Flushing Industrial Park, Parcels 1, 2 and 3

College Point Boulevard and 40th Road

FLUSHING, NEW YORK

Construction Health and Safety Plan

AKRF Project Number: 30141

NYSDEC BCP Site Numbers: C241051, C241078 and C241079

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1.0 INTRODUCTION

This Construction Health and Safety Plan (CHASP) has been prepared by AKRF Engineering, P.C. (AKRF) for Flushing Industrial Park (Eastern), Parcel 1 (BCP Site No. C241051), Flushing Industrial Park (Western), Parcel 2 (BCP Site No. C241078), and Flushing Industrial Park (Western Waterfront), Parcel 3 (BCP Site No. C241079) and Flushing Industrial Park (Flushing River), Parcel 4 (BCP Site No. C241080). These four Parcels (collectively, the Property) comprise approximately 13.6 acres located on the northwest corner of College Point Boulevard and 40th Road, in Flushing, Queens, New York (see Figure 1).

1.1 Planned Development

The planned development, known as Skyview Parc (formerly known as Flushing Town Center), consists of commercial and residential use. Retail and parking structures will occupy a majority of the Property (Parcels 1 and 2) on the first several floors of the development, with residential towers (potentially including office space and/or community facilities) above these structures. A waterfront esplanade consisting of both landscaped and paved areas with upland connections will be constructed on the western portion of the Property on Parcel 3.

1.2 Purpose

This Property-wide CHASP was prepared as part of Parcel-specific Site Management Plans (SMPs) that detail the procedures required to manage known or potential residual contamination following completion of the remedial action. The SMPs consist of Engineering and Institutional Control Plan, a Monitoring Plan, an Operation and Maintenance Plan, and a Site Management Reporting Plan. A Soil Management Plan (SoMP) which includes provisions for managing excavated soil was also attached to the SMPs.

The purpose of this CHASP is to assign responsibilities, establish personnel protection standards and mandatory safety practices and procedures, and provide for contingencies that may arise during construction of the planned development on the Property. The CHASP includes a Community Air Monitoring Plan (CAMP) that will be followed during disturbance of residual contaminated soil to protect the health of community residents who have the potential to be exposed to known on-site contaminants as a result of fugitive discharge of dust, vapors and/or nuisance odors.

The CHASP is intended to minimize health and safety risks resulting from the known and potential presence of contamination on the Property. It is not designed to address potential geotechnical, mechanical or structural safety concerns, nor to supersede or replace any Occupational Safety and Health Administration (OSHA) regulation and/or local and state construction codes or regulations.

1.3 Applicability

This CHASP is applicable to soil disturbances conducted after remediation has been completed. The SMPs detail three Residual Management Zones on the Property and associated soil handling procedures. The locations and elevations of the top of the Residual Management Zones for Parcels 1, 2 and 3 are shown on Figures attached to the SMPs. The Residual Management Zones consist of the following:

- Disturbance of backfill material placed during remediation and construction prior to issuance of the Certificate of Completion (**Residual Management Zone A**) will require oversight and monitoring by a qualified environmental professional. Soil in Residual Management Zone A was previously characterized to meet the Site Specific Action Levels (SSALs) based

on remedial investigation and endpoint sample results but may exceed the Part 375 Soil Cleanup Objectives (SCOs) for Restricted Residential Use. The material excavated from Residual Management Zone A may be reused on-site with no additional testing, provided there is no evidence of contamination (such as staining, sheen, or chemical/petroleum odors). Workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted. If evidence of contamination (such as staining, sheen, or chemical/petroleum odors) is noted in Residual Management Zone A, then the soil handling and health and safety procedures for Residual Management Zone C will apply.

- Disturbance of material below areas significantly excavated prior to foundation construction and areas disturbed during remediation (**Residual Management Zone B**) will require oversight and monitoring by a qualified environmental professional. Endpoint samples indicated this soil meets the SSALs; however, there may be higher concentrations between the endpoint locations and this material may exceed the Part 375 SCOs for Restricted Residential Use. Excavated soil may be reused on-site after laboratory analytical results confirm the material meets SSALs. Work zone and community air monitoring will be performed; however, workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted. If evidence of contamination (such as staining, sheen, or chemical/petroleum odors) is noted in Residual Management Zone B, then the soil handling and health and safety procedures for Residual Management Zone C will apply.
- Disturbance of residually contaminated soil (**Residual Management Zone C**), i.e., those soils known to exceed the SSALs should be overseen and monitored by a qualified environmental professional. Material will be sampled for laboratory analyses for off-site disposal in accordance with applicable requirements. Work zone and community air monitoring will be performed, and workers will have up-to-date OSHA HAZWOPER training. Procedures for Residual Management Zone C should also be followed if evidence of contamination is noted in soil from Residual Management Zones A or B.

The contractors and their subcontractors involved in the work in residual contamination or where evidence of contamination is noted shall provide a copy of this CHASP for review by their employees whose work involves any potential exposure to the on-site chemical hazards in the soil or groundwater. All work disturbing the subsurface post-remediation shall be completed in accordance with this CHASP.

This CHASP does not discuss routine health and safety issues common to general construction/excavation, including, but not limited to, slips, trips, falls, shoring, and other physical hazards. All AKRF employees are directed that all work must also be performed in accordance with the Company's Generic Health and Safety Plan and all OSHA regulations applicable to the work activities required for the project. For issues unrelated to contaminated materials, all non-AKRF employees are to be bound by all applicable OSHA regulations and any more stringent requirements specified by their employer in their corporate HASP or otherwise. AKRF is not responsible for providing oversight for issues unrelated to contaminated materials for non-employees. This oversight shall be the responsibility of the employer of that worker or other official designated by that employer.

2.0 SITE DESCRIPTION

2.1 Property History

The Property history was based on historical maps from 1859 to 1995, historical aerial photographs from 1903 to 1995 and information provided by Consolidated Edison Company of New York, Inc. (Con Edison) regarding their former facility, which operated on the Property from approximately 1923 through 1989.

Much of the Property and vicinity was originally tidal marshlands. Filling of the wetlands and development of the area began in the late-19th century. By 1905, several dwellings were constructed on the southern side of the Property, along 40th Road. The majority of the Property served as a plumbing supply store circa 1917 and larger buildings had been constructed on Parcels 1, 2 and 3. New York & Queens Electric Light & Power Company (the precursor to Con Edison) purchased the majority of the Property from Remington Typewriter in 1923, and continued to acquire much of the remainder of the subject block (which then consisted of row houses in the southeastern portion of the Property) in the 1950s. Con Edison reportedly used the facility for the storage and maintenance of equipment (including PCB-containing transformers), for personnel training, for the storage and servicing vehicles, and for offices. C.E. Flushing Co. purchased a majority of the Property in 1989 (Lot 79 was acquired in September 2005) and leased it to various tenants primarily for light manufacturing of clothing (sewing, etc.) in the Main Building and automobile parking on the paved portion of the Property. The Property was vacated in 2005 and all buildings on the Property were demolished in 2006 as part of remediation and development activities.

Historically, the Property has contained several transformers, a gasoline service station, equipment repair, automobile repair, a potential chemical storage area, a paint storage house, and several underground storage tanks (USTs) and aboveground storage tanks (ASTs).

2.2 Property Environmental History

In 2001, C.E. Flushing, LLC entered into a Voluntary Cleanup Agreement with the New York State Department of Environmental Conservation (NYSDEC) with regard to the Property. By letter dated April 2, 2004, C.E. Flushing, LLC requested transition from the Voluntary Cleanup Program to the Brownfield Cleanup Program for completion of the remedial program for the Property. In December 2004, the Volunteer entered into separate Brownfield Cleanup Agreements with the NYSDEC for each of four Parcels – each one generally matching the former operable unit (OU). Those BCAs were later amended in June 2005 and April 2007 to include additional Volunteers.

2.2.1 Remedial Investigation

Previous studies performed at the Property have been documented in the following reports:

- SESI; *Environmental Engineering Report*, dated June 8, 1989 (provided as an Appendix to the Voluntary Cleanup Program Application);
- AKRF; *Results of Soil Testing*, dated December 30, 1999 (provided as an Appendix to the Voluntary Cleanup Program Application);
- AKRF; *Remedial Investigation/Feasibility Study and OU-1 Remedial Work Plan*, dated September 2001 (provided as an Appendix to the Voluntary Cleanup Program Application);

- AKRF; *Revised Supplemental Investigation Task Report No. 1*, Parcel 1 Soil Study and Parcels 1, 2 and 3 Groundwater Study, dated October 2004;
- AKRF; *Parcels 2 & 3 Revised Remedial Investigation Report*, C.E. Flushing Site, College Point Boulevard and 40th Road, Flushing New York, dated October 2004;
- AKRF; *Interim Remedial Measure Progress Report*, dated March 25, 2005;
- AKRF; *Supplemental Remedial Investigation Report*, Flushing Industrial Park, Parcels 2 and 3, dated April 2006 (included Property-wide groundwater analytical data).
- AKRF; *Modification No. 4 to Revised OU-1 Remedial Action Work Plan*, dated March 13, 2006 (included Lot 79 soil analytical data).

Based on results from the pre-remediation investigations, contaminated media consisted of soil and groundwater, including areas of light non-aqueous phase liquid (LNAPL) on Parcels 2 and 3. Elevated levels of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, arsenic, cadmium, lead and mercury have been found in the soil at the Property. Hazardous waste concentrations were identified in soil for lead and PCBs. Elevated levels of VOCs, SVOCs, PCBs, pesticides, and metals (arsenic, barium, cadmium, iron, lead, magnesium, manganese, selenium and sodium) have been found in the groundwater at the Property.

Based on the results of the investigations, subsurface environmental hazards identified on the Property include soil hotspots, underground storage tanks and potentially contaminated drainage structures. A hotspot is defined as a discrete location where laboratory data indicates the presence of a constituent above the SSAL presented in Table 1.

Table 1

Soil Site-Specific Action Levels

Parameter	Criterion
Individual VOCs	TAGM 4046 RSCOs
Total SVOCs	100 ppm
Total PCBs	10 ppm
Individual Pesticides	1 ppm, or TAGM 4046 RSCOs if higher
Arsenic	24 ppm
Cadmium	10 ppm
Lead	500 ppm
Mercury	4 ppm
Silver	100 ppm
Reactive Cyanide	Hazardous waste reactivity criterion

Notes: TAGM 4046 RSCO – Technical and Administrative Guidance Memorandum #4046 Recommended Soil Cleanup Objectives, January 24, 1994
ppm = parts per million

2.2.2 Remedial Action

The approved remedy for Parcels 1, 2 and 3 was completed between December 2005 and November 2007 and consisted of the following activities:

- Site preparation, including installation of permanent sheeting for a bulkhead along the Flushing River on the boundary of Parcels 3 and 4, and installation of temporary sheeting around the perimeter of the MW-5 hotspot area on Parcels 2 and 3;
- Excavation of contaminated soil (soil with exceedances of the established SSALs) to the water table, as practicable, and below the water table with dewatering only in the MW-5 hotspot area (Parcels 1, 2 and 3);
- Investigation and, if necessary, remediation, of geophysical anomalies;
- Investigation, mapping and, if necessary, remediation, of drainage structures;
- Removal of USTs and ASTs;
- Removal of LNAPL and LNAPL-containing soil identified on Parcels 2 and 3;
- Screening for indications of contamination (by visual means, odor, and monitoring with a photoionization detector (PID)) of all excavated soil during all intrusive work;
- Performance of community air monitoring of dust and VOCs/odors in accordance with NYSDOH requirements.
- Implementation of a Stormwater Pollution Prevention Plan (SWPPP) in accordance with NYSDEC requirements.
- Where pre-excavation delineation was not performed, collection and analysis of endpoint samples to evaluate the performance of the remedy with respect to attaining the SSAL cleanup goals;
- Appropriate off-site disposal of all material removed from Parcels 1, 2 and 3 in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
- Import of materials to be used for backfill and cover in compliance with: (1) TAGM 4046 RSCOs, or for which specific approval was given by NYSDEC; and, (2) all Federal, State and local rules and regulations in handling and transport of material;
- Installation of a site-wide cover consisting of asphalt, concrete or two feet of clean fill;
- Installation of a sub-slab depressurization system under the western approximately ⅓ of the development (on a portion of Parcel 2) that has retail use at grade;
- Post-remediation groundwater monitoring;
- Implementation of institutional controls (environmental easement);
- Publication of a Site Management Plan for long term management of residual contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) groundwater and vapor monitoring, (3) operation and maintenance and (4) reporting;
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- All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, addressed in accordance with all applicable Federal, State and local rules and regulations;
- Performance of all required BCP citizen participation activities (including development of a Citizen Participation Plan, public contact list, document repositories, public notices, and fact sheets); and
- Certification of the completion of the remedy in the Final Engineering Report (FER).

2.3 Hazard Potential

The remediation has been completed; however, some residual soil may contain concentrations above the SSALs or Part 375 SCOs for Restricted Residential Use. Three Residual Management Zones have been identified as part of the SMPs, as follows:

- Previously placed backfill material in **Residual Management Zone A** was characterized to meet the SSALs prior to backfilling; however, concentrations may exceed the Part 375 SCOs for Restricted Residential Use;
- **Residual Management Zone B** consists of the area beneath the limits disturbed during remediation and construction which is expected to meet the SSALs (based on remedial investigation and endpoint sample results) but may exceed the Part 375 SCOs for Restricted Residential Use; and
- **Residual Management Zone C** consists of soil with known concentrations in exceedance of the SSALs. Concentrations in endpoint samples in discrete areas on the Property exceeded the SSALs for VOCs, SVOCs, PCBs, pesticides, arsenic, lead, and mercury, as shown on Figure 2.

During future excavation and other construction activities, there is the potential to uncover the known residual contamination, or additional contaminated soil and/or unanticipated underground storage tanks, drainage structures or other buried structures. If these or other hazards are identified during general construction activities, remedial measures will be implemented using the contingencies summarized in Section 6.0 of this CHASP, which is based on those outlined in the Remedial Action Work Plans for the Property that were previously approved by NYSDEC.

2.4 Hazard Evaluation

The most likely routes of exposure are the inhalation of volatile and semi-volatile chemicals or particulate-laden air during soil disturbing activities and dermal contact. For specific health effects from on-site chemicals that may potentially be encountered in soil or groundwater, please see Appendix A of this CHASP. The remaining sections of this CHASP address procedures (including training, air monitoring, work practices and emergency response) to reduce the potential for unnecessary and unacceptable exposure to these contaminants.

This CHASP addresses potential environmental hazards from the presence of contaminated materials. It is not intended to address the normal hazards of construction work, which are covered by OSHA regulations and/or local and state construction codes or regulations.

3.0 PREVIOUSLY CHARACTERIZED AREAS MEETING SSALS

Disturbance of backfill material placed during remediation and construction (Residual Management Zone A) will require oversight and monitoring by a qualified environmental professional. This backfill was

previously characterized to meet the SSALs; therefore, excavated soil may be reused on-site with no additional testing, provided there is no evidence of contamination. Workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted. To prevent the potential generation and off-site transport of dust, the dust control measures will be implemented as outlined in the Site Management Plan.

All excavation on the Property will be continuously monitored for the presence of buried tanks, drums or other containers, sludges, or soil or groundwater that shows evidence of suspected contamination, such as discoloration, staining, or odors. If containers or evidence of suspected contamination is noted, excavation should stop, the area should be cordoned off, and the contingencies outlined in Section 6.0 shall be implemented, as appropriate.

Areas that have not been remediated may potentially be contaminated. All those who enter the work area while intrusive activities are being performed must recognize and understand the potential hazards to health and safety. Upon entering the work area, all construction personnel must be made aware of the potential hazards they may encounter, and the procedures to follow in the event evidence of contamination is noted.

4.0 AREAS OF KNOWN OR POTENTIAL RESIDUAL CONTAMINATION

Material below areas disturbed during remediation and areas significantly excavated prior to foundation construction (Residual Management Zone B) is considered potentially contaminated and will require oversight and monitoring by a Remedial Engineer. Soil excavated from Residual Management Zone B is expected to meet the SSALs based on remedial investigation and endpoint sample results; however, this soil may exceed the Restricted Residential RSCOs and previously unknown contamination may also be present. Excavated soil may be reused on-site after laboratory analytical results confirm the material meets SSALs. Work zone and community air monitoring will be performed in accordance with Sections 5.3 and 5.4. To prevent the potential generation and off-site transport of dust, the dust control measures will be implemented as outlined in the Site Management Plan. Workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted.

The vertical and horizontal extent of remediation excavations were surveyed and the areas of known residual contamination exceeding one or more of the SSALs (Residual Management Zone C) have been identified as shown on Figure 2. The health and safety procedures to be implemented during disturbance of contaminated soil are outlined in Section 5.0. Soil management practices are outlined in Section 6.0, and in the SoMP, which was included as an Appendix to the SMP. Additional contingencies for contaminated materials are outlined in Section 6.0.

5.0 HEALTH AND SAFETY GUIDELINES

If work disturbs Residual Management Zone C where known residually contaminated soil, or if evidence of contamination (such as staining, oily sheen, or chemical/petroleum odors) is otherwise noted on soil or groundwater, the area will be treated as a contaminated work area. Health and safety protocols for contaminated work areas are described in the following subsections.

5.1 Site Safety Personnel

5.1.1 Health and Safety Officer

Dr. Andrew Rudko of AKRF will be the Health and Safety Officer (HSO) for the duration of the construction of the Property. The HSO for extended post-construction

work will be assigned as work is undertaken. Dr. Rudko has completed a 40-hour training course, supervisory training and updated annual refresher courses that meet OSHA requirements in 29 CFR Part 1910, Occupational Safety and Health Standards.

5.1.2 Site Safety Officer

AKRF shall appoint one of its on-site personnel as the SSO. The SSO will have completed either the 24-hour training course for an Occasional Hazardous Waste Site Worker or the 40-hour Hazardous Waste Operations Worker that meet OSHA requirements 29 CFR Part 1910.120(e). The SSO will be a competent person responsible for the implementation of this plan. The SSO has stop-work authorization, which the SSO will execute upon determination of an imminent safety hazard, emergency situation, or other potentially dangerous situation. If the SSO must be absent from the Property, the SSO will designate a suitably qualified replacement that is familiar with the CHASP.

It will be the responsibility of the HSO to provide the SSO with a copy of this CHASP and to review its contents with him/her. The SSO will make all who enter the potentially contaminated areas of the construction site aware of the potential hazards to health and safety (see Sections 2.3 and 2.4) and will require them to sign the affidavit included in Section 8.0 of this CHASP.

5.1.3 Worker Training

All personnel who enter a contaminated work area while intrusive activities are being performed will have completed a 40-hour training course that meets OSHA requirements of 29 CFR Part 1910, Occupational Safety and Health Standards. All personnel shall also have up to date 8-hour refresher training.

Each member of the field crew will be provided site safety training before going onto the Property. A site safety meeting shall be conducted at the start of the project. Additional meetings shall be conducted, as necessary, for new personnel working at the Property or to provide updates regarding changing site conditions. The site-specific training for workers entering contaminated areas should include the following topics:

- General requirements of this CHASP;
- Review of the Scope of Work;
- Names of personnel responsible for site safety and health;
- Potential hazards and acute effects of compounds present at the Property;
- Air monitoring procedures;
- Proper use of personal protective equipment;
- Safe use of engineering controls and equipment on the Property;
- Decontamination procedures; and
- Work practices by which the employee can minimize risk from hazards. This may include a specific review of heavy equipment safety, safety during inclement weather, changes in common escape rendezvous point, site security measures, or other site-specific issues that need to be addressed before work begins.

5.2 Personal Protection Equipment

The PPE required for various kinds of soil disturbance tasks that disturb known or suspected contaminated soil and groundwater are based on 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, Appendix B, "General Description and Discussion of the Levels of Protection and Protective Gear."

Contractors and other on-site personnel shall wear, at a minimum, Level D personal protective equipment. Table 2 defines the PPE that, at a minimum, will be used at the Property. The SSO may require additional PPE for any level of protection based on the air monitoring described in Section 5.3 of this CHASP.

Table 2
Personal Protection Equipment

LEVEL OF PROTECTION & PPE		Tasks
Level D		
(x) Steel Toe Shoes	(x) Safety Glasses	Potential contact with suspected contaminated materials
(x) Hard Hat (within 25 ft of drill rig/excavator)	( ) Face Shield	
(x) Work Gloves	(x) Ear Plugs (within 25 ft of drill rig/excavator)	
	(x) Latex Gloves	
Level D – Modified *(in addition to Level D)*		Potential contact with NAPL or soil with elevated PCBs
(x) Tyvek Coveralls	(x) Nitrile Gloves	
( ) Saranex Coveralls	( ) Overboots	
Level C *(in addition to Level D – Modified)*		If PID > 10 ppm or particulate > 5 mg/m^3 in breathing zone
( ) Half-Face Respirator	( ) Particulate Cartridge	
(x) Full Face Respirator	( ) Organic Cartridge	
( ) Full-Face PAPR	(x) Dual Organic/Particulate Cartridge	
Notes: Cartridges to be changed out at least once per shift unless warranted beforehand (e.g., more difficult to breathe or any odors detected).		

5.3 Work Zone Air Monitoring

The purpose of the air monitoring program is to identify any exposure of the workers or the public to potential environmental hazards in the soil and groundwater. Results of the air monitoring will be used to determine the appropriate response action, if needed. No air monitoring will be conducted during excavation of the backfill placed during remediation (Residual Management Zone A) unless evidence of suspected contamination (such as discoloration, staining, or odors) is noted. Air monitoring for dust particulates and for VOCs will be performed during excavation and handling of existing soil below the base of the previous remedial or construction excavation (Residual Management Zone B) or in areas of known contamination (Residual Management Zone C).

Work zone air monitoring measurements will be taken prior to commencement of work and continuously during the work. Measurements will be made as close to the workers as practicable and at the breathing height of the workers. The SSO shall set up the equipment and confirm that it is working properly. His/her designee may oversee the air measurements during the day. The initial measurement for the day will be performed before the start of work and will establish the background level for that day. The final measurement for the day will be performed after the end

of work. Background readings and any readings that trigger response actions will be recorded in the project logbook or data sheets, which will be available on-site for NYSDEC or the New York State Department of Health (NYSDOH) review.

The work zone action levels and required responses are listed in Table 3. If exceedances of the work zone action levels are noted, then the prescribed control measures outlined in Site Management Plan will be immediately implemented, and continuous monitoring at the downwind perimeter station (see Section 5.4) will be conducted until any exceedance is corrected and air monitoring levels are re-established at the background conditions. Any exceedances of work zone action levels and the corrective actions taken will be detailed in an email to the project managers for NYSDEC and NYSDOH.

5.3.1 Volatile Organic Compounds

A PID will be used to perform work zone air monitoring to determine airborne levels of total VOCs. The PID will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate the exceedance of an action level. The PID will be calibrated daily in accordance with the manufacturer's specifications with a 100 parts per million (ppm) isobutylene standard. Real time continuous air monitoring will be performed with the PID during activities that will disturb potentially contaminated soil.

5.3.2 Particulates

A particulate monitor will be used to measure airborne levels of respirable particulates less than 10 microns in size (PM_{10}). The monitor will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate exceedance of action levels. The particulate monitor will be zeroed daily and used in accordance with the manufacturer's specifications. Real time continuous air monitoring will be performed with the particulate monitor during activities that will disturb potentially contaminated soil.

5.3.3 Oxygen and Combustible Gases

A combined combustible gas indicator and oxygen meter (CGI/O_2) or a multi-gas meter that measures combustible gases (i.e., lower explosive limit, or LEL), oxygen (O_2), carbon monoxide (CO) and hydrogen sulfide (H_2S) will be used to measure oxygen and combustible gasses during tank cleaning and removal. The instruments will be calibrated daily in accordance with manufacturers' specifications.

Table 3
Work Zone Air Monitoring Action Levels and Response Actions
for VOCs, Oxygen, LEL and Particulate Monitoring

Instrument	Task to be monitored	Action Level (Note 1)	Response Action
PID	All tasks disturbing contaminated or potentially contaminated soil	Less than 10 ppm in breathing zone.	Level D or D-Modified
		Between 10 and 500 ppm	Level C. Apply vapor suppression measures (see Section 5.3).
		More than 500 ppm	**Stop work**. Apply additional vapor suppression measures (see Section 5.3). Resume work when readings are less than 500 ppm.
Particulate monitor	All tasks disturbing contaminated or potentially contaminated soil	Less than 5 mg/m^3	Level D
		Between 5 mg/m^3 and 125 mg/m^3	Level C. Apply additional dust suppression measures (see Section 5.3). If < 2.5 mg/m^3, resume work using Level D. Otherwise, use Level C.
		Above 125 mg/m^3	**Stop work**. Apply additional dust suppression measures (see Section 5.3). Resume work when less than 125 mg/m^3.
CGI or Equivalent (Note 2)	Tank Removal	Less than 20% LEL	Continue work.
		Between 20% and 80% LEL	**Stop work**. Resume work when less than 20% LEL.
		Above 80% LEL	**Evacuate Exclusion Zone.**
O_2 Monitor	Tank Removal	Above 19.5%	Continue work.
		Below 19.5%	**Stop work**. Resume work when greater than 19.5%

Notes: 1 – 15-minute time-weighted average except for CGI, which is instantaneous reading.
2 – For example, the Q-RAE multi-gas meter measures O_2, CO, H_2S and LEL.
ppm – parts per million
mg/m^3 – milligrams per cubic meter

5.4 Community Air Monitoring

Perimeter community air monitoring for VOCs and for dust particulates (PM_{10}) will be conducted during disturbance of soil beneath the previous excavation areas (Residual Management Zone B) and soil in areas of known contamination (Residual Management Zone C). At the start of work, air monitoring stations will be established upwind of the work activities and at the downwind perimeter of the work zone.

If during the continuous work zone air monitoring detailed in Sections 5.3.1 and 5.3.2 above, any air monitoring readings in the work zone approach the community action levels as specified in Table 4, then monitoring at the downwind Property perimeter station will be conducted. If no exceedances of the community action levels are noted at the downwind Property perimeter station at this time, then work zone air monitoring will recommence.

Monitoring for VOCs and PM_{10} at the upwind and downwind stations will be conducted at the start of each workday where potentially contaminated soil is disturbed, and every time the wind direction changes. Background readings and any readings that trigger response actions will be

recorded in the project logbook, which will be available on-site for NYSDEC or NYSDOH review.

If exceedances in the community action levels at the downwind Property perimeter station are noted, the prescribed control measures outlined in the Site Management Plan will be immediately implemented, and continuous monitoring at the downwind perimeter station will be conducted until any exceedance is corrected and air monitoring levels are re-established at the background conditions. Any exceedances of community air monitoring action levels and the corrective actions taken will be detailed in an email to the project managers for NYSDEC and NYSDOH.

5.4.1 Volatile Organic Compounds

Community air monitoring for VOCs will be conducted using a PID. The PID will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate the exceedance of an action level. The PID will be calibrated daily in accordance with the manufacturer's specifications with a 100 ppm isobutylene standard.

5.4.2 Particulates

Community air monitoring for respirable particulates will be conducted using a real time particulate monitor that measures the concentration of PM_{10}. The monitor will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate exceedance of action levels.

Table 4
Community Air Monitoring Action Levels and Response Actions
for VOC and Particulate Monitoring

Instrument	Task to be Monitored	Action Level (Note 1)	Response Action
PID	All tasks disturbing contaminated soil	Less than 5 ppm above background at downwind perimeter.	Continue work
		Between 5 and 25 ppm above background at downwind perimeter.	**Stop work** and continue monitoring. Apply vapor suppression measures (see Section 5.3). If organic vapor levels (instantaneous reading) steadily decrease to less than 5 ppm, resume work. If organic vapor levels persists at >5 ppm, identify source and take steps to abate emissions. Work can resume if organic vapor level (15-minute average) is below 5 ppm at 200 feet downwind of work zone or half the distance to the nearest potential receptor, whichever is closer.
		More than 25 ppm above background at downwind perimeter.	**Shut down job**. Apply additional vapor suppression measures (see Section 5.3). Resume work when perimeter readings are less than 5 ppm above background at downwind perimeter.
Particulate monitor	All tasks disturbing contaminated soil	Less than 0.1 mg/m^3 above background (upwind perimeter) at downwind perimeter.	Continue work.
		Between 0.1 mg/m^3 and 0.15 mg/m^3 above background (upwind perimeter) at downwind perimeter.	Apply additional dust suppression measures (see Section 5.3). Work can continue provided downwind PM_{10} particulate levels do not exceed 150 mg/m^3 above background levels and no visible dust is migrating from the work area.
		Greater than 0.15 mg/m^3 above background (upwind perimeter) at downwind perimeter after dust suppression.	**Stop work**. Apply additional dust suppression measures (see Section 5.3). Resume work when less than 0.15 mg/m^3 above background levels and no visible dust is migrating from the work area.

Notes: 1 – 15-minute time-weighted average
mg/m^3 = milligrams per cubic meter
ppm = parts per million

6.0 CONTAMINATED MATERIALS CONTINGENCIES

The protocols and contingencies outlined in this section apply to construction activities that disturb known or suspected contamination. The contingencies should be implemented if any of the following conditions are encountered: soil or groundwater with chemical or petroleum odors; visual chemical or petroleum staining; sheen or LNAPL on groundwater; elevated PID readings above 5 ppm; or previous sampling results indicated exceedance of an SSAL. In addition to these contingencies, work should also

be performed in accordance with the health and safety guidelines in Section 5.0 and the soil and groundwater management protocol outlined in the SMP.

6.1 Contaminated Materials Contingency Response

Given the Property's history, there is a potential for the discovery of additional contaminated or hazardous materials during soil disturbing activities. All excavation will be continuously monitored for the presence of buried tanks, drums or other containers, sludges, or soil that shows evidence of suspected contamination, such as discoloration, staining, or odors. If any of these are detected, excavation in the area will be halted, and the Site Safety Officer (SSO) will notify the following immediately:

AKRF Health and Safety Officer — Andrew D. Rudko, Ph.D.
Office Phone: 646-388-9526

AKRF Project Manager — Kate Brunner
Office Phone: 646-388-9525
Cellular Phone: 917-612-3990

Project Coordinator (Project Executive – Flushing Town Center III, L.P.) — Michael Brenner
Office Phone: 718-263-3800

The affected area will be cordoned off and no further work will be performed at that location until the appropriate contingency response plan described below is implemented. If any of these contingencies are required, AKRF will notify the project managers for NYSDEC and NYSDOH. All contingency response actions will be carried out in accordance with the procedures specified in Sections 6.2 through 6.5.

6.2 Site Work Zones for Contaminated Areas

During any activities involving disturbance of soil in Residual Management Zone C or if evidence of contamination is noted elsewhere on the property, the work area will be divided into various zones as applicable to prevent the spread of contamination, ensure that proper protective equipment is donned, and provide an area for decontamination. The Exclusion Zone is defined as the area where suspected contaminated materials are located. The Contamination Reduction Zone is the area where decontamination procedures take place and is located next to the Exclusion Zone. The Support Zone is the area where support facilities such as vehicles, a field phone, fire extinguisher, and first aid supplies are located. The emergency staging area (part of the Support Zone) is the area where all workers on-site would assemble in the event of an emergency. These zones shall be designated by the SSO and modified as necessary. All field personnel will be informed of the location of these zones before work begins.

Control measures such as "Caution" tape and traffic cones will be placed around the perimeter of the work area when work is being done in the areas of concern to prevent entrance into the area(s) with exposed soil.

6.3 Drum/Container Contingency Plan

Any drums or other containers encountered will be removed and, if necessary, remediated. If unidentifiable buried objects are encountered that potentially contain compressed gas or munitions, a qualified emergency response team will be mobilized.

6.4 Storage Tank Contingency Plan

Any unregistered underground storage tanks will be registered with NYSDEC and the New York City Fire Department as required by applicable regulations. Any petroleum releases identified, regardless of tank size, must be reported to NYSDEC's Spill Hotline. Any tanks encountered will be cleaned and removed in accordance with federal, state and local regulations.

6.5 LNAPL Contingency Plan

If LNAPL is encountered in an excavation or in dewatering water, it will be removed using oil-absorbent materials such as pads or booms. If the thickness of the LNAPL is sufficient for pumping, skimmer pumps may be used. Excavated soil saturated with LNAPL will be disposed of off-site.

7.0 EMERGENCY RESPONSE

The construction crew will be equipped with emergency equipment, such as a first aid kit and disposable eye washes. In the case of a medical emergency, the SSO will assess the nature of the emergency and he/she will have someone call for an ambulance, if needed. If the nature of the injury is not serious - i.e., the person can be moved without expert emergency medical personnel - he/she should be driven to a hospital by on-site personnel. Field personnel will have cellular phones on-site.

7.1 Emergency Phone Numbers

Flushing Hospital Emergency Room			(718) 670-5000
Ambulance, Fire and Police Departments			911
Local Poison Control	(212) 764-7667	OR	pm/weekend (212) 340-4494
NYSDEC Spill Response Team			(800) 457-7362
NYCDEP Hotline			(718) DEP-HELP

7.2 Hospital Directions

Hospital Name:	Flushing Hospital Center
Phone Number:	(718) 670-5000
Location:	4500 Parsons Boulevard near 45th Avenue
Distance from Site:	1 mile

Directions:

Drive NORTH on College Point Boulevard

Turn RIGHT onto Roosevelt Avenue

Turn RIGHT onto Parsons Boulevard

Proceed about 7 blocks to the intersection with 45th Avenue; hospital will be on the right-hand (west) side

A map to the hospital is attached as Figure 1.

8.0 APPROVAL & ACKNOWLEDGMENTS OF CHASP

This affidavit must be signed by all workers who enter the site. A copy of the CHASP must be on-site at all times and will be kept by the SSO.

AFFIDAVIT

I _______________________________ (name), of ___________________________ (company name), have read the Construction Health and Safety Plan (CHASP) for the Flushing Industrial Park Property (development known as the "Flushing Town Center") in Flushing, New York. I agree to conduct all on-site work in accordance with the requirements set forth in this CHASP and understand that failure to comply with this CHASP could lead to my removal from the Property.

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CHASP FIGURES

CHASP APPENDIX A

POTENTIAL HEALTH EFFECTS FROM ON-SITE CONTAMINANTS