COMMUNITY AIR MONITORING PLAN
(CAMP)

for the

75-20 ASTORIA BOULEVARD SITE
JACKSON HEIGHTS, QUEENS, NEW YORK

VCA No.: W2-0854-9906

CONSULTANT PROJECT No.: 821687

JANUARY 16, 2008

Prepared by:

Shaw Environmental & Infrastructure, Inc.
101-1 Colin Drive
Holbrook, New York 11741

Prepared for:

Bulova Corporation
1 Bulova Avenue
Woodside, New York 11377

TABLE OF CONTENTS

Section **Page**

Figures

1.0 INTRODUCTION

1.1 Project Background

Pursuant to the Voluntary Cleanup Agreement (VCA) and on behalf of Bulova Corporation, Shaw Environmental and Infrastructure, Inc. (Shaw) has prepared this Community Air Monitoring Plan (CAMP) associated with the 75-20 Astoria Boulevard Site, Jackson Heights, Queens, New York (the Site, Figure 1).

The remedial strategy for this Site has been developed to expedite the biodegradation of on-site contaminants *in situ*. The primary remedial action will be biostimulation, which consists of the addition of nutrients and electron donors to the subsurface to enhance the biodegradative capabilities of the native bacteria within the Site groundwater. Based on results obtained during the treatability study and pilot test, biostimulation using lactate and nutrients is capable of degrading the TCA and DCA in the Source Area soil and groundwater.

This CAMP has been developed to address potential dust and subsurface VOCs that may be released during installation of an in-situ bioremediation system. This CAMP was written in accordance with the NYSDEC requirements presented in Appendix 1A of the Draft DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC 2002). The CAMP requires real-time monitoring for both volatile organic compounds (VOCs) and particulates. The measures included in the CAMP will provide a level of protection from potential airborne releases, and sets forth specific action levels for determining the monitoring frequency and the appropriate corrective actions, including work shut-down.

1.2 Project Purpose and Objectives

The principal purpose of the CAMP is to monitor air quality in the vicinity of the treatment area during the remedial actions. The CAMP consists of monitoring of dusts and vapors on a real-time basis. Monitoring of this project will include all standard monitoring functions for environmental remediation projects including real-time air monitoring for particulate matter/dust and VOCs, observations for visible emissions and odors, inspection and monitoring of the contractor's work practices, and reporting to the NYSDEC and the NYSDOH. Continuous monitoring will be performed during all ground intrusive activities.

Principal objectives of the program are as follows:

- Monitor dust as PM_{10} on a real-time basis such that dusts associated with the remedial actions are maintained below action levels
- Monitor VOC vapors on a real-time basis such that vapors associated with the remedial actions are maintained below action levels
- Monitor VOCs and visible emissions so that vapors and dust from the treatment area do not leave the 75-20 Astoria Boulevard Site
- In the event that dust or VOC levels exceed action levels, construction personnel will be immediately notified so that all necessary corrective actions can be taken

1.3 Operations to be Monitored

The remedial actions to be performed at the 75-20 Astoria Boulevard Site consist of:

1. Well installation activities; and
2. Trenching activities.

2.0 AIR MONITORING PROCEDURES

Air monitoring stations will be established at two (2) locations, one upwind of the work area, and one immediately downwind of the work area. The proposed locations for these air monitoring stations is presented in Figure 2; however, the exact locations of these stations will depend on the actual meteorological conditions for each day.

These air-monitoring activities include real-time monitoring for VOCs and particulates based on the New York State CAMP requirements. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. As a supplement, a flow chart summarizing action levels/action is provided on Figure 3.

2.1 VOC Direct Reading Monitoring

VOC monitoring equipment will consist of a photo ionization detector (PID) capable of detecting site-related VOCs. The monitoring equipment will be calibrated on a daily basis and documented in a dedicated field log book. The instrument will be capable of calculating 15-minute running average concentrations, which will be compared to the prescribed action levels.

Upwind 15 minute average background concentrations will be subtracted from the downwind 15 minute average concentrations to establish concentrations reflective of work activities during the periods between collection of background readings.

The 15-minute running average concentrations will be compared to the following:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the treatment area exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the treatment area persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the treatment area or half the distance to the nearest potential receptor or residential structure, whichever is less - but in no case less than 20 feet - is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the downwind perimeter of the treatment area, activities must be shutdown and the engineering controls and the site work plan re-evaluated.

2.2 Particulate (Dust) Direct Reading Monitoring

Particulate (dust) concentrations will be monitored continuously at the upwind and downwind perimeters of the treatment area. The particulate monitoring will be performed using real-time particulate monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM_{10}) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level established below. The equipment will be equipped with an audible alarm to indicate exceedance of the action level, and will be calibrated in accordance with the manufacturer's operating instructions and documented in a dedicated logbook.

The primary standards for PM_{10} are 150 micrograms per cubic meter ($\mu g/m^3$) over a 24 hour averaging time and 50 $\mu g/m^3$ over an annual averaging time. Both of these standards are averaged arithmetically. The action level will be established at 150 $\mu g/m^3$ over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety.

If downwind particulate levels are detected in excess of 150 $\mu g/m^3$, the upwind background level must be measured immediately. If the downwind site particulate measurement is greater than 100 $\mu g/m^3$, but less than 150 $\mu g/m^3$, above the background level, dust suppression techniques will be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. During this time work may continue; however, if the dust suppression measures being utilized at the site do not lower particulates to an acceptable level (i.e., below 150 $\mu g/m^3$ and no visible dust from the treatment area), work will be suspended until appropriate corrective measures are implemented to remedy the situation.

3.0 AIR MONITORING RECORDKEEPING AND OBSERVATIONS

A qualified safety officer or technician will ensure that all air-monitoring data is logged in a dedicated log book. Documentation shall be made clear, concise, and provide the data, time of entry, location, personnel, weather conditions, and background concentrations for each monitoring station. Documentation will also include all observational data that has potential for impacting results, such as potential off-site interferences, on-site public interferences, damage to instruments, site equipment problems, or weather related interferences.

All pages must be numbered; no lines shall be left blank (or put a line through it), and must be initialed on each page in ink. The last entry page for the shift or day that has blank space left at the bottom shall have a line drawn diagonally across it and signed at the bottom of the page. All corrections must be made with a single line, initialed, and dated.

Onsite meteorological instrumentation shall be used to determine the wind speed (anemometer), wind direction (wind sock), barometric pressure (barometer), and relative humidity (psychrometer). These weather data shall be obtained on an hourly basis while work is progressing and documented in the dedicated field log book.

The NYSDEC and NYSDOH will be notified promptly via phone and electronic mail of any exceedance of an Action Level and of the corrective actions taken in connection with the exceedance. If an exceedance occurs, Shaw will prepare an Exceedance Summary Letter, following completion of the exceedance assessment, for submission to the NYSDEC and NYSDOH within five working days of the exceedance. This will be a 1-2 page letter stating the nature of the exceedance, cause(s) of the exceedance and the corrective actions taken.

CAMP air monitoring results and records will be maintained by Shaw for a minimum period of 6 years following completion of the project.

3.1 Equipment Operational Requirements

The air monitoring equipment must be operated by trained and qualified personnel. Personnel who perform air-monitoring functions described in this section shall be experienced in the use of field air monitoring equipment, as well as the air monitoring procedures described above. There must also be appropriate staff (chemist, industrial hygienist or environmental scientist) for assessing the results of air monitoring and advising field personnel and the construction manager of air quality considerations.

All monitoring equipment must be calibrated on a daily basis in accordance with the manufacturer's operating instructions. A dedicated log book for each monitoring unit will be maintained that details the date, time, calibration gas, or other standard, and name of person performing the calibration.

4.0 DUST AND VOC CONTROLS

The information and procedures presented in this section may be used for dust and VOC control during activities summarized in Section 1.3. The construction manager for the project will be responsible for implementing these procedures based on the air monitoring results and required Action Levels described in Sections 2.1, 2.2 and depicted in Figure 3. The information and procedures that may be used for dust and VOC control are presented in the following sub-sections.

4.1 Dust Controls

The primary measure of preventing exposure to dust during excavation or other soil disturbance activities will be wetting techniques. The construction manager will provide for engineering controls (wet techniques) or other techniques to control dust during work tasks that have the potential for generating dust. Dust controls involving the use of water (wetting or water spraying) may be employed at potential dust generating activity areas as follows.

- Before each task is initiated
- During the tasks to keep the soils damp
- When air monitoring results dictate the need for dust control

4.2 VOC Controls

Control of VOCs during excavation work or other soil disturbance activities will consist of the construction manager implementing one or more of the following methods or measures:

- Covering stockpile areas
- Wetting excavation material
- Backfilling the excavation
- Vapor suppression, such as foaming agents

5.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Shaw Environmental and Infrastructure, Inc. has completed the Community Air Monitoring Plan for the 75-20 Astoria Boulevard Site located in Jackson Heights, Queens, New York.

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC.

Garrett Passarelli
Project Engineer

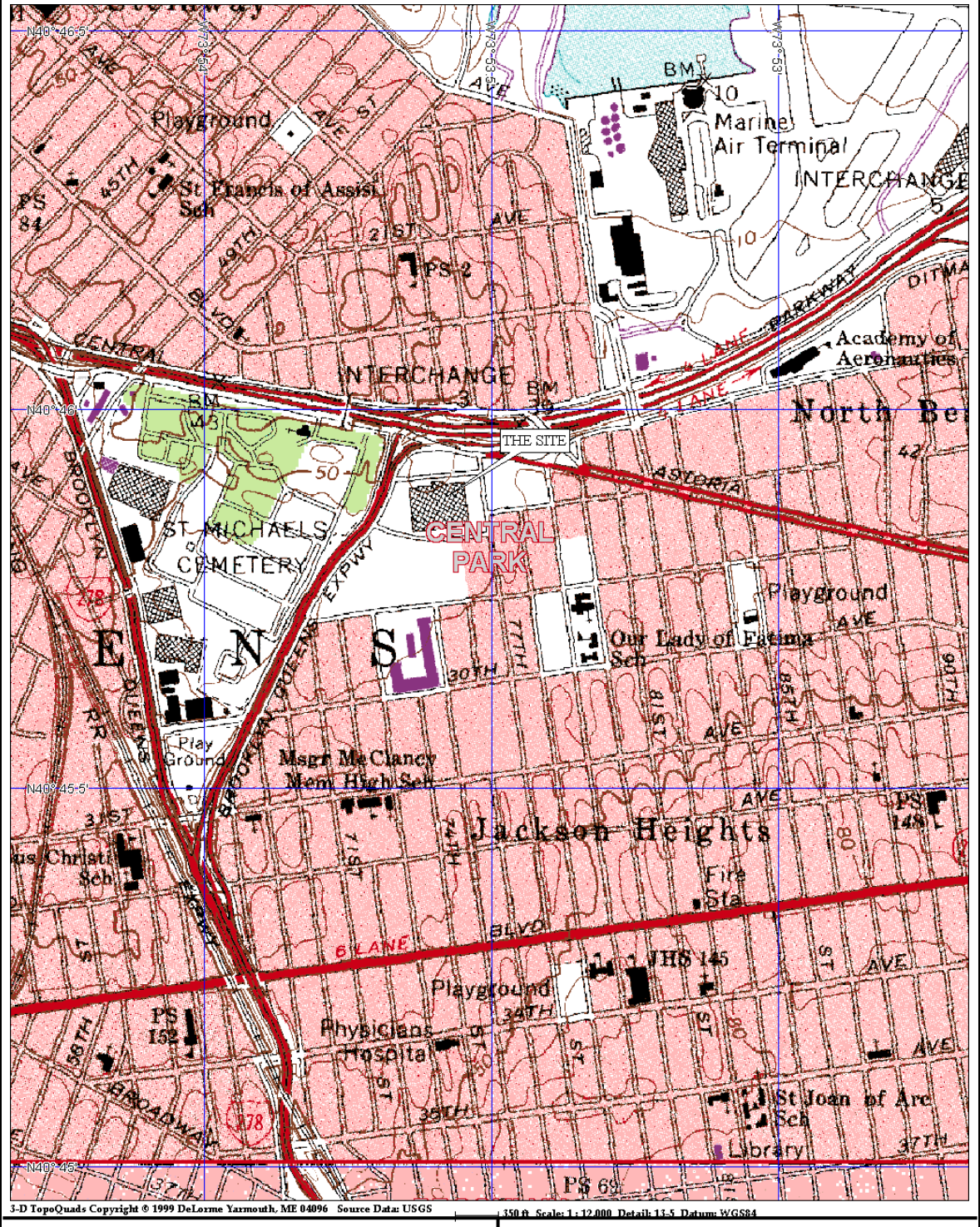
Erik Gustafson
Client Program Manager

6.0 REFERENCES

New York State Department of Environmental Conservation Division of Environmental Remediation. *Draft DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 1A*, December 2002.

Shaw Environmental and Infrastructure, Inc. *Draft Remedial Action Work Plan*, December 2007.

FIGURES



Scale: 1:12,000

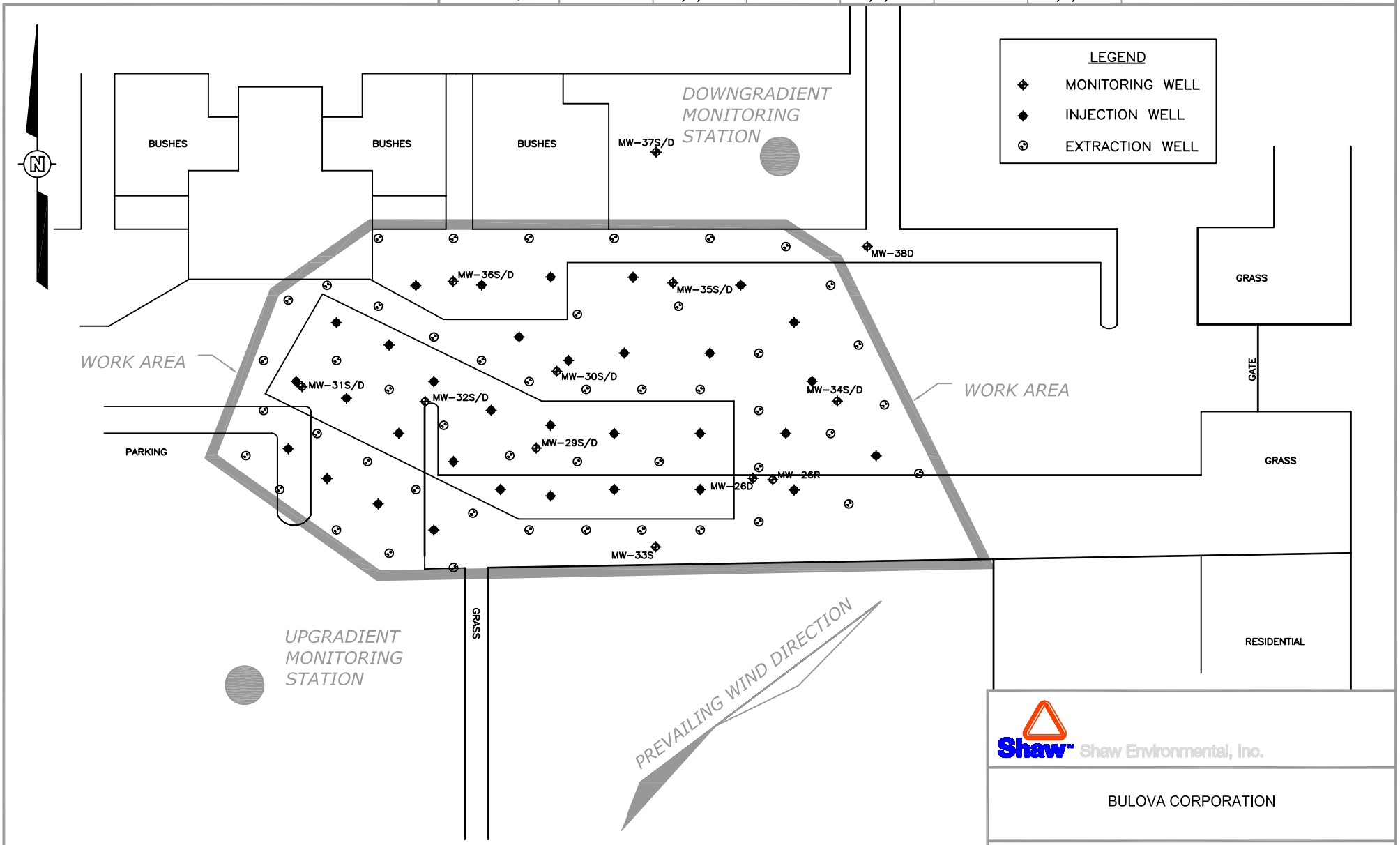
Reference:
DeLorme 3-D Topo Quads
Yarmouth, Me.
1999
Datum WGS84

Figure 1
Site Location Map

75-20 Astoria Blvd.
Jackson Heights, New York

File: N:\Bulova-Jackson Heights\CAMP FIGURE 2.dwg
XREF Files: IMAGE Files:
Plot Date/Time: Jan 07, 2008 - 3:39pm
Plotted By: garrett.passarelli

OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
HOLBROOK, NY	G.PASSARELLI	1/7/08	E.GUSTAFSON	1/7/08	E.GUSTAFSON	1/7/08	821687-FIGURE 2



Shaw Environmental, Inc.

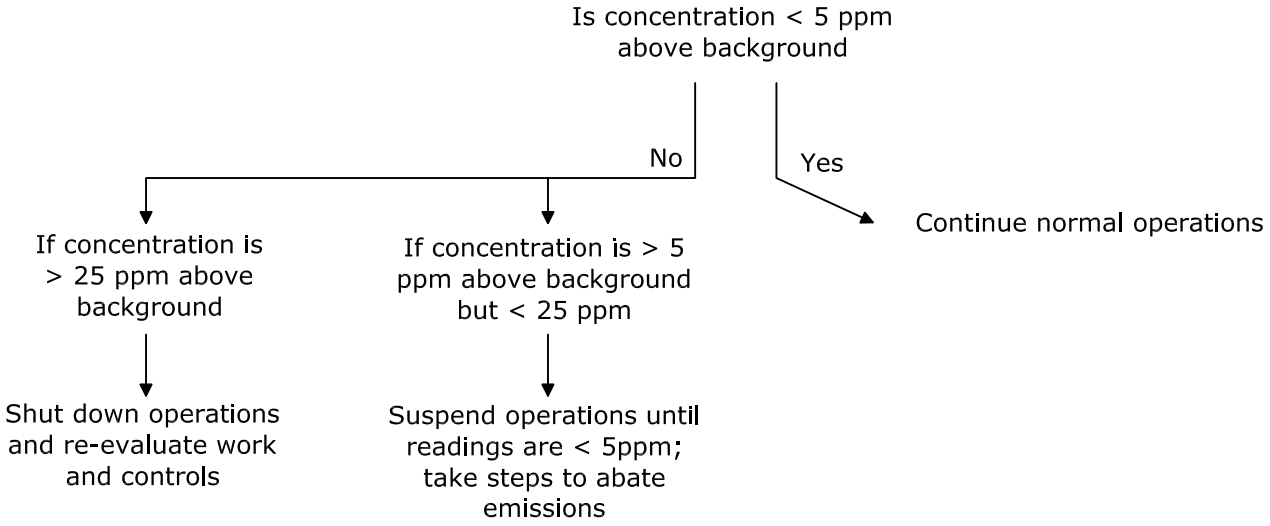
BULOVA CORPORATION

FIGURE 2
AIR MONITORING STATION PLAN

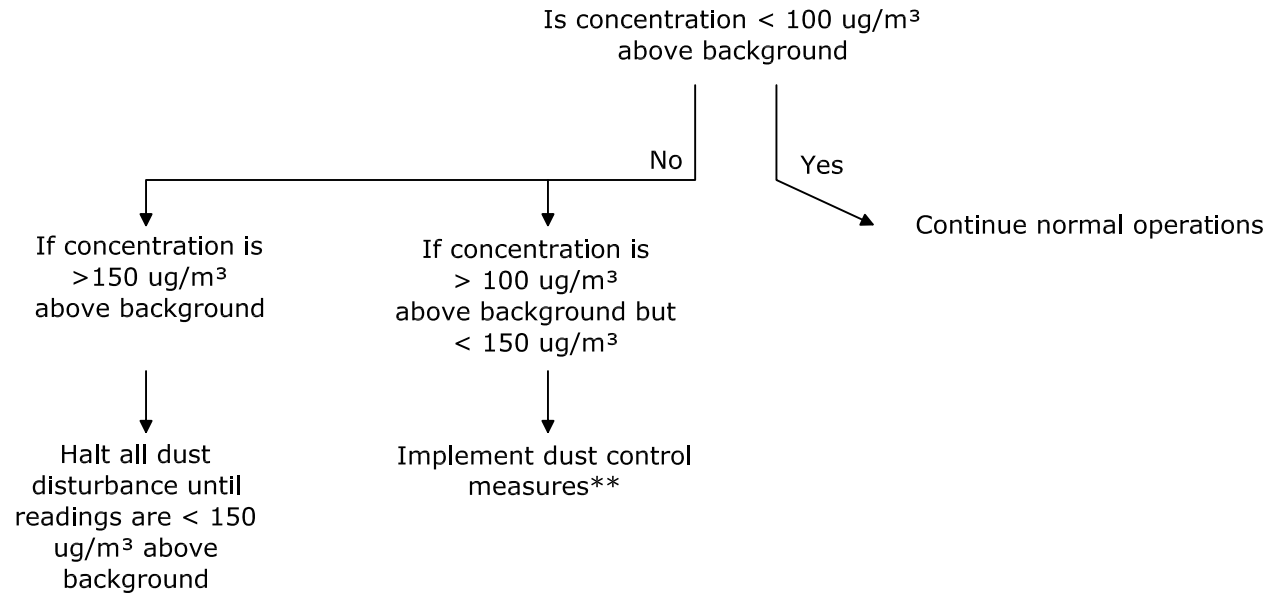
75-20 ASTORIA BLVD
JACKSON HEIGHTS, NEW YORK

OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
HOLBROOK, NY	G.Passarelli	1/16/08	E.Gustafson	1/16/08	E.Gustafson	1/16/08	FIGURE 3

Volatile Organic Monitroing
Downwind of VCP Area



Particulate Monitoring
Downwind of VCP Area



*See VOC control section (Section 4.2)
**See dust control section (Section 4.1)
VOC and particulate readings based on 15 minute time weighted average

Shaw Environmental, Inc.

FIGURE 3
FLOW CHART FOR VOC AND PARTICULATE MONITORING ACTION LEVELS
75-20 ASTORIA BLVD
JACKSON HEIGHTS, QUEENS, NEW YORK