August 12, 1992
File: 10-1682-08/103

Mr. John M. Jang
Water Resources Control Engineer
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94512

SUBJECT: Report of Waste Discharge
Industrial Asphalt
52 El Charro Road, Pleasanton, Alameda County

Dear Mr. Jang:

Industrial Asphalt has requested that I respond to your letter of July 14, 1992 regarding Waste Discharge Requirements for the Industrial Asphalt groundwater cleanup project in Pleasanton, California. Attached are detailed responses to the technical issues raised in your letter. I will address the regulatory issues which have been raised.

1) Waste Discharge Requirements (WDRs) must be established for continuing and future discharges, not past discharges.

California Water Code §13260(a) makes it clear that a Report of Waste Discharge (RWD) must be filed by any person "discharging or proposing to discharge waste." The proper scope of the Waste Discharge Requirements for this project is the quality of water which will be discharged after treatment. The cleanup and abatement of the existing contamination is being accomplished under different statutory authority.

2) Alameda County is the lead agency for the remediation of this site.

It is our understanding that the Alameda County Health Care Services Agency is the lead agency for the remediation of the existing contamination. It is also our understanding that Alameda County has shared the Remedial Investigation Reports, Feasibility Studies, and other technical documents regarding this project with your agency. Through Alameda County, we have responded to every issue and concern expressed by your agency and other regulatory agencies.

As the attached responses to the technical issues raised in your letter indicate, the issues now being raised by the Regional Board have been negotiated and resolved by the lead agency's approval of work plans, remedial investigations and feasibility studies. Your letter of July 14, 1992 indicates that you are not aware of this ongoing formal review and approval process. Your letter also indicates that Alameda County does not speak for your agency regarding water quality issues associated with the remediation project.

If Alameda County is not to be considered the lead agency for the remediation aspects of this project, we must be notified immediately so that we can stop unnecessary and costly work on this project. This project is essentially at the implementation stage. The Waste Discharge Requirements are a necessary step in this implementation. If we must renegotiate issues already settled in the remedial investigation, we must essentially start from scratch.

3) **According to the annual fee schedule established in 23 CCR §2200, the WDR for this project is a Non-Chap 15 WDR, Category III Threat to Water Quality, and Category "b" Complexity.**

Your letter states that Regional Board staff considers this project to be within the I-a rated discharge category because the water which will be extracted is a "toxic waste" and potential discharge of a "toxic waste" water could cause a long-term loss of a designated beneficial use of the receiving water. This project proposes a discharge which can only be characterized as a Non-Chap 15, III-b discharge under 23 CCR §2200. The fee for such a discharge is $400.00 per year.

a. Water to be discharged is not "toxic waste."

The term "toxic waste" is not defined in the regulations (CCR) nor in the statutes (Water Code). Since "toxicity" is a characteristic of a "hazardous waste" as defined in California Health & Safety Code §25117 (See, also 22 CCR §66261), we must assume that 23 CCR §2200 is referring to waste which is hazardous due to its toxicity. We are not aware of any waste now being found in the groundwater which would be defined as a hazardous waste under 22 CCR §66261. Your letter does not identify the waste which you consider "toxic waste".

It must also be noted that the groundwater alleged in your letter to contain "toxic waste" is being <u>extracted</u> from the site. As pointed out above, WDRs should only address waste which are being or will be discharged. Since no "toxic waste" is being added to the groundwater extracted, no "toxic waste" will be discharged.

The discharge is not, therefore, a Category "a" discharge. Since there will be treatment of the extracted groundwater, this will be a Category "b" discharge on the basis of complexity under 23 CCR §2200.

b. Subchapter 15 is not applicable to the proposed discharge.

Subchapter 15 applies only to waste discharges to landfills, surface impoundments, waste piles, and land treatment facilities [23 CCR §2510(a)]. A discharge to any of these units is not the subject of the RWD for this project.

c. The proposed discharge will pose no threat to water quality.

The water will be discharged after treatment to remove very low levels of contaminants. The water will be discharged to the same aquifer from which it was drawn. The proposed discharge will meet all water quality objectives specified in the WDRs. The proposed discharge will not cause a long-term loss or impairment of a designated beneficial use of the receiving waters. It may be argued that since the treated groundwater is being reintroduced to the same aquifer from which it was extracted, even a minor impairment of the aquifer is also not possible. The only possible threat to groundwater is Category III under 23 CCR §2200.

4) **The proposed discharge will be allowed, if the Regional Board fails to act within 120 days.**

The possible outcomes of a RWD listed in your letter failed to mention the event that the Regional Board fails to take any action on the RWD. Such a failure to act within 120 days will essentially approve the proposed discharge under 23 CCR §783.

5) **The proposed discharge does not need to comply with Subchapter 15 requirements.**

As pointed out above, the RWD applies only to the proposed discharge of treated groundwater, not to extracted groundwater or waste contained at the place of release.

Furthermore, the proposed discharge will not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives. The proposed discharge will not contain any decomposable waste. The proposed discharge would, thus, fall under the definition of inert waste under Subchapter 15 which does not require discharge into a classified waste management unit.

CONCLUSION

Industrial Asphalt has spent much time and effort to comply with all requirements of the state, regional and local regulatory agencies with an interest in the remediation of this site. We hope to continue this cooperative effort through to the conclusion of this project. However, Industrial Asphalt must be given clear and timely comments from all interested agencies and unequivocal approvals of work completed to the satisfaction of the lead agency. Without the good faith efforts of all the regulatory agencies, remediation of the site may continue to be delayed. Failure to complete or a delay in the implementation of a remedial action at the site will serve no one.

We look forward to our meeting on August 19 with the Regional Board and Alameda County Health Care Services. We hope that your letter of July 14 and our response will provide a format for our discussion which will resolve all outstanding issues.

Sincerely,

KLEINFELDER, INC.

William Marlin

William Marlin, J.D., R.E.A.
Senior Regulatory Consultant

David K Behrens

David Behrens, P.E.
Senior Project Manager

WM:DB:sw

Attachment

cc: Dennis Hunt - Industrial Asphalt
Dwight Beavers - Industrial Asphalt
Ravi Arulananthum - Alameda County Department of Environmental Services

ATTACHMENT A

Attachment A responds to the July 14, 1992, letter from the RWQCB concerning information to be submitted with application Form 280, Application for Facility Permit/Waste Discharge. Each of the following sections is identified alphanumerically. These sections correspond to the sections of the RWQCB letter having the same identification. All sections except Section 1 are responded to in the following pages. Section 1 is responded to in the cover letter.

This attachment relies extensively on documents previously submitted to the Regional Water Quality Control Board (RWQCB) and other regulatory agencies. Of particular significance are Kleinfelder (1990a), "Remedial Investigation / Remedial Action Plan, Industrial Asphalt, Pleasanton, California," dated January 15, 1990; Kleinfelder (1990b), "Remedial Investigation (RI) Report for Industrial Asphalt, Pleasanton, California," dated December 28, 1990; Kleinfelder (1991), "Feasibility Study for Soil and Ground Water Remediation, Industrial Asphalt, Inc., 52 El Charro Road, Pleasanton, California," dated August 14, 1991, and; Kleinfelder (1992c), "Ground Water Flow Model, Industrial Asphalt, Pleasanton, California," which is currently in agency review.

2.0 SITE BACKGROUND

The site history and background are thoroughly discussed in Kleinfelder, 1991, pages 4 through 6. The objectives for remediation of the Industrial Asphalt site are:

1) to reduce the mobility of petroleum hydrocarbons and PCBs present in the subsurface; and,

2) to reduce the amount of petroleum hydrocarbons and PCBs present in the subsurface (Kleinfelder 1991, p 27).

3.0 HYDROGEOLOGIC ASSESSMENT

3A) LOCAL GEOLOGIC CONDITIONS

Geologic conditions underlying the site are described in detail in Kleinfelder 1990b, pages 22 through 24. Geologic cross-sections illustrating the geologic conditions beneath the site are also presented in Kleinfelder 1990b as Plates 8 and 9 (eight total cross sections). Cross-sections indicating the distribution of hydrocarbon and PCB impact beneath the site are presented in Kleinfelder 1991, Plates 8 and 9. Boring logs for ground water monitoring wells and soil borings have been presented in the following reports: MW-1, MW-2, and MW-3 -- Kleinfelder 1987; MW-4 through MW-8 -- Kleinfelder 1988; MW-9, MW-10, and MW-11 -- Kleinfelder 1989; MW-13 through MW-16 and SB-1 through SB-1 -- Kleinfelder 1990b (Appendix A). More recently ten ground water extraction wells have been installed at the site. Boring logs for these wells are currently being prepared for submittal to the Alameda County Environmental Health Department and RWQCB. The attached Table 1 summarizes the construction of the monitoring and extraction wells at the site.

In general, the site is described as being underlain by approximately sixty feet of fill material consisting of brown silty clay to clayey silt with isolated gravel clays. No free water was encountered in this interval. Below about sixty feet below grade to the maximum depth explored (approximately 130 feet) are predominantly silty gravel layers with variable amounts of fine to medium sand and clay. First water was encountered in this layer at depths below grade ranging from 90 to 110 feet in intervals that appeared to contain lesser amounts of fine grained material. In three wells, the water bearing zone was subdivided by an apparently discontinuous layer of brown silt to clayey silt up to four feet thick. Overall, the cited reports indicate that the site specific geological conditions are similar to those described from the surrounding region.

3B) AQUIFER PROPERTIES

The first encountered ground water beneath the surface of the site has generally been observed in silty gravelly materials at depths ranging from 75 to 95 feet below grade (section 3.1). The highest levels were observed in 1987 (Kleinfelder, 1990b, p 24).

This water bearing zone appears to be unconfined. This zone averages about thirty feet thick. Observed ground water gradients have generally been towards the northeast, occasionally with a northerly to northwesterly component beneath the western portion of the site. During March 1992 these gradients varied between 0.007 and 0.014 feet per foot (Kleinfelder 1992b). Using the transmissivity data used for the ground water modeling (Kleinfelder, in preparation), ground water velocities would vary between 0.036 and 0.073 feet per day.

Because deeper water bearing zones beneath the site have not been penetrated, vertical ground water gradients are unknown. Regionally, piezometric surfaces of deeper water bearing zones are 10 to 100 feet lower than the shallower zone, implying a net downward vertical gradient. Thick clay layers (up to 50 feet thick) separating the water bearing zones should reduce the potential for vertical migration of hydrocarbons and PCBs, however (Kleinfelder 1991b, pp 21, 24).

The transmissivity and storativity of the water bearing zone was estimated from data gathered during a pump test of monitoring well MW-13. Values for transmissivity ranged from 1,500 to 4,200 gallons per day per foot (gpd/ft), averaging 2,500 gpd/ft. Storativity values ranged from 8×10^{-2} to 9×10^{-4} averaging 1.7×10^{-3} (Kleinfelder 1990b, pp 34-39).

An estimate of an inferred capture zone based on the data above indicated that a single ground water extraction well would not be sufficient to capture the entire area apparently containing contaminants. Numerical modelling indicated that ten ground water extraction wells would be necessary to adequately control migration of contaminants beneath the site, including those needed for potential shifts in ground water gradients (Kleinfelder, 1992c). These extraction wells were installed in June, 1992, following verbal approval of the Feasibility Study for the site (Kleinfelder, 1991) by the RWQCB.

3C) SURFACE WATER INTERACTIONS

Surface water in the immediate vicinity of the site may be found in two locations: a desiltation pond along the northern margin of the site, and Arroyo Mocho, to the east of the site. Although water elevations in the desiltation pond are commonly lower than elevations of ground water beneath the site, ground water modelling has indicated there is very little communication between the two (Kleinfelder, 1992c). Interaction between the pond and the ground water is presumably restricted by fine silt deposited in the desiltation pond.

Arroyo Mocho is an ephemeral stream located to the east of the site. The bottom of this stream is no more than 15 feet below the surrounding surface. Ground water at the site in recent years has been present at a depth approximately 90 feet below grade (Kleinfelder, 1992a). Surface water in Arroyo Mocho is therefore at least 75 feet above the observed ground water beneath the site. As a result, ground water beneath the site cannot be expected to have an impact on the surface water in the arroyo.

Water in Ponds R11 and R14 have direct communication with ground water. These ponds were constructed explicitly for the purpose of recharging ground water that is pumped from Jamieson working pits. It is unlikely that discharge of ground water from Industrial Asphalt would have a detectable impact on ground water under R11 and R14. Please refer to Section 4.

3d) OTHER SITE FEATURES

Site Topography

The topography of the site is nearly flat with surface elevations ranging from about 375 to about 380 feet above sea level. The site slopes gently from northeast to southwest with a grade of approximately 0.5 percent. There are no drainage or irrigation structures at the site. Rainfall either flows as sheet runoff along the local surface gradient or ponds on the surface until it evaporates. The area is primarily covered by asphalt pavement and structures. Surface infiltration rates have not been estimated but it is unlikely that rainfall infiltrates from the Industrial Asphalt site. The asphalt pavement is at least one foot thick, is well-compacted by heavy truck traffic, and is sealed by dust embedded in the surface.

Average Annual Rainfall

Annual rainfall for Pleasanton and Livermore for the past ten years was provided by ACFCWCD. It appears that rainfall at Industrial Asphalt would nearly coincide with rainfall levels with Pleasanton, i.e., 10-year average rainfall close to 20.39 inches. Please refer to table of Average Annual Rainfall included in Attachment A of the discharge application.

Flooding Potential

Information available to Kleinfelder at the time of this application was not sufficient to infer the flooding potential of this site. It is however, believed to be low with relatively shallow depths of inundation (less than one foot). Butch Kelly of Jamieson has not recalled flooding at Industrial Asphalt during the 26 years he has worked in the immediate vicinity (personal communication, July 27, 1992).

Nearby Wells

A total of 23 wells were identified within a one mile radius of the site during a well canvass completed in 1990. Six of these wells were within one-half mile of the site not including wells installed at the site. Locations and uses of these wells were discussed in Kleinfelder 1990b, pp 25-26.

4.0 CONTAMINANT ASSESSMENT

Chemical compounds and mixtures detected at this site during the past year total petroleum hydrocarbons as diesel (TPH(d)), total petroleum hydrocarbons as waste oil (TPH(wo)), oil and grease, total hydrocarbons, polychlorinated biphenyl compounds (PCBs) and the volatile organic compounds benzene, ethylbenzene, total xylenes, 1,1-dichloroethane, and vinyl chloride. Of these, petroleum hydrocarbons and PCBs were the most prevalent.

4A) PRODUCT SHEEN AND CHEMICAL CONCENTRATIONS

Ground water monitoring at the site has been ongoing since 1987 (Kleinfelder 1990a, p 21). The maximum observed thickness of floating product layers has ranged from 14 feet in monitoring well MW-2 in August 1987, to 2.4 feet in monitoring well MW-8 in July 1988. Samples of the floating product submitted for laboratory analysis were characterized as diesel.

No measurable floating product has been observed in any of the wells at the site since January 1989 (Kleinfelder 1990a, p 21). Product sheen has been observed in monitoring wells MW-1, MW-2, MW-3, and MW-8 during the first two sampling rounds of 1992 (Kleinfelder 1992a, 1992b).

Current concentrations of compounds dissolved in the ground water beneath the site are also discussed in Kleinfelder 1992a and 1992b. Please refer to those documents.

4B) EXTENT OF GROUND WATER CONTAMINATION

The extent of ground water contamination beneath the site has been described and illustrated in the Remedial Investigation Report (Kleinfelder 1990b, pp 30-31 and Plate 11) and the Feasibility Study (Kleinfelder 1991, pp 13 to 14 and Plates 11 and 12). The extent of PCB impact is smaller than and lies within the limits of the TPH(d) impact. Laboratory reports used to prepare the cited plates are referenced in the above documents.

4C) EXTENT OF SOIL CONTAMINATION

The extent of soil impact beneath the site has been described and illustrated in the Remedial Investigation Report (Kleinfelder 1990b. pp 29-30 and Plate 10) and the Feasibility Study (Kleinfelder 1991, p 13 and Plates 6 through 10). As with the ground water, the extent of PCB contamination lies within the limits of the TPH(d) impact. Laboratory reports used to prepare the cited plates are referenced in the above documents.

4D) CHEMICAL CHARACTERISTICS OF PROCESS WATER

While the recently installed ground water extraction wells have not been tested for compounds of concern at this site, the concentrations anticipated for the process water are estimated from samples collected from existing monitoring wells at the site. Please refer to the following sections on tests for Petroleum Hydrocarbons, Volatile Organic Compounds, and Base/Neutral-Acid Extractables.

EPA Priority Pollutant Elements

Laboratory analysis for the EPA priority pollutant elements has never before been requested for this site or considered necessary by the Alameda County Environmental Health Department which is the lead agency for this site.

Petroleum Hydrocarbons

Hydrocarbon compounds present in ground water beneath the site have been quantified as TPH(d), TPH(wo), oil and grease and total hydrocarbons. Kleinfelder (1992b) tabulates the results of laboratory analyses for these constituents for the last four quarterly sampling rounds. Based on those results, Kleinfelder anticipates an influent petroleum hydrocarbons concentration of 100 mg/l based on an average of maximum concentrations found since 1987. This is a conservative (high) estimate. The concentration will be reduced to 10 mg/l in the oil/water separator and to discharge levels by granular activated carbon. With proper operation of the proposed remediation system, no detectable concentrations of petroleum hydrocarbons should be present in the treated effluent.

Volatile Organic Compounds

Laboratory analysis for volatile organic compounds using EPA Test Method 8240 has never before been requested by the lead regulatory agency for this site.

Volatile organic compounds present in ground water beneath the site have, however, been quantified using Modified EPA Test Methods 8020 for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and (occasionally) 8010 for halogenated volatile compounds as per ACDHS requirements. The results of laboratory analyses for these compounds are tabulated for the last four quarterly sampling rounds. Compounds detected during the last four quarters include, benzene, ethylbenzene, total xylenes, 1,1-dichloroethane, and vinyl chloride. One or more of these compounds have been detected at low levels on occasion in monitoring wells MW-2, MW-3, and MW-8. Because concentrations have been so low and infrequent, monitoring for these compounds is no longer required. Kleinfelder anticipates influent volatile organic compound concentrations of less than 5 μg/l. With proper operation of the proposed remediation system, no detectable concentrations of volatile organic compounds will be present in the treated effluent.

Base/Neutral - Acid Extractable and Pesticide Compounds (EPA Test Method 625)

As with the above, laboratory analysis for base/neutral - acid extractable and pesticide compounds has never been requested for this site. EPA Test Method 625, however, detects a greater range of PCB compounds than EPA Test Method 8270 (see next section). PCB compounds at this site have instead been detected using EPA Test Method 8080. Kleinfelder (1992b) tabulates the results of laboratory analyses for these compounds for the last four quarterly sampling rounds. Kleinfelder anticipates influent PCB compound concentrations of 5 μg/l. With proper operation of the proposed remediation system, no detectable concentrations of PCB compounds should be present in the treated effluent.

Semi-Volatile Compounds (EPA Test Method 8270)

Laboratory analysis for semi-volatile organic compounds using EPA Test Method 8270 has never before been requested or considered necessary by the lead regulatory agency for this site.

5.0 PROPOSED TREATMENT SYSTEM

5A) LOCATION OF REMEDIATION SYSTEM

A site map showing the locations of the monitoring wells, extraction wells, treatment system, infiltration pond and latitude and longitude is included as Plate 1 in Attachment A to the waste discharge application.

5B) DESCRIPTION OF POND(S)

Dimensions and construction details of the reinfiltration ponds (R-11 and R-14) are described in Attachment A to the waste discharge application. The depths of these ponds do not exceed the largest surface dimension and so are not required to comply with the Underground Injection Control Program (40 CFR Part 144).

5C) FLOW RATES

The maximum flow rate to the system is estimated to be 50,400 gallons per day. The average flow rate is estimated to be 31,680 gallons per day. These flow rates are based on the results of the pumping test described in the Remedial Investigation Report (Kleinfelder, 1990b).

5D) DESCRIPTION OF PROPOSED TREATMENT SYSTEM

A description of the proposed treatment system and the piping and instrumentation diagram are included in Attachment A of the waste discharge application.

5E) OPERATIONS AND MAINTENANCE MANUAL

An Operations and Maintenance (O&M) Manual will be drafted after the system design is completed and equipment is purchased and installed. The manual will be finalized during the first year of operations. The manual will include operations manuals provided by equipment supplies, as-built drawings, and supplementary instructions.

A tentative schedule for sampling of influent, process, and effluent water is presented in Table 2.

5F) CONSTRAINTS ON OPERATION OF TREATMENT SYSTEM

Identified constraints on the treatment system and ponds are as follows:

- Treatment rate is dependent upon ground water flow;
- Discharge of treated water must comply with discharge limits and reporting requirements; and,
- Construction of the treatment system and piping should be performed to minimize disruption of Industrial Asphalt or Jamieson operations.

5G) POTENTIAL ADDITIONS TO TREATED WATER

Ground water treatment is a carbon adsorption-based system as described in Section 5d. The system does not include additions of chemical compounds or bacteria to the ground water. Nothing is expected to be discharged into Ponds R11 and R14 that would not otherwise be found in ground water discharged to the ponds from Jamieson. In that Jamieson has discharged ground water to these ponds for a decade with no apparent reduction in percolation rate, it does not appear that precipitates are occurring or would occur at a significant level from Industrial Asphalt's treated ground water.

6.0 PROPOSED GROUND WATER MONITORING STRATEGY

6A) MONITORING POINT LOCATIONS

The proposed ground water monitoring program will use the existing monitoring well network installed at the site. Locations of monitoring wells currently installed at the site area shown on the attached Plate 1.

No ground water monitoring wells are anticipated for the area around the discharge pond for the following reasons:

- Multiple dischargers to the pond make it impossible to separate mounding effects due to treatment system discharge from mounding effects due to other discharges; and
- Effluent water quality will be monitored at the treatment system.

Kleinfelder has monitored the affected ground water since 1987. Data collected during this period suggests that the ground water gradient and direction is influenced by several local recharge and discharge activities associated with the gravel industry. These influences include ground water extraction or drainage in many areas and ground water reinfiltration in other areas. A study performed by Danskin and Gorelick (Danskin and Gorelick, 1985) identified infiltration of creek water as a strong influence on the local ground water system. According to Mr. David Lunn, Water Resources Engineer with ACFCWCD, water from the South Bay Aqueduct comprises the great majority of the water in Arroyo Mocho. These influences have apparently caused the contaminants to migrate over a larger area than would likely be affected in a region devoid of these influences. Placement of the extraction wells throughout the affected area was based on computer modelling using the historic monitoring well data which provided gradients, water level elevations, and concentrations (Kleinfelder 1992c). The number of extraction wells, their placement, and the ground water extraction rates are designed to compensate for anticipated influences on the affected ground water by the recharge activities. Because infiltration from Ponds R-11 and R-14 has not been specifically identified as a significant influence, and because of the distance to the ponds (1,200 feet and 2,000 feet, respectively), reinfiltration of the treated water at a maximum design flow of 35 gpm at Pond

R11 should not provide a driving force leading to dispersal of affected ground water away from the site.

6b) MONITORED PHYSICAL AND CHEMICAL PARAMETERS

Monitored physical parameters will include those routinely collected by Kleinfelder. These include field measurements for temperature, specific conductance, salinity, pH, turbidity, and depth to water.

Monitored chemical parameters will be the same as currently specified for the existing quarterly monitoring program. Specifically, these include the following:

Detection Parameter	Method	Limit
Total Petroleum Hydrocarbons as Diesel (TPH(d))	GCFID (extraction)	0.05 mg/L
Total Petroleum Hydrocarbons as Waste Oil (TPH(wo))	GCFID (extraction)	0.1 mg/L
Polychlorinated Biphenyl Compounds (PCBs)	EPA Test Method 8080	0.5 ug/L
Total Petroleum Hydrocarbons	SM 5520E	0.5 mg/L

All samples will be collected following chain of custody procedures and submitted to a State-certified analytical laboratory.

Frequency of ground water monitoring will follow the currently established quarterly monitoring schedule. Quarterly monitoring rounds are scheduled for the months of February, May, August, and November. In addition, during the first three months of treatment system operation, depth to water measurements will be taken in all monitoring wells at the site following the same schedule as for sampling the treatment system. These measurements will allow an assessment of the effectiveness of ground water extraction by the treatment system.

The analytical results will be tabulated. When appropriate, the results of selected parameters will be graphed to indicate temporal trends or contoured to estimate the current extent of subsurface distribution, i.e., a plume map. Changes in the configuration of the plume would likely allow discrimination between control and cleanup in contrast to dispersal. Assessing the cause of concentration changes cannot be forecast at this time nor until the treatment system is in operation and data is collected from the ground water monitoring wells.

6C) CORRECTIVE ACTION PLAN

If the effluent limits are exceeded, the system will be shut down immediately upon receipt of laboratory analyses indicating this condition. The system will be assessed and appropriate measures taken to correct system performance. The most likely cause of concentrations above the discharge limits is depletion of the adsorbent capacity of the granular activated carbon. However, the likelihood of this occurrence is low because of the design features described in Attachment A to the waste discharge application.

Should petroleum hydrocarbons or PCBs be detected in the effluent, water in discharge pond R11 would then be tested using an integrated depth sampling device to test for these compounds.

8.0 STORM WATER AND AFFECTED SOILS

Remediation of the site, as described in the Feasibility Study (Kleinfelder, 1992) does not include the excavation or other treatment of affected soils. No affected soils are or will be exposed to storm water or other sources of water that could create contaminated runoff. Runoff to the receiving ponds would originate from the pond banks. The ponds are remotely located away from human activities, structures, or operations.

9.0 WATER BALANCE FOR INFILTRATION PONDS R-11 AND R-14

This information is included in Attachment A to the Application for Facility Permit/Waste Discharge.

10.0 LEACHABILITY STUDY

As per Kleinfelder's telephone conversation with Mr. John Jang of the RWQCB on July 23, 1992, a leachability study will not be required until site closure is being considered.

11.0 RESIDUAL SOIL CONTAMINATION

An assessment of residual soil contamination, including the extent, fate and transport, and health risks forms an extensive part of the Feasibility Study for the site (Kleinfelder, 1991). The results of that study are briefly summarized below.

11A) PREVIOUS REMEDIAL ACTIONS

Residual soil contamination will be left in place beneath the site as described in the Feasibility Study. Previous remedial actions at the site include removal of approximately 2,400 cubic yards (cy) of hydrocarbon and PCB contaminated soil during three excavation events between September 1987 and January 1991. An estimated additional 85,000 cy of hydrocarbon impacted soil and 950 cy of PCB impacted soil remain in place (Kleinfelder 1991, p 13). The remaining affected soils appears to be in the vadose zone above affected ground water. Affected ground water has migrated and ground water levels have fluctuated, leaving residual compounds in vadose zone soils, about 75 feet below grade.

11B) COMPLIANCE WITH TITLE 23, SUBCHAPTER 15, SECTION 2511

Section 11B is addressed in Section 5 of the cover letter.

11C) RISK OF RESIDUAL CONTAMINATION

The risks of residual contamination remaining at the site (subsections 11c.i through v) were fully considered in the approved Feasibility Study for the site (pp 15 - 31). Because of the depth of the residually contaminated soil and the limited migration pathways to human receptors, the risk of the residuum was considered insignificant.

12.0 REFERENCES

Alameda County Flood Control and Water Conservation District, 1991. "Memorandum of Mining Area Annual Report, 1991 Water Year." ACFCWCD Zone 7, Water Resources Management, 5997 Parkside Drive, Pleasanton, California 94588 November 27, 1991.

Danskin and Gorelick, 1985. "A Policy Evaluation Tool: Management of a Multiaquifer System Using Controlled Stream Recharge," Water Resources Research, Vol. 21, No. 11, pp 1731-1747. November, 1985.

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Kleinfelder, 1991, "Feasibility Study for Soil and Ground Water Remediation, Industrial Asphalt, Inc., 52 El Charro Road, Pleasanton, California," Kleinfelder, 2121 North California Boulevard, Suite 570, Walnut Creek, California, August 14, 1991.

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Kleinfelder, 1992c "Draft Ground Water Flow Model, Industrial Asphalt, Pleasanton, California," Kleinfelder, 2121 North California Boulevard, Suite 570, Walnut Creek, California.

Lunn, David, 1992. Personal communication with Mr. David Lunn, Water Resources Engineer, ACFCWCD, 5997 Parkside Drive, Pleasanton, California 94588. July 27, 1992.

DRAFT

TABLE 1
MONITORING AND EXTRACTION WELL CONSTRUCTION DATA
INDUSTRIAL ASPHALT FACILITY

Well No.	Total Depth[1] (ft)	Top of Casing[2] (ft)	Screen Interval[3] (ft)	Well Diameter[4] (inch)	Slot Size (inch)	Screen/Casing Material[5]	Top of Filter Pack[3] (ft)	Type of Filter Pack	Depth of Well Seal[5] (ft)	Completion Date
MW-1	88	379.41	58-88	2	0.020	PVC/PVC	56	#3	53	JUNE 1987
MW-2	90	379.80	65-90	4	0.020	PVC/PVC	62	#3	59	JULY 1987
MW-3	90	378.54	65-90	4	0.020	PVC/PVC	62	#3	59	JULY 1987
MW-4	95	376.26	55-95	4	0.020	PVC/PVC	52	#3	48	MARCH 1988
MW-5	110	382.55	57-107	4	0.020	PVC/PVC	53	#3	49	MARCH 1988
MW-6	109	379.15	69-109	4	0.020	PVC/PVC	64	2/12	61	JUNE 1988
MW-7	109	378.94	69-109	4	0.020	PVC/PVC	64	#3	61	JUNE 1988
MW-8	109	378.56	69-109	4	0.020	PVC/PVC	64	2/12	61	JUNE 1988
MW-9	108	377.40	78-108	4	0.020	PVC/PVC	75.4	2/12	70	JULY 1989
MW-10	111	378.04	81-111	4	0.020	PVC/PVC	78.2	2/12	73	JULY 1989
MW-11[6]	75	379.02	55-75	2	0.040	PVC/PVC	53	LA	51	JULY 1989
MW-14	114.5	380.09	99.5-114.5	4	0.020	PVC/PVC	96.5	2M	94	JUNE 1990
MW-15	117	378.12	97-117	4	0.020	PVC/PVC	94	2M	91	JUNE 1990
MW-16	110	379.65	90-110	4	0.020	PVC/PVC	86.5	2M	83.5	JUNE 1990
EW-1	122	-	81-121	6	0.040	PVC/PVC	77	#8	74	MAY 1992
EW-2	122	-	81-121	6	0.040	PVC/PVC	76.5	#8	73.5	MAY 1992
EW-3	122	-	79-119	6	0.040	PVC/PVC	76.5	#8	73.5	MAY 1992
EW-4	122	-	81-121	6	0.040	PVC/PVC	78	#8	75	MAY 1992
EW-5	122	-	77-117	6	0.040	PVC/PVC	72.5	#8	69	MAY 1992
EW-6	122	-	81-121	6	0.040	PVC/PVC	77.5	#8	74	MAY 1992
EW-7	122	-	81-121	6	0.040	PVC/PVC	76	#8	73	MAY 1992
EW-8	122	-	81-121	6	0.040	PVC/PVC	76.5	#8	73.5	MAY 1992
EW-9	122	-	81-121	6	0.040	PVC/PVC	76.5	#8	74	MAY 1992
EW-10	122	-	81-121	6	0.040	PVC/PVC	77	#8	74	MAY 1992
EW-11[17]	116	380.21	76-116	6	0.045	SS/PVC	64	MA	62	AUGUST 1990

NOTES:

1 Total depth of borehole below ground surface
2 Elevation in feet above mean sea level (USGS Datum)
3 Depth below ground surface
4 Nominal casing/screen diameter
5 PVC - Polyvinyl Chloride plastic (Schedule 40), SS - stainless steel
6 Well abandoned on 8 August 1990
7 Previously designated MW-13
8 Not yet surveyed

MW Monitoring Well
EW Extraction Well
MA Medium aquarium sand
#2M No. 2 Monterey sand
#3 No. 3 Monterey sand
#8 #8 Mesh sand
LA Lonestar aquarium sand

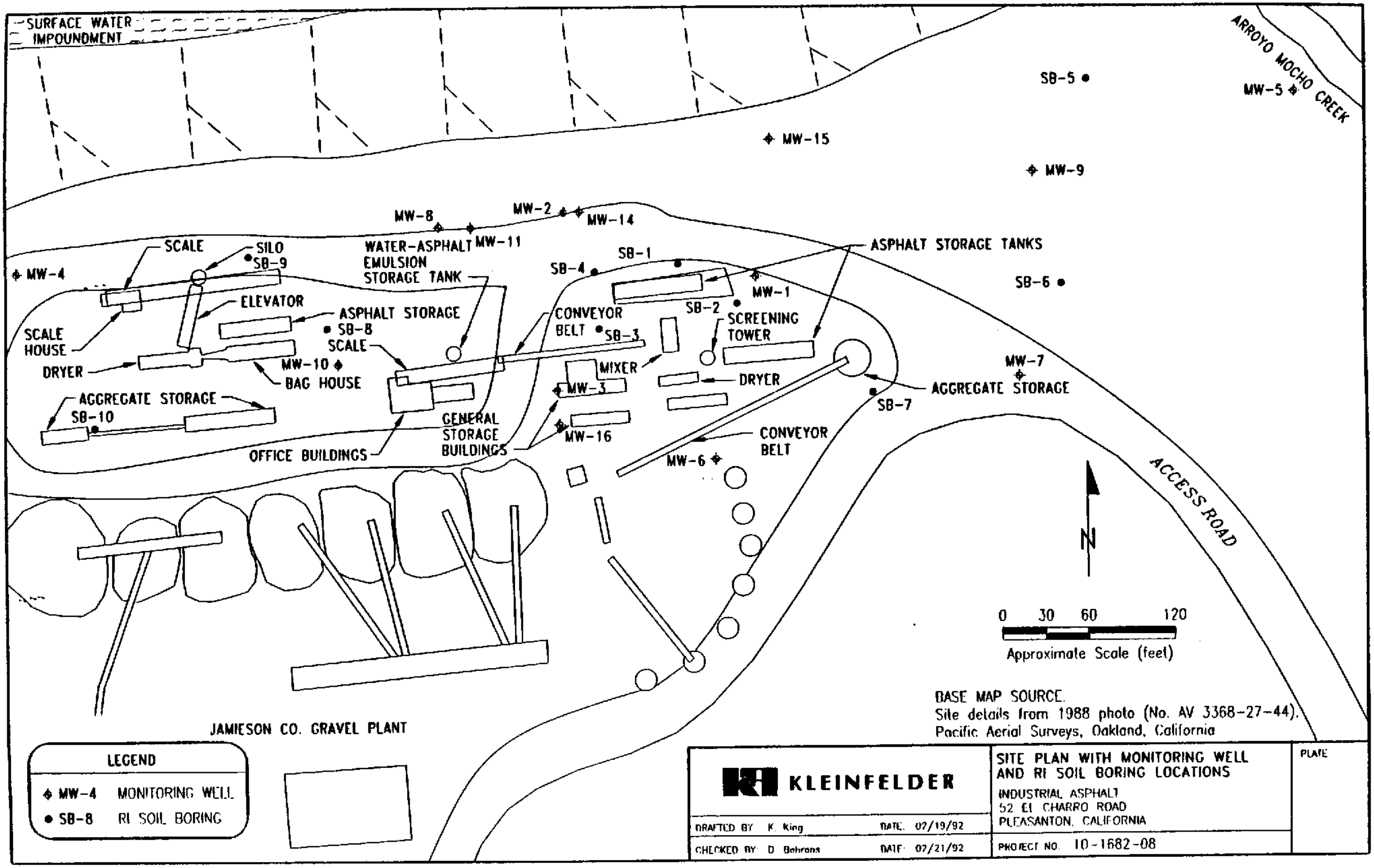
DRAFT

TABLE 2
SAMPLING COMPLIANCE SCHEDULE(1)
INDUSTRIAL ASPHALT
PLEASANTON, CALIFORNIA

	System Startup			System Monitoring Program		
Sampling Point	Daily (for week 1)	Weekly (for month 1)	Monthly (for months 2 & 3)	Monthly (after startup phase)	Quarterly (after startup phase)	Annually (after startup phase)
SP-1	X	X	X	X	X	X
SP-4	X	X	X		X	X
SP6(2)	X	X	X		X	X
SP-8(2)	X	X	X		X	X
SP-7	X	X	X		X	X
SP-9	X	X	X	X	X	X
EW-1 to EW-11			X(3)		X	

Notes:

(1) All samples collected will be tested for compounds listed in the text (Section 6b).
(2) SP-5 and SP-7 will be sampled when they act as the primary units. SP-6 and SP-8 will be sampled when the order is reversed.
(3) 2nd Startup month only, then annually.


SURFACE WATER
IMPOUNDMENT
ARROYO MOCHO CREEK
SB-5
MW-5
MW-15
MW-9
MW-8
MW-2
MW-14
MW-11
WATER-ASPHALT
EMULSION
STORAGE TANK
SB-1
SB-4
ASPHALT STORAGE TANKS
MW-4
SCALE
SILO
SB-9
MW-1
SB-6
ELEVATOR
ASPHALT STORAGE
SB-8
SB-2
SCREENING
TOWER
CONVEYOR
BELT
SB-3
SCALE
HOUSE
SCALE
DRYER
MW-10
BAG HOUSE
MIXER
DRYER
MW-7
AGGREGATE STORAGE
MW-3
AGGREGATE STORAGE
SB-10
SB-7
GENERAL
STORAGE
BUILDINGS
MW-16
CONVEYOR
BELT
OFFICE BUILDINGS
MW-6
ACCESS ROAD
N
0 30 60 120
Approximate Scale (feet)
BASE MAP SOURCE.
Site details from 1988 photo (No. AV 3368-27-44).
Pacific Aerial Surveys, Oakland, California
JAMIESON CO. GRAVEL PLANT
LEGEND
MW-4 MONITORING WELL
SB-8 RI SOIL BORING
KLEINFELDER
SITE PLAN WITH MONITORING WELL
AND RI SOIL BORING LOCATIONS
INDUSTRIAL ASPHALT
52 EL CHARRO ROAD
PLEASANTON, CALIFORNIA
PLATE
DRAFTED BY K. King
DATE 07/19/92
CHECKED BY D. Behrens
DATE 07/21/92
PROJECT NO. 10-1682-08