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2 May 1997

Mr. Sumadhu Arigala
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Subject: Comments on Levine-Fricke-Recon Excavation and Disposal Work Plan for Arsenic-Affected Soils in the Vicinity of the Sherwin-Williams Facility, Emeryville, California, dated 25 April 1997 (EKI 970001.85)

Dear Mr. Arigala:

On behalf of our client, Chiron Corporation ("Chiron"), Erler & Kalinowski, Inc. ("EKI") has prepared comments on Levine-Fricke-Recon's ("LFR") *Excavation and Disposal Work Plan for Arsenic-Affected Soils in the Vicinity of the Sherwin-Williams Facility, Emeryville, California*, dated 25 April 1997 ("25 April 1997 Work Plan"). The Work Plan was prepared by LFR on behalf of The Sherwin-Williams Company ("SW") pursuant to Cleanup and Abatement Order No. 97-047 issued by the Regional Water Quality Control Board ("RWQCB") on 7 April 1997. The Work Plan supplements LFR's *Work Plan for Remediation of Arsenic-Affected Soils on the East and West Sides of Horton Street in the Vicinity of the Sherwin-Williams Facility*, dated 14 April 1997 ("14 April 1997 Work Plan"). EKI provided comments on the 14 April 1997 Work Plan in its letter, dated 22 April 1997.

These comments are being submitted in response to your request during our telephone conversation on 30 April 1997, at which time you requested that Chiron submit comments on the 25 April 1997 Work Plan to the RWQCB by no later than 1 May 1997. We understand the RWQCB's desire to move ahead with remediation; however, as we indicated in our prior comments, we are very concerned that sufficient time be provided to affected parties to understand and comment on the process and that RWQCB staff allow time for these comments to be adequately incorporated in its review. Consideration of Chiron's comments in the RWQCB review process will reduce the likelihood of having to revisit issues later and will also help minimize potential impacts to Chiron's current and future use and development of the nearby properties that it currently owns and leases.

In response to the RWQCB's request, we have prepared comments on the 25 April 1997 Work Plan in the limited time provided. These comments are summarized below. Many of these comments echo comments made in EKI's 22 April 1997 letter and focus on further characterization of soil in areas potentially impacted by arsenic, lead, and other hazardous substances released from the SW Site. If SW plans on addressing these comments in subsequent phases of work, we request that a schedule for submitting additional work plans to address these issues be incorporated into the 25 April 1997 Work Plan.

COMMENTS ON WORK PLAN

The following sections summarize our comments on the Work Plan. These sections specifically focus on:

- (a) the proposed soil cleanup criteria,
- (b) the proposed lateral extent of excavation,
- (c) the absence of air monitoring protocols and criteria, and
- (d) the need for further characterization of soil in areas potentially impacted by arsenic, lead, and other hazardous substances released from the SW Site.

Proposed Soil Cleanup Criteria

The 25 April 1997 Work Plan proposes soil cleanup levels for arsenic in shallow soils (i.e., above 1.5 feet below ground surface, "bgs") and for deeper soils (i.e., below 1.5 feet bgs) in exposed soil areas along Horton Street. Very limited information regarding the bases for selection of these soil cleanup criteria is provided.

Estimated incremental human health risks associated with potential exposures to arsenic-affected soil at the proposed cleanup level should be included in the Work Plan. Assumptions used to estimate these incremental human health risks should also be specified (e.g., potentially exposed populations to arsenic-impacted soils; potential exposure pathways to arsenic impacted soils; and exposure parameters including exposure frequencies, exposure durations, exposure ingestion rates, inhalation rates, respirable dust concentrations). Potential exposure pathways involving longer exposures during prolonged periods of planned construction by City or Chiron contractors in Horton Street or on nearby parcels should also be evaluated in the selection of a soil cleanup goal.

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In addition, we recommend that utility service providers (e.g., East Bay MUD, Pacific Gas & Electric), whose utility workers may, in the future, be exposed to arsenic-impacted soils that remain at depth along Horton Street be contacted and given an opportunity to comment on the proposed cleanup levels prior to approval by the RWQCB.

We also recommend that the following issues be considered in the development of cleanup criteria for arsenic-impacted soil in exposed areas along Horton Street.

- Do proposed cleanup criteria account for the cumulative health effects that may exist from chemicals of concern other than arsenic, e.g. lead, which are also present in soil along Horton Street?
- Are these cleanup criteria protective of groundwater?
- Will additional health and safety measures be required of future utility workers when digging in soil that contains arsenic concentrations up to the proposed cleanup level for deeper soil?
- Will there be incremental costs associated with utility work for management and disposal of excess soils from such utility work?
- Who will be responsible for incremental costs associated with implementation of additional health and safety measures by future utility workers if they are required?
- Will a risk management plan be completed for arsenic-impacted soil that remains along Horton Street?
- Who will be responsible for implementing such a risk management plan?

These issues are of particular concern to Chiron because:

- (a) Chiron employees using this public area on a regular basis may be exposed to chemically-impacted soil that remains along Horton Street;
- (b) the former Rifkin Property, which is owned by Chiron is located downgradient of arsenic-impacted soil along Horton street and may be impacted by any future leaching of residual arsenic in soil; and

- (c) substantial upgrades to utility lines in and along Horton Street are anticipated by the City of Emeryville and Chiron during the Chiron campus expansion.

Proposed Lateral Extent of Excavation

Arsenic-impacted soil excavation areas proposed in the Work Plan do not extend to existing soil sampling locations where arsenic concentrations in soil samples are below proposed soil cleanup criteria. For example, the excavation area surrounding boring HS-44, where arsenic concentrations above proposed cleanup criteria for shallow soil were detected (i.e., 50 mg/kg), does not extend laterally to adjacent soil borings HS-43 and HS-56, where arsenic concentrations below the proposed cleanup criteria for shallow soils were detected (i.e., 5.6 and 6.2, respectively). Proposed excavation areas should be extended to laterally adjacent borings where arsenic concentrations are below cleanup criteria, or confirmation samples should be collected from the sidewalls of the excavation to verify that arsenic impacted soils that exceed cleanup criteria have been removed.

Confirmation soil samples should also be collected from excavation sidewalls adjacent to Horton Street. These data will be helpful in evaluating potential impacts to soil below Horton Street where arsenic may also have migrated (see discussion below, section entitled Further Characterization of Soil in Potentially Arsenic-Impacted Areas).

Absence of Air Monitoring Criteria

The Work Plan states that SW will prepare an air monitoring plan, which will include air monitoring procedures and action levels. A copy of the air monitoring plan should be provided to Chiron for review and comment prior to initiation of work. Chiron owns and leases property in the immediate vicinity of the SW site and frequently has employees in the public area along Horton Street which has been impacted by chemicals of concern from the SW Site. Therefore, as a member of the community directly impacted by these chemicals of concern, Chiron should be allowed to participate in the establishment of these criteria and the procedures used to develop these criteria.

Further Characterization of Soil in Potentially Arsenic-Impacted Areas

While it may be appropriate to deal with the exposed soil along the City of Emeryville right-of-way immediately, the lateral extent of chemically impacted soil has not yet been completely characterized. Additional soil sampling should be conducted below the asphalt within Horton Street and on adjacent properties including adjacent areas of the South BGR property, which is currently leased by Chiron (see EKI comment letter dated 30 April 1997). Review of historical aerial photographs indicates that Horton Street may not have been paved during the early years of operation of SW lead arsenate plant. Therefore, any releases of arsenic or lead from the SW facility in the form of windblown

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dust, or possibly surface water runoff, may have impacted soil below the asphalt on Horton Street.

The potential for contamination within the permeable backfill material along the numerous utilities in Horton Street should also be investigated. As noted above, substantial upgrades to these utility lines is anticipated by the City of Emeryville and Chiron during the Chiron campus expansion. Furthermore, the planned Horton Street bypass will necessitate construction and access by construction workers in the street itself; therefore, data are needed to determine if arsenic and lead impacted soil will be encountered elsewhere within the street besides the exposed soil strips.

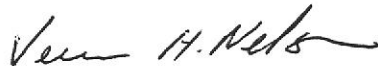
Wipe samples should also be collected and analyzed for chemicals of concern along seepage cracks that are clearly visible on the SW concrete retaining wall that runs along Horton Street. Consideration should be given to collecting wipe samples and dust samples on nearby buildings including those on South BGR.

The above issues serve to highlight the need to establish a process for developing a comprehensive long-term remedy for the areas and all media impacted by releases from the SW site.

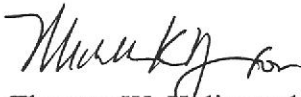
If you have any questions, please call.

Very truly yours,

ERLER & KALINOWSKI, INC.



Vera H. Nelson
Project Manager, P.E.



Thomas W. Kalinowski, Sc.D.
Vice President

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