California Regional Water Quality Control Board
San Francisco Bay Region

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Arnold Schwarzenegger
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RESPONSES TO SELECTED QUESTIONS FROM HOOKSTON STATION AND ADJACENT AREAS OPEN HOUSE MAY 25, 2006

Part 1 – Vapor Intrusion and Risk Assessment

1. How do we know that crawl space vapor mitigation systems are effective? What happens to vapor discharges from crawl space vapor mitigation systems? Do these discharges pose any health threat?

   Indoor air sampling results from houses with vapor mitigation systems operating in 2004 and 2005 indicate the systems have been effective in reducing indoor air concentrations of TCE to below regulatory thresholds. Additional monitoring is appropriate and will be required by Board staff as part of the cleanup enforcement order (through a revision to the Self-Monitoring Program). The vapors are discharged to the ambient air at concentrations that are negligible, considering dilution. The same concentrations are of concern in homes because there is little or no dilution.

2. Will there be more indoor air sampling? Is it up to the residents in the high-VOC plume area to identify themselves as being at risk and request indoor air sampling, or will Water Board staff notify residents in this area and encourage them to seek indoor air sampling?

   Yes, there will be more indoor sampling. The revision to the Self-Monitoring Program noted above will include access requests to sample homes that are within 100 feet of the mapped contour representing 500 parts per billion of TCE in Zone A (the core of the groundwater contamination plume). We will also require ongoing monitoring of indoor air where access is granted.

3. Where did the arsenic come from and will it be addressed in the cleanup? What is the public process for addressing arsenic in soil?

   It is not uncommon to find elevated concentrations of arsenic in soil on industrial property. It was a common ingredient of pesticides. To the extent that arsenic exceeds recommended health-based screening levels on the Hookston Station property, it will be addressed in the cleanup plan. The draft cleanup plan will be the subject of a 30-day public comment period and will be discussed in a future community meeting.

4. Is the plume defined? Is it expanding? Would heavy rains this winter have mobilized VOCs in soil and caused VOC plumes to expand?

The plume is defined, and Board staff considers it to be stable. The "edge" of the commingled VOC plume represents equilibrium between chemical migration and natural degradation processes. Several quarters of monitoring data indicate the "edge" of the plume (represented by 5 ppb of TCE – the drinking water standard) is not moving significantly. Board staff does not expect that heavy winter rains were sufficient to percolate through 20 or more feet of unsaturated soil and significantly affect the existing plume. In any event, ongoing groundwater monitoring will document what happens to the plume over time.

5. This is the first we've heard about impacts to Walnut Creek. What are the risks associated with Walnut Creek?

The concentrations of VOCs reaching the creek are below regulatory threshold. Very low concentrations of VOCs may be present in the water in the creek; however, the concentrations of VOCs are below even the most stringent levels designed to protect aquatic organisms.

Walnut Creek is a flood-control channel, and is not used for recreational swimming. The creek is fenced and posted to prevent public access, and direct contact with these chemicals in surface water is unlikely. Several residential properties are adjacent to the creek, and it is possible that nearby residents (or visitors) could inhale chemicals volatilizing from the creek. This pathway is considered a minor pathway of exposure, and the calculated theoretical lifetime cancer risk for residents exposed to VOCs volatilizing from surface water were less than 2 in one million.

6. The Risk Assessment was prepared by the RPs. How can we trust their numbers? How can we trust the cleanup plan?

State Water Board Resolution 92-49, Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304, requires the discharger to provide documentation that plans and reports are prepared by professionals qualified to prepare such reports, and that each component of investigative and cleanup and abatement actions is conducted under the direction of appropriately qualified professionals. A statement of qualifications of the responsible lead professionals is to be included in all plans and reports submitted by dischargers. The Baseline Risk Assessment report was prepared by a professional toxicologist with 25 years of experience in toxicology and risk assessment, broad experience in assessing chemical exposures and risks to humans, and familiar with risk assessment procedures used throughout the United States. Dr. Marilyn Underwood and Mr. Greg Braun of the Department of Health Services Environmental Health Investigation Branch assisted Water Board staff in reviewing the Baseline Risk Assessment. The approved document

addressed all major issues raised by EHIB and Water Board staff and conformed to professional practices and standards.

Similarly, the California Business and Professions Code and regulatory agencies require licensed professionals to sign reports and workplans. All plans, specifications, reports or documents shall be prepared by or under the direction of a licensed geologist or civil engineer. In addition, the reports shall be signed by the licensed professional or stamped with his or her seal, either of which shall indicate his or her responsibility for the reports. The Hookston Station cleanup plan is being prepared by a consulting company that has considerable expertise in the design, operation and maintenance of remediation systems that bring sustainable risk reduction. The company also has experience with a wide variety of contaminated sites in California and the U.S.

Water Board staff will review the cleanup plan to ensure it addresses the following: (1) site-specific characteristics; (2) applicable state and federal statutes and regulations; (3) applicable water quality control plans adopted by the State Water Board and Regional Water Boards, including beneficial uses, water quality objectives, and implementation plans; (4) State Water Board and Regional Water Board policies, including State Water Board Resolutions No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) and No. 88-63 (Sources of Drinking Water); and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies. The Executive Officer will approve a cleanup plan that has a substantial likelihood to achieve compliance, within a reasonable time frame, with cleanup goals and objectives that implement the applicable Water Quality Control Plans and Policies adopted by the State Water Board and Regional Water Boards.

Part 2 – Cleanup Technologies

1. Water Board staff should just tell the RPs what to do to clean up the problem (e.g. specify cleanup technology). Several residents expressed concern that the RPs will choose the cheapest/slowest cleanup method. If Water Board staff knows so much about site cleanup, then the risk of the staff selecting a sub-optimal cleanup method is low. Can the Water Board reject an inferior cleanup method, versus just give advice and direction to the RP?

   There are two important reasons that the Water Board does not select the cleanup method: one legal and one practical. As a legal matter, the Water Board is prohibited by the California Water Code from specifying the method of compliance. The Water Board will accept any reasonable cleanup alternative that protects human health and the environment, and complies with all applicable state regulations. From a practical perspective, we don't know which cleanup method (or combination of methods) will work best at this site. Site conditions vary enough from place to place that it is difficult to generalize about which methods are best or worst. Selecting the most appropriate cleanup method involves a careful analysis of site conditions and currently-available

cleanup methods. It is normal for oversight agencies such as the Water Board or DTSC to require RPs to perform this analysis as part of preparing the cleanup plan. It has been our experience that RPs do not automatically select the cheapest cleanup method. It is to the advantage of the RPs to select a technology that will be cost-effective over time.

Pursuant to the Water Board's enforcement order for this site, the Board has ample authority to reject a draft cleanup plan that does not adequately protect human health and the environment. In the event that a draft cleanup plan is found to be "unacceptable," then the RPs would be in violation of the enforcement order and could be subject to civil liability.

2. How does Water Board staff evaluate a particular cleanup proposal (or method) once submitted by the RPs? Can Water Board staff tell the public if staff thinks a technology won't work? What would Water Board staff's recommendation be for the most effective, quickest cleanup?

Water Board staff evaluates the rationale presented in the Feasibility Study, and evaluates the cleanup proposal to see that it protects human health and the environment (i.e., likely to meet the cleanup goals) and complies with applicable state regulations. Water Board staff can reject a proposed cleanup plan that fails to adequately address these standards. As noted above, the Water Board does not select the cleanup method for this or other sites.

3. How can the Water Board assure timely implementation of an approved cleanup plan? Can the Water Board enforce the RP's failure to meet the proposed cleanup schedule? What are the consequences of enforcement?

The Water Board has the authority to require timely implementation and to pursue enforcement if warranted. The Porter-Cologne Water Quality Control Act (Porter-Cologne) grants the State and Regional Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the state. Once the cleanup plan is ready for approval, the Water Board will require its implementation as part of a Board-adopted Final Site Cleanup Requirement order, pursuant to Water Code section 13304. The order will include enforceable deadlines.

In the event that the Site Cleanup Requirements order is violated (e.g. task deadline not met), then the Water Board has the authority to seek civil penalties, either administratively or through state courts (see Water Code section 13350). Our decision to seek civil penalties is based on violation severity (e.g. consequences for human health and water quality) and several other factors. Since the mid 1980s, the Water Board has taken formal enforcement action at 33 cleanup sites, imposing administrative civil liability amounting to about $2 million.

The State Board's Water Quality Enforcement Policy is available at http://www.waterboards.ca.gov/plnspols/docs/wqep.doc.

4. What happens if the selected cleanup method is not working? What can the Water Board do to replace it with a more effective cleanup method?

Cleanups such as that for the Hookston site usually require active evaluation and management, particularly in the early stages. RPs are required to collect appropriate data (for example, soil, groundwater, and indoor air data) to confirm effective cleanup. Water Board staff will monitor cleanup progress and work with the Responsible Parties to ensure the cleanup is proceeding as expected. Water Board staff can direct the Responsible Parties to evaluate alternative technologies if the selected technology does not appear to be effective. In situations where there is significant uncertainty about the speed or effectiveness of the cleanup technology, we may require the RPs to include a contingency plan as part of their cleanup plan. However, it commonly takes several quarters or years following implementation to determine the effectiveness of a selected cleanup technology.

5. Can the Water Board act unilaterally on cleanup? Can the Water Board do the cleanup itself if the RPs fail to submit an adequate cleanup plan?

The Water Board does have the authority to perform cleanup when there is no viable RP or when the RP is refusing to do clean up contamination. The State Water Board retains a small "Cleanup and Abatement" Account for that purpose. However, this account is mainly used in extraordinary situations, such as imminent threat to human health or the environment (e.g. threat to domestic wells by the West College Avenue PCE plume in Santa Rosa; see http://www.waterboards.ca.gov/agendas/2002/june/0620-22.doc). The Account would be quickly exhausted if it were used for a wider range of situations. In situations where a viable RP exists and has been making some effort to comply, we normally rely on our enforcement tools to obtain full compliance with our cleanup directives.

6. Does the cleanup plan address sites other than Hookston? Will the cleanup plan address all VOC sources including PCE and petroleum?

The cleanup plan for the Hookston site will address only the Hookston site. The Board's site cleanup order addresses only the Hookston site, and we cannot compel the Hookston RPs to clean up contamination that did not originate on their site. Water Board staff is actively working with the responsible party for the adjacent Pitcock Petroleum site to complete plume definition and work toward a cleanup plan for the petroleum/MTBE plume. Based on current data, PCE contamination is mostly located west of the Hookston site. Board staff is continuing its efforts to identify RPs and issue cleanup directives to those RPs. However, a significant portion of the PCE contamination in groundwater will also be cleaned up in the course of TCE cleanup efforts, due to the commingling of the two chemicals.

7. When determining RPs for other chemical sources will we have to go through the same slow/frustrating process with a different set of RPs to get these other contaminants cleaned up?

Water Board staff is actively working with the responsible party for the adjacent Pitcock Petroleum site to complete plume definition and work toward a cleanup plan for the petroleum/MTBE plume. A responsible party for the PCE plume has not yet been identified, and this is proving to be a challenge. Water Board staff expects that once a RP is identified for the PCE plume, the time frame for developing a cleanup plan would be one to two years, rather than a decade or more.

8. Will there be a public hearing on the cleanup plan prior to its approval? What is the timing for a public hearing (before the Board)?

Yes. The Cleanup Plan will be adopted by the Water Board as part of a Final Site Cleanup Requirement order, pursuant to Water Code section 13304. Such a Board action requires public notice. While such orders can be issued administratively by the Executive Officer, we intend to bring the matter to the Board for hearing and adoption, due to the site's significance and public interest. We expect that the adoption of the final site cleanup requirements will be on the Board agenda in Fall 2006.

9. What will be the aesthetic effects of the various cleanup technologies in the residential neighborhood? What will the noise, aesthetics, odor, and traffic impacts be on the neighborhoods from equipment related to the cleanup?

The aesthetic impacts depend greatly on the cleanup technology (or technologies) selected. It would be expected that a pump-and-treat system would be installed on-site, and involve installation of extraction wells and the above-ground treatment system, consisting of several large holding tanks and a treatment system. The tanks may have a capacity of several thousand gallons, and the system may be about the size of a tractor-trailer. Such systems can be hidden behind a fence or a vegetation screen, or contained within a temporary building for sound control. An in-situ system could be installed on-site or off-site, and would involve initial installation of a trench or injection wells, and minimal long-term surface activities or structures. Impacts to the community by noise, aesthetics, odor, and traffic will be evaluated in the Feasibility Study and subject to community comment.

Part 3 - Other

1. What does Water Board staff mean when referring to cleaning up to "background" levels?

Background refers to constituents or locations that are not influenced by the releases from a site, and is usually described as naturally occurring (substances present in the

environment in forms that have not been influenced by human activity) or anthropogenic (natural and human-made substances present in the environment as a result of human activities). In most cases, metals have natural background concentrations, whereas organic compounds (such as volatile organic compounds) are anthropogenic and may be present in the environment at "ambient" concentrations. Widespread occurrence of organic compounds in the environment may make it difficult to clean up groundwater to "pristine" conditions, but it may be possible to achieve "background" or "ambient" conditions.

2. Will the Water Board require testing for possible leakage of petroleum constituents from the Kinder-Morgan high-pressure gasoline pipeline in the old railroad right of way?

No. Transport pipelines, such as the Kinder Morgan pipeline, are under the jurisdiction of the State Fire Marshall. Regulations governing such pipelines require leakage testing and notification. If contamination from a pipeline leak were discovered, the cleanup would likely be regulated by the Water Board.

3. What is the status of the proposed investigation at 999 Bancroft? Is the site history for 999 Bancroft on the website?

The investigation was completed for the area adjacent to 999 Bancroft. Results, to be published in the forthcoming Monthly Status Report for June 2006, indicate that there is no need to pursue investigation on the 999 Bancroft property at this time since there is no evidence of a contaminant release on this parcel. The site history is available on the GeoTracker website (http://geotracker.waterboards.ca.gov/reports/luft.asp?global_id=SL601392782&assigned_name=SLICSITE).

4. What is EHIB's (DHS Environmental Health Investigation Branch) role in the Water Board's process? What is EHIB's mission? Will EHIB's involvement be ongoing?

EHIB, a branch of the California Department of Health Services, has been the Water Board's technical advisor during review and approval of the Baseline Risk Assessment for the Hookston area. EHIB is not usually involved in the cleanup phase of projects. The mission of the Environmental Health Investigations Branch is to identify and work toward controlling harmful environmental factors, and to promote those that are healthful. To accomplish this, the Branch conducts health and exposure investigations; undertakes health and exposure surveillance; provides public health oversight, technical assistance and training; facilitates public participation and effective community relations; develops policy initiatives and recommendations, and maintains scientific preparedness. More information about EHIB is available on their Website at http://www.ehib.org.

Board staff is pleased to announce that Ms. Elizabeth Allen joined the staff of the Toxics Cleanup Division on June 14, 2006. Ms. Allen is a toxicologist with degrees in

environmental toxicology and biochemistry. She has 16 years of experience working for several different consulting firms, preparing and reviewing risk assessment, and investigating and cleaning up hazardous waste sites.