CHIRON

July 10, 1997

Ms. Susan Junn
California Environmental Protection Agency
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710-2737

RE: Sherwin-Williams Facility, 1450 Sherwin Avenue, Emeryville, CA

Dear Ms. Junn:

I am writing in response to your telephone call on Thursday, June 26, 1997 in which you asked me two questions relating to your investigation of Sherwin-Williams' disposal of hazardous waste at its Emeryville facility. Provided below are my answers based on a review of all relevant information available to Chiron.

QUESTION 1:

The first question was whether I am aware of any written documents prepared by Sherwin-Williams at the time that they constructed the slurry wall that use the term "area of contamination" to describe their excavation and redisposal on-site of RCRA and California Hazardous waste soil and debris. I have inferred from this question that you are seeking to determine if Sherwin-Williams even attempted to create a possible argument that their actions were exempt from the Hazardous Waste Control Law's ("HWCL") Land Disposal Restrictions ("LDRs") by taking advantage of some flexibility in the interpretation and application of LDRs as allowed under U.S. EPA policies under certain circumstances, none of which apply here. As is discussed in detail in my letter to Mr. Borzelleri dated April 17, 1997, an agency must designate a site or a portion thereof as an "area of contamination" ("AOC") in order for these policies to apply. Even within an agency-designated AOC, the LDRs remain fully applicable where, as here, "placement" of hazardous waste within a land disposal unit occurred (see page 10 of my letter to Mr. Borzelleri). Because Sherwin-Williams failed to obtain agency approval for the designation of an AOC at the Emeryville site, and because Sherwin-Williams' on-site treatment and long-term storage of hazardous waste constituted "placement" within the meaning of EPA guidance, Sherwin-Williams was not entitled to dispose of hazardous waste on-site in violation of the LDRs.

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There are three key documents relating to your question. These documents are the *"Evaluation of Interim Remedial Measures"* dated December 20, 1991 (Attachment 1); the *"Interim Remedial Measures Completion Report"* dated April 19, 1996 (Attachment 2); and the letter from Michael Glaser of Levine-Fricke to David Gustafson of Sherwin-Willliams dated December 17, 1993 (Attachment 3).

The *"Evaluation of Interim Remedial Measures"* evaluated five different alternatives for remediating the Sherwin-Williams site and recommended the implementation of Alternative 5 - "Engineered Containment of Chemical-Affected Areas." This alternative called for the installation of a multimedia cap and slurry wall around the on-site areas of affected soil and groundwater..." (see page 48 of Attachment 1). The estimated cost of this alternative included $160,000 for off-site disposal of 400 cubic yards of soil at a unit cost of $400 per cubic yard (see Table 20 in Attachment 1). At a disposal cost of $400 per cubic yard, it is clear that they were assuming that this soil would be classified and disposed of off-site as a hazardous waste. Further, data in the report regarding testing of fixation techniques on the contaminated soil found that even fixated soil failed the California WET (see page 19 of Attachment 1).

This 1991 report does not indicate that Sherwin-Williams was attempting to comply with LDRs by using the concept of an AOC, and does not even mention that Sherwin-Williams was planning on excavating, treating, storing, redisposing, and spreading hazardous waste soil and debris on-site. In fact, the 1991 report, when originally submitted to the Regional Water Quality Control Board ("Regional Board"), proposed just the opposite - that 400 cubic yards of hazardous waste soil would be excavated and disposed of off-site.

Furthermore, the design of the multimedia cap as shown in Figure 15B of the 1991 report (see Figure 15B in Attachment 1) does not indicate that hazardous waste soil and debris would be placed over the existing grade and under the new cap. Figure 15B of the 1991 report indicated that the cap would be placed over a "gravelly unit" which in turn would be placed over "silty clay."

Moreover, the slurry wall was not installed around all of the on-site areas of affected soil and groundwater, and the multimedia cap was never constructed. The slurry wall is set approximately 8 -10 feet back from the property line bordering the former Rifkin property and Horton Street. Consequently, there is an 8 - 10 foot wide zone of highly contaminated soil outside the slurry wall and abutting the former Rifkin property and Horton Street. Additionally, Sherwin-Williams placed RCRA and California hazardous waste soil and debris on top of the existing grade outside of the area of the Sherwin-Williams site encompassed by the slurry wall along and abutting the former Rifkin property and Horton Street. This capped area is elevated approximately 3.5 feet above the surrounding street grade. Furthermore, the "RCRA-like" multimedia cap that was proposed by Levine-Fricke for the site was determined to be too costly by Sherwin-Williams and was replaced with a less expensive and potentially less permanent and more permeable 2-3 inch asphalt cap (see Attachment 4).

Finally, Sherwin-Williams did not dispose of 400 cubic yards of contaminated soil off-site as referenced in their 1991 report, but instead decided to redispose of this material on-site. In fact, according to a December 17, 1993 memo (Attachment 3) three stockpiles of contaminated soil and debris totaling 2,150 cubic yards were excavated, redisposed, spread and graded on-site, 1,950 cubic yards of which were excavated from the arsenic-affected area.

Thus, to the best of my knowledge, the only plan describing the proposed interim remedial measures that was received and approved by the Regional Board failed to mention the AOC concept. On the contrary, the 1991 plan indicated that hazardous waste soil and debris generated in connection with the proposed interim remedial measures would be disposed of off-site.

The only other documents prepared by Sherwin-Williams relating to the proposed interim remedial measures which were submitted to the Regional Board prior to installation of the cap also appear to have failed to mention the AOC concept, including a letter from Sherwin-Williams to the Regional Board dated July 30, 1993 (Attachment 5) which included a map showing the proposed environmental cap layout dated July 27, 1993 (Attachment 6).

The "Interim Remedial Measures Completion Report" was prepared by Levine-Fricke and submitted to the Regional Board in April 1996, **two years after construction of the slurry wall and cap, and two years after Sherwin-Williams became aware that the local District Attorney had investigated some of their activities** in connection with their interim remedial measures construction activities. This 1996 report indicates that soil and concrete from the "former lead-arsenate pesticide area" were "segregated and contained" in the same area (see pages 6 and 9 of Attachment 2).

This after-the-fact report also failed to invoke the AOC concept, and there is no indication that DTSC, the Regional Board, or any other agency designated any portion of the Sherwin-Williams site an AOC. Moreover, *the "Interim Remedial Measures Completion Report"* makes clear that "placement" of hazardous waste in a land disposal unit had occurred. According to the report, the hazardous waste soil at issue was "stockpiled" and "blended" with crushed concrete before being disposed of on-site (see pages 6 and 9 of Attachment 2). EPA guidance provides that even in a CERCLA AOC, "placement" sufficient to trigger the LDRs occurs whenever waste is treated, stored or otherwise "actively managed within or outside the AOC and returned to the land." (see pages 10 and 11 of my letter to Mr. Borzelleri dated April 17, 1997). As such, even if the Sherwin-Williams site had been designated an AOC, Sherwin-Williams actions would not have been exempt from the LDRs.

Several other documents relating to the proposed remedial activities also failed to mention the AOC concept, including a letter from Sherwin-Williams to the Regional Board dated July 30, 1993 (Attachment 5) which included a map showing the proposed environmental cap layout dated July 27, 1993 (Attachment 6).

Summary of Response to Question 1:

To my knowledge, none of the many documents Sherwin-Williams prepared at the time it constructed the slurry wall or cap used the term "area of contamination." Neither DTSC, the Regional Board, nor any other agency designated the Emeryville site or any portion thereof an AOC. More significantly, EPA guidance relating to the applicability of the LDRs to the disposal of hazardous waste within an AOC makes clear that, in this case, "placement" of hazardous waste occurred. As a result, Sherwin-Williams' actions were subject to the LDRs and other HWCL requirements, regardless of whether or not the site constituted an AOC.

QUESTION 2:

Your second question was whether the Regional Board understood that Sherwin-Williams was proposing to redispose of RCRA and California hazardous waste soils and debris excavated in connection with the construction of the slurry wall and demolition and regrading of the site.

As discussed above, the *"Evaluation of Interim Remedial Measures Report"* recommending the installation of a multimedia cap and slurry wall as submitted to the Regional Board in 1991 did not indicate that hazardous soil and debris would be excavated and redisposed on-site. In fact, this 1991 report represented that 400 cubic yards of hazardous soil would be excavated and disposed of off-site (see page 48 of Attachment 1). Moreover, the description and diagram of the proposed cap in the 1991 report (Figure 15B in Attachment 1) did not indicate that contaminated soil and debris would be placed over the site and under the cap as previously discussed above.

Furthermore, the *"Evaluation of Interim Remedial Measures Report"* was approved by the Regional Board only for purposes of water quality protection. A copy of the 1991 report with the handwritten review comments of the Regional Board case officer, Lester Feldman, was obtained from Levine-Fricke's files and is attached. This copy contains the handwritten review comments of the Regional Board's case officer, Lester Feldman made from February 12 to 17, 1992. According to his handwritten notes on page 48 of the report, installation of a cap and slurry wall around the site was "o.k. but only for w.q. protection" (see page 48 of Attachment 1). These notes were provided to Levine-Fricke and Sherwin-Williams, and indicate that the Regional Board's intention was only to approve of the proposed interim remedial measures for the purpose of water quality protection and no other purpose.

By letter dated March 5, 1993 (Attachment 7), Sherwin-Williams provided a status report to the Regional Board case officer on their activities. The letter indicated that detailed specifications for the slurry wall had been completed and that the design of the cap was on schedule. To the best of my knowledge,

these specifications did not include the treatment, redisposal, spreading and grading of hazardous waste soil and debris.

By letter dated June 14, 1993, Sherwin-Williams provided another status report to the Regional Board case officer (Attachment 8). In the letter, they indicated that they had awarded a contract for the construction of the slurry wall. No details on the design or any design changes were provided to the Regional Board at that time.

By letter dated July 30, 1993, Sherwin-Williams provided another status report to the Regional Board case officer (Attachment 5). In the letter they indicated that the design for the site cap was complete. A copy of a drawing (labeled Y SLO 304 L dated 7/27/93) (see Attachment 6) was provided to the Regional Board at that time. The drawing does not indicate that hazardous waste would be redisposed on-site and capped.

By letter dated December 7, 1993, Sherwin-Williams provided another status report to the Regional Board case officer (Attachment 9). On page 2 of this letter, Sherwin-Williams refers to ***"excess soil which was excavated for the slurry wall...in the Northeast section of our property..."*** and proposes to ***"place this excavated soil (having been stockpiled since mid-September) under the on-site 'cap'..."*** The letter goes on to say that ***"new bids were obtained from qualified contractors based on the modified design."*** On page 3 of this letter it states that ***"Sherwin-Williams requests the Board's prompt approval of the activities proposed in this letter."***

By letter dated October 4, 1993, the Osborn Engineering Company issued aletter to Sherwin-Williams regarding "capping for hazardous waste" and eliminating the multilayer cap (Attachment 10).

In January, 1994, the Osborn Engineering Company issued two documents to Sherwin-Williams regarding ***"...spoils to be buried..."*** on the Sherwin-Williams site and ***"...capping for hazardous waste..."*** (Attachment 11)

The December 7, 1993 letter appears to be the key document in this matter. Up until this point in time, Sherwin-Williams had represented to the Regional Board their intent to design and construct a slurry wall and cap that did not involve the redisposal, spreading grading and capping on-site of RCRA and California hazardous waste soil and debris. After illegally stockpiling on-site approximately 1,950 cubic yards of hazardous waste soil and debris since September, 1993 (see Attachment 3), and well aware of the high cost of properly disposing of this material at a licensed RCRA TSDF, Sherwin-Williams apparently decided to modify their design and redispose of this material on-site. **This 1993 letter asking for the Regional Board's approval of such redisposal did not disclose that the material contained levels of arsenic and other hazardous substances that made it a RCRA and California hazardous waste.** We are unaware of any written document indicating that either the Regional Board read the letter, understood the proposed modification, or approved of this change.

Moreover, even if Regional Board staff read the December 7, 1993 letter and understood that Sherwin-Williams was proposing a major change in the design of the interim remedial measures previously approved by the Regional Board Executive Officer in a letter dated March 10, 1992 (See Attachment 12), that involved the on-site redisposal of RCRA and California hazardous waste soil and debris, Regional Board staff did not have the authority to approve these actions. It is our experience that as a matter of practice, typically, Regional Board staff assume that the responsible party will comply with all applicable laws and regulations outside the jurisdiction of the Regional Board, including those relating to hazardous waste management, building and fire codes, OSHA, BAAQMD, etc. Finally, as discussed in my April 17, 1997 letter to Mr. Borzelleri, pursuant to the California Health and Safety Code 25145 (b), Regional Board oversight "shall not be construed to limit the power or authority of [DTSC]...to take any action necessary to ensure compliance with [the HWCL], or to limit the duty of any person to comply with [the HWCL]." Moreover, "(a)n action taken pursuant to [Regional Board oversight] is not a defense to any action taken to enforce [the HWCL]."

CONCLUSION

In conclusion, to the best of my knowledge, Sherwin-Williams did not attempt to exempt from LDRs their excavation and redisposal on-site of RCRA and California Hazardous waste soil and debris. Even if Sherwin-Williams had invoked the "area of contamination" concept, its activities constituted "placement" within the meaning of EPA guidance and therefore remained subject to the LDRs. Furthermore, to the best of my knowledge, none of the documents relating to the development and description of interim remedial measures submitted to the Regional Board and approved by the Executive Officer indicated that Sherwin-Williams intended to excavate, treat, store, redispose, spread and grade RCRA and California Hazardous waste soil and debris on the site. The handwritten notes of Regional Board staff indicate that the Regional Board staff were only approving of the proposed interim remedial measures from the standpoint of protecting water quality. Later on, faced with the high cost of disposing of hazardous waste soil and debris subject to LDRs, Sherwin-Williams decided to modify the interim remedial measures to include the onsite redisposal of RCRA and California hazardous waste soil and debris. I am not aware of any document indicating that the Regional Board understood or approved of this modification. Finally, California law makes clear that Regional Board oversight does not excuse a party's failure to comply with the HWCL.

I hope this information is responsive to your request. Please call me if you have any further questions or comments.

Sincerely,

CHIRON CORPORATION

Ric Notini

cc: Rick Robison
Barbara Cook
Mark Johnson
Steve Morse
Susan Hugo

List of Attachments :

1. "Evaluation of Interim Remedial Measures at the Sherwin-Williams Facility," prepared by Levine-Fricke, dated December 20, 1991.
2. "Interim Remedial Measures Completion Report," prepared by Levine-Fricke, dated April 19, 1996.
3. Letter from Michael Glaser, Levine-Fricke, to David Gustafson, Sherwin-Williams, dated December 17, 1993.
4. Environmental Update Report prepared by David Gustafson, Sherwin-Williams, dated September-October 1993.
5. Letter from David Gustafson, Sherwin-Williams, to Lester Feldman, Regional Board, dated July 30, 1993.
6. Environmental Cap Layout Plan prepared by Osborn Architects-Engineers, dated July 27, 1993 and subsequently revised on October 15, 1993 and March 29, 1994.
7. Letter from David Gustafson, Sherwin-Williams, to Lester Feldman, Regional Board, dated March 5, 1993.
8. Letter from David Gustafson, Sherwin-Williams, to Lester Feldman, Regiona Board, dated June 14, 1993.
9. Letter from David Gustafson, Sherwin-Williams to Lester Feldman, Regional Board, dated December 7, 1993.
10. Letter from D.R. McBean, Osborn Engineering, to William Berning, Sherwin-Williams, dated October 4, 1993..
11. Letter and memorandum from D.R. McBean, Osborn Engineering, to William Berning, dated January 4 and 17, 1994.
12. Letter from Steven Ritchie, Regional Board, to Dave Gustafson, Sherwin-Williams, dated March 10, 1992.

Evaluation of Interim Remedial Measures at the Sherwin-Williams Facility Emeryville, California

December 20, 1991
1563.09

Start Reviewed 2/12/92 LF

Completed Reviewed 2/17/92 LF

Prepared for:

The Sherwin-Williams Company
101 Prospect Avenue
Cleveland, Ohio 44115

LEVINE·FRICKE

P 3626

LF 00456

2.1.1 Stabilization

Stabilization technologies bind inorganic and/or organic chemicals into immobile forms using a variety of cement-, silicate-, asphalt- or organic polymer-based substances. Some of these agents and their mixtures are proprietary compounds. Effectively stabilized soils may resist leaching for several reasons, including low permeability resulting from the formation of solid, cement-like monoliths, and/or the strong sorption or encapsulation of chemicals to, or within, the stabilized soil matrix. The second mechanism allows the stabilized soil to remain in a workable condition rather than to be transformed into a monolithic block.

Soil biotreatment is considered more cost effective for the treatment of organic-affected soils in comparison to stabilization. As a result, stabilization of organic-affected soils was not considered further.

Treatability studies were conducted to evaluate the potential for stabilizing the arsenic-affected soils. A total of eight formulations were tested in more than 20 different mixtures. Five of these formulations were proprietary compounds. Details of the treatability studies are presented in Appendix A. In summary, no formulation stabilized arsenic and lead in site soils to the regulatory leaching concentration (5 mg/kg for arsenic and lead) as produced by the California Waste Extraction Test (WET). However, based on the Federal Toxicity Characteristic Leaching Procedure (TCLP) and a water extraction test, one formulation from Chemfix Technologies, Inc. was able to lower extractable arsenic and lead concentrations to levels below 5 mg/kg.

Stabilization of soils can be performed in situ or ex-situ. However, these treatability studies were conducted in a manner consistent with ex-situ technologies. Although it is likely formulations found to be effective in the treatability studies should stabilize these soils using in situ mixing operations, uncertainties will persist until some level of pilot-scale testing is performed.

Application of stabilization technologies to the soils below ground water would be a far less effective remediation alternative because (1) in situ stabilization of arsenic- and organic-affected soils in saturated soils has not been proven successful and (2) excavation and treatment of the soils would produce dewatering problems requiring additional treatment and disposal.

insufficient national capacity. In the June 1990 Final Rule for the Third Third group of wastes in the LDR program, EPA noted that such "soil and debris would remain eligible for the national capacity variance."

For the arsenic area soils, profiling was pursued with U.S. Ecology and USPCI. Representatives of these two facilities indicated they would accept the soil containing both lead and arsenic without treatment, and they would accept the soil containing only arsenic. A written acceptance for this waste was received from U.S. Ecology in November 1990. USPCI has verbally reversed their earlier decision not to accept the portion of the soil containing both lead and arsenic without treatment.

The option of disposal at an off-site facility is viable (although cost prohibitive) for the soils from the arsenic area, including the soils from the area containing both lead and arsenic, assuming disposal is implemented before May 1992 when the variance for land disposal of these wastes expires. As a result, excavation and disposal of arsenic-affected soils was retained for further consideration.

Oils and Solvent Tank Storage Area Soils. For certain organic wastes addressed in the LDR program, the best demonstrated available technology (BDAT) chosen by the EPA is incineration. Because of a shortage of incinerators, the EPA granted a national capacity extension until June 8, 1991, for soil and debris contaminated with compounds addressed under the Third Third portion of the LDR program that have a BDAT of incineration. Because the national capacity extension has expired, it is no longer possible to excavate and dispose of the soils from the solvent and oil tank storage areas without treatment. Treatment could be achieved either on site or off site, depending on the remedial options chosen. As a result, excavation, treatment (on-site or off-site), and off-site disposal (although cost prohibitive) were retained for further consideration.

Saturated Soils. Soils in the saturated zone (below the ground-water table) have not been extensively analyzed, but it is likely they contain essentially the same constituents as the ground water with which they are in contact. Excavation of those soils would require dewatering, and subsequent treatment and disposal of the resulting water. Therefore, excavation and disposal of the saturated soils was screened out because of the significant logistical problems associated with dewatering, multiple treatment of the water, and disposal.

recovered by a distillation process and, while some of the extracted organics are volatilized, the remaining organics would require further treatment and disposal.

Soil washing was not retained for the saturated soils because extracting arsenic and organics simultaneously has not been demonstrated to be effective, it is not cost effective, and excavation and treatment of soils using this technology would produce dewatering problems requiring additional treatment and disposal.

2.1.4 Excavation and Disposal at an Off-Site, Permitted Disposal Facility

The soil excavation and disposal option would consist of excavating chemical-affected soils from selected areas and disposing of them at an off-site disposal facility (TSDF). The removal of chemical-affected soils from the Site would eliminate or reduce the potential for those chemicals to move into ground water or into the atmosphere at the Site.

Soils from the oil tank storage area, the arsenic area, and the solvent tank storage area (Figures 10 through 12) were profiled for permitted disposal. Three disposal facilities (USPCI, U.S. Ecology, and Chemical Waste Management) were considered for disposal of the affected soils. Each facility was contacted to discuss their acceptance of the affected soils. The framework for regulating off-site disposal of these soils, along with the response from the disposal facilities, is presented below.

<u>Arsenic Area Soils.</u> According to Federal EPA regulations in Title 40 of the Code of Federal Regulations (CFR) 261.24, most of the arsenic-affected soil would be classified as Resource Conservation and Recovery Act (RCRA) D004 waste. These wastes were addressed in the Third Third of the Land Disposal Restriction (LDR) program. EPA has granted a national capacity variance (which expires May 1, 1992) for soil and debris contaminated with Third Third wastes for which the treatment standard was based on incineration, mercury retorting, vitrification, or wet-air oxidation. The treatment standard for D004 wastes was based on vitrification.

One sample location in the northeastern corner of the arsenic area contains high concentrations of lead and arsenic. Lead is a waste whose treatment standard under the LDR program is based on an available treatment technology, while arsenic is a waste whose treatment standard is based on a technology with

arsenic removal process (see next section). Based on modeling of the identified ground-water extraction system, the estimated flow would be approximately 10 gpm. As indicated by results of the pilot-scale laboratory study conducted in the Levine·Fricke laboratory, the optimum process design for removal of the VOCs and SVOCs appears to be a submerged, fixed-film, two-stage aerobic bioreactor. The full-scale biological treatment system also would include clarification for suspended solids removal, sludge thickening and handling equipment, and cartridge filters and carbon adsorption vessels for final polishing as required.

3.1.2.2 Electrochemical Treatment of Arsenic.
Electrochemical precipitation would be used to remove arsenic in extracted ground water. This process technology would be implemented after the biotreatment process to avoid potential organic fouling of the arsenic precipitation process. Discharge waters may be polished by ion exchange and/or activated carbon. The disposal of arsenic-affected sludge would require off-site disposal in accordance with regulatory guidelines. Estimates of sludge production have been made based on results of the treatability work (see Appendix D) and vendor estimates and are included in the cost estimates presented in Section 4.0. The high sludge production and operational difficulty in achieving low concentrations of arsenic, however, favors implementation of some industrial reuse of the treated water over NPDES discharge. Nevertheless, the electrochemical process was demonstrated to be effective in reducing effluent discharge to below sanitary sewer discharge limits.

3.1.3 Excavation and Disposal of Affected Soils

As discussed in Section 2.0, excavation and disposal of affected soils is a remedial alternative considered for soils in the unsaturated A zone. This action could be implemented on affected soils requiring remediation. Many of the soils would require Class I disposal and the arsenic-affected soils would require off-site treatment before disposal at a Class I facility after May 1992. Areas identified for full excavation and disposal are shown in Figures 10, 11A, 11B, and 12. Saturated A-zone soils have not been considered for removal, as measures to control their impact on site ground water are addressed through either the active or passive hydraulic containment.

Site preparation before excavation activities may require structural reinforcement of on-site and neighboring off-site buildings located adjacent to the affected areas. Structural

Stabilization of arsenic-affected soils would be implemented in situ, using a deep soil mixing technology available from several vendors. The in situ option would be implemented because of the difficulties anticipated in excavating adjacent to existing buildings and because of permitting/regulatory difficulties associated with excavating this arsenic-affected soil. Implementation of this option under this scenario may require relocation of existing utilities and railroad lines. The assumed areas for implementation of this alternative are presented in Figure 12.

3.5 Alternative 5: Engineered Containment of Chemical-Affected Areas

This alternative would employ engineered containment to control migration of affected ground water and eliminate potential human exposure pathways. At the same time, this alternative would reduce the amount of ground water requiring extraction and treatment. Engineered containment would include installing a cap and slurry wall around the on-site areas of affected soil and ground water in conjunction with ground-water extraction and treatment within the containment zone to dewater the sediments and maintain an inward hydraulic gradient. This alternative is similar to Alternative 3, with the exception that no source remediation of soils is proposed under this alternative because engineered containment (slurry wall and capping) would eliminate the potential exposure pathways for affected soils and ground water.

O.K. but only for W.Q. Protection

Figure 15A presents the layout of the proposed engineered containment system under this alternative. The conceptual treatment schematic shown in Figure 14 would apply to this alternative.

The following provides a description of the remedial components involved with the implementation of Alternative 5.

3.5.1 Containment

Containment includes the construction of barriers to impede both vertical and horizontal infiltration or leakage. Identical to Alternative 3, a multimedia cap would be used as a horizontal barrier and a slurry wall would be used as a vertical barrier. A detailed discussion of the implementation of these barriers is presented in Sections 3.3.1.1 and 3.3.1.2.

5.0 RECOMMENDED INTERIM REMEDIAL MEASURE -- ALTERNATIVE 5, ENGINEERING CONTAINMENT

Selection of the recommended interim remedial measure has been based on estimated cost of implementation, applicability of the alternative, and perceived acceptance by regulators. The alternatives have been developed based on the concept that they are equal in their ability to meet the stated remedial goals for the project.

Alternative 5 would result in engineered containment of the soils known to be affected on site. This alternative would result in meeting the stated interim remedial goals for the site (i.e., to reduce the potential for exposure pathways from the affected soils and ground water, contain the affected ground water on site, and control source areas to minimize further ground-water impacts). Because affected materials on site would be contained through engineered remedial measures, it is anticipated the regulatory agencies may not require active remediation of soils on site.

Based on the stated remedial goals, cost effectiveness and other stated criteria, Alternative 5, Engineered Containment, is the recommended interim remedial measure. This alternative includes containment of the VOC-, SVOC-, and arsenic-affected soil and ground water.

Alternative 5 is recommended for the following reasons:

- saturated soils, which have probably sorbed substantial amounts of arsenic and organic compounds, would be contained and this source of degradation of site ground water, regardless of ground-water extraction and treatment option selected, would be controlled
- containment of chemical affected areas would mitigate further off-site migration of ground water
- containment provides control of the affected areas without the need for soil treatment or disposal
- use restrictions (deed restrictions) could be imposed on the property in conjunction with containment to prevent potential future exposures as a result of site activities

- containment would reduce the amount of ground water requiring extraction and subsequent treatment, which meets both regulatory concerns regarding excessive pumping of ground water and reduces overall operational costs for implementation

- this alternative could be implemented relatively quickly in comparison to other alternatives, allowing for implementation of interim remedial measures sooner.

This alternative has the lowest estimated capital cost of $2.3 million and annual O&M costs of $125,000 per year with a 20-year present worth O&M value of $1.56 million. The total estimated present worth cost for this alternative is $3.9 million. Final evaluation of this alternative should be made during the design period to confirm and refine the cost estimates and feasibility for the recommended interim remedial measure.

TABLE 20

ALTERNATIVES 3, 4, AND 5: ENGINEERED CONTAINMENT
ESTIMATED CAPITAL COSTS

DESCRIPTION	QUANTITY/UNIT	UNIT COST (1)	TOTAL COST (1)	REFERENCE
3. SOIL REMEDIAL SYSTEM CONTAINMENT OF AS-, VOC-, AND SVOC-AFFECTED SOILS				
a. Structural reinforcement of building	820 LF	$215	$176,300	Vendor Quote
b. Installation of slurry cut-off wall	50,000 SF	6	300,000	Vendor Quote
c. Soil disposal	400 CY	400	160,000	Vendor Quote
d. Flexible membrane liner	17,000 SY	6	102,000	Cost Files
e. Capping	17,000 SY	15	255,000	Cost Files
f. Installation of surface drainage	1 LS	50,000	50,000	Cost Files
g. Replace fencing	300 LF	15	4,500	Cost Files
h. Remove and replace existing utilities	1 LS	35,000	35,000	Cost Files
i. Excavate foundations	1 LS	25,000	25,000	Cost Files
j. Remove and replace existing railroad spurs	7 EA	3,000	21,000	Cost Files
k. Analytical sampling	1 LS	15,000	15,000	Cost Files
l. Engineering, permitting, and construction management (35% of items a. through k.)	35 %		400,300	Cost Files
m. Contingency (20% of items a. through l.)	20 %		308,800	Cost Files
Subtotal 3:			$1,852,900	
ESTIMATED TOTAL CAPITAL COSTS			$2,298,500	

NOTES:

1. All costs are in 1991 dollars.
2. Costs do not include further subsurface investigations (if needed), regulatory interface, or permit fees.

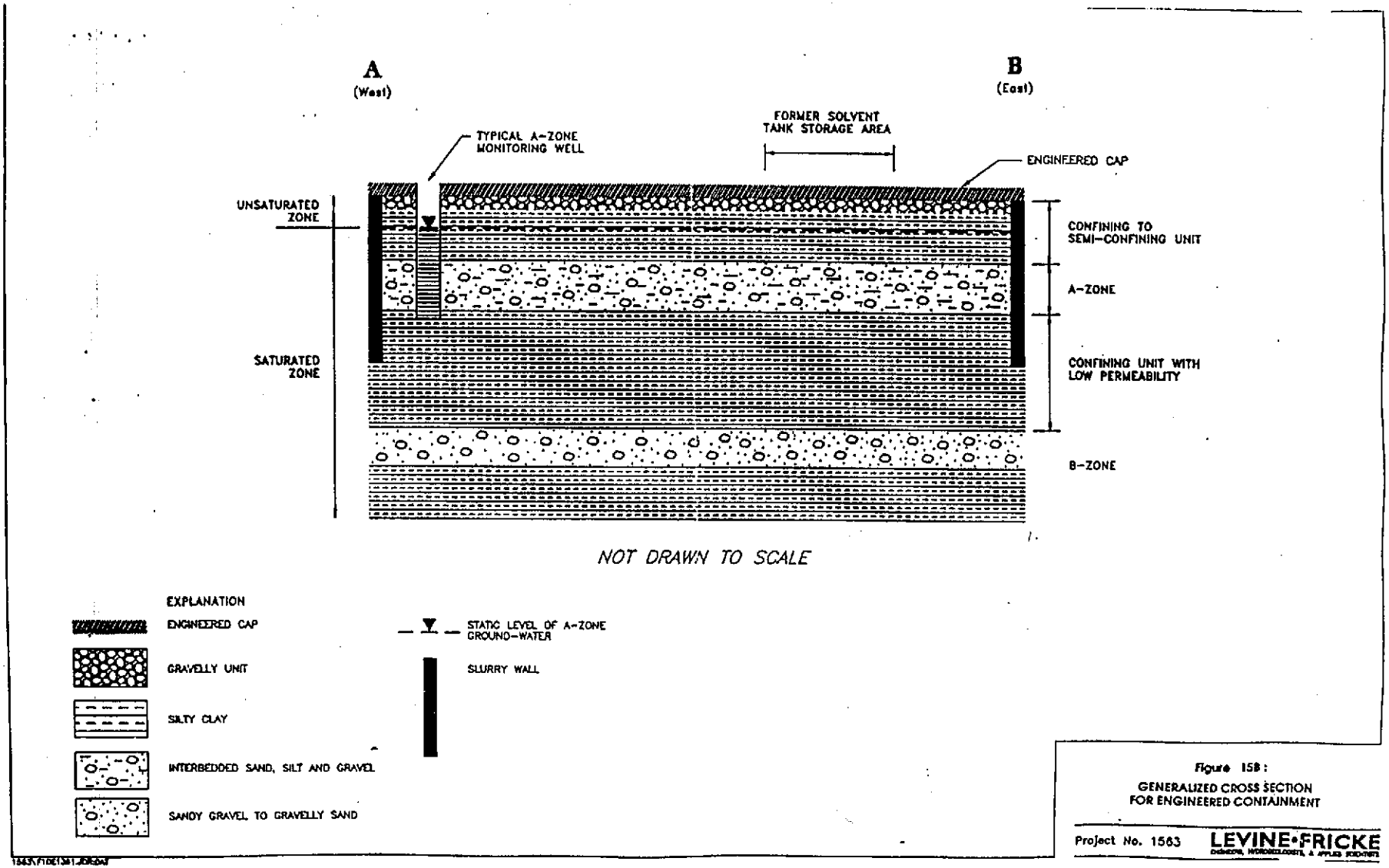


Figure 15B:
GENERALIZED CROSS SECTION
FOR ENGINEERED CONTAINMENT

Project No. 1563 LEVINE•FRICKE

LF 00577

Interim Remedial Measures
Completion Report
Sherwin-Williams Facility,
Emeryville, California
April 19, 1996
LF 2616.94-004

Prepared for
The Sherwin-Williams Company
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115

LEVINE • FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

1.0 INTRODUCTION

Levine-Fricke, Inc. ("Levine-Fricke") has prepared this Interim Remedial Measures (IRM) Completion Report on behalf of The Sherwin-Williams Company (Sherwin-Williams) for submittal to the Regional Water Quality Control Board (RWQCB). This IRM Completion Report presents the results of remedial activities conducted at the Sherwin-Williams Facility in Emeryville, California ("the Site"; see Figure 1). This report summarizes on-site observations and monitoring of remedial activities conducted by Levine-Fricke, and a review of documents provided by others. This report is limited to the IRMs implemented on site for Sherwin-Williams.

1.1 Site Background

1.1.1 Site History

The Sherwin-Williams Company owns and operates a coatings manufacturing plant located at the corner of Horton Street and Sherwin Avenue (1450 Sherwin Avenue) in Emeryville, Alameda County, California. The plant has been in operation since the early 1900s, manufacturing various types of coating products. It also produced lead-arsenate pesticides from the 1920s until the late 1940s. In 1987, Sherwin-Williams changed its manufacturing at the Site from oil-based products to water-based products. The change in manufacturing operations included the closure and dismantling of an oil tank storage facility, solvent tank storage facilities and the demolition of the former lead-arsenate pesticide manufacturing area.

1.1.2 Remedial Investigation

Several phases of soil and ground-water investigation were subsequently conducted from 1988 to 1991 to assess the nature and extent of a range of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and certain inorganic compounds (mostly arsenic and lead) detected at the Site as a result of the investigation of the tank storage and production facilities. Investigations of chemical compounds in soil were conducted in four areas of the Site: the former oil tank storage, the former solvent tank storage, a paved parking area near the former solvent tank storage, and an arsenic source area. Based on the results of these investigations, three general categories of chemicals were identified in A-zone ground water in the site vicinity that require remediation: VOCs, SVOCs (including total petroleum hydrocarbons [TPH]), and arsenic. Analytical data indicated that chemical compounds detected in A-zone ground water did not appear to have affected B-zone ground water at concentrations requiring remediation.

Cement-Bentonite Slurry Wall Construction. The C-B trench excavation and C-B slurry placement techniques were similar to the S-B construction, though the temporary placement of bentonite slurry was eliminated. The C-B slurry was formulated with portland cement and bentonite slurry, creating a material with similar fluid properties to bentonite slurry. Subsequently, the excavated soil was displaced with C-B slurry pumped directly to the trench, and the C-B slurry remained in the trench to cure as the final product.

The primary concern with C-B slurry was excavating and backfilling the trench in a timely manner, so that the cement constituent of the C-B batches were cured within the same initial set time. The QC of this property was important to the compressive strength and permeability of the C-B slurry wall. The excavated soil from the C-B trench was segregated from the excavated S-B soils, and was used as fill for site cap subgrade.

Slurry Wall Cap. After the in-place S-B and C-B backfill cured, the top 3-feet of backfill, and adjacent native soil was removed to develop a 7-foot wide trench. A woven geotextile was placed over the full 7-foot wide trench, and the trench was backfilled and compacted to grade with imported clay soil.

Surplus Excavated Trench Spoils. The slurry wall trenching operation generated surplus soil which was produced by displacement from the backfill. The surplus soil was stockpiled for future use as fill in grading for the site cap. The soil from the former lead-arsenate pesticide area (with an elevated arsenic content) was segregated as designated fill within the same area from where it was excavated.

2.1.3 Slurry Wall Quality Assurance/Quality Control

The slurry wall construction and materials' properties were monitored on site and analyzed in the laboratory for QA/QC. The quality of the constituents was monitored to verify that the designed permeability of the slurry walls would be met.

Slurry Wall Trench Excavation QA/QC. A weighted cable sounding line was constantly suspended in the trench during excavation. The sounding line was used to measure the depth of the slurry wall excavation. Also dragging the sounding line allowed for determining the uniformity and cleanliness of the key bottom.

Bentonite Slurry QA/QC. The bentonite slurry, comprised of bentonite and water, is the common constituent to the two trench backfill materials, and is the primary constituent that mitigates permeability. Density and viscosity are the two main properties of the bentonite slurry. The density indicates the bentonite to water ratio, and the viscosity, measured by the Marsh Funnel test, indicates the slurry's hydration.

The density and viscosity of the bentonite slurry were field tested, at the batch mixer and point of discharge into the trench periodically each day of production. The bentonite itself was delivered in 90- and 1,000-pound sacks with certificates of analysis.

piping that collected surface runoff and discharged into Temescal Creek. During excavation activities the ambient air was monitored by PEC with an OVM meter within the workers' breathing zone.

Prefabricated trench drains were installed in concrete on both sides of the railroad tracks to the east and south of the propane refueling dock. The trench drains were connected to the underground storm-drain conveyance piping.

The proposed site grading consisted of discrete cells draining to catch basins to collect surface-water runoff. These concrete catch basins were installed, and connected to the underground storm-drain conveyance piping. Manholes were installed at pipe inflection points.

The storm-water conveyance piping was constructed of smooth lined, corrugated polypropylene pipe (CPEP). O-ring, bell, and spigot type joints were used to reduce the infiltration potential. Pipe diameters ranged from 18 to 24 inches.

Pipes that crossed under the railroad tracks were protected by pipe casing. The casings were installed by a modified jack and bore method. The conveyance pipe was sleeved through the casing, and grouted in place.

A gate valve was installed in the main storm-drain just upstream from the discharge point to Temescal Creek. The gate valve will normally be in the open position. The gate valve can be closed in an emergency to prevent off-site discharge in the event that surface release of hazardous materials occurs.

Site Grading and Cap Construction. During construction activities, fill material was generated, and was used to regrade the Site. Displaced soils were generated during the slurry wall construction. A significant amount of subsurface demolished concrete was also generated during the cut-off wall construction.

The concrete rubble was crushed using an excavator-mounted hydraulic crushing jaw. The crusher reduced the concrete to a 4-inch-minus material. The crushed material was then blended with soil spoils, and the blended material was graded to proposed elevations.

The subsurface in the former lead-arsenate pesticide area (southern area) was known to contain elevated levels of arsenic and lead, relative to the overall Site. Therefore, the soil and concrete generated in the southern portion of the Site were segregated and contained in that area when graded.

2.2.2 Cap and Storm-Water Collection System Quality Assurance/Quality Control

Levine·Fricke performed QA/QC on the environmental aspects of the cap and storm-water collection system construction. This comprised of periodic site visits to observe construction activities, and to observe whether QA/QC testing procedures were being

MDK

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

December 17, 1993

LF 2616.00-015

Mr. David B. Gustafson
Sherwin-Williams Company
Coatings Division
101 Prospect Avenue N.W.
Cleveland, Ohio 44115

Subject: Status of Rubble and Soil Stockpile Generated During First Phase of Slurry Wall Construction, Sherwin-Williams, Emeryville, California

Dear Dave:

On September 9, 1993, Geo-Con, Inc. ("Geo-Con") completed the cement-bentonite (C-B) portion of the slurry wall being constructed at the subject site, finishing the first phase of slurry wall construction (stations 6+30 to 21+75).

Three stockpiles of excavated material were generated in this phase of work, as shown on the attached plan. The locations, constituents, and sizes of the stockpiles are as follows:

- One small stockpile of excess soil (approximately 200 cubic yards [cy]), excavated from the non-arsenic area of the Site, is located at the Site's northwest corner. Soils in this stockpile are blended with approximately 3% bentonite.

- A stockpile of rubble was generated from the arsenic area of the site, and is located adjacent to the western half of the C-B wall. It contains an estimated 650 cy of bulk debris, with an estimated 25-30 per cent soil content. The rubble consists primarily of concrete, with smaller amounts of timber and rebar.

- The third stockpile is comprised of two separate piles of soils generated from the soil-bentonite (S-B) excavation and the C-B excavation within the arsenic area. This stockpile is located on the raised platform adjacent to Horton Avenue. The southern half of the stockpile is made up of approximately 650 cy of excess soil from the S-B excavation, and is blended with 1% to 3% bentonite. The northern half of the stockpile is also approximately 650 cy in size, and comprises spoils from the C-B

1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500
Fax: (510) 652-4906

excavation mixed with an indeterminate portion of cement and bentonite.

On December 2, 1993, Geo-Con placed 20-30 mil PVC membrane covers over the two rubble and soil stockpiles generated from the arsenic area, to prevent wind and water erosion from mobilizing stockpiled soils. The covers were anchored around the perimeter of the stockpiles with lumber pallets.

Please contact me or Mark Knox, P.E., if you have any questions or comments.

Sincerely,

Michael Glaser
Construction Inspection Manager

Attachment

cc: Bob Stemm, S-W, Emeryville
Larry Mencin, S-W, Cleveland
Bill Berning, S-W, Cleveland

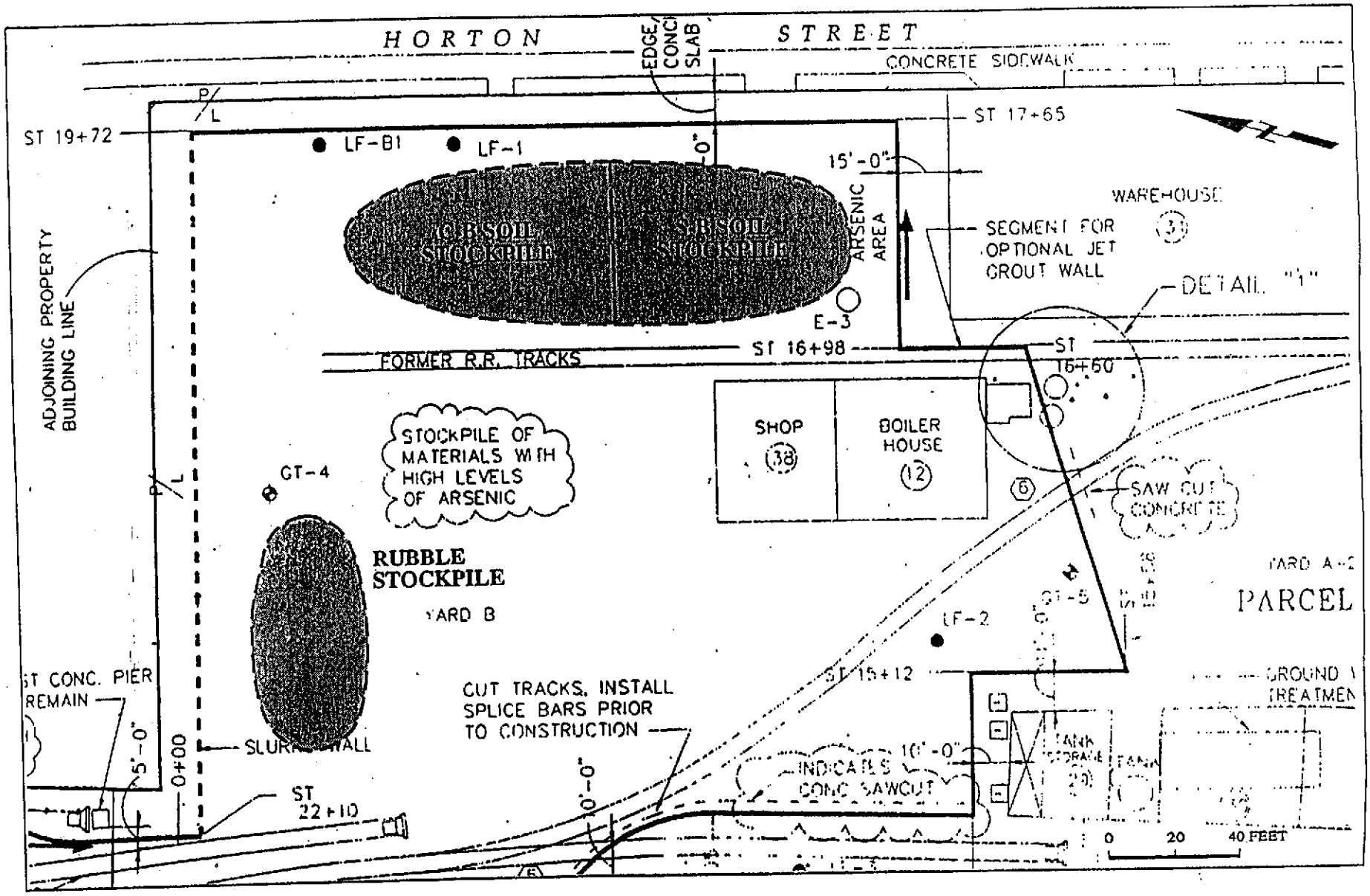


Figure 1 : STOCKPILE LOCATIONS

LF 01431

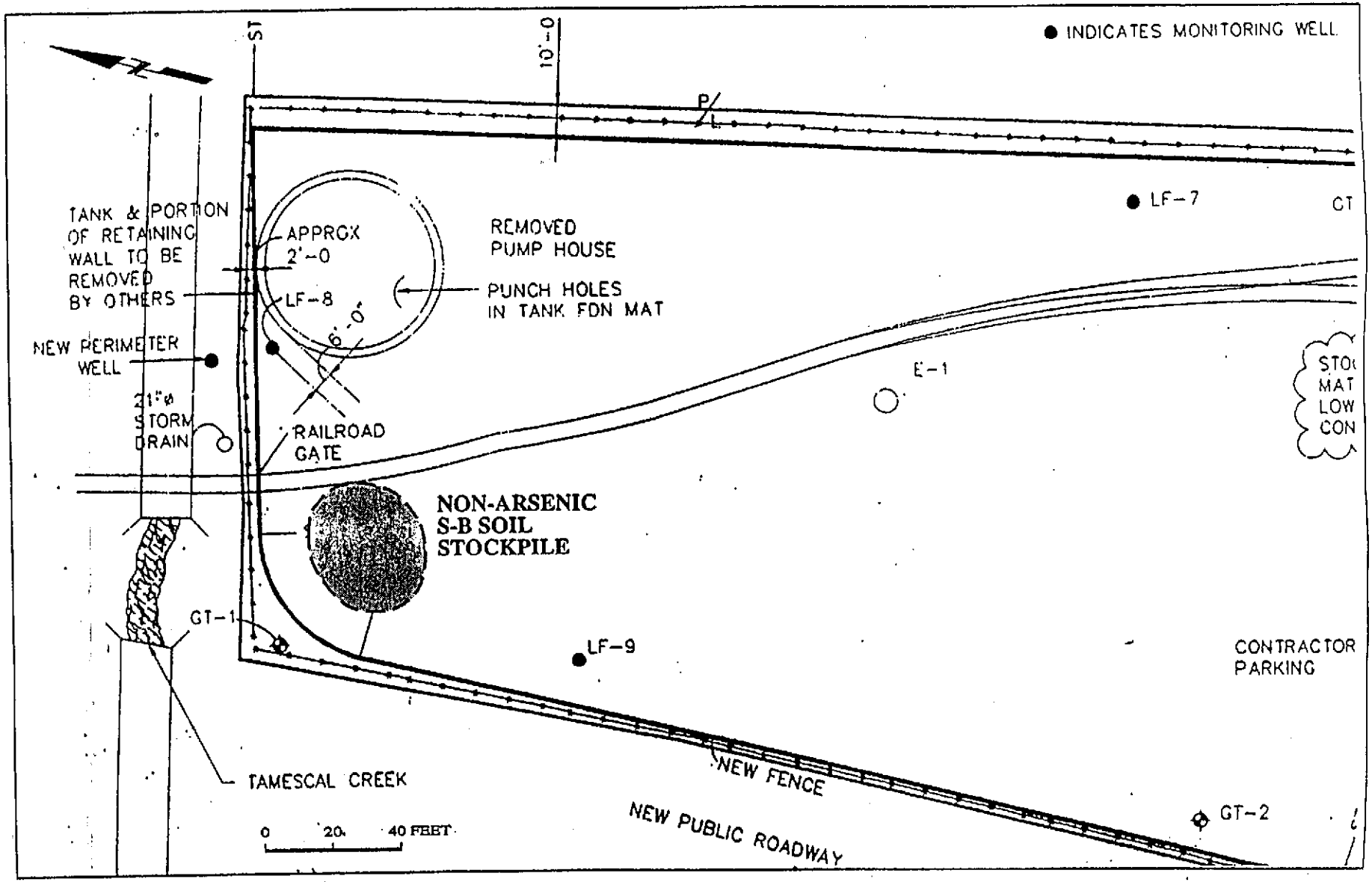


Figure 2 : STOCKPILE LOCATIONS

LF 01432

Environmental Update
September-October, 1995

C. Oakland - Site Remediation

1. Purchase of land from Southern Pacific Lines Closing did not occur at the end of September as expected. Agreement by the City of Emeryville to the new surveys (lot line adjustments) is apparently being held until a meeting is convened by them--this will include S-W, Chiron (see C5 below), the Water Board, other property owners and possibly others.

2. Slurry Wall GeoCon completed all work on S-W property in early September. Completion depends on "closing" of the R.R. property.

3. Environmental "cap". Only two contractors submitted bids, and the lowest was about $1.3 million (more than double the Budget). I requested Levine-Fricke to try and convince the Water Board (L.Feldman) that the closing was too complex and the geo-textile system unnecessary. LF achieved this, and we are out for re-quote or a simplified design. The new quotes and long term implications will be reviewed with Corporate Environmental as we make the final decision.

4. NPDES Permit
The Water Board agreed to our arguments supporting a 25 ppb arsenic clean-up level in the groundwater, rather than the impossible 2 ppb they were advocating.

5. Bad News - Arsenic on Adjacent Property (Rifkin, soon-to-become Chiron)
On 10/26, S-W (F.McHugh, L.Mencin, D.Gustafson) and LF met with J. Grover (Dir. of Facilities Development) of Chiron and two representatives from Erler and Kalinowski (Chiron environmental consultants).

They presented data showing among other things, concentrations of 2.8 to 3.5 ppm arsenic in the groundwater in the southwest triangle of the Rifkin property (which area is downgradient of our arsenic source). Chiron has 3 main concerns which are preventing their acquisition of the Rifkin property.

a) The arsenic contamination, and what S-W plans to do to remediate this (we told them we would evaluate the data they are sending us, and would act responsibly). We denied any responsibility for the VOC contamination they found, and we have data to support our position.

The Sherwin-Williams Company
Coatings Division
101 Prospect Avenue, N.W.
Cleveland, OH 44115

July 30, 1993

Mr. Lester Feldman
Environmental Specialist IV
State of California
Calif. Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

RE: Sherwin-Williams, Emeryville, CA
Site Remediation Project (See past letter dated 6/14/93)

Dear Mr. Feldman:

The following is an update on the status of this project:

1. Acquisition of Southern Pacific Railroad Property
   - Survey work (Nolte) continues and we are still hopeful to "close" prior to Sept. 30th, 1993.

2. Site Slurry Wall
   - Test mixes of the soil/bentonite met or exceeded specifications.

     Actual construction of the slurry wall by Geo•Con will begin on 8/2/93. A qualified field engineer from Levine•Fricke (L•F) will be on-site at all times to monitor air quality and compliance to the agreed to Health and Safety Plans.

3. Site Cap and Groundwater Extraction System
   - Design work for the cap is complete and a bid package, which includes detailed specifications and 10 (ten) drawings, was issued to pre-qualified bidders on 7/28/93.
   - Enclosed is the key plan drawing (Y SLO 304 L dated 7/27/93).
   - Levine•Fricke will complete specifications and obtain bids in August for the installation of the extraction wells.

4. Water Treatment Systems
   - Detailed requests for quotation were issued in mid-July for both the metals removal system and the biological treatment system. Purchase orders will be issued by mid-August.
   - I personally visited two major landfill sites in the Scranton, PA area where the preferred biological system was successfully remediating leachate at significant flow rates.

5. NPDES Permit
   Please note the 6/93 permit application submitted to you on this matter; advise if any additional information is needed.

Mr. Feldman, this is a very active project. Weather and lawyers permitting, all field work will be completed and the treatment system will be started up in the first quarter of 1994. Any questions can be addressed to myself or Levine•Fricke. I will send you a status update in September.

D.B Gustafson (RD)

David B. Gustafson
Director of Engineering

attachment

DBG/mgd
0730a.dbg

cc: M.Knox
L•F

F.McHugh

bcc: W.Antonace
W.Berning
F.Butler
J.Gerulis
C.Johnson
L.Mencin

NORTH

A

B
307 L

C
307 L

D
307 L

203.50±

CONDUIT ON EV

CREEK

FORMER TANK
FOUNDATION

85.0' (TYP.)

LF-7

PT. #2
N 4516.690
E 1000.000

℄ R.R.

HORTON STREET (60' WIDE)

EX. BLACKTOP PAVE

EX. CONC RETAINING WALL WITH CHAIN-LINK FENCE ON TOP

NEW STUB WALL

EX. CONC CURB

EX. CONC WALK

EX. GAS METER

LF-12

LF-B1

LF-1

EXISTING BUILDING #31

NEW C.I. DOWNSPOUT SHOE

E/P LINE (BUTT JOINT)

EX. TANK (RELOCATED BY OTHERS)

R.R.

EX. WALL

NEW STUB WALL

CO 2

MH

CB 6

ADJUST TO GRADE (TYP.)

#38 EXISTING BUILDING

#12

#17

NEW OVERHEAD 4" CASING BY OTHERS

CB MH

TD 5

TD 4

NEW PAINT LINE

EX. CONC

R = 50.0' (TYP.)

11.0' (TYP. OF 3)

MH 5

EX. CO

EX. WALL

30.0'

E 3

5.0'

E/P LINE (BUTT JOINT)

NEW OVERHEAD 4" CASING BY OTHERS

6.0'

20.0'

50.0'

124.0'

EX. WASH STATION

CO 1

EX. CONC

6.0'

EX. PIPE SUPPORT (TYP. OF 8)

6.00'

NEW GUARD POST (TYP. OF 7)

NEW STUB WALL

TD 3

MH 4

LF-2

NEW 10' FENCE

EX. WALL

EX. CONC RAMP

25.0'

35.0'

MH 3

#29

#30

#4

#2

EXISTING BUILDING

C. CONC BLOCK

NEW WALL

EX. CONC

TD 1

R.R.

LF-3

REBUILD SUMP SEE DRAWING Y 35 1 419 M (BY OTHERS)

TD 2

NEW OVERHEAD 4" CASING BY OTHERS

NEW WALL & PIERS

PLATFORM 16.2 TOP

A 307 L

B 307 L

C 306 L

F 307 L

G 307 L

H 307 L

J 307 L

E 305 L

T CB

CB 5

LEGEND

- Existing Fire Hydrant
- Existing Water Valve
- Existing Monitor Well;

TAMES

℄ R.R.

PT. #1
N 5000.000
E 1000.000

CB

C
308 L

LF-9

℄ R.R.

NEW SLURRY WALL
(BY OTHERS)
CONTRACTOR TO PLUG

LF-5

EX. LIGHT

E 1

E 2

215.0'

50.0'

10.0'

A

CB

LF-4

CB

EX. E/P

LF-10

LF-B3

℄

P.PB

C.PB

℄ R.R.

A

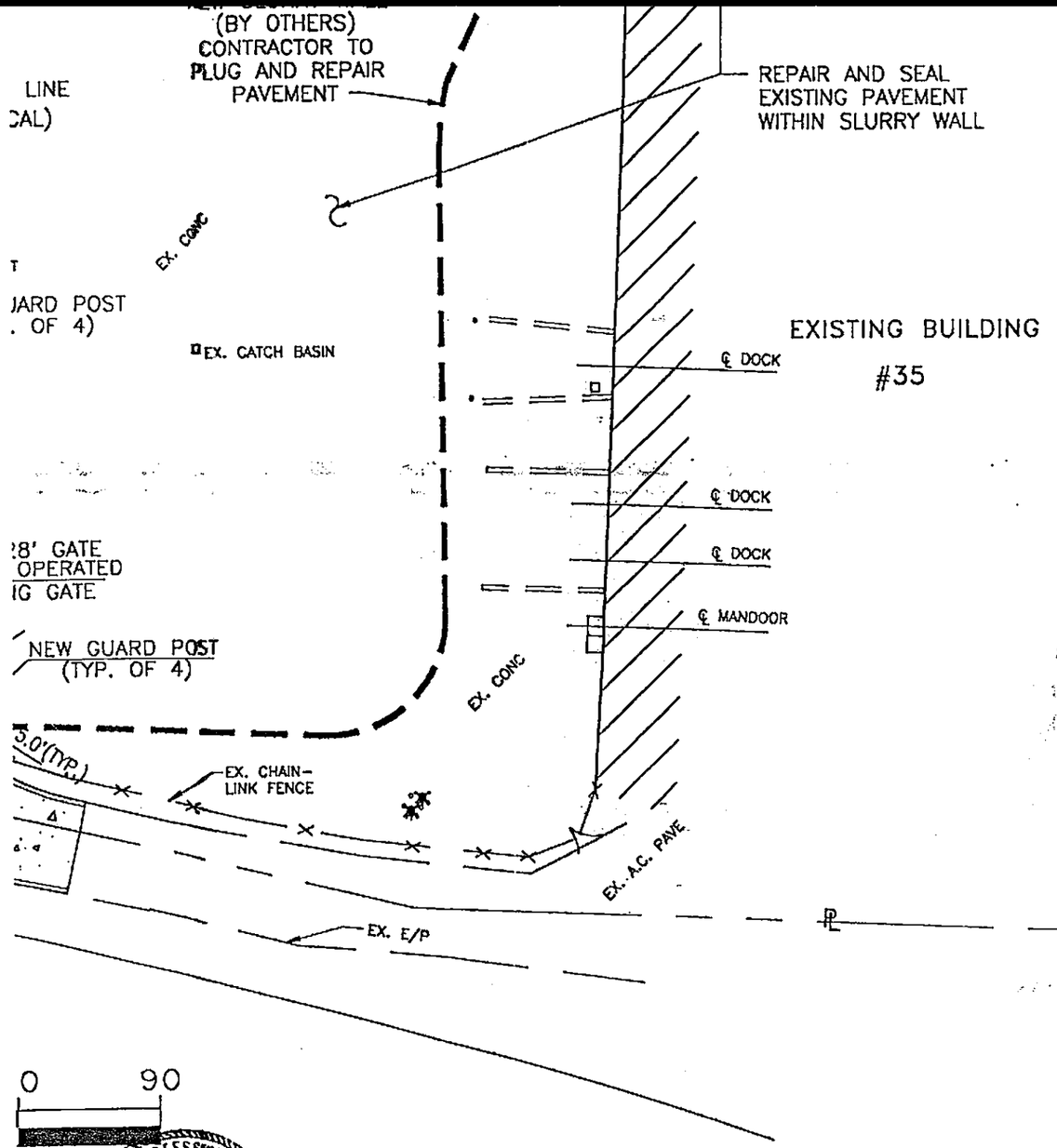
1

LAYOUT

SCALE: 1"

30 0 30

SCALE



Existing Guard Post

P.PB — New Power and Remote Control Pullbox (or Power Only)

C.PB — New Communications Pullbox

E — New Extraction Well Manhole

MH — New Storm Manhole

CB — New Storm Catchbasin

CO — New Storm Cleanout

TD — New Storm Trench Drain

New Concrete Pavement

New Heavy Duty Asphalt Pavement

New Light Duty Asphalt Pavement

NOTE:

1. ALL DIMENSIONS ARE TO FACE OF WALL, CURB OR BUILDING.

OSBORN ARCHITECTS▪ENGINEERS CLEVELAND, OHIO 10177

RECEIVED
MAR 29 1994
CITY OF EMERYVILLE
BUILDING DIVISION

REGISTERED PROFESSIONAL ENGINEER
ROBERT MARVIN NAMEN
No. C. E. 22814
CIVIL
STATE OF CALIFORNIA

DATE	BY	CHANGE DESCRIPTION	REVISION
7/27/93	McB	BID ISSUE	
10/15/93	McB	DELETE DRAINAGE & BARRIER LAYER(S)	ADD. A
3/29/94	McB	DELETE: NORTH LOT INPROVEMENTS; AUTO LOT-RAMP, GATE, STRIPING, PARKING BLOCKS, & LIGHTING; BLDG. 31 PERSON DOOR & RAMP; THE REDUCED PLAN.	1

DRAWN BY R.C.K.
CHKD BY
ENGINEER APPR.
DEPT APP.

SHERWIN WILLIAMS CONSUMER ENGINEERING

OAKLAND, CALIFORINA

ENVIRONMENTAL CAP

LAYOUT PLAN

SCALE: 1"=30'
DATE: 4/12/93

Y SLO 304 L

RECEIVED
JAN 18 1995
DCC CEP PROJECTS

The Sherwin-Williams Company
Consumer Division
101 Prospect Avenue, N.W.
Cleveland, OH 44115

Mailing Address:
P.O. Box 6709
Cleveland, Ohio 44101-1709

March 5, 1993

Mr. Lester Feldman
Environmental Specialist IV
State of California
Calif. Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Dear Mr. Feldman:

The following is a brief status report on this matter:

1. Acquisition of Southern Pacific Railroad property
   - The formal (19-page) Agreement to Purchase should be completed on or about the week of 3/15/93.
   - Survey work (Nolte) was initiated on 2/12/93 and should be complete by early April.
   - The predictions for "closing" are now mid-May to mid-June (a complex issue, involving property splits, the City of Emeryville, etc.)

2. Site Slurry Wall
   - The enclosed updated drawing shows the planned location of this wall. The railroad tracks on the East side and the S-W fire water tank will be removed.
   - The detailed specifications are complete and are a part of the bid package that will be sent to four pre-qualified contractors on the week of 3/12/93.

     Levine♦Fricke has a copy of the bid package should you be interested in seeing further details.

     The bid should be awarded by 4/12/93, after full review by S-W and L♦F. Field work should begin soon after "closing" on the R.R. property.

3. The design of the "cap" and the groundwater extraction systems are just about on schedule. We will send you the completed drawings in April.

4. By mid-March Andco will have completed their current pilot work on new samples of groundwater, to allow them to give us a process guarantee on the heavy metals removal.

5. L♦F will be working with you to secure a NPDES permit for the final effluent.

Mr. Feldman, should you have questions or need further information, please do not hesitate to call me or Mark Knox at L♦F.

David B. Gustafson
Director of Engineering

DBG/mgd
0305a.dbg

Drawing Attached
Plot Plan Y-SLO-407-L dated 2/9/93

cc: M.Knox, L♦F
F.McHugh

bcc: ~~R.Becker~~ W. Waterbury
J.Gerulis
F.Butler
L.Mencin
C. Johnson
W. Bering

SHERWIN WILLIAMS

E.H&RS
JUN 15 1993

The Sherwin-Williams Company
Coatings Division
101 Prospect Avenue, N.W.
Cleveland, OH 44115

June 14, 1993

cc - NLM
MLC

Mr. Lester Feldman
Environmental Specialist IV
State of California
Calif. Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

RE: Sherwin-Williams, Emeryville, CA
Site Remediation Project

Dear Mr. Feldman:

The following is an update on the status of this project:

1. Acquisition of Southern Pacific Railroad Property
   - The formal (19-page) Agreement to Purchase has been finalized. Southern Pacific finally signed off on this 6/3/93.
   - Survey work (Nolte) was completed in April as planned. Additional survey work for the property split will be done by the end of June.
   - Property "closing" must be completed within 120 days of 6/3/93 (i.e., September 30, 1993). We are pushing to complete this as soon as possible.

2. Site Slurry Wall
   - After competitive bidding, a Contract was awarded on April 21 to Geo°Con (David Brown, Haywood, CA) for over $500,000 to do this work.
   - Geo°Con's draft Health and Safety Plan has been reviewed by Levine•Fricke (L•F) and Sherwin-Williams. The final copy will be available at L•F by month end.
   - Geo°Con has completed a number of deep borings along the slurry wall path, and test mixes of soil/bentonite are now underway.
   - Actual slurry wall construction (estimated at five to six weeks) will begin upon the land acquisition "closing". However, we will start this work on S-W property by 9/7/93 if the "closing" approaches the 9/30/93 deadline.

3. Site Cap and Groundwater Extraction System
   - Detailed design work is approximately 70% complete; this includes the cap, new drainage system, car and truck parking, etc. I will send you key drawings in July. The construction of this cap will be delayed until completion of the slurry wall.

   - I have authorized L•F to provide a full time site engineer to oversee slurry wall installation and to conduct air monitoring.

4. Water Treatment Systems
   - Andco has completed their pilot work (heavy metals removal) and can now guarantee the system effluent to meet the NPDES permit requirements (36 ppb arsenic, max.).

   - Levine•Fricke is completing the equipment layout work for the Andco and biological treatment system. My engineering group will handle system purchasing, detailed engineering and installation.

     I'll send you key drawings when these are available.

5. NPDES Permit
   Please note my recent permit submitted to you on this matter; advise if any additional information is needed.

Mr. Feldman, we apologize for the slippage in schedule, however, I know you can appreciate the problems in working with any railroad.

David B. Gustafson
Director of Engineering

DBG/mgd
0614c.dbg

cc: M.Knox
    L•F

    F.McHugh

bcc: W.Antonace
     W.Berning
     F.Butler
     J.Gerulis
     C.Johnson
     L.Mencin

The Sherwin-Williams Company
Coatings Division
101 Prospect Avenue, N.W.
Cleveland, OH 44115

December 7, 1993

Mr. Lester Feldman
Environmental Specialist IV
State of California
CA Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

RE: Sherwin-Williams, Emeryville, CA
Site Remediation Project

Dear Mr. Feldman: was actually 2/3/93

Please refer to my last (6/14/93) report to you on this matter. The following is a current up-date on the status and proposed activities of this project:

1. Acquisition of Southern Pacific Railroad Property
   - o All survey work (Nolte) was completed and passed on to the R.R. and to the City of Emeryville by mid-September.
   - o The City of Emeryville, as of this date, has not taken final action of the "lot line adjustments", in spite of considerable efforts on Sherwin-William's part. This has delayed completion of our Remediation project. Our Plant Manager (F.McHugh) met in November with the City Manager and all of his Department Heads to discuss this and other matters related to our Remediation Plan and efforts to date.

     As requested, the City is now in receipt of the Levine•Fricke Interim Remedial Measures report of 12/20/91. We are continuing to raise concerns with the City over their continuing delay on this matter.

2. Site Slurry Wall
   - o Contract work was started by Geo-Con in early August. Within about 6 weeks, approximately 80% of the wall was installed, starting in the N.W. corner of our property and running counterclockwise to a point West and South of the Rifkin property. Air monitoring and site work logs were monitored by Levine•Fricke (L•F) on a daily basis.

- The slurry wall will be completed upon property closure with the R.R. This has been the major and unanticipated obstacle to our entire Remediation Plan Execution Schedule.

- The excess soil which was excavated for the slurry wall (and replaced by the soil/bentonite and cement/bentonite mixtures) in the Northeast section of our property has been placed on an interim basis on the existing concrete slab and covered with heavy duty PVC liner. This has been properly sealed and secured to resist the elements and prevent contaminated run-off. Sherwin-Williams proposes to place this excavated soil (having been stockpiled since mid-September) under the on-site "cap" (see Item 3 below) upon completion of the slurry wall.

- Completion of this slurry wall will take less than one week (after contractor re-mobilization), after "closure" with the R.R.

3. Site Cap and Groundwater Extraction System
   - New bids were obtained from qualified contractors based on the modified design. In late November a Purchase Order for this work was issued to Power Engineering of Palo Alto, CA. Work includes site grading, a complete new drainage system, and the subbase/asphalt/concrete "cap". Air monitoring and quality of work will be closely monitored by L.F.

   - A schedule for execution of this work will be developed--this also depends on "closure" of the R.R. property and completion of the slurry wall.

   - The three new extraction wells, and the new monitoring wells/well replacements (see L.F memo to you of October 26, 1993) will be installed under the direction of L.F upon completion of site grading by Power Engineering.

4. Water Treatment System
   - Andco and Tri-Bio drawings have been approved and equipment fabrication/control system assembly is now underway. We have delayed delivery from early January until a new schedule is firm (must complete "cap" and related concrete foundation work).

   - The Andco system has been adjusted so as to meet the new NPDES effluent limits of 25 ppb arsenic.

In closing, Sherwin-Williams requests the Board's prompt approval of the activities proposed in this letter.

I will keep you posted and will send you a new schedule when the above mentioned problems have been solved.

Sincerely,

David B. Gustafson
Director of Engineering

DBG/mgd
1207e.dbg

cc: M.Knox
Levine.Fricke

bcc: W.Antonace
W.Berning
F.Butler
J.Gerulis
C.Johnson
L.Mencin
F.McHugh

10177-200

THE OSBORN ENGINEERING COMPANY

ARCHITECTS
ENGINEERS

668 EUCLID AVENUE CLEVELAND, OHIO 44114-3056 (216) 861-2020 FAX (216) 861-3329

October 4, 1993

The Sherwin Williams Company
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115

Attention: Mr. William H. Berning
Senior Project Engineer

Re: Oakland, California
Site Work and Capping for Hazardous Waste
Request for Additional Fee to Prepare Addendum "C"
to Drawings and Specifications

Dear Mr. Berning:

Scope of work changes necessitates our asking for additional fees.

The additional items of work include: eliminate the liner layer, the drainage composite layer, sub-drains, and the rail seals. This will affect seven drawings and the specifications. Changes to the basic design will result from additional slurry wall spoils in the auto parking lot area, affecting the concrete walls and/or the grading.

The above changes will be issued as Addendum "C" to the bid issue contract documents; no later than October 14, 1993.

The amount we require to complete the project is $3,500.00. This brings the total engineering fee to $27,300.00 ($23,800.00 + $3,500.00).

Very truly yours,

THE OSBORN ENGINEERING COMPANY
R. E. Campbell, P.E.

By: _____
D. R. McBean, R.L.A.

cc: D. B. Gustafson
J. Alhajj
R. M. Namen
R. E. Campbell
D. G. Bovington
M. L. Weber
File

DRM:mtp
10177-200

SW2-001059

10177-300

THE OSBORN ENGINEERING COMPANY

ARCHITECTS
ENGINEERS

668 EUCLID AVENUE CLEVELAND, OHIO 44114-3056 (216) 861-2020 FAX (216) 861-3329

January 4, 1994

The Sherwin Williams Company
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115

Attention: Mr. William H. Berning
Senior Project Engineer

Re: Oakland, California
Site Work and Capping for Hazardous Waste
Request for Additional Fee to Prepare Change Order
to Drawings and Specifications

Dear Mr. Berning:

Design changes necessitates our asking for additional fees. The different amount of spoils to be buried at the auto parking lot area and the north lot requires the grading plan to be revised.

The above changes will be issued as Change Order No. 1 to the contract documents; no later than January 7, 1994.

The amount we require to complete the project is $1,600.00. This brings the total engineering fee to $28,900.00 ($27,300.00 + $1,600.00).

Very truly yours,

THE OSBORN ENGINEERING COMPANY
R. E. Campbell, P.E.

By: _____
D. R. McBean, R.L.A.

DRM:car
10177300

cc: D. B. Gustafson
J. Alhajj
R. M. Namen
R. E. Campbell
D. G. Bovington
M. L. Weber
File

SW2-001003

OSBORN

THE OSBORN ENGINEERING COMPANY

668 EUCLID AVENUE
CLEVELAND, OHIO 44114-3056
TELEPHONE 216 • 861-2020
FAX 216 • 861-3329

Date 1/17/94

Job No. 10177 300

Subject OAKLAND ENVIORN. CAP
CHANGE ORDER #1

TO MR BILL BERNING
THE SHERWIN WILLIAMS CO.
101 PROSPECT AVE NW
CLEVE OH 44115

SHIPPED VIA:

____ First Class Mail
____ Federal Express
____ D. H. L.
____ U.P.S. ___ Next Day ___ Ground
____ Express Mail
X By Messenger

We are attaching,
We are forwarding under separate cover [REPRODUCIBLE] complete sets of copies each of

4 SLO 305L

4 SLO 306L

For your use.
To be approved and _____ copies returned.

Reviewed with comments.
For preliminary use only.

REMARKS:

I HAVE REVISED THE GRADING TO PROVIDE FOR ADDITIONAL 'BURY' AT THE AUTO PARKING LOT AREA, AND LESS BURY AT THE NORTH LOT AREA.

C C: RE CAMPBELL
ML WEBER
J. ALIANO

File

Yours Truly,

THE OSBORN ENGINEERING CO.
RE CAMPBELL

SW2-001006

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612
464-1255

March 10, 1992
File No. 2223.09(LF)

Dave Gustafson
Director of Engineering
Consumer Division
The Sherwin-Williams Company
101 Prospect Ave., N.W.
Cleveland, Ohio 44115-1075

SUBJECT: Interim Cleanup Actions at 1450 Sherwin Avenue, Emeryville, CA

Dear Mr. Gustafson:

Staff of the Regional Board have reviewed several reports prepared by Levine-Fricke Consultants concerning pollution of the soil and groundwater at the subject facility. Staff have also reviewed the recommended alternative for interim remedial action contained in the report entitled "Evaluation of Interim Remedial Measures at the Sherwin-Williams Facility Emeryville, California" dated December 20, 1991. In addition, staff have met with you and your consultants several times to discuss soil and groundwater pollution investigation and remediation options.

Based upon the review of the site data, remediation of the soil and groundwater is necessary to protect the beneficial uses of groundwater and surface waters of the State of California. The studies have found significant metals pollution in the upper soils, principally arsenic. The studies have also found groundwater polluted with VOC's, SVOC's, arsenic and TPH.

Your proposed interim remedial action, Engineered Containment, provides for capping the site, installing a slurry wall around the site keyed into the lower permeable bay muds, and providing groundwater extraction and treatment inside of the containment structures. This engineering plan, together with deed notices, should provide for the containment of the soil and groundwater problems on-site. Monitoring of this containment would be an integral part of the pollution management strategy.

Based upon the staff review of the site history, the pollution studies, and the recommended alternative contained in the December 1991 Report, I have no objection to your proceeding with the proposed interim cleanup activities. Please provide staff with implementation time schedules, a draft of the deed notice for review and comment, and a proposed groundwater monitoring plan as soon as possible. Final cleanup standards for the site will be based upon actions taken by the Regional Board at a public hearing. Recent action by the Board on a site polluted with arsenic has been discussed with staff of Levine-Fricke and they have been provided with the summary reports on that action. The Board accepted containment options in that case, where pollution levels in soils left in place were based upon

LF 01500

health-risk based methodologies. In that case removal actions and soil fixation technologies were required. I am unable at this time to provide you with a schedule of Regional Board action on this matter which will most likely require the preparation of health-risk based analyses of final remediation options.

Please continue to coordinate this case with Lester Feldman or his staff at (510) 464-1332.

Sincerely,

Steven R. Ritchie
Executive Officer

cc: Alameda County Health Department
State of California EPA- Department of Toxics Substances Control, Berkeley