speaking residents and identify which sites are of greatest concern to the people they serve. To take advantage of their expertise, the following recommendations should be implemented:

- < **The City and regulatory agencies should work together to identify CBOs which are interested and able to assist in the dissemination of information regarding contaminated sites.**

- < **A master list of CBOs to be contacted based on their proximity to and/or interest in a contaminated site should be created, continually updated, and held on file at the various regulatory agencies.**

- < **The regulatory agencies should, whenever the situation allows (i.e., in a non-emergency situation), notify concerned CBOs, as well as neighborhood schools and other interested parties, by letter 21 days in advance of impending corrective action work.**

- < **The regulatory agencies should always notify concerned CBOs, neighborhood schools and other interested parties by letter of the completion of corrective action work.**

What are the current public notification/participation requirements?

Currently, regulatory agency public notification and participation guidelines are derived from several sources, including: California Code of Regulations (CCR); California Environmental Quality Act (CEQA), Public Resources Code; Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); Superfund Amendments and Reauthorization Act (SARA); and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). These laws provide the regulatory agencies with a high degree of discretion in determining appropriate public notification and participation requirements at a given site.

Regional Board requirements are derived from language in CCR, Title 23, Division 3, Chapter 16, which directs that the regulatory agency shall inform the public of proposed activities in a Corrective Action Plan for an Underground Storage Tank (UST) in at least one of the following ways:

- (1) publication in a regulatory agency meeting agenda;
- (2) public notice posted in a regulatory agency office;
- (3) public notice in a local newspaper;
- (4) block advertisements;
- (5) a public service announcement;
- (6) letters to individual households; or
- (7) personal contacts with the affected parties by regulatory agency staff.

Cal-EPA DTSC requires an assessment of community interest in the site to determine the need and the mechanisms for establishing open lines of communication. The magnitude of public participation activities conducted varies with each site and is generally greater at larger sites in densely populated areas. Decisions regarding the degree of public participation activities are made by the DTSC Project Manager and public participation staff.

- < **Letters should be mailed in an envelope which is easily distinguishable as containing information on a contaminated site.**

3.2.2 Fencing and Posting at Contaminated Sites

Better precautions should be taken on site to prevent human exposure to potentially hazardous chemicals. Typically, there is no danger whatsoever posed to persons who avoid direct contact with contaminants at a site. Therefore, the implementation of the following recommendations would go a long way towards protecting the health of Oakland residents:

- < **The regulatory agencies should require fencing in compliance with applicable zoning codes around all sites that are contaminated or suspected to be contaminated. Fencing should be sufficient to deter children from trespassing and exposing themselves to unhealthy conditions.**
- < **“Do not enter” signs should be posted every fifty feet at all contaminated sites, with at least one posting per street face. Signs should include a universal symbol that is easily identifiable and understood, be at least 11 inches by 17 inches in size, provide very basic information on the contaminants present, give the name of a regulatory agency contact and phone number, and provide basic translation in Spanish, Chinese and Vietnamese (see Appendix C for a graphic representation).**

3.3 INSTITUTIONAL CONTROLS

Regulatory agencies may not require that all traces of a chemical of concern (COC) be removed from a site before granting case closure. Frequently, the agencies determine that the concentration level of the COC is not detrimental to human health and the environment under certain specified conditions, such as the proposed land use and/or engineering controls. In these cases, the lead regulatory agency or agencies may grant closure contingent upon certain site conditions remaining unchanged and/or the appropriate management controls being implemented.

The Panel strongly supports the efforts of the ULR Program to improve and innovate the institutional controls used to ensure that the conditions upon which case closure is granted are maintained and that restrictions on land use are complied with. As these institutional controls are implemented at each new site, the Panel recommends that the regulatory agencies follow the guidelines outlined in the following four subsections.

3.3.1 No Further Action

Regulatory agencies have for several years now issued “no further action” letters on properties where some level of contamination is allowed to remain. No further action letters help to avoid the property devaluation problem associated with deed restrictions, thereby improving prospects for redevelopment. The ULR Program proposes to standardize the use of a no further action letter in granting case closure. The Panel

supports this concept provided that all no further action letters incorporate the following recommendations:

- < **The “no further action” letter or accompanying closure documentation should allow for regulatory flexibility to reopen a case if the site conditions (e.g., the land use or the stability of the chemicals of concern) change or if new information about the site becomes available.**
- < **The no further action letter or accompanying closure documentation should allow for reopening a case if new and better scientific information about the toxicity of chemical(s) of concern or the efficacy of the engineering controls becomes available, especially if this impacts on the cleanup numbers originally applied to the site to achieve closure.**

3.3.2 Site Management Plan

The ULR Program proposes requiring a Site Management Plan (SMP) for sites where some level of contamination, contingent upon its proper management, is allowed to remain. SMPs typically specify any monitoring (e.g., through groundwater extraction wells) or engineering controls (e.g., vapor barriers, asphalt caps, and buried engineering cells) that a property owner must implement and maintain in order to ensure the continued protection of human health and the environment.

The Panel recognizes that engineering controls are one of the principal ways that the public and the environment are protected against contamination.

Engineering controls are also very often the most cost-effective way of handling contamination and therefore can facilitate the redevelopment of idled or abandoned properties.

However, allowing residual contamination to remain on site should not be considered tacit permission to contaminate in the future. In order to prevent such an interpretation, all SMPs should incorporate the following recommendations:

- < **The SMP should ensure not only protection from existing contamination but that new contamination is not created.**
- < **The SMP should ensure that the presence of an engineering control is not used as a rationale, by either the property owner or the lead regulatory agency, for permitting new contamination to occur.**

What are Site Management Plans based on?

The implementation of Site Management Plans are based on “Best Management Practices” (BMPs). BMPs include activity scheduling and maintenance procedures that are most effective at achieving the goals of the Site Management Plan . There is no single set of BMPs that is applicable to all sites. Only the controls that best address site-specific conditions are included in a Site Management Plan. Typical examples are: inspection and maintenance of groundwater monitoring wells, regular analysis of sample data, and proper management of engineering controls. Most BMPs involve planning, reporting, training, preventive maintenance and good housekeeping.

3.3.3 Permit Tracking

The City of Oakland's Permit Tracking System (PTS) is a computerized system that tracks permits from filing to issuance and provides the user with a permitting and inspection history. The Community and Economic Development Agency (CEDA), which handles all operations related to development, inspection and enforcement under the building, planning, zoning and housing codes within the City of Oakland, records new permitting information in the PTS.

The ULR has implemented a new system of permit holds and routing procedures on the PTS. The purpose of these holds and routing procedures is to ensure the appropriate review of City permit applications for work that may either conflict with the conditions of a no further action letter or trigger compliance with the terms of a Site Management Plan.

The Panel strongly supports and commends the efforts of the ULR to create an additional check to ensure that unauthorized or unsafe work is not performed at sites where some contamination remains. With the PTS innovation as an example, the Panel recommends the following:

- < **The City and regulatory agencies should continue to explore new ways of applying technology to ensure compliance with the conditions of case closure and to improve the dissemination of information about contaminated sites.**

3.3.4 Document Storage

The ULR Program provides several new procedures for improving interagency communication and document storage. Copies of "no further action" letters and SMPs will be mailed to the Fire Services Agency (FSA). The FSA will enter information from these documents into the PTS and will maintain the documents on file.

Two issues of concern arise with respect to document storage. First, there is the danger that important information on sites may be permanently lost or rendered unrecoverable due to a misfiling or other type of error. This could result in information essential to the continued protection of human health and the environment not being considered when necessary. Second, when the public wants to access filed information on a site, it often has to contact several different regulatory agencies to determine which has the desired information. Given these concerns, the Panel recommends the following:

- < **Responsibility for handling, storing and communicating information on contaminated sites should be centralized within one City division.**
- < **The City division charged with storing information on contaminated sites should serve as a repository that is easily accessible to the public.**
- < **The City and regulatory agencies should explore methods of quality assurance/quality control that will improve document storage and maintenance.**

3.4 FUTURE BENEFICIAL USES OF GROUNDWATER

Cleanup levels for contaminated groundwater are partially dependent on the potential beneficial uses of the groundwater basin. Most groundwater in Oakland is currently designated as a potential source of drinking water, requiring the highest levels of protection. This has a direct impact on the determination of groundwater cleanup levels and, therefore, on development costs and the prospects for economic revitalization in the Downtown and other commercial/industrial areas of the city.

In January 1997, the San Francisco Bay Regional Water Quality Control Board (RWQCB) initiated a two-year study of the “beneficial uses” of groundwater in the East Bay Plain, which includes Oakland. The objective of the study is to review and revise, as appropriate, the designated beneficial uses of groundwater. The study is an open process and the RWQCB has requested input from the City and its residents.

The Panel recognizes that Oakland’s shallow groundwater is not currently, nor is it expected to be, utilized as a source of drinking water in Oakland. Further, it acknowledges that, due to historic contamination and alternative sources, groundwater in much of Oakland is neither a healthy nor a cost-effective source of drinking water. With this in mind, the Panel supports the RWQCB’s study and a possible redesignation of the beneficial uses of some portions of Oakland’s groundwater on the condition that the following recommendations are implemented:

What are the “beneficial uses” of groundwater?

The Porter-Cologne Water Quality Control Act defines beneficial uses of the State’s waters as uses that may be protected against quality degradation. The Regional Water Quality Control Board’s “Water Quality Control Plan” (1995) identifies the potential beneficial uses of groundwater in Oakland. These include but are not limited to: groundwater recharge; industrial service supply; municipal and domestic supply; and industrial process supply.

Where does Oakland’s municipal water supply come from?

Oakland receives its water supply from the East Bay Municipal Utility District (EBMUD). Almost all of the water used by EBMUD customers comes from melting snow in the Sierra Nevada mountain range. Rain in the Bay Area contributes only about five percent of EBMUD’s water supply.

Winter storms in the Sierra Nevada build up a snowpack that reaches average depths of ten feet or more. In spring, melting snow flows into creeks and streams and then into the Mokelumne River. EBMUD collects Mokelumne River water in Pardee Reservoir and transports it 90 miles to the East Bay through three large steel pipes called the Mokelumne Aqueducts. When it arrives 16 to 24 hours later, it is either treated in filter plants for immediate use or stored in one of five local reservoirs.

- < **The rationale for any redesignation is based on sound hydrogeologic data.**
- < **The City and the RWQCB must ensure that the impact of any redesignation of the beneficial uses of Oakland’s groundwater has a positive impact.**
- < **The City and the RWQCB must ensure that the impact of any redesignation of the beneficial uses of Oakland’s groundwater on the various socio-economic and ethnic groups within Oakland is equitable.**

- < **The City, the RWQCB and the East Bay Municipal Utility District (EBMUD) must ensure that a viable plan exists for providing drinking water to Oakland residents in the case of any foreseeable emergency.**
- < **The City and regulatory agencies must be open to new technologies for providing clean, fresh water.**
- < **A public education campaign must be undertaken to inform Oakland residents of the potential health hazards associated with the use of groundwater from private wells.**
- < **The minimum well sanitary seal depth required to obtain a well construction permit must be increased to ensure greater protection for Oakland residents with private wells.**
- < **The regulatory agencies must not relax their standards on *future* polluting activities based on any redesignation of the beneficial uses of the groundwater.**

SECTION 4: CONCLUSIONS

The Panel supports the efforts of the Urban Land Redevelopment Program to address the myriad of issues associated with “brownfields” in Oakland. The proposed ULR Program strategy appears to be based on sound science and provides safeguards to ensure that Oakland residents are protected against residual contamination. The Panel commends the efforts of the ULR Program Oversight Committee to elicit feedback from concerned Oakland residents and hopes that these efforts will continue as the Program is implemented, analyzed and refined.

The City of Oakland and other agencies charged with enforcing environmental regulations in Oakland have an ethical and moral responsibility to work with impacted communities to develop effective strategies for dealing with contaminated properties. Strategies must be based on the principle that communities are equal partners in developing solutions and should be active participants at all levels of planning and policy development. Because the level of trust between Oakland’s residents and government agencies is often tenuous, it is imperative that the City and regulatory agencies strive to build positive and meaningful relationships with impacted communities. As part of any redevelopment strategy to address contaminated properties, the City and regulatory agencies must seek to improve institutional relationships, balance cleanup goals with redevelopment efforts, and ensure that contamination is adequately addressed in a manner that protects public health and satisfies community concerns.

In this spirit, the ULR Oversight Committee should: (1) consider establishing a permanent place on the Oversight Committee for a community representative; (2) convene a special meeting of the Panel to review the results of the upcoming pilot site testing of the ULR Program; and (3) strongly consider creating a City liaison for community-regulatory agency communication.

Finally, the Panel wishes to stress that, although creative solutions are needed to address the many important issues associated with *past* contamination, these pursuits must be undertaken with the equally important goal of discouraging and preventing *future* pollution that may compromise human health or degrade our natural resources.

SECTION 5: REFERENCES

The following documents were consulted in the creation of this report:

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- California Regional Water Quality Control Board, 1995, San Francisco Bay Region, *Water Quality Control Plan*.
- City of Oakland Public Works Agency-- Environmental Services Division, 1996, *Memorandum of Agreement to Implement the Oakland Urban Land Redevelopment Program (Draft)*.
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- East Bay Municipal Utility District, 1995, *We're doing it... .*
- Federal Facilities Environmental Restoration Dialogue Committee, 1996, *Consensus Principles and Recommendations for Improving Federal Facilities Cleanup*.
- Public Participation and Accountability Subcommittee of the National Environmental Justice Advisory Council, 1996, *The Model Plan for Public Participation*.
- Spence, Lynn and Gomez, Mark, 1997, *Tier 1 Risk-Based Screening Levels: Oakland Urban Land Redevelopment Program (Draft)*.

Appendix A Glossary of Terms

Aggregate risk: The additive risk posed from multiple chemicals of concern.

Beneficial Uses: With respect to groundwater, the potential ways in which this resource may be used in a geographical area. These include but are not limited to: groundwater recharge; industrial services and processes; and municipal and domestic supply.

Cancer Risk Level: The probability that any individual within a defined population will develop cancer from exposure to the chemical of concern under a set of given exposure conditions.

Carcinogen: Any agent which is capable of inducing or increasing the risk of a malignancy. Carcinogens may be physical (e.g., UV or cosmic radiation), biological (e.g., human papilloma virus) or chemical (e.g., vinyl chloride, benzene) agents.

Carcinogenic health risk: The probability of developing a malignancy from a specific exposure in excess of the naturally occurring background cancer incidence.

Closure: Confirmation from the supervising regulatory agency that no further corrective action work is required at the site.

Conservative assumption: With respect to risk-based assessment, an assumption that reflects the higher end of a range of risk possibilities, thereby producing more stringent cleanup standards.

Contamination: The existence of any artificially-placed substance at a site, regardless of whether that substance is harmful to human health or the environment.

Corrective Action: Work undertaken to “remediate” a site; that is, to clean it up to acceptable standards or implement engineering controls which block exposure pathways to a chemical of concern.

Corrective Action Plan: The work plan which the project proponent must submit to the regulatory agency for approval prior to commencement of corrective action work.

Exposure Pathway: A route through which a person may be exposed to a chemical of concern (e.g., ingestion of groundwater, inhalation of contaminated dust particles, etc.)

Hazard/Hazardous condition: A potential source of danger. The goal of risk assessment is to identify the conditions of exposure under which the dangerous properties of a substance are likely to be realized, and the range of conditions under which there is

little probability that those properties will manifest. Toxicity is but one of the hazardous properties of a chemical.

Hazard Quotient: The mechanism used in risk assessment to evaluate the development of non-cancer, systemic toxic health effects. The hazard quotient is developed by establishing a ratio between a chemical's exposure level (usually expressed as the average daily dose) and its reference dose. The frequency and duration of exposure must be taken into account when estimating the exposure level used in generating the hazard quotient.

Lead Regulatory Agency: The principal regulatory agency in charge of supervising and approving corrective actions at a given site. Many sites involve overlapping jurisdictions and more than one regulatory agency may become involved.

No Further Action Letter: A letter issued by the regulatory agency to the property owner confirming that no further corrective action is required at the site, given the current understanding of site conditions and the current or proposed land use.

Non-carcinogenic health risk: The probability of developing an adverse health condition that is not cancerous, such as temporary respiratory difficulty, from a specific exposure.

Permit Tracking System: A computerized system, maintained by the City of Oakland Community and Economic Development Agency, that tracks permits from filing to issuance and provides the user with a permitting and inspection history. CEDA, which handles all operations related to development, inspection and enforcement under the building, planning, zoning and housing codes within the City of Oakland, records all permitting information in the PTS.

Risk: The probability of injury, disease or death under a specific set of circumstances. In quantitative terms, risk is expressed in values ranging from zero (no possibility of harm) to one (a certainty that harm will occur).

Risk-Based Corrective Action: Cleanup or implementation of engineering control at a site based on an evaluation of risk.

Site Management Plan: A plan sometimes required by the regulatory agencies at sites where contamination remains. The SMP specifies any monitoring or engineering controls that a property owner must implement and maintain in order to ensure the continued protection of human health and the environment. Conditions on land use may also be included.

Tier 1: A process through which pre-approved, non-site-specific corrective action standards are applied to a contaminated site.

Tier 2: A process through which negotiated, site-specific corrective action standards are applied to a contaminated site.

Appendix B Who Regulates What in Oakland?

Regulatory Agency	Regulatory Responsibility
Alameda County Department of Environmental Health	< Spills, Leaks, Investigations and Cleanup (“SLICs”) not related to USTs
Army Corps of Engineers	< Water quality control of wetlands and navigable waters
Bay Area Air Quality Management District	< Regulation of equipment and facilities which may cause air pollution
Cal-EPA, Department of Toxic Substances Control (DTSC)	< Management, transportation, recycling, treatment and disposal of all hazardous wastes < Regulation of generators, transporters, and storage/treatment facilities
California Department of Fish and Game	< Protection of wildlife
City of Oakland Community and Economic Development Agency (CEDA)	< All activities related to construction and development under the building, planning, zoning and housing codes
City of Oakland Fire Services Agency (FSA)	< Hazardous materials storage, business plans and underground storage tanks
Regional Water Quality Control Board (RWQCB), San Francisco Bay	< Protection of groundwater < Prevention of storm water contamination
United States Environmental Protection Agency (US EPA)	< Establishment of national standards < Superfund sites

For almost all site evaluation and cleanup activities in Oakland, the lead regulatory agency is either the Alameda County Department of Environmental Health, the DTSC, the RWQCB, or the City of Oakland Fire Services Agency. As a general rule, Alameda County and the DTSC handle soil contamination, the RWQCB handles water contamination and the FSA handles underground storage tanks.

Appendix C Recommended Sign for Contaminated Sites in Oakland

Page C-2 is a graphic representation of the sign that the Panel recommends for posting at sites in Oakland that are contaminated or suspected to be contaminated.

Appendix D EPA Guidance Document for Public Participation

To the extent possible, the ULR Oversight Committee followed the principles of *The Model Plan for Public Participation*, developed by the Public Participation and Accountability Subcommittee of the National Environmental Justice Advisory Council, in forming and interacting with the Community Review Panel. These principles are outlined in pages D-2 and D-3 of this appendix.

GUIDING PRINCIPLES

A. PUBLIC PARTICIPATION

I. Encourage public participation in all aspects of environmental decision making.

Communities, including all types of stakeholders, and agencies should be seen as equal partners in dialogue on environmental justice issues. In order to build successful partnerships, interactions must:

- Encourage active community participation
- Institutionalize public participation
- Recognize community knowledge
- Utilize cross-cultural formats and exchanges

II. Maintain honesty and integrity in the process and articulate goals, expectations, and limitations.

CRITICAL ELEMENTS

A. PREPARATION

I. Developing co-sponsoring and co-planning relationships with community organizations is essential to successful community meetings. To ensure a successful meeting, agencies should provide co-sponsors the resources they need and should share all planning roles. These roles include:

- Decision making
- Development of the agenda
- Establishment of clear goals
- Leadership
- Outreach

II. Educating the community to allow equal participation and provide a means to influence decision making.

III. Regionalizing materials to ensure cultural sensitivity and relevance

IV. Providing a facilitator who is sensitive and trained in environmental justice issues.

B. PARTICIPANTS

I. As the NEJAC model demonstrates, the following communities should be involved in environmental justice issues:

- Community and neighborhood groups
- Community service organizations (health, welfare, and others)
- Educational institutions and academia
- Environmental organizations
- Government agencies (federal, state, county, local and tribal)
- Industry and business
- Medical community
- Nongovernment organizations
- Religious communities
- Spiritual communities

II. Identify key stakeholders, including:

- Educational institutions
- Affected communities
- Policy and decision makers (for example, representatives of agencies accountable for environmental justice issues, such as health officials, regulatory and enforcement officials, and social agency staff).

C. LOGISTICS

I. Where:

- The meetings should be accessible to all who wish to attend (public transportation, child care, and access for the disabled should be considered).
- The meeting must be held in an adequate facility (size and conditions must be considered).
- Technologies should be used to allow more effective communication (teleconferences, adequate translation, equipment, and other factors).

II. When:

- The time of day and year of the meeting should accommodate the needs of affected communities (evening and weekend meetings accommodate working people, and careful scheduling can avoid conflicts with other community or cultural events).

III. How:

- An atmosphere of equal participation must be created (avoid using a “panel” or “head table”).
- A two-day meeting, at a minimum, is suggested. The first day should be reserved for community planning and education.
- The community and the government should share leadership and presentation assignments.

D. MECHANICS

- Maintain clear goals by referring to the agenda; however, do not be bound by it.
- Incorporate cross-cultural exchanges in the presentation of information and the meeting agenda.
- Provide a professional facilitator who is sensitive to, and trained in, environmental justice issues.
- Provide a timeline that describes how the meeting fits into the overall agenda of the issues at hand.
- Coordinate follow-up by developing an action plan and determining who is the contact person who will expedite the work products from the meeting.
- Distribute minutes and a list of action items to facilitate follow-up.

Appendix E

Membership Recruitment Process

Membership recruitment for the Community Review Panel was an open application process. Applications were accepted from anyone who resided or worked extensively in Oakland.

A public notice soliciting applications for membership was published in the July 31, 1996, edition of the Oakland Tribune. In addition, some 30 organizations representing various interests throughout the city were contacted by both letter and phone and invited to submit applications. These organizations included: churches, environmental groups, community/neighborhood associations, developers and business assistance organizations.

The organizations contacted directly were selected at a membership recruitment strategy meeting in June of 1996, attended by representatives of the City of Oakland Public Works Agency--Environmental Services Division, the City of Oakland Mayor's Office, the West Oakland Environmental Justice Program, and The Rose Foundation, an Oakland-based non-profit organization for communities and the environment.

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Appendix H Background Information on the TOSC Program

Assistance in facilitating meetings and in explaining technical issues was received from Janet Gillaspie, a consultant working for the Technical Outreach Services for Communities (TOSC) Program. The TOSC Program is supported by the Western Region Hazardous Substance Research Center, which represents scientists and engineers from Stanford and Oregon State Universities. Through the TOSC Program, the Center provides technical assistance to communities impacted by hazardous waste sites.

The TOSC Program mission is to:

- Answer questions about potential health effects and possible cleanup technologies for hazardous waste sites.
 - Assist communities in becoming active participants in the decision-making process involved in cleaning up hazardous environments.
 - Hold community workshops and provide educational material regarding human health, environmental risks, and regulatory concerns.
 - Help communities to better understand what cleanup options are available and their potential effectiveness.
-

Janet Gillaspie is a former employee of the Oregon Department of Environment Quality with significant experience in helping communities understand the technical aspects of environmental remediation. She can be contacted at:

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