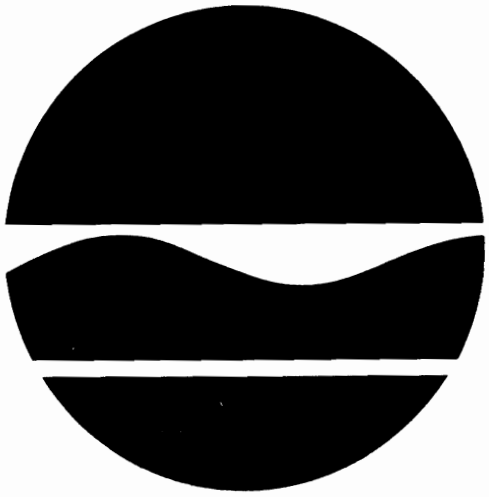
PROPOSED REMEDIAL ACTION PLAN
TRINIDAD PARK

Environmental Restoration Project
Buffalo, Erie County, New York
Site No. B-00083-9

February 2003



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

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the Trinidad Park 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 (Brownfields) Program, the state provides grants to municipalities to reimburse up to 75 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, the previous operations of an asphalt manufacturing facility on the site of the present park resulted in the disposal of hazardous substances, including polycyclic aromatic hydrocarbons (PAHs). These hazardous substances contaminated the soils at the site, and resulted in:

- a threat to human health associated with current and potential exposure to the PAH-contaminated soils and;
- an environmental threat associated with the impacts of contaminants to groundwater.

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the Trinidad Park 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 site investigation/remedial alternatives report (SI/RAR). The IRM undertaken at this site included the removal of an underground storage tank containing asphalt tar and the contaminated soils surrounding the tank.

Based on the implementation of the above IRMs, 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 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 NYSDEC will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

The NYSDEC 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 February 2003 "Site Investigation Remedial Alternatives Report", and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

Buffalo & Erie County Central Library
Science and Technology Area
1 Lafayette Square
Buffalo, NY 14203-1887
716-858-8900 (phone)
716-858-6211 (fax)
Hours:
Monday - Wednesday 8:30 AM - 6 PM
Thursday 8:30 AM - 8 PM
Friday & Saturday 8:30 AM - 6 PM
Sunday (during school year) 1 - 5 PM

Kensington Branch Library
22 Westminster Avenue
Buffalo, NY 14215
716-833-7278 (phone)
716-833-7278 (fax)
Hours:
Monday, Friday & Saturday - 10 AM - 6 PM
Tuesday & Thursday - 12 AM - 8 PM
Wednesday & Sunday - Closed

NYSDEC
270 Michigan Avenue
Buffalo, New York 14203
By appointment only, attn: Mr. David Locey
Hours:
Monday - Friday 8:30 AM-4:45PM
716-851-7220 (phone)
716-851-7226 (fax)

The NYSDEC seeks input from the community on all PRAPs. A public comment period has been set from February 10 to March 26, 2003 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for February 25 at the Kensington Branch Library beginning at 6 PM.

At the meeting, the results of the SI/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 Mr. Locey at the above address through March 26, 2003.

The NYSDEC may modify the preferred alternative 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 NYSDEC's final selection of the remedy for this site.

SECTION 2: SITE LOCATION AND DESCRIPTION

Trinidad Park is a small neighborhood park located at 237 Kensington Avenue and Trinidad Place on the east side of the City of Buffalo, Erie County (refer to Figure 1). The Park is a 3.68 +/- acre, "L"-shaped lot (refer to Figure 2) located in a mixed-use neighborhood, including an active railroad line along the eastern perimeter of the Park, residential homes across Trinidad Place to

the west, and industrial/commercial and residential properties to the north and south.

The Niagara Mohawk Dewey Avenue Service Station, a hazardous materials facility currently under investigation with the NYSDEC's Resource Conservation and Recovery Act (RCRA) program, is located north of the Park, on the opposite side of Kensington Avenue. The Niagara Mohawk facility has serviced electrical equipment since the early 1930's.

The present surface of the Park is irregular due to the earth mounded areas which rise steeply in the central portion of the property. However, in general, the site slopes slightly downward from east to west. The eastern edge of the property is elevated above the railroad track and slopes steeply down to the railroad bed. A fence separates the Park from railroad track, running the length of the property from north to south. The fence has, however, been cut in a few locations, allowing access to the railroad tracks.

The northern perimeter of the Park is dominated by the concrete retaining wall associated with the Kensington Avenue overpass to the railroad tracks. This portion of the Park includes a small, flat grassy area and asphalt-covered basketball courts in a fenced enclosure.

The central portion of the Park, from just south of the basketball courts to the end of Trinidad Place, contains a small building, two separate sand/play areas, and a wading pool. The small building and wading pool lie between the Park's two earth mounded areas.

The southern portion of the Park is a well maintained, grass covered area, reportedly used as a football field. Adjacent to the southwest corner of the field is a small community vegetable garden. Properties to the west and north of the football field are residential homes.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site was occupied in the early 1900's by asphalt manufacturing, paving and construction companies. Products manufactured included asphalt, tar, concrete and other materials used for paving and road construction. As part of these operations, the property contained a series of buildings, including two asphalt manufacturing plants. All of the buildings were demolished a short time after the City of Buffalo purchased the property in 1970, and the property was converted into a park. Based on the findings of subsequent investigation, the materials from the demolished buildings were apparently buried in the earth mound areas presently located in the central portion of the property. A detailed history of the site is contained in the "Phase I Environmental Site Assessment" report, attached as Appendix A to the "Site Investigation Remedial Alternatives Report".

3.2: Remedial History

In 1992, the City of Buffalo excavated three test pits through the basketball courts to investigate the source of tar that reportedly seeped from the subsurface. The tar was removed but the source of the material was never found. A follow up investigation was conducted in 1993. Fire insurance maps had suggested that an underground storage tank was once located in the area of the basketball courts. Test pits were dug through the surface of the basketball court. Traces of asphalt tar were found immediately below the pavement but no evidence was found of a buried tank.

In 1995, an oily tar was observed seeping to the ground surface near the earth mound located north of the park's small building. NYSDEC excavated the seep area, uncovering the remains of four badly corroded underground storage tanks. The tanks and 600 tons of contaminated soil were removed and disposed of at permitted landfill. The contamination was identified as fuel oil.

In 1999, during the completion of the "Phase I Environmental Site Assessment", another exposed patch of oily tar was observed. The small, 2 to 3 foot square area of tar was found near the eastern base of the earth mound located south of the park's small building. The seep area was enclosed with a wooden snow fence. The seep area would later be addressed during the course of this brownfield program investigation.

Exposed patches of tar were also observed outside the park, along the railroad embankment. Several patches of hardened tar were observed near the top of the embankment, behind the park's basketball courts. A patch of a more fluid tar was located midway up the slope of the embankment, at a point opposite the park's small building. As discussed later in this PRAP, the contaminants found in the asphalt tar are chemicals that are also the byproducts of coal and diesel fuel combustion. The adjacent railroad tracks, which have been operated since the late 1800s, are lined with cinders, ash and gravel. This railroad bedding material typically contains the contaminants of the locomotive operation; i.e. the coal and diesel fuel combustion byproducts, as well as spillage from diesel fuels and grease lubricants. It was reasonably presumed that the presence of the scattered asphalt tar in the railroad embankments would present no significant added contribution to the contamination expected to exist along this, and most other, railroad tracks. Since the park's perimeter fence restricts access to the railroad and the embankment, these areas of exposed tar were not addressed during the course of this investigation.

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 Buffalo will assist the state in its efforts by providing all information to the state which identifies PRPs. The City of Buffalo will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

SECTION 5: SITE CONTAMINATION

The City of Buffalo has recently completed a site investigation/remedial alternatives report (SI/RAR) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site.

The SI was conducted between January 2001 and November 2002. The field activities and findings of the investigation are described in the SI report.

The following activities were conducted during the SI:

- research of historical information;
- excavation of twenty seven test pits to analyze soils and describe subsurface stratigraphy;
- installation of thirty-two soil borings and six monitoring wells for analysis of soils and groundwater;
- geophysical survey to locate additional underground storage tanks or buried drums;
- collection of seventeen surface soil samples and twenty-six subsurface soil samples;
- collection of six groundwater samples and;

- collection of two waste samples from the area of exposed tar.

To determine whether the soil and groundwater 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 NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels".

- Background surface soil samples were taken from four locations. These locations were west of the site on the opposite side of Trinidad Place, and were unaffected by historic or current site operations. The samples were analyzed for the Target Compound List (TCL) of organic compounds and Target Analyte List (TAL) of inorganic contaminants. The results of the analysis were compared to data from the SI (Table 1) to determine appropriate site remediation goals.

Based on the SI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized below. More complete information can be found in the SI report.

5.1.1: Site Geology and Hydrogeology

The results of the investigation showed that the subsurface geology consists of an approximate 6 inch topsoil layer underlain by 2.7 to 6.5 feet of overburden fill material. The fill material is underlain by natural yellow brown to brown, cohesive clayey silt. The fill material is red-brown and brown to black, with a non-cohesive matrix of silt and fine to coarse sand. Included in the fill are varying amounts of wood and brick fragments, wire and rebar, concrete and asphalt fragments, and a fine cinder-like material mixed in with the silt.

Localized occurrences of tar material were observed below the surface of the site in several test pits and soil borings, consisting of lenses or discontinuous layers varying in thickness from a few inches to 1.5 feet. The tar material was observed in isolated areas at varying depths and did not appear consistently across the site.

Groundwater was observed just above the level of the native clayey silts that lie above the bedrock. The bedrock is limestone of the Onondaga Formation, encountered beneath the site at depths ranging from approximately 7 to 9 feet. Regional groundwater flow was described in investigation reports of the nearby Niagara Mohawk Dewey Avenue site. Investigation there suggests that groundwater flow within in the bedrock is to the north-northwest, towards the Niagara River. However, the Niagara Mohawk site investigation reports also suggest that the groundwater flow along the surface of the bedrock is to the south-southwest.

The wells installed at Trinidad Park were completed in the overburden to the top of the bedrock. These wells were installed to obtain a snapshot of the groundwater quality and were not designed to establish hydrogeological flow conditions.

5.1.2: Nature of Contamination

As described in the SI report, many soil and groundwater samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main category of contaminants that exceed their SCGs are semivolatile organic compounds (SVOCs).

The SVOCs of concern are certain carcinogenic (cancer-causing) polycyclic aromatic hydrocarbons (cPAHs), which include the

compounds: benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene. PAH compounds are common constituents of fill material in urban environments. PAHs are typically associated with coal tar and asphalt-based materials and ash, and are often found in areas where fossil fuels, such as coal and heating oil have been used as energy sources. PAH compounds are generally not very soluble in water and tend to adsorb to soils. Such compounds are therefore somewhat immobile in the environment. These compounds do not readily breakdown in the environment. PAHs deposited from the combustion of coal or other fuels years ago will most likely still be present today. Because of their low volatility and association with soil, the primary concern for potential exposure to PAHs include inhalation (dust), ingestion and dermal contact.

A number of metal compounds were also detected in the site soils and groundwater at concentrations exceeding the SCGs. The concentrations of metals in the site soils were similar to the levels found in the four background samples collected. Like PAHs, metals are generally not very mobile in that they have low water solubilities and tend to adsorb to soil particles.

5.1.3: Extent of Contamination

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

Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for waste and soil samples. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the degree of contamination for the contaminants of concern in the surface and subsurface soil, groundwater and waste tar, and compares 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.

Waste Materials

A small, 2 to 3 square foot area of oily black tar was observed at the southeastern base of the Park's southern earth mound. A sample of the tar and the soil in direct contact with it was collected and analyzed for petroleum-based volatile and semi-volatile organic compounds. There were no volatile constituents detected. Several semi-volatile compounds were detected, all of them PAHs. Only two PAHs were found at concentrations exceeding the SCGs for soils; chrysene, detected at 0.82 ppm and benzo(a)pyrene, 0.84 ppm. The SCGs for the two contaminants are 0.4 and 0.061 ppm respectively.

As described later in this PRAP (Section 5.2), the oily tar was removed and disposed off-site. Prior to disposal, another sample of the tar was analyzed for PCBs and hazardous waste characteristics. There were no PCBs detected and the material did not exhibit any of the characteristics (toxicity, ignitability, reactivity or corrosivity) of a hazardous waste.

Areas of exposed, hardened tar were also observed in the eastern embankment of the site along the railroad track and in localized occurrences in the site's subsurface soils. The subsurface tar consisted of lenses or discontinuous layers, varying in thickness, from a few inches to 1.5 feet. The tar lenses were noted in test pit TP-13 and borings BH-12, -20 and -22 along with the four borings completed around TP-18.

Surface Soil

Surface soil samples were collected from below the grass surface and within the top two inches of soil. Samples were tested for SVOCs, PCBs and metals.

All but 1 of the 13 surface soil samples collected from the park had detectable levels of SVOCs. The concentrations found were generally below the recommended soil cleanup objectives. The only SVOCs found at concentrations in excess of these objectives were the cPAHs noted earlier. Eight of the 13 surface soil samples had total

cPAH concentrations above 1 ppm, only four samples had total cPAH concentrations above 5 ppm.

As noted earlier, in an urban environment, the presence of cPAHs in the soil is to be expected. For comparison, 4 surface soil samples were collected from outside the park. As shown in Table 2, the total cPAH concentrations in these background samples were as high as 8.73 ppm, which is comparable to highest concentration detected within the park (9.75 ppm).

PCBs were detected in several surface soil samples, but in every case the concentrations were well below the 1 ppm SCG.

The SCGs for most metals are based on local background concentrations. As shown in Table 1, the concentrations of most of the metals found in the surface soil of the site were similar to the concentrations found in the 4 background samples.

Subsurface Soil

Eleven subsurface soil samples were collected from the initial test pits, and another 4 samples were taken during the subsequent soil boring program. Samples were tested for VOCs, SVOCs, PCBs and metals.

A number of VOCs were detected but none were found at concentrations exceeding SCGs, with the exception of the compound o-xylene, found in one sample at 1.7 ppm. The SCG for this compound is 1.2 ppm.

All 15 subsurface soil samples had detectable concentrations of SVOCs, primarily cPAHs. Each sample was collected over an interval, typically beginning 0.5 feet below the ground surface and extending to depths of 3.5 to 4.5 feet. All but one of the samples contained cPAHs at concentrations exceeding SCGs. Three of the samples had total cPAH concentrations above 10 ppm.

The subsurface concentrations of cPAHs were, in general, similar to surface soil levels with the exception of the subsurface soil composited from test pits TP-1 and -2 (total cPAH concentration of 57.8 ppm).

Most of the subsurface soil samples analyzed also contained several SVOCs, which were unidentifiable or only tentatively identified. A closer review of the laboratory reports suggests that these contaminants were from the same category of hydrocarbon compounds that comprise petroleum products; ranging from light-weight hydrocarbons of fuel oils to the heavier weight hydrocarbons of lubricating oils/greases.

PCBs were detected in the subsurface soils but at concentrations well below the 10 ppm SCG.

The concentrations of metals found in the subsurface soils were similar to the levels found in the surface soils on site and the background sample locations outside the site.

Groundwater

Groundwater samples were collected from all six of the well points installed. The samples were tested for the TCL volatiles, semi-volatiles, PCBs and metals. Wells MW-5 and -6 produced only a small amount of water; the samples from these two wells were tested only for TCL semi-volatile compounds.

Groundwater recharge in all of the wells was poor, the samples collected tended to be quite turbid. Both filtered and unfiltered samples were taken and analyzed for metals. Generally, the dissolved metal concentrations were substantially lower than the total metal results from the unfiltered samples.

For the most part, there were no semi-volatile compounds detected, at concentrations exceeding groundwater quality standards. The one notable exception was the sample collected from monitoring well MW-2. The same cPAHs found in the subsurface soils throughout the site, appeared in the groundwater at the MW-2 location. The concentrations of the various

individual cPAHs found in the MW-2 groundwater sample ranged from 1 to 4 ppb, exceeding the 0.002 ppb water quality limit for each compound. Monitoring well MW-2 is located in that corner of the site furthest from the center of the former asphalt plant operations.

There were no volatile compounds detected at concentrations exceeding water quality standards in any of the samples collected. There were no PCBs detected in any of the groundwater samples collected.

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 SI/RAR.

As noted earlier, waste asphalt tar was found in several localized areas of the park and vicinity, primarily beneath the surface. At a few locations however, the tar was found exposed on the surface; at the southeastern foot of the park's southern earth mound, and outside the site along the embankment to the railroad track.

It was determined that the exposed waste within the park posed a potential threat through direct contact, while exposure to materials found along the railroad embankment was limited by the existing site perimeter fence.

In August 2002, an IRM was initiated to remove the waste asphalt tar exposed at the base of the site's southern earth mound. After excavating the waste and soil to a depth of only a few feet, an underground storage tank (UST) was discovered. The tank, approximately 6000 gallons in volume, was three quarters full of tar and soil. It appeared to have been previously ruptured along the upper surface. The waste tar in the tank had evidently been displaced to the ground surface by the soils collapsing into the UST.

The tank was removed along with the tar and soil mixture it contained, and disposed at an off-site landfill. Since the concentrations of identifiable PAHs detected in the tar were similar to the concentrations found in the subsurface soils across the site, no confirmatory soil samples were collected from the completed UST excavation. The IRM was limited to the removal of tar and any soil with visual evidence of contamination. Leakage from the UST, however, appeared to be confined within the surrounding few feet. The excavation was later backfilled with clean sandy soils, covered with topsoil and seeded with grass.

Concerned that there may be other USTs on site, left undiscovered during the previous test pit and soil boring programs, a geophysical survey of the site was completed in September 2002. The electromagnetic conductivity and metal detection survey found several anomalies which suggested large metal objects, possibly other USTs. The strongest signals were recorded at locations along the eastern perimeter of the site and immediately south of the basketball courts.

In November 2002, a second test pit program was initiated, to investigate these geophysical anomalies. In every test pit completed, pieces of large diameter (1 ½") steel rebar (concrete reinforcement) were found or buried concrete foundations uncovered, which were assumed to contain the same metal rebar. There were no metallic USTs found.

In one of the test pits located near the basketball courts, a vertical concrete vault was found. The interior of the cylindrical vault was filled with soil and debris (concrete and brick), and traces of asphalt tar were found at the bottom.

A test pit completed along the western side of the park, near Trinidad Place, uncovered a layer of soil and fill which bore a diesel fuel odor. Three samples of the soil and fill were tested for volatile and semi-volatile organic compounds. The concentrations of the several volatile and PAH compounds detected were all well below the recommended cleanup objectives of TAGM 4046.

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 4 of the SI report. This document can be found at the site document repositories located at the Buffalo & Erie County Central Library, and at the Kensington Branch Library which is located at 22 Westminster Street, Buffalo.

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.

One pathway present at this site is through direct contact with the tar/soil material. Remedial measures that occurred at this site included the excavation and off-site disposal of approximately 100 cubic yards of tar/soil material. Upon completion of this action, the excavation was backfilled with clean soil, covered with topsoil and seeded. These remedial measures eliminated this potential exposure route.

5.4: Summary of Environmental Impacts

This section summarizes the existing and potential future environmental impacts presented by the site. 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.

There were no significant environmental exposure pathways or ecological risks identified. The site lies within a developed, urban area. The surrounding properties are residential, commercial and industrial. Vacant parcels exists to the northeast, east and south of the site, but the plant community in these locations are not well developed and do not provide important habitats for terrestrial wildlife, due to the disturbed nature of the soils and recent history of industrial use.

The surface water resource in closest proximity to the site is Scajaquada Creek, which passes the site to the south and west over a half mile away.

Site contamination has slightly impacted the groundwater resource in the upper portion of the bedrock beneath Trinidad Park. However, due to the fact that PAHs are fairly immobile the magnitude of the impact is considered insignificant and is not considered a threat to the environment.

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 375-1.10. 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.

The proposed future use for the Trinidad Park is recreational, the continuation of its use as a neighborhood park.

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 PAHs in the tar/soil material;

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards

The NYSDEC believes that the IRM has accomplished these remediation goals.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation discussed below, the NYSDEC is proposing No Further Action as the preferred alternative for the site.

The basis for this proposal is the NYSDEC's conclusion that No Further Action would be protective of human health and the environment and would meet all SCGs. Overall protectiveness is achieved through meeting the remediation goals listed above.

The IRM removed the only exposed tar on site and thereby eliminated the existing threat of direct contact with the PAH - contaminated waste material. Tar was found at the surface at other locations, but only outside of the park, along the embankment to the railroad track. The site perimeter fence and the railroad itself discourages incidental contact with this exposed material. Limited pockets of tar were also found buried beneath the park in several locations. Continued routine maintenance of the park landscape and site use restrictions to preclude excavations, would eliminate or control possible future exposure to this buried material.

Analyses of the waste tar material found that it did not exhibit any of the characteristics of a hazardous waste. Though the tar contained PAHs in concentrations exceeding recommended cleanup levels for soil, the concentrations were not so high that they would be expected to have a significant impact on the local groundwater quality. In fact, analyses of the groundwater generally showed no evidence of significant contamination. Removal of the subsurface waste tar is therefore considered unnecessary for the protection of the groundwater.

The main SCGs applicable to this project are as follows:

The NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 for soils, and Part 5 of the New York State Sanitary Code and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 for groundwater.

Most of the surface samples collected from the site contained cPAHs at concentrations which exceeded the TAGM 4046 levels. However, the concentrations of the cPAHs in the site surface soils were similar to the concentrations found in the neighborhood background samples, and only slightly above TAGM 4046 levels. The proposed No Further Action remedial plan would not address these soils. The concentrations of cPAHs in the surface soils do not present a significant threat to public health and therefore do not require remediation.

The concentrations of cPAHs in the subsurface soils were somewhat higher than the levels found at the surface, and were generally consistent across the entire site. Remediation of the subsurface soils, across the entire site, would be impractical. Provided that deed restrictions are put into place restricting the future excavation or disturbance of these soils, remediation is not required.

The cPAHs that were the primary contaminant of concern in the soils, were generally not detected in the groundwater sampled from the site. The one notable exception was monitoring well MW-2, located in a remote corner of the site, furthest from the center of the historical asphalt plant operations. The occurrence of cPAHs in the groundwater at this location is an anomaly, as cPAHs are not very soluble and the soils in the immediate vicinity were not especially high in contaminant concentration. Area residents are provided drinking water from a municipal source. Provided that deed restrictions are put into place preventing the use of the groundwater at this site, No Further Action is required to address the contamination found in the groundwater.

Therefore, the NYSDEC concludes that the following elements of the IRM already completed have achieved the remediation goals for the site and that No Further Action is needed other than the institutional controls listed below.

1. The completed IRM removed the exposed waste tar and underlying storage tank from the site, reducing public exposure to the cPAH contamination.

2. Deed restrictions would be imposed on the site restricting its use to public recreation only.

3. An institutional control would be imposed, in such form as the NYSDEC may approve, that would prevent the use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the Erie County Health Department.

4. The deed restrictions would include the requirement that the soils management procedures, Appendix D of the Final Site Investigation and Remedial Alternatives Report dated February 2003, must be implemented to address any future excavation or soil disturbance activities that may be required on the property.

5. The City shall annually complete and submit to the Department an Annual Report by January 15th of each year. Such annual report shall contain certification that the institutional controls put in place, pursuit to the Final Site Investigation and Remedial Alternatives Report dated February 2003, are still in place, have not been altered and are still effective.

TABLE 1
Nature and Extent of Contamination
October 2000 - July 2002

WASTE	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	chrysene	0.82	0.4	1 of 1
	benzo(a)pyrene	0.84	0.061	1 of 1
Inorganic Compounds	beryllium	0.552	0.55	1 of 1
	copper	47.2	25.9	1 of 1
	nickel	37.6	17.6	1 of 1
	vanadium	150	24	1 of 1

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	benzo(a)-anthracene	0.049 - 1.5	0.224	8 of 13
	chrysene	0.058 - 1.8	0.4	7 of 13
	benzo(b)-fluoranthene	0.092 - 2.6	1.1	5 of 13
	benzo(a)pyrene	0.069 - 1.6	0.061	12 of 13
	dibenzo(a,h)-anthracene	0.082 - 0.15	0.014	3 of 13
	total cPAHs	0.268 - 9.75	1	8 of 13
Inorganic Compounds	calcium	5630 - 126000	32600	4 of 13
	cobalt	3.58 - 8.56	7.5	2 of 13
	iron	7400 - 18500	18050	1 of 13
	magnesium	2720 - 14800	10333	2 of 13
	manganese	163 - 658	452	1 of 13
	mercury	0.032 - 0.19	0.1	2 of 13

TABLE 1
Nature and Extent of Contamination (Continued)

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	benzo(a)-anthracene	0.11 - 11	0.224	12 of 15
	chrysene	0.15 - 13	0.4	11 of 15
	benzo(b)-fluoranthene	0.13 - 14	1.1	5 of 15
	benzo(k)-fluoranthene	0.087 - 4.3	1.1	2 of 15
	benzo(a)pyrene	0.15 - 9.1	0.061	13 of 15
	indeno(1,2,3-c,d)-pyrene	0.16 - 4.9	3.2	2 of 15
	dibenzo(a,h)-anthracene	1.5 -1.5	0.014	1 of 15
	total cPAHs	0.627 - 57.8	10	3 of 15
Inorganic Compounds	aluminum	3030 - 18900	10728	1 of 15
	antimony	2.98 - 3.81	ND	4 of 15
	arsenic	0.6 - 15	8.3	1 of 15
	beryllium	0.042 - 1.06	0.55	2 of 15
	calcium	7260 - 130000	32600	13 of 15
	cobalt	4.3 - 17.5	7.5	2 of 15
	copper	7.5 - 42.3	25.9	5 of 15
	iron	8760 - 26700	18050	4 of 15
	magnesium	2560 - 30300	10333	11 of 15
	manganese	214 - 1180	452	3 of 15
	mercury	0.008 - 0.22	0.1	4 of 15
	nickel	9.7 - 22.8	17.6	2 of 15
	potassium	359 - 1620	1530	3 of 15
	sodium	98.9 - 214	198	2 of 15
Inorganic Compounds	thallium	0.26 - 0.69	0.40	1 of 15
	vanadium	11 - 35.5	24	1 of 15

TABLE 1
Nature and Extent of Contamination (Continued)

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds	benzo(a)-anthracene	4	0.002	1 of 6
	chrysene	3	0.002	1 of 6
	benzo(b)-fluoranthene	4	0.002	1 of 6
	benzo(k)-fluoranthene	2	0.002	1 of 6
	indeno(1,2,3-c,d)pyrene	1	0.002	1 of 6
	maneb	7	1.8	1 of 6
Inorganic Compounds - Unfiltered Samples	antimony	63.2 - 109	3	3 of 4
	arsenic	35 - 63	25	3 of 4
	barium	692 - 1430	1000	2 of 4
	beryllium	5.2 - 10.3	3	0 of 4
	cadmium	6 - 22.1	5	4 of 4
	chromium	142 - 272	50	4 of 4
	copper	269 - 1780	200	4 of 4
	iron	191000 - 315000	300	4 of 4
	lead	216 - 456	25	4 of 4
	magnesium	57800 - 601000	35,000	4 of 4
	manganese	2590 - 9110	300	4 of 4
	mercury	0.4 - 0.99	0.7	3 of 4
	nickel	186 - 299	100	4 of 4
	sodium	7620 - 28400	20,000	1 of 4
	thallium	5 -5	0.5	2 of 4
Inorganic Compounds - Filtered Samples	antimony	29.5 - 34.6	3	2 of 4
	iron	88.6 - 1990	300	1 of 4
	magnesium	15900 - 89300	35000	1 of 4

TABLE 1
Nature and Extent of Contamination (Continued)

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
	manganese	83.6 - 965	300	2 of 4
	sodium	5930 - 23100	20000	1 of 4

[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.

[b] SCG = standards, criteria, and guidance values; TAGM 4046 (soils), Technical and Operational Guidance Series (TOGS)1.1.1 "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (water), and Part 5 of the New York State Sanitary Code (water).

Table 2
Background Soil
January 2001

BACKGROUND SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds	benzo(a)-anthracene	0.18 - 1.5	0.224	2 of 4
	chrysene	0.19 - 1.8	0.4	1 of 4
	benzo(b)-fluoranthene	0.24 - 2	1.1	1 of 4
	benzo(a)pyrene	0.17 - 1.4	0.224	2 of 4
	dibenzo(a.h)-anthracene	0.055 - 0.055	0.014	1 of 4
	total cPAHs	0.98 - 8.73	1	2 of 4
Inorganic Compounds	**Contaminants of Concern**	**Concentration Range Detected (ppm)[a]**	**Average Concentration (ppm)**	
	aluminum	8910 - 12600	10728	
	antimony	ND	ND	
	arsenic	3.3 - 13	8.3	
	barium	84 - 105	91.7	
	beryllium	0.48 - 0.62	0.55	
	cadmium	0.51 - 0.8	0.66	
	calcium	10600 - 52600	32600	
	chromium	11.7 - 18.7	14.4	
	cobalt	6.9 - 8	7.5	
	copper	22.5 - 30.9	25.9	
	iron	16500 - 20600	18050	
	lead	107 - 1250	440	
	magnesium	6080 - 16400	10333	
	manganese	407 - 526	452	
	mercury	0.064 - 0.23	0.12	

Table 2
Background Soil (Continued)
January 2001

Inorganic Compounds	Contaminants of Concern	Concentration Range Detected (ppm)[a]	Average Concentration (ppm)
	nickel	16.1 - 18.6	17.6
	potassium	1210 - 1710	1530
	sodium	127 - 340	198
	thallium	0.26 - 0.51	0.40
	vanadium	21.5 - 28.5	24

[a] ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil

[b] SCG = standards, criteria, and guidance values; TAGM 4046 (soils)

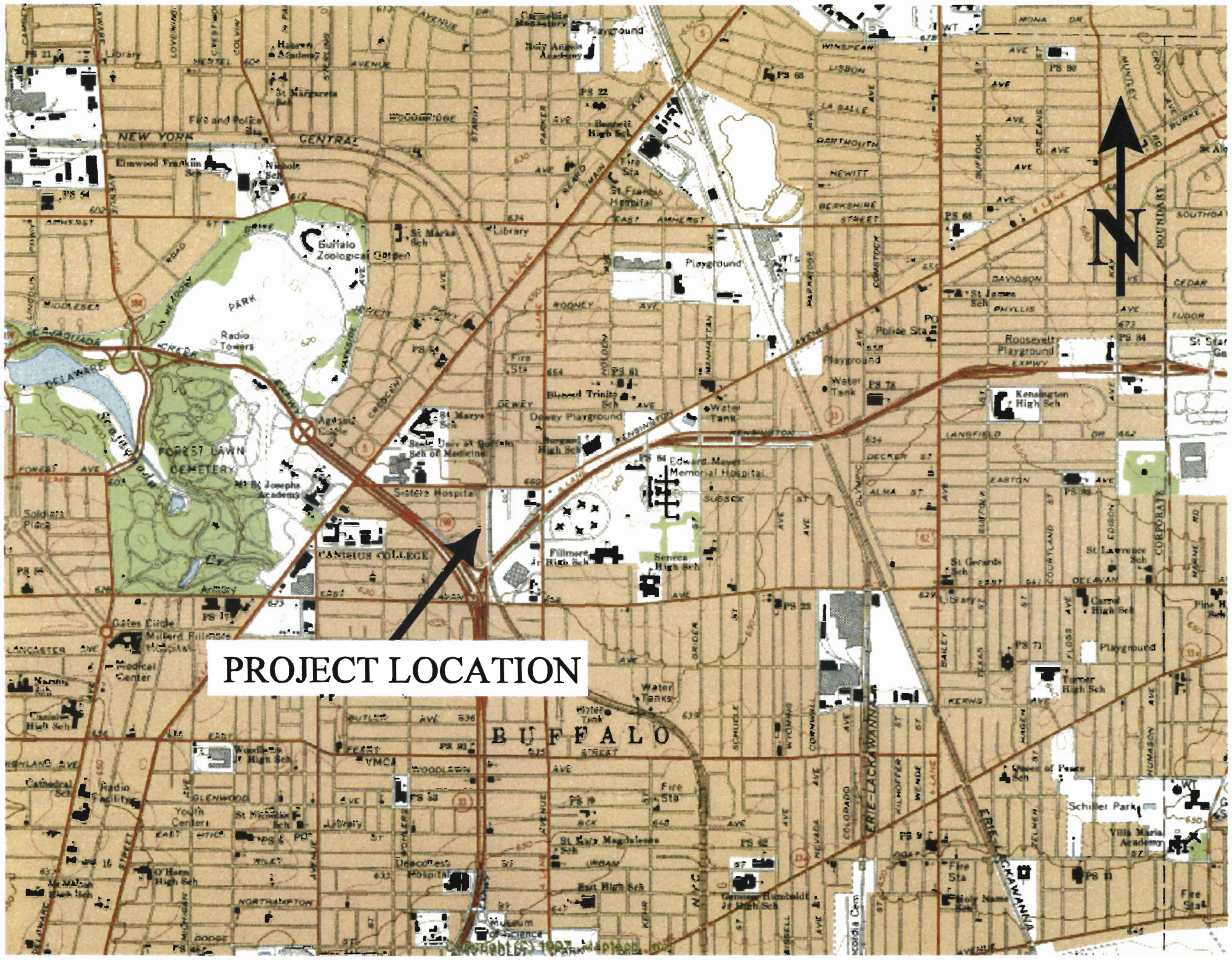
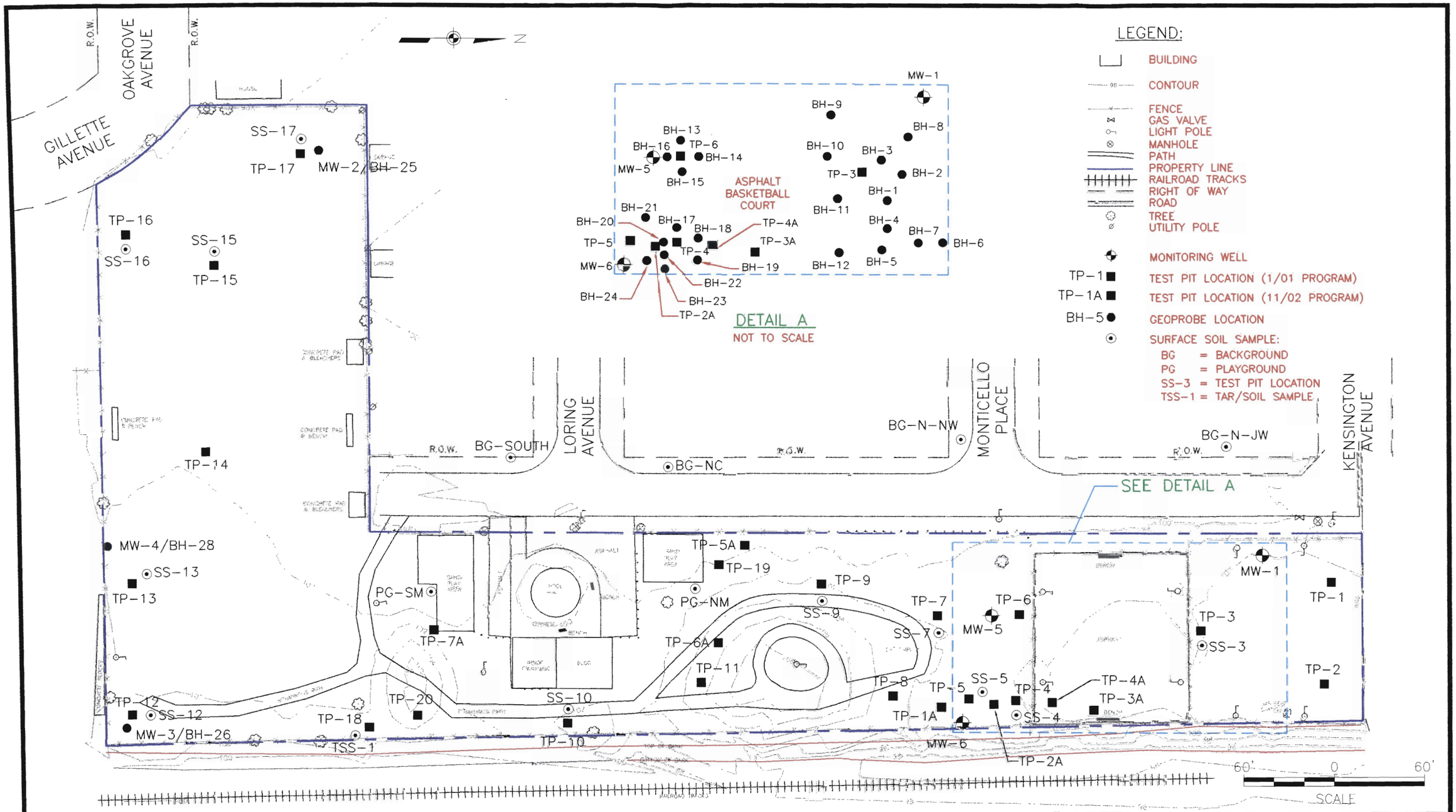


FIGURE 1
TRINIDAD PARK
approx. scale: 1 inch = 0.7 mile



NOTE: ADAPTED FROM DRAWING BY URS INC.

TRINIDAD PARK
TEST PIT, BOREHOLE, AND SAMPLE LOCATIONS

FIGURE 2