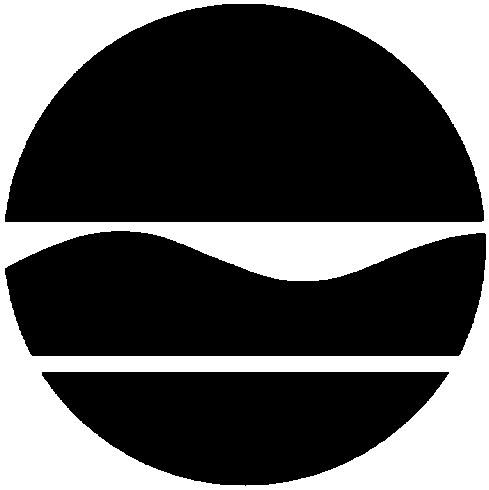
PROPOSED REMEDIAL ACTION PLAN
PLATTSBURGH GATEWAY PROJECT/ DURKEE STREET
Environmental Restoration Project
City of Plattsburgh, Clinton County, New York
Site No. E510020

February 2007



Prepared by:

Division of Environmental Remediation
New York State Department of Environmental Conservation

A 1996 Clean Water/Clean Air Bond Act
Environmental Restoration Project
PROPOSED REMEDIAL ACTION PLAN

PLATTSBURGH GATEWAY PROJECT/DURKEE STREET
City of Plattsburgh, Clinton County, New York
Site No. E510020
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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the Plattsburgh Gateway Project/Durkee Street site.

The 1996 Clean Water/Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

As more fully described in Sections 3 and 5 of this document, former commercial and manufacturing activities such as automotive repair, steam laundering, and milling resulted in the disposal of hazardous substances, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. These hazardous substances contaminated the subsurface soils and groundwater at the site, and resulted in:

- a threat to human health associated with potential exposure to contaminated subsurface soils and groundwater.

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the Plattsburgh Gateway Project/Durkee Street site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation/remedial alternatives report (RI/RAR). The IRM undertaken at this site included an extensive source soil excavation and underground storage tank removal.

Based on the implementation of the above IRM, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action with institutional controls in the form of an environmental easement limiting use of the site to restricted residential activity in conformance with local zoning, including the continued use as a parking lot, is proposed as the remedy for this site.

The proposed remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the reasons for this preference. The Department will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

The Department has issued this PRAP as a component of the Citizen Participation Plan developed pursuant to the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in greater detail in the "Remedial Investigation Report, Operable Unit 1", January 2007 "Remedial Alternatives Report, Operable Unit 1", January 2007 "Remedial Investigation Report, Operable Unit 2", and the January 2007 "Remedial Alternatives Report, Operable Unit 2", and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

NYSDEC Region 5 Ray Brook Office
1115 NYS Route 86, P.O. Box 296
Ray Brook, NY 12977
Hours: Monday through Friday, 8:30 a.m. to 4:45 p.m.
Contact: Ms. Alicia Thorne, P.E.
(518) 897-1242

City of Plattsburgh
Office of Community Development
41 City Hall Place
Plattsburgh, NY 12901
Hours: Monday through Friday, 8:00 a.m. to 4:00 p.m.
(518) 563-7642

City of Plattsburgh Public Library
19 Oak Street
Plattsburgh, NY 12901
(518) 563-0921
Hours: Monday, Friday, and Saturday, 9:00 a.m. to 5:00 p.m.
Tuesday, Wednesday, and Thursday, 9:00 a.m. to 8:00 p.m.
Sunday, 1:00 p.m. to 5:00 p.m.

The Department seeks input from the community on all PRAPs. A public comment period has been set from February 9, 2007 through March 25, 2007 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for February 27, 2007 at the Plattsburgh City Hall Auditorium beginning at 7:00 p.m.

At the meeting, the results of the RI/RAR and IRM will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP. Written comments may also be sent to Ms. Thorne at the above address through March 25, 2007.

The Department may modify the proposed remedy or select another based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Plattsburgh Gateway Project/Durkee Street site is approximately a 5.1-acre lot on the eastern side of Durkee Street in the City of Plattsburgh, Clinton County, New York. The site lies in an urban area in downtown Plattsburgh, adjacent to the Saranac River as indicated in Figure 1. Lake Champlain lies approximately ½ mile to the east of the site.

The site's geology consists primarily of urban fill to approximately 8 feet deep, followed by glacial till to approximately 18 feet below ground surface (bgs). The fill consisted of various amounts of sand, gravel, silt, brick, ash, wood, cinder and concrete. During onsite drilling activities, auger refusal was encountered at approximately 18 ft bgs, which based on information obtained from another nearby remedial project, this is indicative of the presence of bedrock. The site's hydrogeology consisted of groundwater perched atop the glacial till layer, at approximately 8 ft bgs. Overall groundwater flow is from west to east towards the Saranac River. Surface water drains into the Saranac River then flows northerly into Lake Champlain, entering into the lake approximately ½ mile to the northeast of the site.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site has been occupied since the late 1800s with primarily tenement residences and auto repair until 1927. After 1927, manufacturing became more prominent with rug cleaning, dry cleaning, sign painting, and milling activities associated with the site. In addition, over the years, several petroleum spills were reported and properly closed under the oil spill program. These former manufacturing activities and spill events may have resulted in the disposal of hazardous substances on site. The City slowly acquired the deeds for the Durkee Street lots from approximately 1964 through 1991. The buildings were demolished over that time period. The current municipal public parking lot was established in the early 1980s.

3.2: Remedial History

A Limited Subsurface Investigation was performed in May 2004 on behalf of the City of Plattsburgh. This investigation detected metals, VOC, and SVOC soil contamination in the subsurface. In October 2004, an Environmental Database Report was also conducted on behalf of the City. The RI was conducted between July 2004 and December 2006.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past owners and operators, waste generators, and haulers. Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. The City of Plattsburgh will assist the state in its efforts by providing all information to the state which identifies PRPs. The City will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 5: SITE CONTAMINATION

The City of Plattsburgh has recently completed remedial investigation/remedial alternatives reports (RI/RARs) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between July 2004 and December 2006. The field activities and findings of the investigation are described in the RI reports.

Investigative tasks performed as part of the RI include surface soil sampling and analysis, soil boring and monitoring well installation, subsurface soil sampling and analysis, groundwater sampling and analysis, and the performance of a soil gas survey.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil, groundwater, and soil gas contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's Cleanup Objectives ("Technical and Administrative Guidance Memorandum [TAGM] 4046; Determination of Soil Cleanup Objectives and Cleanup Levels," and 6 NYCRR Subpart 375-6 - Remedial Program Soil Cleanup Objectives.)"

- Concentrations of VOCs in air were evaluated using the air guidelines provided in the NYSDOH guidance document titled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York."

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI reports.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

As described in the RI reports, many soil, groundwater and soil vapor samples were collected to characterize the nature and extent of contamination. As seen in Figures 2 through 7 and summarized in Tables 1 through 3, the main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganics (metals). For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per billion (ppb) for water, and parts per million (ppm) for soil. Air samples are reported in micrograms per cubic meter ($\mu g/m^3$).

Figures 2 through 7 and Tables 1 through 3 summarize the degree of contamination for the contaminants of concern in soil, and groundwater and compare the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil

The Plattsburgh Gateway Project/Durkee Street site is comprised of a large municipal parking lot with a farmer's market pavilion and a future office building with adjacent parking garage. Because the entire site is either completely paved or covered with concrete, there was no surface soil sampling conducted at the site.

Subsurface Soil

During the Remedial Investigation both subsurface soil samples and near surface soil samples immediately below the pavement were taken. The following discussion summarizes the analytical results for these samples.

Six (6) SVOCs were detected above their respective SCGs, as indicated on Table 1. These SVOCs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and dibenzo(a,h)anthracene. All of the SVOC contaminants are considered carcinogenic polycyclic aromatic hydrocarbons (cPAHs). These cPAHs were all detected in the historic fill material at approximately 8 to 10 feet depth and potentially associated with the ash and cinder components of the fill material. The SVOC contamination is depicted on Figures 3 and 5, with the highest exceedance being benzo(a)pyrene at 14 ppm at MW-14 at the 8 to 10 feet depth.

Four metals were detected above their respective SCGs as indicated on Table 1. Of the four detected, calcium, and magnesium, were the only contaminants found to be above their respective Eastern USA Background concentration. As indicated in Figures 4 and 6, the metals contamination appeared to be spread randomly throughout the site at varying depths, with the greatest exceedance being calcium at 117,000 ppm at MW-11 at the 0.5 to 2 feet depth.

In general, the subsurface soil contaminants of concern are SVOCs, mainly cPAHs, and metals. Pesticides, PCBs, and VOCs were not detected in any of the soil samples collected. Subsurface soil contamination identified during the RI/RAR was partially addressed during the IRM soil excavation and underground storage tank (UST) removal as described in Section 5.2.

Groundwater

Five metals were detected at concentrations above SCGs in the site groundwater. These detections included iron, lead, magnesium, manganese, and sodium as indicated in Table 3. These detections are attributed to the elevated turbidity levels measured during the groundwater sampling event. The historic fill material may have contributed to the elevated turbidity levels.

Only one SVOC, bis(2-Ethylhexyl)phthalate, was detected slightly above its SCG in 8 of the 12 monitoring wells onsite with the highest exceedance detected at 9.7 ppb in MW-4. Bis(2-Ethylhexyl)phthalate is a common laboratory contaminant, and was also detected in the equipment blank during this sampling event. However, the data usability summary report (DUSR) did not identify the compound as a laboratory contaminant.

Six VOCs were detected in the onsite monitoring wells above SCGs. Five of these chlorinated VOCs or CVOCs were detected in monitoring wells MW-9, MW-10, MW-23, MW-25, and MW-26 as indicated in Figure 7. The 5 CVOCs were all detected at their highest concentration at MW-10 at the following concentrations: vinyl chloride at 170 ppb; 1,1-dichloroethene at 6.0 ppb; trans-1,2-dichloroethene at 410 ppb; cis-1,2-dichloroethene at 680 ppb; and trichloroethene at 99 ppb. Dichloroethene and vinyl chloride are created through the degradation of trichloroethene. MW-10 was the only monitoring well to exhibit trichloroethene and its breakdown products, while the downgradient monitoring wells exhibited significantly lower concentrations of the breakdown products of vinyl chloride and dichloroethenes. Because no VOC contamination was detected in the soil borings at these corresponding areas, there does not appear to be a soil source for this VOC groundwater contamination. The other VOC detected in the groundwater was methyl tert-butyl ether (MTBE) at 57 ppb at monitoring well MW-17. As depicted on Figure 7, monitoring well MW-17 straddles the site's northeast property border. Since no other detections of MTBE were revealed during the RI, it does not appear that MTBE is a site related groundwater contaminant of concern.

These impacted monitoring wells, MW-10, MW-23, MW-25, and MW-26, were re-sampled in December 2006 to determine the effectiveness of the soil excavation IRM that was performed adjacent to the VOC groundwater contamination plume. The levels of trichloroethene and its breakdown products all decreased in MW-10 to the following concentrations: trichloroethylene at 11 ppb, vinyl chloride at non-detect; 1,1-dichloroethene at non-detect; trans-1,2-dichloroethene at non-detect; and cis-1,2-dichloroethene at 8.2 ppb. The levels of breakdown products (vinyl chloride, trans-1,2-dichloroethene, and cis-1,2-dichloroethene) slightly increased in MW-23, while there was a decrease in cis-1,2-dichloroethene and vinyl chloride in MW-25 and the concentrations of contaminants in MW-26 generally remained the same. This decrease in trichloroethene in MW-10, along with the increase of breakdown products in MW-23 suggest evidence of biodegradation. The most downgradient VOC-impacted monitoring wells, MW-25 and MW-26, showed no increase in contamination, indicating that the VOC groundwater contamination plume appears to be contained on site.

Groundwater contamination identified during the RI/RAR was partially addressed during the IRM soil excavation and UST removal as described in Section 5.2.

Soil Vapor/Sub-Slab Vapor/Air

The soil vapor intrusion evaluation included the collection of sub-slab soil vapor and outdoor air samples to evaluate the potential for exposures via soil vapor intrusion. Three soil gas samples were collected within the area of the future office building foundation as indicated in Figure 2. Six soil gas samples were collected within the municipal parking lot area, as indicated in Figure 2, to determine the potential for vapor intrusion in the event that the site should undergo future redevelopment. There were detections of VOCs and SVOCs above the NYSDOH guidance values and EPA BASE Data Background Levels as provided in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York."

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/RAR. In response to the preliminary findings of the Remedial Investigation in October 2005, a soil excavation and UST removal IRM was performed to address the subsurface contamination on site. During the excavation activities, excavation dewatering and active groundwater treatment via carbon filtration was performed. Approximately 12,360 gallons of groundwater was evacuated and treated from the excavation prior to discharge to the sanitary sewer system.

During the excavation activities, 4 USTs were located, ranging from 275-gallon to 1000-gallon capacity, and were subsequently emptied, cleaned and properly disposed of off-site. The vertical extent of excavation varied across the site, with depths ranging from approximately 5 feet deep to approximately 20 feet deep in the areas of deeper contamination. In total, approximately 9,614 tons of contaminated soil was excavated and transported for off-site disposal.

The post-excavation confirmatory samples were analyzed for VOCs and SVOCs only, as the preliminary results from the RI revealed that SVOCs and VOCs were the primary contaminants of concern. Seventy two (72) post-excavation soil samples were collected. As indicated in Table 2, only 7 VOCs were detected slightly above SCGs. These results confirm that a majority of the site's SVOC and VOC contamination was addressed through the implementation of the IRM.

To prevent exposures to soil gas concentrations beneath the soon to be occupied building on site, the developer of the 5-story office building that is currently under construction, installed a sub-slab vapor abatement system in the future office building. This sub-slab vapor abatement system will be in operation upon completion of the building construction.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7.0 of the RI reports, which are located in the document repositories.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no known completed exposure pathways at the site. Potential exposure pathways include inhalation of contaminated soil vapors, dermal contact with impacted sub-surface soils or ingestion of groundwater containing volatile organic compounds.

Use of the site will be limited to restricted residential but the continued commercial use is currently planned at this time. To address the potential for contaminated soil vapors to impact indoor air quality in the future on-site office building, an active sub-slab depressurization system

will be installed during construction. Any changes in the use of the remainder of the site will require an evaluation of the potential for soil vapor intrusion and mitigation, if necessary.

The site is paved, therefore contact with residual contaminated soil is unlikely. Maintenance of the pavement will be required, and the NYSDEC will require notification prior to any ground intrusive work to prevent the potential for exposures.

On-site groundwater is not used for potable or irrigation purposes, making exposures unlikely. Restrictions will be placed to prevent future use of the groundwater, and monitoring will continue.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site prior to the IRM. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands. The site and all adjacent property is a developed area with buildings, paved areas, and little to no vegetation. Contamination detected on site was a localized source, that was partially addressed during the IRM, that has not migrated and will not migrate from the site to impact any off-site resources. Therefore, no complete or potentially complete environmental exposure pathways or ecological risks were identified. However, site contamination has impacted the groundwater resource in the overburden aquifer.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS, PROPOSED REMEDY, AND THE PROPOSED USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles.

Prior to the completion of the IRM described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to VOC and SVOC soil contamination exceeding SCGs.
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from subsurface soil under buildings, into indoor air through soil vapor.

The main SCGs applicable to this project are as follows:

- ambient groundwater quality standards: groundwater sample results indicate that the main groundwater contaminants of concern are VOCs in the municipal parking lot area. The soil excavation IRM was conducted directly adjacent to the VOC groundwater contaminant plume. The initial post-IRM groundwater sampling results indicate an improvement in groundwater quality with evidence of biodegradation. A long-term groundwater monitoring program would be needed to document the long-term effectiveness of the soil excavation IRM on the site's groundwater quality.
- TAGM 4046 and Part 375-6: the TAGM 4046 soil cleanup objectives for VOCs and SVOCs were used as the soil excavation IRM remediation goals. When compared to the 6 NYCRR Part 375-6 - Remedial Program Soil Cleanup Objectives only 7 VOCs were detected slightly above SCGs in the post-excavation confirmatory samples. These results reveal that a majority of the site's SVOC and VOC contamination was addressed through the implementation of the IRM.

The Department believes that the IRM has accomplished the remediation goals and satisfied the SCGs for the site, provided that groundwater continues to be monitored and a soil management plan is developed to

address the residual contaminated soils to prevent human exposures and dispersion of contamination during potential future intrusive activities.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action as the preferred alternative for the site. The Department believes that this alternative would be protective of human health and the environment and would satisfy all SCGs as described above. Overall protectiveness is achieved through meeting the remediation goals listed above.

The elements of the IRM already completed are:

1. Excavation and off-site disposal of 9,614 tons of contaminated soil;

2. Dewater and treat via carbon filtration 12,360 gallons of groundwater, and discharge to the sanitary sewer system;

3. Backfilling of the excavation with clean, off-site soil; and

4. Excavation and proper closure of four USTs.

Therefore, the Department concludes that No Further Action is needed other than operation, maintenance, monitoring, and institutional and engineering controls. The institutional and engineering controls are:

1. Imposition of an institutional control in the form of an environmental easement that would require (a) limiting the use and development of the property to restricted residential use, which would also permit commercial use in conformance with local zoning; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

2. Development of a site management plan which would include the following institutional and engineering controls: (a) notice to the Department of any ground intrusive work or change in use, management of the final cover system to restrict excavation below the pavement layer, or buildings. Excavated soil would be tested, properly handled to protect the health and safety of workers and the nearby community, and would be properly managed in a manner acceptable to the Department; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater; and (d) provisions for the continued proper operation and maintenance of the components of the remedy.

3. The property owner would provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal would: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

The proposed future use for the Plattsburgh Gateway Project/Durkee Street site is commercial.

TABLE 1
Nature and Extent of Soil Contamination
July 2004 - January 2005

SUBSURFACE SOIL (Pre-IRM[c])	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds	Benzo(a)anthracene	2.6 to 20	1	4 of 31
	Benzo(a)pyrene	2.1 to 14	1	4 of 31
	Benzo(k)fluoranthene	1.8 to 8.4	1	2 of 31
	Benzo(b)fluoranthene	2.4 to 17	1	4 of 31
	Chrysene	1.8 to 19	1	4 of 31
	Dibenzo(a,h)anthracene	0.78	0.33	1 of 31
Inorganic Compounds	Calcium	38,000 to 117,000	SB	11 of 49
	Iron	3890 to 122,000	2,000	22 of 49
	Magnesium	5080 to 44,200	SB	11 of 49
	Mercury	1.0	0.81	1 of 49

TABLE 2
Post-IRM Confirmatory Soil Sampling Results
October - December 2005

SUBSURFACE SOIL (Post-IRM[c])	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds	Benzo(a)anthracene	1.1 to 16	1	10 of 72
	Benzo(a)pyrene	0.085 to 15	1	9 of 72
	Benzo(b)fluoranthene	1.3 to 16	1	12 of 72
	Benzo(k)fluoranthene	1.2 to 5.9	1	5 of 72
	Chrysene	1.1 to 15	1	10 of 72
	Dibenzo(a,h)anthracene	0.39 to 1.1	0.33	3 of 72
	Indeno(1,2,3-cd)pyrene	0.65 to 7.9	0.5	6 of 72

TABLE 3
Plattsburgh Gateway Project/Durkee Street Site
Groundwater Nature and Extent of Contamination
July 2004 - December 2006

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Methyl Tert-Butyl Ether	57	10	1 of 16
	Vinyl Chloride	2.2 to 170	2	3 of 16
	1,1-Dichloroethene	6.0	5	1 of 16
	Trans-1,2-Dichloroethene	8.0 to 410	5	2 of 16
	Cis-1,2-Dichloroethene	6.0 to 180	5	4of 16
	Trichloroethene	11 to 99	5	1 of 16
Semivolatile Organic Compounds (SVOCs)	Bis(2-Ethylhexyl) Phthalate	5.3	5	1 of 16
Inorganic Compounds	Iron	1,380 to 38,200	300	6 of 7
	Lead	80.5	25	1 of 7
	Magnesium	50,400 to 128,000	35,000(GV)	7 of 7
	Manganese	713 to 1,720	300	6 of 7
	Sodium	224,000 to 1,790,000	20,000	6 of 7

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

[b] SCG = standards, criteria, and guidance values: Ambient Water Quality Standards and Guidance Values and Part 5 of the New York State Sanitary Code; Technical and Administrative Guidance Memorandum (TAGM) 4046, Determination of Soil Cleanup Objectives and Cleanup Levels; NYCRR Subpart 375-6 - Remedial Program Soil Cleanup Objectives; and Guidance for Evaluating Soil Vapor Instrusion in New York.

IRM = interim remedial measure
MDL = laboratory minimum detection limit
SB = site background
GV = guidance value

Table 4
Plattsburgh Gateway Project/Durkee Street Site
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
Alternative 1: No Action, Groundwater Monitoring Only	$0	$13,000	$120,000
Alternative 2: Implementation of Existing Site Features as a Barrier to Contact, Institutional Controls, Site Management Plan, and Monitoring Well Abandonment	$16,000	$3400	$80,000
Alternative 3: Implementation of Existing Site Features as a Barrier to Contact, Site Management Plan, Institutional Controls, and Groundwater Monitoring	$31,000	$80,000	$240,000
Alternative 4: Excavation, Disposal of Impacted Soils/Fill Material, Backfill, Dewatering and Active Groundwater Treatment, Institutional Controls, and Abandonment of Existing Monitoring Wells	$10,300,000	$0	$10,300,000

NO XREFS

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

MAP REFERENCE:
NEW YORK STATE DEPARTMENT OF TRANSPORTATION 7.5 MINUTE SERIES QUADRANGLE MAP OF PLATTSBURGH, NY, DATED 1979

NOTES:
THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

Date	RECORD OF WORK	Appr.

FIGURE 1
SITE LOCATION MAP
DURKEE STREET PARKING LOT

CITY OF PLATTSBURGH | CLINTON COUNTY, NY

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299
Architecture & Building Systems Engineering * Civil Engineering
Environmental Services * Survey & Land Information Services

Drafter: J.MARX	Checker: K.MOLINE
Appr. by:	Proj. No. 04.9498
SCALE: NOT TO SCALE	DATE: OCTOBER 2004

CAD DWG. FILE NAME: SITE LOC MAP.DWG

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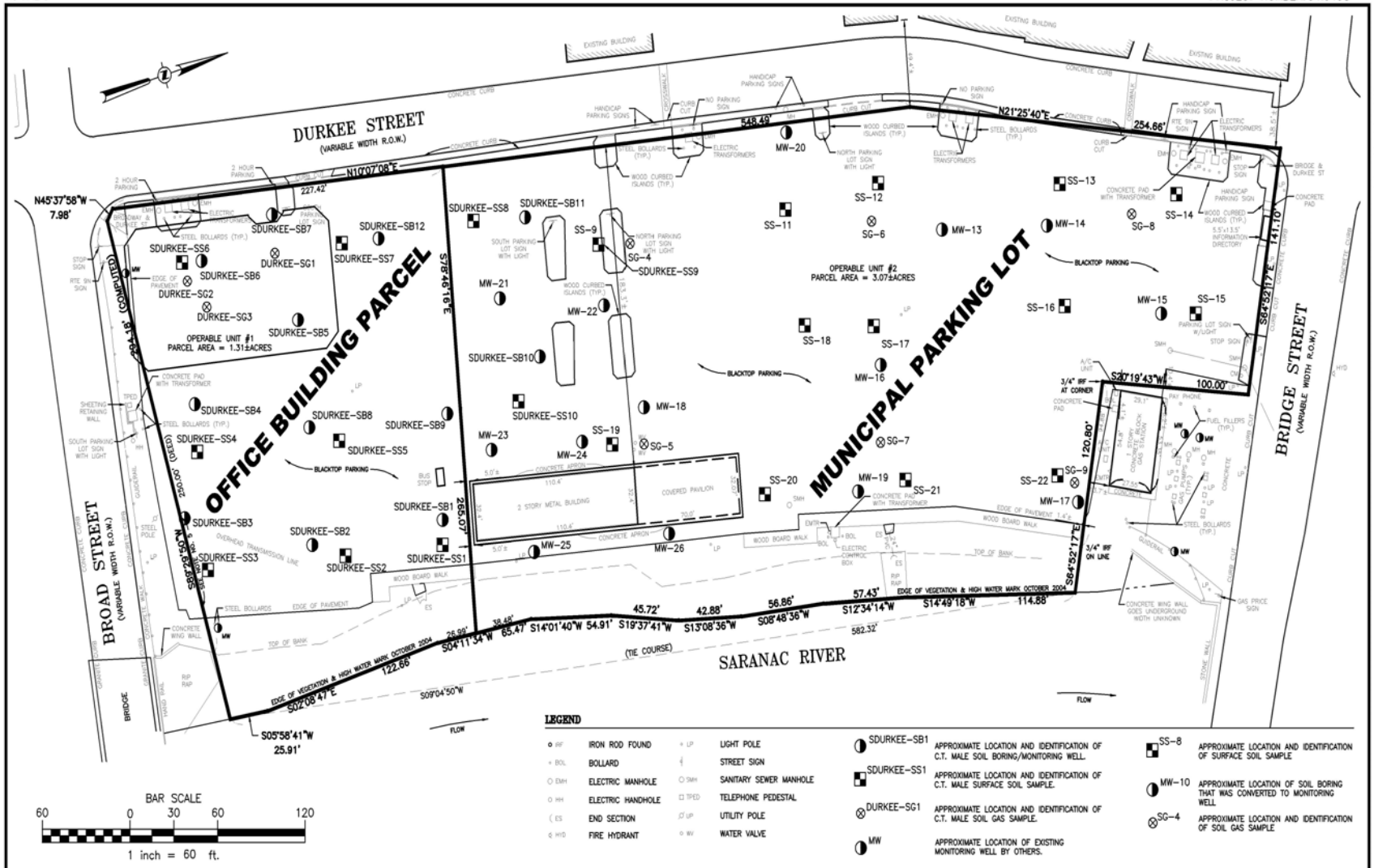

LEGEND

IRF	IRON ROD FOUND	LP	LIGHT POLE
BOL	BOLLARD		STREET SIGN
EMH	ELECTRIC MANHOLE	SMH	SANITARY SEWER MANHOLE
HH	ELECTRIC HANDHOLE	TPED	TELEPHONE PEDESTAL
ES	END SECTION	UP	UTILITY POLE
HYD	FIRE HYDRANT	WV	WATER VALVE

- SDURKEE-SB1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SOIL BORING/MONITORING WELL.
- SDURKEE-SS1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SURFACE SOIL SAMPLE.
- DURKEE-SG1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SOIL GAS SAMPLE.
- MW — APPROXIMATE LOCATION OF EXISTING MONITORING WELL BY OTHERS.
- SS-8 — APPROXIMATE LOCATION AND IDENTIFICATION OF SURFACE SOIL SAMPLE
- MW-10 — APPROXIMATE LOCATION OF SOIL BORING THAT WAS CONVERTED TO MONITORING WELL
- SG-4 — APPROXIMATE LOCATION AND IDENTIFICATION OF SOIL GAS SAMPLE

NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

MAP REFERENCE:
1. SHEET SP-1, PREPARED BY RABIDEAU ARCHITECTS OF BURLINGTON, VT, DATED 12/15/03, LAST REVISED 3/17/04.

2. BOUNDARY SURVEY, PORTION OF LANDS OF CITY OF PLATTSBURGH DURKEE STREET PARKING LOT, PREPARED BY C.T. MALE ASSOCIATES, P.C., DWG NO. 04-0670, DATED OCTOBER 5, 2004, REVISED 11/30/04.

CAD DWG. FILE NAME: FIG3.DWG

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DRAFTED : J.MARX
CHECKED : S.BIEBER
PROJ. NO: 04.9498
SCALE : ±1"=60'
DATE : JAN. 2007

FIGURE 2
SITE PLAN & SAMPLING LOCATIONS MAP

PLATTSBURGH GATEWAY PROJECT
DURKEE STREET SITE

CITY OF PLATTSBURGH — CLINTON COUNTY, NY

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FIG2
SHEET 1 OF 6
DWG. NO: 07-0119

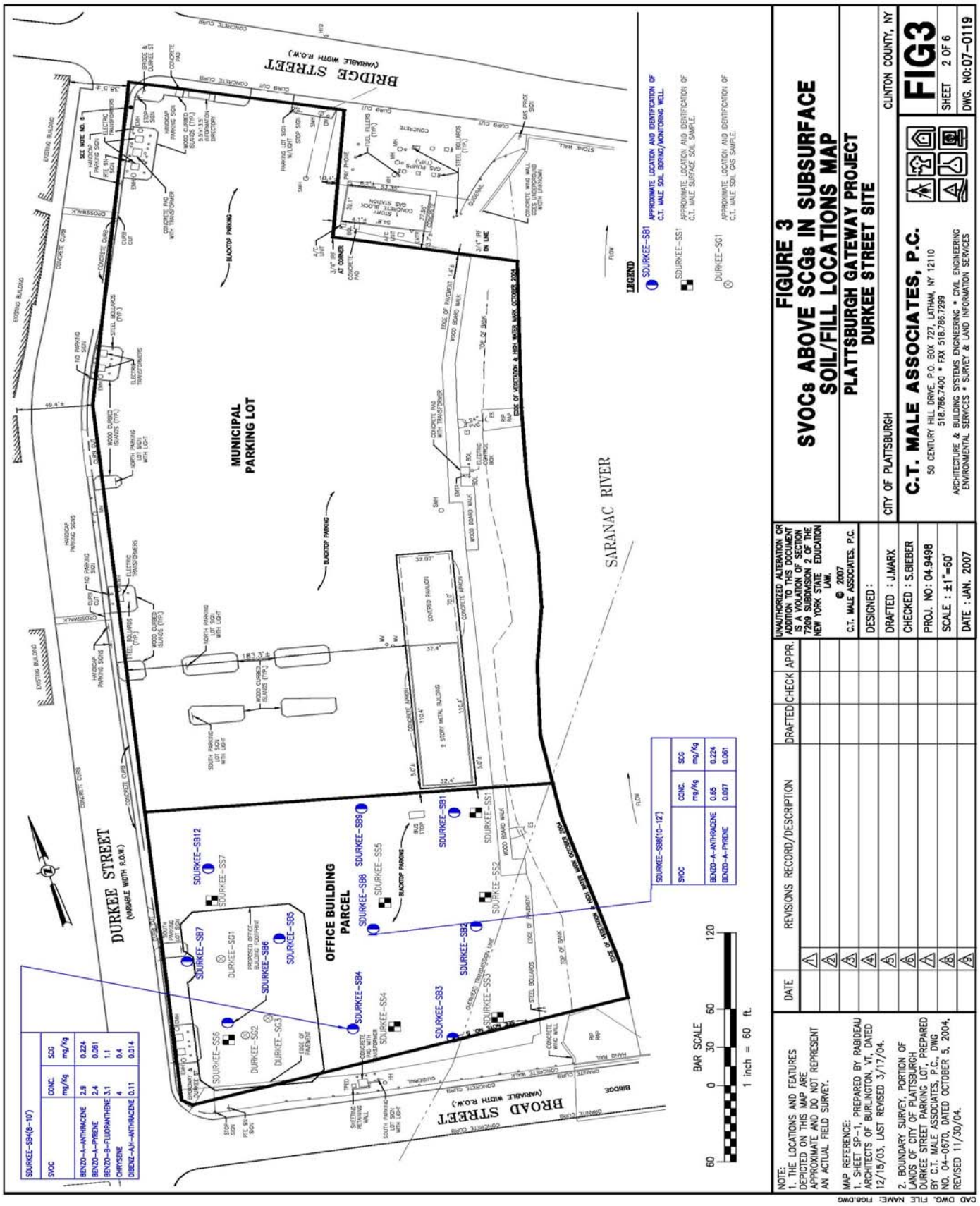
FIGURE 3
SVOCs ABOVE SCGs IN SUBSURFACE SOIL/FILL LOCATIONS MAP
PLATTSBURGH GATEWAY PROJECT
DURKEE STREET SITE
CITY OF PLATTSBURGH
CLINTON COUNTY, NY
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FIG3
SHEET 2 OF 6
DWG. NO:07-0119
DURKEE STREET (VARIABLE WIDTH R.O.W.)
BRIDGE STREET (VARIABLE WIDTH R.O.W.)
BROAD STREET (VARIABLE WIDTH R.O.W.)
MUNICIPAL PARKING LOT
OFFICE BUILDING PARCEL
SARANAC RIVER
LEGEND
SOURKEE-SB1 APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SOIL BORING/MONITORING WELL.
SOURKEE-SS1 APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SURFACE SOIL SAMPLE.
DURKEE-SG1 APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SOIL GAS SAMPLE.
SOURKEE-SB4(8-10')
SVOC | CONC. mg/Kg | SCG mg/Kg
BENZO-A-ANTHRACENE 2.9 0.224
BENZO-A-PYRENE 2.4 0.061
BENZO-B-FLUORANTHENE 3.1 1.1
CHRYSENE 4 0.4
DIBENZ-AH-ANTHRACENE 0.11 0.014
SOURKEE-SB8(10-12')
SVOC | CONC. mg/Kg | SCG mg/Kg
BENZO-A-ANTHRACENE 0.85 0.224
BENZO-A-PYRENE 0.097 0.061
BAR SCALE
60 0 30 60 120
1 inch = 60 ft.
NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.
MAP REFERENCE:
1. SHEET SP-1, PREPARED BY RABIDEAU ARCHITECTS OF BURLINGTON, VT, DATED 12/15/03, LAST REVISED 3/17/04.
2. BOUNDARY SURVEY, PORTION OF LANDS OF CITY OF PLATTSBURGH DURKEE STREET PARKING LOT, PREPARED BY C.T. MALE ASSOCIATES, P.C., DWG NO. 04-0670, DATED OCTOBER 5, 2004, REVISED 11/30/04.
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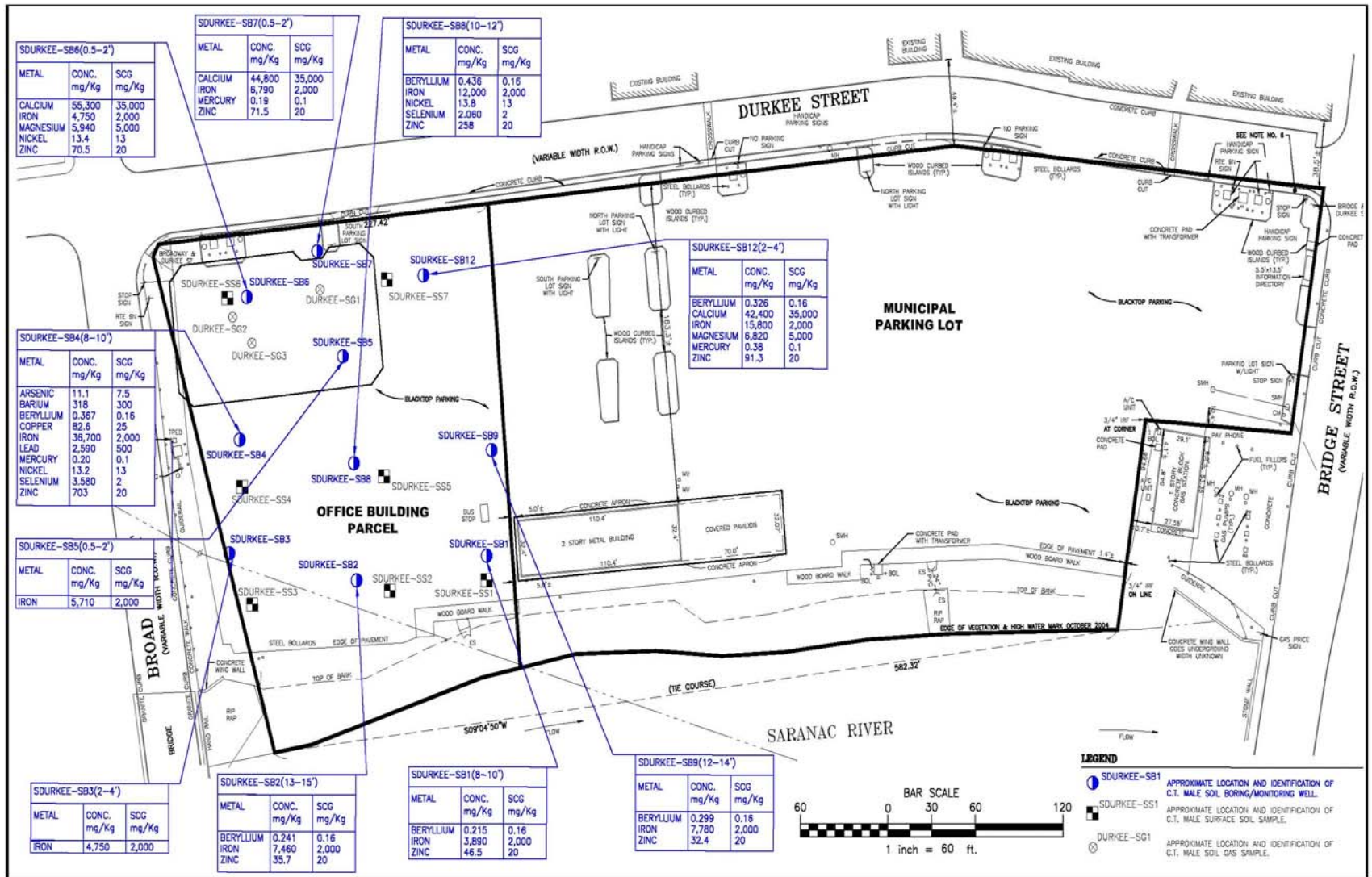
CAD DWG. FILE NAME: FIG6.DWG



SDURKEE-SB6(0.5–2')

METAL	CONC. mg/Kg	SCG mg/Kg
CALCIUM	55,300	35,000
IRON	4,750	2,000
MAGNESIUM	5,940	5,000
NICKEL	13.4	13
ZINC	70.5	20

SDURKEE-SB7(0.5–2')

METAL	CONC. mg/Kg	SCG mg/Kg
CALCIUM	44,800	35,000
IRON	6,790	2,000
MERCURY	0.19	0.1
ZINC	71.5	20

SDURKEE-SB8(10–12')

METAL	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.436	0.16
IRON	12,000	2,000
NICKEL	13.8	13
SELENIUM	2.060	2
ZINC	258	20

SDURKEE-SB12(2–4')

METAL	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.326	0.16
CALCIUM	42,400	35,000
IRON	15,800	2,000
MAGNESIUM	6,820	5,000
MERCURY	0.38	0.1
ZINC	91.3	20

SDURKEE-SB4(8–10')

METAL	CONC. mg/Kg	SCG mg/Kg
ARSENIC	11.1	7.5
BARIUM	318	300
BERYLLIUM	0.367	0.16
COPPER	82.6	25
IRON	36,700	2,000
LEAD	2,590	500
MERCURY	0.20	0.1
NICKEL	13.2	13
SELENIUM	3.580	2
ZINC	703	20

SDURKEE-SB5(0.5–2')

METAL	CONC. mg/Kg	SCG mg/Kg
IRON	5,710	2,000

SDURKEE-SB3(2–4')

METAL	CONC. mg/Kg	SCG mg/Kg
IRON	4,750	2,000

SDURKEE-SB2(13–15')

METAL	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.241	0.16
IRON	7,460	2,000
ZINC	35.7	20

SDURKEE-SB1(8–10')

METAL	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.215	0.16
IRON	3,890	2,000
ZINC	46.5	20

SDURKEE-SB9(12–14')

METAL	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.299	0.16
IRON	7,780	2,000
ZINC	32.4	20

LEGEND

SDURKEE-SB1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SOIL BORING/MONITORING WELL.

SDURKEE-SS1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SURFACE SOIL SAMPLE.

DURKEE-SG1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE SOIL GAS SAMPLE.

NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

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CAD DWG. FILE NAME: FIG9.DWG

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FIGURE 4
METALS ABOVE SCGs IN SUBSURFACE SOILS LOCATIONS MAP

PLATTSBURGH GATEWAY PROJECT
DURKEE STREET SITE

CITY OF PLATTSBURGH — CLINTON COUNTY, NY

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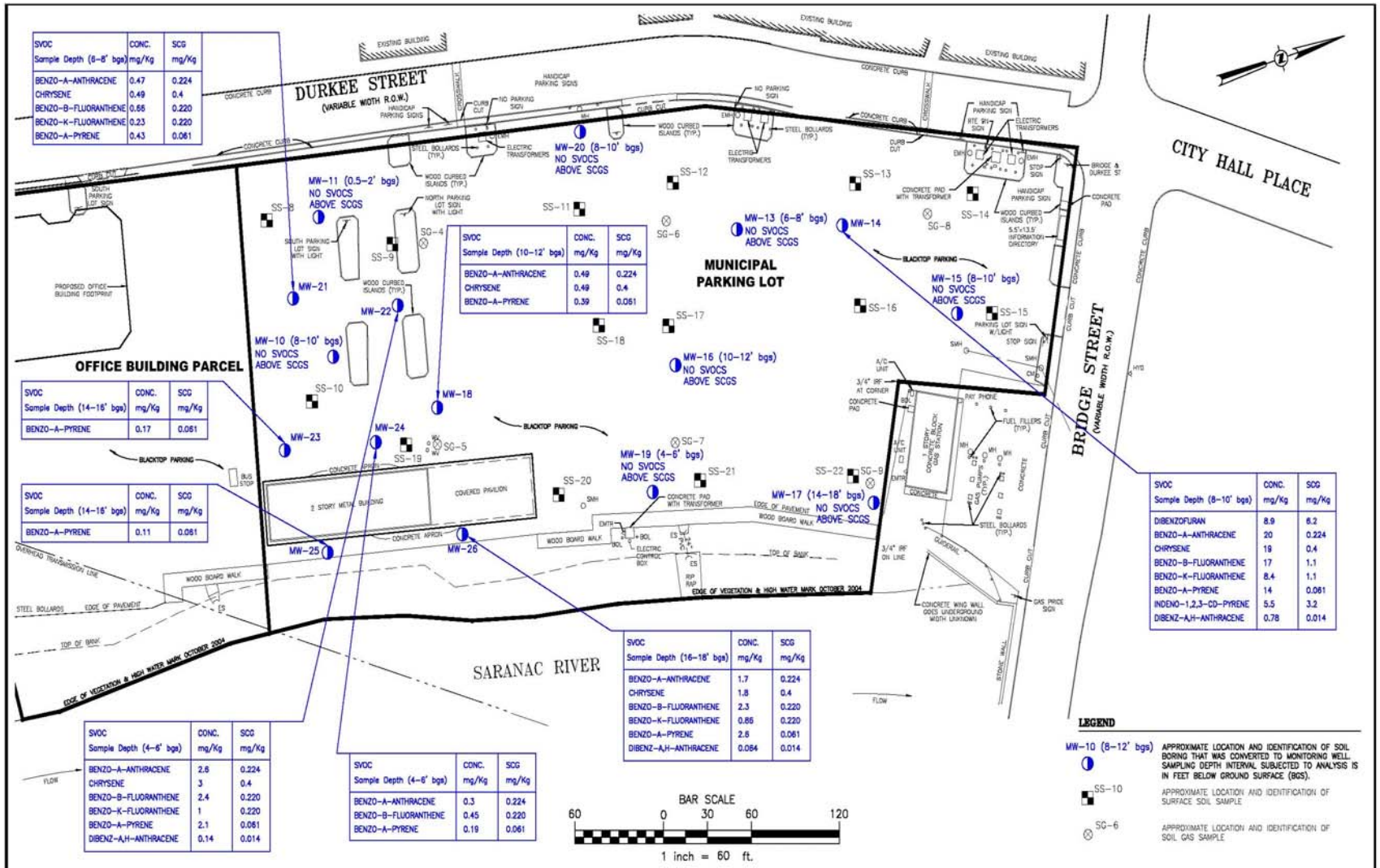
FIG4
SHEET 3 OF 6
DWG. NO:07–0119



SVOC Sample Depth (6-8' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-ANTHRACENE	0.47	0.224
CHRYSENE	0.49	0.4
BENZO-B-FLUORANTHENE	0.66	0.220
BENZO-K-FLUORANTHENE	0.23	0.220
BENZO-A-PYRENE	0.43	0.061

SVOC Sample Depth (10-12' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-ANTHRACENE	0.49	0.224
CHRYSENE	0.49	0.4
BENZO-A-PYRENE	0.39	0.061

SVOC Sample Depth (14-16' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-PYRENE	0.17	0.061

SVOC Sample Depth (14-16' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-PYRENE	0.11	0.061

SVOC Sample Depth (8-10' bgs)	CONC. mg/Kg	SCG mg/Kg
DIBENZOFURAN	8.9	6.2
BENZO-A-ANTHRACENE	20	0.224
CHRYSENE	19	0.4
BENZO-B-FLUORANTHENE	17	1.1
BENZO-K-FLUORANTHENE	8.4	1.1
BENZO-A-PYRENE	14	0.061
INDENO-1,2,3-CD-PYRENE	5.5	3.2
DIBENZ-A,H-ANTHRACENE	0.78	0.014

SVOC Sample Depth (16-18' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-ANTHRACENE	1.7	0.224
CHRYSENE	1.8	0.4
BENZO-B-FLUORANTHENE	2.3	0.220
BENZO-K-FLUORANTHENE	0.85	0.220
BENZO-A-PYRENE	2.5	0.061
DIBENZ-A,H-ANTHRACENE	0.054	0.014

SVOC Sample Depth (4-6' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-ANTHRACENE	2.6	0.224
CHRYSENE	3	0.4
BENZO-B-FLUORANTHENE	2.4	0.220
BENZO-K-FLUORANTHENE	1	0.220
BENZO-A-PYRENE	2.1	0.061
DIBENZ-A,H-ANTHRACENE	0.14	0.014

SVOC Sample Depth (4-6' bgs)	CONC. mg/Kg	SCG mg/Kg
BENZO-A-ANTHRACENE	0.3	0.224
BENZO-B-FLUORANTHENE	0.45	0.220
BENZO-A-PYRENE	0.19	0.061

LEGEND

MW-10 (8-12' bgs) — APPROXIMATE LOCATION AND IDENTIFICATION OF SOIL BORING THAT WAS CONVERTED TO MONITORING WELL. SAMPLING DEPTH INTERVAL SUBJECTED TO ANALYSIS IS IN FEET BELOW GROUND SURFACE (BGS).

SS-10 — APPROXIMATE LOCATION AND IDENTIFICATION OF SURFACE SOIL SAMPLE

SG-6 — APPROXIMATE LOCATION AND IDENTIFICATION OF SOIL GAS SAMPLE

NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

MAP REFERENCE:
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CAD DWG. FILE NAME: FIG5.DWG

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FIGURE 5
SVOCs ABOVE SCGs IN SUBSURFACE SOIL/FILL LOCATIONS MAP
PLATTSBURGH GATEWAY PROJECT
DURKEE STREET SITE

CITY OF PLATTSBURGH — CLINTON COUNTY, NY

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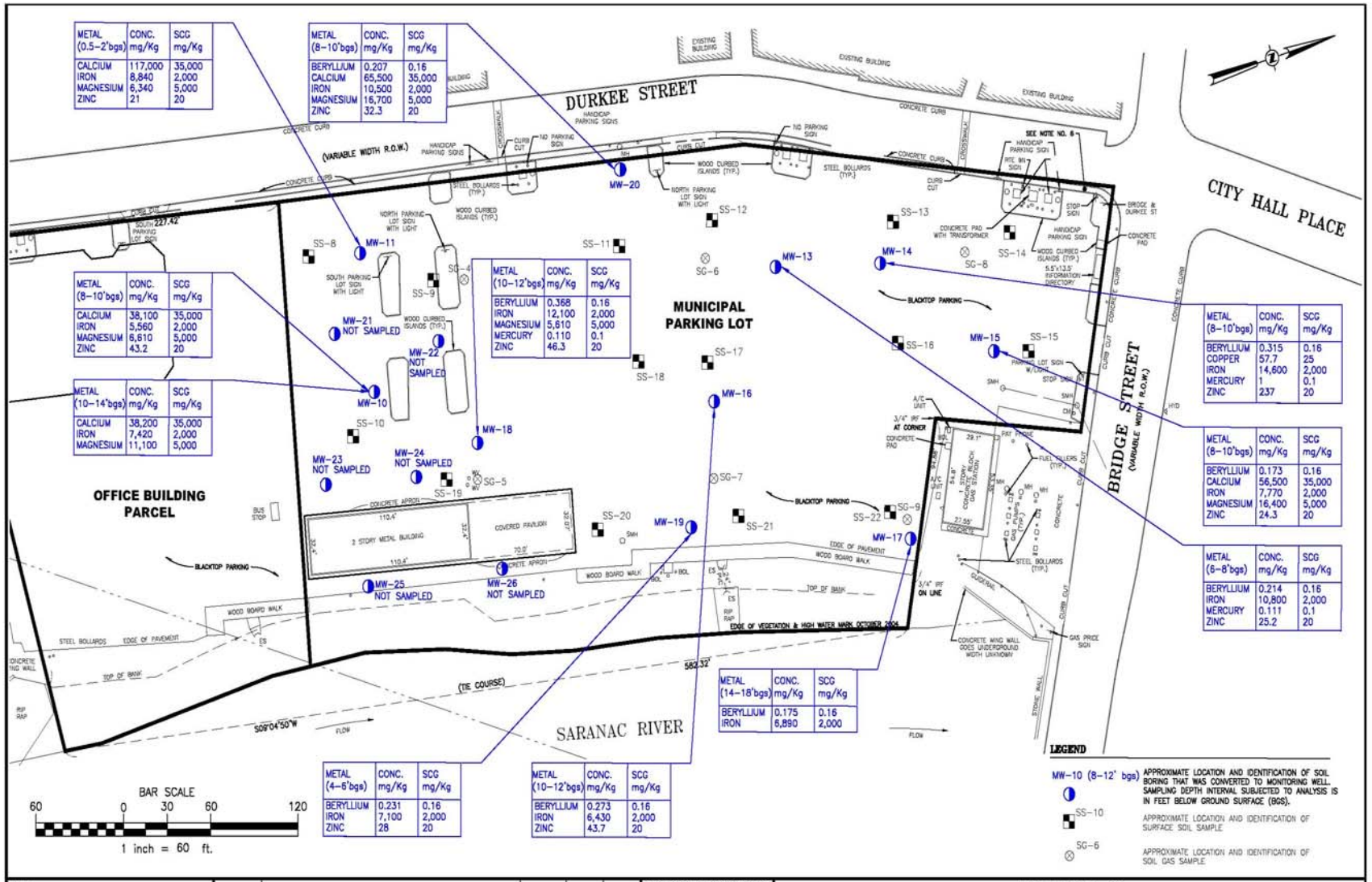
FIG5
SHEET 4 OF 6
DWG. NO: 07-0119



METAL (0.5–2'bgs)	CONC. mg/Kg	SCG mg/Kg
CALCIUM	117,000	35,000
IRON	8,840	2,000
MAGNESIUM	6,340	5,000
ZINC	21	20

METAL (8–10'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.207	0.16
CALCIUM	65,500	35,000
IRON	10,500	2,000
MAGNESIUM	16,700	5,000
ZINC	32.3	20

METAL (8–10'bgs)	CONC. mg/Kg	SCG mg/Kg
CALCIUM	38,100	35,000
IRON	5,560	2,000
MAGNESIUM	6,610	5,000
ZINC	43.2	20

METAL (10–14'bgs)	CONC. mg/Kg	SCG mg/Kg
CALCIUM	38,200	35,000
IRON	7,420	2,000
MAGNESIUM	11,100	5,000

METAL (10–12'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.368	0.16
IRON	12,100	2,000
MAGNESIUM	5,610	5,000
MERCURY	0.110	0.1
ZINC	46.3	20

METAL (8–10'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.315	0.16
COPPER	57.7	25
IRON	14,600	2,000
MERCURY	1	0.1
ZINC	237	20

METAL (8–10'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.173	0.16
CALCIUM	56,500	35,000
IRON	7,770	2,000
MAGNESIUM	16,400	5,000
ZINC	24.3	20

METAL (6–8'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.214	0.16
IRON	10,800	2,000
MERCURY	0.111	0.1
ZINC	25.2	20

METAL (14–18'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.175	0.16
IRON	6,890	2,000

METAL (4–6'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.231	0.16
IRON	7,100	2,000
ZINC	28	20

METAL (10–12'bgs)	CONC. mg/Kg	SCG mg/Kg
BERYLLIUM	0.273	0.16
IRON	6,430	2,000
ZINC	43.7	20

NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

MAP REFERENCE:
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CAD DWG. FILE NAME: FIG9.DWG

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SCALE : ±1"=60'
DATE : JAN. 2007

FIGURE 6
METALS ABOVE SCGs IN SUBSURFACE SOILS LOCATIONS MAP

PLATTSBURGH GATEWAY PROJECT
DURKEE STREET SITE

CITY OF PLATTSBURGH — CLINTON COUNTY, NY

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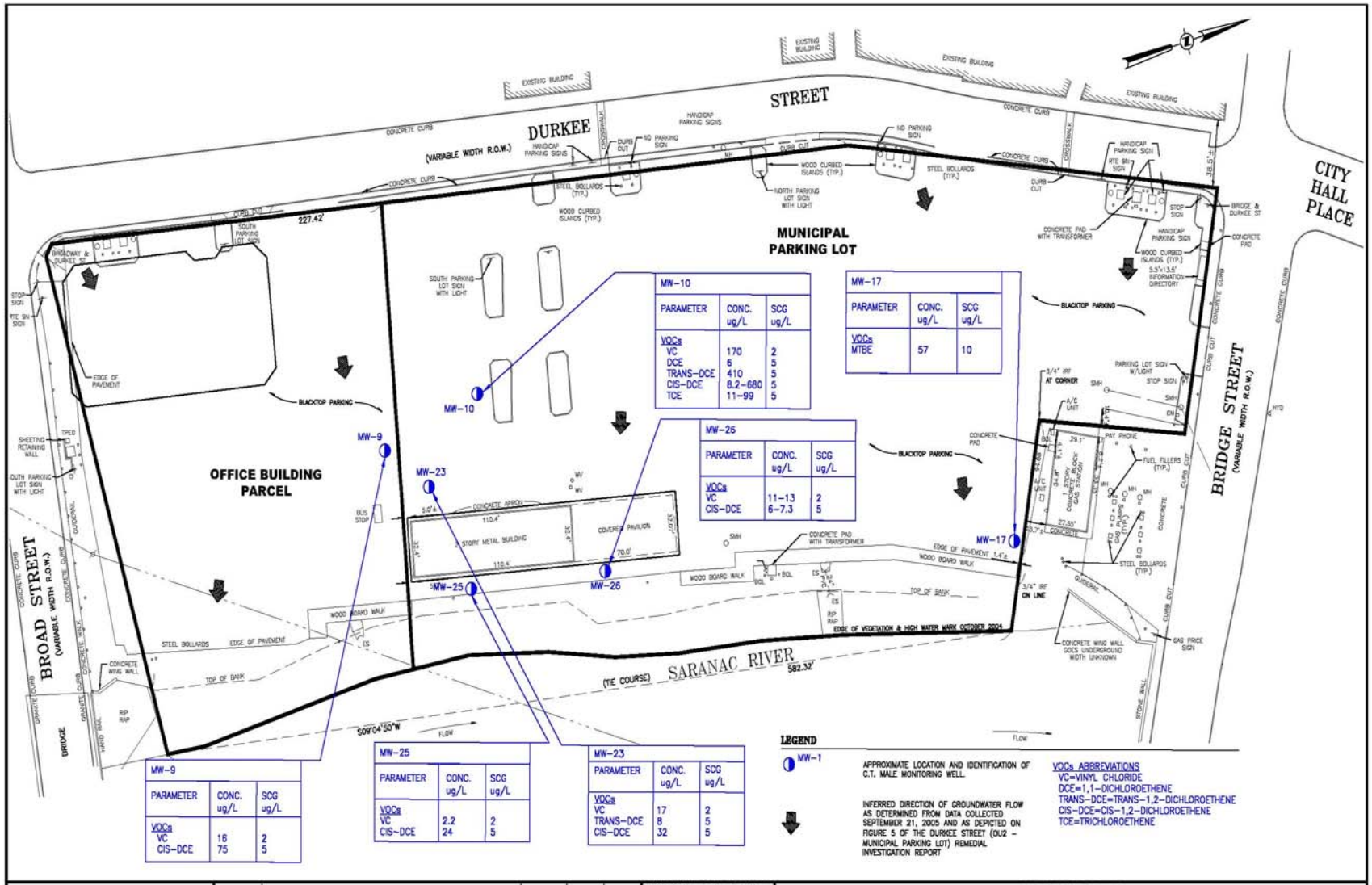
FIG6
SHEET 5 OF 6
DWG. NO:07–0119



MW-10		
PARAMETER	CONC. ug/L	SCG ug/L
VOCs		
VC	170	2
DCE	6	5
TRANS-DCE	410	5
CIS-DCE	8.2-680	5
TCE	11-99	5

MW-17		
PARAMETER	CONC. ug/L	SCG ug/L
VOCs		
MTBE	57	10

MW-26		
PARAMETER	CONC. ug/L	SCG ug/L
VOCs		
VC	11-13	2
CIS-DCE	6-7.3	5

MW-9		
PARAMETER	CONC. ug/L	SCG ug/L
VOCs		
VC	16	2
CIS-DCE	75	5

MW-25		
PARAMETER	CONC. ug/L	SCG ug/L
VOCs		
VC	2.2	2
CIS-DCE	24	5

MW-23		
PARAMETER	CONC. ug/L	SCG ug/L
VOCs		
VC	17	2
TRANS-DCE	8	5
CIS-DCE	32	5

LEGEND

MW-1 — APPROXIMATE LOCATION AND IDENTIFICATION OF C.T. MALE MONITORING WELL.

INFERRED DIRECTION OF GROUNDWATER FLOW AS DETERMINED FROM DATA COLLECTED SEPTEMBER 21, 2005 AND AS DEPICTED ON FIGURE 5 OF THE DURKEE STREET (OU2 - MUNICIPAL PARKING LOT) REMEDIAL INVESTIGATION REPORT

VOCs ABBREVIATIONS
VC=VINYL CHLORIDE
DCE=1,1-DICHLOROETHENE
TRANS-DCE=TRANS-1,2-DICHLOROETHENE
CIS-DCE=CIS-1,2-DICHLOROETHENE
TCE=TRICHLOROETHENE

NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

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DATE : JAN. 2007

FIGURE 7
EXTENT OF VOCS ABOVE SCGS IN GROUNDWATER LOCATIONS MAP

PLATTSBURGH GATEWAY PROJECT
DURKEE STREET SITE

CITY OF PLATTSBURGH — CLINTON COUNTY, NY

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FIG7
SHEET 6 OF 6
DWG. NO: 07-0119