Harding Lawson Associates

August 17, 1999

46559.1

Mr. Don Wayne
Alameda County Environmental Health Services
1131 Harbor by Parkway, Suite 250
Alameda, California 94502

Enhanced Insitu-Bioremediation
and Groundwater Monitoring Procedures
Blue Print Services Facility
17th Street and Jefferson Street
Oakland California

Dear Mr. Wayne

As stated in our report, *Groundwater Investigation, Blue Print Service Company* dated July 27, 1999, HLA plans to begin insitu-bioremediation at the Blue Print Services site in Oakland (see Plate 1 attached). The following is a description of the methods being proposed and the groundwater sampling procedures to be followed.

HLA will place an oxygen-releasing compound (ORC), manufactured and sold by Regenesis, in selected wells to enhance insitu-bioremediation. The ORC will be contained in socks that will be hung in the groundwater across the wells' screened intervals. The ORC socks will be placed in wells MW-1A, MW-3, MW-4, and MW-5 (Plate 1). In order to monitor groundwater conditions without the direct influence of ORC, the socks will be removed from wells MW-3 and MW-5 two weeks prior to sampling. Groundwater samples from MW-1A and MW-4 are not needed because groundwater sampled at MW-1 can monitor groundwater quality in this area.

HLA plans to use the non-purge approach for future sampling at this site as published by the San Francisco Bay Regional Water Quality Control Board on January 31,1999, (see attachment). Prior to the sampling of monitoring wells MW-1, MW-3, MW-5, and MW-6, the depth to groundwater will be measured to the nearest one-hundredth of a foot. Conductivity, pH, Dissolved oxygen (DO), and temperature of the groundwater in each well will be measured and recorded. Water samples from MW-1, MW-3, MW-5, and MW-6 will be collected using a disposable Teflon bailer and placed in 40-milliliter volatile organic analysis (VOA) vials. Water samples will be placed in a cooler with ice and transported directly to a California certified analytical laboratory under chain of custody procedures. Following collection of the groundwater samples, the ORC socks will be replaced in the wells.

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ENVIRONMENTAL PROTECTION
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The groundwater samples will be analyzed using the following methods:

- Total petroleum hydrocarbons (TPH) in accordance with EPA 8015 modified
- Benzene, toluene, ethylbenzene, total xylenes, and methyl t-butyl ether in accordance with EPA 8260

HLA anticipates performing the next groundwater monitoring on or about September 21, 1999 and then placing the ORC socks in the wells on or about October 1, 1999. Unless notified by your office that the plan described above is unacceptable HLA will move forward with our remediation plans.

We trust this letter provides information required at this time. Please call if you have questions or additional information is required. If desired, we also could meet with you to discuss our conclusions in more detail.

Yours very truly,

HARDING LAWSON ASSOCIATES

James McCarty
Project Engineer

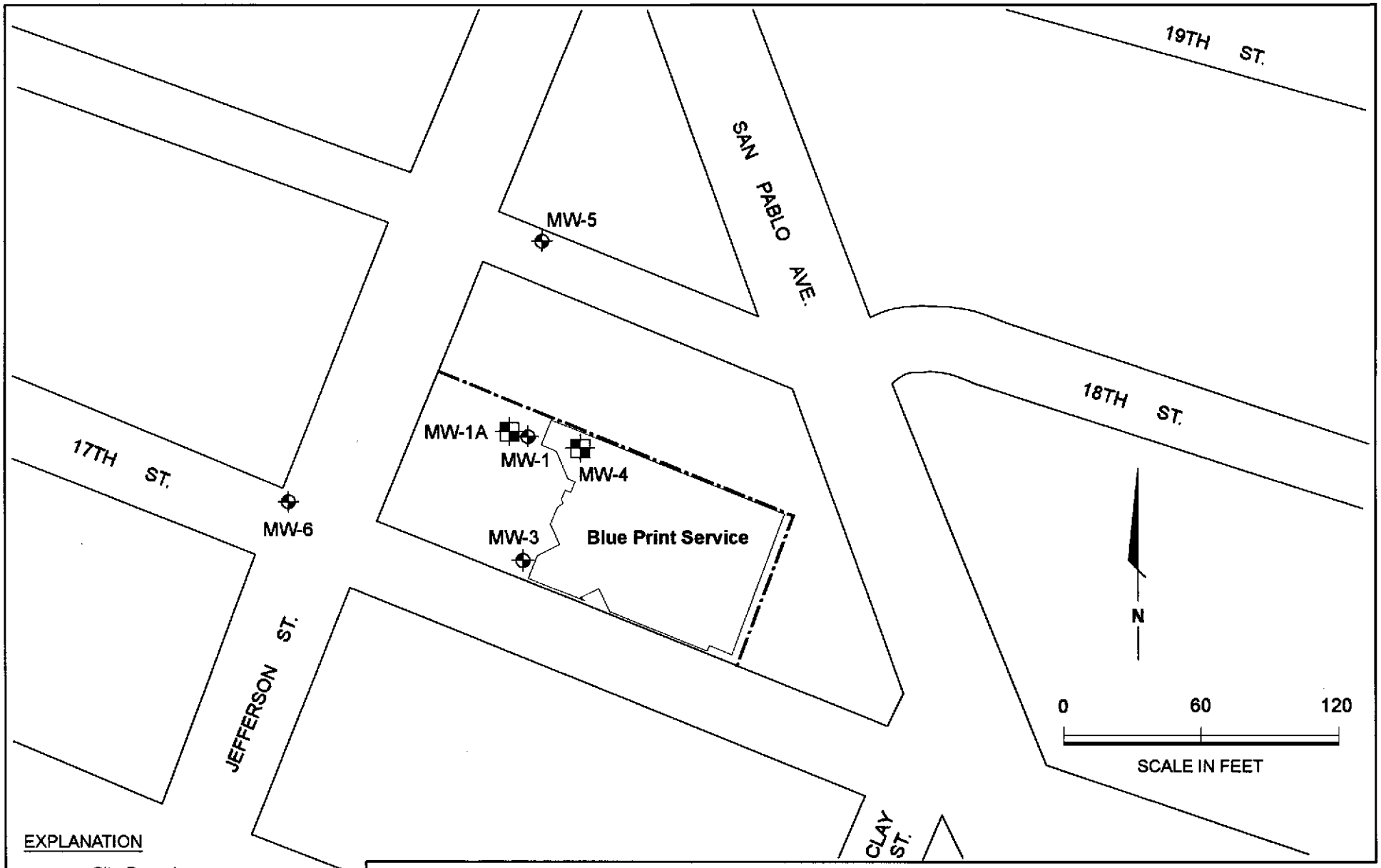
Michael Sides
Senior Engineer

JGM/MAS/mlw/46559/037316L

1 copies submitted

Attachments: Plate 1 – Site Map
Utilization of Non-Purge Approach for Sampling of Monitoring Wells Impacted by Petroleum Hydrocarbons, BTEX, and MTBE

cc: Mr. Jeff Christoff
Blue Print Service Company
1057 Shary Circle
Concord, California 94518



EXPLANATION

- Site Boundary
- Monitoring Well
- Extraction Well
- (5.03) Groundwater Elevation (in feet based on City of Oakland datum)

Harding Lawson Associates
Engineering and Environmental Services

SITE MAP
City Blue Production Facility
Oakland, California

PLATE **1**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
jgm	46559.1	JGM	8/17/99	

Cal/EPA

San Francisco Bay
Regional Water
Quality Control
Board

2101 Webster Street
Suite 500
Oakland, CA 94612
(510) 286-1255
FAX (510) 286-1380

Pete Wilson
Governor

To: Interested Parties

January 31, 1997
File: 1123.64

SUBJECT: **Utilization of Non-Purge Approach for Sampling of Monitoring Wells Impacted by Petroleum Hydrocarbons, BTEX, and MTBE**

REFERENCE: "The California Groundwater Purging Study for Petroleum Hydrocarbons", Report for Western States Petroleum Association by SECOR International Incorporated, Dated October 28, 1996

Finding and Recommendation

The WSPA study concludes that selection of a non-purge sampling methodology will not affect the overall variability of analytic data, and will provide a comparable, and in many cases, conservative estimate of petroleum hydrocarbons in groundwater. Based upon our review of the study, we conclude that for monitoring wells at fuel UST sites purging is not required providing the conditions we have outlined below are met. Our rationale is provided below.

Rationale

Since the release of the Western States Petroleum Association (WSPA) study on the effects of purging or not purging gasoline impacted monitoring wells prior to sampling there have been questions posed as to the validity and applicability of the study. Board staff acknowledge the concerns of some towards the possible bias in the study because of variations in data quality due to differing purging and sampling techniques utilized in the study, the lack of specific well design information or water quality parameter information, and the questions of statistical bias introduced into the study by the inclusion of non-detect data. However, we believe that these concerns are mitigated by the overall environmental and economic benefits discussed below.

Section 13267 (b) of the Water Code states that for technical or monitoring program reports the board may specify that ... "The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports". From an environmental perspective, there is an advantage in reducing the environmental burden by virtue of reducing the volumes of purge water

for treatment and disposal, which in turn reduces secondary impacts to air and water quality from waste handling, transport, and treatment of the purge water. In

addition, there is a positive cost savings and, consequently, a potential savings to the State's limited Clean Up Fund resources. We therefore believe that this approach is consistent with Section 13267.

We recognize at least one disadvantage from not purging is that, if true, higher analytic readings from non-purged samples may result in unnecessarily prolonging remediation and monitoring. In the worst case, some minor changes in water quality may be missed on a timely basis, such as those due to changes resulting from utilizing effective remediation techniques or, conversely, missing the detection of a new release from on or off site. Also, if further refinement of the WSPA study provides new information in conflict to the present study, we are prepared to modify our requirements accordingly.

Conditions on Using the Non-Purging Approach

In consideration of the above, we will now require the following for any Responsible Party or consultant proposing to utilize the non-purging approach:

1. The non-purging approach shall be used only for monitoring wells where groundwater has been impacted by Petroleum Hydrocarbons, BTEX, and MTBE.

2. Non-purge sampling shall be utilized for unconfined aquifers only.

3. The monitoring well shall be properly permitted, constructed (in this case, screened across the water table), and developed.

4. The well is not presently in use for groundwater or soil vapor extraction.

5. The well does not have free product.

6. For new wells or wells brought into monitoring for the first time, the first round of groundwater sampling performed at a site shall be with both non-purged and purged samples. The purging and sampling method used shall be documented. This shall include the rate of purge and sampling details. For these wells we require measurements of dissolved oxygen, specific conductance, pH, and temperature whether purged or not purged. Also, if biodegradation is being tracked at the well, our requirements do not preclude the measurement of other parameters.

7. Existing wells which have already been routinely purged in previous sampling events immediate to being switched to a non-purging mode do not require an initial duplicate non-purged and purged sample.

8. Monitoring data frequency shall be as required by the appropriate regulatory oversight agency.

9. Should a Responsible Party request site closure where the non-purged approach has been used, the final confirmation sampling event shall include both non-purged and purged samples from each well or as agreed upon with the appropriate regulatory oversight agency.

Prior to implementing the non-purge approach, the appropriate regulatory oversight agency shall be contacted, with an information copy to this office. Please call John Kaiser (510 - 286 - 0803) or me (510 - 286 - 0304) if you have any questions regarding this letter.

Loretta K. Barsamian
Executive Officer

Stephen I. Morse, P.E.
Chief,
Toxics Cleanup Division

cc: SWRCB - CWP (Alan Patton and Dave Deaner)
Regional Boards 1,3-9 UST Program Managers
RWQCB Region 2 UST Staff
USEPA, Region 9 (Matt Small)
Region 2 Local Agency UST Managers

Note: A synopsis of the WSPA Report including information on how to obtain the complete report may be found on the Internet at http://www.secor.com/purge.html