

August 13, 1996  
961152NA

Ms. Madhulla Logan  
Hazardous Materials Specialist  
Alameda County Health Agency  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, CA 94502

**Subject: Work Plan for Soil Excavation and Backfilling**

**Re: Encinal Terminals Site, Alameda, California**

Dear Ms. Logan:

Woodward-Clyde Consultants (WCC), on behalf of Encinal Terminals Corporation (Encinal), is pleased to submit this work plan for performing soil excavation and backfilling at the Encinal Terminals site located at 1521 Buena Vista Avenue, Alameda, California (the site). The excavation of soil impacted by 1,1-DCA is one of the activities required by you to obtain a no further action (NFA) notice for the site. In a letter from you to Mr. Wang of Encinal dated May 18, 1996, the Alameda County Department of Environmental Health (the County) required additional activities before issuing a NFA notice. The activities required include stockpile characterization, performance of chemical fate and transport modeling, additional remediation by excavation, and groundwater monitoring.

The site consists of an area where soil and shallow groundwater have been impacted by volatile organic compounds (VOCs), mainly 1,1-DCA. According to existing documentation, a considerable amount of investigation and remediation work has been performed at the site. That work included previous site soil and groundwater characterization by Geomatrix Consultants (Geomatrix 1995), and excavation and on-site stockpiling of several hundred cubic yards of impacted soil. This letter has been prepared to guide field operations and for your review and approval. We will perform the excavation and backfilling based on your comments and recommendations.

## **SCOPE OF WORK**

The activities to be performed include the following tasks:

- Excavate and stockpile on-site soil impacted by 1,1-DCA.
- Utilize an on-site certified laboratory to analyze confirmation samples to verify that the recommended cleanup goal has been achieved.

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- Backfill the excavation with the soil stockpiled on-site as a result of previous excavations (Geomatrix 1995). WCC has characterized the soil and found that it is usable for fill at the site (WCC 1996).
- Compact the fill to a minimum of 90 percent compaction.

The recommended cleanup goal for 1,1-DCA in soil is 0.05 mg/kg (50 micrograms per kilogram), if practicable. This concentration meets and exceeds health-based criteria for protection of human receptors (Geomatrix 1995) and for protection of water quality in the bay (as demonstrated in Woodward-Clyde modeling report, which is forthcoming). If major difficulties arise in achieving this goal, a reasonable effort will be made to bring the residual soil concentration as close to the goal as possible. It is Encinal's intention to remove and treat all impacted soil, to the maximum extent practicable, even though the results of the risk screening evaluation (Geomatrix 1995) and the forthcoming WCC chemical fate and transport modeling report demonstrate that the levels of 1,1-DCA currently detected at the site do not pose a significant potential risk to humans or the environment.

### **Pre-Excavation Activities**

Encinal has retained Caballero Trucking of San Jose, California at (408) 729-0196 to perform the excavation and backfilling activities. On-site chemical analyses will be performed by Onsite Environmental Laboratories.

Encinal will mark the initial excavation boundary (Figure 1), and together with its excavation subcontractor, Caballero, will be responsible for utility location, protection and restoration (if necessary); geotechnical considerations; permitting requirements; health and safety for Encinal and Caballero personnel, which must conform with WCC health and Safety plan; excavation dewatering, storage, and disposal of water; on-site stockpile management; and backfilling, paving, and site restoration. WCC will be responsible for soil sampling and analysis, and health and safety for its own personnel.

Access to the work area will be controlled and limited to persons required to perform the field activities. No visitors will be allowed in the work area without approval of the Site Safety Officer.

For utility clearance, Underground Service Alert (USA) will be contacted by Caballero at least 48 hours, but no more than 14 days prior to the excavation. In addition, a private locator will be retained by Encinal, as necessary. If underground utilities other than water, sewer, and electrical lines will be identified by the locator or discovered during excavation, the County will be notified



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immediately. The appropriate utility agency will be contacted for authorization prior to initiating any work on utilities.

## **EXCAVATION AND BACKFILLING SPECIFICATIONS**

### **Area Of Excavation**

The plan is to excavate and dispose of soil beneath the site impacted by 1,1-DCA by concentration higher than 0.05 mg/kg, as practicable, subject to the safety and stability requirements of excavation. The initial excavation area is shown in Figure 1. The initial excavation will extend in the North-East direction from the approximate location of samples SS-28 and SS-37, all the way to sample location GW-21, representing the most downgradient detection of 1,1-DCA. Shallow groundwater level is approximately 7 to 9 feet below ground surface (bgs). Initial excavation will be stopped at approximately 10 to 12 feet bgs, where bottom confirmation samples will be collected and analyzed on-site by USEPA Method 8010/8020.

A warehouse building exists next to the site. We understand that this building will be demolished in the near future. Therefore, no specific efforts will be made during excavation to protect the building's integrity. The perimeter of the excavation area will be staked off prior to excavation. WCC will not be responsible for any damages to the building.

### **Slope Requirements**

For the sides that are not shored, slope will be maintained in a safe condition at all times during and after the excavation. No slopes will be steeper than one (1) horizontal to one (1) vertical for cohesive soil, and three to one for non-cohesive soil. Near the warehouse building next to the site, the excavation will stop 2 feet from the building footing on the surface and no slope will be steeper than one horizontal to one vertical away from the building.

### **Excavation**

When overhead power lines are close by, earth-moving equipment will not be raised unless the distance between the equipment and the nearest power line is at least 20 feet or other distance as required by local ordinances. The equipment operator or assistant will walk completely around the equipment to make sure that the proper distance exists.

Dust will be controlled by frequently applying water to the excavation area, assuming water is available on site. Dust monitoring will be performed during excavation.



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The excavation will proceed in the following steps:

- Excavate the initial area first (as shown in Figure 1), and stockpile the excavated soil on the appropriate lined containers already prepared on-site;
- Collect soil samples for confirmation, at a frequency of about one every 20 feet at the perimeter and one every 400 square feet at the bottom of excavation;
- If the concentration of 1,1-DCA is below 0.05 mg/kg, then no further excavation will be conducted in that area;
- If 1,1-DCA is detected at concentration greater than 0.05 mg/kg, then advance the excavation five feet horizontally for the sidewall, or two to three feet vertically for the bottom, and collect additional confirmation samples until the goal is met, as practicable;
- The excavated portion of the site will be backfilled and compacted.

#### **Backfilling - Placing And Compacting Fill Material - Site Restoration**

On-site soil will be placed in uniform lifts not exceeding 10 inches in uncompacted thickness. Before compaction begins, the fill soil will be brought to a uniform water content 1 to 3 percent over the optimum water content by either: 1) aerating the soil if it is too wet; or 2) spraying the soil with water if it is too dry. Each lift will be thoroughly mixed to provide a uniform distribution of water content, and will be compacted. The fill soil will be compacted to a minimum of 90 percent relative compaction. The level of the backfill will be placed to meet the original grade and provide for surface drainage away from the excavation area. Upon completion of the project, all equipment and construction materials will be decontaminated and removed from the site.

#### **Outcome of Soil Excavation and Backfilling**

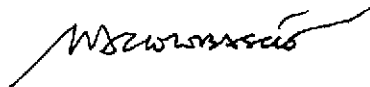
- 1) Based on the results of our chemical fate and transport modeling activity (forthcoming), residual chemicals currently detected in soil do not pose significant potential risk to human health or the environment, therefore the excavation activity presented here will meet and exceed protection criteria.
- 2) We expect that no deed restriction will be necessary after remediation as described above.



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We appreciate your consideration of this excavation work plan before we initiate this activity. If you have any questions, please do not hesitate to contact Marco at (510) 874-3254 or Al at (510) 874-3125.

Sincerely,



Marco C. Lobascio, R.E.A.  
Project Manager



Albert P. Ridley, C.E.G.  
Senior Consultant

cc: Mr. Chengben Wang, Encinal Terminal Co.

**REFERENCES**

Alameda County Health Care Services. 1996. Letter from M. Logan to P. Wang. May 18.

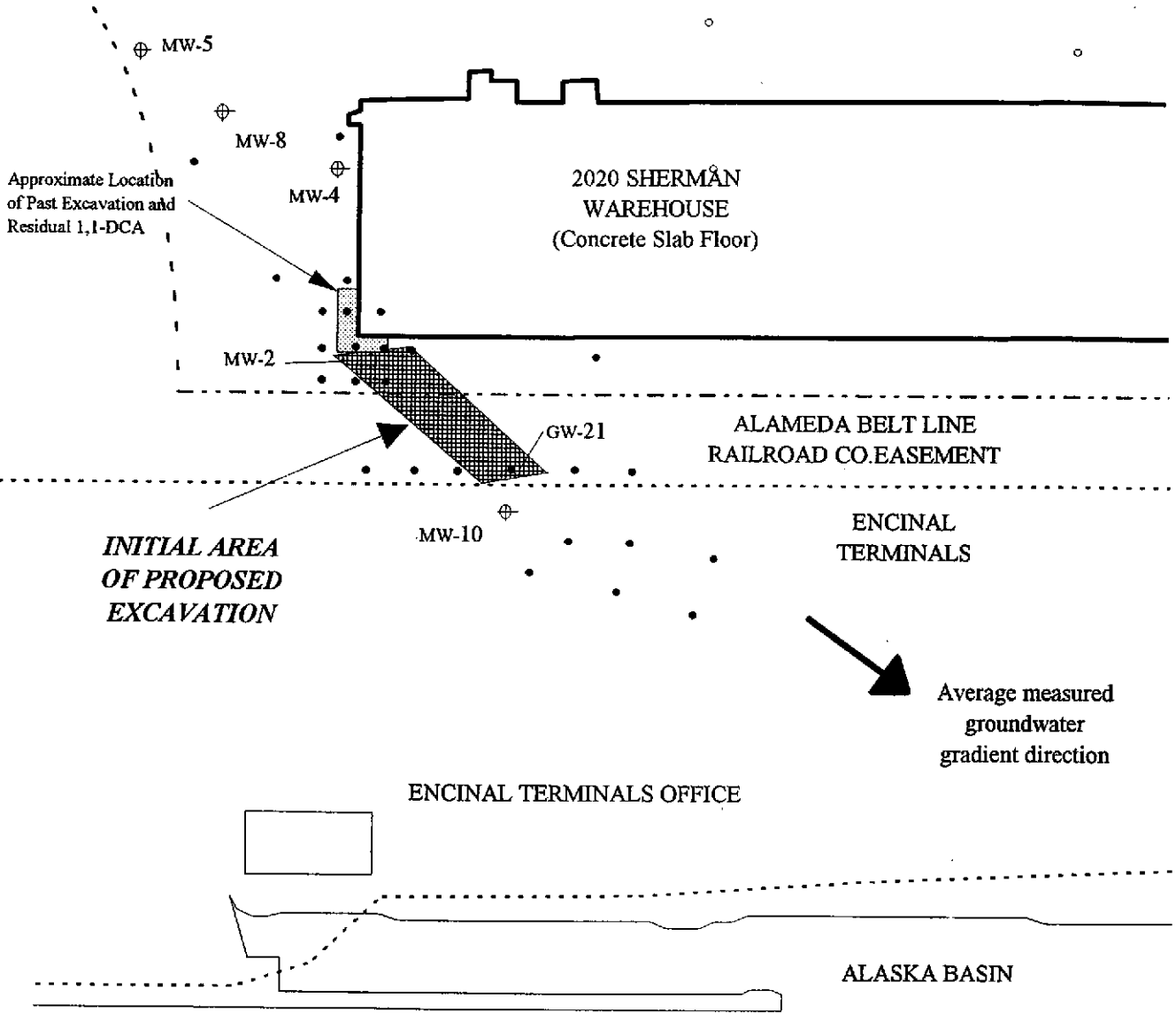
Geomatrix Consultants. 1995. Semi-Annual Monitoring Report and Site Characterization Report. August.

Woodward-Clyde. 1996. Letter from A. Ridley to M. Logan. July 30.

**ENCLOSURES**

FIGURE 1. SCHEMATIC SITE PLAN VIEW WITH INITIAL EXCAVATION BOUNDARY





**Legend**

- ⊕ Approximate Monitoring Well Location
- Approximate Soil Sampling Location
- Approximate Groundwater Grab Sample Location
- - - Property Boundary - Encinal Real Estate
- · · Property Boundary - Encinal Terminals

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Project No. 961152NA	ENCINAL REAL ESTATE	SCHEMATIC SITE PLAN VIEW WITH INITIAL EXCAVATION BOUNDARY	Figure 1
Woodward-Clyde Consultants			