

**SITE SPECIFIC HEALTH AND SAFETY PLAN
FYN PAINT & LACQUER CO., INC.
230 KENT AVENUE
BROOKLYN, NEW YORK 11211
SITE # U-00380-2, INDEX #W2-0873-00-10**

Prepared For

Fyn Paint & Lacquer Co., Inc.

June 2006

Revised: November 2006

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water and Environmental Engineering Services
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TABLE OF CONTENTS

	<u>Page</u>
1.0 ORGANIZATION AND RESPONSIBILITIES	2
1.1 Project Manager	2
1.2 Onsite Health and Safety Officer	3
1.3 Field Personnel	3
1.4 Reporting of Accidents and Unsafe Conditions	3
1.4.1 Disciplinary Actions for Safety Related Infractions	3
1.4.2 Safety Inspections	4
1.4.3 Safety Meetings	4
2.0 HAZARD EVALUATION	4
3.0 MONITORING REQUIREMENTS - DURING EXCAVATION ACTIVITIES	5
3.1 Vapor Emission Response Plan	5
3.2 Major Vapor Emission	6
3.3 Major Vapor Emission Response Plan	6
4.0 LEVELS OF PROTECTION	6
4.1 Level D	7
4.2 Level C	7
4.3 Level B	8
5.0 SAFE WORK PRACTICES AND HYGIENE	8
5.1 Heat Stress	9
5.2 Cold Stress and Exposure	10
6.0 WORK ZONE	10
6.1 Confined Spaces	11
6.2 VOC Project Work Zone Considerations	11
7.0 DECONTAMINATION	11
8.0 CONTINGENCY PLAN FOR EMERGENCIES	12
9.0 SAFETY TRAINING	12
10.0 MEDICAL SURVEILLANCE	12

APPENDICES

LIST OF TABLE

Table

1	Exposure Limits
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SITE # U-00380-2, INDEX #W2-0873-00-10**

This Health and Safety Plan (HASP) is intended to provide a basic framework for the Voluntary Cleanup Program (VCP), Index Number W2-0873-00-10 by Fyn Paint & Lacquer Co., Inc. pursuant to the New York State Department of Environmental Conservation (NYSDEC) VCP. The procedures provided herein are intended as a guide for all Leggette, Brashears & Graham, Inc. (LBG) and subcontractor employees who will be involved in the performance of the project.

The primary objective of the HASP is to establish work-safety guidelines, requirements and procedures before field activities begin and during the field activities. The following information was prepared specifically for field operations by personnel to enforce and adhere to the established rules as specified in the HASP. The HASP will be provided to all personnel to aid in accomplishing the following objectives:

- monitoring the effectiveness of the HASP as it is conducted in the field by performing field operation audits;
- following up on any necessary corrective actions;
- interacting with regulatory agencies and/or client representatives regarding modifications of health and safety actions; and
- stopping work should conditions warrant such action.

All personnel will have had health and safety training in accordance with OSHA Interim Final Standard 29 CFR 1910 or as may be amended. A copy of LBG's Corporate Safety Policy and Drug and Alcohol Policy is attached in Appendix A.

1.0 ORGANIZATION AND RESPONSIBILITIES

The organization and responsibilities for implementing safe site-investigation procedures, and specifically for the requirements contained in this manual, are described in this section. A Contact, Site Safety Briefing, Air Monitoring sheets, and a site and hospital location map are to be completed for applicable sites. Blank forms are attached at the end of this document.

1.1 Project Manager

The LBG Project Manager will be responsible for the overall implementation and monitoring of the health and safety program by:

- ensuring appropriate protective equipment is available and properly used by all personnel, in accordance with the HASP;
- ensuring personnel health and safety awareness by providing them with proper training and familiarity with procedures and contingency plans;
- ensuring all personnel are apprised of potential hazards associated with the site conditions and operations;
- supervising and monitoring the safety performance of all personnel to ensure their work practices are conducted in accordance with the HASP;
- correcting any work practices or conditions that would expose personnel to possible injury or hazardous condition;
- communications with the onsite Health and Safety Officer (HSO);
- ensuring sufficient protective equipment is provided and used;
- promptly initiating emergency alerts; and,
- communicating with the client and/or regulatory agency representatives.

1.2 Onsite Health and Safety Officer

The LBG HSO will be onsite during all field activities. The HSO will be accountable for the direct supervision of personnel from the subcontractors and other LBG personnel with regard to:

- health and safety program compliance;
- maintaining a high level of health and safety consciousness among employees at the work site; and,
- reporting accidents within LBG jurisdiction and undertaking corrective action.

1.3 Field Personnel

All field personnel will report directly to the onsite HSO, and will be required to:

- be familiar with, and conform to, provisions of the HASP;

- ensure that they are well informed of potential hazards at the work site and exercise informed consent in their work;
- report any accidents or hazardous conditions to the onsite HSO; and,
- have complete familiarity with their job requirements and the health and safety procedures involved.

1.4 Reporting of Accidents and Unsafe Conditions

If an accident occurs, the HSO and the injured person(s) are to complete an Accident Report for submittal to the project manager, who will forward a copy to the principal-in-charge who should ensure that follow-up action is taken to correct the situation that caused the accident. The Con Edison onsite representative will be notified immediately upon any accidents, injuries or close calls.

1.4.1 Disciplinary Actions for Safety Related Infractions

If an infraction of the Health and Safety Plan is discovered by the Project Manager or the onsite HSO, each case will be dealt with individually. The infraction will be investigated and a disciplinary meeting held with the offender. Disciplinary actions may include a performance deficiency evaluation entered into the employee's personnel file, correction of problem after the disciplinary meeting or removal of the offender from the project. Repeated infractions will not be tolerated and will be dealt with accordingly.

1.4.2 Safety Inspections

Safety inspections will be conducted periodically by the Project Manager. The Project Manager will be familiar with the Health and Safety Plan before performing an onsite visit. While onsite, the Project Manager will evaluate the effectiveness of the plan and offer any suggestion for improvement. Although Project Managers are responsible for periodic safety inspections and evaluation of the Health and Safety Plan, the onsite HSO is responsible for daily observation and evaluation of Health and Safety Plan effectiveness.

1.4.3 Safety Meetings

Prior to the start of field activities, a meeting will be held to discuss the potential hazards at the site, with a review of the required protective clothing and procedures observed at this site. As needed, daily meetings will be held to discuss any changes in the hazards.

2.0 HAZARD EVALUATION

The exposure limits of chemical constituents which may be encountered are listed in table 1. These constituents would possibly be encountered in ground water and/or soil and comprise the major concerns for personal health. The protection of personnel and the public from exposure to these substances by inhalation, oral ingestion, dermal absorption or eye contact is included as a primary purpose of this plan.

The onsite HSO is responsible for determining the level of personal protection equipment required. The HSO will perform a preliminary evaluation to confirm personal protective equipment requirements once the site has been entered. When work-site conditions warrant, the onsite HSO will modify the level of protection to be utilized. The existence of a situation more hazardous than anticipated will result in the suspension of work until the Project Manager and client representative has been notified and appropriate instructions have been provided to the field team.

3.0 MONITORING REQUIREMENTS - DURING EXCAVATION ACTIVITIES

A photoionization detector (PID) will be used to continuously monitor ambient air quality at the excavation sites (i.e. - trenches). Records of these data will be maintained by the onsite HSO. During excavation operations, real-time breathing zone air monitoring will occur in and about the excavations. Work operations which involve handling of potentially hazardous substances will include continuous contaminant monitoring using the PID. In addition, field monitoring will be performed when work is initiated at different portions of the site, when a new operation is initiated and/or when potentially leaking drums or containers are going to be handled. When deemed necessary or desirable by the onsite HSO, area monitoring will be used in potentially hazardous zones. Area monitoring will be performed as plans and conditions dictate, and in accordance with the HASP and with the goal of accident and hazardous condition prevention in mind. Instrument calibration information is included in Appendix B.

For the compounds previously identified to be most prevalent, the lowest 8-hour exposure limit is listed on table 1.

3.1 Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- the organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

An additional vapor suppression method available to be implemented at the Site, in the event that stopping work is not effective in reducing VOC concentrations, consists of covering the excavation with one continuous layer of fire-retardant polysheeting (at least 6-mil thick).

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

3.2 Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities will be halted.

If, following the cessation of the work activities and/or the covering of the excavation with polysheeting, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality will be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect.

- if organic vapor levels are approaching 5 ppm above background.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

3.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will be notified.
2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.
3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

4.0 LEVELS OF PROTECTION

The level of protection anticipated to perform work on this investigation is Level D, unless otherwise upgraded. Only protective equipment deemed suitable by the onsite HSO for use at the work site will be worn. Any changes in protection levels shall be documented by the onsite HSO. Field personnel should exercise informed judgment on protective equipment requirements at active work sites or at work sites that have been repeatedly entered or occupied without apparent harm. In any case where doubt exists, the safest course of action must be taken. The protective equipment to be used by field personnel is listed below.

4.1 Level D

- hard hat;
- safety glasses, shatter-proof prescription glasses or chemical splash goggles;
- boots/shoes, leather or chemical-resistant, steel toe and shank;
- coveralls; and,
- chemical resistant gloves.

At a minimum, protective headgear, including protective hearing devices, eyewear and footwear will be worn at all times by personnel working around the drilling equipment. When work-site conditions dictate, protective gloves and chemical-resistant boots shall be required for those personnel handling contaminated soils.

Should levels of organic vapor in the ambient air greater than 5 ppm above background levels be detected by the PID in the work area, work will stop and all personnel will leave the work area. The New York State Department of Health (NYSDOH) recommends a level of 5 ppm above background as measured with a PID for VOCs related work. Once the PID readings in the ambient air are back to 0.0 ppm above background, field activities will resume.

4.2 Level C

- hard hat;
- boots, leather, steel toe and shank;
- outer boots, chemical resistant;
- chemical-resistant gloves (solvex);
- Tyvek or Saranex suit; and,
- Air purifying respirator with organic vapor cartridge and dust and mist filter.

Level C protection will be considered for PID consistent readings of 5 to 100 ppm above background in the breathing zone.

Respirators for all personnel will be available with both particulate and organic vapor protection cartridges. The onsite HSO will direct when the protective clothing and respirators will be utilized based on the conditions encountered at the work site.

4.3 Level B

- pressure-demand, self-contained breathing apparatus;
- standby escape pack;
- chemical resistant clothing (Saranex suit);
- outer gloves (Solvex);
- inner gloves (surgical);
- outer boots (chemical resistant);
- inner boots (leather, steel shank and toe); and,
- hard hat.

Level B will be considered for PID readings of 150 ppm above background in the breathing zone. In the event that the work space atmosphere contains in excess of 150 ppm of total ionizable compounds above background, colorimetric tubes or a portable gas chromatograph will be used to determine the levels of individual chemicals. The use of Level B equipment will be based on the specific compounds present and will include discussions with the regulatory authorities and/or the client representative.

Level A conditions will require specialized procedures to be formulated on a case-by-case basis.

5.0 SAFE WORK PRACTICES AND HYGIENE

In addition to the use of protective equipment, other procedures will be followed to minimize risk:

- all consumptive activities including eating, drinking or smoking are prohibited during the drilling, sampling and decontamination activities;
- an adequate source of potable water for emergency use will be available at the drilling sites (two liters per person per day);
- all 55-gallon drums onsite will be moved within the Site using standard drum dolly/carts to avoid personal injury;
- fire extinguishers will be available at the work sites for use on equipment or small fires when appropriate; and,

- an adequately stocked first-aid kit will be maintained at the work site at all times during operational hours.

5.1 Heat Stress

In order to avoid heat stress several preventative measures will be observed:

- Workers will drink a 16-ounce glass of water prior to work (in the morning and after lunch). Water will be contained in a cooler, maintained at a temperature below 60°F. Workers will be encouraged to drink approximately every 20 minutes during days of extreme heat.
- Workers will be encouraged to wear long cotton underwear under the heat-retaining protective clothing required by Level C.
- In extreme hot weather, field activities will be conducted in the early mornings and late afternoons.
- Rest breaks in cool or shaded areas will be enforced as needed.
- Toilet facilities will be made available to site workers, unless transportation is readily available to nearby toilet facilities.
- Good hygiene practices will be encouraged, stressing the importance of allowing the clothing to dry during rest periods. Anyone who notices skin problems should receive medical attention immediately.
- If there are support personnel available outside the work zone, they should observe the workers in the exclusion zone to monitor signs of stress, frequency of breaks, etc.

5.2 Cold Stress and Exposure

In order to avoid cold stress, several preventative measures will be observed;

- work will not take place when the temperature falls below -20°F. (The wind chill factor should be a major consideration);
- clothing should be worn in layers, so that personnel can adapt to changing conditions and various levels of physical stress;

- if possible, breaks should be taken in a heated vehicle or building, but care should be taken to remove outer clothing during the break;
- have on hand extra inner clothing in case perspiration builds up;
- keep insulated containers of warm liquids available for breaks outside of the exclusion zone;
- be aware of the signs of frostbite and take immediate remedial measures; and,
- take extra precautions around areas subject to ice buildup, such as sanding slippery surfaces.

6.0 WORK ZONE

To prevent unauthorized personnel from entering areas where active operations are being performed, the area enclosing the operation will be marked.

This zone will be entered in Level D protection. However, individual work sites within the zone may require higher levels of protection based on air monitoring results during the various activities. If this becomes the case, separate work sites will be established based on the level of protection required.

Field personnel are instructed to leave the area if monitoring shows readings above the permissible exposure limits. Before conducting field work in respirators, the Project Manager and client representative will be contacted. A determination will be made by the onsite HSO and Project Manager if work is to continue with respirators. Factors which may influence this decision include the level of observed or suspected hazards, period of time required to complete activity and weather conditions.

If it is necessary to upgrade personal protection then site control measures need to be implemented. This control will help prevent transporting contaminants off site and minimize exposures to onsite personnel. Site maps will be available which show special work zones.

Three work zones will be delineated. The exclusion zone is where the investigation will take place in the appropriate safety equipment. The contamination reduction zone is where the decontamination of personnel will take place. The support zone is the outer limit zone where equipment is stored and protective clothing is not required.

The buddy system will be observed in the exclusion and contamination reduction zones. Non-essential employees will remain at the clean support zone which will be delineated by a rope or barrier. No one will be permitted beyond that point unless certified and has read and signed the HASP. These zones will be set up with the clean zone being furthest upwind.

6.1 Confined Spaces

Confined spaces are those which, by design or circumstance, present difficulties for entry and exit, or which may serve to reduce ventilation or concentrate vapors. Typical confined spaces consist of excavations, trenches and vaults. Excavations or trenches over 5 feet in depth will be shored or benched according to OSHA regulations. If a vault is to be entered, mechanical ventilation will be initiated and air quality will be monitored. The proposed trench on CE property will be only 3.75 feet in depth. No shoring is expected to be used.

6.2 VOC Project Work Zone Considerations

Typically VOC projects involve installation of wells, monitoring of wells, performance of a pumping test, installation and operation of treatment systems and observation of tank and trench excavation work. Safety issues with respect to this type of work are attached in Appendix C.

7.0 DECONTAMINATION

An area will be set aside within the work zone for decontamination. The type of decontamination procedures used will be based on the level of protection required. Decontamination of Level D protective wear will consist of brushing heavily soiled boots to remove soils, rinsing gloves and safety glasses (and overboots, if worn) with water, and removing and storing coveralls in plastic bags before leaving the work zone, if heavily soiled or suspected of having been in contact with site contaminants. For detailed decontamination, equipment and procedures, refer to Appendix D.

8.0 CONTINGENCY PLAN FOR EMERGENCIES

In the event of a safety or health emergency, appropriate corrective measures must immediately be taken to assist those who have been injured or exposed and to protect others from

hazard. The onsite HSO will be notified of the incident immediately. If necessary, first aid will be rendered.

9.0 SAFETY TRAINING

All site workers, including site managers, will provide documentation to the onsite HSO that the field personnel have been trained in the proper use of protective clothing and equipment in accordance with 29 CFR Part 1910, including:

- purpose of wearing respirators;
- how the respirator works;
- limitations;
- fit testing;
- maintenance; and
- conditions of use.

All LBG personnel, client representatives, regulatory personnel and field personnel shall be made aware of the particular hazardous substances which could be encountered during this project.

10.0 MEDICAL SURVEILLANCE

The HSO will insure that each site worker involved in environmental sampling participates in an ongoing medical surveillance program, which includes baseline and annual follow-up exams.

TABLE

TABLE 1
Exposure Limits

COMPOUND	EXPOSURE STANDARDS			RECOGNITION QUALITIES		
	TLV/PEL (a) (ppm)	STEL (b) (ppm)	IDLH (c) (ppm)	Odor/Threshold (ppm)	LEL (d) (%)	Ionization Potential (eV)
Gasoline ^{1/}	300	500	1,400	-	1.4	-
Alachlor ^{2/}	-	-	-	No odor	-	-
Benzene ^{1/}	0.1	1	500	12	1.2	9.24
Butane	800	-	-	2,700	1.6	10.63
Chlorobenzene	75 ^{3/}	-	1,000	Almonds	1.3	-
1,1-Dichloroethane	100	Ca ^{5/}	3,000	Chloroform	5.4	11.06
1,2-Dichloroethylene	200	-	1,000	Chloroform	5.6	9.65
EDB (Ethylene dibromide) ^{1/}	0.045	0.13	100	Sweet	-	9.45
EDC (Ethylene dichloride) ^{1/}	1	2	50	Chloroform	6.2	11.05
Ethylbenzene	100	125	800	Aromatic	0.8	8.76
Heptane	85	440	750	150	1.05	9.90
N-Hexane	50	-	1,100	Gasoline/130	1.1	10.18
Hexanes	100	510	-	Mild gasoline	-	-
Methyl ethyl ketone (MEK)	0.2 ^{4/}	-	-	Characteristic odor	-	-
Octane	75	385	1,000	Gasoline/150	1.0	9.82
Pentane	120	610	1,500	Gasoline/1000	1.5	10.34
TBA (Tert-butyl alcohol)	100	150	1,600	Camphor	2.4	9.70
Tetrachloroethylene ^{1/}	Ca ^{5/}	Ca ^{5/}	150	Chloroform	-	9.32
Tetraethyl Lead	0.075*	-	40*	Sweet	1.8	11.10

**TABLE 1
(continued)**

Exposure Limits

COMPOUND	EXPOSURE STANDARDS			RECOGNITION QUALITIES		
	TLV/PEL (a) (ppm)	STEL (b) (ppm)	IDLH (c) (ppm)	Odor/Threshold (ppm)	LEL (d) (%)	Ionization Potential (eV)
Tetramethyl Lead	0.075*	-	40*	Fruity	-	8.50
Toluene	100	150	500	Sweet benzene like/2.9	1.1	8.82
1,1,2-Trichloroethane	Ca ^{5/}	10	100	Chloroform	6.0	11.00
Trichloroethylene	Ca ^{5/}	25	1,000	Chloroform	8.0	9.45
Vinyl Chloride	Ca ^{5/}	Ca ^{5/}	Not determined	Pleasant	3.6	9.99
Xylenes	100	150	900	Aromatic/1.1	0.9	8.56

Notes:

1/ Potential occupational carcinogen

2/ Alachlor manufacturer established internal exposure guideline of 10 ppb for 8-hour TWA

3/ OSHA guideline, NIOSH questions the adequacy of 75 ppm

4/ Ceiling REL, should not be exceeded at any time

5/ NIOSH recommends occupational exposures to carcinogens to be limited to the lowest feasible concentration

- = No published value

* mg/m³

(a) The more stringent of either: (1) Occupational Safety and Health Administration (OSHA) 1989 Permissible Exposure Limit (PEL), (2) American Conference Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), or (3) National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (RELs), time-weighted average concentrations for up to a 10-hour work day.

(b) Short Term Exposure Limit - 15 minute exposure.

(c) Immediately dangerous to life and health.

(d) Lower Explosive Limit.

dmd

July 29, 2002

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FORMS

SITE SAFETY BRIEFING

Job Name: Remedial Action Work Plan & Remedial Action
Date: July 2006 on
Site Location: 230 Kent Avenue, Brooklyn, NY 11211
Index #W2-0873-00-10

SAFETY ISSUES (Circle appropriate information)

Tasks: Ground-Water Pump & Treat System and Free-Phase Product Recovery System Installation, Associated Piping Installation, Ground-Water Monitoring Wells Installation, Trench Excavation

Protective Clothing/Equipment: Level D, Level C, Level B, Level A

Chemical Hazards: Acetone, Xylene, Toluene, Gasoline, Diesel Fuel, Heating Oil, Number 2 and 4 Oil

Physical Hazards: Car Traffic, Construction Equipment, Confined Space, Overhead Wires

Control Methods: Cones, Restricted Access, Traffic Control Personnel

Other: _____

Local Hospital: Woodhull Hospital, 760 Broadway
Brooklyn, New York 11206
(718) 963-8000

Emergency Room: (718) 963-8442

ATTENDEES

<u>Print Name:</u>	<u>Sign Name:</u>
_____	_____
_____	_____
_____	_____
_____	_____

Meeting conducted by: _____

AIR MONITORING

General Information

Name(s): _____ Background Level: _____

Date: _____ Weather Conditions: _____

Time: _____

Project: 230 Kent Avenue
Brooklyn, NY 11211
Index #W2-0873-00-10

Equipment Calibration

PID _____ CGI _____

Sample No.	Time	Location	PID Reading (ppm)	Comments	CGI Reading	
					%O ₂	%LEL
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Air Monitoring Data

General Information

Name(s): Fyn Paint & Lacquer Co., Inc.

Project/Location: 230 Kent Avenue, Brooklyn, NY 11211
Index #W2-0873-00-10

Equipment Used: MINIRAM

Background Level: _____

Date	Weather	Total Time (min)	SA (mg/m ³)	TWA (mg/m ³)

CONTACT SHEET

Client: Fyn Paint & Lacquer Co., Inc.
Project: Fyn Paint & Lacquer Co., Inc.
Location: North First Street and Kent Avenue
Brooklyn, New York
Index #W2-0873-00-10
Task: _____
Client Contact: Nicholas Ward-Willis, Esq. (Keane & Beane, P.C.)

Leggette, Brashears & Graham, Inc.

(914) 694-5711 (914) 694-5744 (fax)
Field Supervisor (HSO): Mike Choireanu, Jason Stouffer
Project Manager: Sean Groszkowski
Principal-in-Charge: Dan C. Buzea

Local Police Headquarters: 90th Precinct, Long Island City, New York
(718) 963-5311

Local Hospital: Woodhull Hospital, 760 Broadway
Brooklyn, New York 11206
(718) 963-8000

Emergency Room: (718) 963-8442

State Police: State Government Police, New York Marshalls Bureau,
80 Maiden Lane, Floor 17, New York, New York,
(212) 825-5953

Miscellaneous: New York State Department of Environmental Conservation
(NYSDEC) Region 2, 1 Hunters Point Plaza, 47-40 21st Street,
Long Island City, New York (718) 482-4900

PLAN ACCEPTANCE FORM

PROJECT HEALTH & SAFETY PLAN

INSTRUCTIONS: This form is to be completed by each Leggette, Brashears & Graham, Inc. employee to work on the subject project work site and returned to the Office Safety Coordinator prior to site activities.

Client/Project: Fyn Paint & Lacquer Co., Inc., 230 Kent Avenue, Brooklyn, NY 11211

Date: _____

I represent that I have read and understand the contents of the above Plan and agree to perform my work in accordance with it.

Signed

Signed

Print Name

Print Name

Date

Date

Signed

Signed

Print Name

Print Name

Date

Date

EXCLUSION ZONE LOG SHEET

**LEGGETTE, BRASHEARS & GRAHAM, INC.
110 CORPORATE PARK DRIVE, SUITE 112
WHITE PLAINS, NEW YORK 10604**

Client: Fyn Paint & Lacquer Co., Inc.

Location: 230 Kent Avenue, Brooklyn, New York 11211

Name	Date	Time In	Time Out	Elapsed Time

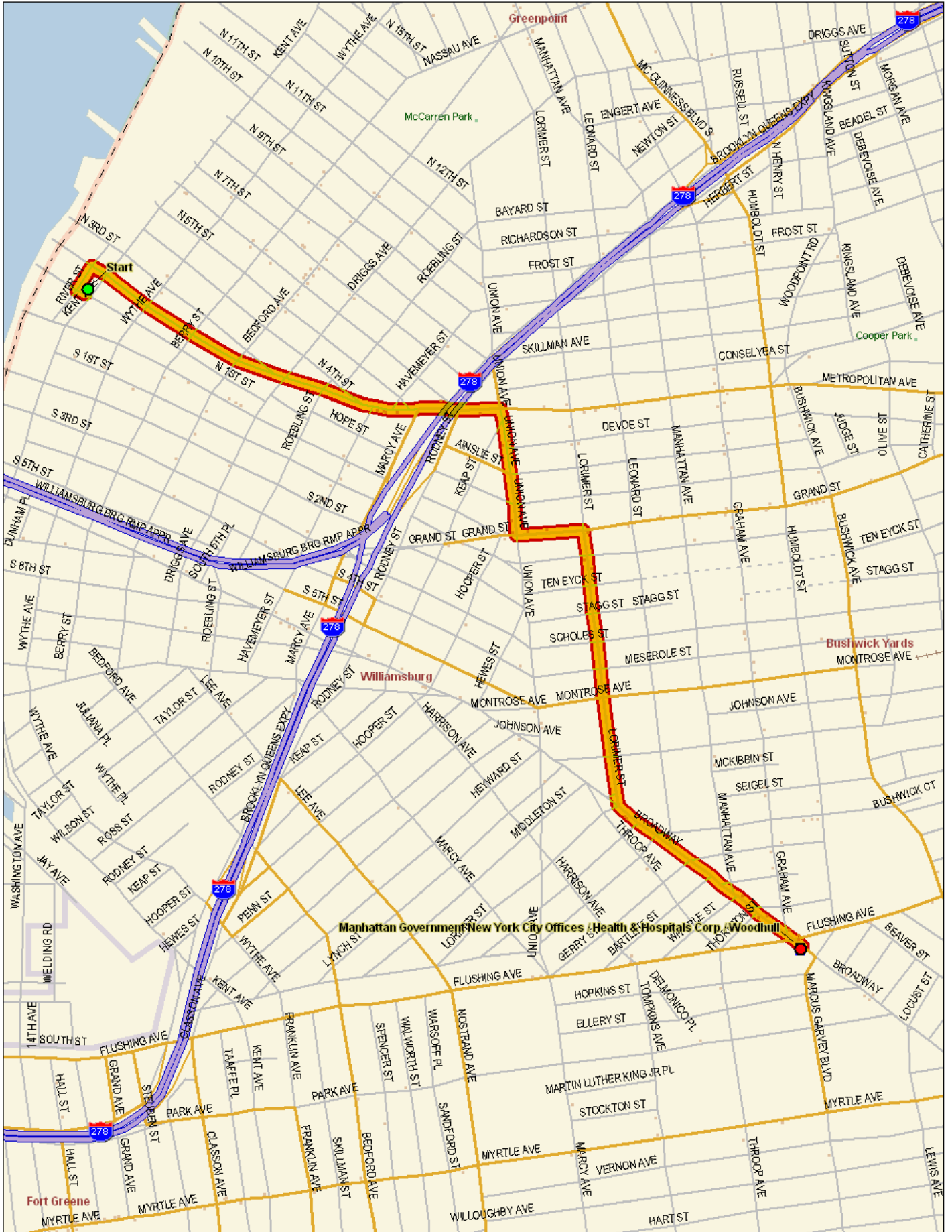
DIRECTIONS TO LOCAL HOSPITAL:

Woodhull Hospital
760 Broadway
Brooklyn, New York 11206

Total Distance: 2.1 miles
Total Estimated Time: 5 minutes

- Go north on Kent Avenue one (1) block
- Turn right onto Metropolitan Avenue
- Follow Metropolitan Avenue east for just under one mile
- Turn right onto Union Avenue
- Follow Union Avenue south for just over half a mile
- Turn left onto Broadway
- Follow Broadway southeast for just over half a mile to the intersection with Flushing Avenue
- Woodhull Hospital is on the southwest corner of the intersection between Broadway & Flushing Avenue

dmd
June 28, 2006
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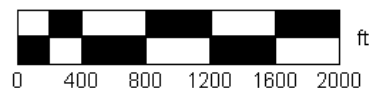
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MN (13.2° W)



Data Zoom 13-7

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APPENDIX A

LEGGETTE, BRASHEARS & GRAHAM, INC.

SAFETY POLICY

Job safety is a common-sense part of everyone's life, but requires constant alertness to possible dangers. When we work on industrial sites, LBG employees are expected to observe the safety rules of our Client hosts.

You are the first line of defense for your own personal safety. In the field, appropriate clothing should be worn at all times. Where appropriate, work shoes with hard toes and/or ankle protection should be worn at all times. **Sneakers/tennis shoes should never be worn in the field, regardless of the circumstances.**

LBG provides hard hats that should be worn around any drilling operations and in any other "hard hat zones". Where required, safety glasses, goggles, protective gloves, respirators, and other safety clothing or equipment should be worn and disposed of as specified by the Project Safety Officer.

Periodically, LBG provides special safety seminars which satisfy the OSHA requirements for work on hazardous waste sites. In-house safety training is conducted on an ongoing basis and as dictated by case-by-case needs. There is a Corporate Safety Officer in the Trumbull, Connecticut headquarters and a designated Safety Officer in each regional office to whom questions and problems relating to job safety should be referred.

Any project that involves or may involve hazardous or toxic waste or any potentially dangerous condition requires the preparation, filing, use and compliance with a Health and Safety Plan (HASP). LBG has a petroleum related work HASP that can be readily adapted to most petroleum jobs and has numerous site-specific HASPS that comply with state and federal CERCLA requirements that can be used for guidance in developing site-specific HASPS.

LEGGETTE, BRASHEARS & GRAHAM, INC.

GENERAL DRUG AND ALCOHOL POLICY

In any company, certain common-sense rules of conduct and performance must be established for the employees to follow in order to avoid any misunderstanding and to protect the right of all concerned. Breaches of acceptable conduct which include, but are not limited to, abusive language, insubordination, intoxication, moral turpitude, or substance abuse/possession can lead to disciplinary action or to dismissal.

While performing any service for LBG or LBG's clients, employees, agents, and subcontractors of LBG shall not: (1) be under the influence of alcohol or any controlled substance; (2) use, possess, distribute, or sell illicit or unprescribed controlled drugs, drug paraphernalia, or alcoholic beverages; or (3) misuse legitimate prescription drugs.

LBG may remove from active project status any of its employees any time there is a reasonable basis for suspicion of alcohol/drug use, possession, or impairment involving such employee, and at any time an incident occurs where drug or alcohol use could have been a contributing factor. In such cases, employee may only be considered for return to work after LBG certifies as a result of a for-cause test, conducted immediately following removal, that said employee is in compliance with this policy.

LBG reserves the right to require drug and alcohol testing for its employees, either for its own purposes or at the direction of Clients. Such testing may take place periodically, or for specific projects. The testing will be in compliance with Department of Transportation drug testing regulations.

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APPENDIX B

LEGGETTE, BRASHEARS & GRAHAM, INC.
AIR MONITORING EQUIPMENT OPERATION

Instrument Calibration

All applicable instruments will be calibrated daily before use. Readings will be recorded on the Air Monitoring form.

Background Readings

Before any field activities commence, the background levels of the site must be read and noted. Daily background readings must be conducted away from areas of potential contamination to obtain accurate results.

Air Monitoring Frequency

All site readings must be noted on the Air Monitoring form along with the date, time, background level, weather conditions, wind direction and speed, and the location where the background level was recorded.

OVM 580B Calibration

- C Turn the OVM on by pressing the ON/OFF switch.
- C With the OVM running, press the MODE/STORE switch and then press the -/CRSR switch when the OVM reads if "logging is desired".
- C Keep pressing the -/CRSR switch until OVM will display "reset to calibrate".
- C Enter the calibration mode by pressing the RESET switch. The OVM will then display "restore backup + = Yes".
- C Press the -/INC switch and the OVM will display "zero gas reset when ready".
- C Connect zero gas to OVM and press RESET switch. The OVM will display "Model 580B zeroing".
- C After the OVM calibrates the zero gas, it will display "span gas reset when ready".
- C Connect span gas to OVM and press RESET switch.
- C When OVM displays "reset to calibrate", the OVM has calibrated the span gas.
- C To exit calibration mode, press MODE/STORE switch.

HNU PI-101 Calibration

- C Battery check--The function switch should be turned to BATT. The needle should be in the green region; if not, recharge the battery.
- C Zero set--The function switch should be turned to STANDBY. In this position, the lamp is OFF and no signal is generated. The zero point should be set with the ZERO set control.
- C Gas standard--The standard should be connected to the probe. The function switch should be turned to the range position of the standard and the meter reading should be noted. The SPAN control setting should be adjusted, as required, to read the parts per million (ppm) concentration of the standard. The zero setting should be rechecked.
- C Lamp cleaning--If the span setting from calibration is 0.0 or calibration cannot be achieved, then the lamp must be cleaned.
- C Lamp replacement--If the lamp output is too low or if the lamp has failed, it must be replaced.

MSA Explosimeter Model 2A Calibration Instructions

Before the calibration can be checked, the instrument and its aspirator sampling bulb must be in operating condition, as described in the instrument instruction manual.

- C The flow control should be attached to the calibration gas tank.
- C The hose should be connected to the flow control and to the instrument inlet fitting.
- C The control valve should be opened.
- C The meter reading should be recorded after it stabilizes. Note: It is not necessary for the aspirator bulb to be operated for the calibration sample to be obtained. If the instrument does not read within the acceptable range, the detector filament unit should be replaced and the calibration check procedure should be repeated.
- C The flow control valve should be closed.
- C The hose should be removed from the flow control and from the inlet fitting on the instrument.
- C The flow control should be removed from the calibration gas tank.

Thermo Anderson MIE Personal Data RAM Dust Meter Calibration and Operation:

- Turn unit on by pressing the ON/OFF button
- Press 'Enter' to 'Start zero', unit will enter the zeroing mode and LCD will display 'Calibration:OK' when complete
- Press 'Next' to enter measure mode, unit will display 'Start Run', press 'Enter'
- Unit will display instantaneous dust concentration (SA) and time weighted average (TWA) in milligrams per cubic meter (mg/m³)

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APPENDIX C

LEGGETTE, BRASHEARS & GRAHAM, INC.
VOLATILE ORGANIC COMPOUNDS
PROJECT WORK ZONE CONSIDERATIONS

1.0 EXCAVATION

The following requirements, which apply to all types of excavation operations, except tunnels and shafts, are taken from the U.S. Department of the Interior, Bureau of Reclamation's Construction Safety Standards. They are not intended to be an exhaustive set of requirements, but rather, a summary of current practices that are being enforced at construction activities by Federal and state government agencies and private industry. The requirements were assembled in cooperation with the Associated General Contractors of America, the American National Standards Institute, labor unions, and other interested in improving safety.

1.1 Preliminary Inspection

Prior to excavation, the site shall be thoroughly inspected to determine conditions that require special safety measures. The location of underground utilities, such as sewer, telephone, gas, water, and electric lines, must be determined and plainly staked. Necessary arrangements must be made with the utility company or owner for the protection, removal, or relocation of the underground utilities. In such circumstances, excavation will be done in a manner that does not endanger the employees engaged in the work or the underground utility. Utilities left in place shall be protected by barricading, shoring, suspension, or other measures, as necessary.

1.2 Protection of the Public

Necessary barricades, walkways, lighting, and posting shall be provided for the protection of the public prior to the start of excavation. Excavation operations on or near state, county, or city streets, accessways, or other locations where there is extensive interface with the public and/or motorized equipment will not start until all of the following actions have been taken:

- C The contractor has contacted the authority having jurisdiction and obtained written permission to proceed with protective measures required.
- C The contractor, using the authority's instructions and these standards, has developed an extensive and detailed standard operating plan.

- C The plan has been discussed with affected employees, and applicable protective measures are in place and functioning.

1.3 Access and Lighting

Safe access will be provided for employees, including installation of walkways, stairs, ladders, etc. When operations are conducted during hours of darkness, adequate lighting will be provided at the excavation, borrow pits, and waste areas.

Where employees are required to enter excavations over 4 feet in depth, stairs, ladders, or ramps must be provided, so as to require no more than 25 feet of lateral travel. When access to excavations exceeds 20 feet vertically, ramps, stairs, or personnel hoists shall be provided. Ladders extending from the bottom of the trench to at least 3 feet above the top must be placed within 25 feet of workers in the trench.

1.4 Personal Protective Equipment

PPE will be provided and used in accordance with the specific requirements set forth in the plan. Drillers and helpers must wear approved safety goggles or safety glasses with side shields, hearing protection, hard hats, and safety shoes.

1.5 Removal of Trees and Brush

Prior to excavation, trees, brush, boulders, and other surface obstacles that present a hazard to employees shall be removed.

1.6 Slide Prevention and Trenching Requirements

All trench excavations over 5 feet in depth must be shored, shielded, or sloped to the angle of repose from the bottom of the trench, but never less than 3/4 horizontal to 1 vertical (i.e., 37 degrees from vertical), or supported by structures designed by a professional engineer. Excavations shall be inspected following rainstorms or other hazardous events. Additional protection against possible slides or cave-ins shall be provided, as necessary. The proposed trench will be completed manually by hand digging equipment. The total depth of the trench will be 3.75 ft bg to 4 ft bg.

1.7 Angle of Repose

The determination of the angle of repose and design of supporting systems shall be based on a thorough evaluation of all pertinent factors, including depth of cut; possible variation in water content of the material; anticipated changes in the material from exposure to air, sun, water, or freezing; loading imposed by structures, equipment, or overlying or stored material; and vibrations from sources such as traffic, equipment, and blasting. The angle of repose for all excavations, including trenching, should be determined by a professional engineer, but in no event should the slope be less than 3/4 horizontal to 1 vertical (i.e., 37 degrees from vertical) from the bottom of the excavation.

1.8 Support Systems

Materials used for support systems, such as sheeting, piling, cribbing, bracing, shoring, and underpinning, shall be in good serviceable condition, and timbers shall be sound and free of large or loose knots. The design of support systems shall be based on calculations of the forces and their directions, with consideration for surcharges, the angle of internal friction of materials, and other pertinent characteristics of the material to be retained.

When tight sheeting or sheet piling is used; full loading due to the ground-water table shall be assumed unless relieved by weep holes, drains, or other means. Cross braces and trench jacks shall be placed in true horizontal position and secured to prevent sliding, falling, or kickouts. Additional stingers, ties, and bracing shall be provided to allow for any necessary temporary removal of individual supports. Support systems should be planned and designed by a professional engineer competent in the field.

Backfilling and removal of trench support systems shall progress together from the bottom of the trench. Jacks or braces shall be released slowly. In unstable soil, ropes or other safe means will be used to remove the braces from the surface after workers have left the trench.

Special precaution must be taken in sloping or shoring the sides of excavations adjacent to a previously backfilled excavation or fill area. The use of compacted backfill as backforms on slopes that are steeper than the angle of repose of the compacted material in its natural state is prohibited.

1.9 Structural Foundations and Footings

Except in hard rock, excavations below the level of the base of any foundation, footing, or retaining wall will not be permitted unless the wall is underpinned and all necessary precautions are taken to ensure the stability of adjacent walls. If the excavation endangers the stability of adjacent buildings or structures, shoring, bracing, or underpinning designed by a qualified person will be installed. Such supporting systems must be inspected at least daily by qualified persons to ensure that protection is adequate and effectively maintained.

Small diameter footings that workers are required to enter, including bell-bottomed footings over 4 feet deep, must be provided with a steel casing or support system of sufficient strength to support the earth walls and prevent cave-ins. The casing or support system shall be provided for the full depth, except for the bell portion of bell footings.

Fixed or portable ladders must be provided for access. A lifeline, securely attached to a shoulder harness, shall be worn by every employee entering the footing. The lifeline shall be manned from above and shall be separate from any line used to raise or lower materials.

1.10 Vertical Cuts and Slopes

Before a slope or vertical cut is undercut, the residual material must be adequately supported and the undercutting method and support system must be inspected.

When exposed to falling, rolling, or sliding rocks, earth, or other materials, employees working below or on slopes or cuts shall be protected in the following manner:

- C By effective scaling performed prior to exposure and at intervals necessary to eliminate the danger.
- C By the installation of rock bolting, wire mesh, or equivalent support if the material continues to ravel and fall after scaling.
- C By the installation of protective timber or wire mesh barricades at the slope of the cut and at necessary intervals down the slope. Wherever practical, benching sufficient to retain falling material may be used in lieu of barricades.
- C By ensuring that personnel do not work above one another where there is danger of falling rock or earth. Personnel performing work on vertical cuts or slopes

where balance depends on a supporting system must wear appropriate safety equipment.

1.11 Ground Water

Ground water is not expected to be an issue with respect to excavations and/or trenching considering the static groundwater level is approximately 15 feet below grade (ground surface).

1.12 Surface Water

The accumulation of surface water in excavations must not be permitted and shall be controlled by diversion ditches, dikes, dewatering sumps, or other effective means.

1.13 Trench Excavation Materials

The materials will be excavated manually using hand digging equipment. The excavated material will be put into a 'bobcat' or similar front loader bucket and then transferred and stored in a roll-off container.

1.14 Protective Devices

Guardrails, fences, barricades, and warning lights or other illumination systems will be maintained from sunset to sunrise on excavations adjacent to walkways, driveways, and other pedestrian or vehicle thoroughfares. Walkways or bridges that are protected by standard guardrails shall be provided where employees are required or permitted to cross over excavations when necessary.

Wells, calyx holes, pits, shafts, and all similar hazardous excavations must be effectively barricaded or covered and posted. All temporary excavations of this type should be backfilled as soon as possible. When mobile equipment is permitted adjacent to excavations with steep slopes or cuts, substantial stoplogs or barricades shall be installed.

1.15 Equipment Operation

Equipment that is operated on loading or waste areas must be equipped with an automatic backup alarm. Additionally, when employees are on foot or otherwise endangered by equipment

in dumping or waste areas, a competent signalman shall be used to direct traffic. The signalman must have no other assignment that interferes with signaling duties. If the equipment or truck cab is not shielded, the operator shall stand clear of the vehicle during loading. Excavating or hoisting equipment shall not be allowed to raise, lower, or swing loads over workers unless effective overhead protection is provided.

1.16 Excavation Operations

When drilling in rock or other dust-producing material, the dust shall be controlled within the OSHA Permissible Exposure Limits (PELs). Except in shaft and tunnel excavation, dust control devices are not required on jackhammers as long as the operators wear approved dust respirators.

2.0 EXCAVATION SAFETY

2.1 Basic Requirements

Employees will not proceed with work on, or in the proximity of, hazardous equipment until they have been properly trained and have received a safety briefing.

Potential hazards (e.g., overhead or underground power, oil, or gas lines in the immediate vicinity of the drilling location) must be removed, avoided by relocating the drill site, or adequately barricaded to eliminate the hazard.

The use of unsafe or defective equipment is not permitted. Equipment must be inspected regularly and, if found to be defective, must be immediately removed from use and either repaired or replaced.

Employees will be familiar with the location of first-aid kits and fire extinguishers. Telephone numbers for emergency assistance must be prominently posted and kept current.

2.2 General Requirements at Excavation Operations

2.2.1 Housekeeping

Good housekeeping conditions shall be observed in and around the work area. Suitable storage places shall be provided for all materials and supplies.

Work surfaces, platforms, stairways, walkways, scaffolding, and accessways will be kept free of obstructions. All debris will be collected and stored in piles or containers for removal and disposal.

2.2.2 Flammable Liquids

All highly flammable liquids used in conjunction with onsite activities will be stored and handled only in approved containers. Portable containers must be the approved red safety containers equipped with flame arresters and self-closing lids. All containers containing flammable liquids will be stored off of the Con Ed property. When equipment needs to be filled with gasoline/diesel, the equipment will be placed on two layers of 6-mil fire retardant polysheeting, bermed on all four sides to prevent migration of any spilled fuels, and filled. After the filling is completed, the flammable liquid will be taken and stored off of the Con Ed property.

Approved hand pumps will be used to dispense gasoline from barrels. Gasoline will not be used for degreasing or to start fires. Also, gasoline containers shall be clearly labeled, and storage areas shall be posted with "No Smoking" signs. Fire extinguishers shall be readily available in all areas that contain flammable liquids.

2.2.3 Public Safety

Work areas will be regulated so that the public will be protected from injury or accident. Adequate danger signs, barriers, etc., will be placed to effectively warn the public of hazards as well as to restrict access to dangerous areas.

2.3 Excavation Equipment

2.3.1 Hand Digging Equipment

The equipment/materials used in the trenching activities will consist of: shovels, pry bars, a concrete/asphalt chop saw, a 'bobcat' or similar front loader bucket machine and if necessary an electric jackhammer (for breaking the existing manhole pads). All shovels, pry-bars and miscellaneous manual digging tools will be constructed of non-conductive materials.

2.3.2 Overhead and Underground Utilities

Special precaution must be taken when using a drill rig or excavating on a site within the vicinity of electrical power lines and other utilities. Electricity can shock, burn, and cause death.

Overhead and underground utilities shall be located, noted, and emphasized on all boring location plans and assignment sheets. As overhead electric lines are not present at the Site, this is not presumed to be an issue. Should overhead utilities be installed in the future, appropriate precautions will be taken when needed.

A check shall be made for sagging power lines before a site is entered. Power lines shall not be lifted to gain entrance. The appropriate utility company shall be contacted and a request shall be made that it lift or raise and cut off power to the lines.

When drilling, the area around the drill rig shall be inspected before the drill rig mast (derrick) is raised at a site in the vicinity of power lines. The minimum distance from any point on the drill rig to the nearest power line shall be determined when the mast is raised or is being raised. The mast shall not be raised and the drill rig should not be operated if this distance is less than 20 feet, because hoist lines and overhead power lines can be moved toward each other by the wind.

The existence of underground utilities, such as electric power, gas, petroleum, telephone, sewer, and water lines, shall always be suspected. These underground electric lines are as dangerous as overhead lines, so a utility locating service shall always be contacted.

There are generally two types of utility locating services. One is a "free" service that is paid for by companies with underground pipes, lines, etc., to protect the public and to prevent costly repairs. However, these services have access only to drawings for primary pipes or lines, typically on public property or right-of-way easements, but not to drawings showing supply or feeder lines from a primary system to the interior of a property. Therefore, they are not required, and in fact hesitate, to locate interior lines. Sites can be cleared for drilling by such services, but without the drill operator's knowledge of the locations of underground feeder or supply lines.

A second type of locating service is provided by a paid subcontractor who physically sweeps or clears interior locations using locating equipment. Locating costs can be minimized by obtaining all available maps, drawings, and employee interview information before contracting with the locating company. This is especially important at large industrial plants or military bases,

which can have an intricate network of underground utilities. It is important that every location be cleared, even those for hand-auger borings.

If a sign warning of underground utilities is located on a site boundary, it shall not be assumed that underground utilities are located on or near the boundary or property line under the sign; they may be a considerable distance from the sign. The utility company shall be contacted to check it out.

The owners of utility lines or the nearest underground utility location service shall always be contacted before drilling or excavation work is started. However, remember that some services provide information on utilities going to, but not within, a site. Metal detectors or other locating equipment may be necessary to determine the presence of shallow (surface) utilities onsite. The utility personnel shall mark or flag the location of the underground lines and determine what specific precautions must be taken to ensure safety.

No saw cutting will be performed over the mark-outs for any underground utilities. Specifically, this relates to the trench extending from MW-22 to the Fyn Paint building. In this area, the asphalt will be carefully pulled up using a pry bar.

2.3.3 Site Selection and Working Platforms

In preparing a work site located on adverse topography, precautions must be taken against cave-ins, slides, and loose boulders. Drill platforms shall be stabilized by outriggers or adequate timbering.

Prior to drilling, adequate site clearing and leveling shall be performed to accommodate the drill rig and supplies and to provide a safe working area. Drilling shall not commence when tree limbs, unstable ground, or site obstructions result in unsafe tool-handling conditions.

Suitable storage locations shall be provided that allow for the convenient handling of tools, materials, and supplies without danger that they could fall and injure anyone. Storing or transporting tools, materials, or supplies within or on the drilling mast (derrick) should be avoided. Pipes, drill rods, bits, casings, augers, and similar drilling tools shall be securely stacked in an orderly manner on racks or sills.

Penetration hammers or other types of driving hammers shall be placed at a safe location on the ground or secured when unattended on a platform. Work areas, platforms, walkways,

scaffolding, and other accessways shall be kept free of obstructions and substances such as ice, grease, or oil that could create a hazardous surface. All controls, control linkages, and warning and operation lights and lenses also shall be kept free of ice, grease, or oil.

In the vicinity of power transmission or distribution lines, drills shall be adequately grounded and set with at least a 15-foot clearance between any part of the drill or mast and the power lines.

3.0 REMEDIATION SYSTEM EQUIPMENT

LBG operates remediation system equipment at various sites. Remediation equipment includes but is not limited to pump and treat, soil vapor extraction, two-phase vapor extraction, liquid and vapor phase granular activated carbon, thermal destruction and air stripping tower systems. This brief list of safety requirements cover hazards specific to this type of operation.

The components of a typical remediation system equipment can include an electric or gasoline powered motor, a carbon absorption bed, and various filters, piping, and controls. For the proposed remediation system onsite at the Fyn Paint building located at 230 Kent Avenue in Brooklyn, NY, a submersible groundwater pump, a low-profile air stripper, a catalytic oxidizer and a free-phase product pump will be the major components utilized.

LBG will install a groundwater pump and treat system and a product recovery system. Activities associated with the remediation system installation, operation and maintenance include: excavation of piping trenches, construction of a treatment building in the Fyn Paint building, installation and connection of the remedial equipment and implementation and operation and maintenance of the remedial system. Activities to be performed following the installation of the system include routine measuring of ground-water levels from onsite and surrounding monitoring wells at set intervals; sampling of influent and effluent groundwater samples, sampling of influent and effluent vapor samples, and monitoring of product recovery. The safety requirements which cover hazards specific to these type of activities are listed below. The list assumes that safety requirements for standard onsite procedures inherent work performed at the facility are already being followed, such as 29 CFR 1910.120 "Hazwoper" planning, training, and other requirements; or drilling, trenching, and shoring safety practices.

3.1 Basic Requirements

3.1.1 General

Employees will not proceed with work on, or in the proximity of, the remediation equipment until they have been properly trained and have attended a safety briefing covering the hazards involved. This may be in the form of a "tailgate" safety briefing or a more extensive session, depending upon the extent of the hazards, the employees' safety knowledge, and site-specific exposures.

The use of unsafe or defective equipment is not permitted. Equipment must be inspected regularly and, if found to be defective, immediately removed from use and repaired or replaced.

Employees shall be familiar with the location of first-aid kits and fire extinguishers. Telephone numbers or radio frequencies for emergency assistance must also be prominently posted and kept current.

3.1.2 Housekeeping

Good housekeeping practices shall be observed in and around the work area. Suitable storage shall be provided for all materials and supplies.

Any work surfaces, platforms, stairways, walkways, scaffolding, or accessways shall be kept free of obstructions. Any debris shall be collected and stored in piles or containers for removal and proper disposal.

3.1.3 Flammable Liquids

All highly flammable liquids shall be stored and handled only in approved containers. Portable containers must be of the approved, red safety container type, equipped with flame arresters and self-closing lids.

Approved hand pumps shall be used to dispense gasoline from drums. Gasoline must not be used for degreasing or starting fires. Also, gasoline containers shall be clearly labeled, and any storage areas shall be posted with "No Smoking" signs. Fire extinguishers shall be installed in all areas that contain flammable liquids.

3.1.4 Public Safety

Work areas shall be regulated so that the public will be protected from injury or accident. Adequate danger signs, barriers, etc., shall be placed to effectively warn the public of hazards as well as to restrict access to dangerous areas.

3.2 Specific Requirements

3.2.1 Chemical Hazards

Some of the primary chemical hazards at remediation operations are site contaminants related to volatile organic compounds. Contaminants will be drawn from extraction wells and treated with a catalytic oxidation system (groundwater) and stored (extracted free-phase product). Manufacturers' Material Safety Data Sheets shall be available on site for all neat chemical compounds used.

Personnel can be exposed to site contaminants during sampling and equipment maintenance. Because the groundwater and vapor phase treatment systems will be closed systems, chances of exposure incidents during normal operations are minimal. If chemical exposure occurs, however, it is most likely during sampling or equipment maintenance. Sampling typically includes sampling of site soils or ground water to measure the long-term effectiveness of remediation activities, or sampling process water or vapors to determine the efficiency of treatment technologies in capturing or destroying the contaminants.

A potential for exposure exists during maintenance procedures because of cleaning sediment from knockout pots and from general piping system repairs.

In order to minimize the potential hazards associated with chemical exposure, all site workers shall have a knowledge of particular site hazards and contaminants. Based upon site conditions, proper personal protective equipment shall be worn such as hard hats, chemical protective clothing, safety gloves, goggles/protective glasses, and safety shoes.

Personnel onsite not involved with the remediation activities will be educated about the system and instructed as to what access restrictions are involved with the system.

3.2.2 Physical Hazards

Physical hazards can be managed by general housekeeping in work areas and routine equipment maintenance. Scaffolding may be erected around vapor effluent stack and the catalytic oxidizer will be inspected periodically, as part of a routine maintenance procedure.

3.2.3 Pressure

The remediation system recovering groundwater and free-phase product (and subsequent vapor phase stream) from beneath the ground surface and forces it through the system under pressure. As such, all remedial equipment will be shut off when maintenance activities or repairs occur.

3.2.4 Electric Hazards

Because several types of equipment in remediation systems are commonly powered by electricity, electrical hazards exist at these remedial sites. Catalytic oxidizers, liquid ring vacuum pumps, knockout pumps, air stripper holding tanks and pumps, and other elements of the treatment units are frequently powered by electricity. General housekeeping and equipment maintenance are necessary to prevent electrical safety hazards. Worn switches and wiring shall be quickly repaired, use of water shall be controlled, and unnecessary spills prevented. Ground fault interrupters (GFI) shall be used on all circuits carrying power from a nearby indoor source to outdoor equipment or from an outdoor portable generator to equipment. Equipment shall also be properly grounded as a protection against shocks, static electricity, and lightning if an electrical storm occurs.

3.2.5 Lighting

In addition to providing required or recommended illumination intensities of at least 5 foot-candles for nighttime operation, consideration shall be given to the selection and placement of lighting equipment. Proper lighting shall provide minimum glare, eliminate harsh shadows, and provide adequate illumination to perform work efficiently and safely. Light bulbs shall be of the heavy duty, outdoor, nonshattering type.

All lighting circuits, including extension cords, shall be grounded and have GFI protection. Circuits and extension cords shall be inspected periodically.

3.2.6 Catalytic Oxidizer/Treatment System

Thermal hazards exist with catalytic oxidizers, and boundaries shall be set up to prevent contact with heated surfaces. Additionally, proper thermal protection shall be available for personnel working at the catalytic oxidizer. Vapor extractor pumps shall be set to shut off automatically if the catalytic oxidizer shuts off, to prevent accumulation of high concentrations of volatile compounds that could result in an explosion hazard.

3.2.7 Carbon Bed Temperature

A hazard related to carbon absorption units is the heat of reaction, which is high for some materials, such as ketones, treated in high concentrations. Vapor Phase treatment equipment shall be designed to take this into account when carbon absorption is employed and the bed temperature must be monitored. This is considered to be a minimal concern as carbon treatment is proposed for use only as a supplemental treatment option shall the air stripper, catalytic oxidizer system not reduce contaminant levels to the required concentrations.

Typically, but not limited to, two carbon units will be piped in series to treat the recovered vapors. Carbon units will be changed out according to the air permit guidelines.

When carbon units are changed out, the primary unit will be taken off line, the secondary unit will become the primary unit, and a fresh carbon vessel will become the secondary unit.

All field activities will be initiated in Level D. If the action levels specified in Table 5-1 are reached, an upgrade will be made to Level C.

3.2.8 Vapor Emission Response Plan

If the air concentration of organic vapors exceeds applicable limits above background in the exhaust of the treatment system, the system exhaust will be continuously monitored and necessary actions will be taken to reduce system emissions to 5 ppm--for example, by bleeding air into the system, changing carbon canisters, etc. If the organic vapor levels measured in the treatment system exhaust are between 5 ppm and 50 ppm above background, continue site

activities and perform continuous monitoring. If the organic vapor level exceeds 50 ppm above background in the treatment system exhaust, shut down work activities until the system is repaired.

Prior to beginning construction activities, notify fire departments and police as well as the local emergency facility of planned site activities. These organizations shall be briefed on the nature of planned site work and given a schedule of the proposed tasks. Changes or modifications to the planned work or schedule which could affect the need for emergency services shall be communicated to these organizations. LBG shall communicate to the local hospital and fire department what types of materials may be encountered at the site.

Should the level of total hydrocarbons exceed 100 ppm for any single reading, or should the explosimeter indicate in excess of 10 percent of the lower explosive limit on any single reading, work in that area will be shut down and personnel will be evacuated upwind. Work will not resume there until authorized by the Site Safety Officer.

3.2.9 System Start-Up and Initial Operating Period

The remediation system is designed to operate unattended 24 hours per day, 7 days per week. Once the electrical connections are complete, LBG will begin system start-up.

LBG will monitor the system on a weekly basis during the first month of operation. LBG field personnel will use a photoionization detector (PID) to monitor the vapor emissions before the catalytic oxidizer, after the catalytic oxidizer and after the GAC treatment (if necessary). These measurements will be used to estimate the amount of VOCs removed from the soil and the rate at which the threatment alternatives are being used to treat vapor phase emissions. As part of the daily and regular monitoring, LBG will follow the Vapor Emission Response Plan.

3.2.10 Continued Operations and Maintenance

For the first month of operation, LBG will monitor the system weekly and from the beginning of the second month to the remainder of the treatment period, LBG will monitor the system once a month. The following data will be recorded on each visit:

- C Summary of system operation;
- C air flow data and calculations;
- C summary of temperatures;

- C laboratory data for all sample ports sampled;
- C PID data for all air sample ports sampled;
- C summary of gauge readings;
- C summary of measured monitor well water and/or product levels;
- C total volume recovered (monthly period and total to date); and,
- C summary of O&M activities.

Any additional data that may provide insight into the operation of the ground-water treatment system and/or product recovery system will also be compiled. Performance data will be reported to the NYSDEC on a monthly basis.

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APPENDIX D

DECONTAMINATION PROCEDURES

Procedure for Level C Decontamination

Level C decontamination, if required, will take place on plastic sheeting so all contaminated material can be contained for proper disposal.

Station 1: Segregated Equipment Drop

Deposit equipment used onsite (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination.

Equipment: various size containers
plastic liners
plastic drop cloths

Station 2: Suit/Safety Boot Wash

Thoroughly wash splash suit and safety boots. Scrub with long-handle, soft-bristle scrub brush and copious amounts of decon solution or detergent/water. Repeat as many times as necessary.

Equipment: container (30-50 gallons)
decon solution
or
detergent/water
2-3 long-handle, soft-bristle scrub brushes

Station 3: Suit/Safety Boot Rinse

Rinse off decon solution or detergent/water using copious amounts of water. Repeat as many times as necessary.

Equipment: container (30-50 gallons)
or
high-pressure spray unit
water
2-3 long-handle, soft-bristle scrub brushes

Station 4: Canister or Mask Change

If worker leaves Exclusion Zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canisters will be exchanged, depositing the old canisters in containers with plastic liners. The worker will enter the work area and return to duty.

Equipment: canister (or mask)
boot covers
gloves

Station 5:

Step 1 - Tape, Safety Boot and Outer Glove Removal

Remove safety boots and gloves and deposit in container with plastic liner.

Equipment: container (30-50 gallons)
plastic liners
bench or stool
boot jack

Step 2 - Splash Suit Removal

With assistance of helper, remove splash suit. Deposit in container with plastic liner.

Equipment: container (30-50 gallons)
bench or stool
liner

Step 3 - Facepiece Removal

Remove facepiece. Avoid touching face with gloves. Deposit facepiece in container with plastic liner.

Equipment: container (30-50 gallons)
plastic liners

Masks will be collected at a central location. Decontamination will be performed as follows:

- remove all cartridges, canisters and filters, plus gaskets or seals not affixed to their seats;
- remove elastic headbands;
- remove exhalation cover;
- remove speaking diaphragm or speaking diaphragm-exhalation valve assembly;
- remove inhalation valves;
- wash facepiece and breathing tube in cleaner mixed with warm water, preferably at 120°F to 140°F; wash components separately from the face mask; remove heavy soil from surfaces with a hand brush;
- remove all parts from the wash water and rinse twice in clean warm water;
- air dry parts in a designated clean area; and,
- wipe facepiece, valves and seats with a damp lint-free cloth to remove any remaining soap or other foreign materials.

Station 6: Inner Glove Removal

Remove inner gloves and deposit in container with plastic liner.

Equipment: container (20-30 gallons)
plastic liners

Station 7: Inner Clothing Removal (optional)

Remove clothing soaked with perspiration. Place in container with plastic liner. Do not wear inner clothing offsite if there is a possibility small amounts of contaminants might have been transferred in removing splash suit.

Equipment: container (30-50 gallons)
plastic liners

Station 8: Field Wash (optional)

Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.

Equipment: water
soap
tables
wash basins/buckets
field showers

Station 9: Redress

Put on clean clothes. A dressing trailer is needed in inclement weather.

Procedure for Level B Decontamination

Level B decontamination, if required, will take place on plastic sheeting so all contaminated material can be contained for proper disposal.

Station 1: Segregated Equipment Drop

Deposit equipment used onsite (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination.

Equipment: various size containers
plastic liners
plastic drop cloths

Station 2: Suit/Safety Boot Wash

Thoroughly wash chemical-resistant splash suit, SCBA, gloves, and safety boots. Scrub with long-handle, soft-bristle scrub brush and copious amounts of decon solution or detergent/water. Wrap SCBA regulator (if belt-mounted type) with plastic to keep out water. Wash backpack assembly with sponges or cloths.

Equipment: container (30-50 gallons)
decon solution
or
detergent/water
2-3 long-handle, soft-bristle scrub brushes
sponges or cloths

Station 3: Suit/SCBA/Boot/Glove Rinse

Rinse off decon solution or detergent/water using copious amounts of water. Repeat as many times as necessary.

Equipment: container (30-50 gallons)
or
high-pressure spray unit
water
small buckets
2-3 long-handle, soft-bristle scrub brushes
sponges or cloths

Station 4: Tank Change

If worker leaves Exclusion zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged and worker returns to duty.

Equipment: air tanks
tape
boot covers
gloves

Station 5: Tape, Safety Boot and Outer Glove Removal

Remove safety boots and gloves and deposit in container with plastic liner.

Equipment: container (30-50 gallons)
plastic liners
bench or stool
boot jack

Station 6: SCBA Backpack Removal

While still wearing facepiece, remove backpack and place on table. Disconnect hose from regulator valve and proceed to next station.

Equipment: table

Station 7: Splash Suit Removal

With assistance of helper, remove splash suit. Deposit in container with plastic liner.

Equipment: container (30-to gallons)
plastic liners
bench or stool

Station 8: Facepiece Removal

Remove facepiece. Avoid touching face with gloves. Deposit in container with plastic liner.

Equipment: container (30-50 gallons)
plastic liners

Masks will be collected at a central location. Decontamination will be performed as follows:

- remove all cartridges, canisters and filters, plus gaskets or seals not affixed to their seats;
- remove elastic headbands;
- remove exhalation cover;
- remove speaking diaphragm or speaking diaphragm-exhalation valve assembly;
- remove inhalation valves;
- wash facepiece and breathing tube in cleaner mixed with warm water, preferably 120°F to 140°F; wash components separately from the face mask; remove heavy soil from surfaces with a hand brush;
- remove all parts from the wash water and rinse twice in clean warm water;
- air dry parts in a designated clean area; and,
- wipe facepiece, valves and seats with a damp lint-free cloth to remove any remaining soap or other foreign materials.

Station 9: Inner Glove Removal

Remove inner gloves and deposit in container with plastic liner.

Equipment: container (20-30 gallons)
plastic liners

Station 10: Inner Clothing Removal (optional)

Remove clothing soaked with perspiration. Place in container with plastic liner. Do not wear inner clothing offsite since there is a possibility small amounts of contaminants might have been transferred in removing fully encapsulating suit.

Equipment: container (30-50 gallons)
plastic liners

Station 11: Field Wash (optional)

Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.

Equipment: water
soap
small tables
basins or buckets
field showers

Station 12: Redress

Put on clean clothes. A dressing trailer is needed in inclement weather.

Equipment: tables
chairs
lockers
clothes

Procedures for Level A Decontamination

(to be formulated on a case-by-case basis)