TRAFFIC IMPACT ANALYSIS REPORT
SUGARHOUSE (DELAWARE AVENUE) SITE

1.0 Introduction

This report describes a traffic impact study for the proposed location of a casino on the Sugarhouse site located along Delaware Avenue. The study includes traffic data collection and analysis of three signalized intersections within the study area for existing and future conditions. The study also includes a comparison of the no-build and build condition for the future to show the impact of the casino on traffic in the vicinity of the site.

2.0 Methodology

Several key steps were conducted for the traffic impact study. The fist step was to examine existing roadway geometry and traffic conditions near the site. Site visits were conducted to collect field data, traffic volumes and signal timing plans. The field data was used to conduct a capacity analysis for signalized intersections within the study area. The analysis included estimation of existing levels of service and site access requirements. All analyses were conducted following the procedures from the 2000 Highway Capacity Manual published by the Transportation Research Board using SYNCHRO traffic analysis software.

A trip generation analysis was conducted to estimate additional trips generated by the casino and other development in the study area. Trip generation rates from the 6th edition of the Trip Generation Handbook published by the Institute of Transportation Engineers and information provided in the Interim Report of Findings by the Philadelphia Gaming Advisory Task Force, submitted to Mayor John F. Street on August 16, 2005, were used for trip generation. Additional traffic generated by these facilities was distributed to the adjacent roadway network based on the origin/destination of the trips; anticipated development entry/exit locations; and existing travel patterns.

The no-build volumes for future years were obtained by applying a growth factor to existing volumes. The build condition volumes for the future were calculated by the addition of trips from the trip generation analysis to the no-build volumes. A SYNCHRO capacity analysis was then conducted on all signalized intersection in the road network with future volumes. Finally, the results from the build condition (with proposed development) and the no-build condition (without the proposed development) were compared to assess the impact of the new development to signalized intersection within the road network.

3.0 Traffic Data Collection

Several site visits were conducted to identify the site accessibility from nearby freeways, particularly I-95, and other local roads in the area. Also site visits were conducted to collect traffic data such as existing turning movement counts and signal timing plans for

both the morning and evening peak hours. In addition a limited survey was conducted to examine the roadway and intersection geometry.

Turning movement counts and signal timing plans were collected at the three signalized intersections within the study area as given in Table 1. Volumes were recorded each 15-minute period during the morning and evening count periods to help calculate the peak hour factor. Peak hour factor or PHF describes the variation of traffic within the peak hour.

Table 1. Field data collection times

Date	Intersection	Data collection Times	
		Morning	Evening
November 29, 2005	Shackamaxon St & Delaware Ave	7:30 - 9:30	4:00 - 6:00
November 30, 2005	Frankford Ave & Delaware Ave	7:30 - 9:30	4:00 - 6:00
December 1, 2005	Penn St & Delaware Ave	7:30 - 9:30	4:00 - 6:00

Following data collection, the traffic volumes were compiled and balanced along Delaware Avenue to obtain the existing condition volumes. The results of the traffic data collection program indicate the morning peak hour occurred from 7:45 AM to 8:45 AM and the evening peak hour occurred from 4:15 PM to 5:15 PM. The peak hour factors for the morning and evening peak hours were found to be 0.97 and 0.96 respectively. Schematics with existing condition volumes for the morning and evening peak hours are provided in Appendix A of this report.

4.0 Access to and Departure from the site

The primary means of access to the facility will be via automobile utilizing the local road and highway network. Regional access to the site from the north and south is provided by I-95. The Benjamin Franklin, Walt Whitman and Betsy Ross Bridges all provide access from New Jersey. These bridges connect with either I-95 or Delaware Avenue. Delaware Avenue provides local access from Center City, northbound I-95 and surrounding neighborhoods.

The closest interchange from I-95 is located at Girard Avenue, just north of the site. Traveling south on I-95, vehicles exiting at the Girard Avenue Exit, make a left onto Aramingo Avenue, travel under I-95 and continue straight to Delaware Avenue. Traveling north on I-95, vehicles exit at the Girard Avenue Exit, travel north on Delaware Avenue, merge onto Richmond Street, turn right onto Beach Street and follow Beach Street south to the intersection with Delaware Avenue. At this point vehicles turn left onto the southbound lanes of Delaware Avenue to reach the proposed site. Because of this non-standard configuration, most northbound traffic destined for the casino facility will exit I-95 further south and access the site from Delaware Avenue.

Plans are being developed to reconfigure the Girard Avenue I-95 exit. Under the new design northbound and southbound on and off ramps will meet Delaware Avenue at two signalized intersections approximately one quarter mile north of the site. A significant benefit of this realignment, for vehicles arriving from I-95 NB, will be the elimination of the need to travel north on Delaware Avenue to access the southbound lanes of Delaware

Avenue. When the improvements are completed, likely in 2011, access to the site will be greatly improved for both I-95 NB and SB traffic. The current schedule suggests that construction on the new interchange will begin in approximately 2009 with a two to three year construction period. The project will be phased to provide continuous access and circulation, however, during the construction period lane closures and detours could impact traffic flow in the immediate vicinity of the casino.

There are sidewalks and bicycle lanes on both sides of Delaware Avenue in the area. The posted speed limit on Delaware Avenue is 30mph. The posted speed limit on both Frankford Avenue and Shackamaxon Avenue is 25mph.

Access to the site from local roads will be mainly from Frankford Avenue, Shackamaxon Street, and roads that connect to Delaware Avenue to the south of the site.

4.1 Local Intersection Access

Local access to the site is provided from the following signalized intersections:

1. Shackamaxon Street/Delaware Avenue
2. Frankford Avenue/Delaware Avenue
3. Penn Street/Delaware Avenue

Appendix B includes schematics of all three intersections and shows general intersection alignment, lane configuration, geometry and striping.

4.1.1 Shackamaxon Street/Delaware Avenue

Shackamaxon Street and Delaware Avenue intersect to form a four-approach signalized intersection. Shackamaxon is a one-way street with traffic movement in the eastbound direction. The Delaware Avenue approaches to this intersection have three lanes with an additional left turn bay on the southbound approach. The Shackamaxon Street approach has a single lane. On street parking is permitted on all approaches except the Shackamaxon Street westbound approach, which currently leads to a parking lot. Cross walks are provided on the eastbound, westbound and the northbound approaches to the intersection. The intersection currently operates at a cycle length of 90 seconds during both the AM and PM peak hours.

This intersection is anticipated to be impacted by patrons coming in from I-95 NB and SB directions, utilizing the Girard Avenue interchange, north of the site. They are expected to drive down south on Delaware Avenue and are expected to make a left turn into the proposed parking lot on the site. Although most of the patrons are expected to utilize this route to access the site, a limited number of patrons are expected to use Shackamaxon Street as an access route. Upon exiting the site, all patrons going to I-95 are anticipated to make a right turn onto Delaware Avenue from Shackamaxon Street westbound.

The site plans include two lanes on the Shackamaxon Street westbound approach from the casino development and a review of the traffic analysis

shows that these two lanes are to be right-turn only lanes for a smooth movement of traffic.

4.1.2 Frankford Avenue/Delaware Avenue

Frankford Avenue and Delaware Avenue currently intersect to form a three-approach signalized intersection. The Delaware Avenue approaches have three lanes with a left turn bay. The Delaware Avenue southbound approach has a channelized right turn lane onto Frankford Avenue. The Frankford Avenue approach has a left turn lane and a right turn bay. Also, Frankford Avenue intersects Laurel Street approximately 60 feet west of this intersection and the Laurel Street approach to Frankford Avenue is a single lane with stop control. All approaches have on-street parking in the vicinity of the intersection. Crosswalks are provided on the eastbound and northbound approaches to the intersection. The intersection currently operates at a cycle length of 90 seconds during both the AM and PM peak hours.

Patrons originating from the south of the site, New Jersey, and some patrons using the Vine Street Expressway onto local roads are anticipated to make a right turn from the Delaware Avenue northbound approach to enter the site. In addition, some patrons using Frankford Avenue are expected to enter the site crossing Delaware Avenue. To accommodate this movement, the left turn lane on Frankford Avenue is to be modified to a shared left and through movement.

The site plans for the development also include the opening of a westbound approach to this intersection. This approach is anticipated to include two left turn lanes and a shared through and right turn lane from the site. Upon exiting, patrons onto Delaware Avenue southbound are anticipated to make left turns from this new approach.

4.1.3 Penn Street/Delaware Avenue

Penn Street intersects Delaware Avenue to form a three-approach T-type signalized intersection. Delaware Avenue approaches have three lanes and the southbound approach has an additional left turn bay. The Delaware Avenue northbound approach has a channelized right turn lane onto Penn Street. The Penn Street westbound approach is short and has a single lane. It curves to the north approximately 60 feet from the intersection. Cross walks are provided on the westbound and the northbound approaches to the intersection. The intersection is semi-actuated with vehicles on the Penn Street approach given the right-of-way upon actuation of a detector on the street. The intersection currently operates at a cycle length of 90 seconds during both the AM and PM peak hours.

Patrons visiting the new development are anticipated to pass through the intersection along Delaware Avenue northbound to reach the site. Upon exiting the site, patrons are anticipated to pass through the intersection on Delaware Avenue southbound. This intersection however, is anticipated to be

the primary point of access to other residential buildings currently being constructed south of the site.

4.2 Site Access

The Site Plan shows direct access to the site proposed along Delaware Avenue at the intersections of Shackamaxon Street/Delaware Avenue and Frankford Avenue/Delaware Avenue. Two driveways will be provided, one at each intersection. Both driveways permit access and egress to and from the site. However, to improve traffic movement, the driveway on Shackamaxon is anticipated to be a right-out only while the driveway on Frankford Avenue is anticipated to be primarily a left-out but permitting through and right movements.

5.0 Existing Conditions

An operational analysis of existing conditions was performed to assess the operation of traffic at individual intersections within the study area. Characteristics like existing lane configuration, lane width, turning movement volumes, heavy vehicle percentage, peak hour factor, and signal timing plans were used to determine the existing levels of service. Based on field observation and area characteristics, the heavy vehicle percentage is assumed to be 5% of the traffic volumes for all turning movements.

SYNCHRO, Version 6, was used to conduct the capacity analysis for intersections discussed in this report. Capacity analysis for intersections yields a level of service (LOS). In general terms, LOS is a guideline for qualifying the acceptability of delay for drivers. In technical terms, LOS is determined based on average control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay at each approach to each intersection. Table 2 shows the relationship between LOS and control delay.

Table 2. Relationship of HCM LOS and average control delay

Highway Capacity Manual LOS Criteria for Signalized Intersections	
Level of Service (LOS)	**Control Delay Per Vehicle (Seconds)**
A	≤ 10
B	>10 and ≤ 20
C	>20 and ≤ 35
D	>35 and ≤ 55
E	>55 and ≤ 80
F	>80

Source: Highway Capacity Manual, 2000.

In general, for an urbanized setting, LOS of D or better is considered acceptable for an intersection while LOS E or better is considered acceptable for movements. All signalized intersections in the study area have been analyzed according to the methodologies contained in the 2000 Highway Capacity Manual utilizing SYNCHRO. The analysis was completed for both the AM and PM peak hours for each of the existing and future conditions discussed in this report.

Tables 3 and 4 show the LOS and the corresponding delays in seconds for the AM and PM peak hour existing conditions in the study area. The LOS and delay values are provided for all movements and approaches. All intersections and movements currently operate at LOS C or better with the exception of the Penn Street westbound movement at the intersection of Penn Street/Delaware Avenue. This movement currently operates at LOS E and the reason for the low LOS is the actuated operation of this movement. Vehicles on Penn Street are given the right-of-way only upon actuation of the loop detector embedded on Penn Street and the wait times are typically longer for a coordinated corridor. However due to low volume on Penn Street, the intersection as a whole currently operates at LOS A with negligible delays.

Table 3. HCM LOS for AM Peak with existing conditions

INTERSECTION	APPROACH	MOVEMENT	AM PEAK		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	C (28.9)	C (28.9)	A (6.2)
	Shackamaxon St. Westbound	Left-Through-Right	C (28.1)	C (28.1)	
	Delaware Ave. Northbound	Through-Right	A (3.9)	A (3.9)	
	Delaware Ave. Southbound	Left	A (4.1)	A (5.5)	
		Through	A (5.5)		
Delaware Ave. & Frankford Ave	Frankford Ave. Westbound	Left	C (27.4)	C (29.9)	B (12.0)
		Right	C (27.9)		
	Delaware Ave. Northbound	Left	B (15.0)	A (8.9)	
		Through	A (5.5)		
	Delaware Ave. Southbound	Through-Right	A (9.3)	A (9.3)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	E (58.9)	E (58.9)	A (1.1)
	Delaware Ave. Northbound	Through-Right	A (0.8)	A (0.8)	
	Delaware Ave. Southbound	Left-Through	A (1.0)	A (1.0)	

Table 4. HCM LOS for PM peak with existing conditions

INTERSECTION	APPROACH	MOVEMENT	PM Peak		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	C (28.8)	C (28.8)	A (5.8)
	Shackamaxon St. Westbound	Left-Through-Right	C (28.6)	C (28.6)	
	Delaware Ave. Northbound	Through-Right	A (5.3)	A (5.3)	
	Delaware Ave. Southbound	Left	A (4.3)	A (4.5)	
		Through	A (4.5)		
Delaware Ave. & Frankford Ave	Frankford Ave. Westbound	Left	C (29.2)	C (27.8)	B (10.8)
		Right	C (26.9)		
	Delaware Ave. Northbound	Left	A (9.9)	A (9.6)	
		Through	A (9.5)		
	Delaware Ave. Southbound	Through-Right	A (8.0)	A (8.0)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	E (57.8)	E (57.8)	A (2.1)
	Delaware Ave. Northbound	Through-Right	A (2.0)	A (2.0)	
	Delaware Ave. Southbound	Left-Through	A (0.9)	A (0.9)	

Printouts from the SYNCHRO traffic analysis for AM and PM peak hours for existing conditions are provided in Appendix C of this report.

6.0 Projected Traffic Volumes (Phase 1 - 2009, Phase 2 - 2011, Phase 2 + 10 - 2021)

Traffic volumes on roadways within the study area were projected for the future years 2009, 2011 and 2021. These time periods correspond to Phase I, Phase II, and Phase II plus 10 years of opening of the casino. Both no-build and build condition volumes were developed for these years. The no-build volumes were estimated by using a background growth factor on existing volumes and the build volumes were obtained by combining the no-build volumes with additional trips generated by new development within the study area. A detailed description of these volume projections is given in sections that follow. Traffic volumes for all scenarios are provided in schematics in Appendix A.

6.1 Background Traffic Projections

Background traffic growth accounts for the general increase in traffic generated by development and facilities outside of the study area. Factors like increase in population, increase in number of vehicles owned, increase in vehicle miles of travel, etc. might trigger an increase in traffic volumes on roadways within the study area. These factors are accounted for by the background growth projections. Information from the 2003 Pennsylvania Traffic Data, a report published by PennDOT was used to identify the traffic growth factor. The report shows a traffic growth of 1% per year between the years 2002-2003 for principal and minor arterials and local roads in urban areas within Pennsylvania. The report also shows a growth factor of 19.9% for the ten year period from 1993 to 2003. However, a study conducted by Gannett Fleming as part of the 30th Street Gateway Circulation Study shows no growth in traffic on roadways in the vicinity of the 30th Street Station area from the years 2001 to 2005. Considering that information provided from the Traffic Date report provides a general growth factor for all urban areas within Pennsylvania and given that the second study provides data on roadways close to the current study site, a growth factor of 1% per year was chosen for analysis in this study. Growth factors to estimate future traffic volumes were used as given in Table 5.

Table 5. Traffic growth factors

Phase	Time Period of Growth	Description	Growth factor
I	2005 - 2009	Increase existing volumes by 5% to account for monthly variation from December volumes and increase traffic by 1% per year for 4 years	1.10
II	2009 - 2011	Increase traffic by 1% per year for 2 years	1.02
II+10	2011 - 2021	Increase traffic by 1% per year for 10 years	1.10

The background growth factors provided in the table were applied to existing volumes to obtain the no-build volumes for the years 2009, 2011 and 2021.

6.2 Site-Generated Traffic Projections and Distribution

The proposed casino is anticipated to be built in two phases. Phase-I is anticipated to be completed in the year 2009 and is expected to include 3000 slot machines. Phase-II is expected to open in the year 2011 and includes an additional 2000 slot machines. The casino is also expected to have other facilities including food and beverage, hotel, and retail. For the purposes of this study it is assumed that trips to slot machines comprise trips to these other facilities.

To identify the casino generated trips during a weekday peak period, the study used data given in the "Interim Report of Findings" by the Philadelphia Gaming Advisory Task Force, submitted to Mayor John F. Street on August 16, 2005. Information provided in the Transportation section starting on page 62 of the report is used, particularly Graph 2.1 – Percent of Weekly Attendance; and Table 2.2 - Casino Visitation patterns by Time of Day. Table 6 shows calculations to identify the AM and PM peak casino generated trips for a 3000 slot casino.

Table 6. Trip generation calculations

No	Estimate	Assumptions/Notes	Trips
1	Total casino trips per week	Use a conservative estimate of 18,000 visits per day as given in the Interim Report	126000
2	Casino visits on a peak weekday	From Graph 2.1 of the Interim Report: 18% of weekly trips occur on a Friday	22,680
3	Casino visits during the morning peak period	From Table 2.2 of the Interim Report: 9% of Friday visits occur from 8:00 - 11:00 AM	2041
4	Casino visits during the morning peak hour	Peak hour traffic is obtained by distributing the morning peak hour visits in a three hour period	680
5	Automobile trips to the casino during the morning peak hour	Assume that 80% of casino patrons use an automobile to visit the casino	**544**
6	Casino visits during the evening peak period	From Table 2.2 of the Interim Report: 15% of Friday visits occur from 4:00 - 7:00 PM	3402
7	Casino visits during the evening peak hour	Peak hour traffic is obtained by distributing the evening peak hour visits in a three hour period	1134
8	Automobile trips to the casino during the evening peak hour	Assume that 80% of casino patrons use an automobile to visit the casino	**907**

The Interim Report mentions that vehicle trip demand is generally balanced between the inbound and outbound trips under peak demand conditions. Also due to lack of additional information, the number of trips generated by casinos that differ in the number of slot machines was assumed to be proportional to the number of slot machines within the casino. The total morning and evening peak hour trips generated by the casino for Phase I and Phase II are as given in Table 7.

6.3 Other Area Development

Other development close to the study area includes 5 high rise condominiums for a total of 780 residential units combined. These buildings are anticipated to be built south of the site close to the riverfront. Additional trips due to this development were calculated following the Trip Generation Handbook methodology and are listed in Table 7.

Table 7. Trips generated by development at the study area (casino and condominiums)

Phase	Development Type	Morning Peak		Evening Peak	
		Enter	Exit	Enter	Exit
Phase I	Casino (3,000 Slots)	272	272	454	453
	High rise condominiums (Total 780 Units)	57	172	157	101
	Total	329	444	611	554
Phase II	Casino Expansion (Additional 2,000 slots)	181	181	302	302
Overall Site		510	625	913	856

Addition traffic generated by the development was distributed on roadways within the study areas based on origin/destination of the trips; anticipated development entry/exit locations; and existing travel patterns. These additional trips were then assigned to the appropriate turning movements as provided in schematics in Appendix A

The build volumes for the future years 2009, 2011 and 2021 were obtained by combining additional trips due to new development to no-build volumes for the corresponding years. The volumes for build conditions for the years 2009, 2011, and 2021 are provided in schematics in Appendix A for both the AM and PM peak hours.

7.0 Future Conditions Analysis & Mitigation

An operational Analysis using SYNCHRO, Version 6 was performed for future no-build and build conditions for the year 2021. Analysis for the years in between, 2009 & 2011, was not conducted because satisfactory traffic network performance in the year 2021 also indicates satisfactory performance for the years 2009 and 2011. Additional analysis was conducted to analyze possible traffic mitigation measures for the year 2021 and the results of all analysis are provided in tables. The tables show the HCM LOS and the corresponding average delay per vehicle in seconds in parenthesis. The sections below describe the analysis in more detail. Printouts with SYNCHRO analysis results for all scenarios are provided in Appendix C of this report.

7.1 No-Build Conditions (Year 2021)

Tables 8 and 9 show the analysis results for the year 2021 no-build AM and PM peak hour conditions respectively. The intersections for the no-build conditions operate at a cycle length of 90 seconds during both AM and PM peak hours to allow for signal coordination with other signals in the region. To accommodate an increase in left turn traffic on the Delaware Avenue southbound approach at the intersection of Penn Street/Delaware Avenue, due to proposed condominiums, an additional left turn phase is implemented in the signal timing plan. The signal timing plans for the three signalized intersections within the network were then optimized for better performance.

Table 8. HCM LOS for AM Peak with 2021 no-build conditions

INTERSECTION	APPROACH	MOVEMENT	AM PEAK		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	C (21.0)	C (21.0)	B (10.6)
	Shackamaxon St. Westbound	Left-Through-Right	C (20.0)	C (20.0)	
	Delaware Ave. Northbound	Through-Right	A (6.1)	A (6.1)	
	Delaware Ave. Southbound	Left	A (8.0)	B (12.0)	
		Through	B (12.0)		
Delaware Ave. & Frankford Ave	Frankford Ave. Westbound	Left	C (27.0)	C (27.6)	B (16.1)
		Right	C (27.8)		
	Delaware Ave. Northbound	Left	C (21.9)	B (11.2)	
		Through	A (6.2)		
	Delaware Ave. Southbound	Through-Right	B (15.9)	B (15.9)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	C (30.0)	C (30.0)	A (6.7)
	Delaware Ave. Northbound	Through-Right	A (3.7)	A (3.7)	
	Delaware Ave. Southbound	Left	A (3.5)	A (5.1)	
		Through	A (5.1)		

Table 9. HCM LOS for PM Peak with 2021 no-build conditions

INTERSECTION	APPROACH	MOVEMENT	PM Peak		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	C (30.7)	C (30.7)	A (3.0)
	Shackamaxon St. Westbound	Left-Through-Right	C (30.5)	C (30.5)	
	Delaware Ave. Northbound	Through-Right	A (1.9)	A (1.9)	
	Delaware Ave. Southbound	Left	A (3.8)	A (4.1)	
		Through	A (4.1)		
Delaware Ave. & Frankford Ave	Frankford Ave. Westbound	Left	C (32.6)	C (30.3)	B (14.1)
		Right	C (28.8)		
	Delaware Ave. Northbound	Left	B (10.6)	B (11.0)	
		Through	B (11.0)		
	Delaware Ave. Southbound	Through-Right	C (20.5)	C (20.5)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	D (40.0)	D (40.0)	B (12.5)
	Delaware Ave. Northbound	Through-Right	B (13.4)	B (13.4)	
	Delaware Ave. Southbound	Left	C (21.8)	A (4.7)	
		Through	A (2.5)		

Each of these tables provide the level of service and the corresponding delay by movement, approach and the entire intersection. It can be observed from the tables that all intersections, approaches and movements are anticipated to operate at LOS C or better. The Penn Street westbound approach however, is an exception and is anticipated to operate at LOS D during the PM peak hour. It is to be noted that this approach currently operates at LOS E and an improvement in LOS can be attributed to the change in signal timing plans as mentioned in the paragraph above.

7.2 Build Conditions (Year 2021)

Tables 10 and 11 show results of the analysis with the build conditions for the year 2021. Changes were made to the road network to accommodate traffic and access/egress to the site. The modifications at the intersection of Shackamaxon Street/Delaware Avenue include the modification of a through lane to a left only lane on Delaware Avenue southbound. Also, the casino exit to the intersection lanes will be configured for right turns only. The modifications at the intersection of Frankford Avenue/Delaware Avenue include the modification of the left turn lane on Frankford Avenue eastbound to a shared through and left to accommodate entry into the casino. Also, the casino exit to the intersection will be configured to accommodate 2 left turn lanes and a shared through and a right turn lane. The signal timing plan at the Penn Street/Delaware Avenue intersection is modified to include a left turn phase for the Delaware Avenue southbound movement. In addition, the signal timing plans at all intersections was optimized for better performance. The cycle length however, was maintained at 90 seconds to allow traffic signal coordination with other signals in the region.

Table 10. HCM LOS for AM Peak with year 2021 build conditions

INTERSECTION	APPROACH	MOVEMENT	AM PEAK		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	C (30.0	C (30.0)	B (15.3)
	Casino Exit Westbound	Right	C (30.1)	C (30.1)	
	Delaware Ave. Northbound	Through-Right	A (9.5)	A (9.5)	
	Delaware Ave. Southbound	Left	C (33.1)	B (13.0)	
		Through	A (9.1)		
Delaware Ave. & Frankford Ave	Frankford Ave. Eastbound	Left	C (32.6)	D (44.0)	C (26.2)
		Through-Right	D (46.1)		
	Casino Exit Westbound	Left	C (31.1)	C (31.1)	
	Delaware Ave. Northbound	Left	D (40.3)	B (19.4)	
		Through	B (11.8)		
	Delaware Ave. Southbound	Through-Right	C (25.0)	C (25.0)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	C (33.3)	C (33.3)	A (7.8)
	Delaware Ave. Northbound	Through-Right	A (6.9)	A (6.9)	
	Delaware Ave. Southbound	Left	A (3.4)	A (5.4)	
		Through	A (5.4)		

Table 11. HCM LOS for PM Peak with year 2021 build conditions

INTERSECTION	APPROACH	MOVEMENT	PM Peak		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	D (38.3)	D (38.3)	C (30.8)
	Casino Exit Westbound	Right	D (52.2)	D (52.2)	
	Delaware Ave. Northbound	Through-Right	C (28.1)	C (28.1)	
	Delaware Ave. Southbound	Left	D (53.8)	C (24.5)	
		Through	A (3.6)		
Delaware Ave. & Frankford Ave	Frankford Ave. Eastbound	Left	D(38.4)	F (105.5)	D (46.9)
		Through-Right	F (136.6)		
	Casino Exit Westbound	Left	C (33.6)	C (33.6)	
	Delaware Ave. Northbound	Left	C (22.0)	D (45.3)	
		Through	D (48.9)		
	Delaware Ave. Southbound	Through-Right	C (26.9)	C (26.9)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	D (40.0)	D (40.0)	B (18.2)
	Delaware Ave. Northbound	Through-Right	C (22.0)	C (22.0)	
	Delaware Ave. Southbound	Left	C (22.3)	A (4.4)	
		Through	A (2.7)		

Tables 10 and 11 show results of the analysis for the AM and PM peak hour build conditions. All intersections, approaches and movements are expected to operate at LOS D or better. The Frankford Avenue eastbound approach is an exception and is expected to operate at LOS F during the PM peak hour. The conversion of a left only lane to a shared left and through lane and the increase in traffic on this lane to include traffic entering the casino contributes to the degradation in LOS.

7.3 Recommended Mitigation Measures

To alleviate traffic problems with build conditions in the year 2021 two different mitigation measures are proposed. The first includes the addition of a dedicated right turn lane on the Frankford Avenue eastbound approach to the intersection of Frankford Avenue/Delaware Avenue and the second eliminates access to the casino from the Frankford Avenue eastbound approach. Since the Frankford Avenue eastbound approach fails during the evening peak, only the PM peak hour conditions were analyzed. The cycle length of all intersections is maintained at 90 seconds to allow for signal coordination with other signals in the region. The signal timing plans however, were optimized for better traffic performance in the roadway network. Printouts from SYNCHRO traffic analysis are provided in Appendix C for both mitigation measures.

Table 12 shows the results of SYNCHRO analysis after the addition of a short right turn lane on the Frankford Avenue eastbound approach to the Frankford Avenue/Delaware Avenue intersection. The existing right turn lane is modified to a through lane. The shared through and left turn lane for build conditions is restored back to a left turn only lane. The analysis show that these modifications would result in a significant reduction in delays on the Frankford Avenue eastbound approach but the through movement is expected to operate at LOS E.

Table 12. HCM LOS for PM Peak with 2021 build conditions and additional right turn lane on Frankford Avenue eastbound

INTERSECTION	APPROACH	MOVEMENT	PM Peak		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	D (38.3)	D (38.3)	D (36.4)
	Casino Exit Westbound	Right	D (52.2)	D (52.2)	
	Delaware Ave. Northbound	Through-Right	D (37.5)	D (37.5)	
	Delaware Ave. Southbound	Left	D (523.8)	C (24.5)	
		Through	A (3.6)		
Delaware Ave. & Frankford Ave	Frankford Ave. Eastbound	Left	D (36.2)	D (43.4)	D (35.0)
		Through	E (59.3)		
		Right	D (40.9)		
	Casino Exit Westbound	Left	C (33.6)	C (33.6)	
	Delaware Ave. Northbound	Left	B (18.6)	C (33.8)	
		Through	D (36.1)		
	Delaware Ave. Southbound	Through-Right	D (36.8)	D (36.8)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	D (40.0)	D (40.0)	B (15.4)
	Delaware Ave. Northbound	Through-Right	B (17.9)	B (17.9)	
	Delaware Ave. Southbound	Left	C (27.6)	A (4.9)	
		Through	A (2.7)		

Table 13 shows results of SYNCHRO analysis after the elimination of access to the casino facility from the Frankford Avenue eastbound approach. Instead, traffic is diverted to Shackamaxon Street to access the casino. With these changes, the shared left and through lane on Frankford Avenue eastbound approach can be restored back to a left only lane as it currently exits. The results of the analysis show that these modifications lead to a significant improvement in traffic operation. With these modifications, all intersections operate at LOS C or better and all approaches and movements operate at LOS D or better.

Table 13. HCM LOS for PM Peak with 2021 build conditions and elimination of access to casino from Frankford Avenue

INTERSECTION	APPROACH	MOVEMENT	PM Peak		
			HCM LOS (Delay in sec) -Movement	HCM LOS (Delay in sec) -Approach	HCM LOS (Delay in sec) -Intersection
Shackamaxon St. & Delaware Ave	Shackamaxon St. Eastbound	Left-Through-Right	D (47.6)	D (47.6)	C (24.8)
	Casino Exit Westbound	Right	D (52.2)	D (52.2)	
	Delaware Ave. Northbound	Through-Right	B (16.6)	B (16.6)	
	Delaware Ave. Southbound	Left	D (53.8)	C (24.5)	
		Through	A (3.6)		
Delaware Ave. & Frankford Ave	Frankford Ave. Eastbound	Left	D (42.7)	C (30.1)	C (24.5)
		Right	C (21.7)		
	Casino Exit Westbound	Left	C (25.7)	C (25.7)	
	Delaware Ave. Northbound	Left	B (15.1)	C (22.9)	
		Through	C (24.1)		
	Delaware Ave. Southbound	Through-Right	C (29.0)	C (29.0)	
Delaware Ave. & N Penn St.	Penn St. Westbound	Left-Right	D (40.0)	D (40.0)	B (15.4)
	Delaware Ave. Northbound	Through-Right	B (17.9)	B (17.9)	
	Delaware Ave. Southbound	Left	C (27.6)	A (4.9)	
		Through	A (2.7)		

8.0 Conclusions and Recommendations

The traffic study analyzed existing and future traffic operations at three intersections in the study area and determined the following:

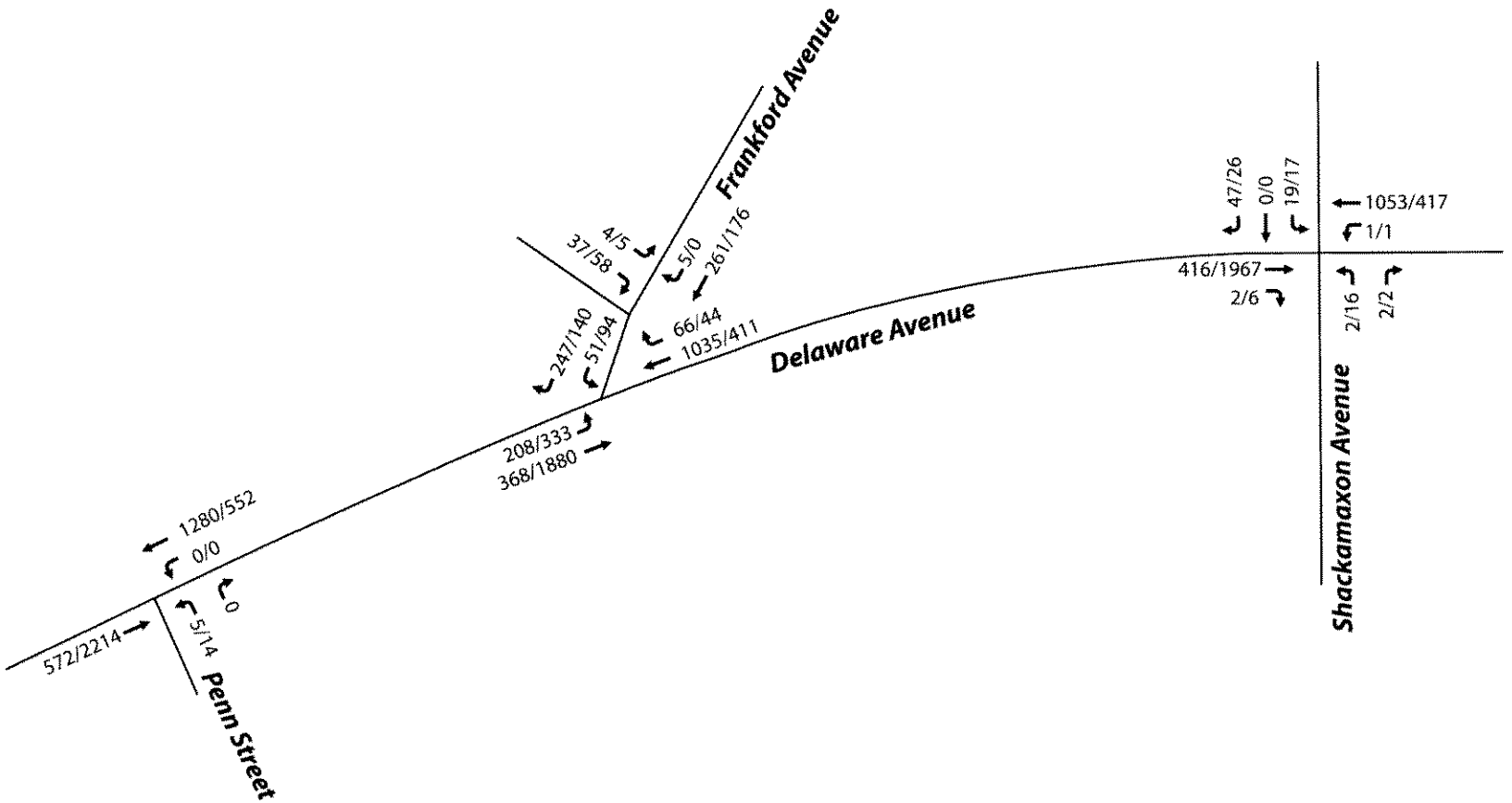
- Traffic counts conducted during the morning and evening peak periods at the three intersections found the morning peak hour to occur between 7:45 AM and 8:45 AM and the evening peak hour to occur from 4:15 PM and 5:15 PM.
- All intersections currently operate at LOS B or better during both the AM and PM peak hours.
- For the no-build conditions signal phasing had to be modified to accommodate the traffic generated by the proposed condominiums to the south of the casino site.
- Future build analysis during year 2021 indicates that the intersections of Shackamaxon Avenue/Delaware Avenue and Penn Street/Delaware Avenue are

expected to operate at LOS C or better. But the intersection of Frankford Avenue/Delaware Avenue is expected to operate at LOS D, while longer delays on the Frankford Avenue eastbound approach are in the unacceptable LOS F range.

- Two mitigation measures were evaluated to alleviate traffic problems at the intersection of Frankford Avenue/Delaware Avenue. The first includes the addition of a dedicated right turn lane on the Frankford Avenue eastbound at the intersection of Frankford Avenue/Delaware Avenue and the second eliminates access to the casino from Frankford Avenue eastbound at the Frankford Avenue/Delaware Avenue intersection. Analysis shows that the second measure is more effective in improving traffic movement at the intersection.

APPENDIX – A

(Traffic volume diagrams for existing, no-build, and build conditions)



AM/PM Peak Hour Volumes
Existing - 2005

AM: 7:45-8:45
PM: 4:15-5:15

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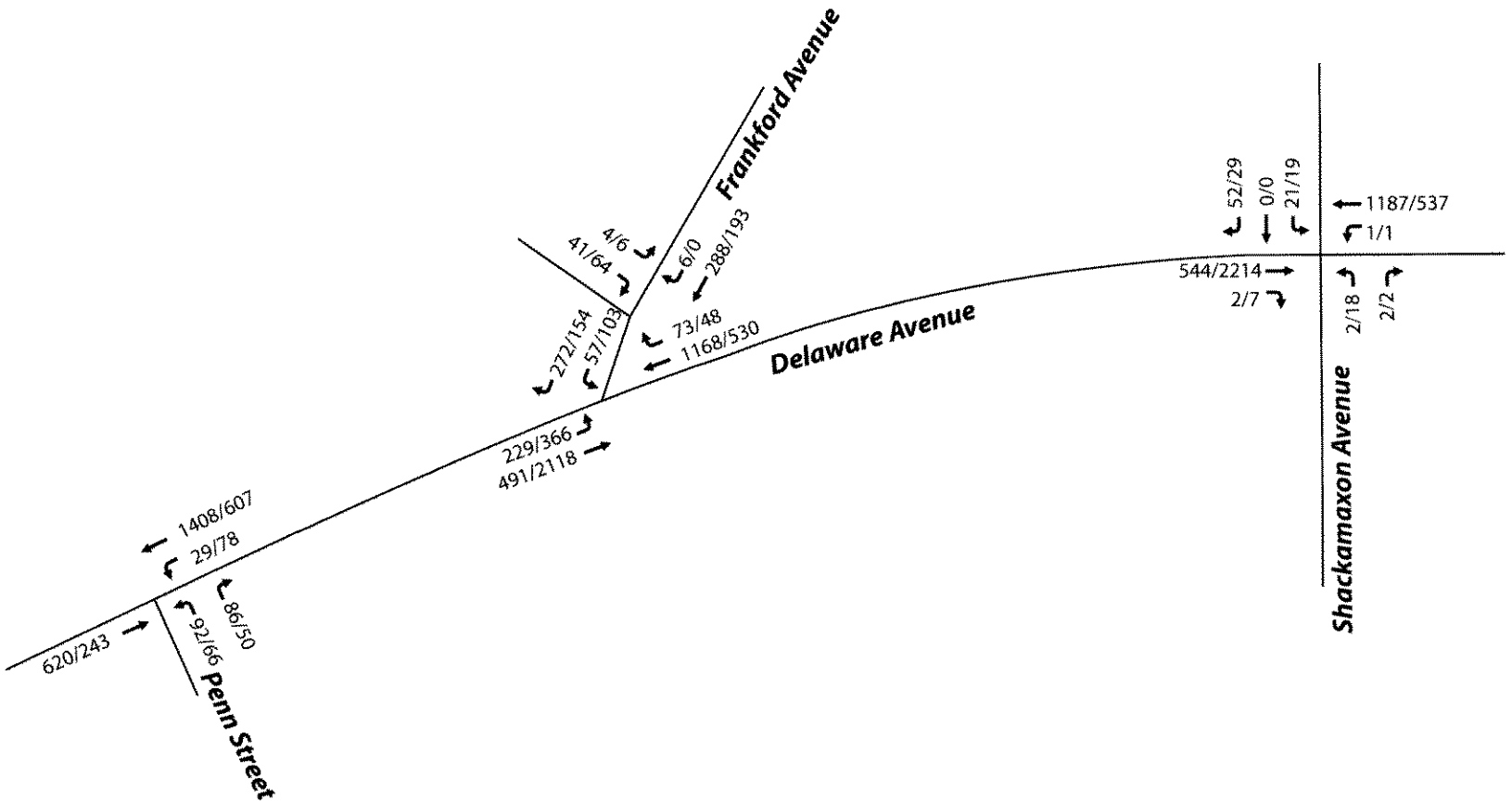


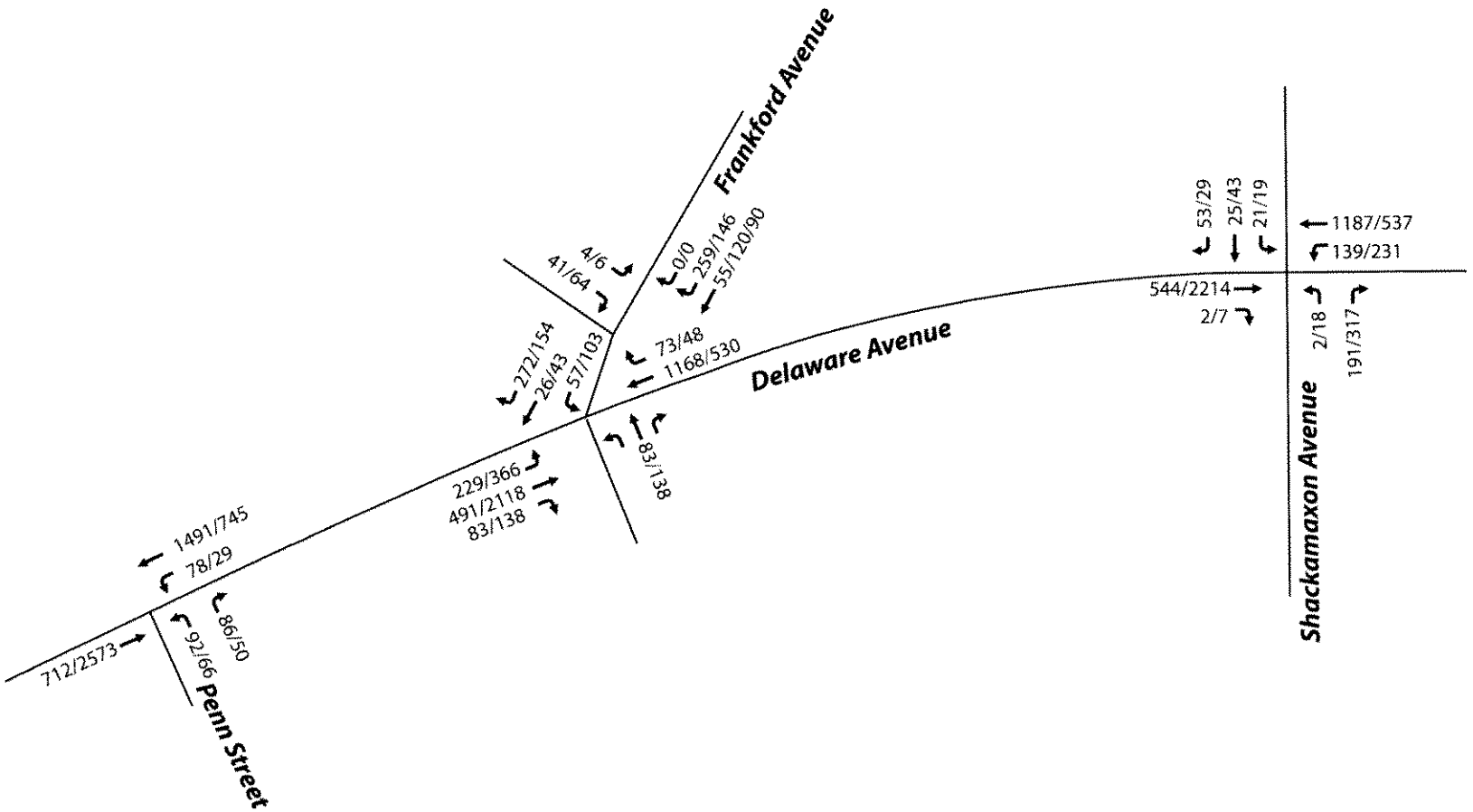
AM/PM Peak Hour Volumes

No-Build - 2009

AM: 7:45-8:45

PM: 4:15-5:15

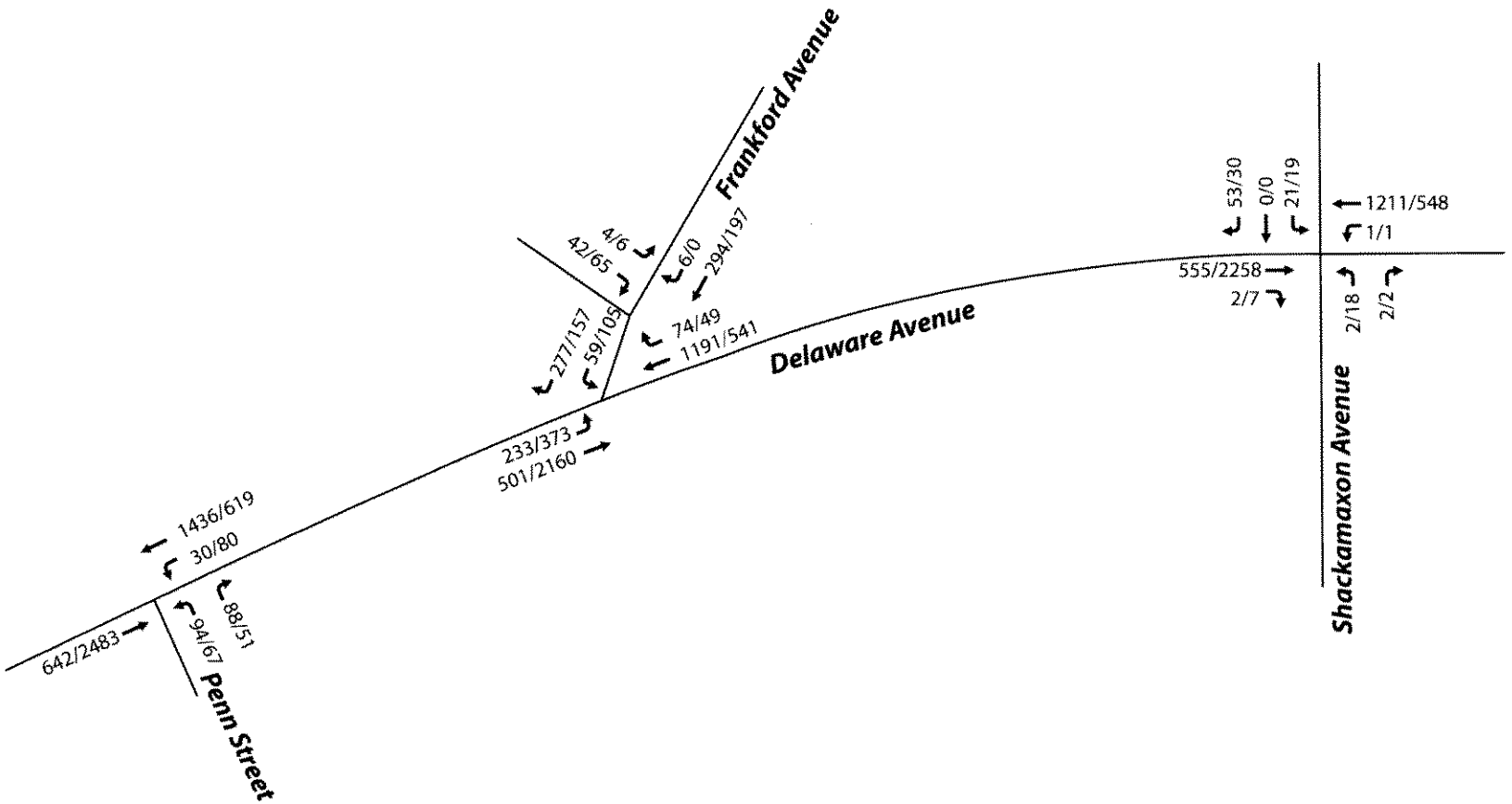
Gannett Fleming



AM/PM Peak Hour Volumes
Build Phase I - 2009

AM: 7:45-8:45
PM: 4:15-5:15

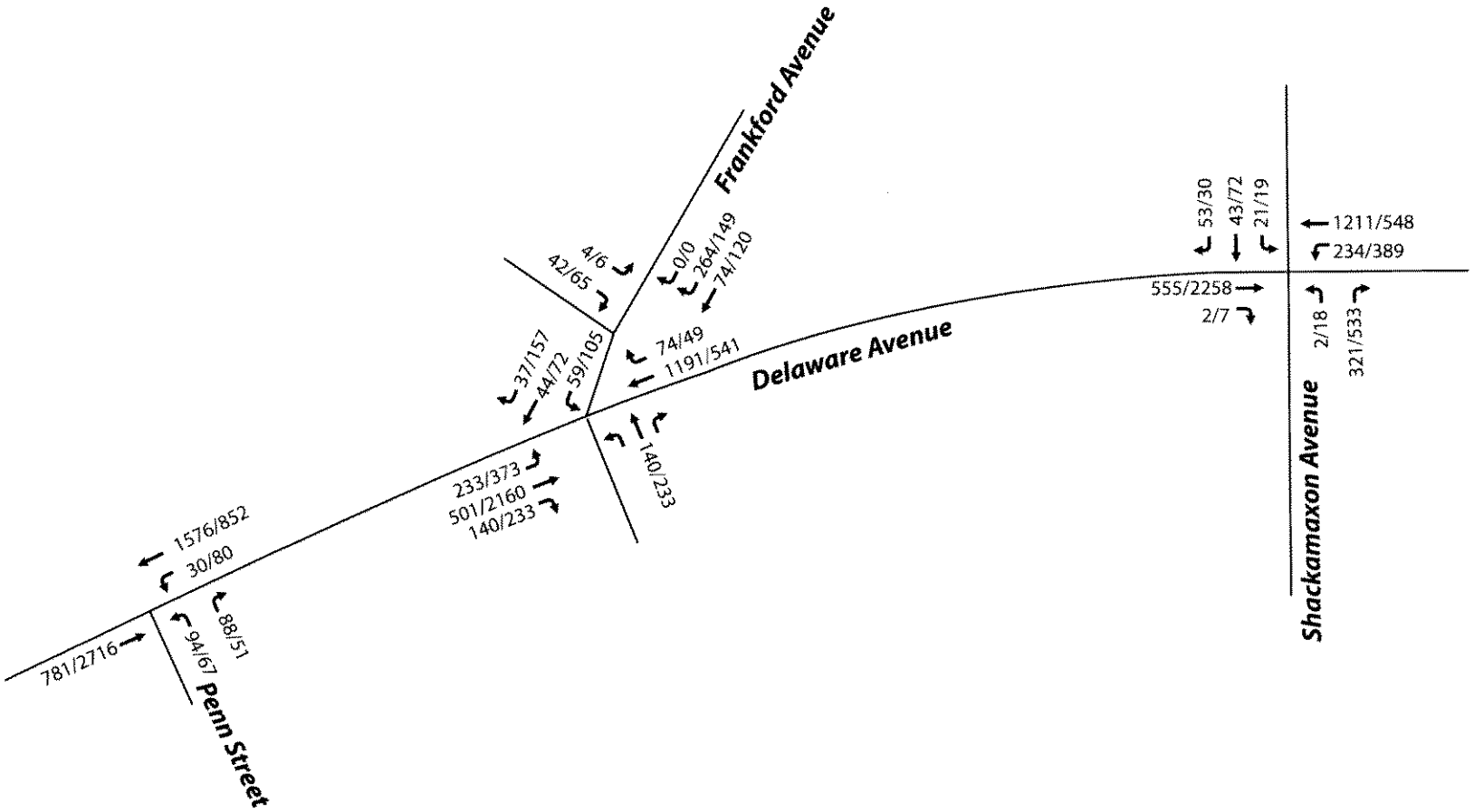
Gannett Fleming



AM/PM Peak Hour Volumes
No-Build - 2011

AM: 7:45-8:45
PM: 4:15-5:15

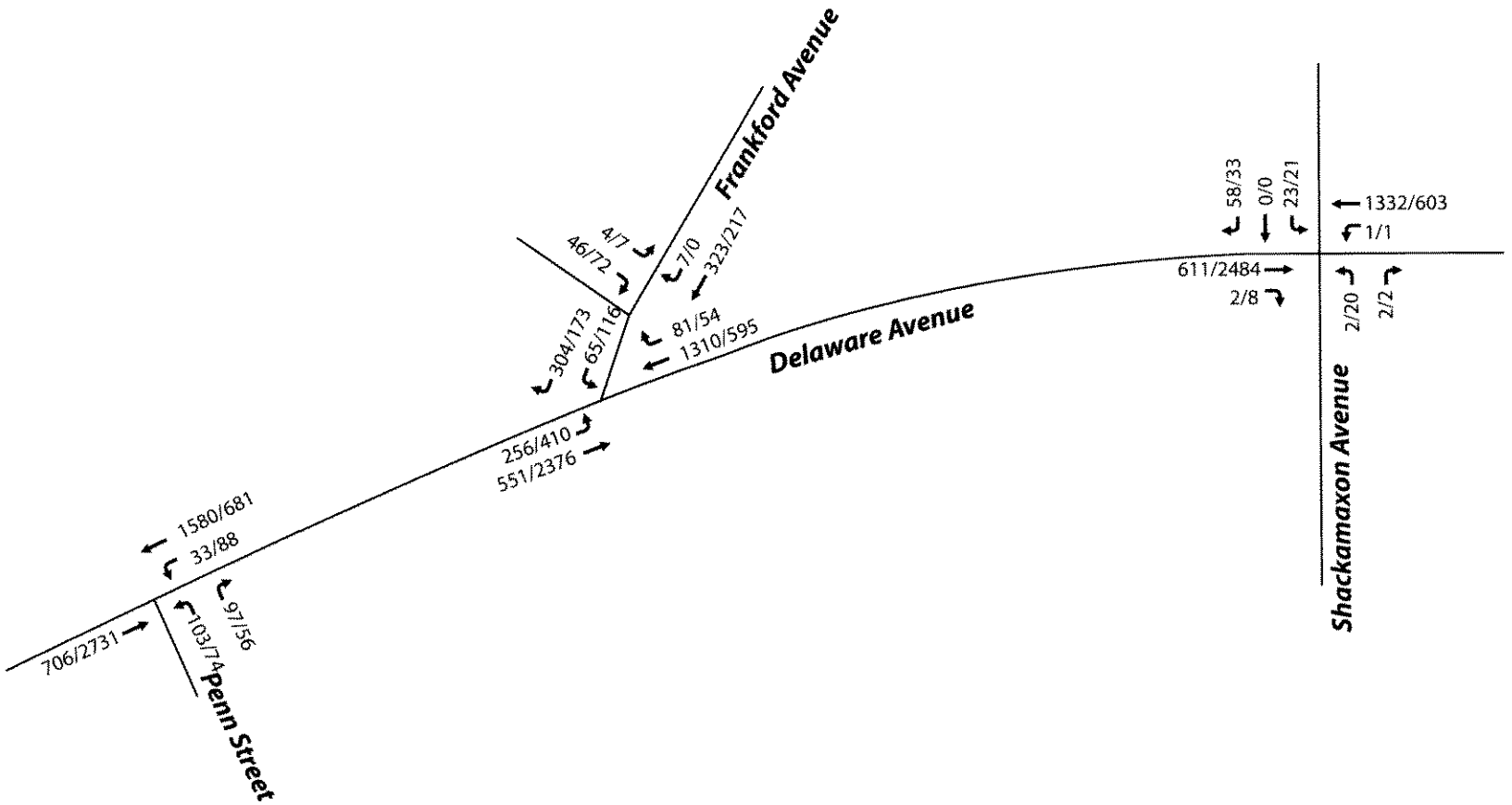
Gannett Fleming



AM/PM Peak Hour Volumes
Build Phase II - 2011

AM: 7:45-8:45
PM: 4:15-5:15

Gannett Fleming



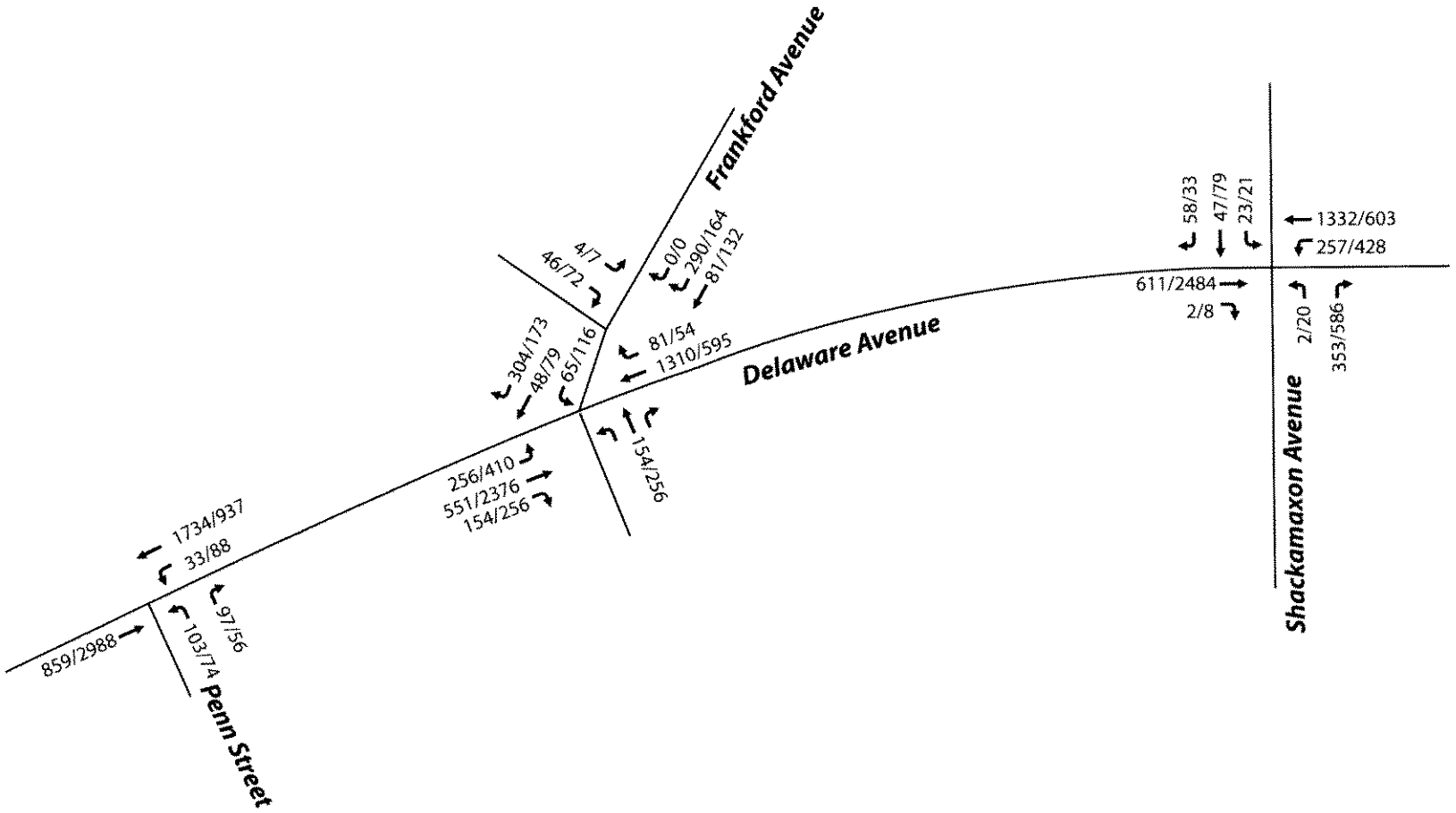
AM/PM Peak Hour Volumes

No-Build - 2021

AM: 7:45-8:45

PM: 4:15-5:15

Gannett Fleming



AM/PM Peak Hour Volumes
Build Phase II + 10 Years- 2021

AM: 7:45-8:45
PM: 4:15-5:15

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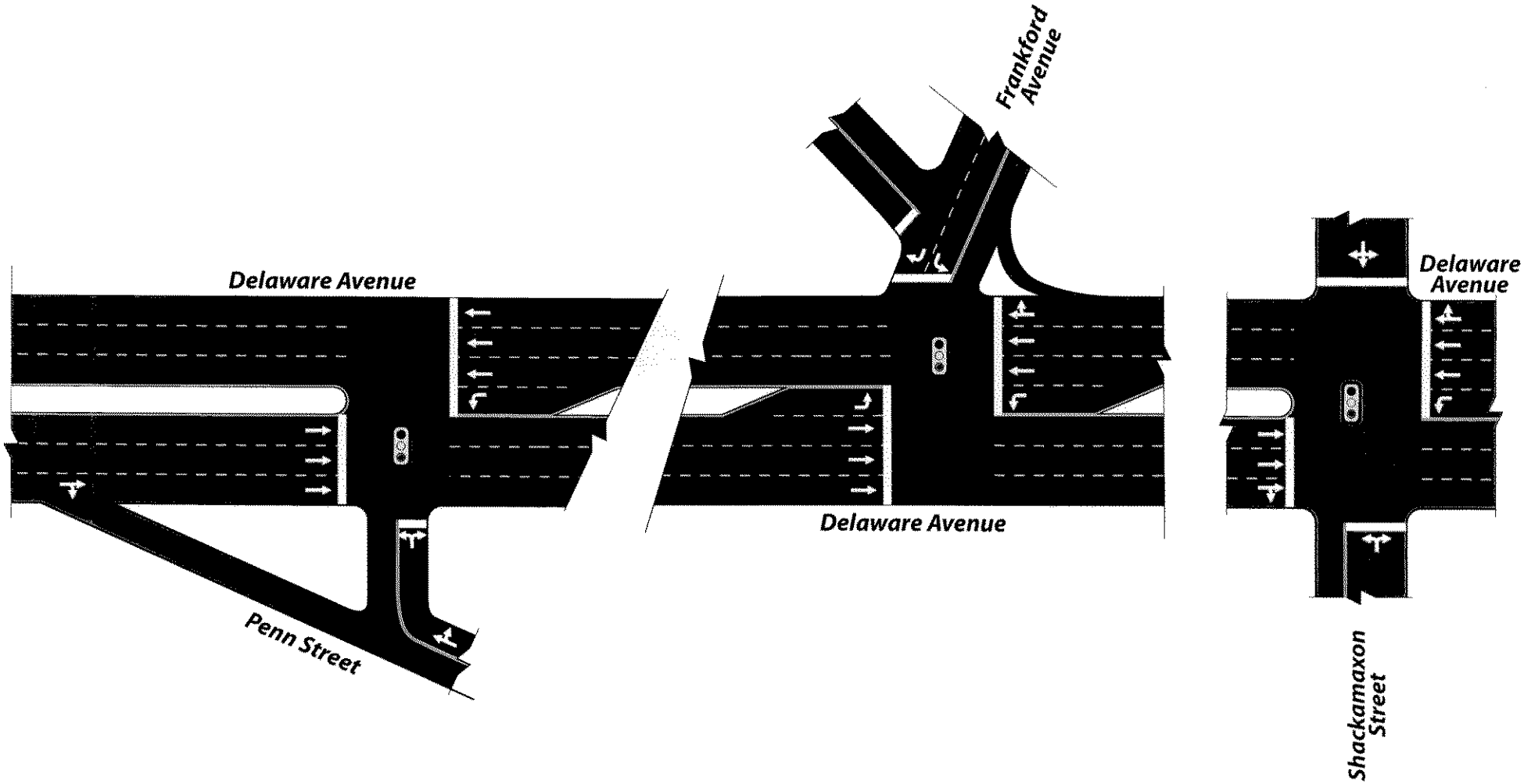
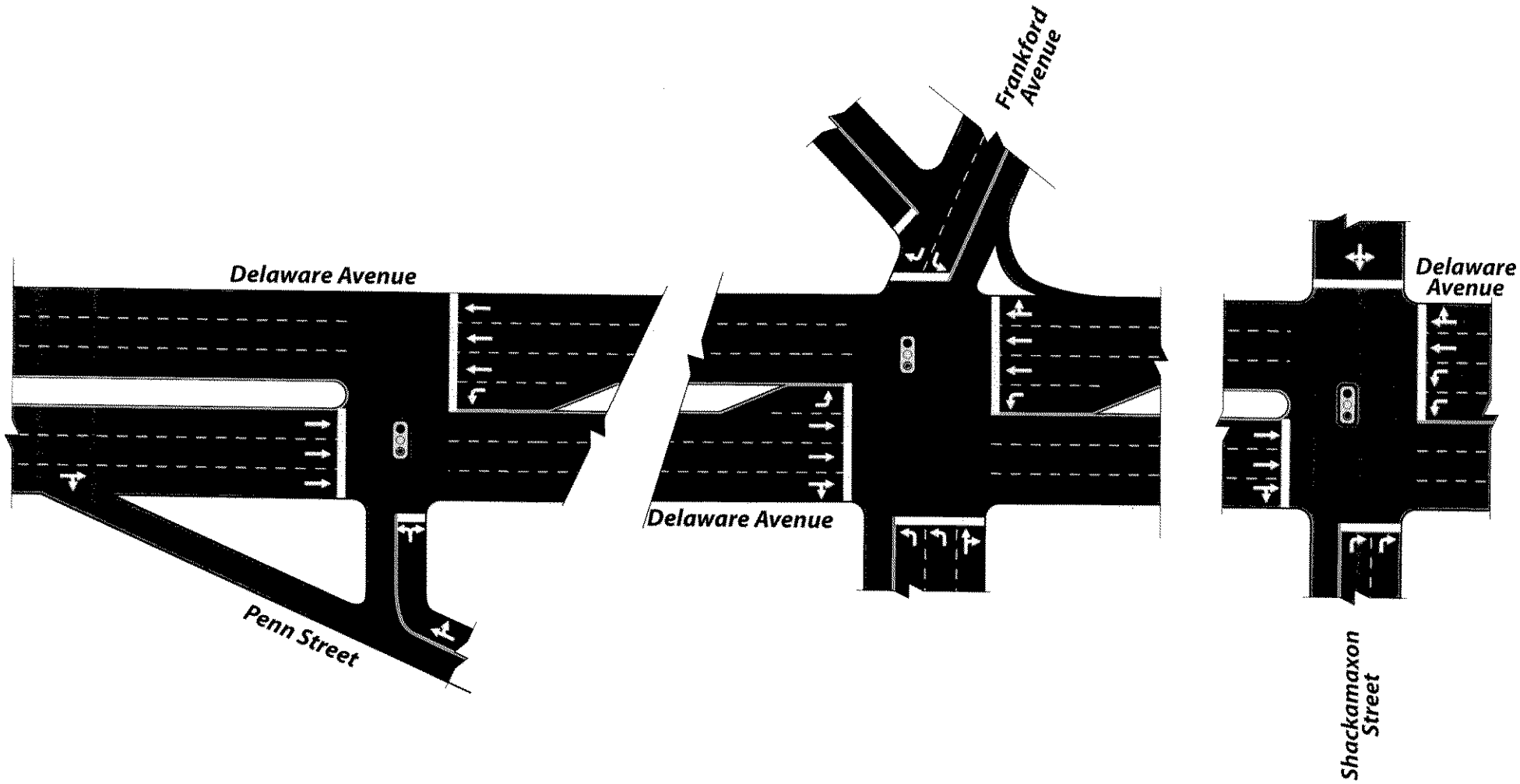
APPENDIX – B
(Lane configuration diagrams)


Delaware Avenue
Frankford Avenue
Delaware Avenue
Delaware Avenue
Penn Street
Shackamaxon Street



Proposed Conditions

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APPENDIX – C
(Printouts from SYNCHRO analysis)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.91		1.00	0.91			1.00			1.00	
Frt		1.00		1.00	1.00			0.93			0.90	
Flt Protected		1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)		4690		1719	4693			1866			1828	
Flt Permitted		1.00		0.49	1.00			0.92			0.93	
Satd. Flow (perm)		4690		890	4693			1755			1725	
Volume (vph)	0	416	2	1	1053	0	2	0	2	19	0	47
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	429	2	1	1086	0	2	0	2	20	0	48
RTOR Reduction (vph)	0	1	0	0	0	0	0	2	0	0	38	0
Lane Group Flow (vph)	0	430	0	1	1086	0	0	2	0	0	30	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Perm			Perm			Perm		
Protected Phases					8			2			6	
Permitted Phases		4		8			2			6		
Actuated Green, G (s)		62.0		62.0	62.0			17.0			17.0	
Effective Green, g (s)		63.0		63.0	63.0			19.0			19.0	
Actuated g/C Ratio		0.70		0.70	0.70			0.21			0.21	
Clearance Time (s)		5.0		5.0	5.0			6.0			6.0	
Lane Grp Cap (vph)		3283		623	3285			371			364	
v/s Ratio Prot					c0.23							
v/s Ratio Perm		0.09		0.00				0.00			c0.04	
v/c Ratio		0.13		0.00	0.33			0.01			0.08	
Uniform Delay, d1		4.5		4.1	5.3			28.0			28.5	
Progression Factor		0.86		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.1		0.0	0.3			0.0			0.4	
Delay (s)		3.9		4.1	5.5			28.1			28.9	
Level of Service		A		A	A			C			C	
Approach Delay (s)		3.9			5.5			28.1			28.9	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM Average Control Delay	6.2	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.30			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	31.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	15	12	12	12	12	12	12
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	
Lane Util. Factor				1.00		1.00	1.00	0.91			0.91	
Frt				1.00		0.85	1.00	1.00			0.99	
Flt Protected				0.95		1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1510		1438	1719	4693			4651	
Flt Permitted				0.95		1.00	0.18	1.00			1.00	
Satd. Flow (perm)				1510		1438	322	4693			4651	
Volume (vph)	0	0	0	51	0	247	208	368	0	0	1035	66
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	53	0	255	214	379	0	0	1067	68
RTOR Reduction (vph)	0	0	0	0	0	193	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	53	0	62	214	379	0	0	1127	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)				10		10		10			10	10
Turn Type				custom				custom			custom	
Protected Phases							7	4			8	
Permitted Phases				6		6	4			8		
Actuated Green, G (s)				20.0		20.0	58.0	58.0			45.0	
Effective Green, g (s)				22.0		22.0	60.0	60.0			47.0	
Actuated g/C Ratio				0.24		0.24	0.67	0.67			0.52	
Clearance Time (s)				6.0		6.0	3.0	6.0			6.0	
Lane Grp Cap (vph)				369		352	354	3129			2429	
v/s Ratio Prot							c0.06	0.08			0.24	
v/s Ratio Perm				0.04		0.18	c0.34					
v/c Ratio				0.14		0.18	0.60	0.12			0.46	
Uniform Delay, d1				26.6		26.9	7.6	5.4			13.6	
Progression Factor				1.00		1.00	1.00	1.00			0.64	
Incremental Delay, d2				0.8		1.1	7.5	0.1			0.6	
Delay (s)				27.4		27.9	15.0	5.5			9.3	
Level of Service				C		C	B	A			A	
Approach Delay (s)		0.0			27.9			8.9			9.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	1948		4693			4693
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	1948		4693			4693
Volume (vph)	5	0	572	0	0	1280
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	0	590	0	0	1320
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	5	0	590	0	0	1320
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	2.2		110.6			110.6
Effective Green, g (s)	4.2		112.6			112.6
Actuated g/C Ratio	0.03		0.90			0.90
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	66		4234			4234
v/s Ratio Prot	c0.00		0.13			c0.28
v/s Ratio Perm						
v/c Ratio	0.08		0.14			0.31
Uniform Delay, d1	58.4		0.7			0.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.5		0.1			0.2
Delay (s)	58.9		0.8			1.0
Level of Service	E		A			A
Approach Delay (s)	58.9		0.8			1.0
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	1.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	124.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.91		1.00	0.91			1.00			1.00	
Frt		1.00		1.00	1.00			0.99			0.92	
Flt Protected		1.00		0.95	1.00			0.96			0.98	
Satd. Flow (prot)		4690		1719	4693			1935			1848	
Flt Permitted		1.00		0.07	1.00			0.81			0.91	
Satd. Flow (perm)		4690		121	4693			1638			1707	
Volume (vph)	0	1967	9	1	417	0	16	0	2	17	0	26
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2049	9	1	434	0	17	0	2	18	0	27
RTOR Reduction (vph)	0	1	0	0	0	0	0	2	0	0	21	0
Lane Group Flow (vph)	0	2057	0	1	434	0	0	17	0	0	24	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Perm			Perm			Perm		
Protected Phases					8			2			6	
Permitted Phases		4		8			2			6		
Actuated Green, G (s)		62.0		62.0	62.0			17.0			17.0	
Effective Green, g (s)		63.0		63.0	63.0			19.0			19.0	
Actuated g/C Ratio		0.70		0.70	0.70			0.21			0.21	
Clearance Time (s)		5.0		5.0	5.0			6.0			6.0	
Lane Grp Cap (vph)		3283		85	3285			346			360	
v/s Ratio Prot					0.09							
v/s Ratio Perm		0.44		0.01				0.01			c0.03	
v/c Ratio		0.63		0.01	0.13			0.05			0.07	
Uniform Delay, d1		7.2		4.1	4.5			28.3			28.4	
Progression Factor		0.64		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.7		0.3	0.1			0.3			0.4	
Delay (s)		5.3		4.3	4.5			28.6			28.8	
Level of Service		A		A	A			C			C	
Approach Delay (s)		5.3			4.5			28.6			28.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	15	12	12	12	12	12	12
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	
Lane Util. Factor				1.00		1.00	1.00	0.91			0.91	
Frt				1.00		0.85	1.00	1.00			0.99	
Flt Protected				0.95		1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1510		1438	1719	4693			4625	
Flt Permitted				0.95		1.00	0.43	1.00			1.00	
Satd. Flow (perm)				1510		1438	776	4693			4625	
Volume (vph)	0	0	0	94	0	140	322	1880	0	0	411	44
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	98	0	146	335	1958	0	0	428	46
RTOR Reduction (vph)	0	0	0	0	0	110	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	98	0	36	335	1958	0	0	460	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)				10		10		10			10	10
Turn Type				custom				custom			custom	
Protected Phases							7	4			8	
Permitted Phases				6		6	4			8		
Actuated Green, G (s)				20.0		20.0	58.0	58.0			45.0	
Effective Green, g (s)				22.0		22.0	60.0	60.0			47.0	
Actuated g/C Ratio				0.24		0.24	0.67	0.67			0.52	
Clearance Time (s)				6.0		6.0	3.0	6.0			6.0	
Lane Grp Cap (vph)				369		352	612	3129			2415	
v/s Ratio Prot							0.05	c0.42			0.10	
v/s Ratio Perm				0.06		0.10	0.31					
v/c Ratio				0.27		0.10	0.55	0.63			0.19	
Uniform Delay, d1				27.5		26.3	6.4	8.6			11.4	
Progression Factor				1.00		1.00	1.00	1.00			0.69	
Incremental Delay, d2				1.8		0.6	3.5	1.0			0.2	
Delay (s)				29.2		26.9	9.9	9.5			8.0	
Level of Service				C		C	A	A			A	
Approach Delay (s)		0.0			27.8			9.6			8.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	1948		4693			4693
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	1948		4693			4693
Volume (vph)	14	0	2214	0	0	552
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	15	0	2306	0	0	575
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	15	0	2306	0	0	575
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	3.5		108.1			108.1
Effective Green, g (s)	5.5		110.1			110.1
Actuated g/C Ratio	0.04		0.89			0.89
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	87		4180			4180
v/s Ratio Prot	c0.01		c0.49			0.12
v/s Ratio Perm						
v/c Ratio	0.17		0.55			0.14
Uniform Delay, d1	56.9		1.4			0.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.9		0.5			0.1
Delay (s)	57.8		2.0			0.9
Level of Service	E		A			A
Approach Delay (s)	57.8		2.0			0.9
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	2.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	123.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.91		1.00	0.91			1.00			1.00	
Frt		1.00		1.00	1.00			0.93			0.90	
Flt Protected		1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)		4691		1719	4693			1866			1827	
Flt Permitted		1.00		0.39	1.00			0.94			0.94	
Satd. Flow (perm)		4691		703	4693			1791			1738	
Volume (vph)	0	611	2	1	1332	0	2	0	2	23	0	58
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	630	2	1	1373	0	2	0	2	24	0	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	30	0
Lane Group Flow (vph)	0	632	0	1	1373	0	0	3	0	0	54	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Perm			Perm			Perm		
Protected Phases					8			2			6	
Permitted Phases		4		8			2			6		
Actuated Green, G (s)		51.0		51.0	51.0			28.0			28.0	
Effective Green, g (s)		52.0		52.0	52.0			30.0			30.0	
Actuated g/C Ratio		0.58		0.58	0.58			0.33			0.33	
Clearance Time (s)		5.0		5.0	5.0			6.0			6.0	
Lane Grp Cap (vph)		2710		406	2712			597			579	
v/s Ratio Prot					c0.29							
v/s Ratio Perm		0.13		0.00				0.00			c0.05	
v/c Ratio		0.23		0.00	0.51			0.00			0.09	
Uniform Delay, d1		9.3		8.0	11.3			20.0			20.6	
Progression Factor		0.64		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.2		0.0	0.7			0.0			0.3	
Delay (s)		6.1		8.0	12.0			20.0			21.0	
Level of Service		A		A	B			C			C	
Approach Delay (s)		6.1			12.0			20.0			21.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	15	12	12	12	12	12	12
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	
Lane Util. Factor				1.00		1.00	1.00	0.91			0.91	
Frt				1.00		0.85	1.00	1.00			1.00	
Flt Protected				0.95		1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1510		1438	1719	4693			4683	
Flt Permitted				0.95		1.00	0.10	1.00			1.00	
Satd. Flow (perm)				1510		1438	186	4693			4683	
Volume (vph)	0	0	0	62	0	304	256	551	0	0	1310	18
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	64	0	313	264	568	0	0	1351	19
RTOR Reduction (vph)	0	0	0	0	0	233	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	64	0	80	264	568	0	0	1368	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)				10		10		10			10	10
Turn Type				custom				custom			custom	
Protected Phases							7	4			8	
Permitted Phases				6		6	4			8		
Actuated Green, G (s)				21.0		21.0	57.0	57.0			33.0	
Effective Green, g (s)				23.0		23.0	59.0	59.0			35.0	
Actuated g/C Ratio				0.26		0.26	0.66	0.66			0.39	
Clearance Time (s)				6.0		6.0	3.0	6.0			6.0	
Lane Grp Cap (vph)				386		367	463	3077			1821	
v/s Ratio Prot							c0.13	0.12			c0.29	
v/s Ratio Perm				0.04		0.22	0.25					
v/c Ratio				0.17		0.22	0.57	0.18			0.75	
Uniform Delay, d1				26.0		26.4	16.9	6.1			23.7	
Progression Factor				1.00		1.00	1.00	1.00			0.56	
Incremental Delay, d2				0.9		1.4	5.0	0.1			2.6	
Delay (s)				27.0		27.8	21.9	6.2			15.9	
Level of Service				C		C	C	A			B	
Approach Delay (s)		0.0			27.6			11.2			15.9	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	0.93		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1868		4693		1719	4693
Flt Permitted	0.97		1.00		0.36	1.00
Satd. Flow (perm)	1868		4693		658	4693
Volume (vph)	103	97	706	0	33	1580
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	106	100	728	0	34	1629
RTOR Reduction (vph)	47	0	0	0	0	0
Lane Group Flow (vph)	159	0	728	0	34	1629
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	11.6		54.0		54.0	54.0
Effective Green, g (s)	13.6		56.0		56.0	56.0
Actuated g/C Ratio	0.18		0.72		0.72	0.72
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	327		3387		475	3387
v/s Ratio Prot	c0.11		0.16			c0.35
v/s Ratio Perm					0.05	
v/c Ratio	0.49		0.21		0.07	0.48
Uniform Delay, d1	28.9		3.6		3.2	4.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.1		0.1		0.3	0.5
Delay (s)	30.0		3.7		3.5	5.1
Level of Service	C		A		A	A
Approach Delay (s)	30.0		3.7			5.1
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.91		1.00	0.91			1.00			1.00	
Frt		1.00		1.00	1.00			0.99			0.92	
Flt Protected		1.00		0.95	1.00			0.96			0.98	
Satd. Flow (prot)		4691		1719	4693			1938			1846	
Flt Permitted		1.00		0.06	1.00			0.78			0.90	
Satd. Flow (perm)		4691		111	4693			1584			1688	
Volume (vph)	0	2484	8	1	603	0	20	0	2	21	0	33
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2588	8	1	628	0	21	0	2	22	0	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	28	0
Lane Group Flow (vph)	0	2596	0	1	628	0	0	21	0	0	28	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Perm			Perm			Perm		
Protected Phases					8			2			6	
Permitted Phases		4		8			2			6		
Actuated Green, G (s)		64.0		64.0	64.0			15.0			15.0	
Effective Green, g (s)		65.0		65.0	65.0			17.0			17.0	
Actuated g/C Ratio		0.72		0.72	0.72			0.19			0.19	
Clearance Time (s)		5.0		5.0	5.0			6.0			6.0	
Lane Grp Cap (vph)		3388		80	3389			299			319	
v/s Ratio Prot					0.13							
v/s Ratio Perm		0.55		0.01				0.01			c0.03	
v/c Ratio		0.77		0.01	0.19			0.07			0.09	
Uniform Delay, d1		7.8		3.5	4.0			30.0			30.1	
Progression Factor		0.10		1.00	1.00			1.00			1.00	
Incremental Delay, d2		1.1		0.3	0.1			0.5			0.6	
Delay (s)		1.9		3.8	4.1			30.5			30.7	
Level of Service		A		A	A			C			C	
Approach Delay (s)		1.9			4.1			30.5			30.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	15	12	12	12	12	12	12
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	
Lane Util. Factor				1.00		1.00	1.00	0.91			0.91	
Frt				1.00		0.85	1.00	1.00			0.99	
Flt Protected				0.95		1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1510		1438	1719	4693			4635	
Flt Permitted				0.95		1.00	0.28	1.00			1.00	
Satd. Flow (perm)				1510		1438	498	4693			4635	
Volume (vph)	0	0	0	116	0	173	410	2376	0	0	595	54
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	121	0	180	427	2475	0	0	620	56
RTOR Reduction (vph)	0	0	0	0	0	140	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	121	0	40	427	2475	0	0	664	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)				10		10		10			10	10
Turn Type				custom				custom			custom	
Protected Phases							7	4			8	
Permitted Phases				6		6	4			8		
Actuated Green, G (s)				18.0		18.0	60.0	60.0			28.0	
Effective Green, g (s)				20.0		20.0	62.0	62.0			30.0	
Actuated g/C Ratio				0.22		0.22	0.69	0.69			0.33	
Clearance Time (s)				6.0		6.0	3.0	6.0			6.0	
Lane Grp Cap (vph)				336		320	723	3233			1545	
v/s Ratio Prot							0.18	c0.53			0.15	
v/s Ratio Perm				0.08		0.13	0.22					
v/c Ratio				0.36		0.12	0.59	0.77			0.43	
Uniform Delay, d1				29.6		28.0	7.1	9.2			23.3	
Progression Factor				1.00		1.00	1.00	1.00			0.84	
Incremental Delay, d2				3.0		0.8	3.5	1.8			0.9	
Delay (s)				32.6		28.8	10.6	11.0			20.5	
Level of Service				C		C	B	B			C	
Approach Delay (s)		0.0			30.3			11.0			20.5	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1878		4693		1719	4693
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	1878		4693		102	4693
Volume (vph)	74	56	2731	0	88	681
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	58	2845	0	92	709
RTOR Reduction (vph)	31	0	0	0	0	0
Lane Group Flow (vph)	104	0	2845	0	92	709
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					pm+pt	
Protected Phases	8		2		1	6
Permitted Phases					6	
Actuated Green, G (s)	9.5		64.7		72.9	72.9
Effective Green, g (s)	11.5		66.7		74.9	74.9
Actuated g/C Ratio	0.12		0.71		0.79	0.79
Clearance Time (s)	6.0		6.0		4.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	229		3316		153	3724
v/s Ratio Prot	c0.07		c0.61		c0.03	0.15
v/s Ratio Perm					0.45	
v/c Ratio	0.46		0.86		0.60	0.19
Uniform Delay, d1	38.5		10.3		15.3	2.4
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		3.1		6.5	0.1
Delay (s)	40.0		13.4		21.8	2.5
Level of Service	D		B		C	A
Approach Delay (s)	40.0		13.4			4.7
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0				4.0		4.0	
Lane Util. Factor		0.91		0.97	0.95				0.88		1.00	
Frt		1.00		1.00	1.00				0.85		0.94	
Flt Protected		1.00		0.95	1.00				1.00		0.99	
Satd. Flow (prot)		4691		3335	3180				2707		1909	
Flt Permitted		1.00		0.95	1.00				1.00		0.99	
Satd. Flow (perm)		4691		3335	3180				2707		1909	
Volume (vph)	0	611	2	257	1332	0	0	0	353	23	47	58
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	636	2	268	1388	0	0	0	368	24	49	60
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	294	0	33	0
Lane Group Flow (vph)	0	637	0	268	1388	0	0	0	74	0	100	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Prot					Over	Perm		
Protected Phases				3	8				3		6	
Permitted Phases		4								6		
Actuated Green, G (s)		39.0		19.0	61.0				19.0		18.0	
Effective Green, g (s)		40.0		18.0	62.0				18.0		20.0	
Actuated g/C Ratio		0.44		0.20	0.69				0.20		0.22	
Clearance Time (s)		5.0		3.0	5.0				3.0		6.0	
Lane Grp Cap (vph)		2085		667	2191				541		424	
v/s Ratio Prot				0.08	c0.44				0.14			
v/s Ratio Perm		0.14									0.07	
v/c Ratio		0.31		0.40	0.63				0.14		0.24	
Uniform Delay, d1		16.1		31.3	7.7				29.6		28.7	
Progression Factor		0.57		1.00	1.00				1.00		1.00	
Incremental Delay, d2		0.4		1.8	1.4				0.5		1.3	
Delay (s)		9.5		33.1	9.1				30.1		30.0	
Level of Service		A		C	A				C		C	
Approach Delay (s)		9.5			13.0			30.1			30.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	15	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		0.97		1.00	0.91			0.91	
Frt	1.00	0.87		1.00		1.00	0.97			1.00	
Flt Protected	0.95	0.99		0.95		0.95	1.00			1.00	
Satd. Flow (prot)	1510	1564		3335		1719	4540			4683	
Flt Permitted	0.76	0.99		0.95		0.11	1.00			1.00	
Satd. Flow (perm)	1203	1564		3335		207	4540			4683	
Volume (vph)	65	48	304	156	0	256	551	154	0	1310	18
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	68	50	317	162	0	267	574	160	0	1365	19
RTOR Reduction (vph)	0	254	0	0	0	0	56	0	0	1	0
Lane Group Flow (vph)	68	113	0	162	0	267	678	0	0	1383	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)	10		10				10			10	10
Turn Type	pm+pt			Prot		pm+pt			Perm		
Protected Phases	1	6		5		7	4			8	
Permitted Phases	6				2	4			8		
Actuated Green, G (s)	16.0	10.0		17.0		46.0	46.0			29.0	
Effective Green, g (s)	18.0	12.0		18.0		48.0	48.0			31.0	
Actuated g/C Ratio	0.20	0.13		0.20		0.53	0.53			0.34	
Clearance Time (s)	4.0	6.0		5.0		4.0	6.0			6.0	
Lane Grp Cap (vph)	261	209		667		329	2421			1613	
v/s Ratio Prot	0.02	c0.23		c0.05		c0.12	0.16			0.30	
v/s Ratio Perm	0.03					c0.32					
v/c Ratio	0.26	0.54		0.24		0.81	0.28			0.86	
Uniform Delay, d1	30.2	36.4		30.3		21.0	11.5			27.4	
Progression Factor	1.00	1.00		1.00		1.00	1.00			0.73	
Incremental Delay, d2	2.4	9.7		0.9		19.2	0.3			4.9	
Delay (s)	32.6	46.1		31.1		40.3	11.8			25.0	
Level of Service	C	D		C		D	B			C	
Approach Delay (s)		44.0		31.1			19.4			25.0	
Approach LOS		D		C			B			C	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	0.93		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1868		4693		1719	4693
Flt Permitted	0.97		1.00		0.27	1.00
Satd. Flow (perm)	1868		4693		490	4693
Volume (vph)	103	97	859	0	33	1734
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	107	101	895	0	34	1806
RTOR Reduction (vph)	43	0	0	0	0	0
Lane Group Flow (vph)	165	0	895	0	34	1806
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					pm+pt	
Protected Phases	8		2		1	6
Permitted Phases					6	
Actuated Green, G (s)	12.4		52.2		60.0	60.0
Effective Green, g (s)	14.4		54.2		62.0	62.0
Actuated g/C Ratio	0.17		0.64		0.73	0.73
Clearance Time (s)	6.0		6.0		4.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	319		3014		415	3447
v/s Ratio Prot	c0.11		0.19		0.00	c0.38
v/s Ratio Perm					0.06	
v/c Ratio	0.52		0.30		0.08	0.52
Uniform Delay, d1	31.8		6.7		3.3	4.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		0.3		0.1	0.6
Delay (s)	33.3		6.9		3.4	5.4
Level of Service	C		A		A	A
Approach Delay (s)	33.3		6.9			5.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0				4.0		4.0	
Lane Util. Factor		0.91		0.97	0.95				0.88		1.00	
Frt		1.00		1.00	1.00				0.85		0.97	
Flt Protected		1.00		0.95	1.00				1.00		0.99	
Satd. Flow (prot)		4691		3335	3180				2707		1967	
Flt Permitted		1.00		0.95	1.00				1.00		0.99	
Satd. Flow (perm)		4691		3335	3180				2707		1967	
Volume (vph)	0	2484	8	428	603	0	0	0	586	21	79	33
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2588	8	446	628	0	0	0	610	22	82	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	269	0	13	0
Lane Group Flow (vph)	0	2596	0	446	628	0	0	0	341	0	125	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Prot					Over	Perm		
Protected Phases				3	8				3		6	
Permitted Phases		4								6		
Actuated Green, G (s)		49.0		15.0	67.0				15.0		12.0	
Effective Green, g (s)		50.0		14.0	68.0				14.0		14.0	
Actuated g/C Ratio		0.56		0.16	0.76				0.16		0.16	
Clearance Time (s)		5.0		3.0	5.0				3.0		6.0	
Lane Grp Cap (vph)		2606		519	2403				421		306	
v/s Ratio Prot				0.13	0.20				c0.23			
v/s Ratio Perm		0.55									0.07	
v/c Ratio		1.00		0.86	0.26				0.81		0.41	
Uniform Delay, d1		19.9		37.0	3.4				36.7		34.3	
Progression Factor		1.19		1.00	1.00				1.00		1.00	
Incremental Delay, d2		4.5		16.8	0.3				15.5		4.0	
Delay (s)		28.1		53.8	3.6				52.2		38.3	
Level of Service		C		D	A				D		D	
Approach Delay (s)		28.1			24.5			52.2			38.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	15	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		0.97		1.00	0.91			0.91	
Frt	1.00	0.90		1.00		1.00	0.99			0.99	
Flt Protected	0.95	0.98		0.95		0.95	1.00			1.00	
Satd. Flow (prot)	1510	1598		3335		1719	4624			4635	
Flt Permitted	0.76	0.98		0.95		0.25	1.00			1.00	
Satd. Flow (perm)	1203	1598		3335		446	4624			4635	
Volume (vph)	116	79	173	276	0	410	2376	256	0	595	54
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	121	82	180	288	0	427	2475	267	0	620	56
RTOR Reduction (vph)	0	88	0	0	0	0	14	0	0	12	0
Lane Group Flow (vph)	121	174	0	288	0	427	2728	0	0	664	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)	10		10				10			10	10
Turn Type	pm+pt			Prot		pm+pt			Perm		
Protected Phases	1	6		5		7	4			8	
Permitted Phases	6				2	4			8		
Actuated Green, G (s)	15.0	7.0		17.0		49.0	49.0			23.0	
Effective Green, g (s)	17.0	9.0		18.0		51.0	51.0			25.0	
Actuated g/C Ratio	0.19	0.10		0.20		0.57	0.57			0.28	
Clearance Time (s)	4.0	6.0		5.0		4.0	6.0			6.0	
Lane Grp Cap (vph)	255	160		667		564	2620			1288	
v/s Ratio Prot	0.04	c0.16		c0.09		0.19	c0.59			0.15	
v/s Ratio Perm	0.05					0.24					
v/c Ratio	0.47	1.09		0.43		0.76	1.04			0.52	
Uniform Delay, d1	32.2	40.5		31.5		12.8	19.5			27.4	
Progression Factor	1.00	1.00		1.00		1.00	1.00			0.93	
Incremental Delay, d2	6.2	96.1		2.0		9.2	29.4			1.4	
Delay (s)	38.4	136.6		33.6		22.0	48.9			26.9	
Level of Service	D	F		C		C	D			C	
Approach Delay (s)		105.5		33.6			45.3			26.9	
Approach LOS		F		C			D			C	

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1878		4693		1719	4693
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	1878		4693		104	4693
Volume (vph)	74	56	2988	0	88	937
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	58	3112	0	92	976
RTOR Reduction (vph)	31	0	0	0	0	0
Lane Group Flow (vph)	104	0	3112	0	92	976
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					pm+pt	
Protected Phases	8		2		1	6
Permitted Phases					6	
Actuated Green, G (s)	9.5		63.4		73.0	73.0
Effective Green, g (s)	11.5		65.4		75.0	75.0
Actuated g/C Ratio	0.12		0.69		0.79	0.79
Clearance Time (s)	6.0		6.0		4.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	229		3248		178	3725
v/s Ratio Prot	c0.07		c0.66		c0.03	0.21
v/s Ratio Perm					0.38	
v/c Ratio	0.46		0.96		0.52	0.26
Uniform Delay, d1	38.6		13.3		19.8	2.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		8.7		2.5	0.2
Delay (s)	40.0		22.0		22.3	2.7
Level of Service	D		C		C	A
Approach Delay (s)	40.0		22.0			4.4
Approach LOS	D		C			A

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0				4.0		4.0	
Lane Util. Factor		0.91		0.97	0.95				0.88		1.00	
Frt		1.00		1.00	1.00				0.85		0.97	
Flt Protected		1.00		0.95	1.00				1.00		0.99	
Satd. Flow (prot)		4691		3335	3180				2707		1967	
Flt Permitted		1.00		0.95	1.00				1.00		0.99	
Satd. Flow (perm)		4691		3335	3180				2707		1967	
Volume (vph)	0	2484	8	428	603	0	0	0	586	21	79	33
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2588	8	446	628	0	0	0	610	22	82	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	269	0	13	0
Lane Group Flow (vph)	0	2596	0	446	628	0	0	0	341	0	125	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Prot					Over	Perm		
Protected Phases				3	8				3		6	
Permitted Phases		4								6		
Actuated Green, G (s)		49.0		15.0	67.0				15.0		12.0	
Effective Green, g (s)		50.0		14.0	68.0				14.0		14.0	
Actuated g/C Ratio		0.56		0.16	0.76				0.16		0.16	
Clearance Time (s)		5.0		3.0	5.0				3.0		6.0	
Lane Grp Cap (vph)		2606		519	2403				421		306	
v/s Ratio Prot				0.13	0.20				c0.23			
v/s Ratio Perm		0.55									0.07	
v/c Ratio		1.00		0.86	0.26				0.81		0.41	
Uniform Delay, d1		19.9		37.0	3.4				36.7		34.3	
Progression Factor		1.46		1.00	1.00				1.00		1.00	
Incremental Delay, d2		8.3		16.8	0.3				15.5		4.0	
Delay (s)		37.5		53.8	3.6				52.2		38.3	
Level of Service		D		D	A				D		D	
Approach Delay (s)		37.5			24.5			52.2			38.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	15	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97		1.00	0.91			0.91	
Frt	1.00	1.00	0.85	1.00		1.00	0.99			0.99	
Flt Protected	0.95	0.95	1.00	0.95		0.95	1.00			1.00	
Satd. Flow (prot)	1510	1719	1438	3335		1719	4624			4635	
Flt Permitted	0.76	0.95	1.00	0.95		0.25	1.00			1.00	
Satd. Flow (perm)	1203	1719	1438	3335		446	4624			4635	
Volume (vph)	116	79	173	276	0	410	2376	256	0	595	54
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	121	82	180	288	0	427	2475	267	0	620	56
RTOR Reduction (vph)	0	0	166	0	0	0	14	0	0	12	0
Lane Group Flow (vph)	121	82	14	288	0	427	2728	0	0	664	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)	10		10				10			10	10
Turn Type	pm+pt		Perm	Prot		pm+pt			Perm		
Protected Phases	1	6		5		7	4			8	
Permitted Phases	6		6		2	4			8		
Actuated Green, G (s)	16.0	5.0	5.0	17.0		51.0	51.0			23.0	
Effective Green, g (s)	18.0	7.0	7.0	18.0		53.0	53.0			25.0	
Actuated g/C Ratio	0.20	0.08	0.08	0.20		0.59	0.59			0.28	
Clearance Time (s)	4.0	6.0	6.0	5.0		4.0	6.0			6.0	
Lane Grp Cap (vph)	278	134	112	667		602	2723			1288	
v/s Ratio Prot	0.05	0.05		c0.09		0.19	c0.59			0.15	
v/s Ratio Perm	0.03		0.13			0.23					
v/c Ratio	0.44	0.61	0.12	0.43		0.71	1.00			0.52	
Uniform Delay, d1	31.3	40.2	38.6	31.5		11.7	18.5			27.4	
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00			1.29	
Incremental Delay, d2	4.9	19.1	2.3	2.0		6.9	17.6			1.4	
Delay (s)	36.2	59.3	40.9	33.6		18.6	36.1			36.8	
Level of Service	D	E	D	C		B	D			D	
Approach Delay (s)		43.4		33.6			33.8			36.8	
Approach LOS		D		C			C			D	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1878		4693		1719	4693
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	1878		4693		102	4693
Volume (vph)	74	56	2988	0	88	937
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	58	3112	0	92	976
RTOR Reduction (vph)	31	0	0	0	0	0
Lane Group Flow (vph)	104	0	3112	0	92	976
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					pm+pt	
Protected Phases	8		2		1	6
Permitted Phases					6	
Actuated Green, G (s)	9.5		65.1		72.9	72.9
Effective Green, g (s)	11.5		67.1		74.9	74.9
Actuated g/C Ratio	0.12		0.71		0.79	0.79
Clearance Time (s)	6.0		6.0		4.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	229		3336		146	3724
v/s Ratio Prot	c0.07		c0.66		c0.03	0.21
v/s Ratio Perm					0.48	
v/c Ratio	0.46		0.93		0.63	0.26
Uniform Delay, d1	38.5		11.7		19.1	2.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		6.2		8.6	0.2
Delay (s)	40.0		17.9		27.6	2.7
Level of Service	D		B		C	A
Approach Delay (s)	40.0		17.9			4.9
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0		4.0	4.0				4.0		4.0	
Lane Util. Factor		0.91		0.97	0.95				0.88		1.00	
Frt		1.00		1.00	1.00				0.85		0.98	
Flt Protected		1.00		0.95	1.00				1.00		1.00	
Satd. Flow (prot)		4691		3335	3180				2707		1998	
Flt Permitted		1.00		0.95	1.00				1.00		1.00	
Satd. Flow (perm)		4691		3335	3180				2707		1998	
Volume (vph)	0	2484	8	428	603	0	0	0	586	21	158	33
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2588	8	446	628	0	0	0	610	22	165	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	269	0	8	0
Lane Group Flow (vph)	0	2596	0	446	628	0	0	0	341	0	213	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10		10	10				10		10
Turn Type				Prot					Over	Perm		
Protected Phases				3	8				3		6	
Permitted Phases		4								6		
Actuated Green, G (s)		49.0		15.0	67.0				15.0		12.0	
Effective Green, g (s)		50.0		14.0	68.0				14.0		14.0	
Actuated g/C Ratio		0.56		0.16	0.76				0.16		0.16	
Clearance Time (s)		5.0		3.0	5.0				3.0		6.0	
Lane Grp Cap (vph)		2606		519	2403				421		311	
v/s Ratio Prot				0.13	0.20				c0.23			
v/s Ratio Perm		0.55									0.11	
v/c Ratio		1.00		0.86	0.26				0.81		0.69	
Uniform Delay, d1		19.9		37.0	3.4				36.7		35.9	
Progression Factor		0.35		1.00	1.00				1.00		1.00	
Incremental Delay, d2		9.7		16.8	0.3				15.5		11.7	
Delay (s)		16.6		53.8	3.6				52.2		47.6	
Level of Service		B		D	A				D		D	
Approach Delay (s)		16.6			24.5			52.2			47.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	15	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00		1.00	0.97		1.00	0.91			0.91	
Frt	1.00		0.85	1.00		1.00	0.99			0.99	
Flt Protected	0.95		1.00	0.95		0.95	1.00			1.00	
Satd. Flow (prot)	1510		1438	3335		1719	4624			4635	
Flt Permitted	0.95		1.00	0.95		0.22	1.00			1.00	
Satd. Flow (perm)	1510		1438	3335		404	4624			4635	
Volume (vph)	116	0	173	276	0	410	2376	256	0	595	54
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	121	0	180	288	0	427	2475	267	0	620	56
RTOR Reduction (vph)	0	0	109	0	0	0	14	0	0	11	0
Lane Group Flow (vph)	121	0	71	288	0	427	2728	0	0	665	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Parking (#/hr)	10		10				10			10	10
Turn Type	Prot		Over	Prot		pm+pt			Perm		
Protected Phases	1		7	5		7	4			8	
Permitted Phases					2	4			8		
Actuated Green, G (s)	12.0		30.0	25.0		54.0	54.0			20.0	
Effective Green, g (s)	14.0		30.0	26.0		56.0	56.0			22.0	
Actuated g/C Ratio	0.16		0.33	0.29		0.62	0.62			0.24	
Clearance Time (s)	6.0		4.0	5.0		4.0	6.0			6.0	
Lane Grp Cap (vph)	235		479	963		690	2877			1133	
v/s Ratio Prot	c0.08		0.13	c0.09		0.21	c0.59			0.15	
v/s Ratio Perm						0.18					
v/c Ratio	0.51		0.15	0.30		0.62	0.95			0.59	
Uniform Delay, d1	34.9		21.0	24.9		10.9	15.7			30.0	
Progression Factor	1.00		1.00	1.00		1.00	1.00			0.89	
Incremental Delay, d2	7.8		0.6	0.8		4.1	8.4			2.2	
Delay (s)	42.7		21.7	25.7		15.1	24.1			29.0	
Level of Service	D		C	C		B	C			C	
Approach Delay (s)		30.1		25.7			22.9			29.0	
Approach LOS		C		C			C			C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

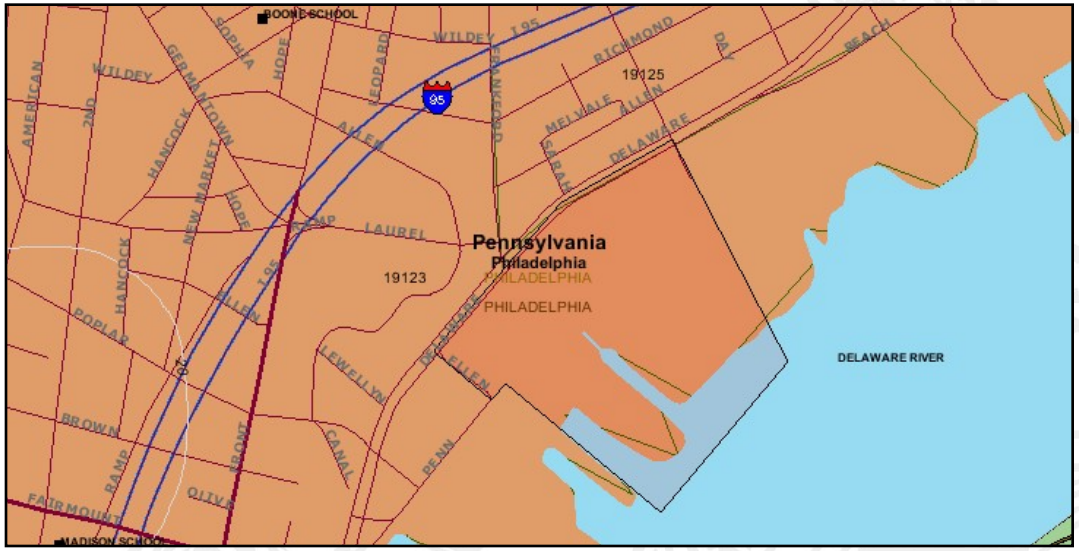
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	12	12	12	12	12
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	0.94		1.00		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1878		4693		1719	4693
Flt Permitted	0.97		1.00		0.06	1.00
Satd. Flow (perm)	1878		4693		102	4693
Volume (vph)	74	56	2988	0	88	937
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	58	3112	0	92	976
RTOR Reduction (vph)	31	0	0	0	0	0
Lane Group Flow (vph)	104	0	3112	0	92	976
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Parking (#/hr)		10	10	10		10
Turn Type					pm+pt	
Protected Phases	8		2		1	6
Permitted Phases					6	
Actuated Green, G (s)	9.5		65.1		72.9	72.9
Effective Green, g (s)	11.5		67.1		74.9	74.9
Actuated g/C Ratio	0.12		0.71		0.79	0.79
Clearance Time (s)	6.0		6.0		4.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	229		3336		146	3724
v/s Ratio Prot	c0.07		c0.66		c0.03	0.21
v/s Ratio Perm					0.48	
v/c Ratio	0.46		0.93		0.63	0.26
Uniform Delay, d1	38.5		11.7		19.1	2.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		6.2		8.6	0.2
Delay (s)	40.0		17.9		27.6	2.7
Level of Service	D		B		C	A
Approach Delay (s)	40.0		17.9			4.9
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

PNDI Project Environmental Review Receipt
Project Search ID: 20051202012682
Project Name: Keating - Sugar Mill
Date: 12/2/2005 8:41:04 AM

Project Location



Project Name: Keating - Sugar Mill
On behalf of: Private Individual
Project Search ID: 20051202012682
Date: 12/2/2005 8:37:45 AM
# of Potential Impacts: 4
Jurisdictional Agency: US Fish and Wildlife Service,Pennsylvania Fish and Boat Commission
Project Category: Recreation,Amusement parks, auto-courses, community swimming pools, racetracks
Project Coordinates (Lambert): 803678.39068134, 364301.19612226 ft

ZIP Code: 19125,19123
Township/Municipality: PHILADELPHIA
County: Philadelphia
USGS 7.5 Minute Quadrangle ID: 785
Quadrangle Name: PHILADELPHIA
Project Size: 26.389 ac

Location Accuracy

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

4 Potential Impacts

Under the Following Agencies' Jurisdiction: US Fish and Wildlife Service,Pennsylvania Fish and Boat Commission

 APPLICANT INITIALS: _____

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County: Philadelphia
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Quadrangle Name: PHILADELPHIA
Project Size: 26.389 ac

These determinations were based on the project-specific information you provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the information you provided does not accurately reflect this project, or if project plans change, DEP and the jurisdictional agencies require that another PNDI review be conducted.

This response represents the most up-to-date summary of the PNDI data files and is good for one(1) year from the date of this PNDI Project Environmental Review Receipt.

Pennsylvania Natural Diversity Inventory (PNDI) records indicate there are potential impacts on special concern species and resources within the project area. If the project is pursued, the jurisdictional agency/agencies indicated require that the instructions below regarding potential impacts and/or avoidance measures be followed in their entirety.

Q1: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats
Your answer is: **1. Yes**
Please initial here signifying that you have provided the most accurate answer to the question as possible.
APPLICANT INITIALS: _____

Q2: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .
Your answer is: **6. The specific project area (that is, project layout or “footprint”) has not yet been identified, but the land parcel on which the project will occur has been investigated by someone qualified to identify and delineate wetlands, and no wetlands were located. (A written report from the wetland specialist should substantiate this.)**
Please initial here signifying that you have provided the most accurate answer to the question as possible.
APPLICANT INITIALS: _____

2 potential impacts
The Applicant should MAIL a copy of this Project Environmental Review Receipt, a cover letter with project narrative, acreage to be impacted, how construction/maintenance activity is to be accomplished, township/municipality and county where project is located, and a USGS 7.5 minute quadrangle with project boundary and quad name marked on the map.

US Fish and Wildlife Service.
Endangered Species Biologist
315 South Allen Street,Suite 322.
State College, PA 16801

2 potential impacts
The Applicant should MAIL/FAX a copy of this Project Environmental Review Receipt, a cover letter with project narrative, acreage to be impacted, how construction/maintenance activity is to be accomplished, township/municipality and county where project is located, and a USGS 7.5 minute quadrangle with project boundary and quad name marked on the map.

Natural Diversity Section
Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
FAX Number: (814) 359-5175

Please mail only one (1) copy of the project review request. Do not email the project information. Allow 30 days for completion of the project review from the date of PFBC receipt of the project review request.

DISCLAIMER

The PNDI environmental review website is a preliminary environmental screening tool. It is not a substitute for information obtained from a field survey of the project area conducted by a biologist. Such surveys may reveal previously undocumented populations of species of special concern. In addition, the PNDI only contains information about species occurrences that have actually been reported to the Pennsylvania Natural Heritage Program.

Pennsylvania State Programmatic General Permit (PASPGP)

Please note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Chester, Cumberland, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) are required by DEP to comply with the bog turtle habitat screening requirements of the PASPGP.

TERMS OF USE

Upon signing into the PNDI environmental review website, and as a condition of using it, you agreed to certain terms of use. These are as follows:

The web site is intended solely for the purpose of screening projects for potential impacts on resources of special concern in accordance with the instructions provided on the web site. Use of the web site for any other purpose or in any other way is prohibited and subject to criminal prosecution under federal and state law, including but not limited to the following: Computer Fraud and Abuse Act of 1986, as amended, 18 U.S.C. § 1030; Pennsylvania Crimes Code, § 4911 (tampering with public records or information), § 7611 (unlawful use of computer and other computer crimes), § 7612 (disruption of service), §

 APPLICANT INITIALS: _____

7613 (computer theft), § 7614 (unlawful duplication), and § 7615 (computer trespass).

The PNHP reserves the right at any time and without notice to modify or suspend the web site and to terminate or restrict access to it.

The terms of use may be revised from time to time. By continuing to use the web site after changes to the terms have been posted, the user has agreed to accept such changes.

This review is based on the project information that was entered. The jurisdictional agencies and DEP require that the review be redone if the project area, location, or the type of project changes. If additional information on species of special concern becomes available, this review may be reconsidered by the jurisdictional agency.

PRIVACY and SECURITY

This web site operates on a Commonwealth of Pennsylvania computer system. It maintains a record of each environmental review search result as well as contact information for the project applicant. These records are maintained for internal tracking purposes. Information collected in this application will be made available only to the jurisdictional agencies and to the Department of Environmental Protection, except if required for law enforcement purposes—see paragraph below.

This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system consents to such monitoring and is advised that if such monitoring reveals evidence of possible criminal activity, system personnel may provide the evidence to law enforcement officials. See Terms of Use.

In order for this project to be considered for subsequent review, a signed and initialed copy of this receipt is required by the agency or agencies indicated. DEP requires that a signed and initialed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted in applications for permits requiring PNDI review. See DEP PNDI policy at www.naturalheritage.state.pa.us or visit the following websites for further information.

Regional Offices
Http://www.dep.state.pa.us/dep/deputate/fieldops/map.pdf

District Mining Operations
Http://www.dep.state.pa.us/dep/deputate/minres/Districts/homepage/Default.htm

Oil and Gas Management
Http://www.dep.state.pa.us/dep/deputate/minres/OILGAS/CustomerNeeds.htm

Print this Project Review Receipt using your Internet browser's print function and keep it as a record of your search.

Signature: _____

Date: _____

Project applicant on whose behalf this search was conducted:

APPLICANT

 APPLICANT INITIALS: _____

PNDI Project Environmental Review Receipt

Project Search ID: 20051202012682
Project Name: Keating - Sugar Mill
Date: 12/2/2005 8:41:04 AM

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

315 South Allen Street,Suite 322.
State College, PA 16801

Natural Diversity Section
Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
FAX Number: (814) 359-5175

PERSON CONDUCTING SEARCH (if not applicant)

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

The following contact information is for the agencies involved in this Pennsylvania Natural Diversity Inventory environmental review process. Please read this entire receipt carefully as it contains instructions for how to contact these agencies for further review of this particular project.

US Fish and Wildlife Service.
Endangered Species Biologist

 APPLICANT INITIALS: _____

Property Solutions INC.
Environmental & Engineering Consulting

121 Whittendale Drive, 2B • Moorestown, New Jersey 08057 • 856-813-3000 • Fax 856-813-1068

PHASE I ENVIRONMENTAL ASSESSMENT

of

Vacant Building
1001 North Delaware Avenue
Philadelphia, Philadelphia County, Pennsylvania 19123

Prepared for:

Michael J. Asbell
297 North Highland Avenue
Merion, Pennsylvania 19066

Prepared by:

Property Solutions Incorporated
121 Whittendale Drive, 2B
Moorestown, New Jersey 08057

Draft: December 22, 2003
Final: December 29, 2003
Property Solutions Project No. 20033681

	No Further Action	ASTM Non-Scope Considerations	HREC	REC	Opinion of Probable Cost	Refer to Section
Other	X					

Notes / Recommendations: To understand the property and report, you must read the Executive Summary and complete report.

ASTM Recognized Environmental Conditions

(1) Two gasoline service stations, equipped with a total of six underground storage tanks (USTs), are depicted on the opposite side of North Delaware Avenue, across the street from the subject property, on fire insurance maps dated 1950, 1976, 1979, and 1989. The service stations are visible on aerial photographs dated 1965, 1975, 1980, 1985, and 1990. The service stations appear to lie hydrogeologically upgradient of the subject property.

Under the Pennsylvania Land Recycling and Environmental Remediation Standards Act, the owner of a given property is not liable for abating contamination that exists on that owner's property if the contamination demonstrably originated at an off-property location. Therefore, should contamination exist at the subject property, and should it have demonstrably originated at either of the service stations, the owner of the subject property would not be liable for taking remedial actions. Property Solutions further notes that groundwater at the subject property is not used, and the service stations do not appear on the UST or leaking UST databases reviewed by Property Solutions. Therefore, no further action regarding the service stations is recommended at this time.

ASTM Non-Scope Considerations

(2) Property Solutions observed presumed asbestos-containing materials (ACMs) in the form of 12-inch by 12-inch vinyl floor tile and mastic, and 2-foot by 4-foot suspended ceiling tiles. These friable and nonfriable materials were observed to be in slightly damaged to significantly damaged condition.

If the subject building is to remain in its current condition, Property Solutions recommends the preparation of an ACM Operations and Maintenance Plan. Should demolition of the building be planned, a formal asbestos survey by an Asbestos Investigator certified by the City of Philadelphia would be required.

Property Solutions INC. 121 Whittendale Drive, 2B • Moorestown, New Jersey 08057 • 856-813-3000 • Fax 856-813-1068

1.0 INTRODUCTION

Property Solutions Incorporated (Property Solutions) conducted a Phase I Environmental Assessment of the vacant building located at 1001 North Delaware Avenue in Philadelphia, Philadelphia County, Pennsylvania 19123 (subject property) at the request of Michael J. Asbell of Merion, Pennsylvania. The subject property is identified as Parcel ID No. 884019044, according to the Philadelphia Tax Assessor's Office.

A property location map is included in Appendix A.

This Phase I Environmental Assessment was conducted in general accordance with industry-accepted practices, Standard and Poor's Plus Protocol, and American Society for Testing and Materials (ASTM) Standard E 1527-00. The work was authorized by the Notice to Proceed dated November 5, 2003.

1.1 Purpose

The purpose of a Phase I Environmental Assessment is to evaluate issues that may have an impact on the subject property. The goal of this process is to identify the presence or likely presence of hazardous substances or petroleum products on the property and identify conditions that indicate an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface of the property. The purpose of this report is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. This report is also not intended to serve as a compliance assessment of the subject property.

1.2 Scope of Work

This Phase I Environmental Assessment was conducted in accordance with the following Scope of Work:

1. Researched and reviewed available information regarding past owners and occupants of the subject property to assess the potential for contamination resulting from prior on-property activities. Aerial photographs, city directories, topographic maps, interviews and fire insurance maps were utilized, as available.

2. Researched available information regarding immediately adjacent properties for evidence of environmental contamination that could adversely impact the subject property.

3. Interviewed available persons familiar with current and former on-property activities for relevant information regarding potential areas of environmental concern.

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1.5 Special Terms and Conditions

This Phase I Environmental Assessment was prepared in accordance with the stated and agreed upon Scope of Work. No special terms and conditions are applicable to this Phase I Environmental Assessment.

1.6 Reliance

This report has been prepared for the sole benefit of Michael J. Asbell, and may not be relied upon by any other person or entity without the written authorization of Property Solutions.

2.0 GENERAL PROPERTY INFORMATION

2.1 Property Location

Property Location	
Property Name	Vacant Building
Property Address	1001 North Delaware Avenue
Property Town, County, State	Philadelphia, Philadelphia County, Pennsylvania 19123
Property Tax Identification	Parcel ID No. 884019044 (Philadelphia Board of Revision of Taxes)
Property Topographic Quadrangle	Philadelphia, Pennsylvania – New Jersey
Nearest Intersection	North Delaware Avenue and Frankford Avenue
Area Description	Urban commercial and industrial

An excerpt from the USGS 7.5-minute series topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey, locating the subject property, is included in Appendix A.

2.2 Property Description

Property Information	
Property Acreage	0.49 acre (Philadelphia Board of Revision of Taxes)
Property Shape	Rectangular
Property Use	Commercial
Number of Buildings	One

Property Information	
Number of Stories	One
Date of Construction	Early 1900s
Building Square Footage	21,147 square feet (Philadelphia Board of Revision of Taxes)
Basement/Slab-on-grade	Basement
Number of Units	One
Ceiling Finishes	Drywall and 2-foot by 4-foot suspended tiles
Floor Finishes	Ceramic tiles, 12-inch by 12-inch vinyl tiles, carpet, wood, and concrete slab
Wall Finishes	Painted drywall and plaster
HVAC	Electricity and natural gas
Renovation Date	Early 1980s (Ed Frye)
Renovation Description	Conversion of warehouse into nightclub
Vehicular Access	Via North Delaware Avenue
Other Improvements	None
Property Coverage	Footprint of the subject building

2.3 Property Operations

The subject building is currently vacant.

No industrial or manufacturing operations were observed at the subject property at the time of the property visit.

No environmental concerns were identified at the subject property based on the operations observed during the property visit.

2.4 Utilities

Property Solutions was informed by Ed Frye, Maintenance Supervisor, that the following companies and municipality currently provide utility services to the subject property:

Utility	Provider
Electricity	PECO Energy Company (PECO Energy)
Natural Gas	PECO Energy
Sanitary Sewerage	Philadelphia Water Department
Potable Water	Philadelphia Water Department
Solid Waste Removal	None

3.0 PHYSICAL SETTINGS

3.1 Topography/Regional Drainage

Review of the United States Geological Survey (USGS) 7.5-minute series topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey, reveals that the elevation of the subject property ranges from approximately 10 to 15 feet above mean sea level. Topography in the vicinity of the subject property appears to decline to the east, toward the Delaware River. Regional drainage appears to flow toward the east, toward the Delaware River, located approximately 1,000 feet east of the subject property.

A copy of the USGS 7.5-minute series topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey, is included in Appendix A.

3.2 Soils

Based on a review of the United States Department of Agriculture, Soil Conservation Service's Soil Survey of Bucks and Philadelphia Counties Pennsylvania (1975), soils in the area of the subject property are classified as Urban Land. The composition, grade, and structure of Urban Land are variable, the original materials, stratigraphy, and grades having been altered by development.

3.3 Underlying Formation

Based on a review of the map entitled Geologic Map of Pennsylvania (1980) by the Pennsylvania Department of Environmental Resources, Bureau of Topographic and Geologic Survey, the subject property is underlain by the Trenton Gravel Formation. The Trenton Gravel consists of Quaternary-age gravelly sand interstratified with cross-bedded sand and clay-silt beds. It is underlain by Wissahickon schist bedrock.

3.4 Groundwater

Based on a review of National Water Summary (1986) by the United States Geological Survey, the subject property is underlain by unconsolidated sand-and-gravel aquifers.

Based on a review of the above-referenced document and the USGS topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey, it is expected that the depth to shallow groundwater is approximately 5 to 10 feet below ground surface (bgs). Local groundwater is expected to mirror local topography and migrate to the east, toward the Delaware River.

4.0 NEIGHBORING PROPERTIES

Review of neighboring properties from the subject property and from public thoroughfares, and research of available information regarding the neighboring properties, were performed to identify evidence of environmental concerns that could adversely impact the subject property. The subject property is located in a commercial and industrial area of Philadelphia, Pennsylvania.

Direction	Property	Address	Operations
North	Vacant Land	North Delaware Avenue	Undeveloped land
South	Parking Area	North Delaware Avenue	Parking lot
East	Vacant Land	N/A	Undeveloped land
West	George L. Wells Meat Company	North Delaware Avenue	Meat processing
	Jatco	North Delaware Avenue	Automobile Repair
	Vacant Building	North Delaware Avenue	Vacant building

Based on a review of neighboring properties from the subject property and from public thoroughfares, the neighboring properties do not appear to be of the type likely to pose a significant threat to the environmental condition of the subject property. The neighboring properties were not listed in the environmental database reviewed or Envirofacts.

Photographs including the neighboring properties are included in Appendix B.

5.0 HISTORICAL PROPERTY INFORMATION

5.1 City Directories

Source: Environmental Data Resources, Inc. Southport, CT
City Directory Type: R.L. Polk and Company: City Directory Image and The Bell Telephone Company

Year	Address	Listing
1920	1001 North Delaware Avenue (SP)	Malone Watson and Sons
1925	1001 North Delaware Avenue (SP)	Address Not Listed
1930	1001 North Delaware Avenue (SP)	Address Not Listed
1946	1001 North Delaware Avenue (SP)	Address Not Listed
1950	1001 North Delaware Avenue (SP)	Address Not Listed
1954	1001 North Delaware Avenue (SP)	Address Not Listed
1967	1001 North Delaware Avenue (SP)	Shippers and Receivers Co-op Association
1972	1001 North Delaware Avenue (SP)	Service Terminal Corp.
1977	1001 North Delaware Avenue (SP)	Address Not Listed
1982	1001 North Delaware Avenue (SP)	Address Not Listed
1993	1001 North Delaware Avenue (SP)	Address Not Listed
2001	1001 North Delaware Avenue (SP)	Address Not Listed

SP – Subject property

No evidence of environmental concern on the subject property was revealed during a review of the city directories.

5.2 Aerial Photographs

Property Solutions obtained aerial photographs of the subject property and surrounding area for the years 1965, 1975, 1980, 1985, and 1990 from the Delaware Valley Regional Planning Commission of Philadelphia, Pennsylvania. The aerial photographs were reviewed for evidence of environmental concerns on or near the subject property. The following is a discussion of the aerial photograph review:

1965: Review of the 1965 aerial photograph revealed that the subject property consisted of the present-day subject building.

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The adjacent property to the north consisted of a small building of indeterminable use. The adjacent property to the south consisted of a railyard. The adjacent properties to the west, across North Delaware Avenue, consisted of commercial buildings that include the gasoline service station at the intersection of North Delaware Avenue and Frankford Avenue (see Section 5.3). The adjacent properties to the east consisted of a railyard followed by a large industrial building, which corresponds to the Pennsylvania Sugar Refinery as depicted on the historic fire insurance maps in Section 5.3.

1975: Review of the 1975 aerial photograph revealed no major changes to the subject property or adjoining properties in comparison to the 1965 aerial photograph, except for the appearance of the gasoline service station at the intersection of North Delaware Avenue and Shackamaxon Street (see Section 5.3).

1980: Review of the 1980 aerial photograph revealed no major changes to the subject property or adjoining properties in comparison to the 1975 aerial photograph.

1985: Review of the 1985 aerial photograph revealed no major changes to the subject property or adjoining properties in comparison to the 1980 aerial photograph.

1990: Review of the 1990 aerial photograph revealed no major changes to the subject property or the western adjoining properties in comparison to the 1985 aerial photograph.

The easterly and southerly adjoining properties appear to be vacant, and the railyards have been removed.

Review of the aerial photographs revealed that the subject building was constructed prior to 1965.

No evidence of environmental concern on or adjacent to the subject property was revealed during a review of the aerial photographs, except for the two gasoline service stations located along the opposite side of North Delaware Avenue.

Under the Pennsylvania Land Recycling and Environmental Remediation Standards Act, the owner of a given property is not liable for abating contamination that exists on that owner's property if the contamination demonstrably originated at an off-property location. Therefore, should contamination exist at the subject property, and should it have demonstrably originated at either of the service stations, the owner of the subject property would not be liable for taking remedial actions. Property Solutions further notes that groundwater at the subject property is not used, and the service stations do not appear on the UST or leaking UST databases reviewed by Property Solutions. Therefore, no further action regarding the service stations is recommended at this time.

Copies of the aerial photographs are included in Appendix C.

5.3 Fire Insurance Maps

Sanborn fire insurance maps covering the subject property for the years 1916, 1950, 1976, 1979, and 1989 were obtained from Environmental Data Resources, Inc. (EDR) of Southport, Connecticut. The fire insurance maps were reviewed for historical uses and evidence of environmental concern on or near the subject property. The following is a discussion of the fire insurance maps.

1916: Review of the 1916 fire insurance map revealed that the subject property consisted of the present-day subject building. The southern portion of the subject building is identified as the Pennsylvania Railroad's Shackamaxon Street Freight Station, while the northern portion of the subject building is identified as Merchants Warehouse Company. The building is served by a railroad siding.

Review of the fire insurance map revealed that the adjacent property to the north consisted of a railroad water tower, and a small building of indeterminable use. The adjacent property to the south was not depicted on the fire insurance map. The adjacent properties to the west, across North Delaware Avenue, consisted of dwellings, a public bath house, and the J.W. Paxson Company, which consisted of a boiler shop, storage rooms, and a warehouse for foundry supplies. The adjacent properties to the east consisted of a railyard followed by the Pennsylvania Sugar Company refinery, the J. W. Paxson Company (foundry supplies), and the Watson Malone & Sons lumberyard.

1950: Review of the 1950 fire insurance map revealed that the subject property consisted of the present-day subject building. The southern portion of the subject building is identified as occupied by Acme Fast Freight Inc.

Significant changes in comparison to the fire insurance map of 1916 include the appearance of two gasoline service stations with a total of six underground storage tanks (USTs) on the opposite side of North Delaware Avenue at the intersections with Frankford Avenue and Shackamaxon Street.

1976: Review of the 1976 fire insurance map revealed no significant changes on the subject and adjoining properties in comparison to the fire insurance map of 1950.

1979: Review of the 1979 fire insurance map revealed no significant changes on the subject and adjoining properties in comparison to the fire insurance map of 1976.

1989: Review of the 1989 fire insurance map revealed that the subject property consisted of the present-day subject building. The southern portion of the subject building is identified as a cold storage facility.

Review of the fire insurance maps revealed that the subject building was constructed prior to 1916. The fire insurance maps revealed that the subject building was historically used for storage.

No evidence of environmental concern on or adjacent to the subject property was revealed during a review of the fire insurance maps, with exception of the two gasoline service stations located on the opposite side of North Delaware Avenue.

Under the Pennsylvania Land Recycling and Environmental Remediation Standards Act, the owner of a given property is not liable for abating contamination that exists on that owner's property if the contamination demonstrably originated at an off-property location. Therefore, should contamination exist at the subject property, and should it have demonstrably originated at either of the service stations, the owner of the subject property would not be liable for taking remedial actions. Property Solutions further notes that groundwater at the subject property is not used, and the service stations do not appear on the UST or leaking UST databases reviewed by Property Solutions. Therefore, no further action regarding the service stations is recommended at this time.

Copies of the fire insurance maps are included in Appendix D.

5.4 Topographic Quadrangle Map

A review of the USGS 7.5-minute series topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey, was performed to identify evidence of man-made structures, fill areas, and natural features that may have an adverse effect on the environmental condition of the subject property. The Philadelphia, Pennsylvania – New Jersey, topographic quadrangle map was issued in 1967, based on aerial photographs taken in 1965, and photorevised in 1985, based on aerial photographs taken in 1982. Photorevisions are indicated in purple.

Review of the Philadelphia, Pennsylvania – New Jersey, topographic quadrangle map revealed that the subject building is depicted in black on the subject property.

No environmental concerns were identified based upon a review of the Philadelphia, Pennsylvania – New Jersey, topographic quadrangle map.

A portion of the USGS 7.5-minute series topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey, which includes the subject property, is included in Appendix A.

5.5 Prior Use Interviews

Property Solutions interviewed Mr. Ed Frye, Maintenance Supervisor, regarding the history of the subject property. Mr. Frye stated that he has been associated with the subject property for three months. According to Mr. Frye, the subject building was previously used as a warehouse.

No environmental concerns were identified during the interview with Mr. Frye.

5.6 Previous Reports and Plans

Property Solutions did not receive and is not aware of previous environmental reports or plans pertaining to the subject property.

6.0 ENVIRONMENTAL RECORD RESEARCH

6.1 Property-Specific Records

During the course of the assessment of the subject property, Property Solutions contacted the following local, county, and state agencies via phone, letter, or in person.

- Philadelphia Board of Revision of Taxes
  Philadelphia, Pennsylvania

  The subject property is identified as Parcel ID No. 884019044, according to the Philadelphia Board of Revision of Taxes.

- Philadelphia Department of Licenses and Inspections
  Philadelphia, Pennsylvania

  Property Solutions visited the Philadelphia Department of Licenses and Inspections on December 3, 2003. Property Solutions submitted a request to review the zoning folder for the subject property, which contains all available records regarding USTs legally installed or closed from 1936 to the present and contains information on the historic uses of the subject property. No files were located at the Philadelphia Department of Licenses and Inspections for the subject property's address.

- Pennsylvania Department of Environmental Protection
  Southeastern Regional Office
  555 North Lane
  Conshohocken, Pennsylvania

  Property Solutions contacted the DEP with regard to files pertaining to the subject property. The DEP informed property solutions that no files exist for the subject property.

Copies of the letters and records of communication are included in Appendix E.

Property Solutions contacted the United States Environmental Protection Agency (USEPA) through an on-line search via the Internet to obtain information concerning the subject property. Property Solutions performed a search of Envirofacts, a USEPA-generated website that integrates data extracted from five major USEPA program systems: Aerometric Information Retrieval System (AIRS)/AIRS Facility Subsystem (AFS), Comprehensive Environmental Response, Compensation

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and Liability Information System (CERCLIS), Permit Compliance System (PCS), Resource Conservation and Recovery Information System (RCRIS) and Toxic Chemical Release Inventory System (TRIS), using two integrating databases: Facility Index System (FINDS) and Envirofacts Master Chemical Integrator (EMCI).

Property Solutions generated a printout of all facilities under the programs identified above that are located within the subject property's zip code (19123). The subject property and adjoining properties were not listed among the sites identified during the query search. The query was executed on December 18, 2003.

A copy of the search results is included in Appendix E.

6.2 Environmental Database Information

As part of the Phase I Environmental Assessment, Property Solutions utilized Environmental Data Resources, Inc. (EDR) of Southport, Connecticut, as an information source for regulatory agency environmental database records. The environmental database was dated December 4, 2003.

Data supplied by EDR is included in Appendix F.

The following summary of the database information is divided into two parts. The first part lists sites as identified and located by EDR within the specified radii of the subject property. The second part contains a discussion of orphan sites, which could not be radius-located by EDR due to incomplete and/or inaccurate address information included in the United States Environmental Protection Agency (USEPA)/state databases.

Although the exact locations of the orphan sites are frequently unknown, Property Solutions attempts to evaluate the potential adverse environmental impact that these sites may have on the subject property. This evaluation consists of reviewing street names in an effort to learn whether the street on which the site is located lies within the radius of the subject property, a drive-by view of surrounding properties during the site visit, and evaluating the site type and information provided by government agencies. The orphan sites included in the following table are those Property Solutions expects to be located within the identified radius. A complete listing of sites is included in Appendix F.

Environmental Database Summary

Database	Radius	Plottable	Orphan
National Priorities List	1 Mile	0	0
State Hazardous Waste Sites	1 Mile	2	0
Coal Gas Sites	1 Mile	1	0

Database	Radius	Plottable	Orphan
RCRA Corrective Action Treatment/ Storage/ Disposal (TSD) Facilities (CORRACTS)	1 Mile	0	0
CERCLIS Sites	½ Mile	3	0
CERCLIS No Further Remedial Action Planned (NFRAP) Sites	½ Mile	4	0
RCRA Non-Corrective Action TSD Facilities	½ Mile	0	0
Leaking Registered Storage Tank Sites	½ Mile	9	0
Unregulated Leaking Registered Storage Tank Sites	½ Mile	2	0
Solid Waste Landfill Sites	½ Mile	1	0
RCRA Large Quantity Generators	Subject Property and Adjoining Properties	0	0
RCRA Small Quantity Generators	Subject Property and Adjoining Properties	0	0
Registered Storage Tank Sites	Subject Property and Adjoining Properties	0	0
Emergency Response Notification System	Subject Property	0	0

The following is a discussion of the database findings:

Subject and Adjoining Properties

The subject property and adjoining properties were not listed in the environmental database. The subject property and adjoining properties were not listed in the non-ASTM databases that were searched in the EDR database.

State Hazardous Waste Sites

1. Site Name: Evergreen Products
   Address: 948 North Front Street
   Camden City, NJ
   Facility ID No.: NJL8000183451
   Case No.: 90-11-09-1422
   Distance: 1/2 - 1 mile
   Direction: Southeast
   Gradient: Hydraulically separate (opposite side of Delaware River)
   Status: Not Reported
   Lead/ Contact: Not Reported
   Potential for Impact: Low, due to distance and hydraulic separation

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2. Site Name: Pennsylvania Engineering
Address: 1107-1121 Howard Street
Philadelphia, PA
Facility ID No.: PAN000305681
Distance: 1/4 - 1/2 mile
Direction: North-northwest
Gradient: Upgradient
Discovery Date: Not Reported
Preliminary Assessment Date: Not Reported
Screening Site Inspection Date: Not Reported
Potential for Impact: Low, due to distance

3. Site Name: Absco Scrap Yard
Address: 1310-1328 North Second Street
Philadelphia, PA
Facility ID No.: PAN000305882
Distance: 1/4 - 1/2 mile
Direction: West-southwest
Gradient: Upgradient
Discovery Date: Not Reported
Preliminary Assessment Date: Not Reported
Screening Site Inspection Date: Not Reported
Potential for Impact: Low, due to distance

CERCLIS NFRAP Sites

1. Site Name: Sugarhouse Realty, Inc.
Address: Delaware Avenue & Shackamaxon Avenue
Philadelphia, PA
Facility ID No.: PAD987352564
Distance: <1/8 mile
Direction: Northeast
Gradient: Upgradient
Discovery Date: 10/15/91
Preliminary Assessment Date: 4/23/92
Screening Site Inspection Date: Not Reported
Potential for Impact: Low, due to NFRAP status

Leaking Registered Storage Tanks

1.	Site Name:	Dry Ice
	Address:	33-51 East Laurel Street Philadelphia, PA
	LRST ID No.:	51-45502
	Distance:	< 1/8 mile
	Direction:	Northwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Diesel
	Media Impacted:	Not Reported
	Status:	Inactive
	Potential for Impact:	Moderate, due to distance
2.	Site Name:	Pier 40
	Address:	933 Penn Street Philadelphia, PA
	LRST ID No.:	51-36235
	Distance:	< 1/8 mile
	Direction:	South-southwest
	Gradient:	Lateral
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Cleanup Completed
	Potential for Impact:	Low, due to status and gradient
3.	Site Name:	Greyhound Hines Inc.
	Address:	710 North Delaware Avenue Philadelphia, PA
	LRST ID No.:	51-43027
	Distance:	1/4 - 1/2 mile
	Direction:	South-southwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Interim Actions Initiated or Completed
	Potential for Impact:	Low, due to distance

4.	Site Name:	Union Boiler Works Inc.
	Address:	716 North Front Street Philadelphia, PA
	LRST ID No.:	51-41904
	Distance:	1/4 - 1/2 mile
	Direction:	Southwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Inactive
	Potential for Impact:	Low, due to distance
5.	Site Name:	Circle K 2705860
	Address:	600 North Delaware Avenue Philadelphia, PA
	LRST ID No.:	51-43620
	Distance:	1/4 - 1/2 mile
	Direction:	South-southwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Interim Actions Initiated or Completed
	Potential for Impact:	Low, due to distance
6.	Site Name:	Streets Site 012
	Address:	601 North Columbus Boulevard Philadelphia, PA
	LRST ID No.:	51-25127
	Distance:	1/4 - 1/2 mile
	Direction:	South-southwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Inactive
	Potential for Impact:	Low, due to distance

7.	Site Name:	JBM Auto Citgo
	Address:	154 West Girard Avenue Philadelphia, PA
	LRST ID No.:	51-04049
	Distance:	1/4 - 1/2 mile
	Direction:	North-northwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Inactive
	Potential for Impact:	Low, due to distance
8.	Site Name:	Brooks Paint Stores
	Address:	1150-1156 American Street Philadelphia, PA
	LRST ID No.:	51-44117
	Distance:	1/4 - 1/2 mile
	Direction:	Northwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Inactive
	Potential for Impact:	Low, due to distance
9.	Site Name:	Select Beverage Company
	Address:	1342 North Howard Street Philadelphia, PA
	LRST ID No.:	51-43293
	Distance:	1/4 - 1/2 mile
	Direction:	North-northwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Interim Actions Initiated or Completed
	Potential for Impact:	Low, due to distance

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Unregulated Leaking Registered Storage Tanks

1.	Site Name:	Greyhound Hines Inc.
	Address:	710 North Delaware Avenue Philadelphia, PA
	LRST ID No.:	Not Reported
	Distance:	1/4 - 1/2 mile
	Direction:	South-southwest
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Petroleum
	Media Impacted:	Not Reported
	Status:	Not Reported
	Potential for Impact:	Low, due to distance
2.	Site Name:	PECO Delaware Generating Station
	Address:	1325 North Beach Street Philadelphia, PA
	LRST ID No.:	Not Reported
	Distance:	1/4 - 1/2 mile
	Direction:	East-northeast
	Gradient:	Upgradient
	Type of Release:	Not Reported
	Type of Product:	Not Reported
	Media Impacted:	Not Reported
	Status:	Not Reported
	Potential for Impact:	Low, due to distance

Solid Waste Landfills

1.	Site Name:	East Central Incinerator
	Address:	Spring Garden Street and Delaware Avenue Philadelphia, PA 19123
	Facility ID No.:	100509
	Distance:	1/4 – 1/2 mile
	Direction:	South-southwest
	Gradient:	Upgradient
	Type of Operation:	Residential Incinerator
	Authorized Wastes:	Not Reported
	Status:	Not Reported

7.0 PROPERTY VISIT

Property Solutions visited the subject property on December 3, 2003. Matthew Hoyle, Environmental Scientist of Property Solutions, was accompanied during the property visit by Mr. Ed Frye, Maintenance Supervisor. Mr. Frye has been associated with the subject property since October 2003.

Property Solutions did not encounter inaccessible areas during the property visit. Property Solutions is not aware of inaccessible areas. Property Solutions was informed by Mr. Frye that all areas of the subject property were observed during the property visit. Weather conditions at the time of the property visit consisted of sunny skies with an approximate outside air temperature of 40 degrees Fahrenheit.

Property Solutions observed the following areas during the property visit:

- Interior areas of former nightclub
- Basement area
- Exterior grounds
- Former kitchen area
- Storage area
- Former office areas

Photographs taken during the property visit are included in Appendix B.

7.1 ASTM Scope Considerations

7.1.1 Underground Storage Tanks

No evidence of underground storage tanks (USTs) was observed on the subject property during the property visit. Mr. Frye was not aware of USTs on the subject property.

Based upon the above information, no further action is recommended.

7.1.2 Aboveground Storage Tanks

No aboveground storage tanks (ASTs) were observed on the subject property during the property visit. Mr. Frye was not aware of ASTs on the subject property.

Based upon the above information, no further action is recommended.

7.1.3 Polychlorinated Biphenyl-Containing Electrical Equipment

A visual review was conducted for the presence of electrical equipment that could contain polychlorinated biphenyls (PCBs), an environmentally regulated material used in dielectric fluid in some electrical equipment. PECO provides electrical service to the subject property.

A dry-type transformer was observed in the basement of the subject building. This transformer is not expected to pose a threat to the environmental condition of the subject property, due to the absence of liquid coolant.

Based upon the above information, PCB-containing electrical equipment is not expected to be an environmental concern at this time. No further action is recommended at this time.

7.1.4 Hydraulic Equipment

No evidence of hydraulic equipment was observed on the subject property during the property visit. Mr. Frye was not aware of hydraulic equipment on the subject property.

Based upon the above information, no further action is recommended.

7.1.5 Chemical, Hazardous Materials, and Raw Materials Storage and Usage

No chemicals, hazardous materials, or raw materials were observed in storage or use on the subject property during the property visit. Mr. Frye was not aware of chemicals, hazardous materials, or raw materials on the subject property.

Based upon the above information, no further action is recommended.

7.1.6 Waste Generation, Storage, and Disposal

No solid waste was generated at the subject property at the time of the property visit. Sanitary waste generated at the subject property is discharged to the Philadelphia Water Department sanitary sewerage system.

No evidence of hazardous waste generation, storage, or disposal was observed during the property visit. Mr. Frye was not aware of hazardous waste generation on the subject property.

Based upon the above information, no further action is recommended.

7.1.7 Wells, Sumps, Pits, and Floor Drains

No wells, sumps, pits, or floor drains were observed on the property during the property visit. Mr. Frye was not aware of wells, sumps, pits, or floor drains on the subject property.

Based upon the above information, no further action is recommended.

7.1.8 Stormwater Runoff and Surface Water

The subject property is improved with the footprint of the subject building. Stormwater runoff is expected to exit the subject property via overland flow and enter the municipal stormwater collection system via storm drains located along local roadways. Stormwater is also expected to percolate through landscaped areas.

The 1972 Amendments to the Federal Water Pollution Control Act (commonly known as the Clean Water Act [CWA]) prohibit the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the CWA was again amended by Congress to require implementation of a comprehensive national program for addressing problematic non-agricultural, non-point sources of stormwater discharge. The rules and regulations of the NPDES program are included in 40 CFR 122.26.

Stormwater permitting for a property is based on the property's Standard Industrial Classification (SIC) Code (category of industrial activity). However, the NPDES program includes a "no exposure" exemption for facilities within an applicable category of industrial activity. Based on 40 CFR 122.26 B(14), the subject property must obtain an NPDES Stormwater Discharge Permit only if material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery is exposed to stormwater. As materials and activities described above are not associated with the subject property, stormwater permitting is not expected to be applicable at this time.

No surface water bodies (i.e., springs or swamps) were observed on the subject property.

Based upon the above information, stormwater runoff and surface water are not expected to be environmental concerns at this time. No further action is recommended at this time.

7.1.9 Lagoons, Septic Systems, and Separators

No evidence of lagoons, septic systems, or separators was observed on the subject property during the property visit.

Based upon the above information, no further action is recommended.

7.1.10 Stressed Vegetation, Staining, and Odors

No evidence of stressed vegetation, staining, or odors was noted on the subject property during the property visit.

Based upon the above information, no further action is recommended.

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7.1.11 Surficial Disturbance

No evidence of surficial disturbances was observed on the subject property during the property visit.

Based upon the above information, no further action is recommended.

7.1.12 On-Property Dry Cleaners

No dry cleaning operations were observed at the subject property at the time of the property visit. Mr. Frye was not aware of dry cleaning operations at the subject property.

No dry cleaners were identified during the historical review of the subject property. Mr. Frye was unaware of historical dry cleaning operations at the subject property.

7.2 ASTM Non-Scope Considerations

7.2.1 Asbestos-Containing Materials

Property Solutions performed a preliminary review of interior, accessible areas of the subject building for the presence of suspect asbestos-containing materials (ACMs). This limited review was conducted for overview purposes only; additional suspect materials exists in concealed locations (behind walls and ceilings, within machinery, etc.). Also, not all suspect materials may have been sampled due to the condition or the location of the suspect materials. Destructive sampling of suspect ACMs was not performed. Suspect ACMs in an overall undamaged condition were not sampled, as that will damage the materials. Property Solutions will not be responsible for damaging materials or causing the materials to become friable. The USEPA defines asbestos-containing material as material containing greater than one percent asbestos. This review was not a pre-demolition/renovation survey or for regulatory submittal purposes.

Presumed ACMs were observed within the subject building during the property visit. The presumed ACMs are listed in the following tables.

Per the scope of work, samples of suspect ACMs were not collected.

Friable Materials

Sample No.	Description of Material	Material Classification	Sample Location	Condition	Approx. Amount	% Asbestos / Type
NS	2-foot by 4-foot suspended tiles	MISC	Kitchen Area	Slightly Damaged	Not Determined	NS-SACM

NS - Not sampled
SACM - Suspect asbestos-containing material (pre-1981 construction)
Condition- Undamaged, slightly damaged, damaged, significantly damaged
MISC - Miscellaneous

Non-Friable Materials

Sample No.	Description of Material	Material Classification	Sample Location	Condition	Approx. Amount	% Asbestos/ Asbestos Type
NS	12-inch by 12-inch vinyl floor tiles and mastic	MISC	Throughout subject building	Slightly Damaged	Not Determined	NS-PACM

NS - Not sampled
PACM - Presumed asbestos-containing material per OSHA (pre-1981 construction)
Condition- Undamaged, slightly damaged, damaged, significantly damaged
MISC - Miscellaneous

On September 30, 1994, the USEPA issued an Asbestos Sampling Bulletin, detailing new guidelines for the analysis of matrix building materials. The USEPA defines matrix building materials as multi-layered building materials such as vinyl asbestos floor tile, mastic and certain wall boarding. The USEPA recommends the use of transmission electron microscopy (TEM) when analysis of matrix building materials using the PLM method reveals non-detect levels of asbestos fibers. The improved method utilizing TEM analysis is able to detect thin asbestos fibers (i.e., <0.25 mm) that may have been undetectable under PLM analysis.

Based on the limited visual review conducted by Property Solutions, suspect and presumed asbestos-containing ceiling tile and floor tiles were identified at the subject property. These materials were observed to be in an overall slightly damaged condition at the time of the property visit.

Per the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 (Asbestos) (k) (Communication of Hazards), thermal system insulation, surfacing material, and asphalt/vinyl flooring that are present in a building constructed prior to 1981, and have not been analytically tested in accordance with 29 CFR 1926.1101 (k) (5) and determined to be non-ACM, are to be presumed to contain asbestos.

It should be noted that 29 CFR 1926.1101 applies to work activities including demolition or salvage of structures where asbestos is present and construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos.

Review of 29 CFR 1926.1101 (k) (2) (Duties of Building and Facility Owners) reveals that building and/or facility owners must notify the following persons about the location and quantity of ACM and PACM at the work sites in their buildings and facilities:

- Prospective employers applying and bidding for work whose employees can be reasonably expected to work in or adjacent to areas containing ACM and/or PACM.
- Employees of the owner who will work in or adjacent to areas containing ACM and/or PACM.
- On multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing ACM and/or PACM.
- Tenants who will occupy areas containing such material.

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Property Solutions recommends that prior to the performance of any renovations, remodeling, demolition, or repairs by the in-house maintenance or engineering staff or outside contractors, verification sampling of PACM in the proposed work areas should be performed to ensure that no ACM will be impacted by work activities. Any abatement or removal of asbestos-containing materials must be performed in accordance with applicable federal, state, and local regulations.

Based on the date of construction (early 1900s), PACM and vinyl/asbestos flooring may be located on the subject property. As indicated above, per OSHA regulations (29 CFR 1926.1101 (k)), building owners are required, under certain circumstances, to notify maintenance people and all persons potentially exposed to PACM at the facility of the presence and location of materials that contain (or are presumed to contain) asbestos. Thermal system insulation, surfacing material, and asphalt/vinyl flooring materials that are present in a building constructed prior to 1981, and have not been analytically tested and determined to be non-ACM, are to be presumed to contain asbestos, and should be addressed in accordance with 29 CFR 1926.1101, as well as other applicable federal, state, and local regulations.

Currently, there are no regulations requiring the removal of ACM unless it will be disturbed during renovation, repairs, or demolition. The USEPA recommends that as long as the ACM does not pose an imminent health threat, the materials can be managed under an Operations and Maintenance (O&M) Plan. If the subject building is to remain in its current condition, Property Solutions recommends the preparation of an ACM O&M Plan. Should demolition of the building be planned, a formal asbestos survey by an Asbestos Investigator certified by the City of Philadelphia would be required.

7.2.2 Radon

The subject property is located in Zone 3 per the EPA's Map of Radon Zones. According to the environmental database supplied by Environmental Data Resources, Inc., 46 canisters were placed at locations in the subject property's zip code area (19123). The mean value was 2.5 picoCuries per Liter (pCi/L). The USEPA action level is 4.0 pCi/L.

Based on the non-residential use of the subject building, no further action regarding radon is recommended at this time.

7.2.3 Lead-Based Paint

Based on the date of construction of the subject building (early 1900s), there is a potential that lead-based paints (LBPs) were used during building construction. This section is for overview purposes only and was not a lead evaluation or comprehensive survey for regulatory submission or predemolition/renovation.

Painted surfaces within the subject building were generally observed to be in a slightly damaged condition. Based on the commercial use of the subject building, LBP is not expected to be an environmental concern. No further action is recommended at this time.

7.2.4 Lead in Drinking Water

Drinking water for the subject property is provided by Philadelphia Water Department. The Philadelphia Water Department was required to perform system-wide lead screening of their water system starting in 1992, under the USEPA "Lead and Copper Regulations" (Federal Register Volume 56, No. 26460). These regulations, promulgated in June1991, require public water systems to perform screening and provide for public notification and corrective action to reduce the lead hazards present in the water system.

According to the Philadelphia Water Department's, 2002 Drinking Water Quality Report, the Philadelphia Water Department's public water supply has met the 90th percentile for the lead action level of 15 parts per billion (ppb), and is currently in compliance with the USEPA's Lead and Copper Regulations.

7.2.5 Potential Wetlands

No evidence of wetland areas was observed on the subject property during the property visit.

Based upon the above information, wetland areas are not expected to be an environmental concern at this time. No further action is recommended.

7.2.6 Air Emissions

No major air emissions sources were identified at the subject property during the property visit.

Based upon the above information, no further action is recommended.

7.2.7 Mold/Water Intrusion

Molds produce tiny spores to reproduce, which waft through the indoor and outdoor air continually. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. There are molds that can grow on wood, paper, carpet, and foods. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or un-addressed. There is no practical way to eliminate all molds and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture. In addition, mold growth may be a problem after flooding.

Standards or Threshold Limit Values (TLVs) for airborne concentrations of mold, or mold spores, have not been set. Currently, there are no USEPA regulations or standards for airborne mold contaminants.

Mr. Frye was unaware of past water damage or historic leaks.

No obvious visual evidence of mold, water intrusion, water damage, or standing water was observed in the interior portions of the subject building accessed by Property Solutions during the property visit. No musty odors indicative of a moisture problem or porous materials such as carpets and insulation in damp niches were observed during the property visit. No botanical materials such as bark chips or potted plants in moist locations such as an atrium were observed during the property visit. No indoor water features such as fountains, indoor waterfalls, or indoor swimming pools were observed in the subject building. Mr. Frye was unaware of reported odor complaints, allergic reactions, or other symptoms possibly associated with mold growth. No problems evident in the building envelope or problematic conditions surrounding the air intake were observed. No operatives conducive to bioaerosol generation such as animal confinement operations, agricultural activities, or wetlands were observed on the subject property or adjacent properties. This limited visual review was conducted for overview purposes only; mold exists in concealed locations (behind walls, wallpaper, and ceilings, etc.). Mr. Frye was unaware of mold, water intrusion, water damage, standing water, or historic floods at the subject property.

Based upon the above information, mold growth and water intrusions are not expected to be an environmental concern at this time. No further action is recommended.

8.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I Environmental Assessment in conformance with the scope and limitations of ASTM Practice E1527-00 of the vacant building located at 1001 North Delaware Avenue in Philadelphia, Philadelphia County, Pennsylvania 19066. Any exceptions to, or deletions from, this practice are described in Section 1.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property, except for the following.

(1) Two gasoline service stations, equipped with a total of six underground storage tanks (USTs), are depicted on the opposite side of North Delaware Avenue, across the street from the subject property, on fire insurance maps dated 1950, 1976, 1979, and 1989. The service stations are visible on aerial photographs dated 1965, 1975, 1980, 1985, and 1990. The service stations appear to lie hydrogeologically upgradient of the subject property.

Under the Pennsylvania Land Recycling and Environmental Remediation Standards Act, the owner of a given property is not liable for abating contamination that exists on that owner's property if the contamination demonstrably originated at an off-property location. Therefore, should contamination exist at the subject property, and should it have demonstrably originated at either of the service stations, the owner of the subject property would not be liable for taking remedial actions. Property Solutions further notes that groundwater at the subject property is not used, and the service stations do not appear on the UST or leaking UST databases reviewed by Property Solutions. Therefore, no further action regarding the service stations is recommended at this time.

This following ASTM non-scope consideration was identified at the subject property based on the findings provided in this report:

(2) Property Solutions observed presumed asbestos-containing materials (ACMs) in the form of 12-inch by 12-inch vinyl floor tiles and 2-foot by 4-foot suspended ceiling tiles. These friable and nonfriable materials were observed to be in slightly damaged to significantly damaged condition.

If the subject building is to remain in its current condition, Property Solutions recommends the preparation of an ACM Operations and Maintenance Plan. Should demolition of the building be planned, a formal asbestos survey by an Asbestos Investigator certified by the City of Philadelphia would be required.

9.0 REFERENCES

9.1 Information Sources

1. United States Geological Survey's 7.5-minute topographic quadrangle map of Philadelphia, Pennsylvania – New Jersey.
2. United States Department of Agriculture, Soil Conservation Services' Soil Survey of Philadelphia and Bucks County, Pennsylvania.
3. Geologic Map of Pennsylvania produced by the Pennsylvania Department of Environmental Resources.
4. National Water Summary dated 1986 produced by the United States Geological Survey.
5. EPA's Map of Radon Zones by the United States Environmental Protection Agency.

9.2 Definitions

Adjoining properties – any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with that of the property but for a street, road, or other public thoroughfare separating them.

Appropriate inquiry – that inquiry constitution "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in CERCLA, 42 USC§9601(35)(B), that will give a party to a *commercial real estate* transaction the *innocent landowner defense* to CERCLA liability (42 USC§9601(A) and (B) and §9607(b)(3)), assuming compliance with other elements of the defense.

Data failure – a standard historical source may be excluded (1) if the source is not reasonably ascertainable, or (2) if past experience indicates that the source is not likely to be sufficiently useful, accurate, or complete in terms of satisfying7.3.2 (uses of the property).

Historical recognized environmental condition – environmental condition which in the past would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently. The final decision rests with the environmental professional and will be influenced by the current impact of the historical recognized environmental condition on the property. If a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an historical recognized environmental condition and included in the findings section of the Phase I Environmental Assessment report. The environmental professional shall provide an opinion of the current impact on the property of this historical recognized environmental condition in the opinion section of the report. If this historical recognized environmental condition is determined to be a recognized environmental condition at the time of the Phase I Environmental Assessment is conducted, the condition shall be identified as such and listed in the conclusions section of the report.

Material threat – a physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the environmental professional, is threatening and might result in impact to public health or the environment. An example might include an aboveground storage tank that contains a hazardous substance and which shows evidence of damage. The damage would represent a material threat if it is deemed serious enough that it may cause or contribute to tank integrity failure with a release of contents to the environment.

Practically reviewable – information that is practically reviewable means that the information if provided by the source in a manner and in a form that, upon examination yields information relevant to the property without the need for extraordinary analysis of irrelevant date. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the property or a geographic area in which the property is located are not generally practically reviewable.

Publicly available – information that is publicly available means that the source of the information allows access to the information by anyone upon request.

Reasonably Ascertainable/ Standard Sources – availability of record information varies from information source to information source, including governmental jurisdictions. The user or environmental professional is not obligated to identify, obtain, or review every possible record that might exist with respect to a property. Instead, this practice identifies record information that shall be reviewed from standard sources, and the user or environmental professional is required to review only record information that is reasonably ascertainable to those standard sources. Record information that is reasonable ascertainable means (1) information that is publicly available, (2) information that is obtainable from its source within reasonable time and cost constraints, and (3) information that is practically reviewable.

Reasonable time and cost – information that is obtainable within reasonable time and cost constraints means that the information will be provided by the source within 20 calendar days of receiving a written, telephone, or in-person request at no more than an nominal cost intended to cover the source's cost of retrieving and duplicating the information. Information that can only be reviewed by a visit to the source is reasonably ascertainable if the visit is permitted by the source within 20 days of request.

Recognized environmental conditions – the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions.

User – the party seeking to use Practices E 1527 or E 1528 to perform an environmental assessment of the property. A user may include, without limitation, a purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager.

9.3 Acronyms

ACM – asbestos-containing material
AST – aboveground storage tank
ASTM – American Society for Testing and Materials
bgs – below ground surface
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act of 1980 (as amended, 42 USC § 9601 et seq.)
CERCLIS – Comprehensive Environmental Response, Compensation and Liability Information System (maintained by EPA)
CFR – Code of Federal Regulations
CORRACTS – facilities subject to Corrective Action under RCRA
EA – environmental assessment
ECRA – Environmental Cleanup Responsibility Act
EDR – Environmental Data Resources, Inc.
EPCRA – Emergency Planning and Community Right to Know Act ((also known as SARA Title III), 42 USC § 11001 et seq.)
ERNS – Emergency Response Notification System
FOIA – United States Freedom of Information Act (5 USC § 552 et seq.)
HREC – historical recognized environmental condition
ISRA – Industrial Site Recovery Act
LBP – lead-based paint
LRST – leaking registered storage tank

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LUST – leaking underground storage tank
MSDS – material safety data sheet
NCP – National Contingency Plan
NFRAP – former CERCLIS sites where no further remedial action is planned under CERCLA
NPDES – national pollutant discharge elimination system
NPL – National Priorities List
NVLAP – National Voluntary Laboratory Accreditation Program
OSHA – Occupational Safety and Health Administration
PACM – presumed asbestos-containing material
PCBs – polychlorinated biphenyls
PLM – polarized light microscopy
PRP – potentially responsible party (pursuant to CERCLA 42 USC § 9607(a))
RCRA – Resource Conservation and Recovery Act (as amended, 42 USC § 6901 et seq.)
RCRIS – Resource Conservation and Recovery Act Information System
REC – recognized environmental condition
ROC – record of communication
RST – registered storage tank
SACM – suspect asbestos-containing material
SARA – Superfund Amendments and Reauthorization Act of 1986 (amendment to CERCLA)
SIC – Standard Industrial Classification
TEM- transmission electron microscopy
TSDF – hazardous waste treatment, storage or disposal facility
USC – United States Code
USEPA –United States Environmental Protection Agency
USGS – United States Geological Survey
UST – underground storage tank

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REMEDIAL INVESTIGATION, RISK ASSESSMENT AND CLEANUP PLAN REPORT

Land Recycling Program

Submitted to:

Mr. Bruce A. McClain, P.G.
Commonwealth of Pennsylvania
Department of Environmental Protection
Bureau of Land Recycling and Waste Management
Environmental Cleanup Program

On Behalf of:

LHTW Corporation
32 Loockerman Square
Suite L-100
Dover, DE 19904

March 2002

Project No. 079-02

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1.0 EXECUTIVE SUMMARY

This facility was utilized for the refining of sugar from approximately the late 1800's until 1980. Since 1980 the facility has been vacant and idle. The facility was purchased by LHTW Corporation (LHTW) in May of 1996. LHTW subsequently completed the demolition of all onsite buildings with the associated asbestos abatement and the decommissioning of the six onsite underground storage tanks (USTs).

LVI Environmental Services, Inc. (LVI) was hired as the prime demolition and environmental remediation contractor and Synertech, Inc. (Synertech) was contracted as the owner's onsite consulting representative. Brown Environmental was originally subcontracted by LVI to offer technical assistance during the removal of the underground storage tanks (USTs) in 1997. In August of 2000 and in March of 2001 Brown Environmental was contracted by LHTW to continue the site characterization process and to develop remedial plans.

A significant amount of asbestos abatement (over 1,000,000 pounds) was performed at this facility prior to the two stage implosion initiated in 1997. The initial UST work was completed prior to and concurrently with the demolition activities associated with the building implosion. Two distinct subsurface areas of concern (AOC), each possessing three USTs were identified: AOC A: Fuel Oil USTs [(1) 17,500 gallon No. 6 Fuel Oil UST & (2) 13,000 gallon No. 4 Fuel Oil USTs]; and AOC B: Leaded Gasoline & Diesel USTs [(1) 4,000 gallon Leaded Gasoline UST & (2) 4,000 gallon Diesel USTs]. Fuel Oil, Leaded Gasoline, and Diesel Fuel were discharged to the subsurface at the site from the two areas of concern. In both AOCs, the removal of the locally impacted soil was completed at the time of the UST decommissioning in order to halt further contribution to the existing environmental impact.

Low concentrations of discharged product from AOC A: Fuel Oil USTs was observed to encompass approximately 2.4 acres of the site with boundaries roughly defined by TP-1, TP-3, and TP-15. Analysis indicated that the residual product is comprised of a non-mobile plume of non-volatile, high molecular weight hydrocarbons that has not, and will not leave the subject property. All potential pathways of exposure to the residual product are eliminated through a combination of proposed engineering and institutional controls in the presented Cleanup Plan. These corrective actions include: Source Removal; Pathway Elimination; and Natural Attenuation. A reduction to five in the total number of required groundwater sampling rounds is requested due to a lack of detection of any contaminants in the four most recent of five total sampling rounds.

Discharged product from AOC B: Leaded Gasoline and Diesel USTs was observed in the local area under the product piping and the UST invert. The impacted soil was removed and ten confirmatory samples were collected at the time of the UST decommissioning with no samples exhibiting concentrations above the noted screening level for chemicals of concern. Upon returning to the site in order to further characterize these AOCs, two test pits were completed in association with this area to ensure the completeness of the initial source removal. In addition, a downgradient well was installed to assess the local groundwater quality associated with this AOC. No target contaminants were detected in any of the soil or groundwater samples. As such, no primary or secondary sources, transport mechanisms, or points of exposure exist for this AOC. Therefore, no further evaluation, assessment, or remedial actions are proposed for this AOC.

2.0 INTRODUCTION

This facility was utilized for the refining of sugar from approximately the late 1800's until 1980. Since 1980 the facility has been vacant and idle. The facility was purchased by LHTW Corporation (LHTW) in May of 1996. LHTW subsequently completed the demolition of all onsite buildings with the associated asbestos abatement and the decommissioning of the six onsite underground storage tanks (USTs). LVI Environmental Services, Inc. (LVI) was hired as the prime demolition and environmental remediation contractor and Synertech, Inc. (Synertech) was contracted as the owner's onsite consulting representative.

A significant amount of asbestos abatement (over 1,000,000 pounds) was performed at this facility prior to the two stage implosion in November of 1997. Brown Environmental was originally subcontracted by LVI to offer technical assistance during the removal of the six underground storage tanks (USTs) located at the facility. The initial UST work was completed prior to and concurrently with the demolition activities associated with the building implosion in 1997.

Two distinct subsurface areas of concern (AOC), each possessing three USTs were identified: AOC A: Fuel Oil USTs [(1) 17,500 gallon No. 6 Fuel Oil UST & (2) 13,000 gallon No. 4 Fuel Oil USTs]; and AOC B: Leaded Gasoline & Diesel USTs [(1) 4,000 gallon Leaded Gasoline UST & (2) 4,000 gallon Diesel USTs].

AOC A: Fuel Oil USTs

The fuel oil USTs were located and efforts to expose the top of the USTs were immediately initiated. Several impedances to the routine progress of this work were encountered. First, the USTs were located in an alley between one standing structure and demolition debris from a second structure. The track excavator was unable to maneuver laterally from the end-to-end arrangement of the storage tanks due to the physical barriers presented by the remaining debris and structure. In addition, the storage tanks were placed within formidable reinforced concrete vaults compounding the difficulty in utilizing the excavator. A breaker was employed to crack the concrete atop the UST areas and an excavator was utilized to remove the ruble. However, the bulk of the overlying soils had to be hand excavated in order to expose the tank tops due to the aforementioned barriers.

Upon exposing the tank tops, manways were cut to gain access. All three USTs in this AOC were found to contain soil and/or sand material. The pump down of the contained bulk fluids was initiated concurrently with the cutting of the tops of the tanks with acetylene torches in order to gain the required access for mechanized equipment that would be required to remove the volume of soil/sand encountered within the USTs.

Following the removal of the tank tops, the ability of the excavator to remove the soils from within the USTs was once again frustrated by the lack of maneuverability due to the physical barriers on either lateral side. In addition, the limited space forced the distant placement of the removed materials which served to reduce the efficiency of the excavation activities.

Attempts were made to break out the vertical concrete walls surrounding the storage tanks in an effort to pull the tanks from the ground, but the limited maneuverability thwarted reasonable progress. The product piping was easily accessible to our equipment and was therefore decommissioned. Upon exposing the piping, significant corrosion was observed and it was apparent

that the product piping had lost it's integrity. Some of the soils below the product piping were removed in order to access the concrete vault with the breaker extension. All removed soils were placed atop and covered with poly sheeting to ensure proper management. Further attempts were made to remove the vertical concrete walls, but progress was unacceptably slow due to the angle at which the breaker had to attack the wall. The breaker continued to slip off of the wall within the first several hits.

Following discussions with LVI personnel, it was agreed by both Brown Environmental and LVI that due to the impending implosion schedule and the poor efficiency due to the physical barriers in the fuel oil UST area, Brown Environmental would demobilize from the site and return following the clearance of the demolition rubble. Despite the aforementioned impedances, 11,345 gallons of contained product and or sludge materials and 99.65 tons of impacted soil were removed from the USTs and the localized area and properly manifest to recycling facilities (Please See Attachment A).

Following the implosion of the building and the clearing of the demolition debris, Brown Environmental remobilized to the site and decommissioned the three fuel oil tanks as better access surrounding the area was possible. An additional 5,540 gallons of an oil/water mix was removed from these USTs prior to their decommissioning. Upon removing the three USTs, an additional 765.56 tons of localized impacted soil was excavated, placed atop and covered with poly sheeting, sampled for waste classification parameters, properly manifest and transported to Soil Safe, Inc. in Salem, NJ (Please See Attachment A). This AOC was observed to contain a much larger footprint than the localized area and discussions were initiated regarding assessment and remedial alternatives for this AOC with LHTW, LVI and Synertech.

AOC B: Leaded Gasoline and Diesel USTs

A total of 6,885 gallons were removed from within the leaded gasoline and the diesel USTs. Upon exposing the tank tops, one of the diesel USTs had been crunched along the top. Manways were cut in the three tanks upon the clearance of the interior atmosphere. The gasoline tank was entered utilizing self-contained breathing apparatus for respiratory protection following the inerting of the interior with nitrogen gas. Following the cleaning, all USTs, associated piping and appurtenant equipment were removed and taken to a recycling facility with the other scrap tonnage from the demolition of the building.

Contamination was observed in the base of the diesel excavation. The PID meter was utilized to field screen and track the horizontal and vertical extent. All impacted soils associated with this discharge were excavated and set atop and covered with poly sheeting.

In addition to the diesel discharge, impacted soils were located along the gasoline product piping line in close proximity to the pump island. The PID meter was utilized to field screen and track the horizontal and vertical extent. All impacted soils associated with this discharge were excavated and set atop and covered with poly sheeting. The excavation, and contaminant migration, was halted by the existence of a concrete foundation for a former elevator shaft. The excavated soil was stockpiled onsite while awaiting removal.

A total of 200.63 tons of localized impacted soil was excavated, placed atop and covered

with poly sheeting, sampled for waste classification parameters, properly manifest and transported to Soil Safe, Inc. in Salem, NJ (Please See Attachment A).

Brown Environmental was contracted by LHTW in August of 2000 and in March of 2001 to continue the site characterization process and to develop remedial plans. The remainder of this report describes the assessment activities completed by Brown Environmental beyond the initial UST decommissionings and local soil removal activities.

2.1 SITE PHYSICAL DESCRIPTION

The site physical description information was collected through the completion of UST decommissiong activities, site assessment activities, site reconnaissance and the review of reference materials.

2.1.1 Site Location

The subject property is located in the Fifth Ward of Philadelphia County (Please See Figure 3 - Site Location Map). The site is a consolidation of multiple parcels with addresses as follows: 941-967 Delaware Avenue & 1015-1025 Delaware Avenue, Philadelphia, PA 19125.

2.1.2 Current Site Improvements/Uses

Presently, the applicable parcels associated with the pertinent AOCs are vacant with no onsite structures. The site possesses overhead electric and underground gas and water utility lines. The onsite utilities have been shut off since the demolition activities in 1997. No stormwater collection systems, telephone, or sanitary lines have been identified on the subject property (Please See Plate 1).

2.1.3 Topography and Surface Water Hydrology

The United States Geological Survey provides topographical map coverage for the site in the Philadelphia, PA-NJ, 7.5 Minute Quadrangle. The elevation of the subject property has an approximate variation between 19-20 feet above mean sea level. The site possesses a downgradient slope to the south and is crowned effecting stormwater drainage to the southwest and to the northeast. As the majority of the site possesses overgrown vegetation and the underlying construction materials are highly heterogeneous, a majority of the stormwater will recharge the local groundwater. The stormwater runoff is collected in culverts and discharged directly to the Delaware River.

Several catch basins are located along Delaware Avenue. The stormwater is diverted for eventual discharge to the Delaware River through the public storm sewer system.

2.1.4 Geology, Soils and Hydrogeology

The Pennsylvania Geological Survey, *Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania,* 1981, Philadelphia Quadrangle, reports the Trenton Gravel (Qt) Formation as the underlying formation below the subject property. The formation consists of a gray to reddish-brown

very gravelly sand with clay-silt interbedded layers. It contains weathered gravel of granite, sandstone, gneiss, siltstone, and quartzite. The formation typically possesses a high porosity and permeability producing yields in excess of 1,000 gallons per minute.

The soil overlying the Trenton Gravel Formation is of unknown origin as it was imported to the area as a fill material. The site is a compilation of multiple piers that were backfilled both atop and around the former footprints. In addition, the site was extended further into the Delaware River beyond the original pier line. The fill material consists of brick, crushed stone, boulders, wood fragments, cinder materials, sand, gravel, and river silt. The shallow subsurface soil was determined to be highly variable, as noted during test pit excavations and monitoring well installation activities, with the presence of the original wooden piers, pilings, cribbing structures, building foundations, basement concrete slabs, etc. (Please See Attachment C).

The tidal and seasonal fluctuations and weather conditions collectively effect the depth to groundwater which varies under normal conditions onsite from a minimum of approximately 9 feet below ground surface (bgs) to a maximum of approximately 18.5 feet bgs at various locations. According to the *Tide Tables 2000, High and Low Water Predictions, East Coast of North and South America* produced by the National Oceanic and Atmospheric Administration, the daily tidal fluctuation of the Delaware River is between 5.5 to 7 feet. Based upon observations of test pit excavations, groundwater monitoring wells, and chemical migration patterns, a substantial tidal influence exists on approximately one third of the subject property closest to the river. This effect dampens with distance from the river. The groundwater flow direction has been determined to be toward the southeast corner of the property based upon monitoring well elevation data. The tidal fluctuations effect the hydraulic gradient, but not the flow direction (Please See Figures 1, 2).

2.2 *AOC DESCRIPTIONS*

Two distinct Areas of Concern were identified during demolition activities. These AOCs included:

1. AOC A: Fuel Oil USTs
2. AOC B: Leaded Gasoline & Diesel USTs

The specific locations of the underground storage tanks associated with AOC A & B are indicated on Plate 1 - Site Plan.

2.2.1 *AOC A: Fuel Oil USTs*

Three underground storage tanks were utilized for onsite operations including sugar refining and power generation. Two of the USTs were 13,000 gallons in capacity and did not contain interior heating elements. The third UST possessed a 17,500 gallon capacity and was equipped with heating coils. Based upon these facts and the consistency of product left in the tanks when they were removed, the USTs were determined to contain No. 4 and No. 6 fuel oil, respectively.

2.2.2 *AOC B: Leaded Gasoline & Diesel USTs*

Three 4,000 gallon underground storage tanks were utilized for onsite motor fueling. One

tank contained leaded gasoline while the remaining two contained diesel fuel. One pump island associated with the leaded gasoline UST was present at the time of decommissioning.

3.0 SITE CHARACTERIZATION

The goal of the Site Characterization is to determine the presence of an environmental discharge and to identify the current horizontal and vertical extent of contaminant migration. This information is then utilized in conjunction with the geological, hydrogeological, and geochemical properties of the subsurface environment in order to predict the migratory tendencies of a discharge and to identify the remedial course and objectives.

3.1 ASSESSMENT METHODS

The following sections detail the methods used to collect representative soil and groundwater samples.

3.1.1 Test Pit Excavations

Test pit excavations were used as the subsurface assessment technique out of necessity due to the nature of the materials at the site. In order to gain access to the subsurface, two excavators, one with a bucket and one with a breaker attachment, were necessary on most of the site due to the presence of concrete slabs and other obstructions. The test pit excavations were completed, where feasible, to depths ranging from between one and twenty-two feet below ground surface where either the groundwater, the reach of the excavator, or refusal was encountered.

The removed soils were field screened with a H-Nu Photoionization Detector (PID) and physically inspected in order to qualitatively identify relative concentrations of contaminants. The soil samples with the highest PID readings were placed into properly preserved laboratory provided glassware and/or collected via an Encore sampler, individually packed, and placed into a cooler with ice and a chain-of-custody. The samples were kept at 4 degrees Celsius from the time of sample collection until the delivery to the selected laboratory.

3.1.2 Groundwater Monitoring Well Installation and Sampling

An initial attempt was made to utilize a hollow stem auger rig onsite prior to our knowledge of subsurface conditions. Drilling was determined to be infeasible with this rig. Next, a mud rotary drilling rig was utilized. This was determined to be infeasible as a 25 foot drill rod was twisted and destroyed due to the invariable nature of the subsurface (concrete footers, foundations, pilings, etc). Finally, two excavators, as previously described, were mobilized to the site in order to install 8" steel casing down to approximately 16' bgs through the variable fill material. The mud rotary rig was again mobilized and was able to place the drill rod and bit through the steel casing to a depth of approximately 16' bgs and initiate drilling into the native materials. Unfortunately, we still struck many different obstructions below the casing depth such as wooden piers, pilings, etc., causing drilling production to be low and hampering the total depth of some wells. In addition, significant quantities of drilling muds were necessary to maintain the borehole wall seal as a significant quantity of water and mud were lost during the process due to the high void space between large concrete

blocks, etc. MW-1 through MW-6 were initially installed with this method. Upon initial characterization, MW-7 through MW-9 were installed with the same process. All groundwater monitoring wells were completed with 4" PVC casing and well screen (Please See Attachment E).

Due to the large quantity of mud consumed during the drilling process, thorough well development was considered critical to the collection of representative samples. To ensure proper development, multiple iterations of well pumping, surging, and air lifting were necessary based upon observation and conductivity measurements.

All wells were purged prior to any sampling event as specified in the PA DEP Groundwater Monitoring Guidance Manual utilizing a groundwater pump at a flow rate of less than 100 ml/min. Groundwater sampling occurred upon stabilization of the pH, the conductivity, and the temperature parameters, but not prior to at least three well volumes. Upon collection, the samples were placed into properly preserved laboratory provided glassware, individually packed in bubble wrap, and placed into a cooler with ice and a chain-of-custody. The samples were kept at 4 degrees Celsius from the time of sample collection until the delivery to the selected laboratory.

The well installation process was field directed by Mr. Andreis Westerbaan, PG. The hydrogeological data collection and interpretation process, including flow direction, hydraulic gradient and hydraulic conductivity measurements and calculations, was managed by Mr. Mark Irani, P.G. Interpretations of all collected groundwater data can be found in Attachment H, Figure 1, and Figure 2.

3.1.3 Equipment Decontamination Procedures

A temporary decontamination station was constructed in the work area. Clean glassware with the proper preservation fluids was always provided by the selected laboratory. All equipment that came into contact with the soil or groundwater was decontaminated between sample events using the following protocol:

1. Rough wash with water
2. Wash with liquinox and water
3. Rinse with water
4. Spray with Nitric Acid, if analyzing for metals
5. Rinse with deionized water
6. Air dry

3.2 ASSESSMENT FINDINGS

The following section details the results of our site characterization efforts. Please note that we have a significant amount of data (five rounds of sampling on MW-4) and we are presenting all data collected to date with this report in order to assist in the full characterization of present conditions. We intend to use portions of this data as part of the Final Report.

We are using the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 in a residential scenario as our screening level to determine the compounds of concern at the site. The use of these standards is considered inherently conservative and therefore, will serve as an initial indication as to which compounds require further analysis under the Site-Specific Standard.

3.2.1 AOC A: Fuel Oil USTs

The type of fill material varies greatly throughout the site making soil classification incongruous (See Attachment C). The three fuel oil tanks were set in a concrete vault. The vault did not appear to be water, or oil, tight and reached to a total depth of twelve feet bgs. The discharge point was through the product piping as it was severely corroded upon removal. The fuel oil discharged from this area did not have to travel more than one to two feet to reach the groundwater surface as it filled the concrete vault. As previously noted, the localized impacted soil was removed upon UST decommissioning.

The discharged fuel oil was easily observed and tracked due to it's black color. The residual product was observed encompassing approximately 2.4 acres of the site with boundaries approximately defined by TP-1, TP-3 and TP-15. The impacted soil, beyond the local area, possessed very low concentrations of volatiles as measured by the PID meter during field activities. Despite the observation of the residual products, a very limited number of samples within this area exhibited concentrations exceeding the noted screening levels for the target parameters during this investigation as detailed below.

3.2.1.1 Soil

Out of 11 collected subsurface samples, 10 were collected from within the saturated zone, in close proximity to the groundwater interface where the residual discharge was consistently observed. Three of eleven samples collected exhibited concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for residential sites for Benzo (a) pyrene (Please See Tables 1 and Plate 1).

3.2.1.2 Groundwater

All onsite monitoring wells, with the exception of MW-6, were utilized to assess this AOC. During the first round of sampling, Chrysene and Pyrene were detected in MW-4 at concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for residential sites. However, in four subsequent rounds of sampling, no concentrations above the MDL were detected for these compounds in MW-4 (Please See Table 4 and Plate 1). No other target compounds were detected above the noted screening level in any of the other onsite wells (Please See Table 3 and Plate 1).

Following the noted detections in MW-4, three additional monitoring wells (MW-7, 8, 9) were installed downgradient to determine the water quality between MW-4 and the Point of Compliance. In two rounds of sampling, no concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for residential sites for target compounds were detected (Table 3).

Please note that the MDL exceeded the noted screening level for MW-3 on the 12/20/00 sample round due to a dilution of the sample by the selected laboratory. A third round was collected for this well which confirmed that all target compound concentrations were below the noted screening levels.

3.2.2 AOC B: Leaded Gasoline & Diesel USTs

These three tanks and associated piping were set under a concrete refueling pad. The associated vent lines were still present at the time of removal in 1997. A pump island and associated product lines were still present only for the Leaded Gasoline UST system. Following the subsequent removal of the UST systems, a total of 200.63 tons of localized impacted soil was excavated, placed atop and covered with poly sheeting, sampled for waste classification, and transported to SoilSafe, Inc. in Salem, NJ for recycling (Please See Attachment A). None of the ten clearance samples, collected by Synertech, from unsaturated soil exhibited concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for Leaded Gasoline and/or Diesel Fuel parameters on residential sites (Please See Table 6 and Attachment A). Please note that the target parameters selected were based upon the guidance in effect at the time of sampling in 1997.

3.2.2.1 Soil

During the present investigation, two samples were collected from this area of concern to identify whether any indication of remaining contaminants exists following the impacted soil removal in 1997. Two test pits were completed: one within the former UST excavation and one downgradient. Both samples were collected from within the saturated zone near the groundwater interface in order to bias our locations toward the presence of contaminants. Neither sample collected from within the saturated zone, in close proximity to the groundwater interface, exhibited concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for residential sites for Leaded Gasoline or Diesel Fuel parameters (Please See Tables 2 and Plate 1).

3.2.2.2 Groundwater

One groundwater monitoring well (MW-6) was installed within the downgradient test pit (TP-18) to assess the general groundwater quality associated with this AOC. No Leaded Gasoline or Diesel Fuel compounds were detected in this well during two rounds of sampling at concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for residential sites (Please See Table 5 and Plate 1).

3.3 SITE CONCEPTUAL MODEL

The following site conceptual model summarizes the data collected during the Site Characterization in a narrative form in order to identify possible routes of exposure currently existing or that may exist in the future based upon the anticipated land use. The site conceptual model will be utilized to assess routes of exposure in the risk assessment sections.

3.3.1 AOC A: Fuel Oil USTs

Nearly the entire land surface at the site has been constructed through the placement of large volumes of heterogeneous fill material on top of and around former piers. The underlying Trenton Gravel formation possesses a high hydraulic conductivity and porosity as previously noted, but does

not influence this site as it is located well below the potentiometric surface. The contaminant migration occurred very slowly at the groundwater interface as the observed impacted soil has a very minimal thickness of 3-12 inches on the upper 2/3 of the site over a widespread area in the direction of groundwater flow.

On the back 1/3 of the property (approximately 250'), toward the Delaware River, a tidal influence is observed of up to seven feet. As a result of this vertical groundwater movement, the soil impact through the smear zone is spread over a greater depth and the contaminant concentrations become further diluted. The effect of this tidal influence on contaminant migration has been to stabilize the plume by soil partitioning. If any lower molecular weight hydrocarbon constituents existed previously onsite, they have attenuated at this point over a maximum of 110 years since the initial discharge. The existing plume, although observable, has been demonstrated to be highly weathered, essentially non-volatile, and partitioned to the soil as expected of a high molecular weight hydrocarbon. In addition, the material has been attenuated to the point where the concentrations of all but one of the target parameters in nearly all locations are below concentrations of concern in soil as exemplified through the targeting of this material at the groundwater interface. This assessment is supported by the lack of impact to the groundwater throughout the plume mainly due to the generally low solubility and the high soil partitioning properties of higher molecular weight hydrocarbons.

3.3.2 *AOC B: Leaded Gasoline & Diesel USTs*

During the UST decommissioning activities, the observed impacted soil was removed from this area and transported offsite. No samples collected following that corrective action from soil or groundwater have indicated the presence of contaminants exceeding the applicable screening levels in this AOC (Please See Tables 2, 5, & 6).

4.0 *HUMAN HEALTH RISK ASSESSMENT*

A Human Health Risk Assessment progresses stepwise through the following basic components, as necessary: the Site Characterization; the Exposure Assessment; the Toxicity Assessment; the Risk Assessment; and the Uncertainty Analysis.

During the site characterization, the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for Residential sites was used as an initial screening level to identify contaminants that would require further consideration in the risk assessment process. Any target contaminants that were detected below these concentrations were eliminated from further analysis due to the inherent protectiveness utilized in the development of the noted standards for all possible pathways of exposure.

4.1 *BASELINE EXPOSURE ASSESSMENT*

An exposure assessment determines the magnitude, frequency, duration and routes of exposure of a receptor to an environmental contaminant. The Baseline Exposure Assessment is an evaluation of an actual or potential exposure to chemicals of concern by a receptor in the absence of remedial action or following an interim remedial action. This Baseline Exposure Assessment is

applied following the Source Removal interim remedial action completed in 1997 and prior to any further corrective action. A complete exposure pathway consists of a source or a secondary source, a transport mechanism, and a point of exposure (Please See Figure 4).

4.1.1 AOC A: *Fuel Oil USTs*

As previously noted, the following contaminants were identified associated with this AOC above the screening level:

Soil (mg/kg)	TP-1	TP-3	TP-15
Depth (bgs)	12'	12'	13'
Benzo (a) pyrene	6.04	3.44	3.44

Groundwater (ug/L)	MW-4
Chrysene	17.9
Pyrene	32.6

The discharged oil migrated through approximately 2.4 acres of the site. However, it has attenuated to a very large extent as indicated by the above concentrations which represent the maximum detected concentrations onsite and the only concentrations detected above the noted screening level.

4.1.1.1 *Sources and Secondary Sources*

Given the data noted in 4.1.1, the sources and secondary sources considered applicable for this AOC are: the Fuel Oil UST systems, the Impacted Subsurface Soil, the Dissolved Groundwater Plume, and the Free-Phase Liquid Plume. Free-Phase Liquid Plume is considered due to the very low solubility and the physical state (solid) of the detected contaminants at soil temperatures.

4.1.1.2 *Transport Mechanisms*

Despite the fact that Benzo (a) pyrene, Chrysene, and Pyrene are all considered non-volatile solids at applicable soil temperatures as noted in *USEPA, 1996, Soil Screening Guidance: User's Guide, Publication 9355.4-23, EPA/540/R-96/018*, contaminant transport due to volatilization was included in this evaluation in order to conservatively account for any uncertainty due to limited data points. In addition, by addressing the volatilization pathway, we can ensure the proper elimination of any potential odor nuisances in future above grade occupied spaces. No below grade occupied spaces will be constructed on this site.

Given the data noted in 4.1.1, the transport mechanisms considered potentially applicable for this AOC are: Volatilization and Atmospheric Dispersion; Volatilization and Enclosed-Space Accumulation; Leaching and Groundwater Transport; and Mobile Free-Liquid Migration.

4.1.1.3 *Exposure Pathways*

Given the data noted in 4.1.1, the exposure pathways considered potentially applicable for this AOC were: Inhalation and Recreational Use.

4.1.2 *AOC B: Leaded Gasoline & Diesel USTs*

Grossly contaminated soil was observed below a short run of product piping from the former Leaded Gasoline UST to the former pump island. These materials were immediately excavated and tracked using a PID meter. Two samples were collected by Synertech, Inc. along the base of this trench following the removal of all detected impacted soil. The samples did not exhibit any concentrations of applicable contaminants above the noted screening level (Please See Table 6 and Attachment A).

A discharge of Diesel Fuel was detected from below one of the removed USTs. The horizontal and vertical extent of the impacted soil was tracked with a PID meter and the impacted soil was immediately removed. Eight confirmatory samples were collected from the base and sidewalls of the excavation following the removal of impacted soils. None of the samples possessed target contaminants in the soil above the noted screening level.

During the present investigation, two samples were collected from this area of concern to identify whether any indication of remaining contaminants exists following the impacted soil removal in 1997. Two test pits were completed: one within the former UST excavation and one downgradient. Both samples were collected from within the saturated zone near the groundwater interface in order to bias our locations toward the presence of contaminants. Neither sample collected from within the saturated zone, in close proximity to the groundwater interface, exhibited concentrations exceeding the Statewide Health Standard for Used Aquifers possessing Total Dissolved Solids <2,500 for residential sites for Leaded Gasoline or Diesel Fuel parameters (Please See Table 2, Table 5 and Plate 1). At the time of the completion of this Baseline Exposure Assessment, no primary or secondary sources, transport mechanisms, or potential routes of exposure exist for this area of concern and, therefore, no further evaluation, assessment, or remedial action are proposed.

4.2 *POST-REMEDIAL EXPOSURE ASSESSMENT*

The Post-Remedial Exposure Assessment is an evaluation of an actual or potential exposure to chemicals of concern by a receptor following the implementation of the proposed remedial actions as detailed in section 6.0 (Please See Figure 5).

4.2.1 *AOC A: Fuel Oil USTs*

The proposed remedial action measures that are proposed for this site can be summarized as follows: Source Removal; Pathway Elimination; and Natural Attenuation.

4.2.1.1 *Sources and Secondary Sources*

The removal of the impacted soil that was in close proximity to these UST systems and the

contained fluids was completed at the time of the UST decommissioning as previously detailed. This remedial action, identified as Source Removal in section 6.0, eliminates the contribution of any further hydrocarbons to the existing plume in this AOC and eliminated the primary and a portion of the secondary contaminant source. This interim remedial action is aimed at eliminating or reducing all three potential complete exposure pathways identified in the Baseline Exposure Assessment in the local area.

4.2.1.2 Transport Mechanisms

Two potential exposure routes identified in the Baseline Exposure Assessment involve the inhalation of volatilized contaminants (Volatilization and Atmospheric Dispersion and Volatilization and Enclosed-Space Accumulation). One corrective action proposed, Pathway Elimination, will focus upon the elimination of these potentially complete exposure pathways through the implementation of the following institutional and engineering controls: Slab-On-Grade Construction; Foundation Vapor Barrier; Surface Cap; and Deed Acknowledgment.

4.2.1.3 Exposure Pathways

The remaining potential exposure routes identified in the Baseline Exposure Assessment are Leaching and Groundwater Transport and Mobile Free-Liquid Migration. The last proposed corrective action is Natural Attenuation. Through a very conservative analysis relating present to future conditions utilizing site-specific and conservative default values, it is clear that the identified impacted onsite plumes are stabile and will not reach the property boundary within the next 30 years (Please See Attachment G and section 6.1.3). Therefore, following the implementation of the proposed remedial actions, all identified pathways of exposure will be eliminated.

4.2.2 AOC B: Leaded Gasoline and Diesel USTs

No chemicals of concern were detected in the soil or groundwater above the noted screening level following the initial UST decommissioning and impacted soil removal work completed in 1997 (Please See Table 2, Table 5, and Attachment A). Therefore, no primary or secondary sources, transport mechanisms, or potential routes of exposure exist for this area of concern and no further evaluation, assessment, or remedial action are proposed.

4.3 UNCERTAINTY ANALYSIS

Throughout the Exposure Assessment procedure, highly conservative approaches were taken in order to minimize the uncertainty associated with imperfect knowledge of the site. For example, the Fate and Transport analysis for Benzo (a) pyrene in saturated soil utilized the groundwater PQL instead of the actual calculated groundwater concentration due to leaching. The utilized value was over 30 times more conservative than the calculated value. Attachment G details the data input for the Fate and Transport model which will further exemplify the extremely conservative nature of our input values yielding a solution that is highly conservative. Based upon the chosen conservatism coupled with the collection of a significant amount of field data, we have a great deal of confidence in the overall analysis of the Exposure Assessment and therefore, the Human Health Risk Assessment.

5.0 ECOLOGICAL RISK ASSESSMENT

As stipulated in section 250.311 (b)(3) of the Act II regulations, sites with operations and/or development sufficiently extensive as to eliminate specific exposure pathways to ecological receptors will drop out of the screening process. Based upon the Baseline Exposure Assessment, the only potential exposure pathways for ecological receptors are through: inhalation of volatilization and atmospheric dispersion for terrestrial biota, and the leaching and groundwater transport to sensitive habitats for terrestrial and aquatic biota.

It is doubtful that the inhalation pathway exists based upon the fact that the three identified contaminants are non-volatile, but was included in order to be conservative for the Human Health Risk Assessment to address the potential for nuisance odors in future above grade occupied spaces. In any case, the inhalation exposure pathway for terrestrial biota will be eliminated as the site is developed. The surface soil at the site consists mainly of brick, crushed concrete, etc. which is unsuitable for development. No matter the chosen future land use, either topsoil with grass, asphalt paving or structures will cover the majority, if not the entirety, of the site as detailed in section 6.1.2.3 and eliminate this pathway for terrestrial ecological receptors. In addition, a significant amount of site activity is anticipated and will further discourage the presence of terrestrial biota.

The second pathway identified involves contaminant leaching and groundwater transport to a sensitive habitat where terrestrial and aquatic biota reside. As detailed in the previous section and in Appendix G, the identified contaminant plume is stable and will not migrate beyond the property boundary. Two wells were installed in close proximity to the property boundary in the most downgradient area of the site and plume. Neither of these wells (MW-8 and MW-9) exhibited concentrations of contaminants above the MDL in two rounds of sampling.

Based upon the above analysis, no complete exposure pathways to ecological receptors presently exist or are anticipated in the future at this site and therefore no further evaluation, assessment or remedial action is proposed.

6.0 CLEANUP PLAN

This section details the completed and proposed corrective actions considered necessary to meet the Site-Specific Standard.

6.1 AOC A: FUEL OIL USTs

Three Fuel Oil underground storage tank systems were decommissioned as previously detailed.

6.1.1 Source Removal

A total of 16,885 gallons of oil/water mixture and 865.21 tons of impacted soil were removed from the source area. The removal of these materials and the decommissioning of the USTs systems removed the potential to contribute to the present residual impacted soil plume. These activities were completed at the time of the UST systems decommissioning in 1997. All materials were transported to properly permitted recycling facilities as documented in Attachment A.

6.1.2 Pathway Elimination

Two potential exposure routes identified in the Baseline Exposure Assessment involve the inhalation of volatilized contaminants (Volatilization and Atmospheric Dispersion and Volatilization and Enclosed-Space Accumulation). One corrective action proposed will focus upon the elimination of these potentially complete exposure pathways through the implementation of the following institutional and engineering controls: Slab-On-Grade Construction; Foundation Vapor Barrier; Surface Cap; and Deed Acknowledgment.

6.1.2.1 Slab-On-Grade Construction

Any structures constructed onsite will use slab-on-grade construction techniques to ensure that no subsurface occupied spaces exist that could result in enclosed space vapor accumulation.

6.1.2.2 Foundation Vapor Barrier

A geotextile membrane will be incorporated into the foundation design to ensure the elimination of vapor intrusion into the building space. This is a precautionary measure to eliminate the potential intrusion of nuisance odors into above grade occupied spaces. Odor thresholds are significantly below health based standards. The exact design for this foundation barrier cannot be provided at this time as the site owner does not know the exact nature of the future development.

However, a typical design would consist of the placement of a Grifolyn T85 5 ply nylon reinforced HDPE vapor barrier or equivalent with all seams, penetrations, and edges sealed with double sided asphaltic tape as per manufacturers instructions between the foundation slab and the subbase material. Another 6 mil HDPE liner is typically placed below the subbase and above at least 6" of compacted fill material free of sharp edges.

6.1.2.3 Surface Cap

The surface soil at the site consists mainly of brick, crushed concrete, etc. Upon development of the site, either topsoil with grass, asphalt paving, or residential and/or commercial structures will cover the majority, if not the entirety of the site and eliminate the inhalation of volatilized contaminants in the outdoor air. This is considered a conservative measure as the site characterization did not identify volatile contaminants. Surface capping will be a natural result of site development and will be driven by the details of the final land use.

6.1.2.4 Deed Acknowledgment

A deed acknowledgment will be utilized to ensure the continuity of these Pathway Elimination measures in the future or to indicate the need for further analysis at the time of disturbance of these measures by the present or future owners.

6.1.3 Natural Attenuation

The remaining potential exposure routes identified in the Baseline Exposure Assessment are Leaching and Groundwater Transport and Mobile Free-Liquid Migration. The saturated soil sample

collected from TP-1 and the first groundwater sample collected from MW-4 were utilized for this evaluation as they are the maximum concentrations detected onsite within the closest proximity to the point of compliance and are therefore considered conservative for the following analysis. The Generic Equation utilized in the development of the Statewide Health Standards was used to relate the saturated soil concentrations to a corresponding groundwater concentration. A fate and transport analysis was completed utilizing the PADEP provided Quick Domenico code. All parameters and formulas used are identified in Attachment G and are considered significantly more conservative that the site-specific conditions. The analysis was completed for a thirty year period.

First, the analysis completed for Benzo (a) pyrene in saturated soil determined that, with the highly conservative use of both site-specific and default input values, the benzo (a) pyrene plume would be stabile in 5,809 days or 15.9 years and only travel less than 0.25 feet. Considering the massively conservative nature of the analysis as detailed in Attachment G, the period of time that this discharge has potentially been in the ground (>100 years), the physical state of Benzo (a) pyrene at soil temperatures (solid), it's low solubility and volatility, it's high organic carbon partitioning coefficient, and extensive field sampling, it is clear that this contaminant plume has reached stability to an extent that it does not pose a threat to migrate offsite. As a point of interest, the Delaware River has such an extreme flow rate that concentrations could not possibly exceed the surface water quality criteria. In summary, the sitewide plume is considered a stable, highly attenuated and/or weathered plume that is partitioned to the soil and is no longer moving. The compound has such an exceedingly low solubility that groundwater impact is not an issue.

Next, the analysis completed for Chrysene in groundwater determined that, with the highly conservative use of both site-specific and default values, the Chrysene plume would be stabile in 6,546 days or 18.4 years and only travel less than 0.4 feet. Considering the massively conservative nature of the analysis as detailed in Attachment G, the distance to the point of compliance (350'), the period of time that this discharge has potentially been in the ground (>100 years), the physical state of Chrysene (solid) at subsurface temperatures, the low solubility and volatility, the extensive amount of field sampling, and the high organic carbon partitioning coefficient, it is clear that this contaminant plume has reached stability to an extent that it does not pose a threat to migrate offsite. In support of this conclusion is the fact that no concentrations exceeding the MDL were detected in this well in the four additional rounds collected after the initial round. Also, no concentrations were detected in two rounds of sampling of the three downgradient wells installed to further delineate this plume. Please note that the usage of a high quantity of drilling mud was necessary in the construction of the onsite wells and that their presence may have influenced this initial sample. In addition, the Delaware River has such an extreme flow rate that concentrations could not possibly exceed the surface water quality criteria. In summary, the sitewide plume is considered a stable, highly attenuated and/or weathered plume that is partitioned to the soil and is no longer moving.

The analysis completed for Pyrene in groundwater determined that, with the highly conservative use of both site-specific and default values, the Pyrene plume would be stabile in 8,044 days or 22.0 years and only travel less than 1.5 feet. Considering the massively conservative nature of the analysis as detailed in Attachment G, the distance to the point of compliance (350'), the period of time that this discharge has potentially been in the ground (>100 years), the physical state of Pyrene (solid) at subsurface temperatures, the low solubility and volatility, the extensive amount of field sampling, and the high organic carbon partitioning coefficient, it is clear that this contaminant plume has reached stability to an extent that it does not pose a threat to migrate offsite. In support

of this conclusion is the fact that no concentrations exceeding the MDL were detected in this well in the four additional rounds collected after the initial round. Also, no concentrations were detected in two rounds of sampling of the three downgradient wells installed to further delineate this plume. Please note that the usage of a high quantity of drilling mud was necessary in the construction of the wells and that their presence may have influenced this initial sample. In addition, the Delaware River has such an extreme flow rate that concentrations could not possibly exceed the surface water quality criteria. In summary, the sitewide plume is considered a stable, highly attenuated and/or weathered plume that is partitioned to the soil and is no longer moving.

Considering the chemical properties of the identified contaminants, the low concentrations detected, the site-specific hydrogeological conditions, the lack of detection of Chrysene and Pyrene in MW-4 for the four most recent sample rounds, the lack of detection of these parameters in the three downgradient wells in two rounds of samples, the level of conservatism utilized in the Fate and Transport analysis which indicated plume stability in a fraction of the time that the contaminant has likely to have been in the subsurface, the tidal influence on the back 250' of the site, the extraordinary flow rate of the Delaware River, and the absence of any downgradient groundwater users within 1,000 feet of the site, we seek the PA DEP's concurrence that the implementation of the proposed corrective actions will result in the elimination of all identified pathways of exposure and will thereby attain the Site-Specific Standard.

In addition, Brown Environmental respectfully requests a reduction in the number of total groundwater sampling rounds to the present quantity of five rounds in MW-4 and two rounds in the three downgradient wells (MW-7, MW-8, and MW-9). This is requested due to the lack of detection of any contaminants during four consecutive sampling rounds in MW-4 and during two rounds in the three downgradient wells. Please note that the only contaminant detection in MW-4 occurred during the first round and may have been influenced by the presence of an extraordinary quantity of drilling mud in the local area.

6.2 *AOC B: Leaded Gasoline and Diesel USTs*

No chemicals of concern were detected in the soil or groundwater above the noted screening level following the initial UST decommissioning and impacted soil removal work completed in 1997 (Please See Table 2, Table 5, and Attachment A). Therefore, no primary or secondary sources, transport mechanisms, or potential routes of exposure exist for this area of concern and no further evaluation, assessment, or remedial actions are proposed.

7.0 *SIGNATURES*

LHTW, Inc. is seeking a release of liability under the provisions of the Land Recycling Program based upon the results of this report prepared by Brown Environmental. We have included the appropriate report review fee of $500.00 with this document. Please note that all groundwater interpretations were completed by Mr. Mark Irani, P.G. His signature can be found in Attachment H.

Print Name Authorized Representative
LHTW, Inc.

Signature Authorized Representative
LHTW, Inc.

Date

of this conclusion is the fact that no concentrations exceeding the MDL were detected in this well in the four additional rounds collected after the initial round. Also, no concentrations were detected in two rounds of sampling of the three downgradient wells installed to further delineate this plume. Please note that the usage of a high quantity of drilling mud was necessary in the construction of the wells and that their presence may have influenced this initial sample. In addition, the Delaware River has such an extreme flow rate that concentrations could not possibly exceed the surface water quality criteria. In summary, the sitewide plume is considered a stable, highly attenuated and/or weathered plume that is partitioned to the soil and is no longer moving.

Considering the chemical properties of the identified contaminants, the low concentrations detected, the site-specific hydrogeological conditions, the lack of detection of Chrysene and Pyrene in MW-4 for the four most recent sample rounds, the lack of detection of these parameters in the three downgradient wells in two rounds of samples, the level of conservatism utilized in the Fate and Transport analysis which indicated plume stability in a fraction of the time that the contaminant has likely to have been in the subsurface, the tidal influence on the back 250' of the site, the extraordinary flow rate of the Delaware River, and the absence of any downgradient groundwater users within 1,000 feet of the site, we seek the PA DEP's concurrence that the implementation of the proposed corrective actions will result in the elimination of all identified pathways of exposure and will thereby attain the Site-Specific Standard.

In addition, Brown Environmental respectfully requests a reduction in the number of total groundwater sampling rounds to the present quantity of five rounds in MW-4 and two rounds in the three downgradient wells (MW-7, MW-8, and MW-9). This is requested due to the lack of detection of any contaminants during four consecutive sampling rounds in MW-4 and during two rounds in the three downgradient wells. Please note that the only contaminant detection in MW-4 occurred during the first round and may have been influenced by the presence of an extraordinary quantity of drilling mud in the local area.

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T. Everett
Print Name Authorized Representative
LHTW, Inc.

Signature Authorized Representative
LHTW, Inc.

V.P. 6/11/02
Date

PLATE

FIGURES

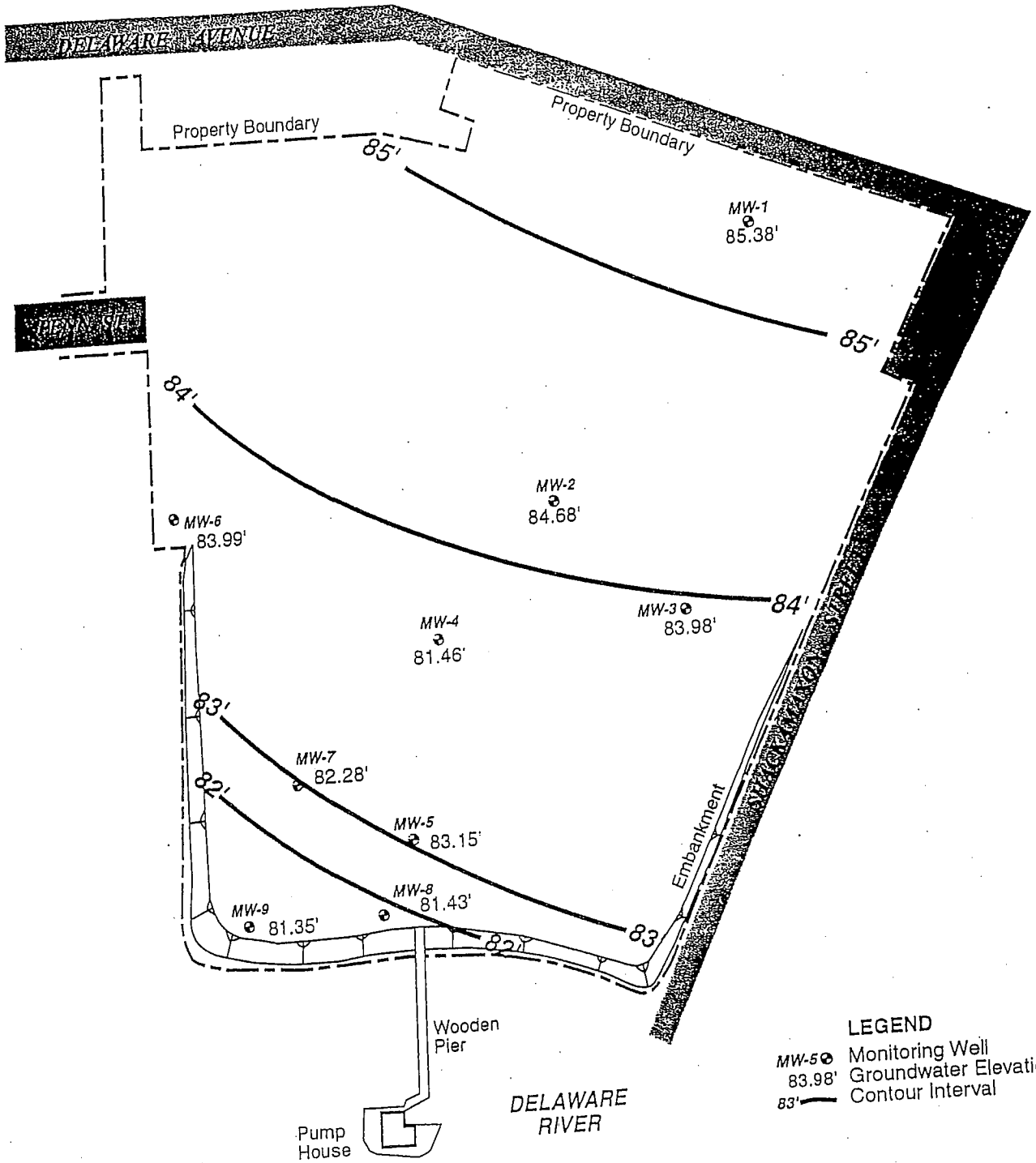


Figure 1 - Piezometric Contour Map
July 17, 2001

Client: LHTW Inc.	ASSOCIATES INC. 920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462-2453
Site Address: Former Jack Frost Sugar Factory 941-967 & 1015-1025 Delaware Avenue Philadelphia, PA	Scale: 1"=150'
Project Number: 50.52074.0100	

SOURCE: ATC Associates Inc. / February 2002

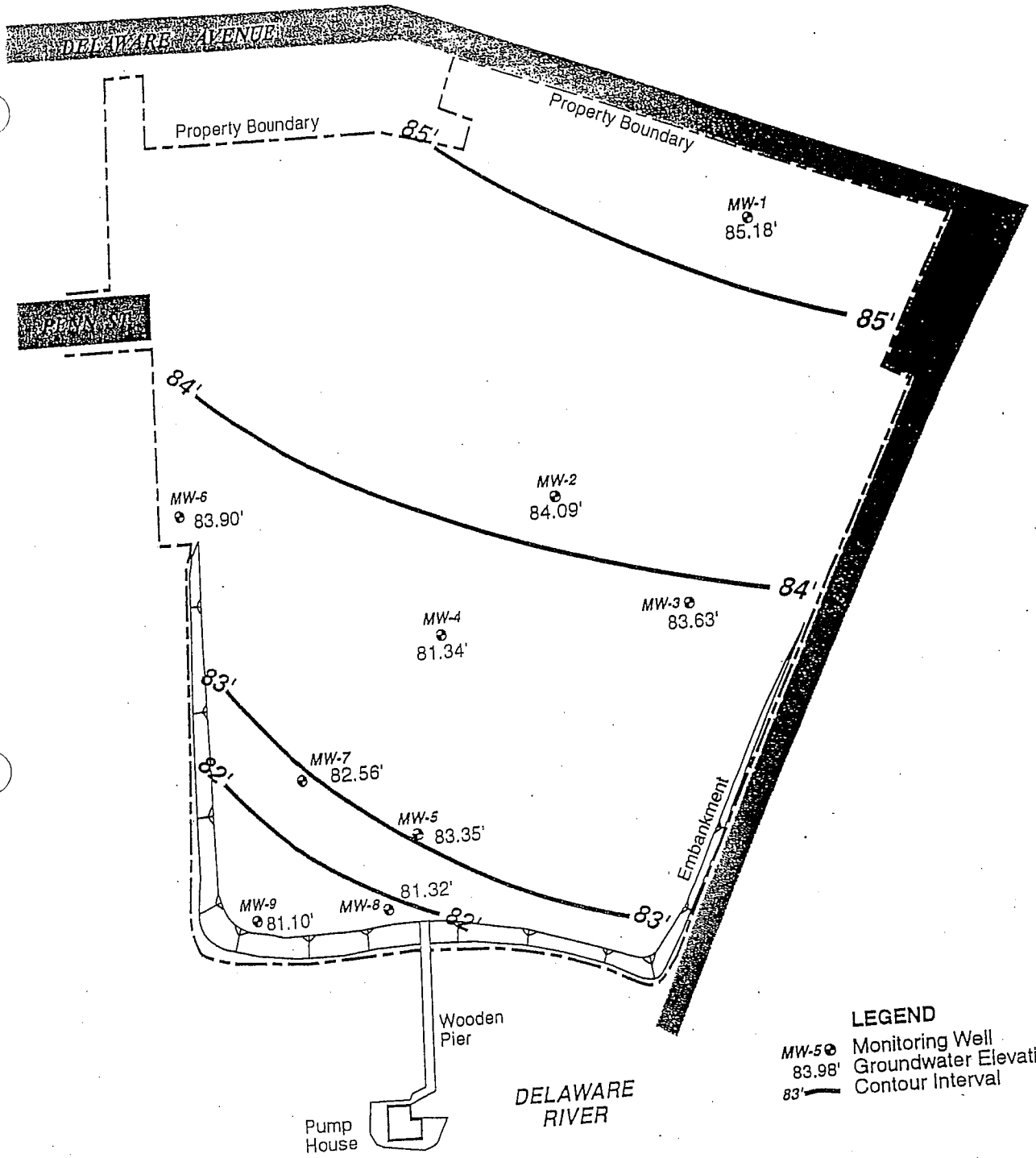


Figure 2 - Piezometric Contour Map
September 25, 2001

Client: LHTW Inc.	ATC ASSOCIATES INC. 920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462-2453
Site Address: Former Jack Frost Sugar Factory 941-967 & 1015-1025 Delaware Avenue Philadelphia, PA	
Project Number: 50.52074.0100	Scale: 1"=150'
SOURCE: ATC Associates Inc. / February 2002	

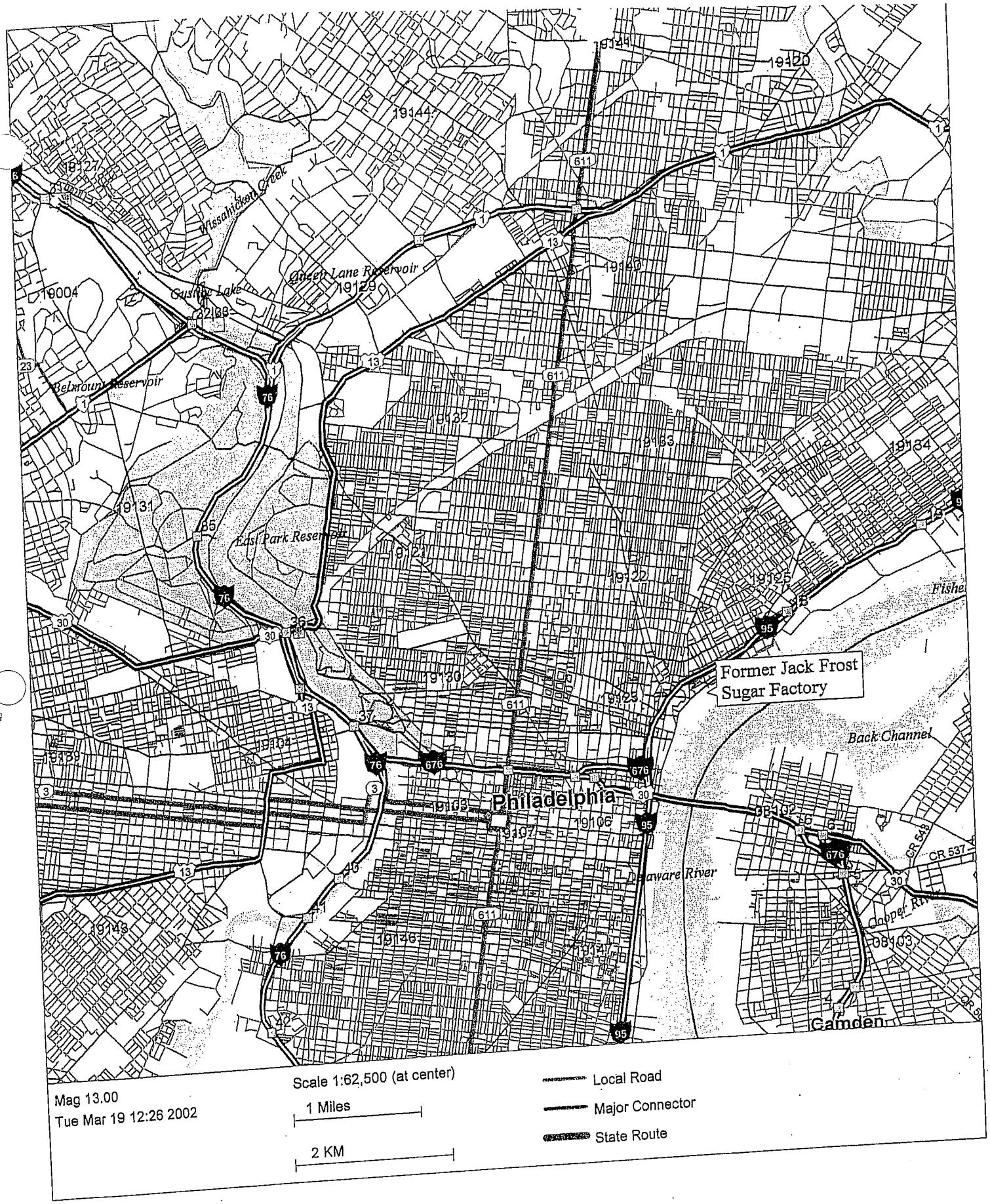
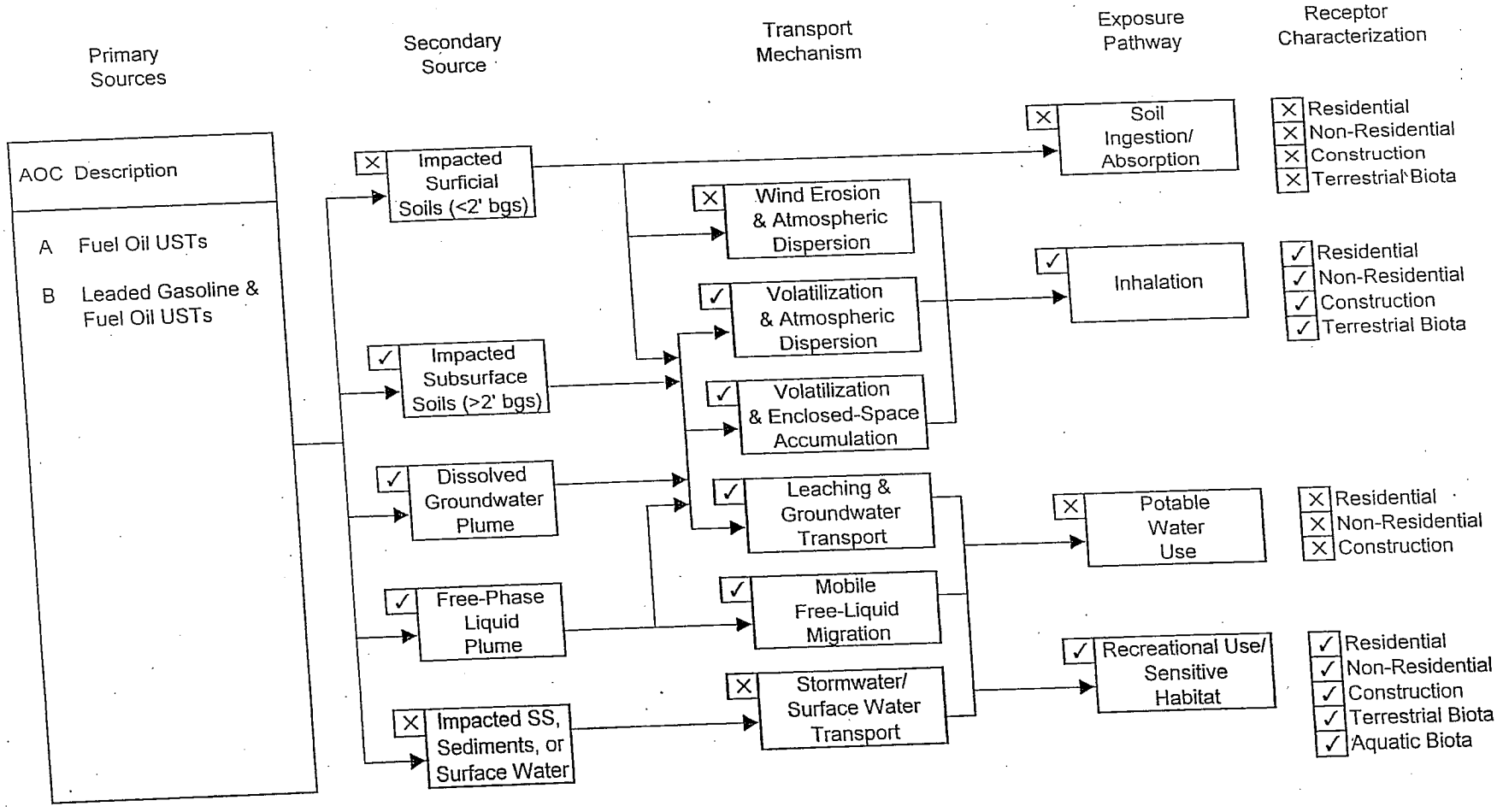


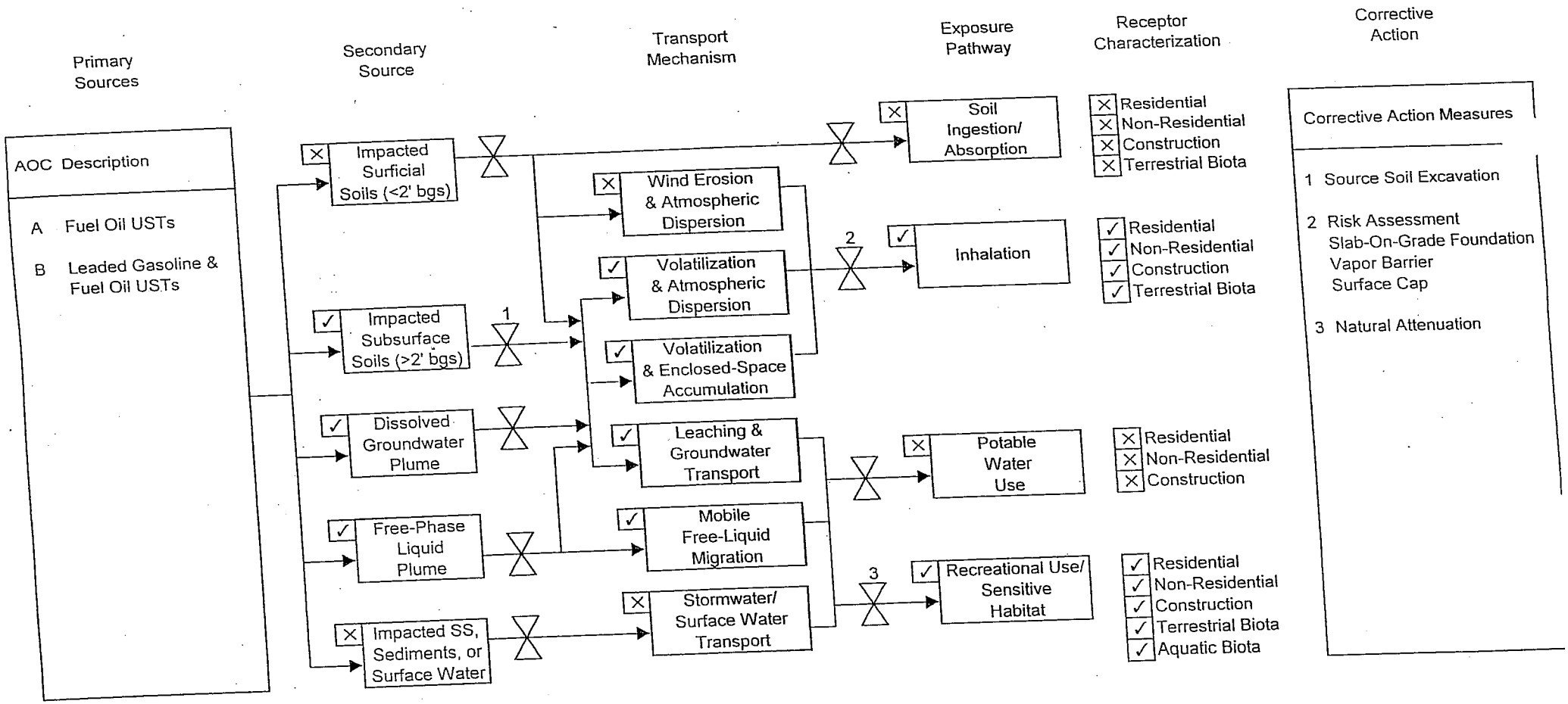
Figure 3 - Site Location Map

FIGURE 4
BASELINE EXPOSURE ASSESSMENT



✓ Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors
× Not Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors

FIGURE 5
POST-REMEDIAL EXPOSURE ASSESSMENT



✓ Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors

× Not Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors

1 Corrective Action Measure # 1 Applied to this Source, Transport Mechanism, or Exposure Pathway

TABLES

Table 1 - AOC A: No. 4, 5, 6 Fuel Oil USTs, Saturated Subsurface Soil Samples
Former Jack Frost Sugar Factory, Philadelphia, Pennsylvania

Sample Identification	TP-1$_x$	TP-3	TP-5	TP-7	TP-11	TP-15	TP-16	TP-19	TP-20	TP-21	TP-22	PA DEP SHS
Sample Depth (bgs)	12'	12'	13'	14'	12'	13'	12.5'	14'	13'	14'	14'	RESIDENTIAL
Date Collected	8/29/00	8/29/00	8/29/00	8/29/00	8/29/00	8/29/00	8/29/00	8/30/00	8/30/00	8/30/00	8/30/00	USED AQUIFER
Date VOCs analyzed	9/6/00	9/6/00	9/6/00	9/7/00	9/7/00	9/7/00	9/7/00	9/8/00	9/8/00	9/8/00	9/8/00	TDS <2,500
Date BNs analyzed	9/7/00	9/7/00	9/7/00	9/8/00	9/8/00	9/8/00	9/8/00	9/12/00	9/12/00	9/12/00	9/12/00	SATURATED
Volatile Organic Compounds and Base Neutral Parameters (mg/kg)												
Anthracene	1.7	1.06	<0.429	<0.522	<0.467	1.85	<0.092	<0.171	<0.419	<0.553	<0.370	23
Benzene	<0.146	<0.117	<0.16	<0.169	<0.164	<0.104	<0.156	<0.109	<0.104	<0.178	<0.129	0.5
Benzo (a) anthracene	6.17	3.29	0.693	<0.522	1.17	3.66	<0.092	0.121 J	0.544	<0.553	0.544	8
Benzo (a) pyrene	6.04	3.44	1.05	<0.522	1.64	3.44	<0.092	<0.171	0.526	<0.553	0.638	2.5
Benzo (b) fluoranthene	7.15	3.32	<0.429	1.4	1.69	3.00	<0.092	<0.171	0.44	<0.553	0.49	12
Benzo (g,h,i,) perylene	2.41	1.84	<0.429	<0.522	1.44	1.66	<0.092	<0.171	0.333 J	<0.553	<0.370	18
Chrysene	7.24	3.64	<0.429	<0.522	0.792 J	3.97	<0.092	0.107 J	0.557	<0.553	0.574	22
Fluorene	0.664	0.459	<0.429	<0.522	<0.467	1.91	<0.092	<0.171	<0.419	<0.553	<0.370	38
Naphthalene	0.147 J	<0.584	<0.798	<0.845	<0.233 J	<0.519	<0.778	<0.545	<0.521	<0.888	<0.645	2
Phenanthrene	7.92	4.49	<0.429	<0.522	<0.467	9.56	<0.092	0.193	0.551	<0.553	0.35 J	1,100
Pyrene	13	7.16	<1.07	<1.3	1.04 J	7.26	<0.229	<0.428	1.12	<1.38	<0.925	22

bgs - Below Ground Surface
Concentrations reported on a "Dry Weight" Basis
VOC analysis by EPA Method 8260
BN analysis by EPA Method 8270
x - Unsaturated Soil Sample
J - Estimated Value

- Exceeds SHS for Used Aquifer, TDS <2,500

- MDL above SHS for Used Aquifer, TDS <2,500 due to dilution

Table 2 - AOC B: Leaded Gas and Diesel USTs, Saturated Subsurface Soil Samples
Former Jack Frost Sugar Factory, Philadelphia, Pennsylvania

Sample Identification	TP-17	TP-18	
Sample Depth (ft bgs)	13'	12'	
Date Collected	9/8/00	9/8/00	PA DEP SHS
Date VOC Analyzed	9/6/00	9/6/00	RESIDENTIAL
Date EDB Analyzed	9/8/00	9/8/00	USED AQUIFER
Date BNs Analyzed	9/8/00	9/8/00	TDS <2,500
Date Metals Analyzed	9/5/00	9/5/00	SATURATED
Volatile Organic Compounds and Base Neutral Compounds (mg/kg)			
1,2-Dibromoethane	<0.001	<0.001	0.005
1,2-Dichloroethane	<0.21	<0.208	0.5
Benzene	<0.105	<0.104	0.5
Cumene	<0.526	<0.52	2.5
Ethylbenzene	<0.526	<0.52	70
Fluorene	<0.078	<0.079	38
Naphthalene	<0.526	<0.52	2
Phenanthrene	<0.078	<0.079	1,100
Toluene	<0.526	<0.52	100
Xylenes (Total)	<0.315	<0.312	1,000
Inorganic Parameters (mg/kg)			
Lead (total)	23.9	9.47	45

bgs - Below Ground Surface
Concentrations reported on a "Dry Weight" Basis
VOC analysis by EPA Method 8260
BN analysis by EPA Method 8270
Metals analysis by SW846 Method 6010

- Exceeds SHS for Used Aquifer, TDS <2,500

- MDL above SHS for Used Aquifer, TDS <2,500 due to dilution

able 3 - AOC A: No. 2 & No. 4, 5, 6 Fuel Oil USTs, Monitor Well Groundwater Samples

Former Jack Frost Sugar Factory, Philadelphia, Pennsylvania

mple Identification	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3	MW-3	MW-5	MW-5	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	PA DEP SHS
ate Collected	10/6/00	12/19/00	10/6/00	12/19/00	10/6/00	12/20/00	4/19/01	10/6/00	12/20/00	7/19/01	9/26/01	7/17/01	9/25/01	7/17/01	9/25/01	RESIDENTIAL
ate VOCs Analyzed	10/16/00	12/28/00	10/16/00	12/28/00	10/16/00	12/29/00	5/1/01	10/16/00	12/29/00	7/25/01	10/4/01	7/25/01	10/4/01	7/24/01	10/4/01	USED AQUIFER
ate BNs Analyzed	10/21/00	1/7/01	10/21/00	1/7/01	10/21/00	1/9/01	4/30/01	10/21/00	1/3/01	7/27/01	10/3/01	7/27/01	10/4/01	7/27/01	10/3/01	TDS <2,500
olatile Organic Compounds & Base Neutral Parameters (ug/l)																
enzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5
hrysene	<2	<4	<2	<4	2.52	<30	<6	<2	<4	<4	<5	<4	<5	<2	<5	10*
umene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	25
thylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	700
luorene	<2	<4	<2	<4	<2	<30	<6	<2	<4	<4	<6	<4	<2	<2	<2	19(
aphthalene	<5	<5	<5	<5	<5	<5	<5	<5	<5	1.49 J	<5	<5	<5	<5	<5	20
henanthrene	<2	<4	<2	<4	2.18	<30	<6	<2	<4	<4	<6	<4	<2	<2	<2	1,200
yrene	<2	<4	1.1 J	<4	4.03	<30	3.96 J	1.12 J	<4	<4	<5	<4	<5	<2	<5	13
oluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	1,000

- Exceeds SHS for Used Aquifer, TDS - 2,500

- MDL above SHS for Used Aquifer, TDS - 2,500 due to dilution

VOC analysis by EPA Method 8260
BN analysis by EPA Method 8270
* - This is a Practical Quantitation Limit Driven Standard
J - Estimated Value

Table 4 - AOC A: No. 2 & No. 4, 5, 6 Fuel Oil USTs, Monitor Well Groundwater Samples
Former Jack Frost Sugar Factory, Philadelphia, Pennsylvania

Sample Identification	MW-4	MW-4	MW-4	MW-4	MW-4	PA DEP SHS
Date Collected	10/6/00	12/20/00	4/19/01	7/19/01	9/26/01	RESIDENTIAL
Date VOCs Analyzed	10/16/00	12/29/00	5/2/01	7/24/01	10/4/01	USED AQUIFER
Date BNs Analyzed	10/21/00	1/9/01	4/30/01	7/27/01	10/3/01	TDS <2,500
Volatile Organic Compounds & Base Neutral Parameters (ug/l)						
Benzene	<1	<1	<1	<1	<1	5
Chrysene	17.9	<4	<2	<2	<5	10*
Cumene	<5	<5	<5	<5	<5	25
Ethylbenzene	<5	<5	<5	<5	<5	700
Fluorene	<10	<4	<2	<2	<2	190
Naphthalene	<5	<5	<5	<5	<5	20
Phenanthrene	23.1	<4	<2	<2	<2	1,200
Pyrene	32.6	4	2	2	5	13
Toluene	<5	1 J	<5	<5	<5	1,000

VOC analysis by EPA Method 8260
BN analysis by EPA Method 8270
* - This is a Practical Quantitation Limit Driven Standard
J - Estimated Value

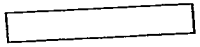
- Exceeds SHS for Used Aquifer, TDS <2,500

- MDL above SHS for Used Aquifer, TDS <2,500 due to dilution

Table 5 - AOC B: Leaded & Unleaded Gas and Diesel US[illegible], Monitor Well Groundwater Samples
Former Jack Frost Sugar Factory, Philadelphia, Pennsylvania

Sample Identification	MW-6	MW-6	
Date Collected	10/6/00	12/20/00	
Date VOCs Analyzed	10/17/00	12/29/00	PA DEP SHS
Date BNs Analyzed	10/21/00	1/3/01	RESIDENTIAL
Date Metals Analyzed	10/11/00	12/27/00	USED AQUIFER
Date EDB Analyzed	10/13/00	12/28/00	TDS <2,500
Volatile Organic Compounds & Base Neutral Parameters (ug/l)			
Benzene	<1	<1	5
Cumene	<5	<5	25
Dibromoethane, 1,2-	<0.05	<0.05	5*
Dichloroethane, 1,2-	<2	<2	5
Ethylbenzene	<5	<5	700
Fluorene	<2	<4	190
Methyl Tert-Butyl Ether (MTBE)	<5	<10	20
Naphthalene	<5	<5	20
Phenanthrene	<2	<4	1,200
Toluene	<5	<5	1,000
Xylenes (Total)	<3	<3	10,000
Inorganic Parameters (ug/l)			
Lead	<2	<2	5

VOC analysis by EPA Method 8260
BN analysis by EPA Method 8270
EDB analysis by EPA Method 8011
Metals analysis by Standard Method 3113 B
* - This is a Practical Quantitation Limit Driven Standard

 - Exceeds SHS for Used Aquifer, TDS <2,500

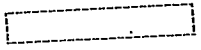
 - MDL above SHS for Used Aquifer, TDS <2,500 due to dilution

Table 6 - AOC B: Leaded Gas and Diesel USTs, Post-Excavation S[illegible] Samples
Former Jack Frost Sugar Factory, Philadelphia, Pennsylvania

Sample Identification	147-015	147-025	147-035	147-045	147-055	147-065	147-075	147-085	147-095	147-105	
Sample Depth (ft bgs)	6.5'	4.5'	~12'	~12'	~12'	~12'	~12'	~12'	~12'	~12'	
Date Collected	9/5/97	9/5/97	9/5/97	9/5/97	9/5/97	9/5/97	9/5/97	9/5/97	9/5/97	9/5/97	PA DEP SHS
Date VOC Analyzed	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	RESIDENTIAL
Date EDB Analyzed	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	USED AQUIFER
Date BNs Analyzed	9/9/97	9/9/97	9/9/97	9/9/97	9/9/97	9/9/97	9/9/97	9/9/97	9/9/97	9/9/97	TDS <2,500
Date Metals Analyzed	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	UNSATURATED
Volatile Organic Compounds and Base Neutral Compounds (mg/kg)											
1,2-Dibromoethane	<0.03	<0.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.005
1,2-Dichloroethane	<0.03	<0.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5
Benzene	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5
Benzo (a) anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25
Benzo (a) pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.5
Cumene	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18
Ethylbenzene	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70
Fluorene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	380
Naphthalene	0.18	0.148	0.116	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5
Methyl tert-Butyl Ether (MTBE)	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2
Phenanthrene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11,000
Toluene	<0.01	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100
Xylenes (Total)	0.48	<0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,000
Inorganic Parameters (mg/kg)											
Lead (total)	0.3	0.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	450

bgs - Below Ground Surface
Concentrations reported on a "Dry Weight" Basis
VOC analysis by EPA Method 8260
BN analysis by EPA Method 8270
Metals analysis by SW846 Method 6010
N/A - Not Applicable
All Samples were collected by Synertech, Inc.

- Exceeds SHS for Used Aquifer, TDS <2,500

- MDL above SHS for Used Aquifer, TDS <2,500 due to dilution

ATTACHMENT A
UST Closure Documents/Waste Manifests

Pennsylvania Department of Environmental Protection
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
October 2, 1997

610-832-5949
Fax 610-832-6143

Southeast Regional Office

Mr. Steven Coe
LHW Corporation
3001 Street Road
Bensalem, Pa 19020

ECP PROGRAM
HYDROGEOLOGIST
SOIL SCIENTIST

Re: Storage Tank Program (N-R)
Jack Frost Sugar
General Municipal File
Facility ID No. NR-08633
1037 Delaware Avenue
City of Philadelphia
Philadelphia County

Dear Mr. Coe:

The Department has received information for a storage tank system located at the above referenced property. From the information provided, the tanks do not appear to be regulated under the Storage Tank and Spill Prevention Act (Act 32) or any other storage tank regulations. For such non-regulated tanks, our involvement is limited to the oversight of any remediation required by the Pennsylvania Clean Streams Law (CSL). Accordingly, we are notifying you that any contamination associated with your tank system must be addressed and a final report submitted to the Department. Site assessment procedures and remediation standards can be found in the Land Recycling and Environmental Remediation Standards Act (act 2 of 1995) and our Technical Guidance Manual. These documents can be obtained by calling 610-832-6209.

Should you have any questions regarding this matter, please feel free to contact our Storage Tank Program at 610-832-5968.

Sincerely,

Stephan B. Sinding
Chief, Storage Tank Program
Environmental Cleanup

cc: Mr. Stephan Brown
Special Projects, ECP
City of Philadelphia
Philadelphia County Health Department
Re

OPERATION PERMIT

CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
FIRE UNIT

PERMIT NUMBER 41388

LOCATION OF TEST
1037 N. Delaware Ave.

DESCRIPTION OF INSTALLATION
Removal of Six (6) U/G Tanks
3- 4,000 gal., 2- 13,000 gal. and
1- 17,500 gal. F.O.

OWNER'S NAME AND ADDRESS
LHTW Corp.
3001 Street Rd.
Bensalem, Pa. 19020

TEST DATE	INSTALLER'S LICENSE NUMBER
	000142
ZONING APPROVAL NUMBER	COMPANY BUSINESS PRIVILEGE LICENSE NUMBER
	069887
PLAN NUMBER	TYPE OCCUPANCY
	Mfg. Plant
DATE PERMIT ISSUED	CODE OFFICIAL
7/18/97	Ed Camacho

TYPE OF PERMIT	FUND	DEPT. / DIV.	SOURCE	FEE
BOWLING LANE RESURFACING/PIN REFINISHING	01	260020	3399	$
AIR POLLUTION CONTROL	01	260020	3201	$
SPRINKLER SYSTEM TEST	01	260020	3627	$
TANK & DISPENSING SYSTEM TEST	01	260020	3628	$
TANK INSTALLATION	01	260020	3363	$
WELDING OR CUTTING	01	260020	3333	$
REMOVAL/INERT	01	260020	3393	$450.00
ALTERATION	01	260020	3392	$
USE OF EXPLOSIVES	01	260020	3321	$
TRANSPORTATION OF EXPLOSIVES (LESS THAN 1,000 LBS.)	01	260020	3323	$
OIL BURNER	01	260020	3365	$
TENTS	01	260020	3385	$

INSTALLER'S NAME & BUSINESS ADDRESS
A B C Tank Company
1029 Delsea Dr.
Clayton, N.J. 08312

ADDITIONAL PERMITS NEEDED:

CERTIFICATION NUMBER

TELEPHONE NUMBER
609 881-6586

81-237 (Rev. 3/95)

CHECK# 09465

THIS PERMIT NOT VALID UNLESS RECEIPTED BELOW BY DEPARTMENT OF REVENUE

APPLICANT

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Date recieved: Sep. 5, 1997

Client ID: Synertech, Inc.
2208 S. Broad St.
Phila., Pa. 19145

Analysis comp.: Sep. 8, 1997

Project ID: Jack Frost
Phila., Pa.

OE Sample No.	Customer No.	Test Parameter		Results mg/kg	Detection Lim.mg/kg
10212	147-015	Volatiles	Benzene	nd	0.005
			Toluene	nd	0.01
			Ethylbenzene	nd	0.05
			m,p-Xylenes	0.48	0.05
			o-Xylene	nd	0.05
			Isopropyl benzene	nd	0.05
			MTBE	nd	0.05
			1,2-Dichloroethane	nd	0.03
			1,2-Dibromoethane	nd	0.03
		Total lead		0.30	0.005

nd=none detected Test Methods: Volatiles=EPA 8021A Lead=EPA 7420
Results reported on dry weight basis.

Respectfully submitted:

Robert A. White
Laboratory Director

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10212 147-015
ANALYSIS METHOD 8270 B
DATA FILE >D0277

MATRIX SOIL
INJECTION TIME 970909 03:53
DATE ANALYZED 09/09/97

COMPOUND	UG/KG	MDL
Naphthalene	180	100.0
Phenanthrene	U	100.0
Benzo (a) pyrene	U	100.0
Fluorene	U	100.0
Benzo (a) anthracene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-9-97

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Synertech, Inc.
2208 S. Broad St.
Phila., Pa. 19145

Project ID: Jack Frost
Phila., Pa.

Date recieved: Sep. 5, 1997

Analysis comp.: Sep. 8, 1997

OE Sample No.	Customer No.	Test Parameter		Results mg/kg	Detection Lim.mg/kg
10213	147-025	Volatiles	Benzene	nd	0.005
			Toluene	nd	0.01
			Ethylbenzene	nd	0.05
			m,p-Xylenes	0.15	0.05
			o-Xylene	nd	0.05
			Isopropyl benzene	nd	0.05
			MTBE	nd	0.05
			1,2-Dichloroethane	nd	0.03
			1,2-Dibromoethane	nd	0.03
		Total lead		0.30	0.005

nd=none detected Test Methods: Volatiles=EPA 8021A Lead=EPA 7420
Results reported on dry weight basis.

Respectfully submitted:

Robert A. White
Laboratory Director

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10213 147-025
ANALYSIS METHOD 8270 B
DATA FILE >D0278

MATRIX SOIL
INJECTION TIME 970909 04:47
DATE ANALYZED 09/09/97

COMPOUND	UG/KG	MDL
Naphthalene	148	100.0
Phenanthrene	U	100.0
Benzo (a) pyrene	U	100.0
Fluorene	U	100.0
Benzo (a) anthracene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

Reviewed 9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID OE10214 147-035
ANALYSIS METHOD 8270 B
DATA FILE >D0279

MATRIX SOIL
INJECTION TIME 970909 05:38
DATE ANALYZED 09/09/97

COMPOUND	UG/KG	MDL
Naphthalene	116	100.0
Phenanthrene	U	100.0
Benzo (a) pyrene	U	100.0
Fluorene	U	100.0
Benzo (a) anthracene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

Absolute 9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10215 147-045
ANALYSIS METHOD 8270 B
DATA FILE >D0280

MATRIX SOIL
INJECTION TIME 970909 06:22
DATE ANALYZED 09/09/97

COMPOUND		UG/KG	MDL
Naphthalene	U	100.0	
Phenanthrene	U	100.0	
Benzo (a) pyrene	U	100.0	
Fluorene	U	100.0	
Benzo (a) anthracene	U	100.0	

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 0E10216 147-055
ANALYSIS METHOD 8270 B
DATA FILE >00283

MATRIX SOIL
INJECTION TIME 970909 09:34
DATE ANALYZED 09/09/97

COMPOUND	UG/KG	MDL
Naphthalene	U	100.0
Phenanthrene	U	100.0
Benzo (a) pyrene	U	100.0
Fluorene	U	100.0
Benzo (a) anthracene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

Allwhite 9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10217 147-065
ANALYSIS METHOD 8270 B
DATA FILE >D0284

MATRIX SOIL
INJECTION TIME 970909 10:27
DATE ANALYZED 09/09/97

COMPOUND		UG/KG	MDL
Naphthalene	U	100.0	
Phenanthrene	U	100.0	
Benzo (a) pyrene	U	100.0	
Fluorene	U	100.0	
Benzo (a) anthracene	U	100.0	

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10218 147-075
ANALYSIS METHOD 8270 B
DATA FILE >D0285

MATRIX SOIL
INJECTION TIME 970909 11:27
DATE ANALYZED 09/09/97

COMPOUND		UG/KG	MDL
Naphthalene	U		100.0
Phenanthrene	U		100.0
Benzo (a) pyrene	U		100.0
Fluorene	U		100.0
Benzo (a) anthracene	U		100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID. 9E10219 147-085
ANALYSIS METHOD 8270 B
DATA FILE *00286

MATRIX SOIL
INJECTION TIME 970909 12:22
DATE ANALYZED 09/09/97

COMPOUND		UG/KG	MDL
Naphthalene	U	100.0	
Phenanthrene	U	100.0	
Benzo (a) pyrene	U	100.0	
Fluorene	U	100.0	
Benzo (a) anthracene	U	100.0	

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-9-97

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10220 147-095
ANALYSIS METHOD 8270 B
DATA FILE >D0287

MATRIX SOIL
INJECTION TIME 970909 13:18
DATE ANALYZED 09/09/97

COMPOUND	UG/KG	MDL
Naphthalene	U	100.0
Phenanthrene	U	100.0
Benzo (a) pyrene	U	100.0
Fluorene	U	100.0
Benzo (a) anthracene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-9-97

RANCOCAS ENVIRONMENTAL LABS
QC/MS ANALYTICAL RESULTS
SEMIVOLATILE ORGANICS

LAB ID 9E10221 147-105
ANALYSIS METHOD 8270 B
DATA FILE >D0208

MATRIX SOIL
INJECTION TIME 970909 14:10
DATE ANALYZED 09/09/97

COMPOUND		UG/KG	MDL
Naphthalene	U	100.0	
Phenanthrene	U	100.0	
Benzo (a) pyrene	U	100.0	
Fluorene	U	100.0	
Benzo (a) anthracene	U	100.0	

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

9-7-97

Ocean Environmental, Inc.

PO Box 12
Wallingford, Pa. 19086

Phone and FAX:
(610) 872-7966

Chain of Custody

REPORT TO: Page 1
Client Name: SYNERTECH
Address: 2204 S. BROAD ST
PHILA PA 19104
Phone: 755-2301 FAX: 755-2405
Attn: J. CHASE

PROJECT NO: 052-004
PROJECT NAME: JACK FROST
CLIENT NAME: SYNERTECH
LAB NO:

ANALYSIS-WRITE IN REQUESTED TESTS: DIESEL, GAS, BTEX

SAMPLE I.D. NO.	DATE	TIME	WATER	SOIL	SAMPLE LOCATION	NUMBER OF CONTAINERS	DIESEL	GAS	BTEX	ADDITIONAL REQUIREMENTS
147-01S	9-5-97	10:30 AM		✓	39' EAST OF TELE POLE, 6.5' DEEP	1	X	X		TPH
147-02S	9-5	10:30 AM		✓	11' EAST OF TELE POLE, 4.5' DEEP	1	X	X		
147-03S	9-5	1:30 PM		✓	DIESEL AREA	1	X			
147-04S	9-5	1:30 PM		✓		1	X			
147-05S	9-5	1:30 PM		✓		1	X			
147-06S	9-5	1:30 PM		✓		1	X			
147-07S	9-5	3:45 PM		✓		1	X			
147-08S	9-5	3:45 PM		✓		1	X			
147-09S	9-5	3:45 PM		✓		1	X			
147-10S	9-5	3:45 PM		✓		1	X			
					TOTAL					

SHIPPED VIA: COURIER

RELINQUISHED BY (SIGNATURE):	DATE/TIME: 9-5 5:45 PM	AGENT OF: SYNERTECH	RECEIVED BY (SIGNATURE):	DATE/TIME: 9/5/97 1700	AGENT OF: OCEAN
PRINTED NAME: J. CHASE			PRINTED NAME: ROBERT WHITE		
RELINQUISHED BY (SIGNATURE):	DATE/TIME:	AGENT OF:	RECEIVED BY:	DATE/TIME:	AGENT OF:
PRINTED NAME:			PRINTED NAME:		
RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE/TIME:	REMARKS:	
PRINTED NAME:		PRINTED NAME:			

SAMPLER (SIGNATURE):

SAMPLERS NAME (PRINT): JONATHAN CHASE

ABC TANK COMPANY, INC.

1280

280

7-28-87

E OF PICKUP

ERATOR ABC Tank Company EPA IDENTIFICATION CODE NO. NJD986583417

Y Clayton, STATE NJ ZIP 08312 PHONE 609-881-6586

NTACT: Paul Molnar PHONE Same

DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	Containers No	Containers Type	Total Quantity	Unit Wt./Vol.	Waste No.
Combustible Liquid, N.O.S. (Fuel Oil) UN1993, PGIII	001	TT	5000	G	N/A

Emergency Phone # 609-881-6586

Additional Information/Lab Code

a. T, Lab Code P099 Petroleum Oil [illegible] c. ERG 128

Water [illegible]

d.

b.

CONTRACT/PO NO.

ME

RIVAL AT CUSTOMER

DEPARTED CUSTOMER

DELAY TIME

SPECIAL INSTRUCTIONS/REASON FOR DELAY

GENERATOR CERTIFICATION:
"I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations." I also certify that all times listed above are true and correct.

PRINT NAME CALVIN MANLEY SIGNATURE [signature] DATE 7-28-87

TRACTOR # 107 TRAILER # 25 TRAILER SPOTTED # TRAILER PICKED UP # 609-881-6586

TRANSPORTER # 1 PHONE NUMBER

COMPANY ABC Tank Company EPA ID NO NJD986583417

PRINT NAME Calvin Manley SIGNATURE [signature] DATE 7-28-87

TRANSPORTER # 2 PHONE NUMBER

COMPANY EPA ID NO

PRINT NAME SIGNATURE DATE

TSDF ARRIVAL TIME REASON FOR DELAY

TSDF DEPARTURE TIME

DELAY TIME

FINISH TIME

CONSIGNEE/TREATMENT/STORAGE/DISPOSAL FACILITY EPA IDENTIFICATION CODE NO. NJD011331150

CONSIGNED TO Republic Environmental Systems ADDRESS Cerco Blvd. PHONE 609-881-7401

CITY Clayton STATE NJ ZIP 08312 DATE

THIS IS TO CERTIFY THE ACCEPTANCE OF THIS WASTE FOR TREATMENT STORAGE DISPOSAL

PRINT NAME SIGNATURE

White-BILLING DEPT COPY
Green-TRANSPORTER FILE
Canary-DEPARTMENT FILE
Pink-DISPOSAL SITE COPY
Goldenrod-GENERATOR/SITE COPY

ABC TANK COMPANY, I...

...OF PICKUP	7/28/97
EPA IDENTIFICATION CODE NO.	NJD9_653417
...ERATOR	ABC Tank Company
ADDRESS	1029 L. Delsea Drive
CITY	Clayton,
STATE	NJ
ZIP	08312
PHONE	609-881-6586
PHONE	Same
...NTACT:	Paul Tolmar

DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	Containers No	Containers Type	Total Quantity	Unit Wt./Vol.	Waste No.
Combustible Liquid, N.O.S. (Fuel Oil) NA1993, PGIII	001	TT	2000	G	N/A

Emergency Phone # 609-881-6586

Additional Information/Lab Code
a. ..., T, Lab Code P099 Petroleum Oil ___ %
Water ___ %
c. ERG 128
d.
b.

CONTRACT/PO NO.	
...ME	
ARRIVAL AT CUSTOMER	
DEPARTED CUSTOMER	
DELAY TIME	

SPECIAL INSTRUCTIONS/REASON FOR DELAY

GENERATOR CERTIFICATION:
"I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations." I also certify that all times listed above are true and correct.

SIGNATURE [signature] DATE 7/28/...

PRINT NAME Boyd Campbell

TRAILER SPOTTED:

TRAILER PICKED UP #

TRACTOR #

TRAILER #

PHONE NUMBER 609-881-6586

TRANSPORTER #1

EPA ID NO NJD986583417

DATE 7-28-...

COMPANY ABC Tank Company

SIGNATURE [signature]

PRINT NAME Boyd Campbell

PHONE NUMBER

EPA ID NO

DATE

TRANSPORTER #2

COMPANY

SIGNATURE

PRINT NAME

REASON FOR DELAY

TSDF ARRIVAL TIME

TSDF DEPARTURE TIME

DELAY TIME

...NISH TIME

...SIGNEE/TREATMENT/STORAGE/DISPOSAL FACILITY EPA IDENTIFICATION CODE NO. NJD991133150

CONSIGNED TO Republic Environmental Recycling

ADDRESS Cenco Blvd.

CITY Clayton

STATE NJ

ZIP 08312

PHONE 609-881-7400

THIS IS TO CERTIFY THE ACCEPTANCE OF THIS WASTE FOR TREATMENT STORAGE DISPOSAL

DATE

PRINT NAME

SIGNATURE

White-BILLING DEPT. COPY
Green-TRANSPORTER FILE
...-...MENT DEPARTMENT FILE
Pink-DISPOSAL SITE COPY
Goldenrod GENERATOR/SITE COPY

1166

A_C TANK COMPANY, I_ _.

er ___
: OF PICKUP ___ EPA IDENTIFICATION CODE NO. NJD 9 _ 6 5 _ 3 4 1 7
ERATOR ABC Tank Company ADDRESS 1029 E. Delsea Drive
Clayton, STATE NJ ZIP 08312 PHONE 609-881-6586
ITACT: Paul Molnar PHONE Same

DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	Containers No	Containers Type	Total Quantity	Unit Wt./Vol.	Waste No.
Combustible Liquid, N.O.S. (Fuel Oil) NA1993, PGIII	001	TT	2,625	G	N/A

Emergency Phone # 609-881-6586

dditional Information/Lab Code c.
L, T, Lab Code P099 Petroleum Oil ___ ERG 128
Water ___ d.

CONTRACT/PO NO. ___
STAR___E ___
_VAL AT CUSTOMER ___
DEPARTED CUSTOMER ___
DELAY TIME ___

SPECIAL INSTRUCTIONS/REASON FOR DELAY ___

GENERATOR CERTIFICATION:
"I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations." I also certify that all times listed above are true and correct.
DATE ___
PRINT NAME ___ SIGNATURE ___

TRACTOR # ___ TRAILER # ___ TRAILER SPOTTED # ___ TRAILER PICKED UP # 609-881-6586

TRANSPORTER #1 PHONE NUMBER ___
EPA ID NO NJD 9 _ 6 5 _ 3 4 1 7
COMPANY ABC Tank Company DATE ___
PRINT NAME ___ SIGNATURE ___

TRANSPORTER # 2 PHONE NUMBER ___
EPA ID NO ___
COMPANY ___ DATE ___
PRINT NAME ___ SIGNATURE ___

TSDF ARRIVAL TIME ___ REASON FOR DELAY ___
TSDF DEPARTURE TIME ___
DELAY TIME ___
FINISH TIME ___

_NEE/TREATMENT/STORAGE/DISPOSAL FACILITY EPA IDENTIFICATION CODE NO. NJD 9 8 1 1 3 3 1 5 _
Republic Environmental Recycling ADDRESS Cenco Blvd. PHONE 609-881-_4_0
_SIGNED TO Clayton STATE NJ ZIP 08312

THIS IS TO CERTIFY THE ACCEPTANCE OF THIS WASTE FOR TREATMENT STORAGE DISPOSAL ___ DATE ___
PRINT NAME ___ SIGNATURE ___

White-BILLING DEPT COPY
_-TRANSPORTER FILE
_-DOCUMENT DEPARTMENT FILE
Pink-DISPOSAL SITE COPY
Goldenrod-GENERATOR/SITE COPY

1172

ABC TANK COMPANY, INC.

EPA IDENTIFICATION CODE NO. J D 9 6 5 8 3 4 1 7

DATE OF PICKUP

GENERATOR ABC Tank Company — ADDRESS 1009 S. Delsea Drive

CITY Clayton, — STATE NJ — ZIP 08312 — PHONE 609-881-6586

CONTACT: Paul Molnar — PHONE same

DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	Containers No	Containers Type	Total Quantity	Unit Wt./Vol.	Waste No.
Combustible Liquid N.O.S. (Fuel Oil) NA1993, PGIII	001	TT	1,000	G	N/A

Emergency Phone # 609-881-6586

Additional Information/Lab Code
L, T, Lab Code P099 Petroleum Oil ____ c. ERG 128
Water ____ d.

CONTRACT/PO NO.

START

ARRIVAL AT CUSTOMER

DEPARTED CUSTOMER

DELAY TIME

SPECIAL INSTRUCTIONS/REASON FOR DELAY

GENERATOR CERTIFICATION:
I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations." I also certify that all times listed above are true and correct.

PRINT NAME — SIGNATURE — DATE

TRACTOR # — TRAILER # — TRAILER SPOTTED # — TRAILER PICKED UP

TRANSPORTER #1 — PHONE NUMBER 609-881-6586

COMPANY ABC Tank Company — EPA ID NO NJD986583417 — DATE

PRINT NAME — SIGNATURE

TRANSPORTER # 2 — PHONE NUMBER

COMPANY — EPA ID NO — DATE

PRINT NAME — SIGNATURE

TSDF ARRIVAL TIME — REASON FOR DELAY

TSDF DEPARTURE TIME

DELAY TIME

FINISH TIME

DESIGNATED TREATMENT/STORAGE/DISPOSAL FACILITY EPA IDENTIFICATION CODE NO. NJD986113150

CONSIGNED TO Republic Environmental Recycling — ADDRESS Cenco Blvd. — PHONE 609-881-7400

CITY Clayton — STATE NJ — ZIP 08312

THIS IS TO CERTIFY THE ACCEPTANCE OF THIS WASTE FOR TREATMENT STORAGE DISPOSAL — DATE

PRINT NAME — SIGNATURE

White-BILLING DEPT. COPY
Green-TRANSPORTER FILE
Yellow-DOCUMENT DEPARTMENT FILE
Pink-DISPOSAL SITE COPY
Goldenrod-GENERATOR/SITE COPY

A..C TANK COMPANY, I...

1304

EPA IDENTIFICATION CODE NO. NJ D 9 8 6 5 8 3 4 1 7

OF PICKUP: ABC Tank Company — ADDRESS: 1029 N. Delsea Drive — PHONE: 609-881-6586

RATOR: Clayton, — STATE: NJ — ZIP: 08312

ACT: Paul Folmar — PHONE: Same

OT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	Containers No	Containers Type	Total Quantity	Unit Wt./Vol.	Waste No.
Combustible Liquid, N.O.S. (Fuel Oil) NA1993, PGIII	001	TT	720	G	N/A

Emergency Phone # 609-881-6586

ditional Information/Lab Code: L, T, Lab Code P090 Petroleum Oil ___ % Water ___ %

c.

d.

ERG 128

ONTRACT/PO NO.

ART

AL AT CUSTOMER

EPARTED CUSTOMER

ELAY TIME

SPECIAL INSTRUCTIONS/REASON FOR DELAY

GENERATOR CERTIFICATION:
I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations." I also certify that all times listed above are true and correct.

PRINT NAME [signature] — SIGNATURE [signature] — DATE

TRACTOR # — TRAILER # — TRAILER SPOTTED # — TRAILER PICKED UP #

TRANSPORTER #1 — PHONE NUMBER 609-881-6586

EPA ID NO NJ D 9 8 6 5 8 3 4 1 7

COMPANY ABC Tank Company — DATE

PRINT NAME [signature] — SIGNATURE [signature]

TRANSPORTER # 2 — PHONE NUMBER

EPA ID NO

COMPANY ABC Tank Co — SIGNATURE [signature] — DATE 08/08/97

PRINT NAME Edward [illegible] — REASON FOR DELAY

TSDF ARRIVAL TIME

TSDF DEPARTURE TIME

DELAY TIME

FINISH TIME

NEE/TREATMENT/STORAGE/DISPOSAL FACILITY EPA IDENTIFICATION CODE NO. NJ D 9 8 1 1 3 3 1 5 0

Republic Environmental Recycling — ADDRESS Cenco Blvd. — PHONE 609-881-7400

IGNED TO Clayton — STATE NJ — ZIP 08312

THIS IS TO CERTIFY THE ACCEPTANCE OF THIS WASTE FOR TREATMENT STORAGE DISPOSAL

PRINT NAME [signature] — SIGNATURE [signature] — DATE 8/8/97

White-BILLING DEPT COPY
Green-TRANSPORTER FILE
...-DOCUMENT DEPARTMENT FILE
Pink-DISPOSAL SITE COPY
Goldenrod-GENERATOR/SITE COPY

INTERNATIONAL PETROLEUM CORPORATION

05 S. Market St.
Wilmington, DE 19801
1-302-421-9306
1-800-222-2511

6305 E. Lomi[illegible]t.
Baltimore, MD [illegible]224
1-410-633-0606

(NON-HAZARDOUS)

31903

OTHER IPC LOCATIONS
Plant City, Florida
New Orleans, Louisiana

I.D. NO. DED984073692
I.D. NO. MDD985389816

DATE OF SERVICE: 8-25-97

DRIVER'S SIGNATURE: X Bill Emsor

COMPANY AND LOCATION	BILLING ADDRESS
Jobsite: Jack Frost Sugar Site	QCI 610 N Sycamore St. Clifton Heights PA 19015

NET: Jim Quinn

PHONE NO.: 610-284-3355

FAX NO.:

NET SERVICE:

TANK SIZE:

OIL SERVICE: at 9:00am & end 11:30 am

WASTE DESCRIPTION	STARTING INCHES	ENDING INCHES	NET VOLUME	UNIT PRICE	TOTAL
ly Water/gasoline mixture	gauged		2900 gal		
2½ hr Pump Time					

TANK MONITOR SERVICE

I.P.C. ASSUMES RESPONSIBILITY FOR THE SAFE REMOVAL AND RECYCLING/TREATMENT OF WASTE FLUIDS IN ACCORDANCE WITH ALL STATE AND FEDERAL LAWS.

RECEIVABLES

PAYMENT RECEIVED ☐ YES ☐ NO

AMOUNT RECEIVED

CHECK NO.

DATE RECEIVED

TO BE BILLED? ☐ YES ☐ NO

P.O. #

REMARKS:

PAYABLES

AMOUNT PAID

CHECK NO.

DATE PAID

CHECK TO BE FORWARDED FROM THE OFFICE ☐ YES ☐ NO

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT RECEIVED SECTION. INVOICES REFLECTING CHARGES TO CUSTOMER ARE SUBJECT TO AN INTEREST RATE OF THE LESSER OF 1 ½% PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY INVOICES THAT ARE NOT PAID WITHIN 30 DAYS. IN THE EVENT OF DEFAULT, INTERNATIONAL OIL SERVICES SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.

GENERATOR WARRANTS AND REPRESENTS THAT THE MATERIALS PROVIDED INTERNATIONAL PETROLEUM CORPORATION HEREUNDER HAVE NOT BEEN MIXED, COMBINED, OR OTHERWISE BLENDED IN ANY QUANTITY WITH MATERIALS CONTAINING POLYCHLORINATED BIPHENYLS (PCB) OR ANY OTHER MATERIAL DEFINED AS A HAZARDOUS WASTE UNDER APPLICABLE LAWS INCLUDING BUT NOT LIMITED TO 40 CFR PART 261. GENERATOR AGREES TO INDEMNIFY AND HOLD INTERNATIONAL PETROLEUM CORPORATION HARMLESS FOR ANY DAMAGES, COSTS, ATTORNEY'S FEES, ETC. ARISING OUT OF OR IN ANY WAY RELATED TO A BREACH OF THE ABOVE WARRANTY BY THE GENERATOR

X AGENT FOR LVI

GENERATOR/CUSTOMER SIGNATURE

INTERNATIONAL PETROLEUM CORPORATION

105 S. Market St.
Wilmington, DE 19801
1-302-421-9306
1-800-222-2511

6305 E. Lomb[illegible]t.
Baltimore, MD 21224
1-410-633-0606

OTHER IPC LOCATIONS
Plant City, Florida
New Orleans, Louisiana

I.D. NO. DED984073692
I.D. NO. MDD985389816

USED OIL MANIFEST
(NON-HAZARDOUS)

31953

DATE OF SERVICE: 9-4-97

DRIVER'S SIGNATURE: X Bill Enzor

COMPANY AND LOCATION

Jobsite:
Jack Frost Sugar Site

BILLING ADDRESS

QCI
610 N. Sycamore Ave
Clifton Heights PA

CT OF SERVICE: Jim Quinn

PHONE NO.: 610-284-3355

NET SERVICE

FAX NO.

TANK SIZE

WASTE DESCRIPTION	STARTING INCHES	ENDING INCHES	NET VOLUME	UNIT PRICE	TOTAL
sline/water mixture for Recycling 1203	gauged		1985 gal		
y Water ERG "27	gauged		2515 gal		

TANK MONITOR SERVICE

On site 7AM to 10AM

I.P.C. ASSUMES RESPONSIBILITY FOR THE SAFE REMOVAL AND RECYCLING/TREATMENT OF WASTE FLUIDS IN ACCORDANCE WITH ALL STATE AND FEDERAL LAWS.

RECEIVABLES

PAYMENT RECEIVED ☐ YES ☐ NO

AMOUNT RECEIVED

CHECK NO.

DATE RECEIVED

TO BE BILLED? ☐ YES ☐ NO

P.O. #

REMARKS:

PAYABLES

AMOUNT PAID

CHECK NO.

DATE PAID

CHECK TO BE FORWARDED FROM THE OFFICE ☐ YES ☐ NO

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT RECEIVED SECTION. INVOICES REFLECTING CHARGES TO CUSTOMER ARE SUBJECT TO AN INTEREST RATE OF THE LESSER OF 1 ½% PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY INVOICES THAT ARE NOT PAID WITHIN 30 DAYS. IN THE EVENT OF DEFAULT, INTERNATIONAL OIL SERVICES SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.

GENERATOR WARRANTS AND REPRESENTS THAT THE MATERIALS PROVIDED INTERNATIONAL PETROLEUM CORPORATION HEREUNDER HAVE NOT BEEN MIXED, COMBINED, OR OTHERWISE BLENDED IN ANY QUANTITY WITH MATERIALS CONTAINING POLYCHLORINATED BIPHENYLS (PCB) OR ANY OTHER MATERIAL DEFINED AS A HAZARDOUS WASTE UNDER APPLICABLE LAWS INCLUDING BUT NOT LIMITED TO 40 CFR PART 261. GENERATOR AGREES TO INDEMNIFY AND HOLD INTERNATIONAL PETROLEUM CORPORATION HARMLESS FOR ANY DAMAGES, COSTS, ATTORNEY'S FEES, ETC. ARISING OUT OF OR IN ANY WAY RELATED TO A BREACH OF THE ABOVE WARRANTY BY THE GENERATOR.

X

GENERATOR/CUSTOMER SIGNATURE

CASIE PROTANK ENVIRONMENTAL SERVICES

print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS MANIFEST	1. Generator's US EPA ID No. EXEMPT - - - - - - - - - Document No. 04034	2. Page 1 of 1

A. Non-hazardous Manifest Document Number: NHZ0200 7182

3. Generator's Name and Mailing Address
Jack Frost Sugar
Delaware Avenue, Philadelphia, PA

B. State Generator's ID: SAME

4. Generator's Phone (609) 696-4401

5. Transporter 1 Company Name: Casie Ecology Oil Salvage, Inc.
6. US EPA ID Number: NJD045995693

C. State Trans. ID: 31 X26335
D. Transporter's Phone ((609)) 696-4401

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Trans. ID
F. Transporter's Phone ( )

9. Designated Facility Name and Site Address
Casie Ecology Oil Salvage, Inc. T/A / Casie Protank
3209 N. Mill Rd
Vineland NJ 08360

10. US EPA ID Number: NJD045995693

G. State Facility's ID: 0301D1HP05
H. Facility's Phone (609) 696-4401

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Combustible liquid, n.o.s.(Fuel Oil) NA1993, III	001	TT	X2600 (~~02001~~)	G	ID72
b. Flammable Liquid, NOS(Gasoline) 3, UN1993, PGIII	001	TT	X2000	G	ID72
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. (L,T) 5 %oil/sed 95 %wtr
b. L,T 50 %oil/sed 50 %wtr
c.
d.

K. Handling Codes for Wastes Listed Above
a. FILTER/ S03
b. FILTER/ S03
c.
d.

15. Special Handling Instructions and Additional Information
PA-AH-0307
24 hr emergency response #609-696-4401 K.Ambrosia
a.ERG# 128

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.

Printed/Typed Name: STEVEN F. COR
Signature: [signature] ON BEHALF OF LVI ENVIRONMENTAL SERVICES, INC
Month Day Year: 09 04 9[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JIM CROSBY
Signature: [signature]
Month Day Year: 09 04 9[illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Michelle Lange
Signature: Michelle Lange
Month Day Year: 09 09 9[illegible]

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

CASIE PROTANK
ENVIRONMENTAL SERVICES

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No. NONEREQUIRED Document No. -5962
2. Page 1 of 1

A. Non-hazardous Manifest Document Number: NHZ0200 9111

3. Generator's Name and Mailing Address: Jack Frost Sugar, Delaware Avenue, Philadelphia PA

B. State Generator's ID: SAME

4. Generator's Phone (610) 594-5511

5. Transporter 1 Company Name: Casie Ecology Oil Salvage, Inc.
6. US EPA ID Number: NJD045995693

C. State Trans. ID: 31
D. Transporter's Phone (609) 696-4401

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Trans. ID: X26356
F. Transporter's Phone ( )

9. Designated Facility Name and Site Address: Casie Ecology Oil Salvage, Inc. T/A / Casie Protank, 3209 N. Mill Rd, Vineland NJ 08360
10. US EPA ID Number: NJD045995693

G. State Facility's ID: 0614D1HP05
H. Facility's Phone (609) 696-4401

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	Combustible liquid, n.o.s.(Fuel Oil) NA1993, III	001	TT	xx 225 (06000)	G	ID72
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. (L,T) 50%oil/sed 50%wtr
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. [illegible]
b.
c.
d.

15. Special Handling Instructions and Additional Information
24 hr emergency response #609-696-4401 K.Ambrosia
a. ERG# 128
b. PA-AH-0307

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.

Printed/Typed Name: x Steve Coe Agent for WI — Signature: x [signature] — Month Day Year: 10 17 97

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Del-Arnold — Signature: Del Arnold — Month Day Year: 10 17 97

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Michelle Lange — Signature: [signature] — Month Day Year: 10 17 97

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

2-TRANSPORTER 1 COPY

EPA ID NOS.
PA0000538827
NJD011881174
PA0000239293

State Facility Nos:
51-41222 (PA)
17098 IHP03 (NJ)

SERVICE ORDER

C.R. WARNER, INC.

YANKEE POINT TERMINAL
81ST & W. PASSYUNK AVE.
PHILADELPHIA, PA. 19153

TEL: (800) 952-5732
TEL: (215) 726-4300 (PA)
FAX: (215) 726-4305 (PA)
TEL: (609) 769-1188 (NJ)
FAX: (609) 769-3950 (NJ)

SERVICE ORDER No. 164434

STATE MANIFEST #

BILLING ADDRESS:
QSI Environmental
No Sycamore
Clifton Heights, PA 19018

CUSTOMER PHONE # 610-284-3355

SITE ADDRESS:
Sugar Mill
No. Delaware Ave
Phila PA

DATE OF ORDER	DRIVER	YOUR P.O. #	TRUCK NUMBER	TERMS
10-21-97	Jackie ME		F-10	

DESCRIPTION	QTY	UNIT PRICE	AMOUNT
COMBUSTIBLE LIQUID, N.O.S., NA1993, PG III (USED MOTOR & FUEL OIL) (NOT EPA REGULATED)	200 gals	[redacted]	[redacted]
svc charge			

Paid
Ck # 3355
11/10/97

CUSTOMER PAYMENT: ☑ CHECK # ______ ☐ CASH ☐ INVOICE

[redacted]
DOLLAR TOTAL

GENERATOR CERTIFICATION: By signing this service order, generator hereby certifies that the waste oil being picked up by C.R. Warner, Inc. is not a hazardous waste as defined by RCRA and that the waste oil does not contain and has not been contaminated by any Hazardous Spent Halogenated Solvents i.e. EPA waste (F001, F002) or other Hazardous Wastes. The Waste Material is therefore classified as a Non-Hazardous Waste Oil as defined in 40 CFR PART 261.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

NJAC 7:26-7.7 Exemption from manifest rules of Generators who only generate less than 100 gallons/month of hazardous waste with hazardous waste numbers x721, x723, x724, x726 or x727, or generators who only generate hazardous waste number x722 in any amount are exempted from the generator requirements as contained in N.J.A.C. 7:26-7.4 provided they are the original generator and they comply with section (c)

CUSTOMER SIGNATURE X [signature] CUSTOMER NUMBER 8683

4-ACCOUNTING COPY

FORM 1012 REV. 3-96

Jan-22-98 09:04A C. R. Warner, Inc. 215 726-4305 P.01

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Brown Env. Serv. Corp.
1690 Newtown-Langhorne Rd.
Newtown, Pa. 18940

Project ID: Jack Frost Sugar Site
Phila., Pa.

Date recieved: Aug. 11, 1997

Analysis comp.: Aug. 4, 1997

OE Sample No.	Customer No.	Test Parameter		Results mg/kg	Detection Lim.mg/kg
10124	1	TCLP Metals	Arsenic	0.014	0.005
			Barium	2.06	0.1
			Cadmium	nd	0.01
			Chromium	0.04	0.01
			Lead	0.38	0.005
			Mercury	nd	0.008
			Selenium	nd	0.001
			Silver	nd	0.05
			Copper	0.22	0.01
			Nickel	0.09	0.01
			Zinc	1.47	0.005

nd=none detected

Respectfully submitted:

Robert A. White
Laboratory Director

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Brown Env. Serv. Corp.
1690 Newtown-Langhorne Rd.
Newtown, Pa. 18940

Date recieved: Aug. 1, 1997

Project ID: Jack Frost Sugar Site
Phila., Pa.

Analysis comp.: Aug. 4, 1997

OE Sample No.	Customer No.	Test Parameter		Results ug/kg	Detection Lim.ug/kg
10124	1	PCB	Aroclor 1016	nd	0.3
			Aroclor 1221	nd	0.3
			Aroclor 1232	nd	0.3
			Aroclor 1242	nd	0.3
			Aroclor 1248	nd	0.3
			Aroclor 1254	nd	0.3
			Aroclor 1260	nd	0.3
			Aroclor 1262	nd	0.3

All results reported on dry weight basis. nd=none detected
SW-846 Method 8080

Respectfully submitted:

Robert A. White
Laboratory Director

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Brown Env. Serv. Corp.
1690 Newtown-Langhorne Rd.
Newtown, Pa. 18940

Date recieved: Aug. 1, 1997

Project ID: Jack Frost Sugar Site
Phila., Pa.

Analysis comp.: Aug. 4, 1997

OE Sample No.	Customer No.	Test Parameter	Results mg/kg	Detection Lim.mg/kg
10124	1	Total petroleum hydrocarbon-TRO	768.6	10.0

Paint Filter Test: Passes

All results reported on dry weight basis. nd=none detected
Test Method: TRO=EPA 418.1

Respectfully submitted:

Robert A. White
Laboratory Director

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
VOLATILE ORGANICS

LAB ID OE10118 Brown-JF Site
ANALYSIS METHOD 8260a
DATA FILE >D0213
MATRIX SOIL
INJECTION TIME 970802 14:44
DATE ANALYZED 08/02/97

COMPOUND	UG/KG	MDL
Acetone	U	200.0
Acrolein	U	200.0
Allyl Alcohol	U	200.0
Benzene	U	50.0
Bromoacetone	U	200.0
Bromodichloromethane	U	100.0
Bromomethane	U	100.0
2-Butanone	U	200.0
Carbon tetrachloride	U	100.0
Chlorobenzene	U	100.0
Chlorodibromomethane	U	100.0
2-Chloroethanol	U	200.0
2-Chloroethyl vin. ether	U	200.0
Chloromethane	U	100.0
3-Chloropropene	U	100.0
1,2-Dibromoethane	U	100.0
1,2-Dichlorobenzene	U	100.0
1,4-Dichlorobenzene	U	100.0
trans-1,4-DCB	U	200.0
1,1-Dichloroethane	U	100.0
1,3-Dichloroethene	U	100.0
1,2-Dichloropropane	U	100.0
cis-1,3-Dichloropropene	U	100.0
1,2,3,4-Diepoxybutane	U	100.0
1,4-Difluorobenzene	U	200.0
Ethylbenzene	U	100.0
Ethyl methacrylate	U	100.0
2-Hexanone	U	200.0
Isobutyl alcohol	U	200.0
Malonitrile	U	200.0
Methylene chloride	U	100.0
4-Methyl-2-pentanone	U	200.0
Nitrobenzene	U	100.0
2-Picoline	U	200.0
B-Propiolactone	U	200.0
Styrene	U	100.0
1,1,2,2-Tetrachloroethane	U	100.0
Toluene	U	50.0
1,1,1-Trichloroethane	U	100.0
Trichloroethene	U	100.0
1,2,3-Trichloropropane	U	100.0
Vinyl chloride	U	100.0
m,p-Xylenes	136	100.0

COMPOUND	UG/KG	MDL
Acetonitrile	U	200.0
Acrylonitrile	U	200.0
Allyl chloride	U	200.0
Benzyl chloride	U	100.0
Bromochloromethane	U	100.0
Bromoform	U	100.0
n-Butanol	U	100.0
Carbon disulfide	U	200.0
Chloral hydrate	U	200.0
2-Chloro-1,3-butadiene	U	100.0
Chloroethane	U	100.0
bis-(2-Chloroethyl) sulf.	U	200.0
Chloroform	U	100.0
Chloropropene	U	100.0
1,2-Dibromo-3-chloroprop.	U	200.0
Dibromomethane	U	100.0
1,3-Dichlorobenzene	U	100.0
cis-1,4-DCB	U	100.0
Dichlorodifluoromethane	U	100.0
1,2-Dichloroethane	U	100.0
trans-1,2-Dichloroethene	U	100.0
1,3-Dichloro-2-propanol	U	200.0
trans-1,3-Dichloropropene	U	100.0
Diethyl ether	U	100.0
1,4-Dioxane	U	100.0
Ethylene Oxide	U	200.0
Hexachlorobutadiene	U	100.0
Iodomethane	U	100.0
Isopropylbenzene	U	100.0
Methacrylonitrile	U	200.0
Methyl methacrylate	U	100.0
Naphthalene	240	100.0
2-Nitropropane	U	100.0
Propargyl alcohol	U	200.0
n-Propylamine	U	100.0
1,1,1,2-Tetrachloroethane	U	100.0
Tetrachloroethene	U	100.0
1,2,4-Trichlorobenzene	U	100.0
1,1,2-Trichloroethane	U	100.0
Trichlorofluoromethane	U	100.0
Vinyl acetate	U	100.0
o-Xylene	U	100.0
1,1-Dichloroethene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

Approved 8-7-97

* Dilution Factor of 203.3 and Percent Moisture of 16.1 % were used to calculate these results.

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Brown Env. Serv. Corp.
1690 Newtown-Langhorne Rd.
Newtown, Pa. 18940

Project ID: Jack Frost
Phila., Pa.

Date recieved: Sep. 5, 1997

Analysis comp.: Sep. 8, 1997

OE Sample No.	Customer No.	Test Parameter		Results mg/l	Detection Lim.mg/l
10199	1	TCLP Metals	Arsenic	0.0011	0.0005
			Barium	0.26	0.1
			Cadmium	nd	0.01
			Chromium	0.05	0.01
			Copper	0.12	0.01
			Lead	0.34	0.005
			Mercury	nd	0.0002
			Nickel	0.02	0.01
			Selenium	nd	0.0005
			Silver	nd	0.01
			Zinc	0.37	0.005

nd=none detected

Results reported on dry weight basis.

Respectfully submitted:

Robert A. White
Laboratory Director

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Brown Env. Serv. Corp.
1690 Newtown-Langhorne Rd.
Newtown, Pa. 18940

Project ID: Jack Frost
Phila., Pa.

Date recieved: Sep. 5, 1997

Analysis comp.: Sep. 8, 1997

OE Sample No.	Customer No.		Test Parameter	Results mg/kg	Detection Lim.mg/kg
10199	1	PCB	Aroclor 1016	nd	0.4
			Aroclor 1221	nd	0.4
			Aroclor 1232	nd	0.4
			Aroclor 1242	nd	0.4
			Aroclor 1248	nd	0.4
			Aroclor 1254	nd	0.4
			Aroclor 1260	nd	0.4

All results reported on dry weight basis. nd=none detected
Test method: SW-846 8080

Respectfully submitted:

Robert A. White
Laboratory Director

OCEAN ENVIRONMENTAL, INC.

PO Box 12
Wallingford, Pa. 19086
NJDEPE Cert. No. 03886

Client ID: Brown Env. Serv. Corp.
1690 Newtown-Langhorne Rd.
Newtown, Pa. 18940

Project ID: Jack Frost
Phila., Pa.

Date recieved: Sep. 5, 1997

Analysis comp.: Sep. 8, 1997

OE Sample No.	Customer No.	Test Parameter	Results mg/kg	Detection Lim.mg/kg
9794	Pile	Total petroleum hydrocarbon-GRO	472.	10.0
		Total petroleum hydrocarbon-DRO	280.	10.0
		Paint Filter Test: Passes		

All results reported on dry weight basis. nd=none detected
Test Methods:TPH=SW-846 Meth 8015 (mod)

Respectfully submitted:

Robert A. White
Laboratory Director

RANCOCAS ENVIRONMENTAL LABS
GC/MS ANALYTICAL RESULTS
VOLATILE ORGANICS

LAB ID OE10118 Brown-Jack Frost MATRIX SOIL

ANALYSIS METHOD 8260a

DATA FILE >D0259

INJECTION TIME 970906 14:43

DATE ANALYZED 09/6/97

COMPOUND	UG/KG	MDL
Acetone	114 J	200.0
Acrolein	U	200.0
Allyl Alcohol	U	200.0
Benzene	62	50.0
Bromoacetone	U	200.0
Bromodichloromethane	U	100.0
Bromomethane	U	100.0
2-Butanone	88 J	200.0
Carbon tetrachloride	U	100.0
Chlorobenzene	U	100.0
Chlorodibromomethane	U	100.0
2-Chloroethanol	U	200.0
2-Chloroethyl vin. ether	U	200.0
Chloromethane	U	100.0
3-Chloropropene	U	100.0
1,2-Dibromoethane	U	100.0
1,2-Dichlorobenzene	U	100.0
1,4-Dichlorobenzene	U	100.0
trans-1,4-DCB	U	200.0
1,1-Dichloroethane	U	100.0
1,3-Dichloroethene	U	100.0
1,2-Dichloropropane	U	100.0
cis-1,3-Dichloropropene	U	100.0
1,2,3,4-Diepoxybutane	U	100.0
1,4-Difluorobenzene	U	200.0
Ethylbenzene	247	100.0
Ethyl methacrylate	U	100.0
2-Hexanone	U	200.0
Isobutyl alcohol	U	200.0
Malonitrile	U	200.0
Methylene chloride	U	100.0
4-Methyl-2-pentanone	U	200.0
Nitrobenzene	U	100.0
2-Picoline	U	200.0
β-Propiolactone	U	200.0
Styrene	U	100.0
1,1,2,2-Tetrachloroethane	U	100.0
Toluene	458	50.0
1,1,1-Trichloroethane	U	100.0
Trichloroethene	U	100.0
1,2,3-Trichloropropane	U	100.0
Vinyl chloride	U	100.0
m,p-Xylenes	730	100.0

COMPOUND	UG/KG	MDL
Acetonitrile	U	200.0
Acrylonitrile	U	200.0
Allyl chloride	U	200.0
Benzyl chloride	U	100.0
Bromochloromethane	U	100.0
Bromoform	U	100.0
n-Butanol	U	100.0
Carbon disulfide	U	200.0
Chloral hydrate	U	200.0
2-Chloro-1,3-butadiene	U	100.0
Chloroethane	U	100.0
bis-(2-Chloroethyl) sulf.	U	200.0
Chloroform	U	100.0
Chloropropene	U	100.0
1,2-Dibromo-3-chloroprop.	U	200.0
Dibromomethane	U	100.0
1,3-Dichlorobenzene	U	100.0
cis-1,4-DCB	U	100.0
Dichlorodifluoromethane	U	100.0
1,2-Dichloroethane	U	100.0
trans-1,2-Dichloroethene	U	100.0
1,3-Dichloro-2-propanol	U	200.0
trans-1,3-Dichloropropene	U	100.0
Diethyl ether	U	100.0
1,4-Dioxane	U	100.0
Ethylene Oxide	U	200.0
Hexachlorobutadiene	U	100.0
Iodomethane	U	100.0
Isopropylbenzene	U	100.0
Methacrylonitrile	U	200.0
Methyl methacrylate	U	100.0
Naphthalene	309	100.0
2-Nitropropane	U	100.0
Propargyl alcohol	U	200.0
n-Propylamine	U	100.0
1,1,1,2-Tetrachloroethane	U	100.0
Tetrachloroethene	U	100.0
1,2,4-Trichlorobenzene	U	100.0
1,1,2-Trichloroethane	U	100.0
Trichlorofluoromethane	U	100.0
Vinyl acetate	U	100.0
o-Xylene	227	100.0
1,1-Dichloroethene	U	100.0

(U) Indicates compound not detected
(J) Indicates detected below MDL
(B) Indicates also present in blank

* Dilution Factor of and Percent Moisture of % were used to calculate these results.

Approved 9/6/97

Ocean Environmental, Inc.

PO Box 12
Wallingford, Pa. 19086

Phone and FAX
(610) 872-7966

Chain of Custody

REPORT TO:
Client Name: Brown
Address: 1690 Newtown-Langhorne Rd
Newtown PA
Phone: 504-5066 FAX: 504-5062
Attn: Steve

PROJECT NO.:
PROJECT NAME: JACK FROST
CLIENT NAME: Brown Envl
LAB NO.:

ANALYSIS-WRITE IN REQUESTED TESTS

SAMPLE ID NO.	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NUMBER OF CONTAINERS	PCBS	TCLP METALS	TPH (DRO)	TPH (GRO)	VOCS	PAINT FILTER	ADDITIONAL REQUIREMENTS
1-S	9-5-97	4:00				2	X	X	X	X	X	X	
					TOTAL								

SHIPPED VIA:			
RELINQUISHED BY: (SIGNATURE) [signature]	DATE/TIME 9/5/97 4:48	AGENT OF: Brown Environ.	
PRINTED NAME: STEVEN F. COE			
RECEIVED BY: (SIGNATURE) [signature]	DATE/TIME 9/5/97 1648	AGENT OF: OCEAN	
PRINTED NAME: ROBERT WHITE			
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	AGENT OF:	
PRINTED NAME			
RECEIVED BY:	DATE/TIME	AGENT OF:	
PRINTED NAME			
RELINQUISHED BY: (SIGNATURE)	DATE/TIME		
PRINTED NAME [signature]			
RECEIVED FOR LABORATORY BY (SIGNATURE): [signature]	DATE/TIME	REMARKS	
PRINTED NAME: ROBERT WHITE			
SAMPLER (SIGNATURE) [signature]	SAMPLERS NAME (PRINT): STEVEN F. COE		

ytheon Engineers & Constructors, Inc.
vironmental Services Laboratory Data Summary
mmary # 34598

g	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
8178	Heating Oil S-01	427	TPH SOLID	11000		mg/kg-dry	10/24/1997	10/27/1997	10/28/1997	DJS
8178	Heating Oil S-01	S06	WATER BY EVAP	9.7		% as received	10/24/1997	10/28/1997	10/28/1997	MCH
8179	Heating Oil S-02	427	TPH SOLID	7700		mg/kg-dry	10/24/1997	10/27/1997	10/28/1997	DJS
8179	Heating Oil S-02	S06	WATER BY EVAP	8.8		% as received	10/24/1997	10/28/1997	10/28/1997	MCH
38180	Heating Oil S-04	G18	Acetone	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Benzene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Bromodichloromethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Bromoform	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Bromomethane	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	2-Butanone	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Carbon Disulfide	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Carbon Tetrachloride	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Chlorobenzene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Chloroethane	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Chloroform	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Chloromethane	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Dibromochloromethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,2-Dichloroethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,1-Dichloroethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,1-Dichloroethene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	trans-1,2-Dichloroethene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	cis-1,2-Dichloroethene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,2-Dichloropropane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	trans-1,3-Dichloropropene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	cis-1,3-Dichloropropene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Ethylbenzene	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	2-Hexanone	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	4-Methyl-2-Pentanone	550 J	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Methylene Chloride	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Styrene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,1,2,2-Tetrachloroethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Tetrachloroethene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	Toluene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,1,1-Trichloroethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
38180	Heating Oil S-04	G18	1,1,2-Trichloroethane	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT

tcheon Engineers & Constructors, Inc.
ironmental Services Laboratory Data Summary
mary # 34598

	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
180	Heating Oil S-04	G18	Trichloroethene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
180	Heating Oil S-04	G18	Vinyl Chloride	ND	1400	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
180	Heating Oil S-04	G18	o-Xylene	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
180	Heating Oil S-04	G18	m&p-Xylenes	ND	680	ug/kg-dry	10/24/1997	10/27/1997	10/27/1997	DMT
180	Heating Oil S-04	S06	WATER BY EVAP	8.5		% as received	10/24/1997	10/28/1997	10/28/1997	MCH

Approved by:_____

Report Prep:_____

ytheon Engineers and Constructors
othwyn, Pennsylvania
mmary #: 34598

Laboratory Data Summary
Total Petroleum Hydrocarbons by Method 418.1
DRY WEIGHT BASIS

sults Expressed as mg/kg

mple mber	Sample Description	TPH (as received)	Percent Moisture	TPH (dry weight)
38178	Heating Oil S-01	10000	9.7	11000
38179	Heating Oil S-02	7000	8.8	7700

Raytheon Engineers & Constructors

VOLATILE ORGANIC COMPOUNDS DATA SHEET

ANALYSIS DATE	: 10/27/1997
RECVD DATE	: 10/24/1997
ID FILE	: g18.id
DATA FILE	: g5017

SAMPLE #	: 138180
RIX	: SOIL
ENT ID	: Heating Oil S-04
ple wt/vol	: 0.04G
oisture	: 8.5

	Compound	Result (ug/kg)	Detection Limit (ug/kg)
-87-3	Chloromethane	ND	1400
-83-9	Bromomethane	ND	1400
-01-4	Vinyl Chloride	ND	1400
-00-3	Chloroethane	ND	1400
-09-2	Methylene Chloride	ND	680
-64-1	Acetone	550 J	1400
-15-0	Carbon Disulfide	ND	1400
-35-4	1,1-Dichloroethene	ND	680
-34-3	1,1-Dichloroethane	ND	680
56-59-2	cis-1,2-Dichloroethene	ND	680
56-60-5	trans-1,2-Dichloroethene	ND	680
7-66-3	Chloroform	ND	680
07-06-2	1,2-Dichloroethane	ND	1400
8- 3	2-Butanone	ND	680
5 -6	1,1,1-Trichloroethane	ND	680
23-5	Carbon Tetrachloride	ND	680
5-27-4	Bromodichloromethane	ND	680
8-87-5	1,2-Dichloropropane	ND	680
0061-01-5	cis-1,3-Dichloropropene	ND	680
9-01-6	Trichloroethene	ND	680
24-48-1	Dibromochloromethane	ND	680
9-00-5	1,1,2-Trichloroethane	ND	680
1-43-2	Benzene	ND	680
0061-02-6	trans-1,3-Dichloropropene	ND	1400
5-25-2	Bromoform	ND	1400
108-10-1	4-Methyl-2-Pentanone	ND	680
591-78-6	2-Hexanone	ND	680
127-18-4	Tetrachloroethene	ND	680
79-34-5	1,1,2,2-Tetrachloroethane	ND	680
108-88-3	Toluene	ND	680
108-90-7	Chlorobenzene	ND	680
100-41-4	Ethylbenzene	ND	680
100-42-5	Styrene	ND	680
330-20-7	m&p-Xylenes	ND	680
95-47-6	o-Xylene	ND	680

ND - Not Detected
J - Indicates an estimated value below MDL
B - Analyte Also found in blank
D - Diluted
E - Estimated

6.6SUMMARY 34598

CHAIN OF CUSTODY DOCUMENTATION

(PLEASE DO NOT WRITE IN SHADED AREAS)

SHIP TO:
Raytheon
Engineers & Constructors
301 CHELSEA PARKWAY
BOOTHWYN, PA 19061
PHONE (610) 497-8000
FAX (610) 497-8005
FAX (610) 485-5274

CLIENT: Brown Envl. Services
PROJECT DESCRIPTION: Heating oil tank excavation
SEND REPORT TO: Brown Env. SEND INVOICE TO: Same
DATA NEEDED BY: Steve Coe REPORT NEEDED BY:

LABORATORY JOB NO.:
SAMPLERS: Anthony Velazquez
PHONE: (215) 504-5066 FAX: (215) 504-5067
REPORT TYPE: TIER I___ TIER II___ STANDARD X QC___ OTHER___

FOR LAB USE ONLY:
P.O. NO.:
DUE DATE:
COOLER SEAL: YES ☐ NO ☐ BROKEN ☐ INTACT ☐
COOLER TEMP: deg. F

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:
Need Analysis ASAP
* ~~Hold TCLP for Approval!~~
* No TCLP!

ANALYSIS REQUIRED: TPH 418.1; TPH 418.1; ~~TCLP [illegible]~~; VOC 8260

QUOTE NO.:
SUMMARY NO.:
LABORATORY NO.:

ID.	DATE	TIME	MATRIX	GRAB	COMP	TYPE	NO.	PRESERVATIVE	pH	TPH 418.1	TPH 418.1	TCLP	VOC 8260
S01	10-24	8:20	SOIL		✓	4oz	1	NO		1			
S02	10-24	8:25	"		✓	"	1	"			1		
S03	10-24	8:30	"		✓	"	1	"					1
S04	10-24	8:35	"		✓	"	1	"					

RELINQUISHED BY
NAME: Anthony Velazquez OF: Brown Envl. Services DATE: 10-24-97 TIME: 1030
NAME: OF: DATE: TIME:
NAME: OF: DATE: TIME:

RECEIVED BY
NAME: [illegible] OF: DATE: 10.24.97 TIME: 1030
NAME: OF: DATE: TIME:
NAME: OF: DATE: TIME:

METHOD OF SHIPMENT
AIRBILL NO.:

Log No. (43)

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name LMTW Corp.

Address P.O. Box 1000

Bensalem P.A. 19020

Phone No. 215 [redacted] - 639 9000

Shipping Location Former Jack Frost S.

Address Columbus & Shackamaxon St.

Phila PA

Phone No.

Approval Number NJ-1508

Description of Material

Non-Regulated Petroleum

Contaminated Soil

Non DOT/RCRA Regulated

15:03 08/04/97	40.92 TN (M) G — GROSS
ID 9414	16.05 TN T — TARE
# 43	24.87 TN N — NET
	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Gary Bowman — Generator Authorized Agent Name

[signature] — Signature

8-4-97 — Shipment Date

TRANSPORTER

Transporter Name TVBC

Address Tullytown Pa.

Driver Name (Print) George Mark

Vehicle License No./State AH 54779 Pa

Truck Number 9414

I hereby certify that the above named material was picked up at the generator site listed above.

[signature] — Driver Signature

8/4/97 — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

[signature] — Driver Signature

8/4/97 — Delivery Date

DESTINATION

Site Name SOIL SAFE INC.

Address 107 Tilbury Rd. Salem, NJ 08079

Phone No.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Dominic Holmes — Name of Authorized Agent

[signature] — Signature

8-4-97 — Receipt Date

White – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

Log Number: 44

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp.

Address: P.O. Box 1000, Bensalem, PA 19020

Phone No. 215 639 9000

Shipping Location: Former Jack Frost Sugar

Address: Columbus & Shackamaxon St, Phila PA

Phone No.

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

15:04 08/04/97	40.10 TN (M) G	GROSS
ID 8816	16.57 TN T	TARE
# 44	23.53 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: Gary Bowman

Signature: [signature]

Shipment Date: 8-4-97

TRANSPORTER

Transporter Name: Indian Valley Bulk Carrier

Address: Ridge Road, Tylersport, PA

Driver Name (Print): Gary Rinehimer

Vehicle License No./State: AA 24519 PA

Truck Number: 8816

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: [signature]

Shipment Date: 8-4-97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature: [signature]

Delivery Date: 8-4-97

DESTINATION

Site Name: SOIL SAFE INC.

Phone No.

Address: 107 Tilbury Rd., Salem, NJ 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent: [handwritten name]

Signature: [signature]

Receipt Date: 8-4-97

Green — Facility Yellow — Generator Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

45

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name LHTW Corp

Address P.O. BOX 1000
Bensalem, P.A

Phone No. 215 639-9000

Shipping Location Former Jack Frost Sugar

Address Columbus Ave + Shackamaxon
Philadelphia PA

Phone No.

Approval Number N7-1508

Description of Material
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

GROSS
TARE
NET
TONNAGE

15:14 08/04/97 47.03 TN
ID 8710 17.01 TN T
47 30.02 TN

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Gary Bowman
Generator Authorized Agent Name

Signature

8-4-97
Shipment Date

TRANSPORTER

Transporter Name Indian Valley Bulk

Address Ridge Road
Telford PA 18971

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature

8-4-97
Shipment Date

Driver Name (Print) Joseph E Bringhurst

Vehicle License No./State

Truck Number 8710

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature

8-4-97
Delivery Date

DESTINATION

Site Name SSI

Phone No.

Address 107 Tilbury Rd Salem NJ

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Haaan
Name of Authorized Agent

Signature

8-4-97
Receipt Date

White — Facility Green — Facility Yellow — Generator Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

Log Number: 22

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: 17-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

GROSS: 09:52 08/05/97 37.47 TN (M) G
TARE: ID 9414 16.22 TN T
NET: # 22 21.25 TN N
TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

CHRIS A RIVARD — Generator Authorized Agent Name
Signature
8-5-97 — Shipment Date

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): George Mack
Vehicle License No./State: AA58779 Pa.
Truck Number: 9414

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature
8/5/97 — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature
Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature
Receipt Date

Name of Authorized Agent

Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

Log No.

②

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000
Bensalem, PA 19020

Phone No.

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamaxon
Philadelphia, PA

Phone No.

Approval Number: N7-1500

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

09:28 09/09/97	35.65 TN (M) G	GROSS
ID 265	11.78 TN T	TARE
# 2	23.87 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: L.V.I.
Signature: [signature]
Shipment Date

TRANSPORTER

Transporter Name: Soil Safe
Address: [illegible]

Driver Name (Print): [illegible]
Vehicle License No./State: [illegible]
Truck Number: 265

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: [signature]
Shipment Date: 9-9-97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature: [signature]
Delivery Date: 9-9-97

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4385
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent: [signature]
Signature
Receipt Date: 9-9-97

Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

3

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamaxon
Philadelphia, PA
Phone No.:

Approval Number: NJ-1500

Description of Material:
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

09:32	09/09/97	GROSS 36.31 TN (M) G
ID 267		TARE 11.59 TN T
# 3		NET 24.72 TN N
		TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

LVI — Signature — Shipment Date

Generator Authorized Agent Name

TRANSPORTER

Transporter Name: SOIL SAFE INC
Address: 4600 E. FAYETTE ST
BALTIMORE MARYLAND

Driver Name (Print): DAWSON H. TRICE JR.
Vehicle License No./State: 018ED67 MD.
Truck Number: # 267

I hereby certify that the above named material was picked up at the generator site listed above.

Dawson H. Trice Jr. 9-9-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Dawson H. Trice Jr. 9-9-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4365 ~~(609) 339-3400~~

Address:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent — Signature — 9/9/97 Receipt Date

White — Facility Green — Facility Yellow — Generator Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

4

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000, Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Ave & Shackamaxon, Philadelphia, PA
Phone No.:

09:32 09/09/97	36.09 TN (M) G	GROSS
ID 263	11.59 TN T	TARE
# 4	24.50 TN N	NET
		TONNAGE

Approval Number: NJ-1503

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

LVT — Signature — Shipment Date

Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe Inc.
Address: 107 Tilbury Road, Salem, NJ

Driver Name (Print): Kevin Higgins
Vehicle License No./State: 040 ED NJ
Truck Number: #263

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Address: 107 Tilbury Road, Salem New Jersey 08079
Phone No.: (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent — Signature — Receipt Date

White — Facility Green — Facility Yellow — Generator Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

(5)

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000
Bethlehem, PA 18020

Phone No.

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamaxon
Philadelphia, PA

Phone No.

Approval Number: N7-1506

Description of Material:
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

12:13 09/09/97	GROSS 34.55 TN (M) G
ID 263	TARE 11.54 TN T
# 5	NET 23.01 TN N
	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

LVI, F. [signature]

Generator Authorized Agent Name — Signature — Shipment Date

TRANSPORTER

Transporter Name: Soil Safe Inc

Address: 107 Tilbury Road
Salem, NJ

I hereby certify that the above named material was picked up at the generator site listed above.

[signature] 9/9/97

Driver Signature — Shipment Date

Driver Name (Print): Ken Higgins

Vehicle License No./State: 040 ED MD

Truck Number: #263

I hereby certify that the above named material was delivered without incident to the destination listed below.

[signature] 9/9/97

Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4365
(609) 339-8400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[signature] 9/9/97

Name of Authorized Agent — Signature — Receipt Date

Green – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000
Bensalem, PA 19020

Phone No.

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamaxon
Philadelphia, PA

Phone No.

Approval Number
NJ-1509

Description of Material
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

12:20	09/09/97	37.42 TN (M) G	GROSS / TARE
ID 267		11.55 TN T	NET
#	7	25.87 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: LUT Signature Shipment Date

TRANSPORTER

Transporter Name: Soil Safe Inc

Address: 4100 E Fayette St
Baltimore Maryland

Driver Name (Print): Dawson H. Trice Jr.

Vehicle License No./State: 615ED67 Md

Truck Number: # 267

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature Shipment Date 9-9-97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature 9-9-97 Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent Signature Receipt Date

Green – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

(8)

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000
Bensalem, PA 19020

Phone No.

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamaxon
Philadelphia, PA

Phone No.

		GROSS
12:21 09/09/97		34.99 TN (M) G
		TARE
ID 265		11.72 TN T
		NET
#	8	23.27 TN N
		TONNAGE

Approval Number
NJ7-1508

Description of Material

Non-Regulated Petroleum
Contaminated Soil

Non DOT/RCRA Regulated

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: LVT | Signature | Shipment Date

TRANSPORTER

Transporter Name: Soil Safe

Address

Driver Name (Print)

Vehicle License No./State

Truck Number: 265

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature | Shipment Date: 9-9-97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature | Delivery Date: 9-9-97

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No. (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent | Signature | Receipt Date: 9-9-97

White – Facility | Green – Facility | Yellow – Generator | Pink – Broker | Goldenrod – Contractor | Blue – Trucking Co.

SOIL SAFE, INC.

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NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000
Bensalem PA 19020

Phone No.:

Shipping Location: Former Jack Frost Sugar
1037 Columbus Av & Shackamaxon

Address: Philadelphia, PA

Phone No.:

Description of Material

Non-Regulated Petroleum Contaminated Soil

Non DOT/RCRA Regulated

Approval Number: NJ-1606

		GROSS
11:04 09/11/97	39.41 TN (M) G	
		TARE
ID 263	11.70 TN T	
		NET
N 6	27.71 TN N	
		TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Luis F [illegible]

Generator Authorized Agent Name — Signature — Shipment Date

TRANSPORTER

Transporter Name: Soil Safe Inc.

Address: 101 Tilbury Road
Salem, NJ

Driver Name (Print): K. Hughes

Vehicle License No./State: [illegible]

Truck Number: 265

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature — Delivery Date

DESTINATION

SOIL SAFE INCORPORATED

Site Name: 101 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4365
(609) 339-9400

Address:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent — Signature — Receipt Date

Facility — Yellow — Generator — Pink — Broker — Goldenrod — Contractor — Blue — Trucking Co.

7

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000

Bensalem, PA 18020

Phone No.

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamaxon

Philadelphia, PA

Phone No.

Approval Number: N7-1506

Description of Material:

Non-Regulated Petroleum Contaminated Soil

Non DOT/RCRA Regulated

11:04	09/11/97	39.52 TN (M) G	GROSS
			TARE
ID 265		11.84 TN T	NET
# 7		27.68 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: Levi F. C.   Signature   Shipment Date

TRANSPORTER

Transporter Name: Soil Safe

Address: 1605 C ...

Driver Name (Print): T. Herman

Vehicle License No./State: 0 17237

Truck Number: 265

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: [signature]   Shipment Date: 9 11 97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature: [signature]   Delivery Date: 9-11-97

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4368 / (609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent: [signature]   Signature   Receipt Date: 9-11-97

Green – Facility   Yellow – Generator   Pink – Broker   Goldenrod – Contractor   Blue – Trucking Co.

SOIL SAFE, INC.

(1)

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number N7-1508

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

09:01 10/29/97
ID 272
181

GROSS 31.55 TN (M) G
TARE 15.10 TN T
NET 16.45 TN N
TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe Inc.
Address: 4600 E. Fayette St.
Balto. MD. 21224

Driver Name (Print): Rodney Williams
Vehicle License No./State: 046 E D 26 MD
Truck Number: #272

I hereby certify that the above named material was picked up at the generator site listed above.

Rodney Williams 10-29-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Rodney Williams 10-29-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Address: 107 Tilbury Road, Salem New Jersey 08079
Phone No.: (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Hasson — Signature — 10/29/97 Receipt Date
Name of Authorized Agent

White — Facility Green — Facility Yellow — Generator Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

Log Number 2

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

09:02 10/29/97	38.59 TN (M) G	TARE
ID 264	11.88 TN T	NET
# 82	26.71 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe Inc
Address: 4600 E Fayette St

Driver Name (Print): Bill Kirts
Vehicle License No./State: 018577 MD
Truck Number: 264

I hereby certify that the above named material was picked up at the generator site listed above.

Bill Kirts — 10/29/97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Bill Kirts — 10/29/97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: (800) 562-4365 (609) 339-9400
Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Hagan — 10/29/97
Name of Authorized Agent — Signature — Receipt Date

Log # 3

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

		GROSS
09:04	10/29/97	34.33 TN (M) TARE
ID 266		11.55 TN T NET
# ~~23~~ 3		22.78 TN N TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Lui F Creighton — Signature — 10-29-97 — Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe
Address: 4600 E. Fayette
Baltimore

Driver Name (Print): Ron Diamond
Vehicle License No./State: 62767 MD
Truck Number: 266

I hereby certify that the above named material was picked up at the generator site listed above.

Ron Diamond — 10-29-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Ron Diamond — 10-2[illegible]
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: (800) 562-4365 / (609) 339-9400
Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Haasen — 10-29-97
Name of Authorized Agent — Signature — Receipt Date

White – Broker — Goldenrod – Contractor — Blue – Trucking Co.

Log No. 4

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

		GROSS
09:27 10/29/97	50.51 TN (M)	TARE
ID 9410	16.24 TN T	NET
# 4	34.27 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: Lui F Cieszkiewicz — Signature — Shipment Date: 10-29-97.

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): JEFF DAVIES
Vehicle License No./State: AB 40488 PA
Truck Number: 9410 - 159

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature — Shipment Date: 10-29-97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature — Delivery Date: 10-29-9

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent: Patricia Haasch — Signature — Receipt Date: 10-29-97

Facility — Yellow — Generator — Pink — Broker — Goldenrod — Contractor — Blue — Trucking Co.

Log Number 5

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

09:29 10/29/97	46.36 TN (M) G	GROSS
ID 9414	16.05 TN T	TARE
# 5	30.31 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): George MacH
Vehicle License No./State: AA58779 Pa,
Truck Number: 9414

I hereby certify that the above named material was picked up at the generator site listed above.

George MacH — 10/29/97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

George MacH — 10/29/97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Mason — 10/29/97
Name of Authorized Agent — Signature — Receipt Date

White — Broker Goldenrod — Contractor Blue — Trucking Co.

Log Number 9

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

09:52 10/29/97 49.74 TN (B) GROSS
ID 9506 15.05 TN T TARE
9 34.69 TN N NET
TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): Gordon O Downing II
Vehicle License No./State: AB55018 PA
Truck Number: 9506

I hereby certify that the above named material was picked up at the generator site listed above.

Gordon O Downing II 10-29-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Gordon O Downing II 10-29-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature — 10-29-9 Receipt Date

Log Number: 10

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

09:53 10/29/97	53.12 TN (M) G	GROSS
ID 9408	16.41 TN T	TARE
# 10	36.71 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F. Coughlin — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): Keith Emrich
Vehicle License No./State: AA-46173 PA
Truck Number: 9408

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature — 10/29/97 Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature — 10/29/97 Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Hlavach — Signature — 10/29/97 Receipt Date
Name of Authorized Agent

Blue — Trucking Co.

Log Number: 12

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.

Address: P.O. BOX 1000
BENSALEM, PA.

Phone No. 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR

Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA

Phone No.

Approval Number	Description of Material
N7-1508	Non-Regulated Petroleum Contaminated Soil Non DOT/RCRA Regulated

			GROSS
10:04	10/29/97	42.48 TN (M) G	TARE
ID 8736		16.64 TN T	NET
# 12		25.84 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Lvi F Crighton (signature) — 10-29-97

Generator Authorized Agent Name — Signature — Shipment Date

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS

Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): GARY RINEHIMER

Vehicle License No./State: AB-82201 PA

Truck Number: 8736

I hereby certify that the above named material was picked up at the generator site listed above.

(signature) — 10-29-97

Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

(signature) — 10-29-97

Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Phone No. 1-800-562-4365

Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia W Haasch (signature) — 10-29-97

Name of Authorized Agent — Signature — Receipt Date

White — ... Pink — Broker ... Goldenrod — Contractor ... Blue — Trucking Co.

Log Number 22

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name LHTW Corp

Address PO Box 1000
Bensalem, PA 19020

Phone No.

Shipping Location Former Jack Frost Sugar

Address 1037 Columbus Av & Shackamavon
Philadelphia, PA

Phone No.

Approval Number N7-1508

Description of Material

Non-Regulated Petroleum Contaminated Soil

Non DOT/RCRA Regulated

19.96 TON D

GROSS

TARE

NET

TONNAGE

11:38 10/29/97 34.99 TN

15.03 TN

10 272

22

19.96 TN

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: Lvi F Creighton   Signature   Shipment Date: 10-29-97

TRANSPORTER

Transporter Name: Soil Safe Inc.

Address: 4600 E. Fayette St.
Balto. MD. 21224

Driver Name (Print): Rodney Williams

Vehicle License No./State: 046 D 26 · MD

Truck Number: #272

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Rodney Williams   Shipment Date: 10·29·97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature: Rodney Williams   Delivery Date: 10·29·97

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Phone No. (609) 339-9400

Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent   Signature   Receipt Date: 10-29-97

Log Number 24

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000, Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon, Philadelphia, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

		GROSS
11:39 10/29/97	36.42 TN (M) G	TARE
ID 264	11.81 TN T	NET
# 24	24.61 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe Inc
Address: 4600 E Fayette St

Driver Name (Print): Bill Kirts
Vehicle License No./State: 018 S 27 MD
Truck Number: 264

I hereby certify that the above named material was picked up at the generator site listed above.

Bill Kirts — 10/29/97 Shipment Date
Driver Signature

I hereby certify that the above named material was delivered without incident to the destination listed below.

Bill Kirts — 10/29/97 Delivery Date
Driver Signature

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: (800) 562-4365 / (609) 339-9400
Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Haasch — Signature — 10/29/97 Receipt Date
Name of Authorized Agent

Log Number 27

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

		GROSS
12:09	10/29/97	47.90 TN (M) TARE
ID 9414		16.00 TN T NET
# 27		31.90 TN TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): George Mack
Vehicle License No./State: AA 68779 Pa.
Truck Number: 9414

I hereby certify that the above named material was picked up at the generator site listed above.

George Mack — 10/29/97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

George Mack — 10/29/97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Haasch — 10/29/97
Name of Authorized Agent — Signature — Receipt Date

Log Number 28

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

		GROSS
12:09	10/29/97	46.97 TN (M) TARE
ID 9410		16.20 TN T NET
#	28	30.77 TN N TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: Lui F Caughlin
Signature
10-29-97
Shipment Date

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): JEFF DAVIES
Vehicle License No./State: AB40488 PA
Truck Number: 9410 · 169

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature
10-29-97
Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature
10-29
Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent
Signature
10-29-9
Receipt Date

Log Number 34

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

GROSS
12:28 10/29/97 53.99 TN (M) G
TARE
ID 9506 14.99 TN T
NET
34 39.00 TN N
TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Lui F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): Gordon O. Downing II
Vehicle License No./State: AB550181
Truck Number: 9506

I hereby certify that the above named material was picked up at the generator site listed above.

Gordon O Downing II 10-29-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Gordon O Downing II 10-29-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Hansen — Signature — 10-29-97 Receipt Date
Name of Authorized Agent

Log Number 35

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

51.36 GROSS
16.35 TARE
35.01 NET
TONNAGE

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum
Contaminated Soil
Non DOT/RCRA Regulated

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

ID 9408 16.35 TN T

Generator Authorized Agent Name: Lui F Creighton
Signature
35
10-29-97 TN N
Shipment Date

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): Keith Emrich
Vehicle License No./State: AA-46173 PA
Truck Number: 9408

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature
10/29/97
Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature
10/29/97
Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent: Patricia Hagan
Signature
10/29/97
Receipt Date

Log Number 38

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAVON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

12:42 10/29/97	48.86 TN (M) G	GROSS
ID 8736	16.61 TN T	TARE
# 38	32.25 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): GARY RINEHIMER
Vehicle License No./State: AB-82201 PA
Truck Number: 8736

I hereby certify that the above named material was picked up at the generator site listed above.

Gary Rinehimer — 10-29-97 Shipment Date
Driver Signature

I hereby certify that the above named material was delivered without incident to the destination listed below.

Gary Rinehimer — 10-29-97 Delivery Date
Driver Signature

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Haasch — 10-29-97 Receipt Date
Name of Authorized Agent — Signature

Log Number (42)

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000
Bensalem, PA 19020

Phone No.:

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA

Phone No.:

14:40 10/29/97	40.26 TN (M) G	GROSS
ID 272	15.02 TN T	TARE
# 42	25.24 TN N	NET
		TONNAGE

Approval Number N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date

Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe Inc.

Address: 4600 E. Fayette St.
Balto. MD. 21224

Driver Name (Print): Rodney Williams

Vehicle License No./State: 046-626 MD

Truck Number: #272

I hereby certify that the above named material was picked up at the generator site listed above.

Rodney Williams 10-29-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Rodney Williams 10-29-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED

Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[signature] — Signature — 10-29-97 Receipt Date

Name of Authorized Agent

White — Facility Yellow — Generator Pink — Broker Goldenrod — Contractor Blue — Trucking Co.

Log Number 43

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

		GROSS
14:41	10/29/97	38.79 TN (M) TARE
ID 264		11.76 TN T NET
# 43		27.03 TN N TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe Inc.
Address: 4600 E Fayette St

Driver Name (Print): Bill Kurts
Vehicle License No./State: 018577 MD
Truck Number: 264

I hereby certify that the above named material was picked up at the generator site listed above.

Bill Kurts — 10/29/97 Shipment Date
Driver Signature

I hereby certify that the above named material was delivered without incident to the destination listed below.

Bill Kurts — 10/29/97 Delivery Date
Driver Signature

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: (800) 562-4365
(609) 339-9400
Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Haasch — Signature — 10/29/9 Receipt Date
Authorized Agent

Log Number 44

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP
Address: Po Box 1000
BENSALEM PA 19020
Phone No.:

Shipping Location: FORMER JACK FROST Sug.
Address: 1037 Columbus AV Shackam
Philadelphia PA
Phone No.:

Approval Number: 1608

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

14:48 10/29/97	39.62 TN (M) G	GROSS
ID 267	11.57 TN T	TARE
# 44	28.05 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Luis F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: ~~Tim~~ Soil SAFE
Address: 4600 EAST FAYETTE St
Balt MD

Driver Name (Print): Tim CLAYTON
Vehicle License No./State: 018 867
Truck Number: 267

I hereby certify that the above named material was picked up at the generator site listed above.

T Clayton — 10-29-97 Shipment Date
Driver Signature

I hereby certify that the above named material was delivered without incident to the destination listed below.

T Clayton — 10-29-97 Delivery Date
Driver Signature

DESTINATION

Site Name: Soil Safe
Address: 100 Tilbury Rd Salem
Phone No.:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Nathan Hagan — Signature — 10.29.9 Receipt Date
Name of Authorized Agent

45

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

15:02 10/29/97 37.83 TN (N) GROSS
ID 265 11.68 TN T TARE
45 26.15 TN N NET
TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe
Address: 4600 E Fayette

Driver Name (Print): T. Herman
Vehicle License No./State: 01 BE078
Truck Number: 265

I hereby certify that the above named material was picked up at the generator site listed above.

T. Herman 10-28-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

T. Herman 10-28-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: (800) 562-4365
(609) 339-9400
Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Melissa Mason — Signature — 10-28-97 Receipt Date
Name of Authorized Agent

Generator — Pink — Broker — Goldenrod — Contractor — Blue — Trucking Co.

Log Number 46

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

15:03 10/29/97 38.10 TN (N) GROSS
ID 266 11.51 TN T TARE
46 26.59 TN N NET
TONNAGE

Approval Number N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-29-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name: Soil Safe
Address: 4600 E. Fayette Baltimore

Driver Name (Print): Leon Diamond
Vehicle License No./State: 027167 MD.
Truck Number: 266

I hereby certify that the above named material was picked up at the generator site listed above.

Leon Diamond 10-29-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Leon Diamond 10-29-
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Address: 107 Tilbury Road, Salem New Jersey 08079
Phone No.: (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent — Signature — 10-29-97 Receipt Date

Log Number (47)

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name LHTW Corp
Address PO Box 1000
Bensalem, Pa 19020
Phone No.

Shipping Location former Jack Frost Sugar
Address 1037 Columbus Blvd + Shackamaxon
Phelade[illegible]phia, Pa
Phone No.

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

15:11 10/29/97
ID 262
1 47

37.48 GROSS TN (M) G
TARE 11.57 TN T
NET 25.91 TN N TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name Levi F Coughlin Signature 10-29-97 Shipment Date

TRANSPORTER

Transporter Name Soil Safe
Address 4000 E Fayette St
Baltimore, Md 21224

Driver Name (Print) Michael A. Wilfong
Vehicle License No./State 018 ED 75 Md
Truck Number 262

I hereby certify that the above named material was picked up at the generator site listed above.

Michael A. Wilfong 10-29-97
Driver Signature Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Michael A. Wilfong 10-29-9
Driver Signature Delivery Dat

DESTINATION

Site Name Soil Safe Inc
Address 607 Tilbury Rd Salem, NJ 08079

Phone No. 800-562-4365
609 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[illegible] Signature 10-29-97 Receipt Da

Log Number 7

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW CORP.
Address: P.O. BOX 1000
BENSALEM, PA.
Phone No.: 215-639-9000

Shipping Location: FORMER JACK FROST SUGAR
Address: COLUMBUS & SHACKAMAXON STS.
PHILADELPHIA, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

		GROSS
10:15	10/30/97	43.65 TN (M) TARE
ID 9504		15.52 TN T NET
# 7		28.13 TN TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Steven F. Coe for LVI — Steven F. Coe for LVI — 10/30/97
Generator Authorized Agent Name — Signature — Shipment Date

TRANSPORTER

Transporter Name: INDIAN VALLEY BULK CARRIERS
Address: RIDGE ROAD
TYLERSPORT, PA. 18971

Driver Name (Print): Robert Wasilauski
Vehicle License No./State: AB2232-01 / PA.
Truck Number: 9504

I hereby certify that the above named material was picked up at the generator site listed above.

Robert Woodward — 10-30-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Robert Woodward — 10-30-97
Driver Signature — Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: 1-800-562-4365
Address: TILBURY ROAD, SALEM, NJ.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Mason — 10-30-97
Name of Authorized Agent — Signature — Receipt Date

White – Facility Green – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co

Oct-30-97 03:45P SSI lem NJ 60' 339 9158

Log Number

10

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name LHTW CORP.

Address P.O. BOX 1000

BENSALEM, PA.

Phone No. 215-639-9000

Shipping Location FORMER JACK FROST SUGAR

Address COLUMBUS & SHACKAMAXON STS.

PHILADELPHIA, PA

Phone No.

Approval Number N7-1508

Description of Material

Non-Regulated Petroleum Contaminated Soil

Non DOT/RCRA Regulated

10:45 10/30/97	41.92 TN (M) G	GROSS / TARE
ID 9406	16.69 TN T	NET
# 10	25.23 TN N	TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name: Lvi F Crighton Signature

Shipment Date 10-30-97

TRANSPORTER

Transporter Name INDIAN VALLEY BULK CARRIERS

Address RIDGE ROAD

TYLERSPORT, PA. 18971

Driver Name (Print) Andrew J Schell

Vehicle License No./State PA AA 56779

Truck Number 9906 T913

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature Andrew J Schell Shipment Date 10/30/97

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature Andrew J Schell Delivery Date 10/30/97

DESTINATION

Site Name SOIL SAFE INCORPORATED

Address TILBURY ROAD, SALEM, NJ.

Phone No. 1-800-562-4365

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent Patricia Haasch Signature

Receipt Date 10/30/97

White – Facility Green – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

Log Number 31

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name MTW Corp.

Address PO Box 1000

Bensalem, PA

Phone No. 215-639-9000

Shipping Location Former Jack Frost Sugar

Address Columbus & Shackamaxon Sts.

Philadelphia, PA

Phone No.

Approval Number 1507

Description of Material

Non-Regulated Petroleum Contaminated Soil

Non DOT/RCRA Regulated

14:03 10/30/97 40.79 TN (R) GROSS

ID 9406 16.65 TN T TARE

31 24.14 TN N NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F Creighton — Signature — 10-30-97 Shipment Date

Generator Authorized Agent Name

TRANSPORTER

Transporter Name Indian Valley Bulk

Address Tylersport PA

Driver Name (Print) Andrew J Schell

Vehicle License No./State PA AH5[illegible]779

Truck Number 9906 T913

I hereby certify that the above named material was picked up at the generator site listed above.

Andrew J Schell 10/30/97

Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Andrew J Schell 10/30/97

Driver Signature — Delivery Date

DESTINATION

Site Name Soil Safe Inc. Phone No.

Address 107 Tilbury Rd. Salem NJ

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Matthew Haasch 10/30/97

Name of Authorized Agent — Signature — Receipt Date

White – Facility Green – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

Log Number 32

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name LH TW Corp.
Address P.O. Box 1000
BENSALEM PA.
Phone No. 215-639-9000

Shipping Location FORMER JACK FROST SUGAR
Address Columbus & Shackamaxon
PHILA. PA.
Phone No.

Approval Number N7-i508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

		GROSS
14:06	10/30/97	37.33 TN (M) TARE
ID 9504		15.47 TN T NET
# 32		21.86 TN N TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Levi F. Coughlin — Signature — 10-30-97 Shipment Date
Generator Authorized Agent Name

TRANSPORTER

Transporter Name Indian Valley
Address Ridge Rd
Telford PA.

Driver Name (Print) Robert WASILAUSKI
Vehicle License No./State AB23201 PA.
Truck Number 9584

I hereby certify that the above named material was picked up at the generator site listed above.

Robt Woodland 10-30-97
Driver Signature — Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Robt Woodland 10-30-97
Driver Signature — Delivery Date

DESTINATION

Site Name Soil Safe Inc. Phone No. (609) 339-9400
Address 107 Tibbury Rd. Salem NJ 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Patricia Hasson 10.30.97
Name of Authorized Agent — Signature — Receipt Date

White – Facility Green – Facility Yellow – Generator Pink – Broker Goldenrod – Contractor Blue – Trucking Co.

Log Number

1

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp

Address: PO Box 1000

Bensalem, PA 19020

Phone No.:

Shipping Location: Former Jack Frost Sugar

Address: 1037 Columbus Av & Shackamavon

Philadelphia, PA

Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil; Non DOT/RCRA Regulated

08:34	01/08/98	35.53 TN (M) G GROSS
ID 260		11.60 TN T TARE
H		23.93 TN H NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name — Signature — Shipment Date: 1-8-98

TRANSPORTER

Transporter Name: SOIL SAFE

Address: BALTO MD 21224

Driver Name (Print): Tim Brofka

Vehicle License No./State: 018 E D 69 MD

Truck Number: 260

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Tim Brofka — Shipment Date: 1-8-98

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature: Tim Brofka — Delivery Date: 1-8-98

DESTINATION

Name: SOIL SAFE INCORPORATED

Address: 107 Tilbury Road, Salem New Jersey 08079

Phone No.: (800) 562-4365 (609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature — Receipt Date: 1-8-98

Log Number 2

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number: N7-1508

Description of Material:
Non-Regulated Petroleum Contaminated Soil
Non DOT/RCRA Regulated

		GROSS
08:34	01/08/98	37.66 TN (M) TARE
ID 262		11.59 TN T NET
#	2	26.07 TN N TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name | Signature | Shipment Date

TRANSPORTER

Transporter Name: SoilSafe
Address: 4600 E Fayette St
Baltimore, Md 21224

Driver Name (Print): Michael A Wilsie
Vehicle License No./State: 018ED75 MD
Truck Number: 262

I hereby certify that the above named material was picked up at the generator site listed above.

Michael A Wilsie 1-8-98
Driver Signature | Shipment Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

Michael A Wilsie 1-8-98
Driver Signature | Delivery Date

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Phone No.: (800) 562-4565 (609) 339-9400
Address: 107 Tilbury Road, Salem New Jersey 08079

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Authorized Agent | Signature | 1-8-98 Receipt Date

Log Number: 6

SOIL SAFE, INC.

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: LHTW Corp
Address: PO Box 1000
Bensalem, PA 19020
Phone No.:

Shipping Location: Former Jack Frost Sugar
Address: 1037 Columbus Av & Shackamavon
Philadelphia, PA
Phone No.:

Approval Number: N7-1508

Description of Material: Non-Regulated Petroleum Contaminated Soil

Non DOT/RCRA Regulated

12:13 01/08/98	27.52 TN (M) G	GROSS
ID 260	11.57 TN T	TARE
# 6	15.95 TN N	NET TONNAGE

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name — Signature — Shipment Date: 1-8-98

TRANSPORTER

Transporter Name: Soil Safe
Address: Balto md 21224

Driver Name (Print): Tim Brofka
Vehicle License No./State: 018 E 69 MD
Truck Number: 260

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature — Shipment Date: 1-8-98

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature: Tim Brofka — Delivery Date: 1-8-98

DESTINATION

Site Name: SOIL SAFE INCORPORATED
Address: 107 Tilbury Road, Salem New Jersey 08079
Phone No.: (800) 562-4365
(609) 339-9400

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Authorized Agent — Signature — Receipt Date: 1-8-98

ATTACHMENT B
Subsurface Soil Sample Analytical Results

QC Laboratories

Analytical Results

09/22/00 09:00am

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

unt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ect No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-01
PWSID No:

Inv. No: 309795

Samp. Date/Time/Temp: 08/29/00 01:00pm NA°F
Sampled by: Customer Sampled

ple Number: 1906-1
Sample Description: TP-1 (12)
Received Temp: 45°F Iced (Y/N): Y

ameter	Method	Result	RLs	Test Date
LUORENE	EPA Method 8270	664. ug/kg DRY	430. ug/kg	09/07/00
HENANTHRENE	EPA Method 8270	7920 ug/kg DRY	430. ug/kg	09/07/00
NTHRACENE	EPA Method 8270	1700 ug/kg DRY	430. ug/kg	09/07/00
YRENE	EPA Method 8270	13000 ug/kg DRY	1070 ug/kg	09/07/00
ENZO(A)ANTHRACENE	EPA Method 8270	6170 ug/kg DRY	430. ug/kg	09/07/00
HRYSENE	EPA Method 8270	7240 ug/kg DRY	430. ug/kg	09/07/00
ENZO(B)FLUORANTHENE	EPA Method 8270	7150 ug/kg DRY	430. ug/kg	09/07/00
ENZO(A)PYRENE	EPA Method 8270	6040 ug/kg DRY	430. ug/kg	09/07/00
ENZO(G,H,I)PERYLENE	EPA Method 8260	2410 ug/kg DRY	146. ug/kg	09/06/00
ENZENE	EPA Method 8260	ND ug/kg DRY	728. ug/kg	09/06/00
APHTHALENE	STD Methods 18th Ed. 2540	147. J ug/kg DRY	0.01000 %	09/05/00
OT SOLIDS PERCENT		77.59 %		

Samp. Date/Time/Temp: 08/29/00 02:30pm NA°F
Sampled by: Customer Sampled

Number: 5-2
Sample Description: TP-3 (12)
Received Temp: 45°F Iced (Y/N): Y

rameter	Method	Result	RLs	Test Date
FLUORENE	EPA Method 8270	459. ug/kg DRY	413. ug/kg	09/07/00
PHENANTHRENE	EPA Method 8270	4490 ug/kg DRY	413. ug/kg	09/07/00
ANTHRACENE	EPA Method 8270	1060 ug/kg DRY	413. ug/kg	09/07/00
PYRENE	EPA Method 8270	7160 ug/kg DRY	1030 ug/kg	09/07/00
BENZO(A)ANTHRACENE	EPA Method 8270	3290 ug/kg DRY	413. ug/kg	09/07/00
CHRYSENE	EPA Method 8270	3640 ug/kg DRY	413. ug/kg	09/07/00
BENZO(B)FLUORANTHENE	EPA Method 8270	3320 ug/kg DRY	413. ug/kg	09/07/00
BENZO(A)PYRENE	EPA Method 8270	3440 ug/kg DRY	413. ug/kg	09/07/00
BENZO(G,H,I)PERYLENE	EPA Method 8260	1840 ug/kg DRY	117. ug/kg	09/06/00
BENZENE	EPA Method 8260	ND ug/kg DRY	584. ug/kg	09/06/00
NAPHTHALENE	STD Methods 18th Ed. 2540	ND ug/kg DRY	0.01000 %	09/05/00
TOTAL SOLIDS PERCENT		80.42 %		

Samp. Date/Time/Temp: 08/29/00 01:25pm NA°F
Sampled by: Customer Sampled

ample Number: 688906-3
Sample Description: TP-5 (13)

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
TNTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Page 1

Serial Number: 35324

Allan D. Schaeffer, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

09/22/00 09:00am

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-01
PWSID No:

Inv. No: 309795

Received Temp: 45°F Iced (Y/N): Y

eter	Method	Result	RLs	Test Date
ORENE	EPA Method 8270	ND ug/kg DRY	429. ug/kg	09/07/00
NANTHRENE	EPA Method 8270	ND ug/kg DRY	429. ug/kg	09/07/00
HRACENE	EPA Method 8270	ND ug/kg DRY	429. ug/kg	09/07/00
ENE	EPA Method 8270	ND ug/kg DRY	1070 ug/kg	09/07/00
IZO(A)ANTHRACENE	EPA Method 8270	693. ug/kg DRY	429. ug/kg	09/07/00
YSENE	EPA Method 8270	ND ug/kg DRY	429. ug/kg	09/07/00
IZO(B)FLUORANTHENE	EPA Method 8270	ND ug/kg DRY	429. ug/kg	09/07/00
IZO(A)PYRENE	EPA Method 8270	1050 ug/kg DRY	429. ug/kg	09/07/00
IZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/kg DRY	429. ug/kg	09/07/00
NZENE	EPA Method 8260	ND ug/kg DRY	160. ug/kg	09/06/00
PHTHALENE	EPA Method 8260	ND ug/kg DRY	798. ug/kg	09/06/00
TAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	77.72 %	0.01000 %	09/05/00

Samp. Date/Time/Temp: 08/29/00 02:00pm NA°F
Sampled by: Customer Sampled

le Number: 906-4
Sample Description: TP-7 (14)
Received Temp: 45°F Iced (Y/N): Y

meter	Method	Result	RLs	Test Date
UORENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
ENANTHRENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
THRACENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
RENE	EPA Method 8270	ND ug/kg DRY	1300 ug/kg	09/08/00
NZO(A)ANTHRACENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
IRYSENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
NZO(B)FLUORANTHENE	EPA Method 8270	1400 ug/kg DRY	522. ug/kg	09/08/00
NZO(A)PYRENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
D(G,H,I)PERYLENE	EPA Method 8270	ND ug/kg DRY	522. ug/kg	09/08/00
ENE	EPA Method 8260	ND ug/kg DRY	169. ug/kg	09/07/00
APHTHALENE	EPA Method 8260	ND ug/kg DRY	845. ug/kg	09/07/00
OTAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	63.88 %	0.01000 %	09/05/00

Samp. Date/Time/Temp: 08/29/00 02:25pm NA°F
Sampled by: Customer Sampled

ple Number: B906-5
Sample Description: TP-11 (12)
Received Temp: 45°F Iced (Y/N): Y

ameter	Method	Result	RLs	Test Date
LUORENE	EPA Method 8270	ND ug/kg DRY	467. ug/kg	09/08/00
HENANTHRENE	EPA Method 8270	ND ug/kg DRY	467. ug/kg	09/08/00
NTHRACENE	EPA Method 8270	ND ug/kg DRY	467. ug/kg	09/08/00
YRENE	EPA Method 8270	1040 J ug/kg DRY	1170 ug/kg	09/08/00
ENZO(A)ANTHRACENE	EPA Method 8270	1170 ug/kg DRY	467. ug/kg	09/08/00
CHRYSENE	EPA Method 8270	792. J ug/kg DRY	467. ug/kg	09/08/00
ENZO(B)FLUORANTHENE	EPA Method 8270	1690 ug/kg DRY	467. ug/kg	09/08/00
ENZO(A)PYRENE	EPA Method 8270	1640 ug/kg DRY	467. ug/kg	09/08/00
ENZO(G,H,I)PERYLENE	EPA Method 8270	1440 ug/kg DRY	467. ug/kg	09/08/00
ENZENE	EPA Method 8260	ND ug/kg DRY	164. ug/kg	09/07/00
NAPHTHALENE	EPA Method 8260	233. J ug/kg DRY	820. ug/kg	09/07/00
TOTAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	71.35 %	0.01000 %	09/05/00

result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
; INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
ef tions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
bo numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Serial Number: 35324

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

Analytical Results

QC Laboratories

09/22/00 09:00am

P.O. No: 079-01 Inv. No: 309795
PWSID No:

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Samp. Date/Time/Temp: 08/29/00 08:00am NA°F
Sampled by: Customer Sampled

e Number: 906-6
Sample Description: TP-15 (13)
Received Temp: 45°F Iced (Y/N): Y

eter	Method	Result	RLs	Test Date
IORENE	EPA Method 8270	1910 ug/kg DRY	412. ug/kg	09/08/00
ENANTHRENE	EPA Method 8270	9560 ug/kg DRY	412. ug/kg	09/08/00
THRACENE	EPA Method 8270	1850 ug/kg DRY	412. ug/kg	09/08/00
RENE	EPA Method 8270	7260 ug/kg DRY	1030 ug/kg	09/08/00
NZO(A)ANTHRACENE	EPA Method 8270	3660 ug/kg DRY	412. ug/kg	09/08/00
RYSENE	EPA Method 8270	3970 ug/kg DRY	412. ug/kg	09/08/00
NZO(B)FLUORANTHENE	EPA Method 8270	3000 ug/kg DRY	412. ug/kg	09/08/00
NZO(A)PYRENE	EPA Method 8270	3440 ug/kg DRY	412. ug/kg	09/08/00
NZO(G,H,I)PERYLENE	EPA Method 8270	1660 ug/kg DRY	412. ug/kg	09/08/00
NZENE	EPA Method 8260	ND ug/kg DRY	104. ug/kg	09/07/00
PHTHALENE	EPA Method 8260	ND ug/kg DRY	519. ug/kg	09/07/00
TAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	80.95 %	0.01000 %	09/05/00

Samp. Date/Time/Temp: 08/29/00 10:00am NA°F
Sampled by: Customer Sampled

le Number: 906-7
Sample Description: TP-16 (12.5)
Received Temp: 45°F Iced (Y/N): Y

ameter	Method	Result	RLs	Test Date
LUORENE	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
ENANTHRENE	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
NTHRACENE	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
YRENE	EPA Method 8270	ND ug/kg DRY	229. ug/kg	09/08/00
EN)ANTHRACENE	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
HRY E	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
O(B)FLUORANTHENE	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
O(A)PYRENE	EPA Method 8270	ND ug/kg DRY	91.8 ug/kg	09/08/00
ENZO(G,H,I)PERYLENE	EPA Method 8260	ND ug/kg DRY	156. ug/kg	09/07/00
ENZENE	EPA Method 8260	ND ug/kg DRY	778. ug/kg	09/07/00
APHTHALENE	STD Methods 18th Ed. 2540	72.66 %	0.01000 %	09/05/00
OTAL SOLIDS PERCENT				

Samp. Date/Time/Temp: 08/29/00 10:25am NA°F
Sampled by: Customer Sampled

ple Number: 8906-8
Sample Description: TP-17 (13)
Received Temp: 45°F Iced (Y/N): Y

ameter	Method	Result	RLs	Test Date
EAD	SW846 Method 6010	23.9 mg/kg DRY	2.34 mg/kg	09/05/00
FLUORENE	EPA Method 8270	ND ug/kg DRY	78.0 ug/kg	09/08/00
PHENANTHRENE	EPA Method 8270	ND ug/kg DRY	78.0 ug/kg	09/08/00
BENZENE	EPA Method 8260	ND ug/kg DRY	105. ug/kg	09/06/00
1,2-DICHLOROETHANE	EPA Method 8260	ND ug/kg DRY	210. ug/kg	09/06/00
TOLUENE	EPA Method 8260	ND ug/kg DRY	526. ug/kg	09/06/00
1,2-DIBROMOETHANE	EPA Method 8260	ND ug/kg DRY	1.08 ug/kg	08/09/00
ETHYL BENZENE	EPA Method 8260	ND ug/kg DRY	526. ug/kg	09/06/00
M&P-XYLENES	EPA Method 8260	ND ug/kg DRY	210. ug/kg	09/06/00
O-XYLENE	EPA Method 8260	ND ug/kg DRY	105. ug/kg	09/06/00
ISOPROPYLBENZENE	EPA Method 8260	ND ug/kg DRY	526. ug/kg	09/06/00
NAPHTHALENE		ND ug/kg DRY	526. ug/kg	09/06/00

result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
C INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
efinitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
H oo numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Serial Number: 35324

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

09/22/00 09:00am

Inv. No: 309795

P.O. No: 079-01
PWSID No:

unt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ect No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

le Number	Sample Description			Samp. Date/Time/Temp	Sampled by
906-8	TP-17 (13)			08/29/00 10:25am NA°F	Customer Sampled
				RLs	Test Date
meter		Method	Result		
TAL SOLIDS PERCENT		STD Methods 18th Ed. 2540	85.52 %	0.01000 %	09/05/00

le Number	Sample Description			Samp. Date/Time/Temp	Sampled by
906-9	TP-18 (12)			08/29/00 11:00am NA°F	Customer Sampled
	Received Temp: 45°F Iced (Y/N): Y				
				RLs	Test Date
meter		Method	Result		
AD		SW846 Method 6010	9.47 mg/kg DRY	2.36 mg/kg	09/05/00
UORENE		EPA Method 8270	ND ug/kg DRY	78.8 ug/kg	09/08/00
ENANTHRENE		EPA Method 8270	ND ug/kg DRY	78.8 ug/kg	09/08/00
NZENE		EPA Method 8260	ND ug/kg DRY	104. ug/kg	09/06/00
,2-DICHLOROETHANE		EPA Method 8260	ND ug/kg DRY	208. ug/kg	09/06/00
OLUENE		EPA Method 8260	ND ug/kg DRY	520. ug/kg	09/06/00
,2-DIBROMOETHANE		EPA Method 8260	ND ug/kg DRY	1.05 ug/kg	08/09/00
THYL BENZENE		EPA Method 8260	ND ug/kg DRY	520. ug/kg	09/06/00
&P-XYLENES		EPA Method 8260	ND ug/kg DRY	208. ug/kg	09/06/00
-XYLENE		EPA Method 8260	ND ug/kg DRY	104. ug/kg	09/06/00
SOPROPYLBENZENE		EPA Method 8260	ND ug/kg DRY	520. ug/kg	09/06/00
APHTHALENE		EPA Method 8260	ND ug/kg DRY	520. ug/kg	09/06/00
OTAL SOLIDS PERCENT		STD Methods 18th Ed. 2540	84.57 %	0.01000 %	09/05/00

8906-1:
QUALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater
in MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a
ira search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

8906-5:
QUALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater
an the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a
brary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
C INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
efinitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
NTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Serial Number: 35324

Allan D Schappert, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Lab LIMS No:

LAB USE ONLY:

___ Ascorbic/HCl Vials # ___ HCl Vials
___ $Na_2S_2O_3$
___ Na OH/Zn acetate pH
___ HNO_3 pH
___ H_2SO_4 pH
___ NaOH pH
___ Unpreserved
___ Hcl pH
___ Temp control ___ ID# ___

Matrix Codes
DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

Client/Acct. No. BROWN ENVIRONMENTAL
Address 42 SEQUOIA DRIVE
City/State/Zip NEWTOWN, PA 18940
Phone/Fax (215) 504-5066 / 5067
Client Contact STEVEN F. COE

Bill to/Report to: (if different) SAME
Sampling Site Address: (if different)
P.O. No. 079-01
QC Contact AMY CORR

PROJECT / FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	HNO_3	NaOH	ZnAc	Unpres	Bact	ANALYSIS REQUESTED	Field pH, Temp (C or F) DO, Cl_2, S, Cond. etc.
TP-1 (12)	8/29	1300	X		SO	3								PA ACT II No. 4,5,6 FUEL OIL	
TP-3 (12)	8/29	1430	X		SO	3								" "	
TP-5 (13)	8/28	1325	X		SO	3								" "	
TP-7 (14)	8/29	1400	X		SO	3								" "	
TP-11 (12)	8/29	1425	X		SO	3								" "	
TP-15 (13)	8/29	0800	X		SO	3								" "	
TP-16 (12.5)	8/29	1000	X		SO	3								" "	
TP-17 (13)	8/29	1025	X		SO	3								PA ACT II LEADED GAS & DIESEL FUEL	
TP-18 (12)	8/29	1100	X		SO	3								" " " "	

SAMPLED BY: (Name/Company)
ANDY WESTERBAAN, PG
BROWN ENVIRONMENTAL

Verbal/fax data due:
Hardcopy due: STANDARD TAT

Report Format: ☒ Standard ☐ Forms ☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig:
Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK. I.E. 8AM IS 0800, 4 PM IS 1600)

	DATE	TIME		DATE	TIME
RELINQUISHED BY SAMPLER 1 Steven Floe	8/29/00	1739	RECEIVED BY 1	8.30.00	1130
RELINQUISHED BY 2	DATE	TIME	RECEIVED BY 2	DATE	TIME
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: ☐ QC COURIER ☒ CLIENT ☐ UPS ☐ FEDEX ☐ OTHER ___

Custody Seal Number

COMMENTS:

Hazardous: yes / no

QC Laboratories

Analytical Results

09/15/00 07:06pm

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Inv. No: 308756

ount No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ject No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-01
PWSID No:

ple Number 9329-1 — Sample Description: TP-19 (14) — Received Temp: 57°F — Iced (Y/N): Y
Samp. Date/Time/Temp: 08/30/00 02:28pm NA°F — Sampled by: Customer Sampled

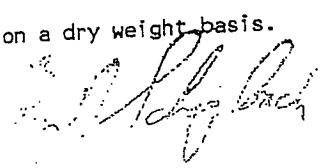
ameter	Method	Result	RLs	Test Date
LUORENE	EPA Method 8270	ND ug/kg DRY	171. ug/kg	09/12/00
HENANTHRENE	EPA Method 8270	193. ug/kg DRY	171. ug/kg	09/12/00
NTHRACENE	EPA Method 8270	ND ug/kg DRY	171. ug/kg	09/12/00
YRENE	EPA Method 8270	ND ug/kg DRY	428. ug/kg	09/12/00
ENZO(A)ANTHRACENE	EPA Method 8270	121. J ug/kg DRY	171. ug/kg	09/12/00
HRYSENE	EPA Method 8270	107. J ug/kg DRY	171. ug/kg	09/12/00
ENZO(B)FLUORANTHENE	EPA Method 8270	ND ug/kg DRY	171. ug/kg	09/12/00
ENZO(A)PYRENE	EPA Method 8270	ND ug/kg DRY	171. ug/kg	09/12/00
ENZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/kg DRY	171. ug/kg	09/12/00
ENZENE	EPA Method 8260	ND ug/kg DRY	109. ug/kg	09/08/00
APHTHALENE	EPA Method 8260	ND ug/kg DRY	545. ug/kg	09/08/00
TOTAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	77.96 %	0.01000 %	09/06/00

Number 9-2 — Sample Description: TP-20 (13) — Received Temp: 57°F — Iced (Y/N): Y
Samp. Date/Time/Temp: 08/30/00 01:30pm NA°F — Sampled by: Customer Sampled

rameter	Method	Result	RLs	Test Date
FLUORENE	EPA Method 8270	ND ug/kg DRY	419. ug/kg	09/12/00
PHENANTHRENE	EPA Method 8270	551. ug/kg DRY	419. ug/kg	09/12/00
ANTHRACENE	EPA Method 8270	ND ug/kg DRY	419. ug/kg	09/12/00
PYRENE	EPA Method 8270	1120 ug/kg DRY	1050 ug/kg	09/12/00
BENZO(A)ANTHRACENE	EPA Method 8270	544. ug/kg DRY	419. ug/kg	09/12/00
CHRYSENE	EPA Method 8270	557. ug/kg DRY	419. ug/kg	09/12/00
BENZO(B)FLUORANTHENE	EPA Method 8270	440. ug/kg DRY	419. ug/kg	09/12/00
BENZO(A)PYRENE	EPA Method 8270	526. ug/kg DRY	419. ug/kg	09/12/00
BENZO(G,H,I)PERYLENE	EPA Method 8270	333. J ug/kg DRY	419. ug/kg	09/12/00
BENZENE	EPA Method 8260	ND ug/kg DRY	104. ug/kg	09/08/00
NAPHTHALENE	EPA Method 8260	ND ug/kg DRY	521. ug/kg	09/08/00
TOTAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	79.60 %	0.01000 %	09/06/00

ample Number 589329-3 — Sample Description: TP-21 (14)
Samp. Date/Time/Temp: 08/30/00 12:45pm NA°F — Sampled by: Customer Sampled

result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
IC INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
lefinitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
NTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.



Page 1 — Serial Number: 33853

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

Analytical Results

QC Laboratories

09/15/00 07:06pm

Inv. No: 308756

P.O. No: 079-01
PWSID No:

unt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ect No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Received Temp: 57°F Iced (Y/N): Y

meter	Method	Result	RLs	Test Date
UORENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
ENANTHRENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
THRACENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
RENE	EPA Method 8270	ND ug/kg DRY	1380 ug/kg	09/12/00
NZO(A)ANTHRACENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
RYSENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
NZO(B)FLUORANTHENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
NZO(A)PYRENE	EPA Method 8270	ND ug/kg DRY	553. ug/kg	09/12/00
NZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/kg DRY	178. ug/kg	09/08/00
NZENE	EPA Method 8260	ND ug/kg DRY	888. ug/kg	09/08/00
PHTHALENE	EPA Method 8260			09/06/00
TAL SOLIDS PERCENT	STD Methods 18th Ed. 2540	52.92 %	0.01000 %	

ple Number	Sample Description	Samp. Date/Time/Temp	Sampled by
9329-4	TP-22 (14)	08/30/00 02:00pm NA°F	Customer Sampled

Received Temp: 57°F Iced (Y/N): Y

ameter	Method	Result	RLs	Test Date
LUORENE	EPA Method 8270	ND ug/kg DRY	370. ug/kg	09/12/00
HENANTHRENE	EPA Method 8270	350. J ug/kg DRY	370. ug/kg	09/12/00
NTHRACENE	EPA Method 8270	ND ug/kg DRY	370. ug/kg	09/12/00
YRENE	EPA Method 8270	ND ug/kg DRY	925. ug/kg	09/12/00
ENZO(A)ANTHRACENE	EPA Method 8270	544. ug/kg DRY	370. ug/kg	09/12/00
HRYSENE	EPA Method 8270	574. ug/kg DRY	370. ug/kg	09/12/00
E)FLUORANTHENE	EPA Method 8270	490. ug/kg DRY	370. ug/kg	09/12/00
N)PYRENE	EPA Method 8270	638. ug/kg DRY	370. ug/kg	09/12/00
(G,H,I)PERYLENE	EPA Method 8260	ND ug/kg DRY	129. ug/kg	09/08/00
ENE	EPA Method 8260	ND ug/kg DRY	645. ug/kg	09/08/00
APHTHALENE	STD Methods 18th Ed. 2540			09/06/00
TOTAL SOLIDS PERCENT		72.07 %	0.01000 %	

89329-1:
QUALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater an the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a brary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

89329-2:
QUALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater ian the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a ibrary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

589329-3:
QUALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater han the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a ibrary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

689329-4:

result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
efinitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Allan D. Schlosser Jr.

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

09/15/00 07:06pm

Inv. No: 308756

P.O. No: 079-01
PWSID No:

unt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ect No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

JALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a ary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
IC INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001(WindGap), additional states upon request.
)efinitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
TNTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Par 3

Serial Number: 33853

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

Lab LIMS No:

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Bill to/Report to: (if different) SAME

Client/Acct. No. BROWN ENVIRONMENTAL

Address 42 SEQUOIA DRIVE

Sampling Site Address: (if different)

City/State/Zip NEWTOWN, PA 18940

Phone/Fax (215) 504-5066/5067

P.O. No. 077-01

Client Contact STEVE COE

QC Contact ANDY CORR

LAB USE ONLY:

- # ___ Ascorbic/HCl Vials # ___ HCl Vials
- # ___ $Na_2S_2O_3$
- # ___ NaOH/Zn acetate pH
- # ___ HNO_3 pH
- # ___ H_2SO_4 pH
- # ___ NaOH pH
- # ___ Unpreserved
- # ___ Fld pH
- # ___ Temp Control ID#

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

PROJECT / FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	$Na_2S_2O_3$	HNO_3	NaOH	ZnAc	Unpre	Bact	ANALYSIS REQUESTED	Field pH, Temp (C or F), DO, Cl_2, S. Cond. etc
TP-19 (14)	8/30	1428	X		SO	3									PA ACT II No. 4, 5, 6 Fuel Oil	
TP-20 (13)	8/30	1330	X		SO	3									"	
TP-21 (14)	8/30	1245	X		SO	3									"	
TP-22 (14)	8/30	1400	X		SO	3									"	

SAMPLED BY: (Name/Company)
ANDY, WESTERBAN PG
BROWN ENVIRONMENTAL

Verbal/fax data due:

Hardcopy due: STANDARD TAT

Report Format: ☒ Standard ☐ Forms ☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:

Sig:

Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE. DATE AND MILITARY TIME (24 HOUR CLOCK. I.E. 8AM IS 0800. 4 PM IS 1600)

	DATE	TIME		DATE	TIME
RELINQUISHED BY SAMPLER 1	8/31/00	1300	RECEIVED BY 1 Allison Corr	8/31/00	1309
RELINQUISHED BY 2 Allison Corr	8/31/00	1639	RECEIVED BY 2	8/31/00	1639
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: ☐ QC COURIER ☒ CLIENT ☐ UPS ☐ FEDEX ☐ OTHER

Custody Seal Number

COMMENTS:

Hazardous: yes / no

ATTACHMENT C
Soil Boring Logs

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-1

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02

Contractor: QCI, Inc.
Boring Method: Excavation
Boring Date: 8/28/00

Depth	Sample ID	Description	Recovery	PID Reading
0		Ground Surface		
0–2		Silt, gravel with concrete fragments, steel rebar, brick fragments Gray brown, slightly moist		0
2–4		Layered red brick with concrete fragments, dry		0
4–11		Brown silt with brick fragments, concrete, rebar Note: large 2' concrete column in the excavation		0
11	▽ TP-1 (12)			
15		End of Boring		

Soil Boring Log: TP-2

ENVIRONMENTAL SERVICES
BROWN
42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02

Contractor: QCI, Inc.
Boring Method: Excavation
Boring Date: 8/28/00

Depth	Sample ID	Description	Recovery	PID Reading
		Ground Surface		0
0		Brown silt with concrete fragments		0
1		Gray brown silt, brick w/ concrete fragments, steel, aluminum pieces		
2				
3				
4				
5				
6		End of boring. Refusal due to concrete slab		
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Soil Boring Log: TP-3

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

CLIENT NAME LHTW CORPORATION
SITE NAME JACK FROST SUGAR FACTORY
PROJECT CODE 079-01 & 02

CONTRACTOR QCI, INC.
BORING METHOD EXCAVATION
BORING DATE 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		
		BROWN SILT WITH CONCRETE AND SOME BRICK FRAGMENTS		0
1				
2		BROWN SILT WITH LARGE RED BRICK AND CONCRETE FRAGMENTS, REBAR		0
3				
4				
5				
6				
7				
8				
9				1.5
10		BROWN SILT WITH SOME CLAY		
11	▽	GRAVEL WITH FINE TO COARSE SAND AND GRAY SILT		1.0
12	TP-3 (12)	BLACK OIL NOTED IN SOIL AT GROUNDWATER INTERFACE		
		SOLID WOOD NOTED AT 13' BGS		
13		END OF BORING		
14				
15				
16				
17				
18				
19				

Soil Boring Log: TP-4

ENVIRONMENTAL SERVICES
BROWN
42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
		GROUND SURFACE		0
0		GRAY BROWN SILT WITH SOME SAND, BRICK AND CONCRETE FRAGMENTS, REBAR SLIGHTLY MOIST		
7		END OF BORING. REFUSAL DUE TO CONCRETE SLAB		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-5 (MW-2)

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02

Contractor: QCI, Inc.
Boring Method: Excavation
Boring Date: 8/28/00

Depth	Sample ID	Description	Recovery	PID Reading
		Ground Surface		
0		Brown silt with concrete and brick fragments, rebar		0
2		Brown silt with red brick and concrete fragments, metal pieces		0
7		Dark gray brown silt w/ little clay, brick and concrete fragments		0
12		Dark gray brown silt w/ little clay; Hydrocarbon odor		2.0
13	TP-5 (13)	Brown silt with gravel. Hydrocarbon odor		1.5
14		Brown silt with gravel and little clay		

Soil Boring Log: TP-6

ENVIRONMENTAL SERVICES BROWN
42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
0		BROWN SILT WITH SOME BRICK AND CONCRETE FRAGMENTS SLIGHTLY MOIST		
7		END OF BORING. REFUSAL DUE TO CONCRETE SLAB		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log

TP-7 (MW-4)

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
0		BROWN SILT WITH CONCRETE AND BRICK FRAGMENTS, REBAR		
7		CONCRETE SLAB		0
8		DARK BROWN SILT W/ LITTLE GRAVEL, BRICK AND CONCRETE FRAGMENTS		
12		GRAY TO DARK GRAY SILT W/ SOME CLAY AND GRAVEL		0
14	TP-7 (14)	GRAY TO LIGHT GRAY BROWN SILT WITH SOME GRAVEL AND SAND		0
17		END OF BORING		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-8

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
0		BROWN SILT WITH SOME BRICK AND CONCRETE FRAGMENTS, REBAR SLIGHTLY MOIST TO DRY		
7		END OF BORING. REFUSAL DUE TO CONCRETE SLAB		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log

TP-9 (MW-5)

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		Ground Surface		0
1		Gravel sized concrete with brown silt and some brick fragments, chunks of rubber tire. Slightly moist		
2				
3				
4				
5				
6				
7				
8		Concrete slab		0
9		Brown silt with brick and concrete fragments. Moist at 10'		
10				0
11		Silt with brick and concrete fragments		
12	▽			
13		Light gray to brown silt with some gravel, wood chunks		0
14				
15				
16		End of Boring		
17				
18				
19				
20				

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-10

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

NT NAME LHTW Corporation
SITE NAME Jack Frost Sugar Factory
PROJECT CODE 079-01 & 02

CONTRACTOR QCI, Inc.
BORING METHOD Excavation
BORING DATE 8/28/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
0		GRAY BROWN SILT WITH LARGE PIECES OF CONCRETE		
1		END OF BORING. REFUSAL DUE TO CONCRETE SLAB		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-11

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

NT Name LHTW Corporation
Site Name Jack Frost Sugar Factory
Project Code 079-01 & 02

Contractor QCI, Inc.
Boring Method Excavation
Boring Date 8/29/00

Depth	Sample ID	Description	Recovery	PID Reading
		Ground Surface		
0		Concrete, brick with medium brown silt		0
1		Dry		
2				
3				
4		Brown medium sand w/ brick and concrete fragments, rubber hose		0
5		Dry		
6		Brown silt with brick and concrete fragments		0
7		Dry		
8		Concrete slab		0
9		Gray brown silt with little clay, gravel, and concrete		
10				
11	▽			
12	TP-11 (12)	End of Boring		
13				
14				
15				
16				
17				
18				
19				
20				

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-12

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/29/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
0		BROWN SILT WITH SOME BRICK AND CONCRETE FRAGMENTS, STEEL		0
1		BROWN SILT W/ SAND, BRICK AND CONCRETE FRAGMENTS, TRACE CLAY, GRAVEL		
2		DRY		
3				
4				
5		SILT WITH SAND, BRICK AND CONCRETE FRAGMENTS		0
6				
7		END OF BORING. REFUSAL DUE TO CONCRETE SLAB		
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Soil Boring Log: TP-13

ENVIRONMENTAL SERVICES
BROWN
42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, Inc.
BORING METHOD: Excavation
BORING DATE: 8/29/00

Depth	Sample ID	Description	Recovery	PID Reading
0		Ground Surface		0
1		Light brown silt with little clay. Moist		0
2		Light brown silt with little clay. Dry		0
3		Light brown silt with little clay. Dry		
4		End of Boring. Refusal due to concrete slab		
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log: TP-14

CLIENT NAME: LHTW CORPORATION
SITE NAME: JACK FROST SUGAR FACTORY
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, INC.
BORING METHOD: EXCAVATION
BORING DATE: 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
1		BROWN SILT. DRY		0
2		BROWN SILT WITH LITTLE CLAY AND SAND, SOME BRICK FRAGMENTS		
3				
4		BRICK FRAGMENTS WITH LITTLE SILT AND SAND NOTE: BRICK WALL OBSERVED ALONG EAST FACE OF EXCAVATION FROM 3.5' - 9'		0
5				
6		SILT WITH SOME BRICK AND CONCRETE FRAGMENTS		0
7				
8				
9		END OF BORING		
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log: TP-15

CLIENT NAME LHTW CORPORATION
SITE NAME JACK FROST SUGAR FACTORY
PROJECT CODE 079-01 & 02

CONTRACTOR QCI, INC.
BORING METHOD EXCAVATION
BORING DATE 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		
0		BROWN SILT WITH SOME GRAVEL AND SAND, BRICK AND WOOD FRAGMENTS DRY		0
5		DARK BROWN SILT WITH SAND, LITTLE GRAVEL AND BRICK FRAGMENTS DRY		0
8		BROWN TO GRAY BROWN SILT WITH GRAVEL AND SAND, BRICK FRAGMENTS MOIST AT 11'		0
11	▽ TP-15 (13)	GRAY TO GRAY BROWN SILT W/ SOME CLAY, BRICK AND CONCRETE FRAGMENTS, LITTLE FINE SAND		0
14		END OF BORING		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log — TP-16 (MW-1)

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02

Contractor: QCI, Inc.
Boring Method: Excavation
Boring Date: 8/30/00

Depth	Sample ID	Description	Recovery	PID Reading
0		Ground Surface		
0		Brown silt with sand		0
1				
2		Light brown moderately sorted medium sand with little silt		0
3				
4				
5				
6		Light gray moderately sorted fine to coarse sand with little silt		0
7				
8				
9				
10				
11				
12	▽ TP-16 (12.5)			
13		Light gray sand with little silt		0
14				
15				
16				
17				
18				
19				
20				
21				

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log: TP-17

CLIENT NAME: LHTW CORPORATION
SITE NAME: JACK FROST SUGAR FACTORY
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, INC.
BORING METHOD: EXCAVATION
BORING DATE: 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		
0		BROWN TO DARK BROWN SILT W/ BRICK AND CONCRETE FRAGMENTS, GRAVEL, METAL, WOOD SLIGHTLY MOIST		0
7		GRAY BROWN SAND WITH SILT AND GRAVEL		3.0
10		GRAY BROWN SILT WITH FINE SAND, LITTLE CLAY		2.0
13	▽ TP-17 (13)	END OF BORING		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Lo, TP-18 (MW-6)

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02

Contractor: QCI, Inc.
Boring Method: Excavation
Boring Date: 8/30/00

Depth	Sample ID	Description	Recovery	PID Reading
0		Ground Surface		
		Brown to light brown silt with clay, little mica flakes Moist		0
2				
3		Dark gray silt with little gravel, brick fragments, wood pieces Moist		0
7				
8		Concrete Slab		
9		Dark gray silt with brick fragments Moist		0
10	▽			
11		Light brown silt with little sand and clay Moist to wet at 10'		0
12	TP-18 (12)			
13		Light brown silt with little sand, trace clay		0
20		End of Boring		

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log: TP-19

IENT NAME LHTW CORPORATION
SITE NAME JACK FROST SUGAR FACTORY
PROJECT CODE 079-01 & 02

CONTRACTOR QCI, INC.
BORING METHOD EXCAVATION
BORING DATE 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		
		LIGHT BROWN SILT WITH CONCRETE FRAGMENTS		0
1		CONCRETE SLAB		
2		DARK GRAY SILT WITH SOME CLAY, BRICK FRAGMENTS		0
3				
4				
5				
6		DARK GRAY SILT WITH LITTLE CLAY AND GRAVEL		0
7				
8				
9	▽			
10				
11				
12				
13				
14	TP-19 (14)			
15		END OF BORING		
16				
17				
18				
19				
20				

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log — TP-20 (MW-3)

CLIENT NAME: LHTW CORPORATION
SITE NAME: JACK FROST SUGAR FACTORY
PROJECT CODE: 079-01 & 02
CONTRACTOR: QCI, INC.
BORING METHOD: EXCAVATION
BORING DATE: 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		
0–3		LIGHT BROWN SILT AND SAND WITH BRICK AND CONCRETE FRAGMENTS DRY		0
3–7		BROWN SILT WITH SAND, LITTLE GRAVEL, CONCRETE FRAGMENTS, CLAY SLIGHTLY MOIST		0
7–11		GRAY BROWN SILT WITH SOME CLAY, LITTLE BRICK FRAGMENTS WET AT 11'		0
11	▽			
11–15	TP-20 (13)	DARK GRAY SILT WITH GRAVEL		0
15		END OF BORING		

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log: TP-21

CLIENT NAME: LHTW CORPORATION
SITE NAME: JACK FROST SUGAR FACTORY
PROJECT CODE: 079-01 & 02

CONTRACTOR: QCI, INC.
BORING METHOD: EXCAVATION
BORING DATE: 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
1		BROWN SILT WITH LITTLE BRICK FRAGMENTS DRY		
2		DARK GRAY SILT AND GRAVEL, BRICK AND CONCRETE FRAGMENTS, METAL, PLASTIC, WOOD PIECES		5.0
6		DARK GRAY SILT WITH SOME CLAY AND GRAVEL		1.0
12	▽			
14	TP-21 (14)			
15		END OF BORING		
20				

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log: TP-22

CLIENT NAME: LHTW CORPORATION
SITE NAME: JACK FROST SUGAR FACTORY
PROJECT CODE: 079-01 & 02
CONTRACTOR: QCI, INC.
BORING METHOD: EXCAVATION
BORING DATE: 8/30/00

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
0		SILT WITH BRICK AND CONCRETE FRAGMENTS, METAL PIECES		
6		BRICK AND CONCRETE FRAGMENTS WITH BROWN SILT AND SAND, METAL PIECES DRY		0
11		BROWN GRAVEL AND SAND, SOME SHELL FRAGMENTS		0
14	▽ TP-22 (14)	END OF BORING		

ENVIRONMENTAL SERVICES
BROWN

Soil Boring Log: TP-23 (MW-7)

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02

Contractor: QCI, Inc.
Boring Method: Excavation
Boring Date: 3/28/01

Depth	Sample ID	Description	Recovery	PID Reading
0		Ground Surface		0
0		Brown silt with concrete and some brick fragments		
8				0
9		Dark brown silt w/ little gravel, brick and concrete fragments		
12				0
12	▽	Gray to dark gray silt w/ some clay and gravel		
14		End of Boring, Refusal due to wood pier		

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log TP-24 (MW-8)

CLIENT NAME LHTW CORPORATION
SITE NAME JACK FROST SUGAR FACTORY
PROJECT CODE 079-01 & 02
CONTRACTOR QCI, INC.
BORING METHOD EXCAVATION
BORING DATE 3/28/01

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		0
1		GRAVEL SIZED CONCRETE WITH BROWN SILT AND SOME BRICK FRAGMENTS, SLIGHTLY MOIST		
2				
3				
4				
5				
6				
7				
8		BROWN SILT WITH BRICK AND CONCRETE FRAGMENTS		0
9				
10		BROWN SILT WITH SOME CLAY		0
11	▽			
12		GRAVEL WITH FINE TO COARSE SAND AND GRAY SILT		
13				0
14		LIGHT GRAY SILT WITH SOME GRAVEL ENCOUNTERED 4' DIAMETER CYLINDRICAL CONCRETE PILINGS		
15				
16		END OF BORING		
17				
18				
19				
20				

ENVIRONMENTAL SERVICES
BROWN
42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

Soil Boring Log TP-25 (MW-9)

CLIENT NAME: LHTW CORPORATION
SITE NAME: JACK FROST SUGAR FACTORY
PROJECT CODE: 079-01 & 02
CONTRACTOR: QCI, INC.
BORING METHOD: EXCAVATION
BORING DATE: 3/28/01

DEPTH	SAMPLE ID	DESCRIPTION	RECOVERY	PID READING
0		GROUND SURFACE		
0		SILT, GRAVEL WITH CONCRETE FRAGMENTS, STEEL REBAR, BRICK FRAGMENTS GRAY BROWN, SLIGHTLY MOIST		0
2				
3		LAYERED RED BRICK WITH CONCRETE FRAGMENTS, DRY		0
4		BROWN SILT WITH BRICK FRAGMENTS, CONCRETE, REBAR		0
5				
6				
7				
8		ENCOUNTERED LARGE CONCRETE PILINGS, FOOTERS, ETC		
9				
10				
11	▽	GRAVEL WITH FINE TO COARSE SAND AND GRAY SILT		0
12				
13		LIGHT GRAY SILT WITH GRAVEL		0
14		END OF BORING		
15				
16				
17				
18				
19				
20				

ATTACHMENT D
Monitor Well Sample Analytical Results

QC Laboratories

Analytical Results

10/26/00 10:45pm

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Inv. No: 316769

:ount No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
)ject No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-01
PWSID No:

Sample Number: 699302-1
Sample Description: MW-1
Received Temp: 38°F Iced (Y/N): Y

Samp. Date/Time/Temp: 10/06/00 04:50pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
FLUORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
PHENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
PYRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
CHRYSENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
BENZENE	EPA Method 8260	ND ug/l	1.00 ug/l	10/16/00
TOLUENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
ETHYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
ISOPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
NA[illegible]ALENE				

Sample Number: [illegible]02-2
Sample Description: MW-2
Received Temp: 38°F Iced (Y/N): Y

Samp. Date/Time/Temp: 10/06/00 05:40pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
FLUORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
PHENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
PYRENE	EPA Method 8270	1.10 J ug/l	2.00 ug/l	10/21/00
CHRYSENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
BENZENE	EPA Method 8260	ND ug/l	1.00 ug/l	10/16/00
TOLUENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
ETHYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
ISOPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
NAPHTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00

Sample Number: 699302-3
Sample Description: MW-3
Received Temp: 38°F Iced (Y/N): Y

Samp. Date/Time/Temp: 10/06/00 05:22pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
FLUORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001/02015, additional states upon request.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
TNTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Allen D. Schopbach, President

Serial Number: 43961

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

10/26/00 10:45pm

P.O. No: 079-01 Inv. No: 316769
PWSID No:

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

e Number	Sample Description	Method	Result	RLs	Test Date
			Samp. Date/Time/Temp	10/06/00 05:22pm NA°F	Sampled by Customer Sampled
02-3	MW-3				
ieter		EPA Method 8270	2.18 ug/l	2.00 ug/l	10/21/00
NANTHRENE		EPA Method 8270	4.03 ug/l	2.00 ug/l	10/21/00
ENE		EPA Method 8270	2.52 ug/l	2.00 ug/l	10/21/00
.YSENE		EPA Method 8260	ND ug/l	1.00 ug/l	10/16/00
IZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
.UENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
IYL BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
)PROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
'HTHALENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00

.e Number	Sample Description	Method	Result	RLs	Test Date
			Samp. Date/Time/Temp	10/06/00 05:30pm NA°F	Sampled by Customer Sampled
502-4	MW-4 Received Temp: 38°F Iced (Y/N): Y				
neter		EPA Method 8270	ND ug/l	10.0 ug/l	10/21/00
JORENE		EPA Method 8270	23.1 ug/l	10.0 ug/l	10/21/00
ENANTHRENE		EPA Method 8270	32.6 ug/l	10.0 ug/l	10/21/00
RENE		EPA Method 8270	17.9 ug/l	10.0 ug/l	10/21/00
RYSENE		EPA Method 8260	ND ug/l	1.00 ug/l	10/16/00
NZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
LUENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
HYL BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
OPROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
PHTHALENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00

...mber	Sample Description	Method	Result	RLs	Test Date
			Samp. Date/Time/Temp	10/06/00 05:10pm NA°F	Sampled by Customer Sampled
...5	MW-5 Received Temp: 38°F Iced (Y/N): Y				
imeter		EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
.UORENE		EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
IENANTHRENE		EPA Method 8270	1.12 J ug/l	2.00 ug/l	10/21/00
'RENE		EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
IRYSENE		EPA Method 8260	ND ug/l	1.00 ug/l	10/16/00
ENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
)LUENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
THYL BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
SOPROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00
APHTHALENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/16/00

esult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001/02015, additional states upon request.
initions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
C=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Allen D. Schopbach

Allen D. Schopbach, President

Serial Number: 43961

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

10/26/00 10:45pm

P.O. No: 079-01 Inv. No: 316769
PWSID No:

int No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Samp. Date/Time/Temp 10/06/00 02:35pm NA°F
Sampled by Customer Sampled

e Number 02-6
Sample Description MW-6
Received Temp: 38°F Iced (Y/N): Y

ıeter	Method	Result	RLs	Test Date
ND LOW LEVEL DISSOLVED	Std Method 3113 B	ND mg/l	0.00200 mg/l	10/11/00
JORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
ENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/21/00
2-DIBROMOETHANE	EPA Method 8011	ND ug/l	0.0500 ug/l	10/13/00
THYL TERTIARY BUTYL ETHER	EPA Method 8260	ND ug/l	5.00 ug/l	10/17/00
NZENE	EPA Method 8260	ND ug/l	1.00 ug/l	10/17/00
2-DICHLOROETHANE	EPA Method 8260	ND ug/l	2.00 ug/l	10/17/00
LUENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/17/00
HYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/17/00
P-XYLENES	EPA Method 8260	ND ug/l	2.00 ug/l	10/17/00
XYLENE	EPA Method 8260	ND ug/l	1.00 ug/l	10/17/00
OPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/17/00
PHTHALENE		ND ug/l	5.00 ug/l	10/17/00

302-2:
UALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater
the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a
ary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

)30
IFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater
MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a
ary search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

esult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
INC's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001/02015, additional states upon request.
initions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
C=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Allen D. Schopbach

Serial Number: 43961

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

Lab LIMS No:

Client/Acct. No. BROWN ENVIRONMENTAL
Address 42 SEQUOIA DRIVE
City/State/Zip NEWTOWN, PA 18940
Phone/Fax (215) 504-5066 / (215) 504-5067
Client Contact STEVE COX

Bill to/Report to: (if different) SAME
Sampling Site Address: (if different)
P.O. No. 079-01
QC Contact AMY CORR

LAB USE ONLY:
___ Ascorbic/HCl Vials # ___ HCl Vials
___ $Na_2S_2O_3$
___ NaOH/Zn acetate pH
___ HNO_3 pH
___ H_2SO_4 pH
___ NaOH pH
___ Unpreserved
___ Hcl pH
___ Temp control ___ ID#

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

PROJECT

FIELD ID	Collection Date	Military Time	GRAB	COMP	Matrix Code	Total	H_2SO_4	HCl	Vials	HNO_3	NaOH	ZnAc	Unpres	Bact	ANALYSIS REQUESTED	Field pH, Temp (C or F), DO, Cl_2, S. Cond. et
MW-1	10/6	1650	X		GW	5		X → 3/5							PA ACT II → No. 2 & No. 4, 5, 6 PARAMET.	
MW-2	↓	1740	X		GW	5		X → 3/5							" "	
MW-3		1722	X		GW	5		X → 3/5							" "	
MW-4		1730	X		GW	5		X → 3/5							" "	
MW-5		1710	X		GW	5		X → 3/5							" "	
MW-6	↓	1435	X		GW	8		X → 6/8							PA ACT II → LEADED & UNLEADED & DIESEL PARAMETERS	

SAMPLED BY: (Name/Company) ANDY WESTERGAARD / STEVE COX / BROWN ENVIRONMENTAL

Verbal/fax data due: ASAP
Hardcopy due: 10/20/00

Report Format: ☒ Standard ☐ Forms ☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig: Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
1 RELINQUISHED BY SAMPLER [signature]	10/6/00	1905	1 [signature]	[illegible]	[illegible]
2 RELINQUISHED BY			2 RECEIVED BY		
3 RELINQUISHED BY			3 RECEIVED BY		
4 RELINQUISHED BY			4 RECEIVED BY		
5 RELINQUISHED BY			5 RECEIVED BY		

DELIVERY METHOD: ☐ QC COURIER ☒ CLIENT ☐ UPS ☐ FEDEX ☐ OTHER ___

Custody Seal Number

COMMENTS: MW-6 WAS NOT FIELD FILTERED!! NEEDS TO BE FILTERED IN LAB PRIOR TO ANALYSIS FOR DISSOLVED LEAD

Hazardous: yes (no)

QC Laboratories

Analytical Results

01/22/01 10:39pm

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-01
PWSID No:

Inv. No: 330759

Number 9-1
Sample Description 079-01 MW-1
Received Temp: 55°F Iced (Y/N): Y

Samp. Date/Time/Temp 12/19/00 11:50am NA°F
Sampled by Customer Sampled

	Method	Result	RLs	Test Date
ter	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
RENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
ANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
RACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
NE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(A)ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
SENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(B)FLUORANTHENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(A)PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(I)PERYLENE	EPA Method 8260	ND ug/l	1.00 ug/l	12/28/00
EN	EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
NE	EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
OPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
THALENE				

Number 9-2
Sample Description MW-2
Received Temp: 55°F Iced (Y/N): Y

Samp. Date/Time/Temp 12/19/00 01:45pm NA°F
Sampled by Customer Sampled

	Method	Result	RLs	Test Date
ter	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
RENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
ANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
RACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
NE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(A)ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
SENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(B)FLUORANTHENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(A)PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/07/01
O(G,H,I)PERYLENE	EPA Method 8260	ND ug/l	1.00 ug/l	12/28/00
ENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
JENE				

lt of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001/02015, additional states upon request.
itions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Serial Number: 63311

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

01/22/01 10:39pm

Inv. No: 330759

P.O. No: 079-01
PWSID No:

1t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
:t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Number	Sample Description			Samp. Date/Time/Temp	Sampled by
i9-2	MW-2			12/19/00 01:45pm NA°F	Customer Sampled
ster		Method	Result	RLs	Test Date
'L BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
'ROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00
ITHALENE		EPA Method 8260	ND ug/l	5.00 ug/l	12/28/00

ult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
C's laboratory certification numbers are; PADER 09-131;NJDEP 77166/77001/02015, additional states upon request.
itions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.

Serial Number: 63311

Allen D. Schopbach, President

2

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

QC Laboratories
1203 Industrial Drive
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Page 1 of 1

Lab LIMS No.:

Client/Acct. No.: BROWN ENVIRONMENTAL
Address: 12 SEQUOIA DRIVE
City/State/Zip: NEWTOWN PA 18940
Phone/Fax: 215 504-5066 / 5067
Client Contact: STEVEN F. COE

Bill to/Report to: (if different) AMLE
Sampling Site Address: (if different)
P.O. No.: 077-01
QC Contact: AMY COLIZ / JEFF

LAB USE ONLY:
____ Ascorbic/HCl Vials # ____ HCl Vials
____ $Na_2S_2O_3$
____ NaOH/Zn acetate pH
____ HNO_3 pH
____ H_2SO_4 pH
____ NaOH pH
____ Unpreserved
____ Hcl pH
____ Temp control

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

PROJECT / FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	Vials	HNO_3	NaOH	ZnAc	Unpres	Bact
MW-1	12/19	1150	X		GW	6		X	3					
MW-2	12/19	1345	X		GW	6		X	3					

ANALYSIS REQUESTED

PA Act II - No. 2 & No. 4, 5, 6
11 11

Field pH, Temp (C or F), DO, Cl_2, S. Cond. et

SAMPLED BY: (Name/Company)
STEVEN F. COE
BROWN

Verbal/fax data due: 01/03/01
Hardcopy due: 01/03/01

Report Format: X Standard ☐ Forms ☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig:
Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK. I.E. 8AM IS 0800. 4 PM IS 1600)

	DATE	TIME		DATE	TIME
1 RELINQUISHED BY SAMPLER: STEVEN F COE	12/19/00	1525	1 RECEIVED BY: [signature]	[illegible]	[illegible]
2 RELINQUISHED BY	DATE	TIME	2 RECEIVED BY	DATE	TIME
3 RELINQUISHED BY	DATE	TIME	3 RECEIVED BY	DATE	TIME
4 RELINQUISHED BY	DATE	TIME	4 RECEIVED BY	DATE	TIME
5 RELINQUISHED BY	DATE	TIME	5 RECEIVED BY	DATE	TIME

DELIVERY METHOD: ☐ QC COURIER X CLIENT ☐ UPS ☐ FEDEX ☐ OTHER

Custody Seal Number

COMMENTS:

Hazardous: yes / no

QC Laboratories

Analytical Results

02/02/01 10:38pm

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Inv. No: 332904

P.O. No: 079-01
PWSID No:

1t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

e Number: 91-1
Sample Description: 079-01 MW-3
Received Temp: 37°F Iced (Y/N): Y
Samp. Date/Time/Temp: 12/20/00 11:45am NA°F
Sampled by: Customer Sampled

eter	Method	Result	RLs	Test Date
ORENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
NANTHRENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
HRACENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
ENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
ZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
YSENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
ZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
ZO(A)PYRENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
ZO(,1)PERYLENE	EPA Method 8270	ND ug/l	30.0 ug/l	01/09/01
ZE	EPA Method 8260	ND ug/l	1.00 ug/l	12/29/00
IFN	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
OPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
HTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00

e Number: 91-2
Sample Description: MW-4
Received Temp: 37°F Iced (Y/N): Y
Samp. Date/Time/Temp: 12/20/00 12:55pm NA°F
Sampled by: Customer Sampled

eter	Method	Result	RLs	Test Date
ORENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
NANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
HRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
ENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
ZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
YSENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
ZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
ZO(A)PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01

ult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
IC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015 additional states
request.
itions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
:too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with " * "
have NELAP accreditation.

Serial Number: 65928

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

02/02/01 10:38pm

Inv. No: 332904

P.O. No: 079-01
PWSID No:

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
:t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

e Number 71-2 | Sample Description MW-4 | Samp. Date/Time/Temp 12/20/00 12:55pm NA°F | Sampled by Customer Sampled

eter	Method	Result	RLs	Test Date
ZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/09/01
ZENE	EPA Method 8260	ND ug/l	1.00 ug/l	12/29/00
JENE	EPA Method 8260	1.00 J ug/l	5.00 ug/l	12/29/00
YL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
PROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
ITHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00

e Number 71-3 | Sample Description MW-5 | Samp. Date/Time/Temp 12/20/00 02:25pm NA°F | Sampled by Customer Sampled

Received Temp: 37°F Iced (Y/N): Y

eter	Method	Result	RLs	Test Date
ORENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
NANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
IRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
ENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
ZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
YSENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
ZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
ZO(A)PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
ZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
ZENE	EPA Method 8260	ND ug/l	1.00 ug/l	12/29/00
JEN	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
YL ENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
PYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
HALENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00

e Number 71-4 | Sample Description MW-6 | Samp. Date/Time/Temp 12/20/00 01:25pm NA°F | Sampled by Customer Sampled

Received Temp: 37°F Iced (Y/N): Y

eter	Method	Result	RLs	Test Date
D LOW LEVEL DISSOLVED	Std Method 3113 B	ND mg/l	0.00200 mg/l	12/27/00
ORENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
NANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	01/03/01
-DIBROMOETHANE	EPA Method 8011	ND ug/l	0.0500 ug/l	12/28/00
HYL TERTIARY BUTYL ETHER	EPA Method 8260	ND ug/l	10.0 ug/l	12/29/00
ZENE	EPA Method 8260	ND ug/l	1.00 ug/l	12/29/00
-DICHLOROETHANE	EPA Method 8260	ND ug/l	2.00 ug/l	12/29/00
UENE	EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00

ult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
C's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015 additional states request.
itions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident; too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with " * " have NELAP accreditation.

Serial Number: 65928

Allen D. Schopbach
Allen D. Schopbach, President

QC Laboratories

Analytical Results

02/02/01 10:38pm

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-01
PWSID No:

Inv. No: 332904

e Number	Sample Description			Samp. Date/Time/Temp	Sampled by
91-4	MW-6			12/20/00 01:25pm NA°F	Customer Sampled
eter		Method	Result	RLs	Test Date
YL BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
-XYLENES		EPA Method 8260	ND ug/l	2.00 ug/l	12/29/00
YLENE		EPA Method 8260	ND ug/l	1.00 ug/l	12/29/00
PROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00
HTHALENE		EPA Method 8260	ND ug/l	5.00 ug/l	12/29/00

91-2:
ALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a ry search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

sult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
NC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015 additional states request.
nitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident; =too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
l analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with " * " have NELAP accreditation.

Serial Number: 65928

Allen D. Schopbach

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories
1203 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

Lab LIMS No:

Bill to/Report to: (If different)

Client/Acct. No. BROWN ENVIRONMENTAL

Address 42 SQUIRE DRIVE

NEWTOWN, PA 18940

Sampling Site Address: (If different)

City/State/Zip

Phone/Fax 215 504-5066 / 5067

P.O. No. 077-01

Client Contact STEVEN F. COE

QC Contact AMY CORR / JEFF

PROJECT 077-01

LAB USE ONLY:

Ascorbic/HCl Vials # HCl Vials
$Na_2S_2O_3$
NaOH/Zn acetate pH
HNO_3 pH
H_2SO_4 pH
NaOH pH
Unpreserved
Hcl pH
Temp control ID#

MATRIX CODES

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	Vials	HNO_3	NaOH	ZnAc	Unpres	Bact
MW-3	12/20	1145	X		GW	6								
MW-4	12/20	1255	X		GW	6								
MW-5	12/20	1425	X		GW	6								
MW-6	12/20	1325	X		GW	10								

ANALYSIS REQUESTED

PA ACT II - No.2 & No.4,5,6
" "
" "
PA ACT II - LEADED, UNLEADED, No.2

Field pH, Temp (C or F), DO, Cl_2, S. Cond. etc.

SAMPLED BY: (Name/Company)
STEVEN F. COE
BROWN

Verbal/fax data due: 01/03/01
Hardcopy due: 01/03/01

Report Format: [X] Standard [ ] Forms
[ ] Standard + QC [ ] NJ Reduced [ ] Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig: Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK. I.E. 8AM IS 0800. 4 PM IS 1600)

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME
1 STEVEN F. COE	12/20/00	1650	1		
RELINQUISHED BY 2	DATE	TIME	RECEIVED BY 2	DATE	TIME
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: [ ] QC COURIER [X] CLIENT
[ ] UPS [ ] FEDEX [ ] OTHER

Custody Seal Number

COMMENTS: PLEASE FILTER & PRESERVE SAMPLE MW-6. THAT SAMPLE WAS NOT FIELD FILTERED.

SFC THANKS

Hazardous: yes / (no)

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac

05/03/01 10:48pm

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-02
PWSID No:

Inv. No: 348464

e Number	Sample Description	Samp. Date/Time/Temp	Sampled by
65-1	079-02 MW-3 Received Temp: 48°F Iced (Y/N): Y	04/19/01 03:28pm NA°F	Customer Sampled

ıeter	Method	Result	RLs	Test Date
ORENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
NANTHRENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
HRACENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
ENE	EPA Method 8270	3.96 J ug/l	6.00 ug/l	04/30/01
ZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
YSENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
ZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
ZO(A)PYRENE	EPA Method 8270	ND ug/l	6.00 ug/l	04/30/01
ZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	1.00 ug/l	05/01/01
ZE	EPA Method 8260	ND ug/l	5.00 ug/l	05/01/01
L	EPA Method 8260	ND ug/l	5.00 ug/l	05/01/01
ENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	05/01/01
PYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	05/01/01
HTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	05/01/01

e Number	Sample Description	Samp. Date/Time/Temp	Sampled by
65-2	MW-4 Received Temp: 48°F Iced (Y/N): Y	04/19/01 12:37pm NA°F	Customer Sampled

ıeter	Method	Result	RLs	Test Date
ORENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
NANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
HRACENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
ENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
ZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
YSENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
ZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
ZO(A)PYRENE	EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01

sult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
NC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015 additional states
request.
nitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
=too numerous to count
sult marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' have
P accreditation.

Serial Number: 86187

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac

05/03/01 10:48pm

Inv. No: 348464

P.O. No: 079-02
PWSID No:

t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Number	Sample Description			Samp. Date/Time/Temp	Sampled by
55-2	MW-4			04/19/01 12:37pm NA°F	Customer Sampled
eter		Method	Result	RLs	Test Date
O(G,H,I)PERYLENE		EPA Method 8270	ND ug/l	2.00 ug/l	04/30/01
ENE		EPA Method 8260	ND ug/l	1.00 ug/l	05/02/01
ENE		EPA Method 8260	ND ug/l	5.00 ug/l	05/02/01
L BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	05/02/01
ROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	05/02/01
THALENE		EPA Method 8260	ND ug/l	5.00 ug/l	05/02/01

55-1:
ALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is greater the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a ry search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

sult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
NC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015 additional states request.
nitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident; =too numerous to count
sult marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' have P accreditation.

Allen D. Schopbach

Serial Number: 86187

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

Lab LIMS No:

Client/Acct. No. BROWN ENVIRONMENTAL
Address 42 SEQUOIA DRIVE
City/State/Zip NEWTOWN, PA 18940
Phone/Fax (215)504-5066/5067
Client Contact STEVEN F. COE

Bill to/Report to: (If different) SAME
Sampling Site Address: (If different)
P.O. No. 079-02
QC Contact JEFF KLINE

PROJECT 079-02

LAB USE ONLY

Absorbic Vials
$Na_2S_2O_3$
NaOH/Zn acetate pH
HNO_3 pH
H_2SO_4 pH
NaOH pH
Unpreserved
HCl pH
Temp control ~4° ID

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

Field pH, Temp (C or F), DO, Cl_2, S. Cond. et

FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	YSI	HNO_3	NaOH	ZnAc	Unpres	BSGT	ANALYSIS REQUESTED
MW-3	4/19/01	1528	X		GW	5		3					2		PA Act II - No. 2 & No. 4,5,6
MW-4	4/19/01	1237	X		GW	5		3					2		" "

SAMPLED BY: (Name/Company)
STEVEN F. COE
BROWN ENVIRONMENTAL

Verbal/fax data due: 5/3/01
Hardcopy due: 5/3/01

Report Format: X Standard ☐ Forms
☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig:
Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

	DATE	TIME		DATE	TIME
RELINQUISHED BY SAMPLER 1 Steven F. Coe	4-19-01	16:30	RECEIVED BY 1. [signature]	4-19-01	16:30
RELINQUISHED BY 2	DATE	TIME	RECEIVED BY 2	DATE	TIME
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: ☐ QC COURIER X CLIENT ☐ UPS ☐ FEDEX ☐ OTHER
Custody Seal Number

COMMENTS:

Hazardous: yes / no

QC Laboratories

Analytical Results

08/20/01 08:48am

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Account No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
Project No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-02
PWSID No:

Inv. No: 370089

Sample Number: L792208-1
Sample Description: MW-4
Received Temp: 43°F Iced (Y/N): Y

Samp. Date/Time/Temp: 07/19/01 01:11pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
* FLUORENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* PHENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* ANTHRACENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* PYRENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* CHRYSENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(A)PYRENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(G,H,I)PERYLENE	EPA Method 8260	ND ug/l	1.00 ug/l	07/24/01
* BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
* TOLUENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
* ETHYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
* ISOPROFYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
* NAPHTHALENE				

Sample Number: L792208-2
Sample Description: MW-7
Received Temp: 43°F Iced (Y/N): Y

Samp. Date/Time/Temp: 07/19/01 02:23pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
* FLUORENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* PHENANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* CHRYSENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
additional states upon request.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory acciden
TNTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
All analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' h
NELAP accreditation.
The test"pH lab"is analyzed upon receipt in the lab, the result may not be suitable for regulatory purposes.

Unserialized Copy

Allen D. Schopbach

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone. 215-355-3900 Fax: 215-355-7231

Analytical Results

QC Laboratories

08/30/01 08:48am

Inv. No: 370089

Account No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
Project No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-02
PWSID No:

Sample Number	Sample Description			Samp. Date/Time/Temp	Sampled by
L792208-2	MW-7			07/19/01 02:23pm NA°F	Customer Sampled
Parameter		Method	Result	RLs	Test Date
* BENZO(A)PYRENE		EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZO(G,H,I)PERYLENE		EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZENE		EPA Method 8260	ND ug/l	1.00 ug/l	07/25/01
* TOLUENE		EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01
* ETHYL BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01
ISOPROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01
NAPHTHALENE		EPA Method 8260	1.49 J ug/l	5.00 ug/l	07/25/01

L792208-2:
1. QUALIFIERS: "B" is used when the compound is found in the blank as well as in the sample; "J" indicates a value that is grea than the MDL but lower than the lowest standard, it is also used to indicate that a compound is tentatively identified in a library search;"E"compound exceeded the calibration range;"N" presumptive evidence of a compound.

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
Additional states upon request.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory acciden
INTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
All analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' h
NELAP accreditation.
The test"pH Lab"is analyzed upon receipt in the lab, the result may not be suitable for regulatory purposes.

 Unserialized Copy

Allen D. Schopbach

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Lab LIMS No:

Client/Acct. No. BROWN ENVIRONMENTAL

Address 42 SEQUOIA DRIVE

City/State/Zip NEWTOWN, PA 18940

Phone/Fax (215)504-5066/5067

Client Contact STEVEN F. COE

Bill to/Report to: (if different) SAME

Sampling Site Address: (if different) SAME

P.O. No. 079-02

QC Contact JEFF CLINE

LAB USE ONLY:

___ Ascorbic/HCl Vials # ___ HCl vials
___ $Na_2S_2O_3$
___ NaOH/Zn acetate pH ___
___ HNO_3 pH ___
___ H_2SO_4 pH ___
___ NaOH pH ___
___ Unpreserved
___ Hcl pH ___
___ Temp control ___ ID# ___

MATRIX CODES

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

PROJECT

FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	Y_1T_3S	HNO_3	NaOH	ZnAc	Unpres	Bact
MW-4	7/19/01	1311	X		GW	5		X	→	3/5				
MW-7	7/19/01	1423	X		GW	5		X	→	3/5				

ANALYSIS REQUESTED

PA ACT II - No. 2 & No 4, 5, 6
" "

Field pH, Temp (C or F)
DO, Cl_2, S. Cond. etc.

SAMPLED BY: (Name/Company)
STEVEN F. COE
BROWN

Verbal/fax data due: 08/02/01
Hardcopy due: 08/02/01

Report Format: [X] Standard [ ] Forms [ ] Standard + QC [ ] NJ Reduced [ ] Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig: Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

	DATE	TIME		DATE	TIME
RELINQUISHED BY SAMPLER 1	7/19/01	1600	RECEIVED BY 1	7-19-01	1600
RELINQUISHED BY 2	DATE	TIME	RECEIVED BY 2	DATE	TIME
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: [ ] QC COURIER [X] CLIENT [ ] UPS [ ] FEDEX [ ] OTHER

Custody Seal Number

COMMENTS: PLEASE OBSERVE PQL's IN RELATION TO STATEWIDE HEALTH STANDARDS!

Hazardous: yes / no

QC Laboratories

Analytical Results

08/20/01 10:30am

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Account No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
Project No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

P.O. No: 079-02
PWSID No:

Inv. No: 370090

Sample Number: L792209-1
Sample Description: 079-02, MW-8
Received Temp: 45°F Iced (Y/N): Y

Samp. Date/Time/Temp: 07/17/01 04:08pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
* FLUORENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* PHENANTHRENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* CHRYSENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZO(A)PYRENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	4.00 ug/l	07/27/01
* BENZENE	EPA Method 8260	ND ug/l	1.00 ug/l	07/25/01
* TOLUENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01
* ETHYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01
* ISOPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01
* NAPHTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/25/01

Sample Number: L792209-2
Sample Description: MW-9
Received Temp: 45°F Iced (Y/N): Y

Samp. Date/Time/Temp: 07/17/01 04:39pm NA°F
Sampled by: Customer Sampled

Parameter	Method	Result	RLs	Test Date
* FLUORENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* PHENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* ANTHRACENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* PYRENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* CHRYSENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(A)PYRENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01
* BENZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	2.00 ug/l	07/27/01

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
additional states upon request.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory acciden
TNTC=too numerous to count
p result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
All analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with [illegible] h
NELAP accreditation.
The test"pH lab"is analyzed upon receipt in the lab, the result may not be suitable for regulatory purposes.

Unserialized Copy

Allen D. Schopbach

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

08/20/01 10:30am

Inv. No: 370090

P.O. No: 079-02
PWSID No:

Account No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
Project No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Sample Number L792309-2
Sample Description MW-9
Samp. Date/Time/Temp 07/17/01 04:39pm NA°P
Sampled by Customer Sampled

Parameter	Method	Result	RLs	Test Date
* BENZENE	EPA Method 8260	ND ug/l	1.00 ug/l	07/24/01
* TOLUENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
* ETHYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
ISOPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01
NAPHTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	07/24/01

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
QC INC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
additional states upon request.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory acciden
TNTC=toc numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
All analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' h
NELAP accreditation.
The test"pH lab"is analyzed upon receipt in the lab, the result may not be suitable for regulatory purposes.

Unserialized Copy

Allen D. Schopbach

Allen D. Schopbach, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone. 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Lab LIMS No:

Client/Acct. No. BROWN ENVIRONMENTAL

Address 42 SEQUOIA DRIVE

City/State/Zip NEWTOWN, PA 18940

Phone/Fax (215)504-5066/5067

Client Contact STEVEN F. COE

Bill to/Report to: (if different) SAME

Sampling Site Address: (if different) SAME

P.O. No. 079-02

QC Contact JEFF CLINE

PROJECT 079-02

LAB USE ONLY

- # ___ Ascorbic/HCl Vials # ___ HCl Vials
- # ___ $Na_2S_2O_3$
- # ___ NaOH/Zn acetate pH ___
- # ___ HNO_3 pH ___
- # ___ H_2SO_4 pH ___
- # ___ NaOH pH ___
- # ___ Unpreserved
- # ___ HCl pH ___
- # ___ Temp Control ___ ID ___

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	Vials	HNO_3	NaOH	ZnAc	UNPR	Bact	ANALYSIS REQUESTED	Field pH, Temp (C or F) DO, Cl_2, S. Cond. etc
MW-8	7/17/01	1608	X		GW	5		X	→			3/5			PA ACT II - No. 2 & No. 4, 5, 6	
MW-9	"	1639	X		GW	5		X	→			3/5			"	

SAMPLED BY: (Name/Company) STEVEN F. COE / BROWN

Verbal/fax data due: 08/02/01

Hardcopy due: 08/02/01

Report Format: X Standard ☐ Forms ☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:

Sig: Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

	DATE	TIME		DATE	TIME
RELINQUISHED BY SAMPLER 1 STEVEN F. COE	7/19/01	1608	RECEIVED BY 1 [signature]	7/19-01	1600
RELINQUISHED BY 2	DATE	TIME	RECEIVED BY 2	DATE	TIME
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: ☐ QC COURIER X CLIENT ☐ UPS ☐ FEDEX ☐ OTHER

Custody Seal Number

COMMENTS: OBSERVE PQL's IN RELATION TO STATEWIDE HEALTH STANDARDS!

Hazardous: yes / no

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac

10/23/01 03:53pm

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

Regarding:

STEVE COE
BROWN ENVIRONMENTAL SERVICES CORPORATION
42 SEQUOIA DRIVE
NEWTOWN, PA 18940

P.O. No: 079-02
PWSID No:

Inv. No: 385196

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Samp. Date/Time/Temp: 09/25/01 02:05pm NA°F
Sampled by: Customer Sampled

e Number: 55-1
Sample Description: 079-02 MW-8
Received Temp: 43°F Iced (Y/N): Y

eter	Method	Result	RLs	Test Date, Time, Analyst
IORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/04/01 04:01PM MJP
:NANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/04/01 04:01PM MJP
'HRACENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
:ENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
IZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
:YSENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
IZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
IZO(A)PYRENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
IZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/04/01 04:01PM MJP
IZE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 05:57PM MES
.U	EPA Method 8260	ND ug/l	1.00 ug/l	10/04/01 05:57PM MES
ENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 05:57PM MES
PYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 05:57PM MES
PHTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 05:57PM MES

Samp. Date/Time/Temp: 09/25/01 02:43pm NA°F
Sampled by: Customer Sampled

le Number: 055-2
Sample Description: MW-9
Received Temp: 43°F Iced (Y/N): Y

meter	Method	Result	RLs	Test Date, Time, Analyst
JORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/03/01 06:15PM MJP
ENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/03/01 06:15PM MJP
THRACENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP
RENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP
NZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP

sult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
NC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
r states upon request.
nitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
=too numerous to count
sult marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' have
AP accreditation.
The test"pH lab"is analyzed upon receipt at the laboratory, the result may not be suitable for regulatory purposes.
ual times of analysis for parameters reported <30 hrs are available upon request. All testing is completed within the required holding time.

Allen D. Schopbach

Allen D. Schopbach, President

Serial Number: 143526

e

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac

10/23/01 03:53pm

Inv. No: 385196

P.O. No: 079-02
PWSID No:

nt No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
ct No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

e Number	Sample Description	Samp. Date/Time/Temp	Sampled by
155-2	MW-9	09/25/01 02:43pm NA°F	Customer Sampled

ieter	Method	Result	RLs	Test Date, Time, Analyst
YSENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP
IZO(B)FLUORANTHENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP
IZO(A)PYRENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP
IZO(G,H,I)PERYLENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 06:15PM MJP
IZENE	EPA Method 8260	ND ug/l	1.00 ug/l	10/04/01 06:31PM MES
LUENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 06:31PM MES
HYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 06:31PM MES
OPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 06:31PM MES
PHTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 06:31PM MES

le Number	Sample Description	Samp. Date/Time/Temp	Sampled by
055-3	MW-4 Received Temp: 43°F Iced (Y/N): Y	09/26/01 09:19am NA°F	Customer Sampled

neter	Method	Result	RLs	Test Date, Time, Analyst
JORENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/03/01 07:01PM MJP
ENANTHRENE	EPA Method 8270	ND ug/l	2.00 ug/l	10/03/01 07:01PM MJP
THRACENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:01PM MJP
RENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:01PM MJP
NZO(A)ANTHRACENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:01PM MJP
RYS	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:01PM MJP
NZO LUORANTHENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:01PM MJP
NZO(A)PYRENE	EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:01PM MJP
G,H,I)PERYLENE	EPA Method 8260	ND ug/l	1.00 ug/l	10/04/01 07:05PM MES
NE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:05PM MES
LUENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:05PM MES
HYL BENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:05PM MES
OPROPYLBENZENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:05PM MES
PHTHALENE	EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:05PM MES

le Number	Sample Description	Samp. Date/Time/Temp	Sampled by
055-4	MW-7 Received Temp: 43°F Iced (Y/N): Y	09/26/01 10:10am NA°F	Customer Sampled

ameter	Method	Result	RLs	Test Date, Time, Analyst
LUORENE	EPA Method 8270	ND ug/l	6.00 ug/l	10/03/01 07:48PM MJP
HENANTHRENE	EPA Method 8270	ND ug/l	6.00 ug/l	10/03/01 07:48PM MJP

esult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
INC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
er states upon request.
initions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
C=too numerous to count
esult marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' have
AP accreditation.
The test"pH lab"is analyzed upon receipt at the laboratory, the result may not be suitable for regulatory purposes.
:tual times of analysis for parameters reported <30 hrs are available upon request. All testing is completed within the required holding time.

Serial Number: 143526

Allen D. Schopbach, President

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1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac

10/23/01 03:53pm

Inv. No: 385196

P.O. No: 079-02
PWSID No:

t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION
t No: B00168, BROWN ENVIRONMENTAL SERVICES CORPORATION

Samp. Date/Time/Temp
09/26/01 10:10am NA°F

Sampled by
Customer Sampled

Number	Sample Description	Method	Result	RLs	Test Date, Time, Analyst
5-4	MW-7				
ter		EPA Method 8270	ND ug/l	15.0 ug/l	10/03/01 07:48PM MJP
IRACENE		EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:48PM MJP
ENE		EPA Method 8270	ND ug/l	15.0 ug/l	10/03/01 07:48PM MJP
ZO(A)ANTHRACENE		EPA Method 8270	ND ug/l	5.00 ug/l	10/03/01 07:48PM MJP
YSENE		EPA Method 8270	ND ug/l	15.0 ug/l	10/03/01 07:48PM MJP
ZO(B)FLUORANTHENE		EPA Method 8270	ND ug/l	15.0 ug/l	10/03/01 07:48PM MJP
ZO(A)PYRENE		EPA Method 8270	ND ug/l	15.0 ug/l	10/03/01 07:48PM MJP
ZO(G,H,I)PERYLENE		EPA Method 8260	ND ug/l	1.00 ug/l	10/04/01 07:40PM MES
ZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:40PM MES
UENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:40PM MES
YL BENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:40PM MES
PROPYLBENZENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:40PM MES
HTHALENE		EPA Method 8260	ND ug/l	5.00 ug/l	10/04/01 07:40PM MES

evised report.

esult of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
INC's laboratory certification ID's are; PADER 09-131; NJDEP Southampton 77166, Wind Gap 77001, Alltest 02015,Vineland 06005
er states upon request.
finitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident;
TC=too numerous to count
result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
l analysis, except field tests are conducted in Southampton, PA unless otherwise identified. All parameters marked with '*' have
LAP accreditation.
The test"pH lab"is analyzed upon receipt at the laboratory, the result may not be suitable for regulatory purposes.
ctual times of analysis for parameters reported <30 hrs are available upon request. All testing is completed within the required holding time.

Allen D. Schopbach, President

Serial Number: 143526

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1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Lab LIMS No:

LAB USE ONLY:

____ Ascorbic/HCl Vials ____ # ____ HCl Vials ____
____ $Na_2S_2O_3$ ____
____ NaOH/Zn acetate pH ____
____ HNO_3 pH ____
____ H_2SO_4 pH ____
____ NaOH pH ____
____ Unpreserved
____ Hcl pH ____
____ Temp control 4/3.5 ID# ____

MATRIX CODES

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

Client/Acct. No. BROWN ENVIRONMENTAL

Address 42 SEQUOIA DRIVE

City/State/Zip NEWTOWN, PA 18940

Phone/Fax (215) 504-5066 / 5067

Client Contact STEVEN F. COE

Bill to/Report to: (if different) SAME

Sampling Site Address: (if different)

P.O. No. 079-02

QC Contact JEFF KLINE

PROJECT 079-02

FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	VIALS	HNO_3	NaOH	ZnAc	Unpres	BACT
MW-8	9/25/01	1405	X		GW	5		3					2	
MW-9	9/25/01	1443	X		GW	5		3					2	
MW-4	9/26/01	0919	X		GW	5		3					2	
MW-7	9/26/01	1010	X		GW	5		3					2	

ANALYSIS REQUESTED

PA ACT II: No.2 & No.4,5,6
" "
" "
" "

Field pH, Temp (C or F), DO, Cl_2, S. Cond. et

SAMPLED BY: (Name/Company)
STEVEN F. COE
BROWN ENVIRON

Verbal/fax data due: 10/10/01

Hardcopy due: 10/10/01

Report Format: [X] Standard [ ] Forms [ ] Standard + QC [ ] NJ Reduced [ ] Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:

Sig:

Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

RELINQUISHED BY SAMPLER 1	DATE 9/26/01	TIME 1215	RECEIVED BY 1	DATE 9-26	TIME 1215
RELINQUISHED BY 2	DATE	TIME	RECEIVED BY 2	DATE	TIME
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: [ ] QC COURIER [ ] CLIENT [ ] UPS [ ] FEDEX [ ] OTHER

Custody Seal Number

COMMENTS:

PLEASE OBSERVE PA ACT II MDLS OR PQLS!

Hazardous: yes / no

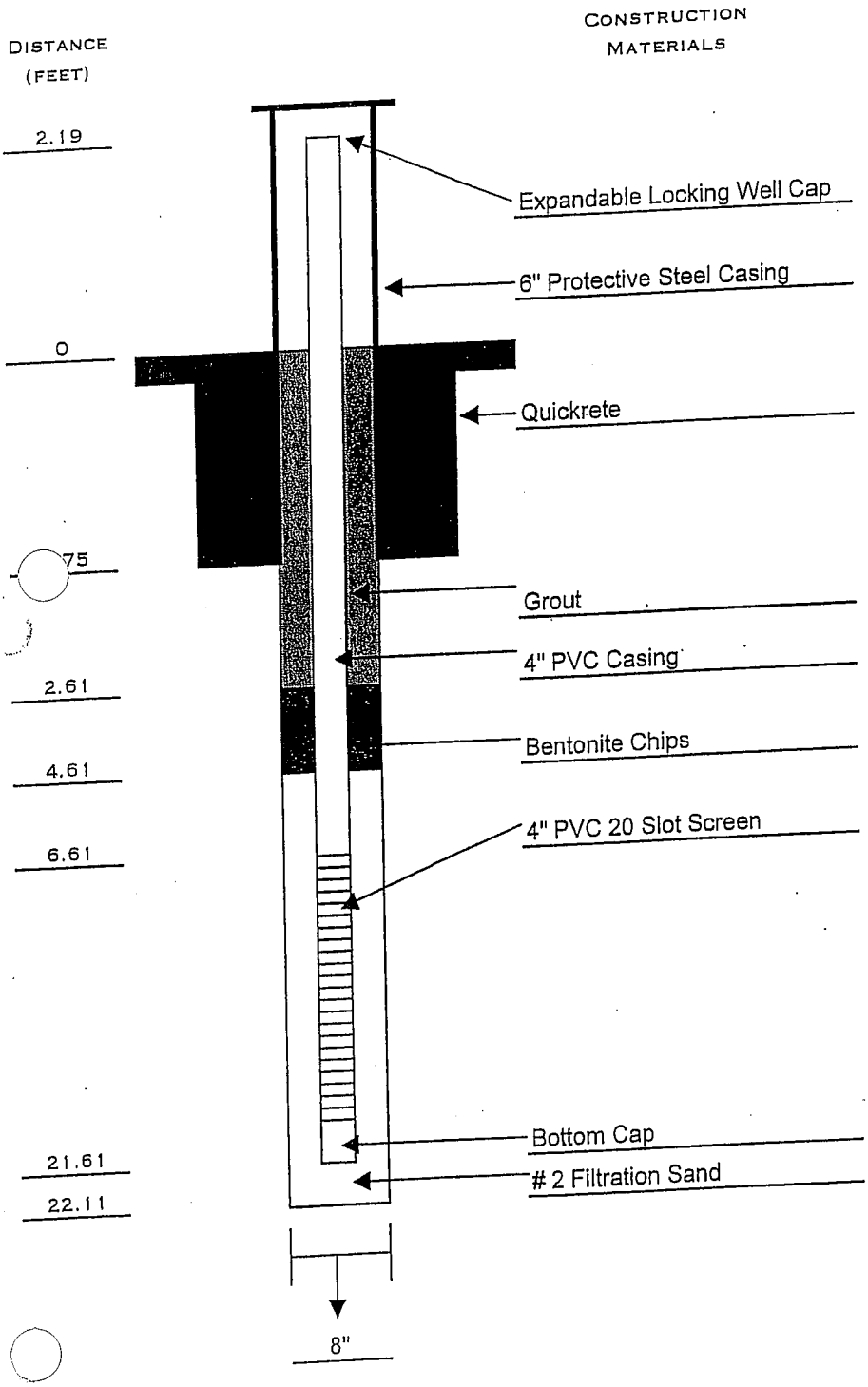
ATTACHMENT E
Monitor Well Logs

ENVIRONMENTAL SERVICES
BROWN

Groundwater Well Construction Log: MW-1

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

Client Name: LHTW Corporation
Site Name: Jack Frost Sugar Factory
Project Code: 079-01 & 02
Field Day: 5
Date: 8/31/00
Groundwater (bgs): 12.89'
Drilling Co.: Total Quality Drilling
Rig Type: Mud Rotary
Master Driller: Mike Kavlunas



ENVIRONMENTAL SERVICES
BROWN

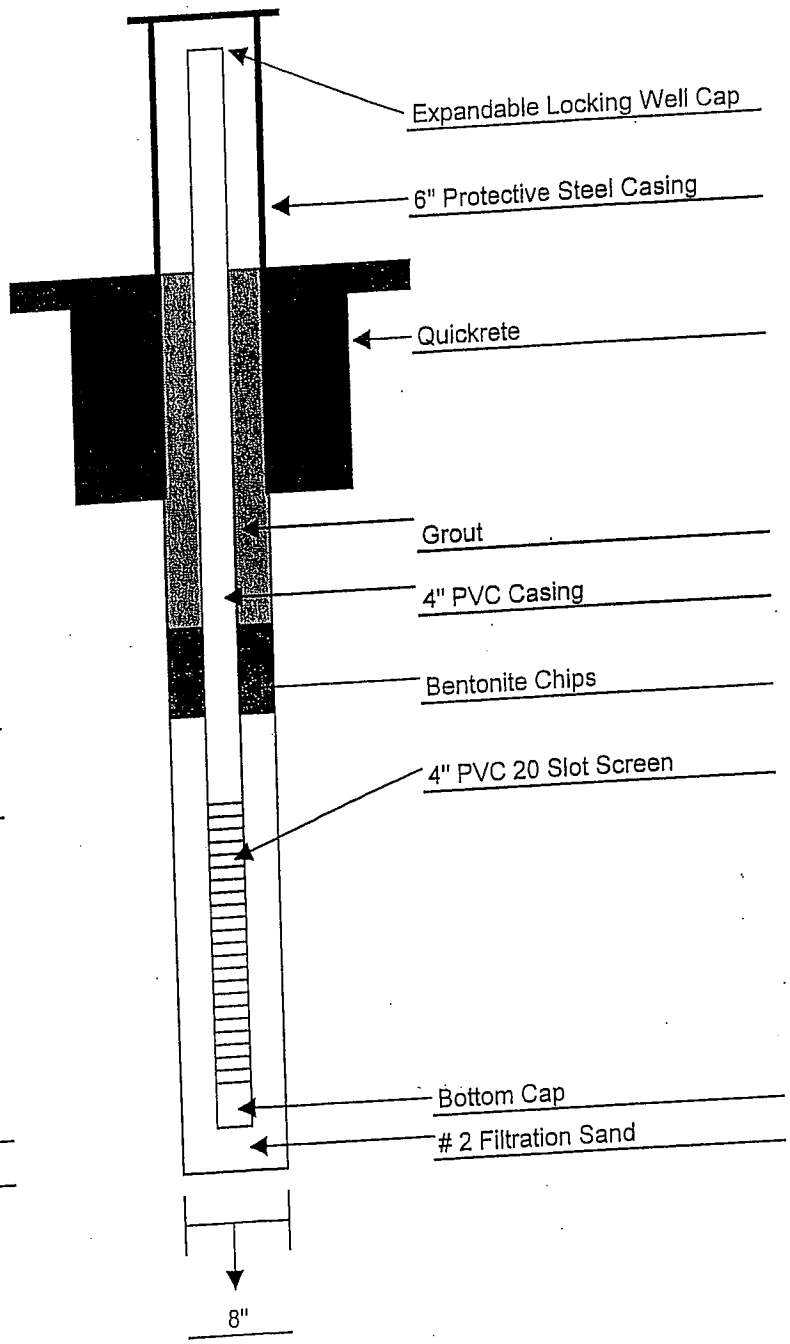
Groundwater Well Construction Log: MW-2

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02
FIELD DAY: 5
DATE: 8/31/00
GROUNDWATER (BGS): 13.58'
DRILLING CO.: Total Quality Drilling
RIG TYPE: Mud Rotary
MASTER DRILLER: Mike Kavlunas

CONSTRUCTION MATERIALS

DISTANCE (FEET)

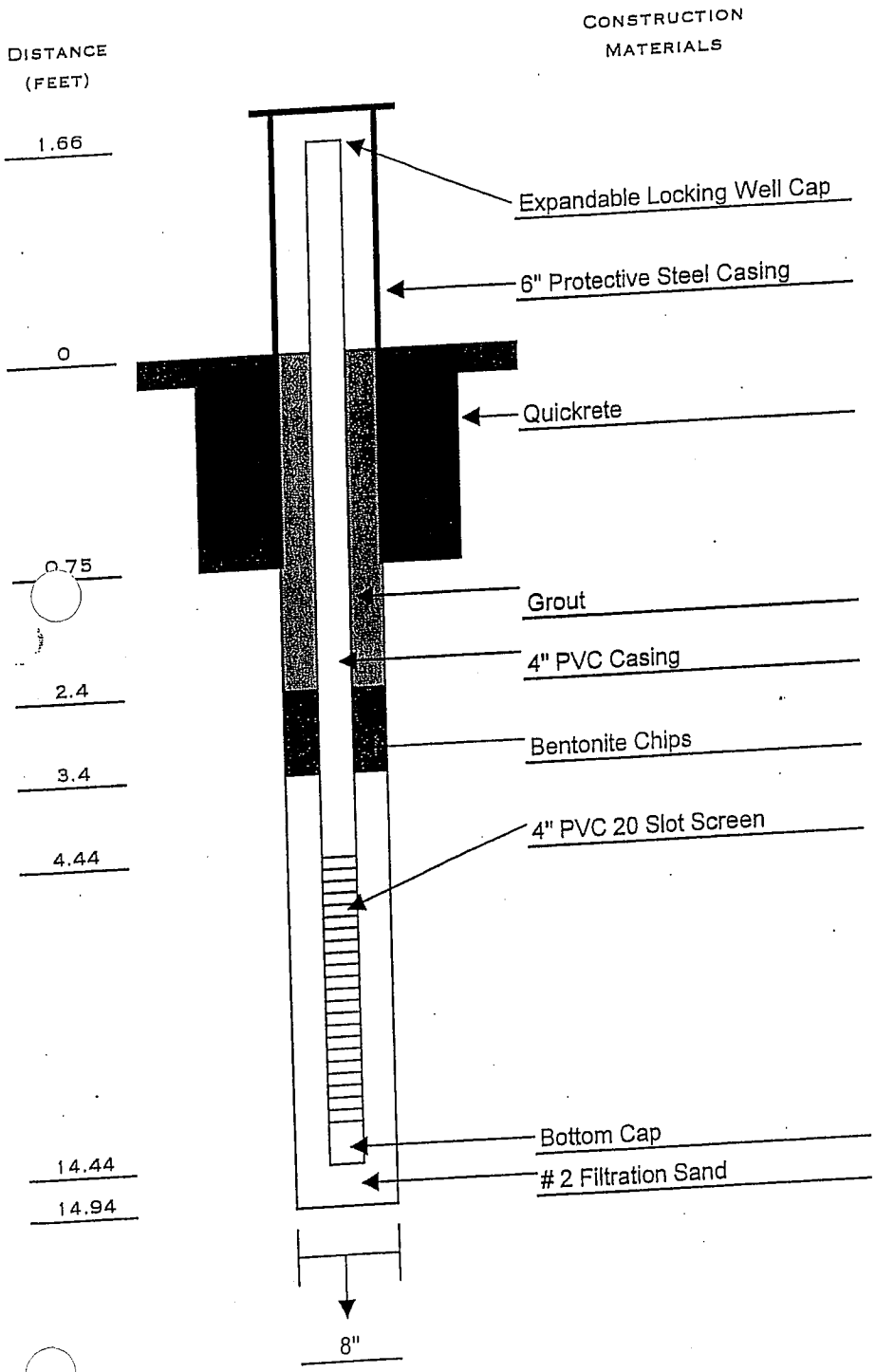


ENVIRONMENTAL SERVICES
BROWN

Groundwater Well Construction Log: MW-3

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02
FIELD DAY: 5
DATE: 8/31/00
GROUNDWATER (BGS): 11.94'
DRILLING CO.: Total Quality Drilling
RIG TYPE: Mud Rotary
MASTER DRILLER: Mike Kavlunas



ENVIRONMENTAL SERVICES
BROWN

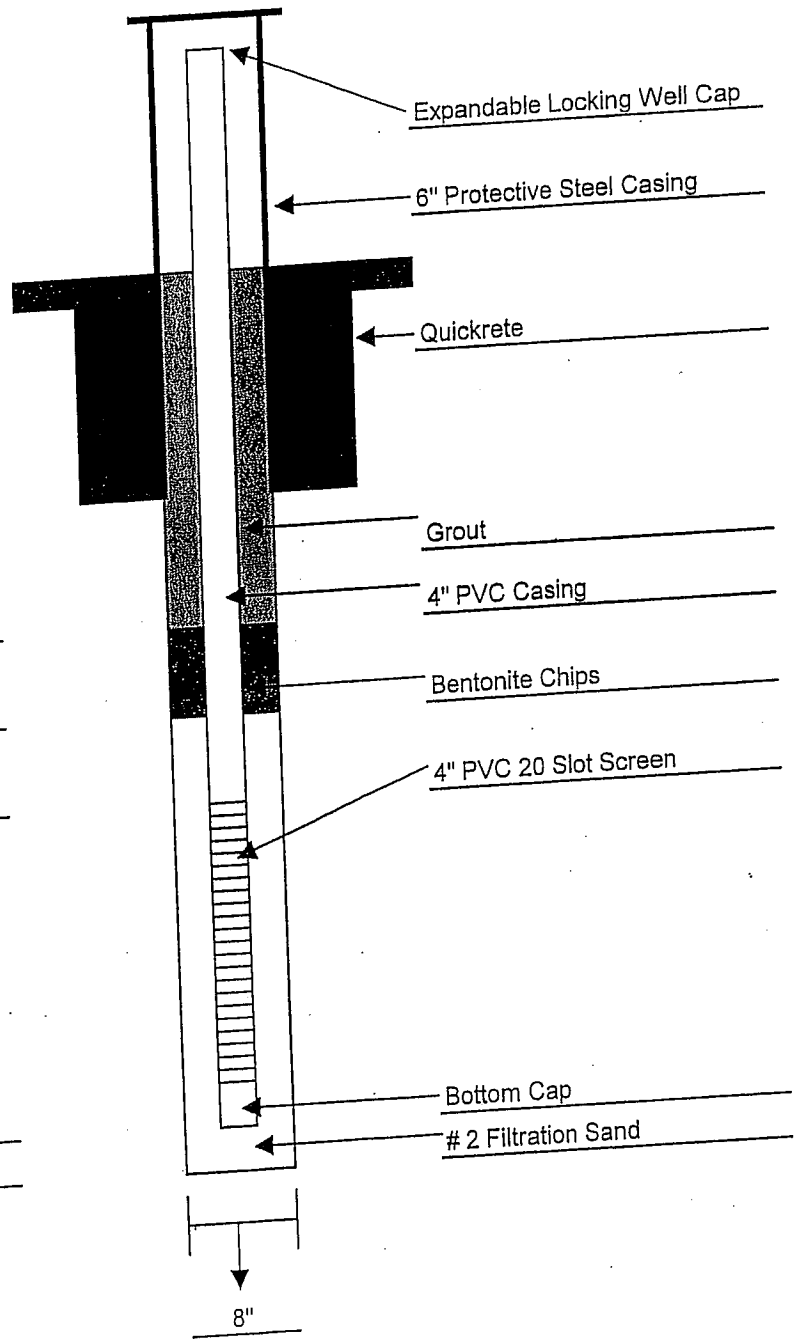
Groundwater Well Construction Log: MW-4

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLIENT NAME: LHTW Corporation
SITE NAME: Jack Frost Sugar Factory
PROJECT CODE: 079-01 & 02
FIELD DAY: 5
DATE: 8/31/00
GROUNDWATER (BGS): 12.45'
DRILLING CO.: Total Quality Drilling
RIG TYPE: Mud Rotary
MASTER DRILLER: Mike Kavlunas

CONSTRUCTION MATERIALS

DISTANCE (FEET)



MW-5

BROWN ENVIRONMENTAL SERVICES

Groundwater Well Construction Log:

42 SEQUOIA DRIVE NEWTOWN, PA 18940 (215) 504-5066 TEL (215) 504-5067 FAX

SITE NAME: JACK FROST SUGAR FACTORY

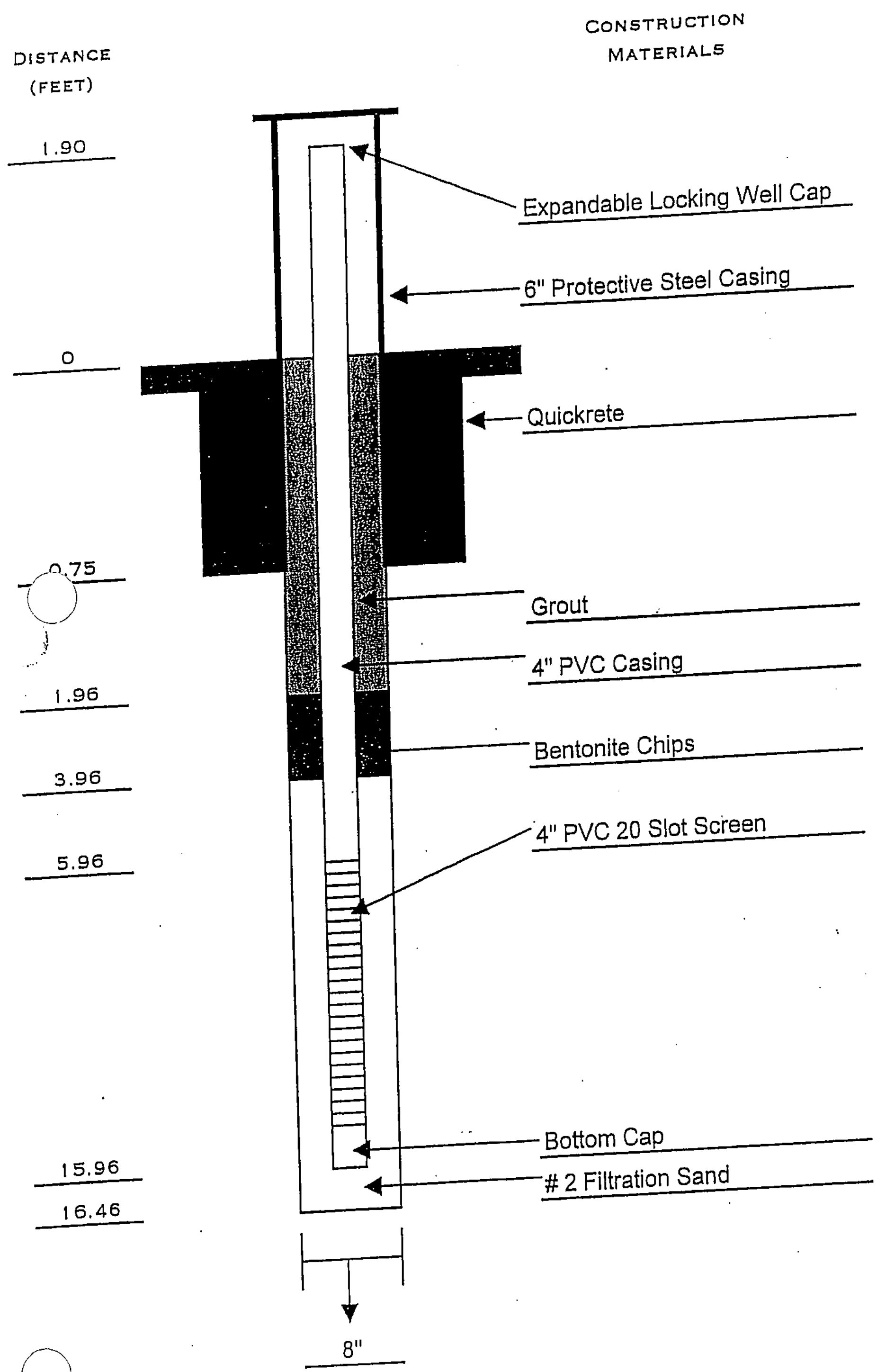
CLIENT NAME: LHTW CORPORATION

GROUNDWATER (BGS): 11.26'

PROJECT CODE: 079-01 & 02 FIELD DAY: 6 DATE: 9/1/01

MASTER DRILLER: MIKE KAVLUNAS

DRILLING CO.: TOTAL QUALITY DRILLING RIG TYPE: MUD ROTARY



ENVIRONMENTAL SERVICES
BROWN

Groundwater Well Construction Log: MW-6

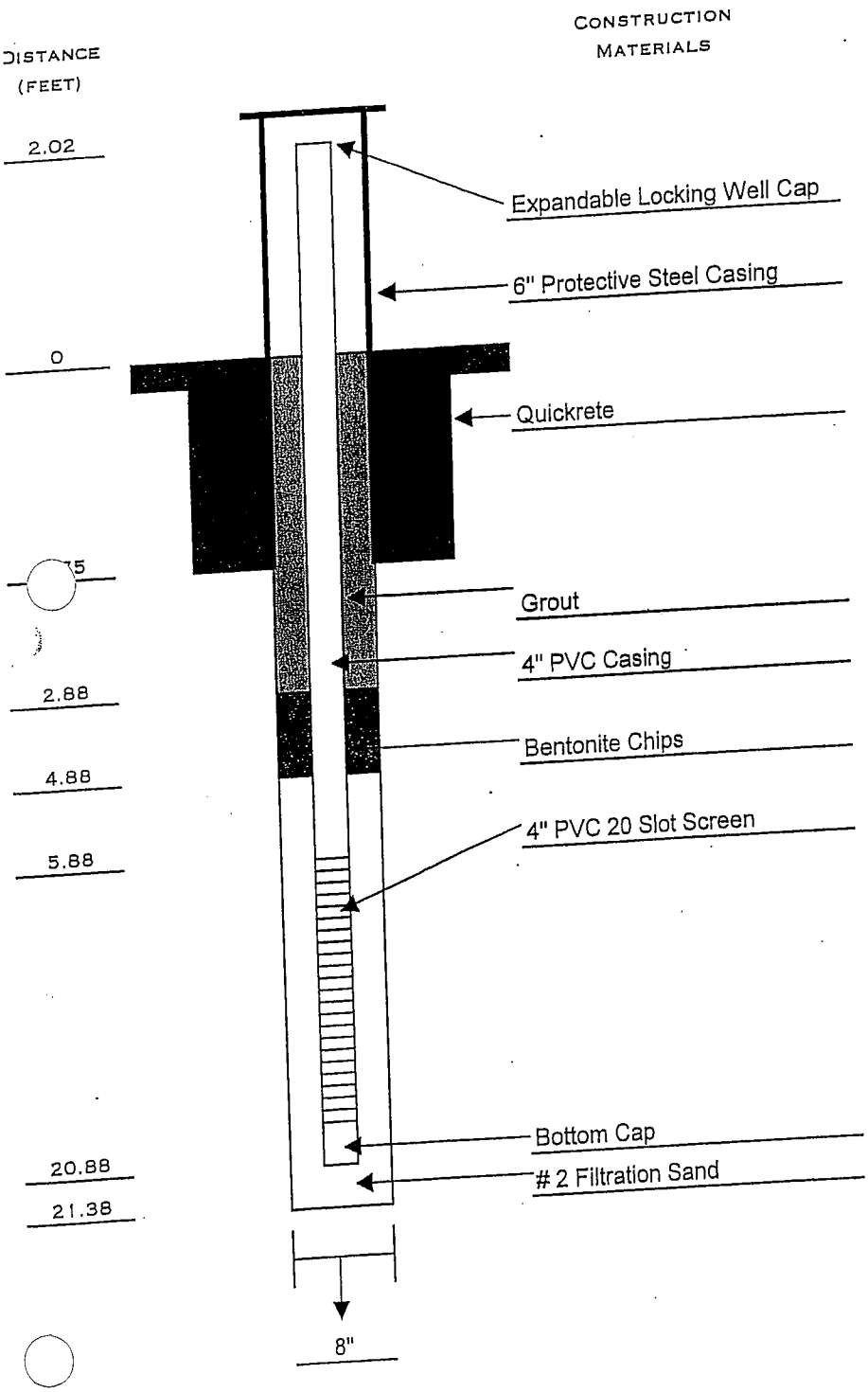
42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLI NAME LHTW Corporation

SITE NAME JACK FROST SUGAR FACTORY

PROJECT CODE 079-01 & 02 FIELD DAY 6 DATE 9/1/01 GROUNDWATER (BGS) 9.22'

DRILLING CO. TOTAL QUALITY DRILLING RIG TYPE MUD ROTARY MASTER DRILLER MIKE KAVLUNAS

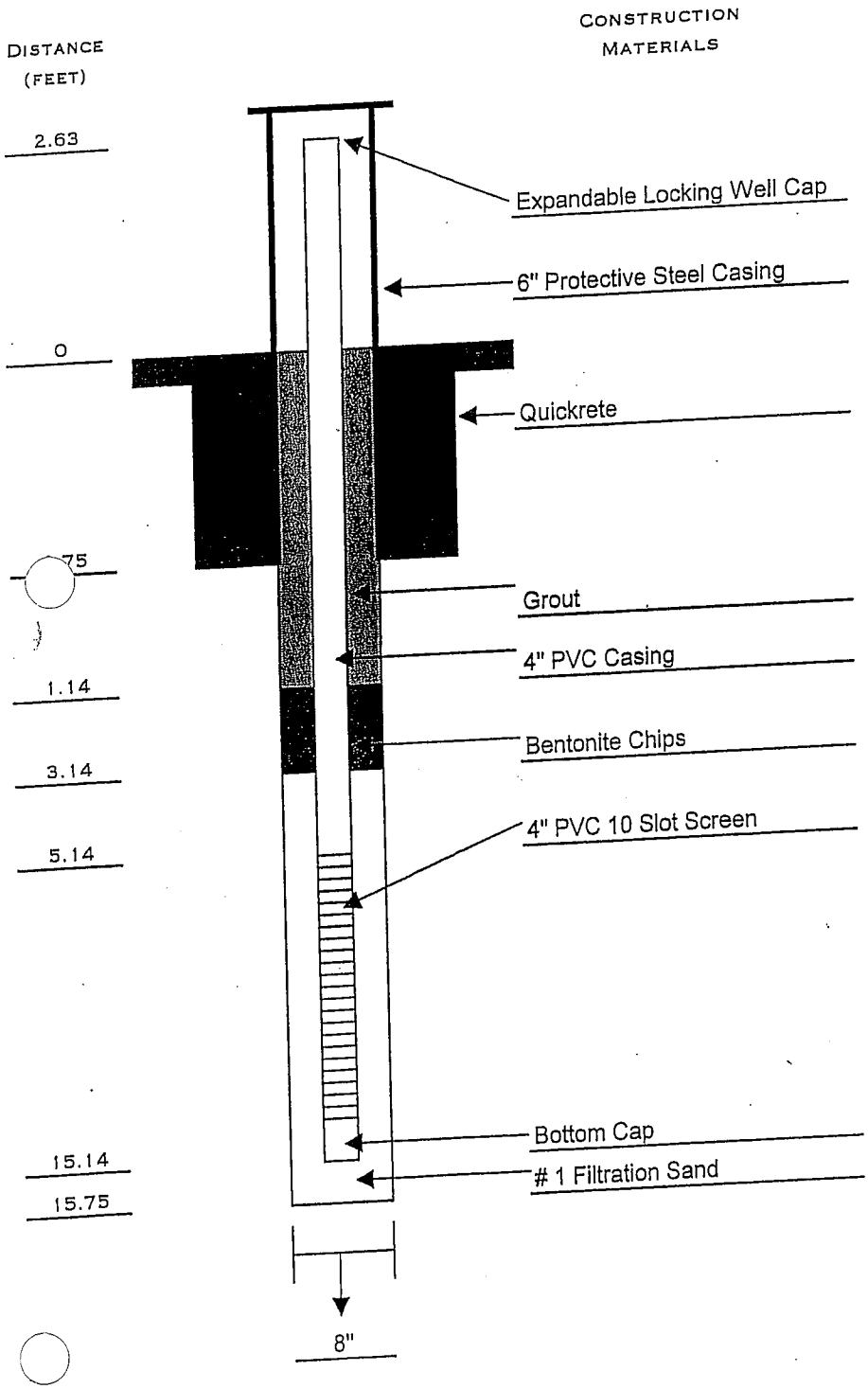


ENVIRONMENTAL SERVICES
BROWN

Groundwater Well Construction Log: MW-7

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CL[illegible] Name LHTW Corporation
Site Name Jack Frost Sugar Factory
Project Code 079-01 & 02 Field Day 16 Date 4/4/01 Groundwater (bgs) 12.87'
Drilling Co. Total Quality Drilling Rig Type Mud Rotary Master Driller Mike Kavlunas



ENVIRONMENTAL SERVICES
BROWN

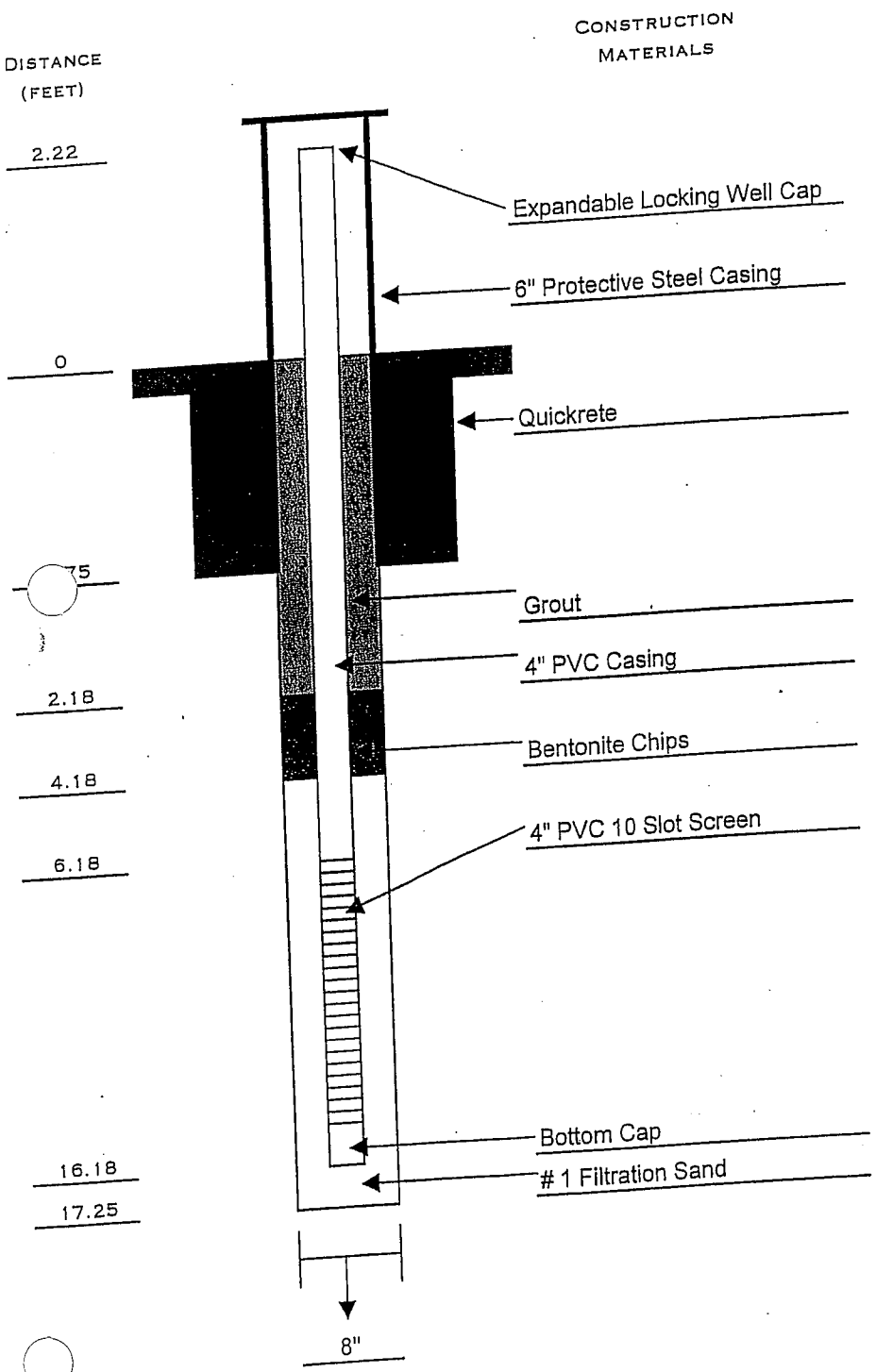
Groundwater Well Construction Log: MW-8

42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CLI NAME LHTW Corporation — Site Name Jack Frost Sugar Factory

Project Code 079-01 & 02 — Field Day 16 — Date 4/4/01 — Groundwater (BGS) 11.12'

Drilling Co. Total Quality Drilling — Rig Type Mud Rotary — Master Driller Mike Kavlunas



ENVIRONMENTAL SERVICES
BROWN

Groundwater Well Construction Log: MW-9

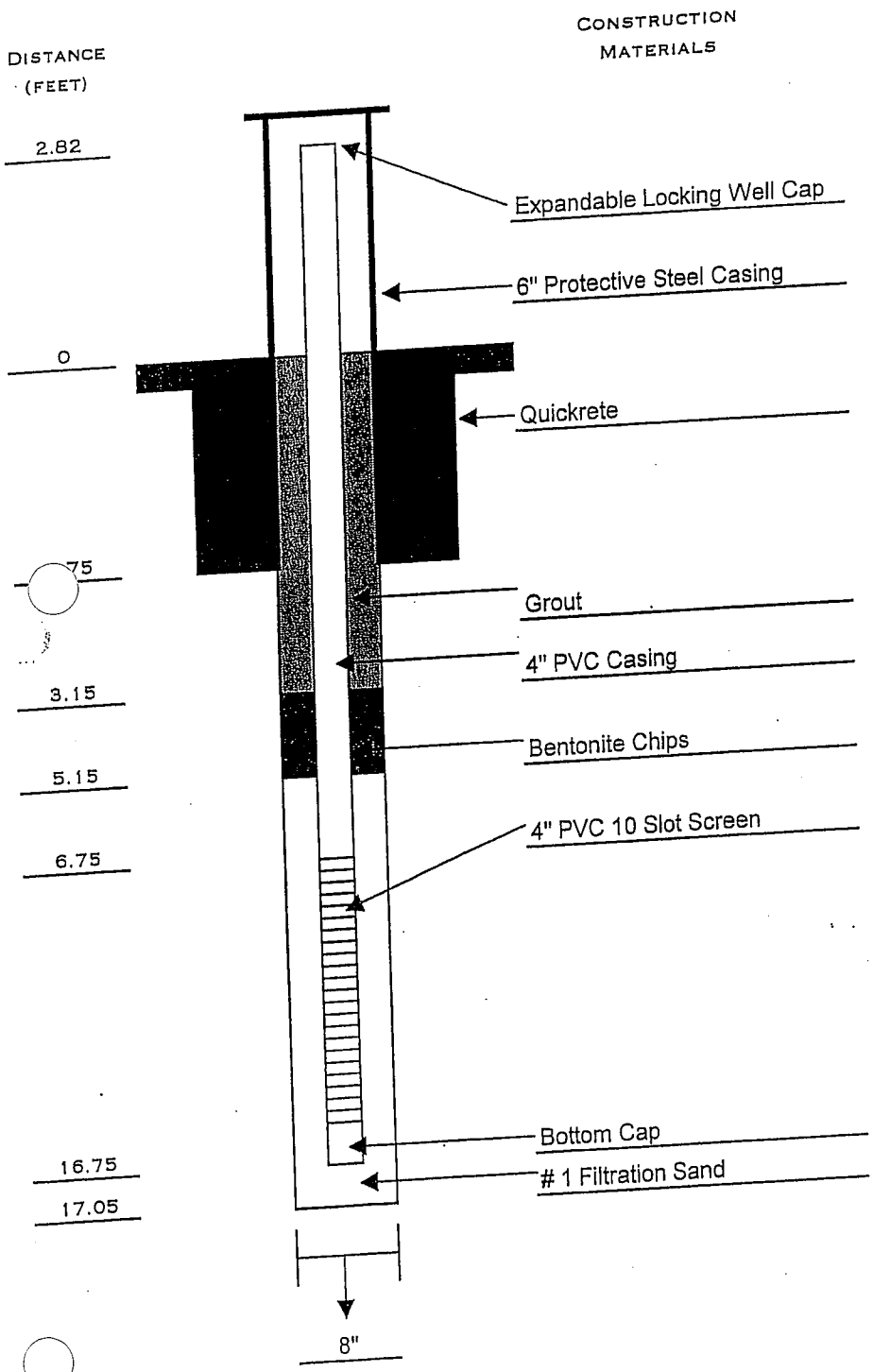
42 Sequoia Drive Newtown, PA 18940 (215) 504-5066 Tel (215) 504-5067 Fax

CL[illegible] NAME LHTW Corporation

SITE NAME Jack Frost Sugar Factory

PROJECT CODE 079-01 & 02 FIELD DAY 17 DATE 4/5/01 GROUNDWATER (BGS) 10.57'

DRILLING CO. Total Quality Drilling RIG TYPE Mud Rotary MASTER DRILLER Mike Kavlunas



ATTACHMENT F
Public Notification/Notice of Intent to Remediate

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
December 4, 2001

610-832-5949
Fax 610-832-6143

Southeast Regional Office

Mr. Steven F. Coe
Brown Environmental Services
42 Sequoia Drive
Newtown PA 18940

Re: ID # 1-51-0-28841
LHTW Corp.
City of Philadelphia
Philadelphia County

Dear Mr. Coe:

This letter acknowledges receipt of your Notice of Intent to Remediate on November 26, 2001, pertaining to the subject site and submitted in accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2). Your notice indicates that the site will be remediated to meet Site-specific standards.

The procedures set forth in Act 2 must be followed in order for your site to qualify for the liability protection provided by the Act. Remedial Investigation reports, Risk Assessment reports (if needed), and Cleanup Plans may be submitted individually or at once. Submittals are to be accompanied by verification of the required public notification and the appropriate fee.

Persons undertaking remediation are encouraged to develop a proactive approach in working with the municipality throughout the cleanup process. If the municipality requested involvement in the development of your remediation and reuse reports or plans, the reports or plans shall include the comments of the municipality.

Upon completion of remediation, please submit your final report to the Department accompanied by the required fee and documentation verifying compliance with the public notification requirements. The Department will review the report to determine attainment of the indicated cleanup standard. If the final report is submitted within 90 days of a contaminant release, which occurred after the effective date of this Act, public notification is not necessary.

We want to emphasize that as a project progresses through the Act 2 process, documents are required to be submitted to the Department. You are advised that these documents often require proofs of public and municipal notification, appropriate fees, appropriate signatures, appropriate professional seals, the Department's checklist as well as summary and transmittal sheets. The Department cannot begin a formal review of a submission until all required documentation is provided. Failure to submit any of these required components either with a submission or within TEN DAYS of our receipt of a submission will result in the return of the document.

We look forward to working with you toward the remediation of your site. If you have any questions or need further clarification of our procedures, please contact the Environmental Cleanup ogram.

Sincerely,

Bruce A. McClain, P.G.
Licensed Professional Geologist
Environmental Cleanup Program

Enclosures

cc: Mr. Beitler
Mr. Day-Lewis
Ms. Henning-Dudley
Mr. Rocco
Ms. Tremont
Mr. Zipin, Phila. Health Dept.
Regional File
Re 30 (WP)

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Anna Dickerson being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

November 27th, 2001

Affiant further deposes and says that he is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that he is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Anna Dickerson

Sworn to and subscribed before me this 27th day of November, 2001.

Margaret C. Ruchalski
Notary Public

My Commission Expires:

NOTARIAL SEAL
Margaret C. Ruchalski, Notary Public
City of Philadelphia, Phila. County
My Commission Expires May 27, 2002

Copy of Notice of Publication

Notice of an Intent To Remediate

Pursuant to the Land Recycling and Environmental Remediation Standards Act, the act of May 19, 1995, P.L. 4, No. 1995-2, notice is hereby given that LHTW Corp. has submitted to the PA-DEP a Notice of Intent to Remediate a site located at 1037 N. Delaware Ave., Philadelphia, PA 19125. This Notice of Intent to Remediate states that the site was formerly an industrial facility. The intended future use of the property may be either residential or non-residential. The site has been found to be contaminated with petroleum hydrocarbons which have impacted the soil and groundwater. LHTW Corp. has indicated that the proposed remediation measures will include source removal and pathway elimination to meet the site-specific standard for residential properties. The Act provides for a 30-day public comment period which is initiated with the publication of this notice. The municipality may submit a request to LHTW Corp. to be involved in the development of the remediation and reuse plans and/or to develop and implement a public involvement plan by contacting Steven F. Coe, at (215) 504-5066. Copies of these requests/comments should also be submitted to the PADEP.

ENVIRONMENTAL SERVICES
BROWN

42 Sequoia Drive
Newtown, PA 18940
Tel: 215-504-5066
Fax: 215-504-5067
www.BrownBio.com

Toll Free: 866-77-Brown

November 20, 2001

Mr. Robert Day-Lewis
Environmental Cleanup Program
Pennsylvania Department of Environmental Protection
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

RE: Notice of Intent to Remediate
Former Jack Frost Sugar Factory
1037 N. Delaware Avenue
Philadelphia, PA 19125

Dear Mr. Day-Lewis:

As per the requirements of the Land Recycling and Environmental Standards Act, I am filing the enclosed Notice of Intent to Remediate (NIR) with you and with Mr. Richard Zipin of the Philadelphia Department of Public Health. In addition, we will be publishing a Public Notice in the Philadelphia Daily News promptly. I will forward all documentation of these notices with the anticipated combined Remedial Investigation/Risk Assessment/Cleanup Plan Report.

I believe that you may already have a Facility ID# for this parcel as it was the subject of a major asbestos project, demolition work and multiple underground storage tank removals. I have previously corresponded with Mr. Stephan Brown regarding this facility in October of 1997. Should you have any questions or comments, please don't hesitate to contact me at the Newtown Office at (215) 504-5066 or through my cellular phone at (215) 284-4559.

Sincerely,

Steven F. Coe
President

-LRWM0019 8/2000

)MMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTICE OF INTENT TO REMEDIATE

LHTW Corp.

ddress 1037 N. Columbus Boulevard (Formerly Delaware Avenue) **County** Philadelphia

:ipality Philadelphia **Longitude** W75 ° 07 ' 58"

ıde N39 ° 57 ' 53 "

determined DeLorme Street Atlas Version 5.0

ification Number

aminated Media and Contaminants Present: Use the appropriate cleanup standard abbreviation for each ıminant and media. The abbreviations are: Background - BKG, Statewide Health - SHS, Site Specific - SSS.

Contaminant	Soil	Groundwater	Surface Water
PCBs			
Lead			
Heavy Metals			
BTEX	SSS	SSS	
PHCs			
PAHs			
[illegible]ents			
Pesticides			
Dioxin			

ources of Contamination: ☐ Industrial Process ☐ Impoundment ☐ Landfill ☐ Contaminated Soil

] Drums/Containers ☒ Storage Tanks (not regulated by Act 32) ☐ Waste Pile

)ther

Are you requesting Special Industrial Area designation? ☐ Yes ☒ No

Are you requesting Non-Use Aquifer designation? ☐ Yes ☒ No

Have you received Non-Use Aquifer designation? ☐ Yes ☒ No

Anticipated Future Use: ☐ Residential ☒ Non-Residential

Anticipated Date of Submission of Plan or Final Report December 28, 2001

Na[illegible] of newspaper and date of publication of NIR Summary. Newspaper The Philadelphia Daily News

Date of publication November 27, 2001

ial Industrial Areas only:

A. Identify Enterprise Zone (if applicable)

B. Ownership History (as required by 25 Pa Code §250.520(3))

ıstrial Sites Reuse Program ☐ Yes ☒ No. If yes, name of applicant _____

posed Remediation:
C A: Fuel Oil USTs - Source Removal & Pathway Elimination

C B: Gasoline/Diesel USTs - Source Removal & Pathway Elimination

n of Future Use (Job creation, environmental remediation, acres of brownfields made available for use, nity improvement, municipal tax base increase, preserving greenfields, etc.):

b creation with future development

'operty Owner Name LHTW Corp. Address 32 Lockerman Square, Suite L-100 Dover, DE 19904

emediator Name Same as Above Address _____

the NIR was completed by someone other than the owner, was a copy of the NIR provided to the owner?
☒ Yes ☐ No

'reparer of Notice of Intent to Remediate: Brown Environmental Services Corporation

Name Steven F. Coe Title President

Address 42 Sequoia Drive, Newtown, PA 18940

Signature Steven F. Coe Date 11/20/01 Telephone (215) 504-5066

Recycled Paper

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MR. ROBERT E. DAY-LEWIS
PADEP
LAND RECYCLING & WASTE MANAGEMENT
ENVIRONMENTAL CLEANUP PROGRAM
LEE PARK, SUITE 6010
555 NORTH LANE
CONSHOHOCKEN, PA 19428

2. Ar
(Tr

PS F

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X T. Burton
☐ Agent
☐ Addressee

B. Received by (Printed Name)
T. Burton

C. Date of Delivery
11/26/01

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

102595-01-M-2509

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

CONSHOHOCKEN PA 19428

Postage	$ $0.57
Certified Fee	$2.10
Return Receipt Fee (Endorsement Required)	$1.50
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $4.17

USPS 11/21/2001 NEWTOWN PA 18940 Postmark Here

7001 2510 0005 7268 4596

Sent To ROBERT E. DAY-LEWIS
PADEP - ECP
Street, Apt. No., or PO Box No. LEE PARK, SUITE 6010
555 NORTH LANE
City, State, ZIP+4 CONSHOHOCKEN, PA 19428

PS Form 3800, January 2001 See Reverse for Instructions

ENVIRONMENTAL SERVICES
BROWN

42 Sequoia Drive
Newtown, PA 18940
Tel: 215-504-5066
Fax: 215-504-5067
www.BrownBio.com

Toll Free: 866-77-Brown

November 20, 2001

Mr. Richard Zipin
City of Philadelphia
Department of Public Health
321 University Avenue
2nd Floor
Philadelphia, PA 19104

RE: Former Jack Frost Sugar Factory
1037 N. Delaware Avenue
Philadelphia, PA 19125

Dear Mr. Zipin:

The Land Recycling and Environmental Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) be provided to the municipality in which the site is located. Act 2 also provides that when a site is being remediated to a Site-Specific Standard, the municipality is afforded a 30-day comment period. In accordance with the provisions of the Act, we are formally notifying you of our intent to remediate the subject site. A copy of the Notice of Intent to Remediate, which has been sent to the Department of Environmental Protection (DEP), is enclosed. The Department will publish an acknowledgment of the receipt of this Notice in the Pennsylvania Bulletin, and a summary of the notice will be published in the Philadelphia Daily News.

Publication of this notice in a local newspaper initiates the 30-day public and municipal comment period. During this time, your municipality may request to become involved in the development of the remediation and reuse plans for the site. Should you have any questions or comments regarding the proposed remediation, please contact me as detailed above.

Sincerely,

Steven F. Coe
President

-FM-LRWM0019 8/2000

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTICE OF INTENT TO REMEDIATE

me LHTW Corp.

e Address 1037 N. Columbus Boulevard (Formerly Delaware Avenue)

nicipality Philadelphia County Philadelphia

titude N39 ° 57 ' 53 " Longitude W75 ° 07 ' 58"

w determined DeLorme Street Atlas Version 5.0

ntification Number

ntaminated Media and Contaminants Present: Use the appropriate cleanup standard abbreviation for each ntaminant and media. The abbreviations are: Background - BKG, Statewide Health - SHS, Site Specific - SSS.

Contaminant	Soil	Groundwater	Surface Water
PCBs			
Lead			
Heavy Metals			
BTEX	SSS	SSS	
PHCs			
PAHs			
lvents			
esticides			
Dioxin			

Sources of Contamination: ☐ Industrial Process ☐ Impoundment ☐ Landfill ☐ Contaminated Soil

☐ Drums/Containers ☒ Storage Tanks (not regulated by Act 32) ☐ Waste Pile

Other

Are you requesting Special Industrial Area designation? ☐ Yes ☒ No

Are you requesting Non-Use Aquifer designation? ☐ Yes ☒ No

Have you received Non-Use Aquifer designation? ☐ Yes ☒ No

Anticipated Future Use: ☐ Residential ☒ Non-Residential

Anticipated Date of Submission of Plan or Final Report December 28, 2001

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Date of publication November 27, 2001

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A. Identify Enterprise Zone (if applicable)

B. Ownership History (as required by 25 Pa Code §250.520(3))

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)C A: Fuel Oil USTs - Source Removal & Pathway Elimination

)C B: Gasoline/Diesel USTs - Source Removal & Pathway Elimination

ts of Future Use (Job creation, environmental remediation, acres of brownfields made available for use, nunity improvement, municipal tax base increase, preserving greenfields, etc.):

ob creation with future development

Property Owner Name LHTW Corp. Address 32 Lockerman Square, Suite L-100 Dover, DE 19904

Remediator Name Same as Above Address _____

If the NIR was completed by someone other than the owner, was a copy of the NIR provided to the owner?
☒ Yes ☐ No

Preparer of Notice of Intent to Remediate: Brown Environmental Services Corporation

Name Steven F. Coe Title President

Address 42 Sequoia Drive, Newtown, PA 18940

Signature Steven F Coe Date 11/20/01 Telephone (215) 504-5066

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MR. RICHARD ZIPIN
CITY OF PHILADELPHIA
DEPT. OF PUBLIC HEALTH
321 UNIVERSITY AVE.
2ND FLOOR
PHILADELPHIA, PA 19104

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Yvonne Wooten C. Date of Delivery NOV 26 2001

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7001 2510 0005 7268 4572

PS Form 3811, August 2001 Domestic Return Receipt 102595-01-M-2509

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

PHILADELPHIA PA 19104

Postage	$ $0.34
Certified Fee	$2.10
Return Receipt Fee (Endorsement Required)	$1.50
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $3.94

Postmark Here
PA 19104 USA
11/21/2001

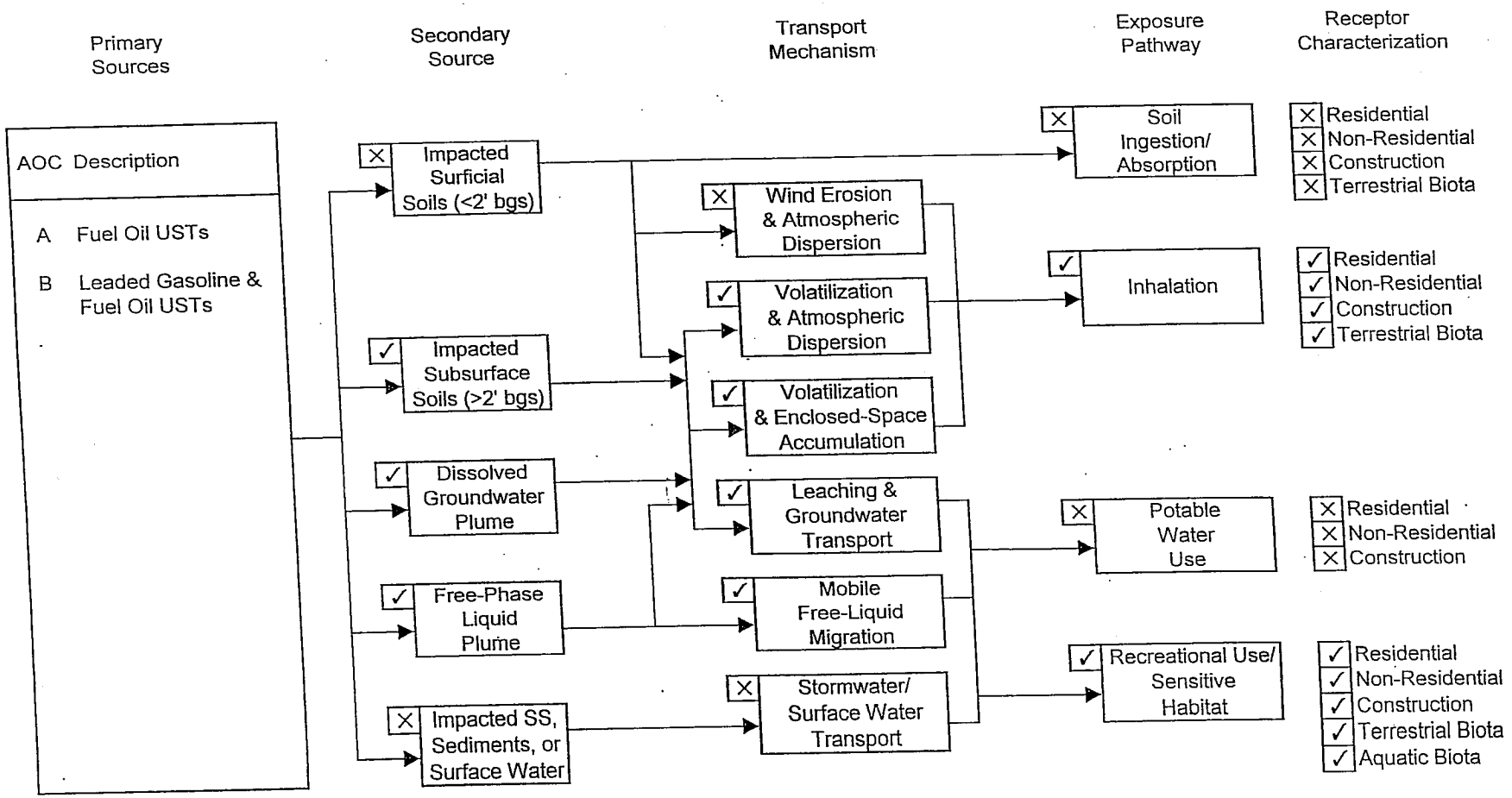
Sent To R. ZIPIN CITY OF PHILA, DEPT OF PUBLIC HEALTH
Street, Apt. No., or PO Box No. 321 UNIVERSITY AVE, 2ND FLOOR
City, State, ZIP+4 PHILADELPHIA, PA 19104

7001 2510 0005 7268 4572

PS Form 3800, January 2001 See Reverse for Instructions

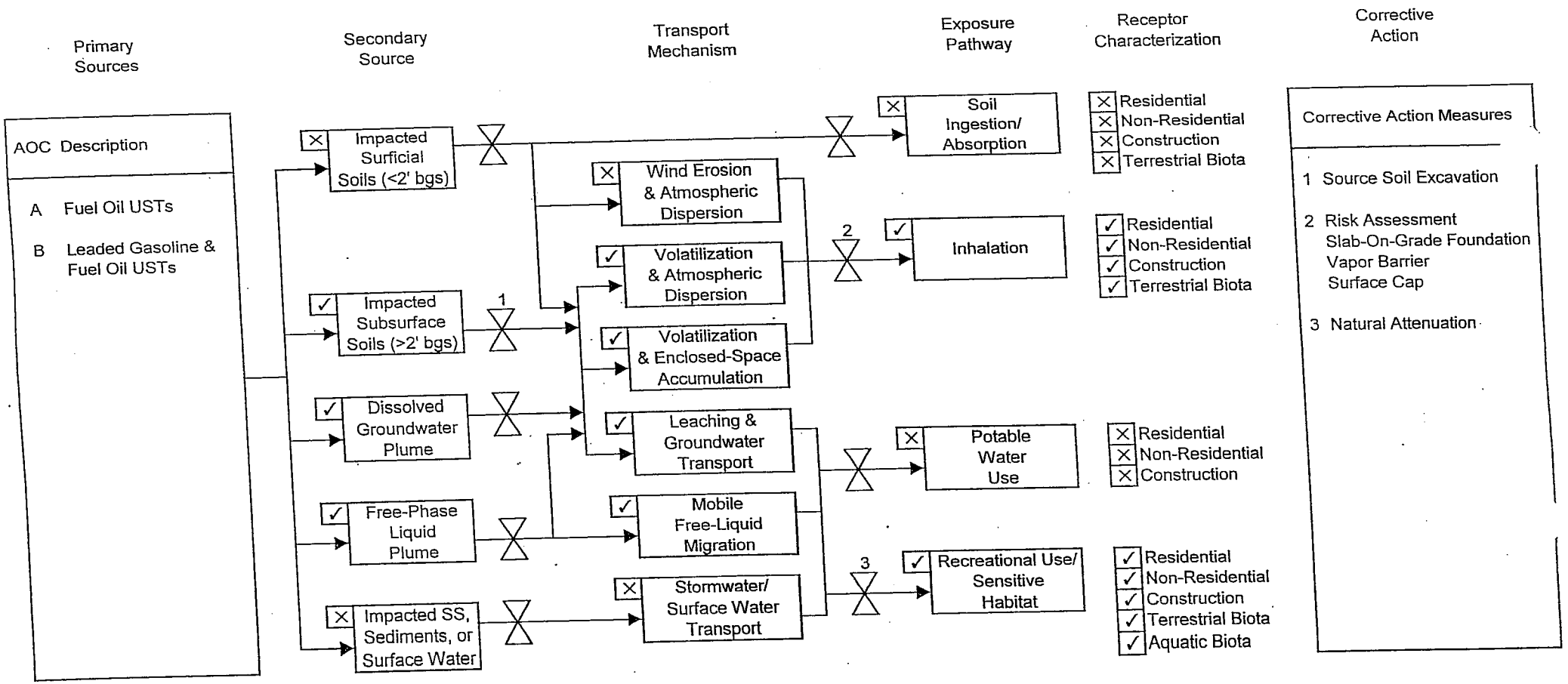
ATTACHMENT G
Exposure Assessment Documentation

FIGURE 4
BASELINE EXPOSURE ASSESSMENT



✓ Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors
X Not Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors

FIGURE 5
POST-REMEDIAL EXPOSURE ASSESSMENT



✓ Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors
× Not Applicable or Potential Site-Specific Sources, Transport Mechanisms, Exposure Pathways, and Receptors

1 Corrective Action Measure # 1 Applied to this Source, Transport Mechanism, or Exposure Pathway

Fate and Transport Analysis
Input Parameters
Quick_Domenico.xls

Source Concentration:
Benzo (a) pyrene - Used MSCgw PQL = 10 ug/L. Solubility is 3.8 ug/L.
Max calculated value in groundwater [leaching from saturated soil, TP-1] was 0.265 ug/L.
Chrysene & Pyrene - Max onsite detected concentrations

Distance to Location of Concern:
Benzo (a) pyrene - TP-1 to SE corner of land, Point of Compliance. Parcel extends into river.
Chrysene & Pyrene - MW-4 to SE corner of land.

Longitudinal Dispersivity:
All - Used distance from AOC source area to SE corner of land as X. Ax = X/10 = 580'/10 = 58'

Transverse Dispersivity:
All - Used max plume width onsite as Y. Ay = Y/10 = 320'/10 = 32'

Vertical Dispersivity:
All - Used conservative value of 0.001

Lambda:
All - Used Statewide Health Standard Values given by PADEP

Source Width:
All - Used max plume width onsite = 320'

Source Thickness:
All - Used approximate daily tidal fluctuation of river given in NOAA tidal tables = 7'

Hydraulic Conductivity:
All - Used highest measured value = 5.83E-03

Hydraulic Gradient:
All - Divided total max tidal by back 1/3 of property = 7'/250' = 0.028. Max measured is 0.018.
Note: The HG in the ATC report used 430' between MW-2 and MW-8. True distance is 385'.

Porosity:
All - Used conservative value = 0.2

Soil Bilk Density:
All - Used 1.8 g/cm^3

Koc:
All - Used Statewide Health Standard Values given by PADEP

foc:
All - Used conservative value = 0.0025

Time:
All - Time shown is the time at which the plume becomes stabile. Plume does not move for the remaining period reviewed = 10,950 days = 30 years

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Jack Frost Sugar Factory						
Date:	3/6/02	Prepared by:	Steven F. Coe				
		Contaminant:	Chrysene				
	X						
SOURCE	DISTANCE T	Ax	Ay	Az	LAMBDA	SOURCE	SOURCE
CONC	LOCATION C	(ft)	(ft)	(ft)		WIDTH	THICKNESS
(MG/L)	CONCERN (ft)			>=.001	day-1	(ft)	(ft)
0.0179	350	58	32	0.001	0.000356164	320	7

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
5.83E-03	0.028	0.2	1.8	490000	2.50E-03	11026	7.4025E-08

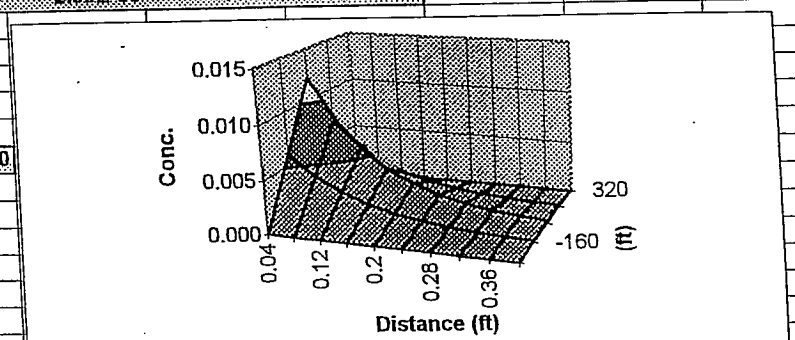
y(ft)	z(ft)	Time (days)
350	0	0	6546

Projected Conc. at 350 0 0

at 6546 days

0.000 mg/l

PA DEPARTMENT
OF ENVIRONMENTAL PROTECTION
QUICK_DOMENICO.XLS
SPREADSHEET APPLICATION OF
"AN ANALYTICAL MODEL FOR
MULTIDIMENSIONAL TRANSPORT OF A
DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation



AREAL MODEL CALCULATION DOMAIN

Length (ft) 0.4

Width (ft) 320

	0.04	0.08	0.12	0.16	0.2	0.24	0.28	0.32	0.36	0.4
320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.006	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000
0	0.012	0.008	0.006	0.004	0.003	0.002	0.001	0.001	0.001	0.000
-160	0.006	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000
-320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Jack Frost Sugar Factory						
Date:	3/6/02	Prepared by:	Steven F. Coe				
		Contaminant:	Pyrene				
	X						
SOURCE	DISTANCE T	Ax	Ay	Az	LAMBDA	SOURCE	SOURCE
CONC	LOCATION O	(ft)	(ft)	(ft)		WIDTH	THICKNESS
(MG/L)	CONCERN (ft)			>=.001	day-1	(ft)	(ft)
0.0326	350	58	32	0.001	0.00019178	320	7

Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
5.83E-03	0.028	0.2	1.8	68000	2.50E-03	1531	5.33116E-07

y(ft)	z(ft)	Time (days)
350	0	8044

Projected Conc. at 350 0 0

at 8044 days

0.000 mg/l

PA DEPARTMENT
OF ENVIRONMENTAL PROTECTION
QUICK_DOMENICO.XLS
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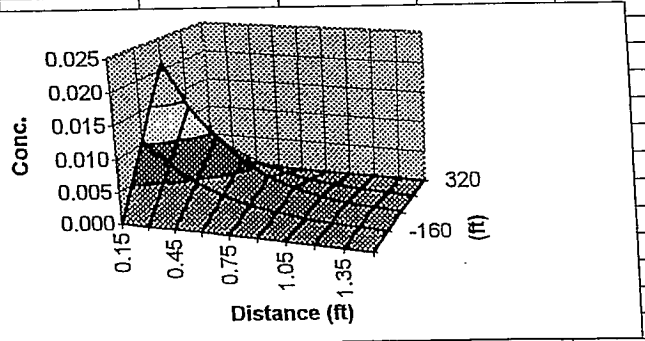

AREAL MODEL CALCULATION DOMAIN

Length (ft) 1.5

Width (ft) 320

	0.15	0.3	0.45	0.6	0.75	0.9	1.05	1.2	1.35	1.5
320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.011	0.007	0.005	0.003	0.002	0.001	0.001	0.000	0.000	0.000
0	0.021	0.014	0.009	0.006	0.004	0.002	0.001	0.001	0.001	0.000
-160	0.011	0.007	0.005	0.003	0.002	0.001	0.001	0.000	0.000	0.000
-320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Saturated Soil Leach to Groundwater Calculation
Fate and Transport Analysis

Generic Equation Relating Soil and Groundwater Concentrations as per 250.308 (a) (2) (ii) on page 250-33:

$$MSCss = MSCsv / 10 = \{MSCgw [(Koc * foc) + (\theta w / \rho b)] DF\} / 10$$

Therefore, the Corresponding Groundwater Concentration of Benzo (a) pyrene as a Result of Onsite Saturated Soil Concentrations:

$$MSCgw = (10 * MSCss) / \{ [(Koc * foc) + (\theta w / \rho b)] DF\}$$

Organics	MSCss mg/Kg	Koc L/Kg	foc unitless	θw unitless	ρb kg/L	DF unitless	MSCgw mg/L	MSCgw ug/L	PQLgw ug/L	PQLs mg/Kg	Sample No.	Distance to POC feet
Benzo (a) pyrene	6.04	910000	0.0025	0.2	1.8	100	2.65E-04	0.265	10	0.66	TP-1	25
Benzo (a) pyrene	3.44	910000	0.0025	0.2	1.8	100	1.51E-04	0.151	10	0.66	TP-3	30
Benzo (a) pyrene	3.44	910000	0.0025	0.2	1.8	100	1.51E-04	0.151	10	0.66	TP-15	715

Parameter	Description	Values Used	Units
MSCss	Saturated Soil Concentration	Maximum Sample Concentrations	mg/Kg
MSCsv	Vadose Soil Concentration	Not Applicable	mg/Kg
MSCgw	Groundwater Concentration due to Leaching from Saturated Soil	Calculated	mg/L
Koc	Organic Carbon Partition Coefficient	Appendix A - Table 5 Chapter 250	L/Kg
foc	Fraction of Organic Carbon in Soil	Act 2 Default Value	unitless
θw	Water-filled Porosity of Soil	Act 2 Default Value	unitless
ρb	Dry Bulk Density of Soil	Act 2 Default Value	Kg/L
DF	Dilution Factor	Act 2 Default Value	unitless
PQLgw	Practical Quantitation Limit for Groundwater	Act 2 Value	ug/L
PQLs	Practical Quantitation Limit for Soil	Act 2 Value	mg/Kg

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION AND 1ST ORDER DECAY and RETARDATION

Project:	Jack Frost Sugar Factory		
Date:	3/6/02	Prepared by:	Steven F. Coe
		Contaminant:	Benzo (a) pyrene

PA DEPARTMENT
OF ENVIRONMENTAL PROTECTION
QUICK_DOMENICO.XLS
SPREADSHEET APPLICATION OF
"AN ANALYTICAL MODEL FOR
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DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

SOURCE CONC (MG/L)	X DISTANCE TO LOCATION OF CONCERN (ft)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)
0.01	25	58	32	0.001	0.000657534	320	7

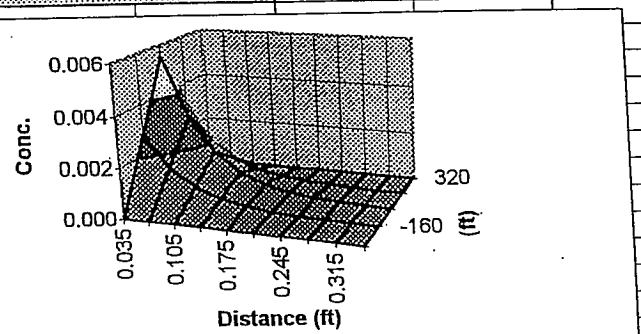
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retardation (R)	V (=K*i/n*R) (ft/day)
5.83E-03	0.028	0.2	1.8	910000	2.50E-03	20476	3.98613E-08

y(ft)	z(ft)	Time (days)
25	0	5809

Projected Conc. at 25 0 0

at 5809 days

0.000 mg/l



AREAL MODEL CALCULATION DOMAIN

Length (ft) 0.35

Width (ft) 320

	0.035	0.07	0.105	0.14	0.175	0.21	0.245	0.28	0.315	0.35
320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.003	0.002	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000
0	0.006	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000
-160	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ATTACHMENT H
Hydrogeological Study

ATC ASSOCIATES INC.

Plymouth Meeting, Pennsylvania 19462-2453
www.atc-enviro.com
610.313.3100
Fax 610.313.3151

January 15, 2001

Mr. Steven F. Coe
President
Brown Environmental Services Corporation
42 Sequoia Drive
Newtown, Pennsylvania 18940

Re: **Results for Aquifer Slug Testing Services**
Former Jack Frost Sugar Factory Property
North Delaware Avenue
Philadelphia, Pennsylvania

Dear Mr. Coe:

ATC Associates Inc. (ATC) is pleased to submit the results of the aquifer slug testing activities completed on December 11, 2001 at the Former Jack Frost Sugar Factory Property on North Delaware Avenue in Philadelphia, Pennsylvania (hereinafter referred to as the "Site"). The slug testing activities were conducted at your request to supplement ongoing investigative activities at the Site by Brown Environmental Services.

SCOPE OF WORK

The scope of work included on-site slug testing of two monitoring wells and subsequent data reduction and analysis to determine respective hydraulic conductivity values of the subsurface, and the calculation of a representative groundwater velocity at the Site.

FIELD ACTIVITIES

On December 11, 2001, ATC, under the supervision of Brown Environmental personnel, conducted and completed slug testing activities on two monitoring wells, MW-2 and MW-8, at the Site. Before beginning either slug test, water levels were obtained at the two respective wells. Slug testing at each well consisted of a slug-in test and a slug-out test. The slug tests were conducted using a 2-inch diameter slug constructed of PVC piping and an In-Situ 20 PSI Level Transducer connected to a Hermit 1000C Data Logger. Time-displacement data collected by the Hermit Data Logger was reviewed after each test to confirm that the equipment had been functioning properly during the respective test.

DATA ANALYSIS

Slug test data collected in the field was reduced and analyzed using the software program Aquifer^{win32}© to determine hydraulic conductivity values. The groundwater velocity between MW-2 and MW-8 was then calculated based upon 1) average calculated conductivity values for MW-2 and MW-8 and 2) the hydraulic gradient between MW-2 and MW-8 which was determined to be 0.48 ft/430 ft. Graphs depicting time-displacement values and hydraulic conductivity values are included in **Appendix A.**

FINDINGS

Calculated hydraulic conductivity values at the Site ranged from 8.63E-04 feet per day in MW-2 to 5.83E-03 feet per day in MW-8. The average calculated hydraulic conductivity for MW-8 and MW-2 equates to 4.67E-03 feet per day. The calculated groundwater velocity, based upon the average calculated hydraulic conductivity of MW-2 and MW-8, equates to 5.23E-06 feet per day. A summary of calculated hydraulic conductivity and groundwater velocity values is presented in **Table** 1.

ATC appreciates the opportunity to be of Service to Brown Environmental and looks forward to working with you on future projects. If you have any questions or would like to discuss any of the elements included in the presentation of results, please call me at ATC's Plymouth Meeting, Pennsylvania office at (610) 313-3100.

Sincerely Yours,

ATC Associates Inc.

Daniel Auerbach
Senior Staff Scientist

Mark Irani, P.G.
Branch Manager

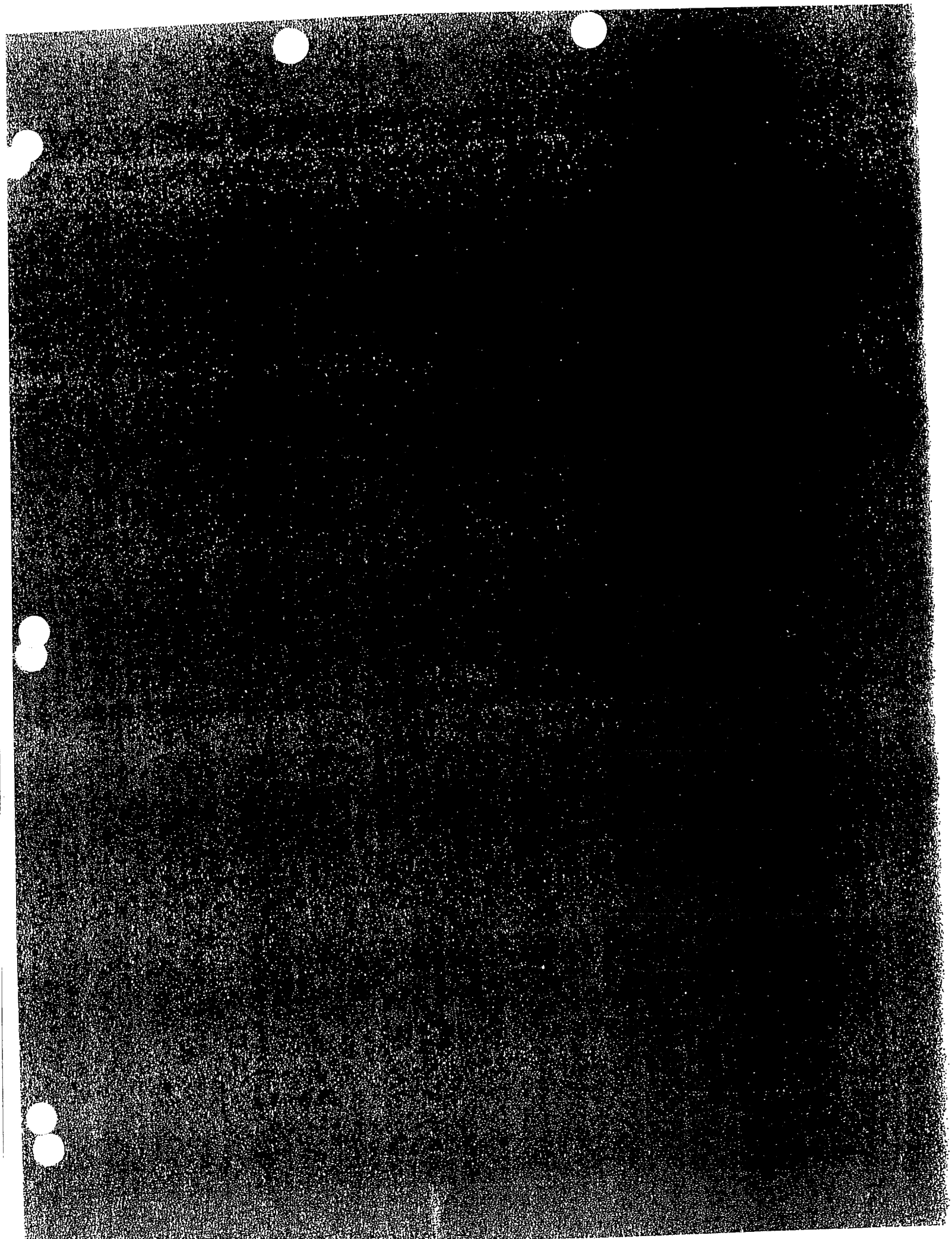


TABLE 1

SLUG TEST RESULTS

FORMER JACK FROST SUGAR FACTORY

PHILADELPHIA, PENNSYLVANIA

ON-SITE SLUG TESTING DATE: DECEMBER 11, 2001

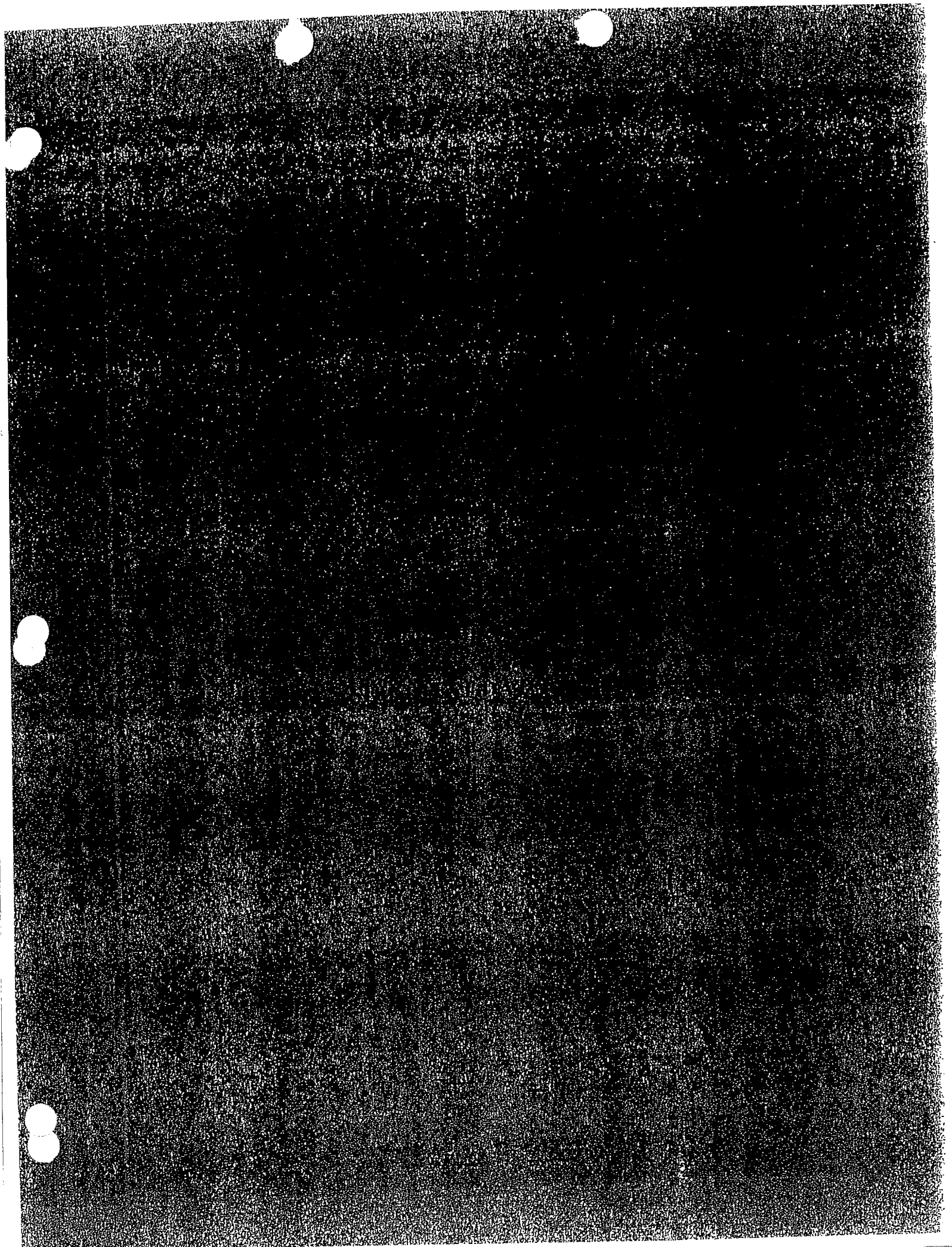
Well	Depth to Water (ft)	Top of Casing Elevation (ft)	Groundwater Elevation (ft)	Test Type	Hydraulic Conductivity (K)					
					cm/sec	m/day	m/yr	ft/min	ft/day	ft/yr
MW-2	16.50	100.04	83.54	Slug In	3.04E-07	2.63E-04	9.60E-02	5.99E-07	8.63E-04	3.15E-01
				Slug Out	1.24E-06	1.07E-03	3.91E-01	2.44E-06	3.51E-03	1.28E+00
MW-8	11.95	95.97	84.02	Slug In	-5.33E-07	4.60E-04	1.68E-01	1.05E-06	1.51E-03	5.51E-01
				Slug Out	2.06E-06	1.78E-03	6.49E-01	4.05E-06	5.83E-03	2.13E+00
Average Hydraulic Conductivity (Slug Out) (K_{avg})					1.65E-06	1.42E-03	5.20E-01	3.24E-06	4.67E-03	1.71E+00
Groundawater Velocity Based on Average Hydraulic Conductivity (V_{GW})					1.85E-09	1.59E-06	5.82E-04	3.63E-09	5.23E-06	1.91E-03

Calculation of Groundwater Velocity based on average hydraulic conductivity (slug out) of MW-2 and MW-8 ft/day.

V_{GW} = Groundwater Velocity
Q = Hydraulic Gradient between MW-2 and MW-8
H = .48 ft = Difference in water elevation between MW-2 and MW-8
X = 430 ft = Linear distance between MW-2 and MW-8
K_{avg} = 4.67E-03 = Hydraulic Conductivity Average ft/day

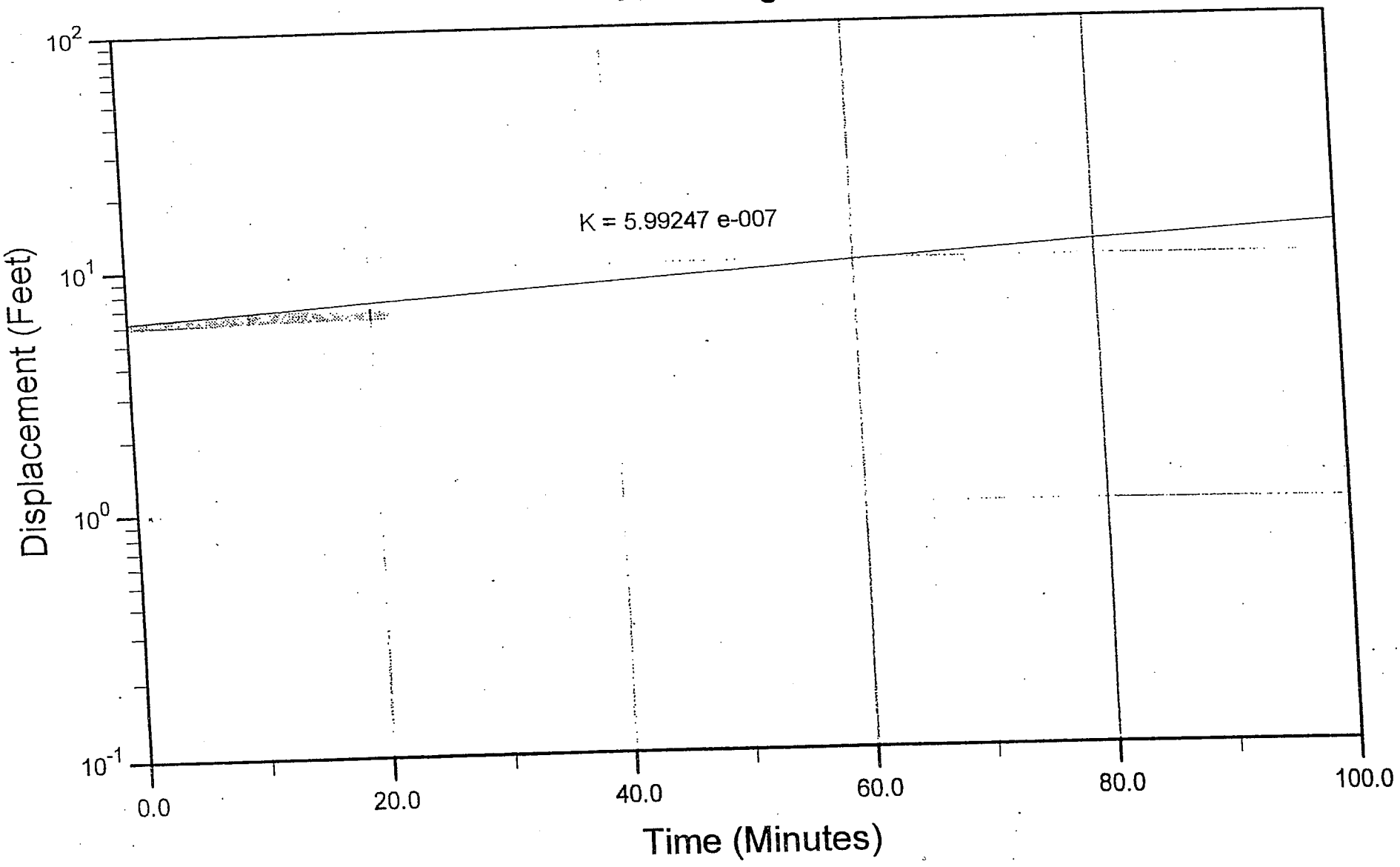
Hydraulic Gradient (Q) taken between MW-2 and MW-8 = H/X =.48 ft/430 ft = 1.12E-03

$V_{GW} = Q \times K_{avg}$ = 1.12E-03 * 4.67E-03 ft/day = 5.23E-06 ft/day.



SLUG TEST DATA
FORMER JACK FROST SUGAR FACTORY
PHILADELPHIA, PENNSYLVANIA

MW-2 Slug In

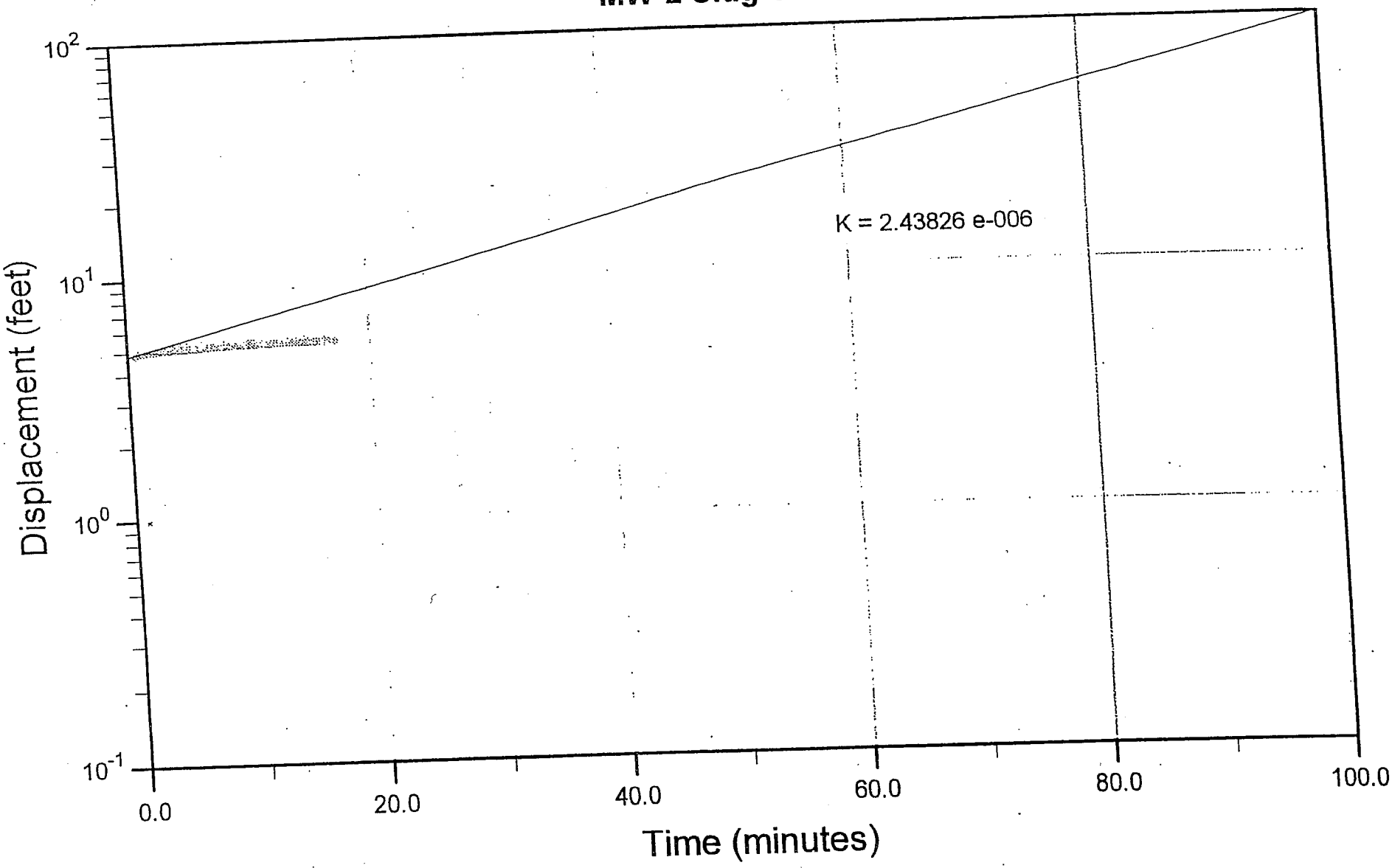


SLUG TEST DATA

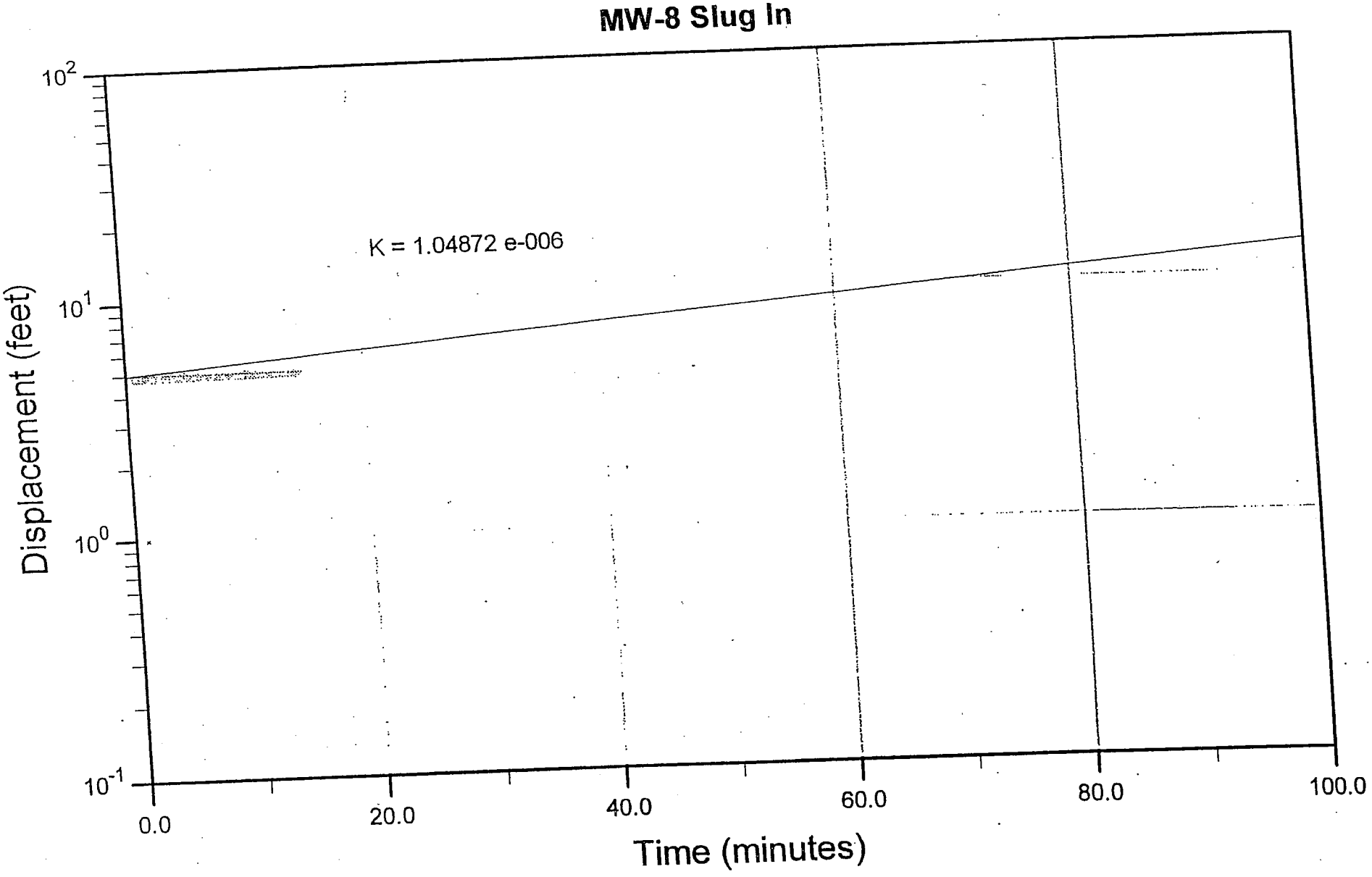
FORMER JACK FROST SUGAR FACTORY

PHILADELPHIA, PENNSYLVANIA

MW-2 Slug Out



SLUG TEST DATA
FORMER JACK FROST SUGAR FACTORY
PHILADELPHIA, PENNSYLVANIA

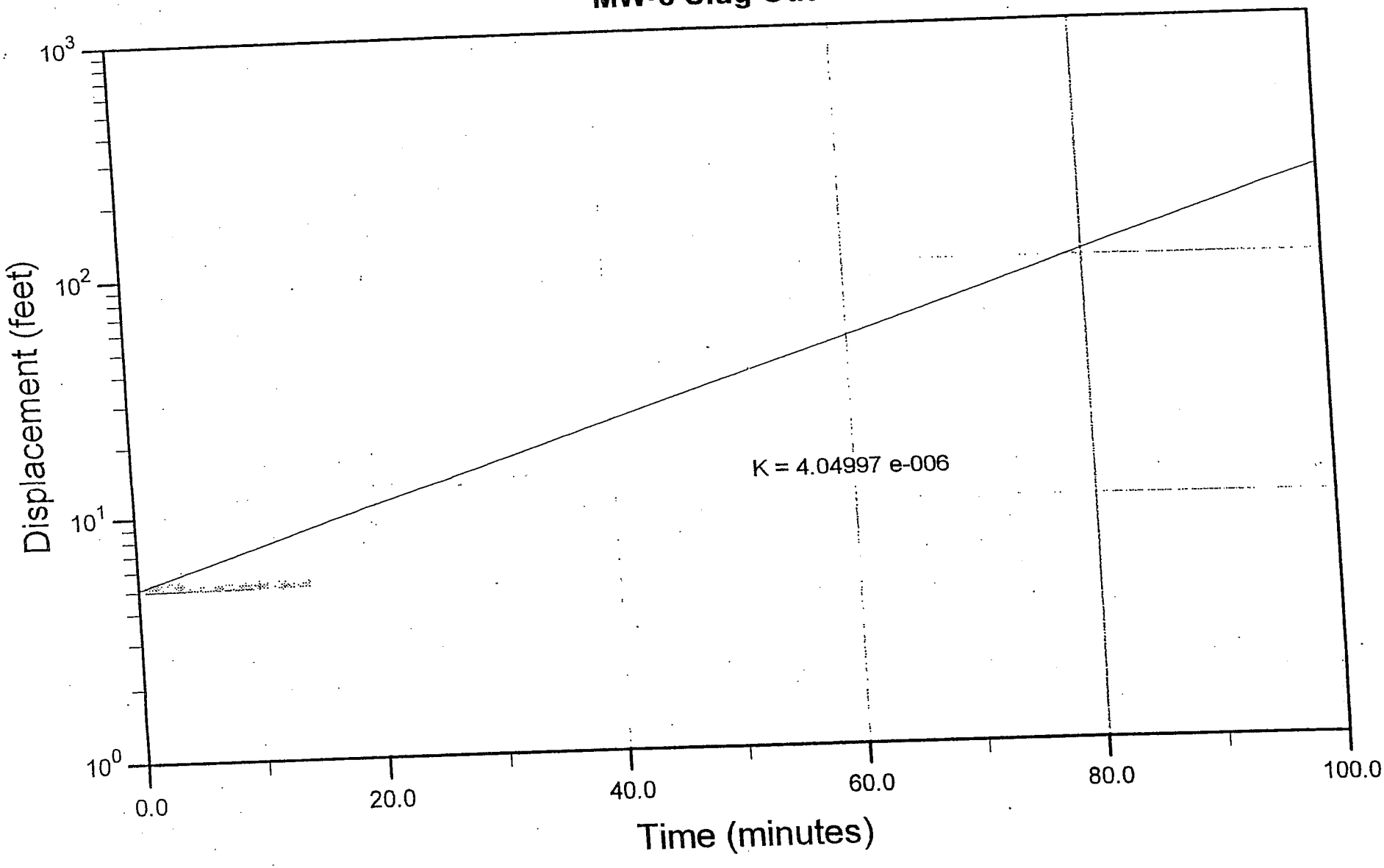


SLUG TEST DATA

FORMER JACK FROST SUGAR FACTORY

PHILADELPHIA, PENNSYLVANIA

MW-8 Slug Out



The EDR Radius Map
with GeoCheck®

941-967/1001/1015-1025 N. Delaware Ave
941 Delaware Avenue
Philadelphia, PA 19123

Inquiry Number: 1566367.2s

December 01, 2005

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the minimum government records search requirements of EPA's Standards and Practices for All Appropriate Inquiries, 40 CFR Part 312 (AAI) and the ASTM Standard Practice for Environmental Site Assessments, E 1527-05. Search distances are per AAI and ASTM standards or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

941 DELAWARE AVENUE
PHILADELPHIA, PA 19123

COORDINATES

Latitude (North):	39.964200 - 39° 57' 51.1''
Longitude (West):	75.133500 - 75° 8' 0.6''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	488598.2
UTM Y (Meters):	4423582.5
Elevation:	10 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	39075-H2 PHILADELPHIA, PA NJ
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available "reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL National Priority List
Proposed NPL Proposed National Priority List Sites
Delisted NPL National Priority List Deletions
NPL Liens Federal Superfund Liens
CORRACTS Corrective Action Report
RCRA-TSDF Resource Conservation and Recovery Act Information
RCRA-LQG Resource Conservation and Recovery Act Information
ERNS Emergency Response Notification System
HMIRS Hazardous Materials Information Reporting System
US ENG CONTROLS Engineering Controls Sites List

EXECUTIVE SUMMARY

US INST CONTROL Sites with Institutional Controls
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
US BROWNFIELDS A Listing of Brownfields Sites
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
ODI Open Dump Inventory
TRIS Toxic Chemical Release Inventory System
TSCA Toxic Substances Control Act
FTTS INSP FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS Section 7 Tracking Systems
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
MINES Mines Master Index File
FINDS Facility Index System/Facility Registry System
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SHWS Hazardous Sites Cleanup Act Site List
HSCA HSCA Remedial Sites Listing
SWF/LF Operating Facilities
LAST Storage Tank Release Sites
AST Listing of Pennsylvania Regulated Aboveground Storage Tanks
DRYCLEANERS Drycleaner Facility Locations
ARCHIVE AST Archived Aboveground Storage Tank Sites
ACT 2-DEED Act 2-Deed Acknowledgment Sites
ENG CONTROLS Engineering Controls Site Listing
INST CONTROL Institutional Controls Site Listing
VCP Voluntary Cleanup Program Sites
BROWNFIELDS Brownfields Sites

TRIBAL RECORDS

INDIAN RESERV Indian Reservations

EDR Proprietary Records

See the EDR Proprietary Historical Database Section for details

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

FEDERAL RECORDS

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 09/19/2005 has revealed that there are 3 CERCLIS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
E-Z CHEMICAL CO	***CORNER OF LAUREL & CANA***	***0 - 1/8 WNW***	***A1***	***6***
PENNSYLVANIA ENGINEERING HOWAR	1107-21 HOWARD STREET	1/4 - 1/2 NW	20	20
ABSCO SCRAP YARD	***1310-28 N. SECOND STREE***	***1/4 - 1/2 WSW***	***23***	***21***

CERCLIS-NFRAP: As of February 1995. CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

A review of the CERC-NFRAP list, as provided by EDR, and dated 08/22/2005 has revealed that there are 4 CERC-NFRAP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SUGARHOUSE REALTY, INC.	DELAWARE AVE. & SHACKAM	1/8 - 1/4 NE	B8	10
PHILA. STREET DEPT. YARD	DELAWARE AVE. & SPRING	1/4 - 1/2 SW	C16	15
DEPT OF STREETS PIER LEAK	DELAWARE & SPRING GARDE	1/4 - 1/2 SW	C17	15
RICCIARDI, AL & SONS CO INC	***914-20 N 2ND ST***	***1/4 - 1/2 W***	***21***	***20***

RCRAInfo:RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facil

A review of the RCRA-SQG list, as provided by EDR, and dated 08/11/2005 has revealed that there are 6 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
E-Z CHEMICAL CO	***CORNER OF LAUREL & CANA***	***0 - 1/8 WNW***	***A1***	***6***
PIONEER SALT & CHEMICAL CO INC	***940 N DELAWARE AVE***	***0 - 1/8 WSW***	***3***	***7***
RELIABLE WAGON & AUTO BODY INC	***117 EAST RICHMOND ST***	***1/8 - 1/4 NNW***	***5***	***9***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
OLD TOWN TROLLEY TOURS	***60 LAUREL ST***	***1/8 - 1/4 WNW***	***6***	***9***
UNIQUE INDUSTRIES INC	***46 RICHMOND ST***	***1/8 - 1/4 NW***	***9***	***11***
PROCESS MACHINERY & SUPPLY	***1108 FRANKFORD AVE***	***1/8 - 1/4 NNW***	***10***	***11***

STATE AND LOCAL RECORDS

HIST LF: The report provides facility information recorded in the Pennsylvania Department of Environmental Protection ALI database. Some of this information has been abstracted from old records and may not accurately reflect the current conditions and status at these facilities.

A review of the HIST LF list, as provided by EDR, and dated 01/04/2005 has revealed that there is 1 HIST LF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
EAST CENTRAL INCINERATOR	SPRING GARDEN / DELAW	1/4 - 1/2 SW	C15	15

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Resources' List of Confirmed Releases.

A review of the LUST list, as provided by EDR, and dated 11/01/2005 has revealed that there are 9 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
DRY ICE	***33-51 E LAUREL ST***	***0 - 1/8 WNW***	***A2***	***6***
PIER 40	933 PENN ST	1/8 - 1/4 SW	7	10
GREYHOUND HINES INC	***710 N DELAWARE AVE***	***1/4 - 1/2 SW***	***11***	***11***
UNION BOILER WORKS INC	716 N FRONT ST	1/4 - 1/2 WSW	12	12
GETTY 69708	***600 N DELAWARE***	***1/4 - 1/2 SW***	***C13***	***13***
STREETS SITE 012	601 N COLUMBUS BLVD	1/4 - 1/2 SW	C14	14
DELAWARE GENERATING STA	***1325 N BEACH ST***	***1/4 - 1/2 NE***	***D18***	***15***
JBM AUTO CITGO	154 W GIRARD AVE	1/4 - 1/2 NW	22	21
BROOKS PAINT STORES	1150-56 AMERICAN	1/4 - 1/2 NW	24	22

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Resources' Regulated Underground Storage Tank Listing.

A review of the UST list, as provided by EDR, and dated 10/03/2005 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
DRY ICE	***33-51 E LAUREL ST***	***0 - 1/8 WNW***	***A2***	***6***

EXECUTIVE SUMMARY

ARCHIVE UST: The list includes tanks storing highly hazardous substances that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

A review of the ARCHIVE UST list, as provided by EDR, and dated 07/05/2005 has revealed that there is 1 ARCHIVE UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
FITZGERALDS QUALITY FUELS	1086 N DELAWARE AVE	1/8 - 1/4 NE	B4	7

UNREG LTANKS: Leaking storage tank cases from unregulated storage tanks.

A review of the UNREG LTANKS list, as provided by EDR, and dated 04/12/2002 has revealed that there are 2 UNREG LTANKS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
GREYHOUND HINES INC	***710 N DELAWARE AVE***	***1/4 - 1/2 SW***	***11***	***11***
PECO DELAWARE GENERATING STA	1325 N BEACH ST	1/4 - 1/2 NE	D19	20

EDR Proprietary Records

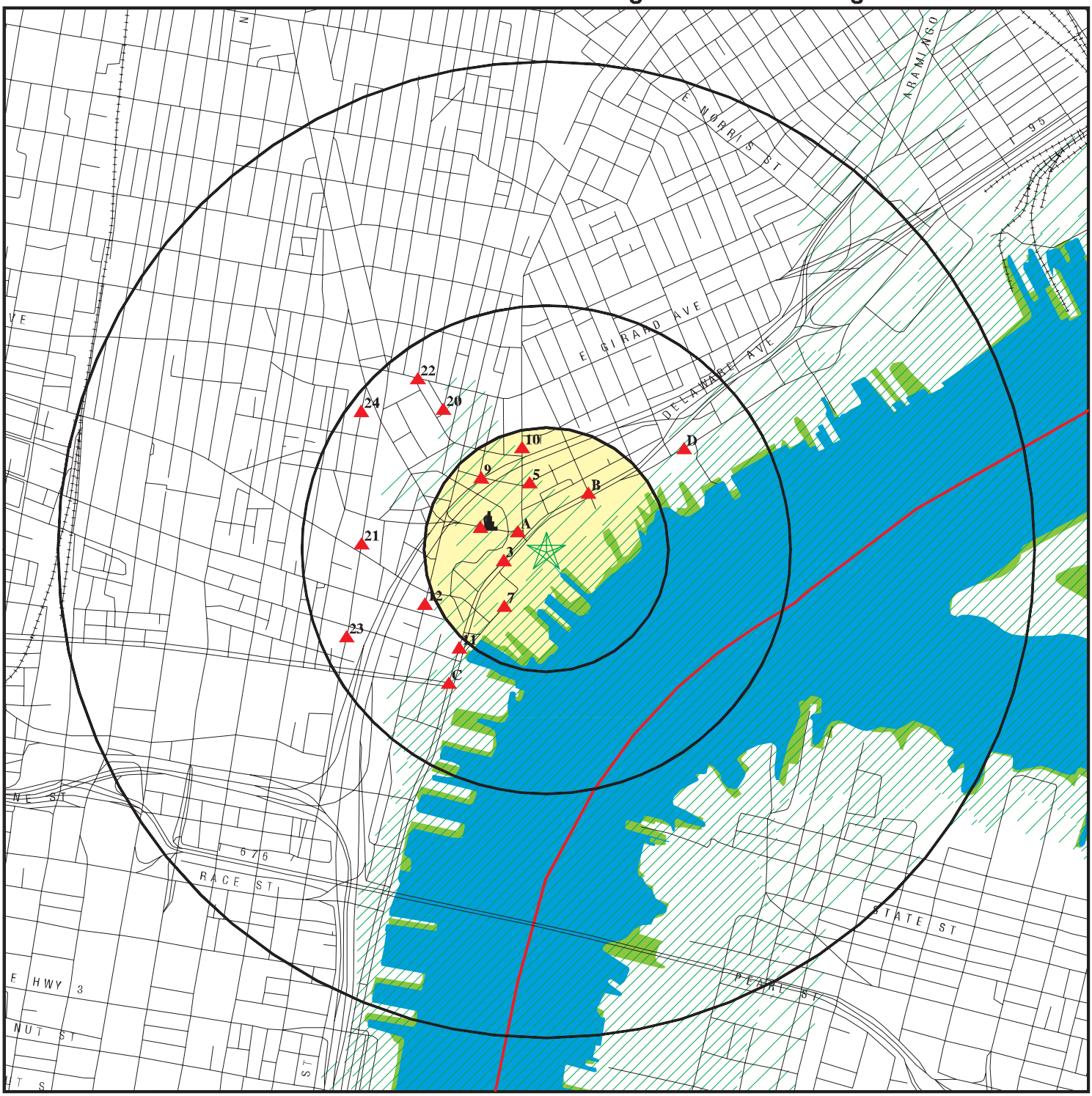
See the EDR Proprietary Historical Database Section for details

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
RCA CORP /CAMDEN PLANT	RCRA-SQG, FINDS, RCRA-TSDF, CORRACTS, CERC-NFRAP
PALKO CONTINENTAL	RCRA-SQG, SHWS, LUST, UST, NJ Release, VCP
COOPERS POYNT ELEMENTARY SCHOOL	SHWS, UST
DELAWARE RIVER PORT AUTH BETSY ROS	SHWS, LUST, NJ Spills, UST, NJ Release
CIONE PARK	CERCLIS, FINDS
HIGH CHEMICAL INC.	CERC-NFRAP
PHILA REDEVELOPMENT AUTH	CERC-NFRAP
MARINE SAFETY OFFICE-PHILA (USCG)	CERC-NFRAP
DELAWARE AVE. TRANSFORMER OIL SPIL	CERC-NFRAP
PA DOT I-95 ARAMINGO	INST CONTROL, ACT 2-DEED, ENG CONTROLS
CSX INTERMODAL/SNYDER AVE YARD FAC	VCP, ACT 2-DEED
PHILA REG PRT AUTH PIER 80 S ANNEX	VCP, ACT 2-DEED
CHRISTIAN & SWANSON ST	VCP
CHAMPION DEV WHITAKER AVE	VCP
ISLAND AVE --ENTERPRISE AVE LANDFI	HIST LF
PARKER AVE. AND SILVERWOODSTREET	HIST LF
PHILA WATER DEPT LARDNER POINT PUM	UNREG LTANKS
CHESTNUT HILL COLL	UNREG LTANKS
1104 MOYAMENSING AVE SITE	UNREG LTANKS
4108-4120 PARKSIDE AVE SITE	UNREG LTANKS
FLEET MGMT SITE 4 175	UNREG LTANKS
PHILA WATER DEPT TORRESDALE PUMP S	UNREG LTANKS
DUPONT	UNREG LTANKS
KOBRYN PROP	LUST
BEACH STREET ASPHALT PLT	LUST
VACANT LOT	LUST
PORT OF HISTORY MUSEUM	LUST
PECO ENERGY CO	LUST
CUMBERLAND GULF 142996	LUST
SOMERSET KNITTING MILLS	LUST
6614, 6616, 6620, 6622 GERMANTOWN	US BROWNFIELDS
1501 N. BROAD STREET	US BROWNFIELDS
700-704 N. THIRD STREET	US BROWNFIELDS

OVERVIEW MAP - 1566367.2s - Keating Environmental Mgmt.

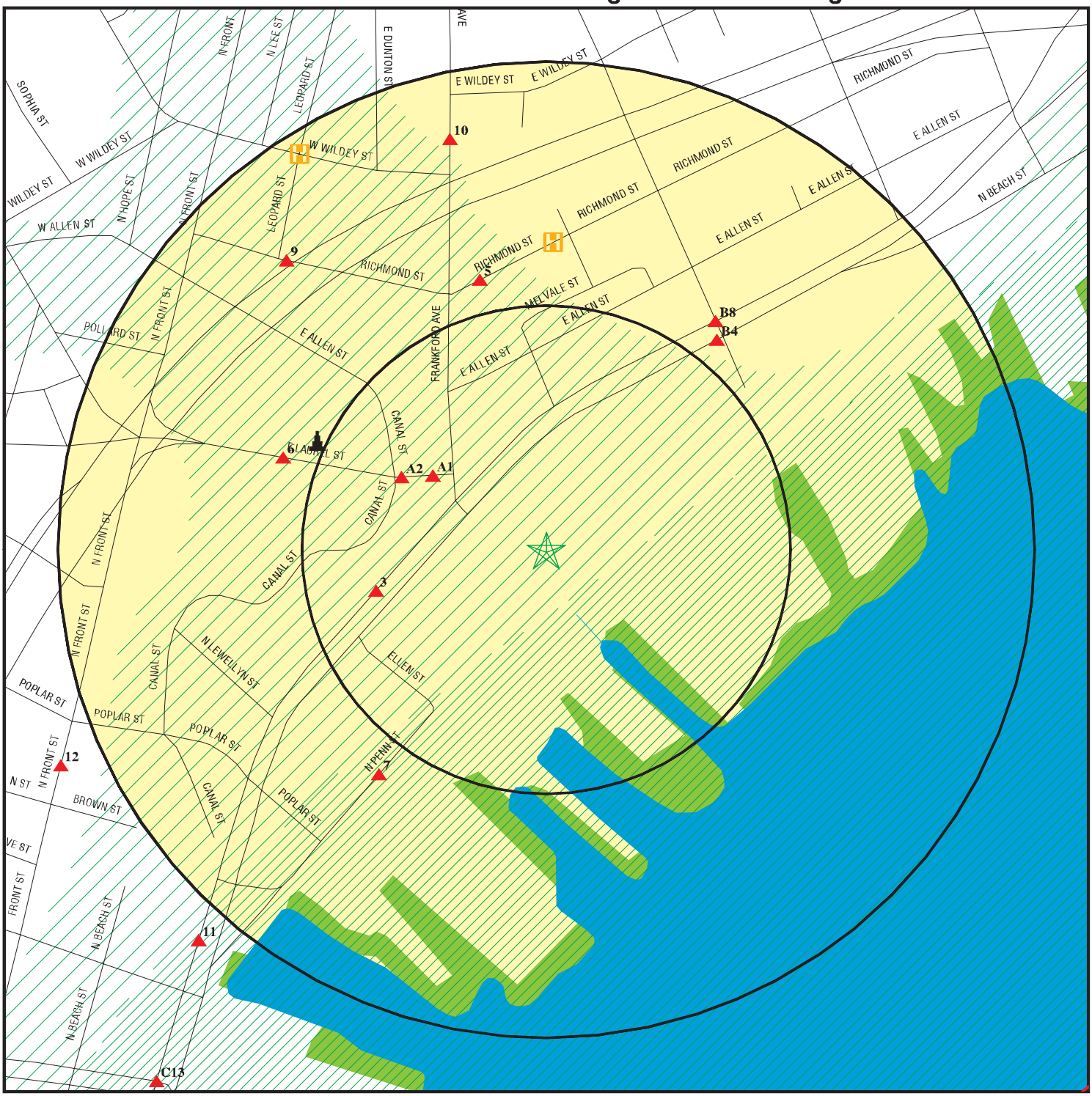


0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands

TARGET PROPERTY:	941-967/1001/1015-1025 N. Delaware Ave	CUSTOMER:	Keating Environmental Mgmt.
ADDRESS:	941 Delaware Avenue	CONTACT:	Terry McKenna
CITY/STATE/ZIP:	Philadelphia PA 19123	INQUIRY #:	1566367.2s
LAT/LONG:	39.9642 / 75.1335	DATE:	December 01, 2005 6:51 pm

DETAIL MAP - 1566367.2s - Keating Environmental Mgmt.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Historical Gas Stations / Historical Dry Cleaners See the EDR Proprietary Historical Map Findings
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands

0 1/16 1/8 1/4 Miles

TARGET PROPERTY:	941-967/1001/1015-1025 N. Delaware Ave	CUSTOMER:	Keating Environmental Mgmt.
ADDRESS:	941 Delaware Avenue	CONTACT:	Terry McKenna
CITY/STATE/ZIP:	Philadelphia PA 19123	INQUIRY #:	1566367.2s
LAT/LONG:	39.9642 / 75.1335	DATE:	December 01, 2005 6:51 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	1	0	2	NR	NR	3
CERC-NFRAP		0.500	0	1	3	NR	NR	4
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	2	4	NR	NR	NR	6
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
State Haz. Waste		1.000	0	0	0	0	NR	0
HSCA		1.000	0	0	0	0	NR	0
SWF/LF		0.500	0	0	0	NR	NR	0
HIST LF		0.500	0	0	1	NR	NR	1
LUST		0.500	1	1	7	NR	NR	9
UST		0.250	1	0	NR	NR	NR	1
ARCHIVE UST		0.250	0	1	NR	NR	NR	1
LAST		0.500	0	0	0	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
ARCHIVE AST		TP	NR	NR	NR	NR	NR	0
UNREG LTANKS		0.500	0	0	2	NR	NR	2
ACT 2-DEED		0.500	0	0	0	NR	NR	0
ENG CONTROLS		0.500	0	0	0	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
VCP		0.500	0	0	0	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
EDR PROPRIETARY RECORDS								
Gas Stations/Dry Cleaners		0.250	0	5	NR	NR	NR	5
COAL GAS		1.000	0	1	0	0	NR	1

NOTES:

See the EDR Proprietary Historical Database Section for details

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
WNW
< 1/8
367 ft.

Relative:
Higher

Actual:
12 ft.

E-Z CHEMICAL CO
CORNER OF LAUREL & CANAL STS
PHILADELPHIA, PA 19123

CERCLIS
RCRA-SQG
FINDS

1000442748
PAD055427256

Site 1 of 2 in cluster A

CERCLIS Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Status: NFRAP
NPL Status: Not on the NPL
Site Description: TWO CEASE AND DESIST ORDERS WERE ISSUED BY LICENSES AND INSPECTION AND ARE INVACUATION NOTICE WAS ALSO ISSED. NUMERIOUS RESIDENT COMPLAINTS CONCERNING STRONG ODORS AND VAPORS IN THE AIR.THERE IS FEAR OF FIRE TO UNLABELLED DRUMS.

CERCLIS Assessment History:

Assessment:	DISCOVERY	Completed:	04/20/1989
Assessment:	PRP REMOVAL	Completed:	01/12/1990
Assessment:	UNILATERAL ADMIN ORDER	Completed:	01/12/1990
Assessment:	NON-NPL PRP SEARCH	Completed:	02/08/1990
Assessment:	REMOVAL	Completed:	09/28/1990
Assessment:	PRELIMINARY ASSESSMENT	Completed:	10/22/1990
Assessment:	SECTION 106 107 LITIGATION	Completed:	05/12/1994

CERCLIS Site Status:
Not reported
CERCLIS Alias Name(s):
E. Z. CHEMICAL

RCRAInfo:
Owner: OPERNAME
(215) 555-1212
EPA ID: PAD055427256

Contact: Not reported

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND INFORMATION SYSTEM
INTEGRATED COMPLIANCE INFORMATION SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

A2
WNW
< 1/8
438 ft.

Relative:
Higher

Actual:
12 ft.

DRY ICE
33-51 E LAUREL ST
PHILADELPHIA, PA 19123

LUST
UST

U003215416
N/A

Site 2 of 2 in cluster A

LUST:

Facility Id:	51-45502
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Inactive
Status Date:	1999-12-31
Release Date:	1989-08-05
Region:	SE-1
Description :	DRY ICE CORP

UST:

DRY ICE (Continued) **U003215416**

Site ID:	587872
Capacity:	4000
Date Installed:	11/01/91
Tank Seq No:	001
Substance:	Diesel Fuel
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	179171
Mailing Name :	DRY ICE CORP
Mailing Address:	189 CENTRAL AVE
	OLD TAPPAN, NJ 07675
Other Id :	51-45502
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	02/04/06
Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	23-Apr-04
Region Code :	4100

---

3 **PIONEER SALT & CHEMICAL CO INC** **RCRA-SQG** **1000312301**
WSW **940 N DELAWARE AVE** **FINDS** **PAD065728826**
< 1/8 **PHILADELPHIA, PA 19123** **RAATS**
474 ft.

Relative: Higher

Actual: 13 ft.

RCRAInfo:
Owner: OPERNAME
(215) 555-1212
EPA ID: PAD065728826
Contact: RONALD HELWIG
(215) 925-6500
Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
INTEGRATED COMPLIANCE INFORMATION SYSTEM
PENNSYLVANIA-ENVIRONMENTAL FACILITY APPLICATION COMPLIANCE TRACKING SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

B4 **FITZGERALDS QUALITY FUELS** **ARCHIVE UST** **U001101233**
NE **1086 N DELAWARE AVE** **N/A**
1/8-1/4 **PHILADELPHIA, PA 19125**
731 ft.

Site 1 of 2 in cluster B

Relative: Higher

Actual: 16 ft.

PA UST ARCHIVE:

Tank Id Number :	Not reported	Facility Id Number :	587241
Tank Sequence #	001	Installation Date :	06/01/1982
Capacity :	6000	Substance :	DIESL
Status :	Temporarily Out of use	Owner Id Number :	Not reported
Owner Name :	Not reported		
Owner Address :			
Owner Phone :	Not reported	County Code :	Not reported
Municipality :	Philadelphia	Client Date :	181917

FITZGERALDS QUALITY FUELS (Continued) **U001101233**

Resp Party Name PHILIP M FITZGERALD
RP Address : 4822 PASCHALL AVE
PHILADELPHIA, PA 19143
Other Id : 51-41703
Reg Exp Date : 02/04/1995
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE, CONSHOHOCKEN
Tank Code : UST
Dt Last Inspection : Not reported

Tank Id Number : Not reported
Tank Sequence # 002
Capacity : 4000
Status : Temporarily Out of use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Facility Id Number : 587241
Installation Date : 06/01/1982
Substance : GAS
Owner Id Number : Not reported
County Code : Not reported
Client Date : 181917

Resp Party Name PHILIP M FITZGERALD
RP Address : 4822 PASCHALL AVE
PHILADELPHIA, PA 19143
Other Id : 51-41703
Reg Exp Date : 02/04/1995
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE, CONSHOHOCKEN
Tank Code : UST
Dt Last Inspection : Not reported

Tank Id Number : Not reported
Tank Sequence # 003
Capacity : 4000
Status : Temporarily Out of use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Facility Id Number : 587241
Installation Date : 06/01/1982
Substance : GAS
Owner Id Number : Not reported
County Code : Not reported
Client Date : 181917

Resp Party Name PHILIP M FITZGERALD
RP Address : 4822 PASCHALL AVE
PHILADELPHIA, PA 19143
Other Id : 51-41703
Reg Exp Date : 02/04/1995
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE, CONSHOHOCKEN
Tank Code : UST
Dt Last Inspection : Not reported

Tank Id Number : Not reported
Tank Sequence # 004
Capacity : 4000
Status : Temporarily Out of use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Facility Id Number : 587241
Installation Date : 06/01/1982
Substance : GAS
Owner Id Number : Not reported
County Code : Not reported
Client Date : 181917

Resp Party Name PHILIP M FITZGERALD
RP Address : 4822 PASCHALL AVE
PHILADELPHIA, PA 19143
Region Code : 4100

FITZGERALDS QUALITY FUELS (Continued) **U001101233**

Other Id : 51-41703
Reg Exp Date : 02/04/1995
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Regn Code Name : SE REGIONAL OFFICE, CONSHOHOCKEN
Tank Code : UST
Dt Last Inspection : Not reported

Tank Id Number : Not reported
Tank Sequence # 005
Capacity : 2000
Status : Temporarily Out of use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name PHILIP M FITZGERALD
RP Address : 4822 PASCHALL AVE
PHILADELPHIA, PA 19143

Facility Id Number : 587241
Installation Date : 06/01/1982
Substance : GAS
Owner Id Number : Not reported

County Code : Not reported
Client Date : 181917
Region Code : 4100

Other Id : 51-41703
Reg Exp Date : 02/04/1995
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Regn Code Name : SE REGIONAL OFFICE, CONSHOHOCKEN
Tank Code : UST
Dt Last Inspection : Not reported

5
NNW
1/8-1/4
752 ft.

RELIABLE WAGON & AUTO BODY INCORPORATED **RCRA-SQG 1000245336**
117 EAST RICHMOND ST **FINDS PAD014795819**
PHILADELPHIA, PA 19125

Relative:
Higher

Actual:
13 ft.

RCRAInfo:
Owner: ROLLAND, FRANK
(215) 555-1212
EPA ID: PAD014795819
Contact: FRANK ROLLAND
(215) 423-2700
Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

6
WNW
1/8-1/4
754 ft.

OLD TOWN TROLLEY TOURS **RCRA-SQG 1004776453**
60 LAUREL ST **FINDS PAR000011817**
PHILADELPHIA, PA 19123

Relative:
Higher

Actual:
14 ft.

OLD TOWN TROLLEY TOURS (Continued) **1004776453**

RCRAInfo:
Owner: HISTORIC TOURS OF AMERICA
(305) 296-3609
EPA ID: PAR000011817
Contact: LOUIS WALCHAK
(215) 928-8687
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

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7 **PIER 40** **LUST** **S102607513**
SW **933 PENN ST** **N/A**
1/8-1/4 **PHILADELPHIA, PA**
757 ft.

Relative:
Higher

Actual:
11 ft.

LUST:
Facility Id: 51-36235
Facility Address 2: Not reported
Facility Type: Underground Storage Tank Containing Petroleum
Facility Status: Cleanup Completed
Status Date: 1995-03-17
Release Date: 1989-08-05
Region: SE-1
Description : PIER 40

B8 **SUGARHOUSE REALTY, INC.** **CERC-NFRAP** **1003008001**
NE **DELAWARE AVE. & SHACKAMAXON AVE.** **PAD987352564**
1/8-1/4 **PHILADELPHIA, PA 19125**
769 ft.

Site 2 of 2 in cluster B

Relative:
Higher

Actual:
17 ft.

CERCLIS-NFRAP Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Code: NFRAP
NPL Status: Not on the NPL
Site Description: SITE IS THE ABANDONED JACK FROST SUGAR PROCESSING PLANT. AS A RESULT OF TSC ACTIONS, OWNER REMOVED TRANSFORMERS CONTAINING PCB-LADEN OIL IN 1988.

CERCLIS-NFRAP Assessment History:

Assessment:	REMOVAL ASSESSMENT	Completed:	09/30/1991
Assessment:	DISCOVERY	Completed:	10/15/1991
Assessment:	ARCHIVE SITE	Completed:	04/23/1992
Assessment:	PRELIMINARY ASSESSMENT	Completed:	04/23/1992

9
NW
1/8-1/4
1052 ft.

UNIQUE INDUSTRIES INC
46 RICHMOND ST
PHILADELPHIA, PA 19134

RCRA-SQG
FINDS

1000350555
PAD002265502

Relative:
Higher

Actual:
13 ft.

RCRAInfo:
Owner: Not reported
EPA ID: PAD002265502
Contact: ENVIRONMENTAL COORDINATOR
(215) 555-1212
Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

10
NNW
1/8-1/4
1141 ft.

PROCESS MACHINERY & SUPPLY
1108 FRANKFORD AVE
PHILADELPHIA, PA 19125

RCRA-SQG
FINDS

1004773828
PAD981732357

Relative:
Higher

Actual:
15 ft.

RCRAInfo:
Owner: OPERNAME
(215) 555-1212
EPA ID: PAD981732357
Contact: BOB CASTRO
(215) 425-4320
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

11
SW
1/4-1/2
1413 ft.

GREYHOUND HINES INC
710 N DELAWARE AVE
PHILADELPHIA, PA 19123

RCRA-SQG
LUST
UNREG LTANKS

1000569352
PAD987336153

Relative:
Higher

Actual:
15 ft.

RCRAInfo:
Owner: OPERNAME
(215) 555-1212
EPA ID: PAD987336153
Contact: Not reported
Classification: Small Quantity Generator
TSDF Activities: Not reported

GREYHOUND HINES INC (Continued) **1000569352**

Violation Status: No violations found

LUST:

Facility Id:	51-43027
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Interim Remedial Actions Initiated or Completed
Status Date:	Not reported
Release Date:	1991-05-05
Region:	SE-1
Description :	GREYHOUND BUS LINES

Facility Id:	51-43027
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Interim Remedial Actions Initiated or Completed
Status Date:	Not reported
Release Date:	1991-05-05
Region:	SE-1
Description :	GREYHOUND MAINT CTR

Facility Id:	51-43027
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Interim Remedial Actions Initiated or Completed
Status Date:	Not reported
Release Date:	1994-09-28
Region:	SE-1
Description :	GREYHOUND MAINT CTR

Facility Id:	51-43027
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Interim Remedial Actions Initiated or Completed
Status Date:	Not reported
Release Date:	1998-12-15
Region:	SE-1
Description :	GREYHOUND MAINT CTR

UNREG LTANKS:

Region :	South East
Class :	Cleanup of Tanks using authorities other than Act 32
Closed :	Not reported
Contaminant :	Not reported

12
WSW
1/4-1/2
1436 ft.

Relative:
Higher

Actual:
18 ft.

UNION BOILER WORKS INC **LUST** **U003215290**
716 N FRONT ST **N/A**
PHILADELPHIA, PA

LUST:

Facility Id:	51-41904
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Inactive
Status Date:	1999-12-31
Release Date:	1997-07-23
Region:	SE-1
Description :	UNION BOILER WORK

C13
SW
1/4-1/2
1781 ft.

Relative:
Higher

Actual:
15 ft.

GETTY 69708
600 N DELAWARE
PHILADELPHIA, PA 19123

Site 1 of 5 in cluster C

LUST **U001459491**
UST **N/A**

LUST:

Facility Id:	51-43620
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Cleanup Completed
Status Date:	2005-05-24
Release Date:	1989-08-05
Region:	SE-1
Description :	MOBIL OIL 16 DKH

UST:

Site ID:	515267
Capacity:	10000
Date Installed:	01/01/87
Tank Seq No:	001
Substance:	Gasoline
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	186021
Mailing Name :	GETTY PETRO MKT INC
Mailing Address:	1500 HEMPSTEAD TPKE
	EAST MEADOW, NY 11554
Other Id :	51-43620
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	02/04/06
Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	Not reported
Region Code :	4100

Site ID:	515267
Capacity:	10000
Date Installed:	01/01/87
Tank Seq No:	002
Substance:	Gasoline
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	186021
Mailing Name :	GETTY PETRO MKT INC
Mailing Address:	1500 HEMPSTEAD TPKE
	EAST MEADOW, NY 11554
Other Id :	51-43620
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	02/04/06
Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	Not reported
Region Code :	4100

Site ID:	515267
Capacity:	10000
Date Installed:	01/01/87

GETTY 69708 (Continued) **U001459491**

Tank Seq No:	003
Substance:	Gasoline
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	186021
Mailing Name :	GETTY PETRO MKT INC
Mailing Address:	1500 HEMPSTEAD TPKE
	EAST MEADOW, NY 11554
Other Id :	51-43620
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	02/04/06
Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	Not reported
Region Code :	4100

Site ID:	515267
Capacity:	10000
Date Installed:	01/01/87
Tank Seq No:	004
Substance:	Diesel Fuel
Tank Status:	Currently in Use
Municipality Name :	Philadelphia
Client Id Number :	186021
Mailing Name :	GETTY PETRO MKT INC
Mailing Address:	1500 HEMPSTEAD TPKE
	EAST MEADOW, NY 11554
Other Id :	51-43620
Secondary Facility Address	Not reported
Region Code Name :	EP SE Rgnl Off
Regulated Expiration Dt:	02/04/06
Tank Code :	UST
Inspection Code :	Facility Operation Inspection
Tank Last Dt Inspected :	Not reported
Region Code :	4100

C14 **STREETS SITE 012** **LUST** **S105800728**
SW **601 N COLUMBUS BLVD** **N/A**
1/4-1/2 **PHILADELPHIA, PA**
1787 ft.

Site 2 of 5 in cluster C

Relative:
Higher

Actual:
15 ft.

LUST:

Facility Id:	51-25127
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Inactive
Status Date:	1999-12-31
Release Date:	1989-08-05
Region:	SE-1
Description :	FLEET MGMT STS SITE 012

C15
SW
1/4-1/2
1825 ft.

EAST CENTRAL INCINERATOR — **HIST LF** — **S102400188**
SPRING GARDEN / DELAWARE AVE. — **N/A**
PHILADELPHIA, PA 00000

Site 3 of 5 in cluster C

Relative:
Higher

Actual:
15 ft.

LF HIST:

Region :	NEVER
Inspect Date :	11/17/88
Facility Status:	P
ALI ID:	Not reported
Size Acres :	Not reported
Cont ID :	Not reported
Contact Name :	Not reported
Contact Tele :	Not reported
Facility Type :	MUN INCINERATOR

C16
SW
1/4-1/2
1825 ft.

PHILA. STREET DEPT. YARD — **CERC-NFRAP** — **1004654879**
DELAWARE AVE. & SPRING GARDEN STREET — **PA0001407113**
PHILADELPHIA, PA 19123

Site 4 of 5 in cluster C

Relative:
Higher

Actual:
15 ft.

CERCLIS-NFRAP Classification Data:

Federal Facility:	Not a Federal Facility
Non NPL Code:	NFRAP
NPL Status:	Not on the NPL

CERCLIS-NFRAP Assessment History:

Assessment:	REMOVAL ASSESSMENT	Completed:	04/04/1996
Assessment:	DISCOVERY	Completed:	04/04/1996
Assessment:	PRELIMINARY ASSESSMENT	Completed:	08/13/1996
Assessment:	ARCHIVE SITE	Completed:	02/15/2001

C17
SW
1/4-1/2
1825 ft.

DEPT OF STREETS PIER LEAK — **CERC-NFRAP** — **1003867131**
DELAWARE & SPRING GARDEN — **PAD987390036**
PHILADELPHIA, PA 19123

Site 5 of 5 in cluster C

Relative:
Higher

Actual:
15 ft.

CERCLIS-NFRAP Classification Data:

Federal Facility:	Not a Federal Facility
Non NPL Code:	NFRAP
NPL Status:	Not on the NPL

CERCLIS-NFRAP Assessment History:

Assessment:	DISCOVERY	Completed:	09/30/1992
Assessment:	ARCHIVE SITE	Completed:	12/04/1992
Assessment:	PRELIMINARY ASSESSMENT	Completed:	12/04/1992
Assessment:	REMOVAL ASSESSMENT	Completed:	05/06/2003

D18
NE
1/4-1/2
1853 ft.

DELAWARE GENERATING STA — **LUST** — **U000454295**
1325 N BEACH ST — **ARCHIVE AST** — **N/A**
PHILADELPHIA, PA 19125 — **ARCHIVE UST**

Site 1 of 2 in cluster D

Relative:
Higher

Actual:
17 ft.

DELAWARE GENERATING STA (Continued) **U000454295**

LUST:
Facility Id: 51-02642
Facility Address 2: Not reported
Facility Type: Underground Storage Tank Containing Petroleum
Facility Status: Interim Remedial Actions Initiated or Completed
Status Date: 2004-09-15
Release Date: 2004-09-15
Region: SE-1
Description : NOC

PA UST ARCHIVE:
Tank Id Number : Not reported
Tank Sequence # 002
Capacity : 6000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Facility Id Number : 586371
Installation Date : 08/01/50
Substance : OTHER
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : UST
Dt Last Inspection : Not reported

Tank Id Number : Not reported
Tank Sequence # 003
Capacity : 6000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Facility Id Number : 586371
Installation Date : 08/01/50
Substance : OTHER
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : UST
Dt Last Inspection : Not reported

Tank Id Number : Not reported
Tank Sequence # 004
Capacity : 6000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
Facility Id Number : 586371
Installation Date : 08/01/50
Substance : OTHER
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100

DELAWARE GENERATING STA (Continued) **U000454295**

KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : FOI
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : UST
Dt Last Inspection : Not reported

PA AST ARCHIVE:
Tank Id Number : Not reported
Tank Sequence # 004A
Capacity : 4000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Facility Id Number : 586371
Installation Date : 01/01/72
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 007A
Capacity : 4000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Facility Id Number : 586371
Installation Date : 01/01/72
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 008A
Capacity : 15000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Facility Id Number : 586371
Installation Date : 01/01/50
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST

DELAWARE GENERATING STA (Continued) **U000454295**

Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 009A
Capacity : 15000
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Facility Id Number : 586371
Installation Date : 08/01/85
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 014A
Capacity : 275
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Facility Id Number : 586371
Installation Date : 01/01/50
Substance : OTHER
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 015A
Capacity : 360
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported

Facility Id Number : 586371
Installation Date : 01/01/50
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

DELAWARE GENERATING STA (Continued) **U000454295**

Site ID : Not reported

Tank Id Number : Not reported
Tank Sequence # 016A
Capacity : 395
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Facility Id Number : 586371
Installation Date : 01/01/50
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 017A
Capacity : 500
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Facility Id Number : 586371
Installation Date : 01/01/72
Substance : HZSUB
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

Tank Id Number : Not reported
Tank Sequence # 018A
Capacity : 500
Status : Currently In Use
Owner Name : Not reported
Owner Address :
Owner Phone : Not reported
Municipality : Philadelphia
Resp Party Name EXELON GENERATION CO
RP Address : 200 EXELON WAY KSA 1E
KENNETT SQUARE, PA 19348
Other Id : 51-02642
Reg Exp Date : 02/04/05
Inspection Code : IS
Status Code End Date : Not reported
Tank Substance End Dt : Not reported
Site ID : Not reported

Facility Id Number : 586371
Installation Date : 01/01/72
Substance : OTHER
Owner Id Number : Not reported
County Code : Not reported
Client Date : 147686
Region Code : 4100
Regn Code Name : SE REGIONAL OFFICE NORRISTOWN
Tank Code : AST
Dt Last Inspection : 1-Oct-02

D19
NE
1/4-1/2
1853 ft.

Relative:
Higher

Actual:
17 ft.

PECO DELAWARE GENERATING STA — **UNREG LTANKS** — **S105919690**
1325 N BEACH ST — **N/A**
PHILADELPHIA, PA

Site 2 of 2 in cluster D

UNREG LTANKS:
Region : South East
Class : Cleanup of Tanks using authorities other than Act 32
Closed : Not reported
Contaminant : FUEL OIL #6

20
NW
1/4-1/2
1888 ft.

Relative:
Higher

Actual:
17 ft.

PENNSYLVANIA ENGINEERING HOWARD STREET — **CERCLIS** — **1004654374**
1107-21 HOWARD STREET — **PAN000305681**
PHILADELPHIA, PA 19123

CERCLIS Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Status: Removal Only Site (No Site Assessment Work Needed)
NPL Status: Not on the NPL
Contact: DOUGLAS FOX — Contact Tel: (215) 814-3262
Contact Title: Not reported

CERCLIS Assessment History:

Assessment:	REMOVAL ASSESSMENT	Completed:	06/05/2002
Assessment:	REMOVAL	Completed:	06/05/2002
Assessment:	CONSENT AGREEMENT (ADMINISTRATIVE)	Completed:	07/24/2002
Assessment:	CLAIM IN BANKRUPTCY PROCEEDING	Completed:	07/24/2002

CERCLIS Site Status:
Not reported

21
West
1/4-1/2
1999 ft.

Relative:
Higher

Actual:
21 ft.

RICCIARDI, AL & SONS CO INC — **RCRA-SQG** — **1000171555**
914-20 N 2ND ST — **FINDS** — **PAD002310043**
PHILADELPHIA, PA 19123 — **CERC-NFRAP**

CERCLIS-NFRAP Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Code: NFRAP
NPL Status: Not on the NPL

CERCLIS-NFRAP Assessment History:

Assessment:	DISCOVERY	Completed:	06/01/1981
Assessment:	ARCHIVE SITE	Completed:	04/17/1987
Assessment:	PRELIMINARY ASSESSMENT	Completed:	04/17/1987

RCRAInfo:
Owner: CORPORATION
(215) 555-1212
EPA ID: PAD002310043

Contact: GEORGE RICCIARDI
(215) 925-1290

Classification: Small Quantity Generator
TSDF Activities: Not reported

RICCIARDI, AL & SONS CO INC (Continued) **1000171555**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

22
NW
1/4-1/2
2317 ft.

JBM AUTO CITGO **LUST** **S101477363**
154 W GIRARD AVE **N/A**
PHILADELPHIA, PA

Relative:
Higher

Actual:
19 ft.

LUST:

Facility Id:	51-04049
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Inactive
Status Date:	1999-12-31
Release Date:	1995-01-27
Region:	SE-1
Description :	JBM AUTO CITGO

23
WSW
1/4-1/2
2351 ft.

ABSCO SCRAP YARD **CERCLIS** **1005904017**
1310-28 N. SECOND STREET **FINDS** **PAN000305882**
PHILADELPHIA, PA 19122

Relative:
Higher

Actual:
22 ft.

CERCLIS Classification Data:

Federal Facility:	Not a Federal Facility
Non NPL Status:	Referred to Removal - Further Assessment Needed
NPL Status:	Not on the NPL

CERCLIS Assessment History:

Assessment:	REMOVAL ASSESSMENT	Completed:	10/21/2002
Assessment:	COMBINED PA/SI	Completed:	05/30/2003
Assessment:	ADMIN ORDER ON CONSENT	Completed:	06/24/2003
Assessment:	ADMIN ORDER ON CONSENT	Completed:	05/12/2005
Assessment:	PRP REMOVAL	Completed:	06/29/2005

CERCLIS Site Status:
Stabilized
CERCLIS Alias Name(s):
ABSCO SSITE
ABSCO SITE
ABSCO SITE

FINDS:
Other Pertinent Environmental Activity Identified at Site:
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND INFORMATION SYSTEM
INTEGRATED COMPLIANCE INFORMATION SYSTEM

24
NW
1/4-1/2
2501 ft.

BROOKS PAINT STORES
1150-56 AMERICAN
PHILADELPHIA, PA

LUST **S105145307**
N/A

Relative:
Higher

Actual:
19 ft.

LUST:

Facility Id:	51-44117
Facility Address 2:	Not reported
Facility Type:	Underground Storage Tank Containing Petroleum
Facility Status:	Inactive
Status Date:	2001-12-31
Release Date:	1989-08-05
Region:	SE-1

Description : BROOKS PAINT STORES INC

MAP FINDINGS - EDR PROPRIETARY HISTORICAL DATABASES

YEAR	NAME	ADDRESS	CITY	ST	DIR.	DIST.	ELEV.	TYPE
1930	FRECO DANL	35 W WILDEY ST	PHILADELPHIA	PA	NNW	1/8-1/4	Higher	Automobile Repairing
1936	FRESCO DANL	35 W WILDEY ST	PHILADELPHIA	PA	NNW	1/8-1/4	Higher	Automobile Repairing
1925	FRESCO DANL	35 W WILDEY ST	PHILADELPHIA	PA	NNW	1/8-1/4	Higher	Automobile Repairing
1920	MECHANICS OVERALL	155 RICHMOND ST	PHILADELPHIA	PA	North	1/8-1/4	Higher	Laundries
1925	MECHANICS OVERALL LAUNDRY	155 RICHMOND ST	PHILADELPHIA	PA	North	1/8-1/4	Higher	Laundries
N/A	NORTHERN LIBERTIES GAS CO.	50 LAUREL	PHILADELPHIA	PA	WNW	1/8-1/4	Higher	PHILADELPHIA

Description: Site is on the south side of Laurel, west of Canal, between Front and Beach.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CAMDEN	1000145845	RCA CORP /CAMDEN PLANT	FRONT & COOPER STS	08102	RCRA-SQG, FINDS, RCRA-TSDF, CORRACTS, CERC-NFRAP
CAMDEN	1000271550	PALKO CONTINENTAL	5 LINDEN ST	08102	RCRA-SQG, SHWS, LUST, UST, NJ Release, VCP
CAMDEN CITY	U002157733	COOPERS POYNT ELEMENTARY SCHOOL	3RD & STATE STS	08102	SHWS, UST
PENNSAUKEN TWP	U002156527	DELAWARE RIVER PORT AUTH BETSY ROS	BETSY ROSS BRIDGE PLZA	08110	SHWS, LUST, NJ Spills, UST, NJ Release
PHILADELPHIA	S107176370	KOBRYN PROP	603 - 617 NORTH AMERICAN ST		LUST
PHILADELPHIA	1007266327	6614, 6616, 6620, 6622 GERMANTOWN	6614, 6616, 6620, 6622 GERMANT		US BROWNFIELDS
PHILADELPHIA	S106776580	PA DOT I-95 ARAMINGO	I-95 ARAMINGO AVE INTERCHANGE		INST CONTROL, ACT 2-DEED, ENG CONTROLS
PHILADELPHIA	S105800638	BEACH STREET ASPHALT PLT	BEACH / SUSQUEHANNA ST		LUST
PHILADELPHIA	1007266331	1501 N. BROAD STREET	1501 N. BROAD STREET		US BROWNFIELDS
PHILADELPHIA	S106662373	CSX INTERMODAL/SNYDER AVE YARD FAC	CHRISTOPHER COLUMBUS BLVD E SN		VCP, ACT 2-DEED
PHILADELPHIA	S105423878	PHILA REG PRT AUTH PIER 80 S ANNEX	2100 CHRISTOPHER COLUMBUS BLVD		VCP, ACT 2-DEED
PHILADELPHIA	S105800745	VACANT LOT	1850 CHRISTOPHER COLUMBUS BLVD		LUST
PHILADELPHIA	1003867159	HIGH CHEMICAL INC.	COLUMBIA AND HOWARD ST.	19122	CERC-NFRAP
PHILADELPHIA	1003865209	PHILA REDEVELOPMENT AUTH	9TH & COLUMBIA	19125	CERC-NFRAP
PHILADELPHIA	S105800711	PORT OF HISTORY MUSEUM	COLUMBUS BLVD AT WALNUT ST		LUST
PHILADELPHIA	S105919714	PHILA WATER DEPT LARDNER POINT PUM	DELAWARE AVE / ROBBINS ST		UNREG LTANKS
PHILADELPHIA	1003866766	MARINE SAFETY OFFICE-PHILA (USCG)	DELAWARE AND PACKER AVENUES	19123	CERC-NFRAP
PHILADELPHIA	S106110617	PECO ENERGY CO	DELAWARE / PALMER AVE		LUST
PHILADELPHIA	S105954888	ISLAND AVE --ENTERPRISE AVE LANDFI	FORT MIFFLIN ROAD		HIST LF
PHILADELPHIA	S105919497	CHESTNUT HILL COLL	GERMANTOWN / NW AVE		UNREG LTANKS
PHILADELPHIA	S105800649	CUMBERLAND GULF 142996	8701 GERMANTOWN / BETHLEHEM		LUST
PHILADELPHIA	S105919429	1104 MOYAMENSING AVE SITE	1104 MOYAMENSING AVE		UNREG LTANKS
PHILADELPHIA	1001471029	CIONE PARK	MOYER AND HUNTINGDON AVENUE	19125	CERCLIS, FINDS
PHILADELPHIA	S105954917	PARKER AVE. AND SILVERWOODSTREET	PARKER AVE. AND SILVERWOOD STR		HIST LF
PHILADELPHIA	S105919437	4108-4120 PARKSIDE AVE SITE	4108-4120 PARKSIDE / 4109-41		UNREG LTANKS
PHILADELPHIA	1003866862	DELAWARE AVE. TRANSFORMER OIL SPIL	2345 EAST POPLAR STREET	19123	CERC-NFRAP
PHILADELPHIA	S106662346	CHRISTIAN & SWANSON ST	QUEEN / INTERSTATE 95		VCP
PHILADELPHIA	S105423853	CHAMPION DEV WHITAKER AVE	1413 1417 RHAWN ST		VCP
PHILADELPHIA	S105800725	SOMERSET KNITTING MILLS	SEVENTH / SPRING GARDEN ST		LUST
PHILADELPHIA	S105919558	FLEET MGMT SITE 4 175	8501 STATE RD / ASHBURNER ST		UNREG LTANKS
PHILADELPHIA	S105919716	PHILA WATER DEPT TORRESDALE PUMP S	8601 STATE RD AKA 5201 PENNY P		UNREG LTANKS
PHILADELPHIA	S105919526	DUPONT	5803 TACONY ST / STATE RD		UNREG LTANKS
PHILADELPHIA	1007266314	700-704 N. THIRD STREET	700-704 N. THIRD STREET		US BROWNFIELDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/01/05
Date Data Arrived at EDR: 08/03/05
Date Made Active in Reports: 08/22/05
Number of Days to Update: 19

Source: EPA
Telephone: N/A
Last EDR Contact: 08/03/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 04/27/05
Date Data Arrived at EDR: 05/04/05
Date Made Active in Reports: 05/16/05
Number of Days to Update: 12

Source: EPA
Telephone: N/A
Last EDR Contact: 08/05/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/01/05
Date Data Arrived at EDR: 08/03/05
Date Made Active in Reports: 08/22/05
Number of Days to Update: 19

Source: EPA
Telephone: N/A
Last EDR Contact: 08/03/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Date Data Arrived at EDR: 02/02/94
Date Made Active in Reports: 03/30/94
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/19/05
Date Data Arrived at EDR: 10/21/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 6

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 09/20/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/20/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 37

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 09/20/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/28/05
Date Data Arrived at EDR: 07/05/05
Date Made Active in Reports: 08/08/05
Number of Days to Update: 34

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 08/11/05
Date Data Arrived at EDR: 08/23/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 44

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/23/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 01/27/05
Date Made Active in Reports: 03/24/05
Number of Days to Update: 56

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/27/05
Date Data Arrived at EDR: 07/22/05
Date Made Active in Reports: 09/01/05
Number of Days to Update: 41

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/22/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/02/05
Date Data Arrived at EDR: 08/12/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 55

Source: Environmental Protection Agency
Telephone: 703-603-8867
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05
Date Data Arrived at EDR: 02/11/05
Date Made Active in Reports: 04/06/05
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 703-603-8867
Last EDR Contact: 07/05/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Date Data Arrived at EDR: 11/12/03
Date Made Active in Reports: 11/21/03
Number of Days to Update: 9

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/09/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 06/29/05
Date Made Active in Reports: 08/08/05
Number of Days to Update: 40

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/29/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 08/18/05
Date Data Arrived at EDR: 08/18/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 08/11/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/04
Date Data Arrived at EDR: 02/15/05
Date Made Active in Reports: 04/25/05
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/08/05
Date Data Arrived at EDR: 07/11/05
Date Made Active in Reports: 08/08/05
Number of Days to Update: 28

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 07/06/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04
Date Data Arrived at EDR: 01/07/05
Date Made Active in Reports: 03/14/05
Number of Days to Update: 66

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Date Data Arrived at EDR: 08/09/04
Date Made Active in Reports: 09/17/04
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 05/23/95
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 07/13/05
Date Made Active in Reports: 08/17/05
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Date Data Arrived at EDR: 04/27/04
Date Made Active in Reports: 05/21/04
Number of Days to Update: 24

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/18/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/15/05
Date Data Arrived at EDR: 07/25/05
Date Made Active in Reports: 08/22/05
Number of Days to Update: 28

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 07/15/05
Date Data Arrived at EDR: 07/25/05
Date Made Active in Reports: 08/22/05
Number of Days to Update: 28

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 01/03/05
Date Made Active in Reports: 01/25/05
Number of Days to Update: 22

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/18/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Annually

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 08/30/05
Date Data Arrived at EDR: 09/13/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 44

Source: EPA
Telephone: 202-564-3887
Last EDR Contact: 08/25/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/14/05
Date Data Arrived at EDR: 07/22/05
Date Made Active in Reports: 08/22/05
Number of Days to Update: 31

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/05/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/12/05
Date Data Arrived at EDR: 09/27/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 48

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/29/05
Date Data Arrived at EDR: 10/04/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 41

Source: EPA
Telephone: N/A
Last EDR Contact: 09/29/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Date Data Arrived at EDR: 07/03/95
Date Made Active in Reports: 08/07/95
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 06/17/05
Date Made Active in Reports: 08/04/05
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/12/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS: Hazardous Sites Cleanup Act Site List

The Hazardous Sites Cleanup Act Site List includes sites listed on PA Priority List, sites delisted from PA Priority List, Interim Response Completed sites, and Sites Being Studied or Response Being Planned.

Date of Government Version: 08/15/05
Date Data Arrived at EDR: 08/18/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 34

Source: Department Environmental Protection
Telephone: 717-783-7816
Last EDR Contact: 08/18/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Semi-Annually

HSCA: HSCA Remedial Sites Listing

A list of remedial sites on the PA Priority List. This is the PA state equivalent of the federal NPL superfund list.

Date of Government Version: 05/05/04
Date Data Arrived at EDR: 05/26/04
Date Made Active in Reports: 06/24/04
Number of Days to Update: 29

Source: Department of Environmental Protection
Telephone: 717-783-7816
Last EDR Contact: 08/18/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Varies

SWF/LF: Operating Facilities

Date of Government Version: 09/20/05
Date Data Arrived at EDR: 09/29/05
Date Made Active in Reports: 11/09/05
Number of Days to Update: 41

Source: Department of Environmental Protection
Telephone: 717-787-7564
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Semi-Annually

HIST LF: Abandoned Landfill Inventory

The report provides facility information recorded in the Pennsylvania Department of Environmental Protection ALI database. Some of this information has been abstracted from old records and may not accurately reflect the current conditions and status at these facilities

Date of Government Version: 01/04/05
Date Data Arrived at EDR: 01/04/05
Date Made Active in Reports: 02/04/05
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 717-787-7564
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST: Storage Tank Release Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/01/05
Date Data Arrived at EDR: 11/01/05
Date Made Active in Reports: 11/22/05
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 11/01/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Semi-Annually

UST: Listing of Pennsylvania Regulated Underground Storage Tanks

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 10/03/05
Date Data Arrived at EDR: 10/11/05
Date Made Active in Reports: 11/16/05
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 10/11/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Varies

ARCHIVE UST: Archived Underground Storage Tank Sites

The list includes tanks storing highly hazardous substances that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 07/05/05
Date Data Arrived at EDR: 10/11/05
Date Made Active in Reports: 11/11/05
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 10/11/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Varies

LAST: Storage Tank Release Sites

Leaking Aboveground Storage Tank Incident Reports.

Date of Government Version: 11/01/05
Date Data Arrived at EDR: 11/01/05
Date Made Active in Reports: 11/22/05
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 11/01/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Semi-Annually

AST: Listing of Pennsylvania Regulated Aboveground Storage Tanks

Registered Aboveground Storage Tanks.

Date of Government Version: 10/03/05
Date Data Arrived at EDR: 10/11/05
Date Made Active in Reports: 11/17/05
Number of Days to Update: 37

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 10/11/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Varies

HIST LF INVENTORY: Facility Inventory

A listing of solid waste facilities. This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP?s name was the Department of Environmental Resources.

Date of Government Version: 06/02/99
Date Data Arrived at EDR: 07/12/05
Date Made Active in Reports: 08/11/05
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 717-787-7381
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: No Update Planned

DRYCLEANERS: Drycleaner Facility Locations
A listing of drycleaner facility locations.

Date of Government Version: 10/18/05
Date Data Arrived at EDR: 10/18/05
Date Made Active in Reports: 11/09/05
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: 717-787-9702
Last EDR Contact: 10/17/05
Next Scheduled EDR Contact: 01/16/06
Data Release Frequency: Varies

HIST LF INACTIVE: Inactive Facilities List
A listing of inactive non-hazardous facilities (10000 & 300000 series). This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP?s name was the Department of Environmental Resources.

Date of Government Version: 12/20/94
Date Data Arrived at EDR: 07/12/05
Date Made Active in Reports: 08/11/05
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 717-787-7381
Last EDR Contact: 09/21/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: No Update Planned

ARCHIVE AST: Archived Aboveground Storage Tank Sites
The list includes aboveground tanks with a capacity greater than 21,000 gallons that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 07/05/05
Date Data Arrived at EDR: 10/11/05
Date Made Active in Reports: 11/11/05
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 10/11/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Varies

UNREG LTANKS: Unregulated Tank Cases
Leaking storage tank cases from unregulated storage tanks.

Date of Government Version: 04/12/02
Date Data Arrived at EDR: 08/14/03
Date Made Active in Reports: 08/29/03
Number of Days to Update: 15

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 08/14/03
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

ACT 2-DEED: Act 2-Deed Acknowledgment Sites
This listing pertains to sites where the Department has approved a cleanup requiring a deed acknowledgment under Act 2. This list includes sites remediated to a non-residential Statewide health standard (Section 303(g)); all sites demonstrating attainment of a Site-specific standard (Section 304(m)); and sites being remediated as a special industrial area (Section 305(g)). Persons who remediated a site to a standard that requires a deed acknowledgment shall comply with the requirements of the Solid Waste Management Act or the Hazardous Sites Cleanup Act, as referenced in Act 2. These statutes require a property description section in the deed concerning the hazardous substance disposal on the site. The location of disposed hazardous substances and a description of the type of hazardous substances disposed on the site shall be included in the deed acknowledgment. A deed acknowledgment is required at the time of conveyance of the property.

Date of Government Version: 08/18/05
Date Data Arrived at EDR: 08/19/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 08/16/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Varies

ENG CONTROLS: Engineering Controls Site Listing
Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/09/05
Date Data Arrived at EDR: 05/17/05
Date Made Active in Reports: 06/07/05
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 08/19/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Varies

INST CONTROL: Institutional Controls Site Listing

Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/09/05
Date Data Arrived at EDR: 05/17/05
Date Made Active in Reports: 06/07/05
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 08/19/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Sites

Sites involved in the Voluntary Cleanup Program

Date of Government Version: 08/18/05
Date Data Arrived at EDR: 08/18/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 34

Source: Department of Environmental Protection
Telephone: 717-783-2388
Last EDR Contact: 08/16/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Semi-Annually

BROWNFIELDS: Brownfields Sites

Date of Government Version: 08/19/05
Date Data Arrived at EDR: 08/19/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 08/15/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Date Data Arrived at EDR: 11/12/03
Date Made Active in Reports: 11/21/03
Number of Days to Update: 9

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Semi-Annually

EDR PROPRIETARY HISTORICAL DATABASES

EDR Historical Gas Station and Dry Cleaners: EDR has searched select national collections of business directories and has collected listings of potential dry cleaner and gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning and gas station/filling station/service station establishments. The categories reviewed included, but were not limited to: *gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, dry cleaner, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.*

This information is meant to assist and complement environmental professionals in their conduct of environmental site assessments, and is not meant to be a substitute for a full historical investigation as defined in ASTM E1527. The information provided in this proprietary database may or may not be complete; i.e., the absence of a dry cleaner or gas station/filling station/service station site does not necessarily mean that such a site did not exist in the area covered by this report.

(A note on "dry cleaning" sites: it is not possible for EDR to differentiate between establishments that use PERC on-site as a cleaning solvent and sites that function simply as drop-off and pick-up locations or that are traditional wet cleaning/laundry facilities. Therefore, it is essential for environmental professionals to incorporate professional judgment in the evaluation of each site.)

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Daycare Centers: Child Care Facility List
Source: Department of Public Welfare
Telephone: 717-783-3856

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

941-967/1001/1015-1025 N. DELAWARE AVE
941 DELAWARE AVENUE
PHILADELPHIA, PA 19123

TARGET PROPERTY COORDINATES

Latitude (North):	39.964199 - 39° 57' 51.1''
Longitude (West):	75.133499 - 75° 8' 0.6''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	488598.2
UTM Y (Meters):	4423582.5
Elevation:	10 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with EPA's Standards and Practices for All Appropriate Inquiries (AAI) and ASTM E 1527-05, Section 8.2.3.

Section 8.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

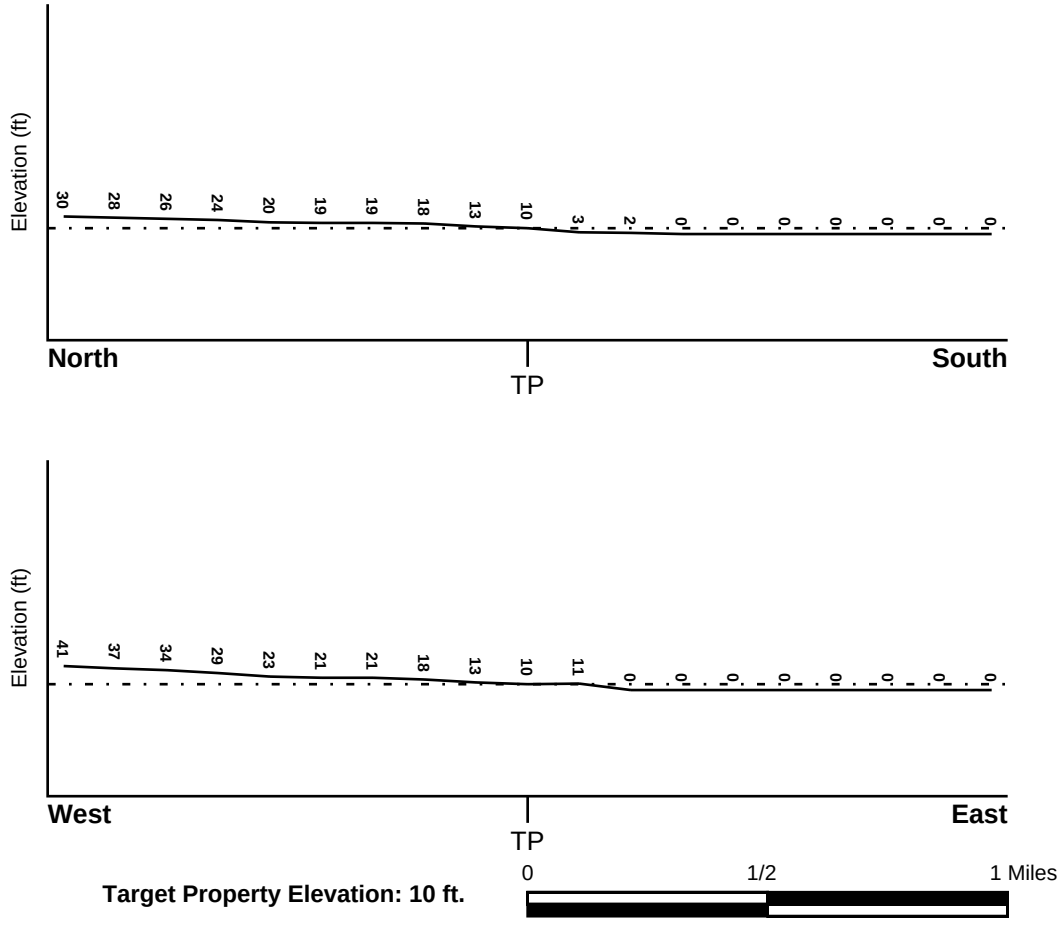
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	39075-H2 PHILADELPHIA, PA NJ
General Topographic Gradient:	General SE
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
PHILADELPHIA, PA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	4207570184F
Additional Panels in search area:	4207570182F 4207570201F 4207570203F 3401420005C 3401280001B 3401280003B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
PHILADELPHIA	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
69	1/2 - 1 Mile ENE	E
70	1/2 - 1 Mile NNW	Not Reported
95	1/2 - 1 Mile NE	SSE
102	1/2 - 1 Mile NNW	NE

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Mesozoic
System:	Cretaceous
Series:	Lower Cretaceous
Code:	lK *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class: Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 10 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: extremely gravelly - coarse sand
silt loam
loam

Surficial Soil Types: extremely gravelly - coarse sand
silt loam
loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: extremely gravelly - sand
sand
stratified
clay loam
loam
sandy loam

LOCAL / REGIONAL WATER AGENCY RECORDS

According to ASTM E 1527-05, Section 8.2.2, "To enhance and supplement the standard environmental record sources in 8.2.1, local records and/or additional state or tribal records shall be checked when, in the judgment of the environmental professional, such additional records (1) are reasonably ascertainable, (2) are sufficiently useful, accurate, and complete in light of the objective of the records review (see 8.1.1), and (3) are generally obtained, pursuant to local good commercial or customary practice, in initial environmental site assessments in the type of commercial real estate transaction involved." One of the records sources listed in 8.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS2151431	0 - 1/8 Mile SE
B4	USGS2151453	0 - 1/8 Mile NW
C8	USGS2151452	0 - 1/8 Mile ENE
C9	USGS2151450	0 - 1/8 Mile ENE
C10	USGS2151451	0 - 1/8 Mile ENE
A12	USGS2151420	0 - 1/8 Mile SE
D13	USGS2151314	1/8 - 1/4 Mile NNW
D16	USGS2151315	1/8 - 1/4 Mile NNW
D17	USGS2151316	1/8 - 1/4 Mile NW
D19	USGS2151326	1/8 - 1/4 Mile NNW
E22	USGS2151376	1/4 - 1/2 Mile North
F24	USGS2151375	1/4 - 1/2 Mile NNE
G26	USGS2151487	1/4 - 1/2 Mile WNW
G27	USGS2151478	1/4 - 1/2 Mile WNW
H29	USGS2151362	1/4 - 1/2 Mile NW
H32	USGS2151347	1/4 - 1/2 Mile NW
H34	USGS2151377	1/4 - 1/2 Mile NW
I36	USGS2151233	1/4 - 1/2 Mile NNW
J37	USGS2151508	1/4 - 1/2 Mile SW
J38	USGS2151504	1/4 - 1/2 Mile SW
J39	USGS2151506	1/4 - 1/2 Mile SW
J40	USGS2151507	1/4 - 1/2 Mile SW
J41	USGS2151503	1/4 - 1/2 Mile SW
J42	USGS2151511	1/4 - 1/2 Mile SW
J43	USGS2151510	1/4 - 1/2 Mile SW
J44	USGS2151505	1/4 - 1/2 Mile SW
J45	USGS2151509	1/4 - 1/2 Mile SW
I56	USGS2151236	1/4 - 1/2 Mile NNW
H58	USGS2151387	1/4 - 1/2 Mile NW
K59	USGS2151434	1/4 - 1/2 Mile West
K61	USGS2151454	1/4 - 1/2 Mile West
K63	USGS2151435	1/4 - 1/2 Mile West
L66	USGS2151564	1/4 - 1/2 Mile WSW
M68	USGS2151468	1/2 - 1 Mile West
M71	USGS2151456	1/2 - 1 Mile West
M72	USGS2151455	1/2 - 1 Mile West
N75	USGS2151608	1/2 - 1 Mile SSW
L77	USGS2151548	1/2 - 1 Mile WSW
O79	USGS2151249	1/2 - 1 Mile NW
P82	USGS2151655	1/2 - 1 Mile SW
Q83	USGS2151276	1/2 - 1 Mile NE
O85	USGS2151250	1/2 - 1 Mile NW
P87	USGS2151645	1/2 - 1 Mile SW
R91	USGS2151132	1/2 - 1 Mile NNW
R92	USGS2151133	1/2 - 1 Mile NNW
S93	USGS2151589	1/2 - 1 Mile SW
T96	USGS2151737	1/2 - 1 Mile SSW
T97	USGS2151738	1/2 - 1 Mile SSW
U101	USGS2151205	1/2 - 1 Mile North
V104	USGS2151635	1/2 - 1 Mile WSW
W105	USGS2151512	1/2 - 1 Mile WSW
X107	USGS2151636	1/2 - 1 Mile WSW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
W110	USGS2151495	1/2 - 1 Mile WSW
Y112	USGS2151838	1/2 - 1 Mile SSW
Y114	USGS2151839	1/2 - 1 Mile SSW
Z116	USGS2151722	1/2 - 1 Mile SW
Z118	USGS2151699	1/2 - 1 Mile SW
AA120	USGS2151053	1/2 - 1 Mile NNW
AB121	USGS2151080	1/2 - 1 Mile NNW
AC123	USGS2151337	1/2 - 1 Mile WNW
AC126	USGS2151488	1/2 - 1 Mile West
AD128	USGS2151700	1/2 - 1 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

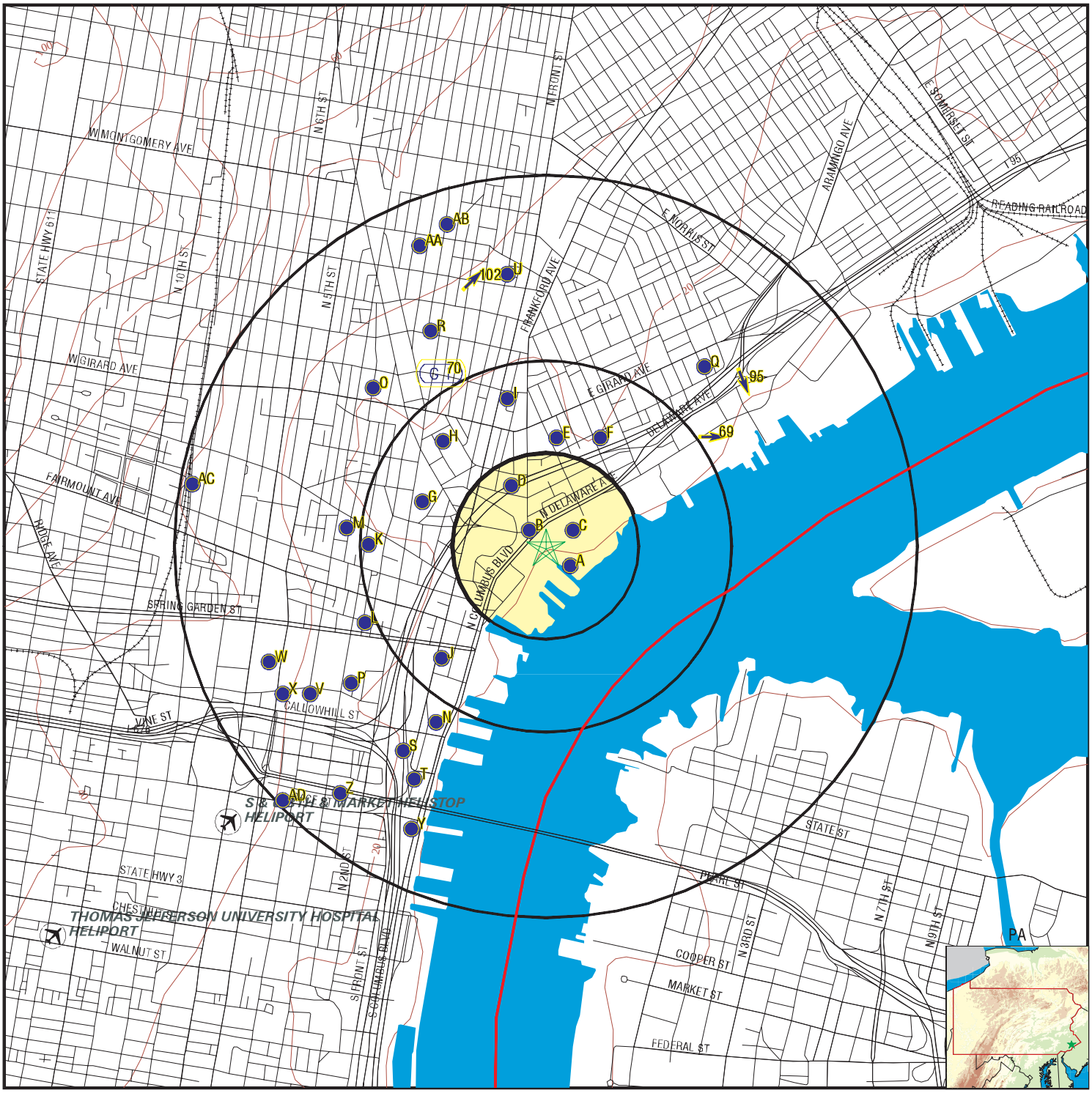
MAP ID	WELL ID	LOCATION FROM TP
A1	PA1000000025451	0 - 1/8 Mile SE
B3	PA1000000025611	0 - 1/8 Mile NW
C5	PA1000000025608	0 - 1/8 Mile ENE
C6	PA1000000025609	0 - 1/8 Mile ENE
C7	PA1000000025610	0 - 1/8 Mile ENE
A11	PA1000000025407	0 - 1/8 Mile SE
D14	PA1000000025843	1/8 - 1/4 Mile NNW
D15	PA1000000025842	1/8 - 1/4 Mile NNW
D18	PA1000000025841	1/8 - 1/4 Mile NW
D20	PA1000000025881	1/8 - 1/4 Mile NNW
E21	PA1000000026121	1/4 - 1/2 Mile North
F23	PA1000000026120	1/4 - 1/2 Mile NNE
G25	PA1000000025804	1/4 - 1/2 Mile WNW
G28	PA1000000025719	1/4 - 1/2 Mile WNW
H30	PA1000000026074	1/4 - 1/2 Mile NW
H31	PA1000000025994	1/4 - 1/2 Mile NW
H33	PA1000000026122	1/4 - 1/2 Mile NW
I35	PA1000000026346	1/4 - 1/2 Mile NNW
J46	PA1000000024949	1/4 - 1/2 Mile SW
J47	PA1000000024950	1/4 - 1/2 Mile SW
J48	PA1000000024947	1/4 - 1/2 Mile SW
J49	PA1000000024948	1/4 - 1/2 Mile SW
J50	PA1000000024951	1/4 - 1/2 Mile SW
J51	PA1000000024954	1/4 - 1/2 Mile SW
J52	PA1000000024955	1/4 - 1/2 Mile SW
J53	PA1000000024952	1/4 - 1/2 Mile SW
J54	PA1000000024953	1/4 - 1/2 Mile SW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
I55	PA1000000026378	1/4 - 1/2 Mile NNW
H57	PA1000000026211	1/4 - 1/2 Mile NW
K60	PA1000000025499	1/4 - 1/2 Mile West
K62	PA1000000025612	1/4 - 1/2 Mile West
K64	PA1000000025498	1/4 - 1/2 Mile West
L65	PA1000000025171	1/4 - 1/2 Mile WSW
M67	PA1000000025657	1/2 - 1 Mile West
M73	PA1000000025613	1/2 - 1 Mile West
M74	PA1000000025614	1/2 - 1 Mile West
N76	PA1000000024627	1/2 - 1 Mile SSW
L78	PA1000000025081	1/2 - 1 Mile WSW
O80	PA1000000026418	1/2 - 1 Mile NW
P81	PA1000000024832	1/2 - 1 Mile SW
Q84	PA1000000026514	1/2 - 1 Mile NE
O86	PA1000000026417	1/2 - 1 Mile NW
P88	PA1000000024792	1/2 - 1 Mile SW
R89	PA1000000026694	1/2 - 1 Mile NNW
R90	PA1000000026695	1/2 - 1 Mile NNW
S94	PA1000000024503	1/2 - 1 Mile SW
T98	PA1000000024368	1/2 - 1 Mile SSW
T99	PA1000000024369	1/2 - 1 Mile SSW
U100	PA1000000027008	1/2 - 1 Mile North
V103	PA1000000024759	1/2 - 1 Mile WSW
W106	PA1000000024956	1/2 - 1 Mile WSW
X108	PA1000000024758	1/2 - 1 Mile WSW
W109	PA1000000024926	1/2 - 1 Mile WSW
Y111	PA1000000024091	1/2 - 1 Mile SSW
Y113	PA1000000024090	1/2 - 1 Mile SSW
Z115	PA1000000024335	1/2 - 1 Mile SW
Z117	PA1000000024253	1/2 - 1 Mile SW
AA119	PA1000000027122	1/2 - 1 Mile NNW
AB122	PA1000000027206	1/2 - 1 Mile NNW
AC124	PA1000000025910	1/2 - 1 Mile WNW
AC125	PA1000000025805	1/2 - 1 Mile West
AD127	PA1000000024254	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 1566367.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location

TARGET PROPERTY:	941-967/1001/1015-1025 N. Delaware Ave	CUSTOMER:	Keating Environmental Mgmt.
ADDRESS:	941 Delaware Avenue	CONTACT:	Terry McKenna
CITY/STATE/ZIP:	Philadelphia PA 19123	INQUIRY #:	1566367.2s
LAT/LONG:	39.9642 / 75.1335	DATE:	December 01, 2005 6:51 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
SE | **PA WELLS** | **PA1000000025451**
0 - 1/8 Mile
Lower

WELLID:	395749075075901	LOCALWELLN:	PH 274
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	390		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96361		
LONGITUDED:	-75.13306		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30489		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	07/22/1931 00:00:00		
Driller:	0249		
Source Cons Data:	DRILLER'S RECORD		
Method Cons:	CABLE TOOL		
Finish:	OPEN HOLE		

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	126	Casing Diameter:	8
Casing:	UNKNOWN		
Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	10
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	390	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	PA SUGAR CO
Date Ownership:	07/22/1931 00:00:00

A2
SE
0 - 1/8 Mile
Lower

FED USGS **USGS2151431**

Agency cd:	USGS	Site no:	395749075075901
Site name:	PH 274		
Latitude:	395749		
Longitude:	0750759	Dec lat:	39.9637238
Dec lon:	-75.13267626	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	8.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19310722
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	390	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1945-12-19
Water quality data end date:	1945-12-19	Water quality data count:	1
Ground water data begin date:	1931-07-22	Ground water data end date:	1931-07-22
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1931-07-22	12.00	

B3
NW
0 - 1/8 Mile
Higher

PA WELLS **PA1000000025611**

WELLID:	395753075080501	LOCALWELLN:	PH 732
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	308		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96472		
LONGITUDED:	-75.13472		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30043		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1893 00:00:00
Driller:	-398
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	UNKNOWN

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported
A A P G:	BEDROCK		
Lithology:	UNKNOWN		
Contributing Unit:	SECONDARY		
Top Of Interval:	78	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

B4
NW
0 - 1/8 Mile
Higher

FED USGS **USGS2151453**

Agency cd:	USGS	Site no:	395753075080501
Site name:	PH 732		
Latitude:	395753		
Longitude:	0750805	Dec lat:	39.96483491
Dec lon:	-75.13434301	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	13.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	18930101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	308	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

C5
ENE **PA WELLS** **PA1000000025608**
0 - 1/8 Mile
Higher

WELLID:	395753075075701	LOCALWELLN:	PH 271
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	64		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96472		
LONGITUDED:	-75.1325		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30040

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1912 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 52
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 64
Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PA SUGAR CO
Date Ownership: 01/01/1912 00:00:00

C6
ENE **PA WELLS** **PA1000000025609**
0 - 1/8 Mile
Higher

WELLID: 395753075075702
LOCALWELLN: PH 272
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 69
ELEVATION: 10
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96472
LONGITUDED: -75.1325

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30041

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1912 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: 58
Casing Diameter: 8
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 69
Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PA SUGAR CO
Date Ownership: 01/01/1912 00:00:00

C7
ENE
0 - 1/8 Mile
Higher

PA WELLS **PA1000000025610**

WELLID: 395753075075703
LOCALWELLN: PH 273
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 215
ELEVATION: 10
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96472
LONGITUDED: -75.1325

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30042

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1912 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	67	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	215	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PA SUGAR CO
Date Ownership: 01/01/1912 00:00:00

C8
ENE **FED USGS** **USGS2151452**
0 - 1/8 Mile
Higher

Agency cd:	USGS	Site no:	395753075075703
Site name:	PH 273		
Latitude:	395753		
Longitude:	0750757	Dec lat:	39.9648349
Dec lon:	-75.13212068	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	10.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19120101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	215	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

C9
ENE **FED USGS** **USGS2151450**
0 - 1/8 Mile
Higher

Agency cd:	USGS	Site no:	395753075075701
Site name:	PH 271		
Latitude:	395753		
Longitude:	0750757	Dec lat:	39.9648349
Dec lon:	-75.13212068	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	10.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19120101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	64.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1912-01-01	Ground water data end date:	1912-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1912-01-01	30.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C10
ENE
0 - 1/8 Mile
Higher | **FED USGS** | **USGS2151451**

Agency cd:	USGS	Site no:	395753075075702
Site name:	PH 272		
Latitude:	395753		
Longitude:	0750757	Dec lat:	39.9648349
Dec lon:	-75.13212068	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	10.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19120101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	69.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1912-01-01	Ground water data end date:	1912-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1912-01-01	30.00	

A11
SE
0 - 1/8 Mile
Lower | **PA WELLS** | **PA1000000025407**

WELLID:	395747075075601	LOCALWELLN:	PH 275
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	400		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96306
LONGITUDED: -75.13222
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30034

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 12/26/1945 00:00:00
Driller: 0249
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 72 Casing Diameter: 10
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 72.5 Hole Diameter: 10

Top Of Hole: 72.5
Bottom Of Hole: 400 Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

A A P G: BEDROCK
Lithology: UNKNOWN
Contributing Unit: NO WATER
Top Of Interval: 63 Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PA SUGAR CO
Date Ownership: 12/26/1945 00:00:00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A12
SE
0 - 1/8 Mile
Lower

FED USGS **USGS2151420**

Agency cd:	USGS	Site no:	395747075075601
Site name:	PH 275		
Latitude:	395747		
Longitude:	0750756	Dec lat:	39.96316825
Dec lon:	-75.13184289	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	13.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19451226
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	400	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1945-12-26	Ground water data end date:	1945-12-26
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1945-12-26	22.13	

D13
NNW
1/8 - 1/4 Mile
Higher

FED USGS **USGS2151314**

Agency cd:	USGS	Site no:	395759075080601
Site name:	PH 270		
Latitude:	395759		
Longitude:	0750806	Dec lat:	39.96650156
Dec lon:	-75.13462081	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000

Altitude:	14.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19411120
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	245	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-12-03
Water quality data end date:	1956-02-10	Water quality data count:	4
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

D14
NNW **PA WELLS** **PA1000000025843**
1/8 - 1/4 Mile
Higher

WELLID:	395759075080601	LOCALWELLN:	PH 270
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	245		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96639		
LONGITUDED:	-75.135		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30491		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	11/20/1941 00:00:00
Driller:	0297
Source Cons Data:	WELL OWNER
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	65	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	245	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	NICHOLSON FILE CO
Date Ownership:	11/20/1941 00:00:00

D15
NNW **PA WELLS** **PA1000000025842**
1/8 - 1/4 Mile
Higher

WELLID:	395759075080901	LOCALWELLN:	PH 269
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	400		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96639		
LONGITUDED:	-75.13583		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30054		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	11/01/1941 00:00:00
Driller:	0297
Source Cons Data:	WELL OWNER
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	62	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	400	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	NICHOLSON FILE CO
Date Ownership:	11/01/1941 00:00:00

D16
NNW **FED USGS** **USGS2151315**
1/8 - 1/4 Mile
Higher

Agency cd:	USGS	Site no:	395759075080901
Site name:	PH 269		
Latitude:	395759		
Longitude:	0750809	Dec lat:	39.96650156
Dec lon:	-75.13545418	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	14.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19411101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	400	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

D17
NW **FED USGS** **USGS2151316**
1/8 - 1/4 Mile
Higher

Agency cd:	USGS	Site no:	395759075081001
Site name:	PH 267		
Latitude:	395759		
Longitude:	0750810	Dec lat:	39.96650156
Dec lon:	-75.13573197	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	14.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	340	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

D18
NW **PA WELLS** **PA1000000025841**
1/8 - 1/4 Mile
Higher

WELLID:	395759075081001	LOCALWELLN:	PH 267
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	340		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96639
LONGITUDED: -75.13611
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30055

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: 1
Source Cons Data: WELL OWNER
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported Casing Diameter: 6
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 340 Hole Diameter: 6

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: NICHOLSON FILE CO
Date Ownership: 12/03/1953 00:00:00

D19
NNW **FED USGS** **USGS2151326**
1/8 - 1/4 Mile
Higher

Agency cd:	USGS	Site no:	395800075080801
Site name:	PH 268		
Latitude:	395800		
Longitude:	0750808	Dec lat:	39.96677934
Dec lon:	-75.13517639	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	14.00	Altitude method:	M
Altitude accuracy:	5	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	340	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

D20
NNW **PA WELLS** **PA1000000025881**
1/8 - 1/4 Mile
Higher

WELLID:	395800075080801	LOCALWELLN:	PH 268
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	340		
ELEVATION:	15		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	5		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96667		
LONGITUDED:	-75.13556		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30057

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: 1
Source Cons Data: WELL OWNER
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported
Casing Diameter: 6
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 6

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: NICHOLSON FILE CO
Date Ownership: 12/03/1953 00:00:00

E21
North
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000026121**

WELLID: 395806075080001
LOCALWELLN: PH 276
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 85
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 5
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96833
LONGITUDED: -75.13333

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30063

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1938 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 65
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: WEST CO
Date Ownership: 01/01/1938 00:00:00

Owner: STOCKWELL RUBBER CO
Date Ownership: 12/10/1953 00:00:00

E22
North
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151376**

Agency cd: USGS
Site name: PH 276
Latitude: 395806
Longitude: 0750800
Dec lon: -75.13295406
Coor accr: S
Dec latlong datum: NAD83
State: 42
Country: US
Location map: PHILADELPHIA
Site no: 395806075080001
Dec lat: 39.96844599
Coor meth: M
Latlong datum: NAD27
District: 42
County: 101
Land net: Not Reported
Map scale: 24000

Altitude:	21.00	Altitude method:	M
Altitude accuracy:	5	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19380101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	85.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1938-01-01	Ground water data end date:	1938-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1938-01-01	28.00	

F23
NNE **PA WELLS** **PA1000000026120**
1/4 - 1/2 Mile
Higher

WELLID:	395806075075201	LOCALWELLN:	PH 277
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	225		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96833		
LONGITUDED:	-75.13111		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30494		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1946 00:00:00
Driller:	-387
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	33	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	JOSEPH H SMITH & CO
Date Ownership:	01/01/1946 00:00:00
Owner:	HOPPLE PRINTING CO
Date Ownership:	12/12/1978 00:00:00

F24
NNE **FED USGS** **USGS2151375**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	395806075075201
Site name:	PH 277		
Latitude:	395806		
Longitude:	0750752	Dec lat:	39.96844599
Dec lon:	-75.13073173	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	22.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19460101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	225	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 1946-09-04
Water quality data end date: 1953-12-03
Water quality data count: 2
Ground water data begin date: 1978-12-12
Ground water data end date: 1978-12-12
Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-12-12	17.15	

Note: Foreign substance was present on the surface of the water.

G25
WNW
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000025804**

WELLID: 395758075082401
LOCALWELLN: PH 278
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 21
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96611
LONGITUDED: -75.14
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30051

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1919 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported
Casing Diameter: 6
Casing: UNKNOWN

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	21	Hole Diameter:	6

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	AMERICAN STORES CO
Date Ownership:	01/01/1919 00:00:00

G26
WNW **FED USGS** **USGS2151487**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	395758075082401
Site name:	PH 278		
Latitude:	395758		
Longitude:	0750824	Dec lat:	39.96622379
Dec lon:	-75.13962105	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	17.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19190101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	21.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

G27
WNW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151478**

Agency cd:	USGS	Site no:	395756075082501
Site name:	PH 279		
Latitude:	395756		
Longitude:	0750825	Dec lat:	39.96566824
Dec lon:	-75.13989884	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	18.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19200101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	26.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G28
WNW
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000025719**

WELLID:	395756075082501	LOCALWELLN:	PH 279
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	26		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96556		
LONGITUDED:	-75.14028		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30050

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1920 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	26	Hole Diameter:	6

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: AMERICAN STORES CO
Date Ownership: 01/01/1920 00:00:00

H29
NW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151362**

Agency cd:	USGS	Site no:	395805075081901
Site name:	PH 252		
Latitude:	395805		
Longitude:	0750819	Dec lat:	39.96816822
Dec lon:	-75.1382321	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	18.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19490610
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	36.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-05-13
Water quality data end date:	1956-01-20	Water quality data count:	2
Ground water data begin date:	1949-06-10	Ground water data end date:	1949-06-10
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949-06-10	16.00	

H30
NW
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000026074**

WELLID:	395805075081901	LOCALWELLN:	PH 252
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	36		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96806		
LONGITUDED:	-75.13861		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30493		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	06/10/1949 00:00:00
Driller:	0249
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	19	Casing Diameter:	12
Casing:	UNKNOWN		
Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	18
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	36	Hole Diameter:	12

Screen Opening Information:

Top Open Interval:	19		
Bottom Open Interval:	36	Diameter Open Interval:	12
Open Interval Material:	BRASS OR BRONZE		
Opening:	SCREEN		

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	C SCHMIDT & SONS INC
Date Ownership:	06/10/1949 00:00:00

H31
NW **PA WELLS** **PA1000000025994**
1/4 - 1/2 Mile
Higher

WELLID:	395803075082201	LOCALWELLN:	PH 253
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	1000		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.9675		
LONGITUDED:	-75.13944		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30060

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 08/26/1949 00:00:00
Driller: 0249
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	60	Casing Diameter:	8
Casing:	UNKNOWN		
Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	12
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: C SCHMIDT & SONS INC
Date Ownership: 08/26/1949 00:00:00

H32
NW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151347**

Agency cd:	USGS	Site no:	395803075082201
Site name:	PH 253		
Latitude:	395803		
Longitude:	0750822	Dec lat:	39.96761267
Dec lon:	-75.13906547	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000

Altitude:	18.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19490826
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	1000	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1949-08-26	Ground water data end date:	1949-08-26
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949-08-26	17.00	

H33
NW **PA WELLS** **PA1000000026122**
1/4 - 1/2 Mile
Higher

WELLID:	395806075082001	LOCALWELLN:	PH 254
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	38		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96833		
LONGITUDED:	-75.13889		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30064		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	Not Reported
Driller:	1
Source Cons Data:	USGS OR PAGS
Method Cons:	DUG
Finish:	WALLED

Casing Information:

Top Of Casing:	11	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	38	Casing Diameter:	96
Casing:	ROCK OR STONE		

Hole Information:

Top Of Hole:	11		
Bottom Of Hole:	38	Hole Diameter:	96

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	C SCHMIDT & SONS INC
Date Ownership:	05/13/1954 00:00:00

H34
NW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151377**

Agency cd:	USGS	Site no:	395806075082001
Site name:	PH 254		
Latitude:	395806		
Longitude:	0750820	Dec lat:	39.968446
Dec lon:	-75.13850989	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	20.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	38.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date: 0000-00-00
Water quality data count: 0
Ground water data begin date: 1954-05-13
Ground water data end date: 1954-05-13
Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1954-05-13	21.02	

I35
NNW **PA WELLS** **PA1000000026346**
1/4 - 1/2 Mile
Higher

WELLID: 395811075080901 LOCALWELLN: PH 280
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 30
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96972
LONGITUDED: -75.13583
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30066

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1930 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 30 Hole Diameter: 4.5

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	SHEARERS DAIRIES INC
Date Ownership:	01/01/1930 00:00:00

I36
NNW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151233**

Agency cd:	USGS	Site no:	395811075080901
Site name:	PH 280		
Latitude:	395811		
Longitude:	0750809	Dec lat:	39.96983487
Dec lon:	-75.13545418	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	18.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19300101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	30.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1930-01-01	Ground water data end date:	1930-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1930-01-01	14.00	

J37
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151508**

Agency cd:	USGS	Site no:	395735075082106
Site name:	PH 262		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19170101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	49.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1917-01-01	Ground water data end date:	1917-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1917-01-01	5.00	

J38
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151504**

Agency cd:	USGS	Site no:	395735075082102
Site name:	PH 258		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19090101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	27.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1909-01-01	Ground water data end date:	1909-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1909-01-01	2.00	

J39
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151506**

Agency cd:	USGS	Site no:	395735075082104
Site name:	PH 260		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19090101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	27.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1909-01-01	Ground water data end date:	1909-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1909-01-01	2.00	

J40
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151507**

Agency cd:	USGS	Site no:	395735075082105
Site name:	PH 261		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19150101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	62.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1915-01-01	Ground water data end date:	1915-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1915-01-01	5.00	

J41
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151503**

Agency cd:	USGS	Site no:	395735075082101
Site name:	PH 257		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19090101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	27.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1909-01-01	Ground water data end date:	1909-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1909-01-01	2.00	

J42
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151511**

Agency cd:	USGS	Site no:	395735075082109
Site name:	PH 265		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19350101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	50.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

J43
SW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151510**

Agency cd:	USGS	Site no:	395735075082108
Site name:	PH 264		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19170101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	51.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1917-01-01	Ground water data end date:	1917-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1917-01-01	5.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

J44
SW
1/4 - 1/2 Mile
Higher | **FED USGS** | **USGS2151505**

Agency cd:	USGS	Site no:	395735075082103
Site name:	PH 259		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19090101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	27.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1909-01-01	Ground water data end date:	1909-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1909-01-01	2.00	

J45
SW
1/4 - 1/2 Mile
Higher | **FED USGS** | **USGS2151509**

Agency cd:	USGS	Site no:	395735075082107
Site name:	PH 263		
Latitude:	395735		
Longitude:	0750821	Dec lat:	39.95983494
Dec lon:	-75.13878767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000

Altitude:	15.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19170101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	50.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1917-01-01	Ground water data end date:	1917-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1917-01-01	5.00	

J46
SW **PA WELLS** **PA1000000024949**
1/4 - 1/2 Mile
Higher

WELLID:	395735075082103	LOCALWELLN:	PH 259
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	27		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95972		
LONGITUDED:	-75.13917		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30012		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1909 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	10	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	PHILA COLD STORAGE C
Date Ownership:	01/01/1909 00:00:00

J47
SW **PA WELLS** **PA1000000024950**
1/4 - 1/2 Mile
Higher

WELLID:	395735075082104	LOCALWELLN:	PH 260
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	27		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95972		
LONGITUDED:	-75.13917		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30013

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1909 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 10
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 8

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1909 00:00:00

J48
SW **PA WELLS** **PA1000000024947**
1/4 - 1/2 Mile
Higher

WELLID: 395735075082101
LOCALWELLN: PH 257
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 27
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.13917

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30010

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1909 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 10
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 8

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1909 00:00:00

J49
SW **PA WELLS** **PA1000000024948**
1/4 - 1/2 Mile
Higher

WELLID: 395735075082102
LOCALWELLN: PH 258
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 27
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.13917

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30011

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1909 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 10
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 8

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1909 00:00:00

J50
SW
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000024951**

WELLID: 395735075082105
LOCALWELLN: PH 261
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 62
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.13917

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30014

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1915 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported
Casing Diameter: 6
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 62
Hole Diameter: 6

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1915 00:00:00

J51
SW
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000024954**

WELLID: 395735075082108
LOCALWELLN: PH 264
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 51
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.13917

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30017

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1917 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported
Casing Diameter: 8
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 51
Hole Diameter: 8

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1917 00:00:00

J52
SW
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000024955**

WELLID: 395735075082109
LOCALWELLN: PH 265
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 50
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.13917

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30018

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1935 00:00:00
Driller: 0297
Source Cons Data: WELL OWNER
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	10
Casing:	UNKNOWN		
Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	12
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	50	Hole Diameter:	10

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1935 00:00:00

J53
SW **PA WELLS** **PA1000000024952**
1/4 - 1/2 Mile
Higher

WELLID:	395735075082106	LOCALWELLN:	PH 262
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	49		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		

LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95972		
LONGITUDED:	-75.13917		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30015		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1917 00:00:00		
Driller:	0297		
Source Cons Data:	DRILLER'S RECORD		
Method Cons:	CABLE TOOL		
Finish:	SCREEN		

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	49	Hole Diameter:	8

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	PHILA COLD STORAGE C
Date Ownership:	01/01/1917 00:00:00

J54
SW **PA WELLS** **PA1000000024953**
1/4 - 1/2 Mile
Higher

WELLID:	395735075082107	LOCALWELLN:	PH 263
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	50		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.13917
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30016

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1917 00:00:00
Driller: 0297
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported Casing Diameter: 8
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 50 Hole Diameter: 8

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA COLD STORAGE C
Date Ownership: 01/01/1917 00:00:00

I55
NNW **PA WELLS** **PA1000000026378**
1/4 - 1/2 Mile
Higher

WELLID: 395812075080901 LOCALWELLN: PH 281
COUNTY: PHILADELPHIA
AAPG: 112TRNN
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 38
ELEVATION: 20
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.97
LONGITUDED: -75.13583
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30495

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 04/18/1952 00:00:00
Driller: 0249
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 27 Casing Diameter: 8
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0 Hole Diameter: 8

Screen Opening Information:
Top Open Interval: 34
Bottom Open Interval: Not Reported Diameter Open Interval: Not Reported
Open Interval Material: UNKNOWN
Opening: SCREEN

Top Open Interval: 34
Bottom Open Interval: 38 Diameter Open Interval: 8
Open Interval Material: UNKNOWN
Opening: SCREEN

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: UNUSED
Water Use: UNUSED

Owner Information:

Owner:	SHEARERS DAIRIES INC
Date Ownership:	04/18/1952 00:00:00

I56
NNW **FED USGS** **USGS2151236**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	395812075080901
Site name:	PH 281		
Latitude:	395812		
Longitude:	0750809	Dec lat:	39.97011265
Dec lon:	-75.13545419	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	18.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19520418
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	38.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-05-12
Water quality data end date:	1956-02-29	Water quality data count:	2
Ground water data begin date:	1952-04-18	Ground water data end date:	1952-04-18
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1952-04-18	12.50	

H57
NW **PA WELLS** **PA1000000026211**
1/4 - 1/2 Mile
Higher

WELLID:	395808075082201	LOCALWELLN:	PH 775
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	0		
ELEVATION:	23.4		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.1		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96889
LONGITUDED: -75.13944
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30065

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: 1
Source Cons Data: OTHER/UNKNOWN/UNSPECIFIED
Method Cons: DRIVEN
Finish: SAND POINT

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: UNUSED
Water Use: UNUSED

Owner Information:
Owner: C SCHMIDT & SONS INC
Date Ownership: 10/16/1979 00:00:00

H58
NW
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151387**

Agency cd: USGS Site no: 395808075082201
Site name: PH 775
Latitude: 395808
Longitude: 0750822 Dec lat: 39.96900155
Dec lon: -75.13906547 Coor meth: M
Coor accr: S Latlong datum: NAD27
Dec latlong datum: NAD83 District: 42
State: 42 County: 101
Country: US Land net: Not Reported
Location map: PHILADELPHIA Map scale: 24000
Altitude: 23.44 Altitude method: L
Altitude accuracy: .1 Altitude datum: NGVD29
Hydrologic: Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.
Topographic: Valley flat
Site type: Ground-water other than Spring Date construction: Not Reported
Date inventoried: Not Reported Mean greenwich time offset: EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	444209600
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

K59
West
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151434**

Agency cd:	USGS	Site no:	395750075083401
Site name:	PH 232		
Latitude:	395750		
Longitude:	0750834	Dec lat:	39.96400159
Dec lon:	-75.14239897	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	36.00	Altitude method:	L
Altitude accuracy:	.1	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	40.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1979-08-21
Water quality data end date:	1979-08-21	Water quality data count:	1
Ground water data begin date:	1978-12-08	Ground water data end date:	1978-12-08
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-12-08	26.64	

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

K60
West
1/4 - 1/2 Mile
Higher | **PA WELLS** | **PA1000000025499**

WELLID:	395750075083401	LOCALWELLN:	PH 232
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	40		
ELEVATION:	36		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.1		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96389		
LONGITUDED:	-75.14278		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30490		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	Not Reported
Driller:	1
Source Cons Data:	WELL OWNER
Method Cons:	DUG
Finish:	WALLED

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	60
Casing:	ROCK OR STONE		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	40	Hole Diameter:	60

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	ORTLIEB BREWING CO
Date Ownership:	01/01/1900 00:00:00

K61
West
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151454**

Agency cd:	USGS	Site no:	395753075083401
Site name:	PH 233		
Latitude:	395753		
Longitude:	0750834	Dec lat:	39.96483491
Dec lon:	-75.14239897	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	32.00	Altitude method:	L
Altitude accuracy:	.1	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	40.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1978-12-08	Ground water data end date:	1978-12-08
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-12-08	16.72	

Note: Other conditions existed that would affect the measured water level.

K62
West
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000025612**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

WELLID:	395753075083401	LOCALWELLN:	PH 233
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	40		
ELEVATION:	32		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.1		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96472		
LONGITUDED:	-75.14278		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30044		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	Not Reported
Driller:	1
Source Cons Data:	WELL OWNER
Method Cons:	DUG
Finish:	WALLED

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	60
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	40	Hole Diameter:	5

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	ORTLIEB BREWING CO
Date Ownership:	01/01/1900 00:00:00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

K63
West
1/4 - 1/2 Mile
Higher

FED USGS **USGS2151435**

Agency cd:	USGS	Site no:	395750075083501
Site name:	PH 231		
Latitude:	395750		
Longitude:	0750835	Dec lat:	39.96400159
Dec lon:	-75.14267676	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	36.00	Altitude method:	L
Altitude accuracy:	.1	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	40.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1978-12-08	Ground water data end date:	1978-12-08
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-12-08	25.27	

K64
West
1/4 - 1/2 Mile
Higher

PA WELLS **PA1000000025498**

WELLID:	395750075083501	LOCALWELLN:	PH 231
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	40		
ELEVATION:	36		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.1		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96389
LONGITUDED: -75.14306
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30036

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: 1
Source Cons Data: WELL OWNER
Method Cons: DUG
Finish: WALLED

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported Casing Diameter: 60
Casing: ROCK OR STONE

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 40 Hole Diameter: 60

Geohydrologic Information:
A A P G: 112TRNN
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: UNUSED
Water Use: UNUSED

Owner Information:
Owner: ORTLIEB BREWING CO
Date Ownership: 01/01/1900 00:00:00

L65
WSW **PA WELLS** **PA1000000025171**
1/4 - 1/2 Mile
Higher

WELLID: 395741075083301 LOCALWELLN: PH 228
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 500
ELEVATION: 30
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA:OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96139
LONGITUDED: -75.1425
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30488

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 06/10/1937 00:00:00
Driller: 0249
Source Cons Data: WELL OWNER
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Construction Date: 08/12/1943 00:00:00
Driller: 1
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: SWEETIE BEVERAGES
Date Ownership: 06/10/1937 00:00:00

L66
WSW **FED USGS** **USGS2151564**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	395741075083301
Site name:	PH 228		
Latitude:	395741		
Longitude:	0750833	Dec lat:	39.9615016
Dec lon:	-75.14212117	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	33.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19370610
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	500	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-05-18
Water quality data end date:	1954-05-18	Water quality data count:	1
Ground water data begin date:	1943-08-12	Ground water data end date:	1943-08-12
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1943-08-12	31.05	

M67
West
1/2 - 1 Mile
Higher

PA WELLS **PA1000000025657**

WELLID:	395754075083701	LOCALWELLN:	PH 243
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	33		
ELEVATION:	30		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.965		
LONGITUDED:	-75.14361		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30048

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: 1
Source Cons Data: USGS OR PAGS
Method Cons: DUG
Finish: WALLED

Casing Information:

Top Of Casing:	19	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	82
Casing:	BRICK		

Hole Information:

Top Of Hole:	19		
Bottom Of Hole:	33	Hole Diameter:	82

Screen Opening Information:

Top Open Interval:	19		
Bottom Open Interval:	33	Diameter Open Interval:	82
Open Interval Material:	UNKNOWN		
Opening:	WALLED		

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: PHILA DAIRY PRODUCTS
Date Ownership: 12/10/1953 00:00:00

M68
West
1/2 - 1 Mile
Higher

FED USGS **USGS2151468**

Agency cd:	USGS	Site no:	395754075083701
Site name:	PH 243		
Latitude:	395754		
Longitude:	0750837	Dec lat:	39.96511269
Dec lon:	-75.14323234	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	32.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	33.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

69
ENE
1/2 - 1 Mile
Higher

Site ID:	51-46031
Groundwater Flow:	E
Shallowest Water Table Depth:	7
Deepest Water Table Depth:	10
Average Water Table Depth:	Not Reported
Date:	09/30/1994

AQUIFLOW **61748**

70
NNW
1/2 - 1 Mile
Higher

Site ID:	51-42133
Groundwater Flow:	Not Reported
Shallowest Water Table Depth:	8
Deepest Water Table Depth:	Not Reported
Average Water Table Depth:	Not Reported
Date:	06/03/1994

AQUIFLOW **46513**

M71
West
1/2 - 1 Mile
Higher

FED USGS **USGS2151456**

Agency cd:	USGS	Site no:	395753075083902
Site name:	PH 245		
Latitude:	395753		
Longitude:	0750839	Dec lat:	39.96483491
Dec lon:	-75.14378792	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	35.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19380101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	500	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1953-12-10	Ground water data end date:	1953-12-10
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1953-12-10	22.78	

M72
West
1/2 - 1 Mile
Higher

FED USGS **USGS2151455**

Agency cd:	USGS	Site no:	395753075083901
Site name:	PH 244		
Latitude:	395753		
Longitude:	0750839	Dec lat:	39.96483491
Dec lon:	-75.14378792	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	35.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19110101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	181	Hole depth:	285
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1911-01-01	Ground water data end date:	1911-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1911-01-01	30.00	

M73
West
1/2 - 1 Mile
Higher

PA WELLS **PA1000000025613**

WELLID:	395753075083901	LOCALWELLN:	PH 244
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	181		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96472		
LONGITUDED:	-75.14417		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30045		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1911 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	51	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	181	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	HESS BREWING CO
Date Ownership:	01/01/1911 00:00:00

M74
West **PA WELLS** **PA1000000025614**
1/2 - 1 Mile
Higher

WELLID:	395753075083902	LOCALWELLN:	PH 245
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	500		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96472		
LONGITUDED:	-75.14417		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30046		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1938 00:00:00
Driller:	1
Source Cons Data:	WELL OWNER
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	12
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	12

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	PHILA DAIRY PRODUCTS
Date Ownership:	01/01/1938 00:00:00

N75
SSW **FED USGS** **USGS2151608**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395726075082201
Site name:	PH 255		
Latitude:	395726		
Longitude:	0750822	Dec lat:	39.95733496
Dec lon:	-75.13906546	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	10.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19490219
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	61.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date: 0000-00-00
Water quality data count: 0
Ground water data begin date: 1949-02-19
Ground water data end date: 1949-02-19
Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949-02-19	8.00	

N76
SSW **PA WELLS** **PA1000000024627**
1/2 - 1 Mile
Higher

WELLID: 395726075082201 LOCALWELLN: PH 255
COUNTY: PHILADELPHIA
AAPG: 211MRPAL
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 61
ELEVATION: 10
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95722
LONGITUDED: -75.13944
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 29992

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 02/19/1949 00:00:00
Driller: 1
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 40 Casing Diameter: 8
Casing: UNKNOWN

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	61	Hole Diameter:	8

Screen Opening Information:

Top Open Interval:	40		
Bottom Open Interval:	61	Diameter Open Interval:	8
Open Interval Material:	UNKNOWN		
Opening:	SCREEN		

Geohydrologic Information:

A A P G:	211MRPAL		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	GOLIN A
Date Ownership:	02/19/1949 00:00:00

L77
WSW **FED USGS** **USGS2151548**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395739075083701
Site name:	PH 748		
Latitude:	395739		
Longitude:	0750837	Dec lat:	39.96094605
Dec lon:	-75.14323234	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	28.90	Altitude method:	L
Altitude accuracy:	.10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19760301
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	200	Hole depth:	200
Source of depth data:	Not Reported	Project number:	444209600
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-06-09
Water quality data end date:	1980-06-09	Water quality data count:	1
Ground water data begin date:	1978-12-07	Ground water data end date:	1978-12-07
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-12-07	15.90	

L78
WSW **PA WELLS** **PA1000000025081**
1/2 - 1 Mile
Higher

WELLID:	395739075083701	LOCALWELLN:	PH 748
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	200		
ELEVATION:	28.9		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96083		
LONGITUDED:	-75.14361		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30487		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	03/01/1976 00:00:00
Driller:	0413
Source Cons Data:	DRILLER'S RECORD
Method Cons:	AIR ROTARY
Finish:	OPEN HOLE

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	200	Hole Diameter:	0

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	UNKNOWN		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	WITHDRAWAL
Water Use:	OTHER

Owner Information:

Owner:	CITY OF PHILADELPHIA
Date Ownership:	04/01/1976 00:00:00

O79
NW
1/2 - 1 Mile
Higher

FED USGS **USGS2151249**

Agency cd:	USGS	Site no:	395813075083201
Site name:	PH 282		
Latitude:	395813		
Longitude:	0750832	Dec lat:	39.97039043
Dec lon:	-75.14184338	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	23.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19040101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	750	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1949-09-14	Ground water data end date:	1949-09-14
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949-09-14	18.00	

O80
NW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000026418**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

WELLID:	395813075083201	LOCALWELLN:	PH 282
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	750		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.97028		
LONGITUDED:	-75.14222		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30069		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1904 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	54	Casing Diameter:	10
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	10

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	LOUIS BURK INC
Date Ownership:	01/01/1904 00:00:00

Map ID Direction Distance Elevation		Database	EDR ID Number
P81 **SW** **1/2 - 1 Mile** **Higher**		**PA WELLS**	**PA1000000024832**

WELLID:	395732075083701	LOCALWELLN:	PH 226
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	200		
ELEVATION:	30		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95889		
LONGITUDED:	-75.14361		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30004		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1906 00:00:00		
Driller:	-389		
Source Cons Data:	DRILLER'S RECORD		
Method Cons:	CABLE TOOL		
Finish:	OPEN HOLE		

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	42	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	200	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	MATTHEWS CHARLES J
Date Ownership:	01/01/1906 00:00:00

P82
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2151655**

Agency cd:	USGS	Site no:	395732075083701
Site name:	PH 226		
Latitude:	395732		
Longitude:	0750837	Dec lat:	39.95900162
Dec lon:	-75.14323234	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	27.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19060101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1978-12-07	Ground water data end date:	1978-12-07
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-12-07	15.48	

Q83
NE
1/2 - 1 Mile
Higher

FED USGS **USGS2151276**

Agency cd:	USGS	Site no:	395816075073301
Site name:	PH 796		
Latitude:	395816		
Longitude:	0750733	Dec lat:	39.97122374
Dec lon:	-75.1254537	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	14.40	Altitude method:	L
Altitude accuracy:	.5	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19760501
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRENTON AQUIFER		
Well depth:	17.5	Hole depth:	18.0
Source of depth data:	Not Reported	Project number:	444209600
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-10-10
Water quality data end date:	1980-10-10	Water quality data count:	1
Ground water data begin date:	1980-10-09	Ground water data end date:	1980-10-09
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1980-10-09	8.67	

Q84
NE
1/2 - 1 Mile
Higher

PA WELLS **PA1000000026514**

WELLID:	395816075073301	LOCALWELLN:	PH 796
COUNTY:	PHILADELPHIA		
AAPG:	112TRNN		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	17.5		
ELEVATION:	14.5		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.5		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.97111		
LONGITUDED:	-75.12583		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30499

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 05/01/1976 00:00:00
Driller: 1
Source Cons Data: WELL OWNER
Method Cons: BORED OR AUGERED
Finish: GRAVEL PACK W/SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	12.5	Casing Diameter:	1.5
Casing:	PVC OR OTHER PLASTIC		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	18	Hole Diameter:	1.5

Screen Opening Information:

Top Open Interval:	12.5		
Bottom Open Interval:	17.5	Diameter Open Interval:	1.5
Open Interval Material:	PLASTIC		
Opening:	PERFORATED, POROUS, OR SLOTTED CASING		

Geohydrologic Information:

A A P G:	112TRNN		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: OBSERVATION
Water Use: UNUSED

Owner Information:
Owner: CITY OF PHILA
Date Ownership: 05/01/1976 00:00:00

Other ID Information:

Other Identifier:	B3-30-1	Other I D Assignor:	WESTON CNSLTNTS

O85
NW
1/2 - 1 Mile
Higher

FED USGS **USGS2151250**

Agency cd:	USGS	Site no:	395813075083501
Site name:	PH 283		
Latitude:	395813		
Longitude:	0750835	Dec lat:	39.97039043
Dec lon:	-75.14267676	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	21.90	Altitude method:	L
Altitude accuracy:	.1	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19160101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	380	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-06-09
Water quality data end date:	1980-06-09	Water quality data count:	1
Ground water data begin date:	1979-01-18	Ground water data end date:	1979-01-18
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1979-01-18	9.46	

O86
NW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000026417**

WELLID:	395813075083501	LOCALWELLN:	PH 283
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	380		
ELEVATION:	21.9		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.1		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.97028		
LONGITUDED:	-75.14306		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30497

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1916 00:00:00
Driller: -387
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 25
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: WITHDRAWAL
Water Use: IRRIGATION

Owner Information:
Owner: JONES DAIRY CO
Date Ownership: 01/01/1916 00:00:00

Owner: DEGREGORIO ANTHONY
Date Ownership: 01/18/1979 00:00:00

P87
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2151645**

Agency cd: USGS
Site no: 395731075083801
Site name: PH 227
Latitude: 395731
Longitude: 0750838
Dec lat: 39.95872384
Dec lon: -75.14351013
Coor meth: M
Coor accr: S
Latlong datum: NAD27
Dec latlong datum: NAD83
District: 42
State: 42
County: 101
Country: US
Land net: Not Reported
Location map: PHILADELPHIA
Map scale: 24000

Altitude:	25.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19070101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1907-01-01	Ground water data end date:	1907-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1907-01-01	14.00	

P88
SW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000024792**

WELLID:	395731075083801	LOCALWELLN:	PH 227
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	200		
ELEVATION:	30		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95861		
LONGITUDED:	-75.14389		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	29998		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1907 00:00:00
Driller:	-389
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	42	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	200	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	MATTHEWS CHARLES J
Date Ownership:	01/01/1907 00:00:00

R89
NNW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000026694**

WELLID:	395821075082301	LOCALWELLN:	PH 634
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	200		
ELEVATION:	30		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.9725		
LONGITUDED:	-75.13972		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30072

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Bottom Of Casing: 33
Casing: UNKNOWN
Casing Wall Thickness: Not Reported
Casing Diameter: 8

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: J P MALLON MILK
Date Ownership: 01/01/1919 00:00:00

Owner: C A SCHOFIELD CO
Date Ownership: 12/13/1954 00:00:00

R90
NNW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000026695**

WELLID: 395821075082302
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 76
ELEVATION: 30
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LOCALWELLN: PH 633

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.9725
LONGITUDED: -75.13972
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30073

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1919 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 11 Casing Diameter: 8
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0 Hole Diameter: 8

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: J P MALLON MILK
Date Ownership: 01/01/1919 00:00:00

Owner: C A SCHOFIELD CO
Date Ownership: 12/13/1954 00:00:00

R91
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS2151132**

Agency cd:	USGS	Site no:	395821075082301
Site name:	PH 634		
Latitude:	395821		
Longitude:	0750823	Dec lat:	39.97261264
Dec lon:	-75.13934327	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	30.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

R92
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS2151133**

Agency cd:	USGS	Site no:	395821075082302
Site name:	PH 633		
Latitude:	395821		
Longitude:	0750823	Dec lat:	39.97261264
Dec lon:	-75.13934327	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	30.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19190101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	76.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

S93
SW **FED USGS** **USGS2151589**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395722075082801
Site name:	PH 741		
Latitude:	395722		
Longitude:	0750828	Dec lat:	39.95622386
Dec lon:	-75.14073221	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	22	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19570101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	70	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1968-12-11
Water quality data end date:	1968-12-11	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

S94
SW **PA WELLS** **PA1000000024503**
1/2 - 1 Mile
Higher

WELLID:	395722075082801	LOCALWELLN:	PH 741
COUNTY:	PHILADELPHIA		
AAPG:	211MRPAL		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	70		
ELEVATION:	20		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95611
LONGITUDED: -75.14111
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30483

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1957 00:00:00
Driller: 0503
Source Cons Data: OTHER/UNKNOWN/UNSPECIFIED
Method Cons: OTHER/UNKNOWN
Finish: SCREEN

Geohydrologic Information:
A A P G: 211MRPAL
Lithology: SAND AND GRAVEL
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: NORTHWOOD RUBBER CO
Date Ownership: 01/01/1957 00:00:00

95
NE
1/2 - 1 Mile
Higher

Site ID: 51-45341
Groundwater Flow: SSE
Shallowest Water Table Depth: 5.07
Deepest Water Table Depth: 6.41
Average Water Table Depth: Not Reported
Date: 11/10/1992

AQUIFLOW **61728**

T96
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS2151737**

Agency cd:	USGS	Site no:	395718075082601
Site name:	PH 206		
Latitude:	395718		
Longitude:	0750826	Dec lat:	39.95511275
Dec lon:	-75.14017663	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	10.55	Altitude method:	L
Altitude accuracy:	.02	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19480720
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	61.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1954-05-13
Water quality data end date:	1956-02-10	Water quality data count:	2
Ground water data begin date:	1978-11-09	Ground water data end date:	1978-11-09
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-11-09	7.87	

T97
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS2151738**

Agency cd:	USGS	Site no:	395718075082602
Site name:	PH 776		
Latitude:	395718		
Longitude:	0750826	Dec lat:	39.95511275
Dec lon:	-75.14017663	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	8.95	Altitude method:	L
Altitude accuracy:	.02	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	444209600
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1978-11-09	Ground water data end date:	1981-03-23
Ground water data count:	9		

Ground-water levels, Number of Measurements: 9

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1981-03-23	5.23		1979-12-20	4.92	
1979-11-26	5.05		1979-10-23	4.92	
1979-09-24	4.66		1979-08-27	5.15	
1979-07-24	4.54		1979-06-22	4.72	
1978-11-09	6.70				

T98
SSW **PA WELLS** **PA1000000024368**
1/2 - 1 Mile
Higher

WELLID:	395718075082602	LOCALWELLN:	PH 776
COUNTY:	PHILADELPHIA		
AAPG:	1		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	0		
ELEVATION:	8.9		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.02		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.955		
LONGITUDED:	-75.14056		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	29987		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	M WILDSTEIN & CO
Date Ownership:	11/09/1978 00:00:00

T99 **PA WELLS** **PA1000000024369**
SSW
1/2 - 1 Mile
Higher

WELLID:	395718075082601	LOCALWELLN:	PH 206
COUNTY:	PHILADELPHIA		
AAPG:	211MRPAL		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	61		
ELEVATION:	10.5		
ELEVMETHOD:	LEVEL OR OTHER SURVEYING METHOD		
ACCURACYOF:	.02		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.955		
LONGITUDED:	-75.14056		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30481		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	07/20/1948 00:00:00
Driller:	0249
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	40	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	61	Hole Diameter:	8

Screen Opening Information:

Top Open Interval:	40		
Bottom Open Interval:	61	Diameter Open Interval:	8
Open Interval Material:	UNKNOWN		
Opening:	SCREEN		

Geohydrologic Information:

A A P G:	211MRPAL		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported
A A P G:	BEDROCK		
Lithology:	UNKNOWN		
Contributing Unit:	NO WATER		
Top Of Interval:	60	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	UNUSED
Water Use:	UNUSED

Owner Information:

Owner:	WILDSTEIN & CO
Date Ownership:	01/01/1948 00:00:00

U100
North **PA WELLS** **PA1000000027008**
1/2 - 1 Mile
Higher

WELLID:	395829075080901	LOCALWELLN:	PH 635
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	330		
ELEVATION:	30		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.97472		
LONGITUDED:	-75.13583		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30078		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	07/09/1932 00:00:00
Driller:	0249
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	37	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	MILLSIDE DAIRIES INC
Date Ownership:	07/09/1932 00:00:00

U101
North
1/2 - 1 Mile
Higher

FED USGS **USGS2151205**

Agency cd:	USGS	Site no:	395829075080901
Site name:	PH 635		
Latitude:	395829		
Longitude:	0750809	Dec lat:	39.97483484
Dec lon:	-75.13545419	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	25.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19320709
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	330	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date: 0000-00-00
Water quality data count: 0
Ground water data begin date: 1932-07-09
Ground water data end date: 1954-12-16
Ground water data count: 2

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1954-12-16	11.56		1932-07-09	11.00	

102
NNW
1/2 - 1 Mile
Higher

Site ID: 51-40363
Groundwater Flow: NE
Shallowest Water Table Depth: 9.5
Deepest Water Table Depth: 12.5
Average Water Table Depth: Not Reported
Date: 09/30/1994

AQUIFLOW **61721**

V103
WSW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000024759**

WELLID: 395730075084501 LOCALWELLN: PH 256
COUNTY: PHILADELPHIA
AAPG: 211MRPAL
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 62
ELEVATION: 30
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95833
LONGITUDED: -75.14583
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 29996

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 06/03/1937 00:00:00
Driller: 0249
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	51	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	62	Hole Diameter:	8

Screen Opening Information:

Top Open Interval:	51		
Bottom Open Interval:	62	Diameter Open Interval:	8
Open Interval Material:	UNKNOWN		
Opening:	SCREEN		

Geohydrologic Information:

A A P G:	211MRPAL		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	E HUBSCHMAN & SONS
Date Ownership:	06/03/1937 00:00:00

V104
WSW **FED USGS** **USGS2151635**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395730075084501
Site name:	PH 256		
Latitude:	395730		
Longitude:	0750845	Dec lat:	39.95844607
Dec lon:	-75.14545467	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	25.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19370603
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	62.0	Hole depth:	253
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1937-06-03	Ground water data end date:	1954-05-12
Ground water data count:	2		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1954-05-12	14.1		1937-06-03	14.00	

W105
WSW
1/2 - 1 Mile
Higher

FED USGS **USGS2151512**

Agency cd:	USGS	Site no:	395735075085102
Site name:	PH 740		
Latitude:	395735		
Longitude:	0750851	Dec lat:	39.95983495
Dec lon:	-75.14712142	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	41.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19560101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	70.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

W106
WSW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000024956**

WELLID:	395735075085102	LOCALWELLN:	PH 740
COUNTY:	PHILADELPHIA		
AAPG:	211MRPAL		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	70		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		

LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA:OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95972
LONGITUDED: -75.1475
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30019

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1956 00:00:00
Driller: -221
Source Cons Data: OTHER/UNKNOWN/UNSPECIFIED
Method Cons: OTHER/UNKNOWN
Finish: SCREEN

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 60 Casing Diameter: 8
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 70 Hole Diameter: 8

Screen Opening Information:
Top Open Interval: 60
Bottom Open Interval: 70 Diameter Open Interval: 8
Open Interval Material: UNKNOWN
Opening: SCREEN

Geohydrologic Information:
A A P G: 211MRPAL
Lithology: SAND
Contributing Unit: PRIMARY
Top Of Interval: Not Reported Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: CRESCENT INK & COLOR
Date Ownership: 01/01/1956 00:00:00

X107
WSW **FED USGS** **USGS2151636**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395730075085001
Site name:	PH 224		
Latitude:	395730		
Longitude:	0750850	Dec lat:	39.95844607
Dec lon:	-75.14684363	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	27.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	1000	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

X108
WSW **PA WELLS** **PA1000000024758**
1/2 - 1 Mile
Higher

WELLID:	395730075085001	LOCALWELLN:	PH 224
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	1000		
ELEVATION:	30		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95833		
LONGITUDED:	-75.14722		

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 29997

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: Not Reported
Driller: -204
Source Cons Data: WELL OWNER
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: Not Reported
Casing Diameter: 10
Casing: UNKNOWN

Hole Information:
Top Of Hole: 0
Bottom Of Hole: 0
Hole Diameter: 10

Geohydrologic Information:
A A P G: 300WSCKO
Lithology: SCHIST
Contributing Unit: PRIMARY
Top Of Interval: Not Reported
Bottom Of Interval: Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: BETZ BREWERY
Date Ownership: 01/01/1896 00:00:00

W109
WSW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000024926**

WELLID: 395734075085401
LOCALWELLN: PH 225
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 260
ELEVATION: 30
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95944
LONGITUDED: -75.14833

DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30485

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 07/01/1949 00:00:00
Driller: -221
Source Cons Data: WELL OWNER
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	50	Casing Diameter:	8
Casing:	UNKNOWN		
Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	112	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	260	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:
Site Use: DESTROYED
Water Use: UNUSED

Owner Information:
Owner: CRESCENT INK & COLOR
Date Ownership: 07/01/1949 00:00:00

W110
WSW
1/2 - 1 Mile
Higher

FED USGS **USGS2151495**

Agency cd:	USGS	Site no:	395734075085401
Site name:	PH 225		
Latitude:	395734		
Longitude:	0750854	Dec lat:	39.95955717
Dec lon:	-75.1479548	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000

Altitude:	30.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19490701
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	260	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-11-04
Water quality data end date:	1956-02-10	Water quality data count:	3
Ground water data begin date:	1949-07-01	Ground water data end date:	1949-07-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949-07-01	18.00	

Y111
SSW **PA WELLS** **PA1000000024091**
1/2 - 1 Mile
Higher

WELLID:	395711075082601	LOCALWELLN:	PH 204
COUNTY:	PHILADELPHIA		
AAPG:	211MRPAL		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	74		
ELEVATION:	10		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95306		
LONGITUDED:	-75.14056		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	29972		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1918 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	74	Hole Diameter:	8

Geohydrologic Information:

A A P G:	211MRPAL		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	LUMMIS & CO
Date Ownership:	01/01/1918 00:00:00

Y112
SSW **FED USGS** **USGS2151838**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395711075082601
Site name:	PH 204		
Latitude:	395711		
Longitude:	0750826	Dec lat:	39.95316832
Dec lon:	-75.14017663	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	10.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19180101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	74.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date: 0000-00-00
Water quality data count: 0
Ground water data begin date: 1918-01-01
Ground water data end date: 1918-01-01
Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1918-01-01	13.00	

Y113
SSW **PA WELLS** **PA1000000024090**
1/2 - 1 Mile
Higher

WELLID: 395711075082701 LOCALWELLN: PH 205
COUNTY: PHILADELPHIA
AAPG: 211MRPAL
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 61
ELEVATION: 15
ELEVMETHOD: LEVEL OR OTHER SURVEYING METHOD
ACCURACYOF: .01
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95306
LONGITUDED: -75.14083
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30480

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 08/01/1928 00:00:00
Driller: 0249
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: SCREEN

Casing Information:
Top Of Casing: 0 Casing Wall Thickness: Not Reported
Bottom Of Casing: 42 Casing Diameter: 8
Casing: UNKNOWN

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	61	Hole Diameter:	8

Screen Opening Information:

Top Open Interval:	40		
Bottom Open Interval:	61	Diameter Open Interval:	8
Open Interval Material:	UNKNOWN		
Opening:	SCREEN		

Geohydrologic Information:

A A P G:	211MRPAL		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	FIRE

Owner Information:

Owner:	LUMMIS & CO
Date Ownership:	01/01/1928 00:00:00
Owner:	NATIONWIDE FURNITURE
Date Ownership:	11/14/1978 00:00:00

Other ID Information:

Other Identifier:	2	Other I D Assignor:	OWNER PA

Y114
SSW **FED USGS** **USGS2151839**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	395711075082701
Site name:	PH 205		
Latitude:	395711		
Longitude:	0750827	Dec lat:	39.95316832
Dec lon:	-75.14045442	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	14.96	Altitude method:	L
Altitude accuracy:	.01	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19280801
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	61.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 1945-12-12
Water quality data end date: 1980-11-06
Water quality data count: 30
Ground water data begin date: 1928-08-25
Ground water data end date: 1979-08-22
Ground water data count: 2

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1979-08-22	11.88		1928-08-25	10.3	

Z115
SW **PA WELLS** **PA1000000024335**
1/2 - 1 Mile
Higher

WELLID: 395717075084001 LOCALWELLN: PH 210
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 363
ELEVATION: 30
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.95472
LONGITUDED: -75.14444
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 29984

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1904 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: 67
Casing Diameter: 8
Casing: UNKNOWN

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	363	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	H O WILBUR & SONS
Date Ownership:	01/01/1904 00:00:00

Z116
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2151722**

Agency cd:	USGS	Site no:	395717075084001
Site name:	PH 210		
Latitude:	395717		
Longitude:	0750840	Dec lat:	39.95483498
Dec lon:	-75.14406571	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	34.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19040101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	363	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1904-01-01	Ground water data end date:	1904-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1904-01-01	16.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

Z117
SW
1/2 - 1 Mile
Higher | **PA WELLS** | **PA1000000024253**

WELLID:	395715075083901	LOCALWELLN:	PH 209
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	200		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95417		
LONGITUDED:	-75.14417		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	29979		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1910 00:00:00		
Driller:	-389		
Source Cons Data:	DRILLER'S RECORD		
Method Cons:	CABLE TOOL		
Finish:	OPEN HOLE		

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	70	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	200	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	LONERGAN CO
Date Ownership:	01/01/1910 00:00:00

Z118
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2151699**

Agency cd:	USGS	Site no:	395715075083901
Site name:	PH 209		
Latitude:	395715		
Longitude:	0750839	Dec lat:	39.95427943
Dec lon:	-75.14378792	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	35.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19100101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1910-01-01	Ground water data end date:	1910-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1910-01-01	22.00	

AA119
NNW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000027122**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

WELLID:	395833075082501	LOCALWELLN:	PH 637
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	500		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.97583		
LONGITUDED:	-75.14028		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30081		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1908 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	33	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	COLLINS MFG CO
Date Ownership:	01/01/1908 00:00:00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

AA120
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS2151053**

Agency cd:	USGS	Site no:	395833075082501
Site name:	PH 637		
Latitude:	395833		
Longitude:	0750825	Dec lat:	39.97594595
Dec lon:	-75.13989885	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	35.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19080101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	500	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1908-01-01	Ground water data end date:	1908-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1908-01-01	8.00	

AB121
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS2151080**

Agency cd:	USGS	Site no:	395836075082001
Site name:	PH 636		
Latitude:	395836		
Longitude:	0750820	Dec lat:	39.97677927
Dec lon:	-75.1385099	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000

Altitude:	30.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19350613
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	366	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1935-06-13	Ground water data end date:	1954-12-13
Ground water data count:	2		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1954-12-13	12.70		1935-06-13	19.6	

AB122
NNW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000027206**

WELLID:	395836075082001	LOCALWELLN:	PH	636
COUNTY:	PHILADELPHIA			
AAPG:	300WSCKO			
TOPOGRAPHY:	VALLEY FLAT			
WELLDEPTH:	366			
ELEVATION:	30			
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP			
ACCURACYOF:	10			
HYDROLOGIC:	02040202			
LATLONGACCURACY:	ACCURATE TO +1 SECOND			
QUAD:	PHILADELPHIA			
TYPEOFSITE:	WELL			
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported	
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)			
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED			
MUNICIPALITY:	PHILADELPHIA			
LATITUDEDD:	39.97667			
LONGITUDED:	-75.13889			
DEPTHTOBED:	0			
DATEDRILLE:	Not Reported			
PAGWIS ID:	30086			

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	06/13/1935 00:00:00
Driller:	-387
Source Cons Data:	OTHER/UNKNOWN/UNSPECIFIED
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	Not Reported	Casing Diameter:	8
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	0	Hole Diameter:	8

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	HEIDELBERGER CONFECT
Date Ownership:	06/13/1935 00:00:00

AC123
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS2151337**

Agency cd:	USGS	Site no:	395801075090601
Site name:	PH 295		
Latitude:	395801		
Longitude:	0750906	Dec lat:	39.96705713
Dec lon:	-75.15128829	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	40.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19110101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	281	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date: 0000-00-00
Water quality data count: 0
Ground water data begin date: 1911-01-01
Ground water data end date: 1911-01-01
Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1911-01-01	34.00	

AC124
WNW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000025910**

WELLID: 395801075090601
LOCALWELLN: PH 295
COUNTY: PHILADELPHIA
AAPG: 300WSCKO
TOPOGRAPHY: VALLEY FLAT
WELLDEPTH: 281
ELEVATION: 40
ELEVMETHOD: INTERPOLATED FROM TOPOGRAPHIC MAP
ACCURACYOF: 10
HYDROLOGIC: 02040202
LATLONGACCURACY: ACCURATE TO +1 SECOND
QUAD: PHILADELPHIA
TYPEOFSITE: WELL
DATECREATE: Not Reported
DATEUPDATE: Not Reported
DATARELIABILITY: FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)
SOURCE DEPTH DATA: OTHER/UNKNOWN/UNSPECIFIED
MUNICIPALITY: PHILADELPHIA
LATITUDEDD: 39.96694
LONGITUDED: -75.15167
DEPTHTOBED: 0
DATEDRILLE: Not Reported
PAGWIS ID: 30058

Agency Use Section:
Agency Use of Site: OBSERVATION
Agency Use Date: Not Reported

Construction Information:
Construction Date: 01/01/1911 00:00:00
Driller: -204
Source Cons Data: DRILLER'S RECORD
Method Cons: CABLE TOOL
Finish: OPEN HOLE

Casing Information:
Top Of Casing: 0
Casing Wall Thickness: Not Reported
Bottom Of Casing: 22
Casing Diameter: 6
Casing: UNKNOWN

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	281	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	MERCK & CO
Date Ownership:	01/01/1911 00:00:00

AC125
West
1/2 - 1 Mile
Higher

PA WELLS **PA1000000025805**

WELLID:	395758075090701	LOCALWELLN:	PH 296
COUNTY:	PHILADELPHIA		
AAPG:	300WSCKO		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	287		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.96611		
LONGITUDED:	-75.15194		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	30052		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1921 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	OPEN HOLE

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	29	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	287	Hole Diameter:	6

Geohydrologic Information:

A A P G:	300WSCKO		
Lithology:	SCHIST		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	MERCK & CO
Date Ownership:	01/01/1921 00:00:00

AC126
West
1/2 - 1 Mile
Higher

FED USGS **USGS2151488**

Agency cd:	USGS	Site no:	395758075090701
Site name:	PH 296		
Latitude:	395758		
Longitude:	0750907	Dec lat:	39.9662238
Dec lon:	-75.15156608	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	40.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19210101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	WISSAHICKON FORMATION,OLIGOCLASE MICA SCHIST		
Well depth:	287	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1921-01-01	Ground water data end date:	1921-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1921-01-01	18.00	

AD127
SW
1/2 - 1 Mile
Higher

PA WELLS **PA1000000024254**

WELLID:	395715075085001	LOCALWELLN:	PH 208
COUNTY:	PHILADELPHIA		
AAPG:	211MRPAL		
TOPOGRAPHY:	VALLEY FLAT		
WELLDEPTH:	67		
ELEVATION:	40		
ELEVMETHOD:	INTERPOLATED FROM TOPOGRAPHIC MAP		
ACCURACYOF:	10		
HYDROLOGIC:	02040202		
LATLONGACCURACY:	ACCURATE TO +1 SECOND		
QUAD:	PHILADELPHIA		
TYPEOFSITE:	WELL		
DATECREATE:	Not Reported	DATEUPDATE:	Not Reported
DATARELIABILITY:	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		
SOURCE DEPTH DATA:	OTHER/UNKNOWN/UNSPECIFIED		
MUNICIPALITY:	PHILADELPHIA		
LATITUDEDD:	39.95417		
LONGITUDED:	-75.14722		
DEPTHTOBED:	0		
DATEDRILLE:	Not Reported		
PAGWIS ID:	29980		

Agency Use Section:

Agency Use of Site:	OBSERVATION
Agency Use Date:	Not Reported

Construction Information:

Construction Date:	01/01/1910 00:00:00
Driller:	-204
Source Cons Data:	DRILLER'S RECORD
Method Cons:	CABLE TOOL
Finish:	SCREEN

Casing Information:

Top Of Casing:	0	Casing Wall Thickness:	Not Reported
Bottom Of Casing:	57	Casing Diameter:	6
Casing:	UNKNOWN		

Hole Information:

Top Of Hole:	0		
Bottom Of Hole:	67	Hole Diameter:	6

Screen Opening Information:

Top Open Interval:	57		
Bottom Open Interval:	67	Diameter Open Interval:	6
Open Interval Material:	UNKNOWN		
Opening:	SCREEN		

Geohydrologic Information:

A A P G:	211MRPAL		
Lithology:	SAND AND GRAVEL		
Contributing Unit:	PRIMARY		
Top Of Interval:	Not Reported	Bottom Of Interval:	Not Reported

Water Use Information:

Site Use:	DESTROYED
Water Use:	UNUSED

Owner Information:

Owner:	WHITMAN & SON
Date Ownership:	01/01/1910 00:00:00

AD128
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2151700**

Agency cd:	USGS	Site no:	395715075085001
Site name:	PH 208		
Latitude:	395715		
Longitude:	0750850	Dec lat:	39.95427943
Dec lon:	-75.14684363	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	42
State:	42	County:	101
Country:	US	Land net:	Not Reported
Location map:	PHILADELPHIA	Map scale:	24000
Altitude:	35.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Delaware. New Jersey, Pennsylvania. Area = 1050 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19100101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	MAGOTHY-RARITAN-POTOMAC AQUIFER SYSTEM, LOWER AQUIFER		
Well depth:	67.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: PA Radon

Test Result Statistics

Zip	Total Sites	Min pCi/L	Max pCi/L	Avg pCi/L
19123	46	.3	7.6	2.5

EPA Region 3 Statistical Summary Readings for Zip Code: 19123

Number of sites tested: 46.

Maximum Radon Level: 5.5 pCi/L.
Minimum Radon Level: 0.1 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
44 (95.65%)	2 (4.35%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Federal EPA Radon Zone for PHILADELPHIA County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

Pennsylvania Public Water Supply Wells
Source: Pennsylvania Department of Environmental Resources Bureau of Water Supply
Telephone: 717-787-5017

Pennsylvania Groundwater Information System
Source: Department of Conservation and Natural Resources
Telephone: 717-783-7258

OTHER STATE DATABASE INFORMATION

RADON

State Database: PA Radon
Source: Department of Environmental Protection
Telephone: 717-783-3594
Radon Test Results Statistics by Zip Code

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

EPA Region 3 Statistical Summary Readings
Source: Region 3 EPA
Telephone: 215-814-2082
Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

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Cope Linder Architects

Architects
Landscape Architects
Planners

Cope Linder Architects

Cope Linder Architects combines the practices of Architecture, Landscape Architecture, Urban Design and Planning to offer a full range of professional services, including strategic planning, conceptual design, theming, and full production and construction administration services. Partners in each discipline share design, production, and administrative responsibilities. Since its founding in 1966, the Firm has developed and retained a highly creative staff dedicated to design excellence and comprehensive project management.

Each project is viewed as an opportunity to integrate innovative design, appropriate technology, environmental sensitivity, and economic reality. The success the Firm has achieved in meeting this challenge is attested to by the large number clients, both private and public, who return to the Firm with repeat commissions.

The Firm has successfully completed commissions representing myriad uses including hospitality & gaming, commercial retail, corporate office, multi-family residential and entertainment venues with an aggregate construction value in excess of US $3 billion. These projects are located throughout the U.S., Canada, The Bahamas and Western Europe and many have garnered major professional awards and extensive industry acclaim.

Cope Linder Architects is nationally renowned for its hospitality and gaming practice. Completed projects include **Borgata**, **Caesars Atlantic City, and Dover Downs Hotel & Slots**. Our gaming industry clients include **Harrah's**, **Caesars, Isle of Capri**, **MGM/Mirage,** and **Boyd Gaming** and current projects are in design in four states. In addition, the Firm has successfully completed hotel projects representing **Sheraton, Hampton Inn** and **Hilton** flagged properties.

Much of the Firm's work is accessible to the public on a daily basis, and the experience gained by executing these designs benefits all projects. Enriching the relationship between people and places is the hallmark of Cope Linder Architects' practice.

Cope Linder Architects

IAN M. COPE, AIA
Partner

Responsibilities: Mr. Cope takes major responsibility for many of the Firm's projects, participating in the conceptualization process and the resolution of important design issues. In addition, he participates in many of the business and administrative tasks within the Firm. He brings to each project a wide range of experience in the planning and design of public-oriented buildings and spaces in both urban and suburban contexts. Completed commissions include hospitality, gaming, office, residential, retail, and institutional uses.

Education:
Massachusetts Institute of Technology, Master of Architecture, 1984
North Carolina State University, Bachelor of Architecture, 1981

Registration: NCARB, PA, NJ, DE, CO, MD, NY, MO

Professional Memberships:
Member, American Institute of Architects
Member, SMPS
Member, International Council of Shopping Centers

Honors and Awards:
First Prize, Certainteed/Foundation for Architecture Award for City Visions
First Prize, Commonwealth of Massachusetts Urban Housing Competition

Experience:
Cope Linder Architects - 17 years
Other firms - 4 years

Major Professional Assignments:

Hospitality/Gaming Projects
The Borgata, Atlantic City, NJ
Sheraton Headquarters Hotel, Atlantic City, NJ
Caesars Atlantic City Expansion, Atlantic City, NJ
Dover Downs, Dover, DE
Hilton Garden Inn, Philadelphia, PA

Office Projects
Bahamas Financial Centre, Nassau Bahamas
Tri-Pointe Office Complex, Cherry Hill, NJ

Retail Projects
Brandywine Town Center, New Castle County, DE
Military Circle Mall, Norfolk, VA
Concord Mall, New Castle County, DE

Specialty/Institutional Projects
Terra Building Facade Replacement, University of the Arts, Philadelphia, PA
La Trobada, Mixed-use Urban Development Project, Spain
Center for Arts & Planning, New Brunswick, NJ

Residential Projects
Green Street Townhomes, Philadelphia, PA
The Regency, Atlantic City, NJ

Cope Linder Architects

STEVEN W. HENKELMAN, AIA
Partner

Responsibilities: Mr. Henkelman has been responsible for a wide variety of projects including high-rise office and mixed-use buildings, hospitality/gaming, new and renovated regional malls, college and university buildings, and historically certified renovations. He is expert in code interpretation and in presentation to jurisdictional authorities.

Education:
Princeton University, Master of Architecture, 1974
Princeton University, Bachelor of Arts (Architecture), 1971

Registration: NCARB, PA, NJ, CT, MI, OH

Professional Memberships:
American Institute of Architects
Building Officials and Code Administrators International, Inc. (BOCA)
Southern Building Code Congress International, Inc.

Experience:
Cope Linder Architects - 28 years
Other firms - 2 years

Major Professional Assignments:

Hospitality/Gaming Projects
Valley View Downs, South Beaver Township, PA
Caesars Atlantic City Expansion, Atlantic City, NJ
The Borgata, Atlantic City, NJ
Dover Downs Hotel and Expansion, Dover, DE

Office Projects
One Reading Center, Philadelphia, PA
Halle Building, Cleveland, OH
Ross House at NewMarket, Philadelphia, PA

Retail Projects
Raleigh Springs Mall, Memphis, TN
The Galleria, White Plains, NY
South Hills Village, Pittsburgh, PA
Concord Mall Renovation and Expansion, New Castle County, DE
Landmark Center, Alexandria, VA
Robinson Town Center, Pittsburgh, PA
Ocean One, Atlantic City, NJ

Mixed-Use Projects
Reading Terminal Headhouse, Philadelphia, PA
Capital Center, Trenton, NJ

Institutional/Academic Projects
Business and Industry Center, Community College of Philadelphia, Philadelphia, PA
Center for the Arts and Planning, New Brunswick, NJ

Cope Linder Architects

STANLEY B. CAIRNS, AIA
Partner

Responsibilities: As Partner and Senior Designer, Mr. Cairns supervises the architectural design of projects from concept phase to completion. He works closely with each client to develop a project of unique character, based on their specific needs, with primary responsibility to coordinate the efforts of the in-house design team.

Education: University of Wisconsin School of Architecture and Urban Planning, Master of Architecture, 1980,
Bachelor of Science in Architecture, 1978

Registration: NCARB, PA, NJ

Professional Memberships: Member, American Institute of Architects

Experience: Cope Linder Architects - 16 years
Other firms - 6 years

Major Professional Assignments:

Hospitality Projects
Borgata Casino Hotel expansion, Atlantic City, NJ
Mirage at Renaissance Point, Atlantic City, NJ
Sheraton Headquarters Hotel, Atlantic City, NJ
Caesars Atlantic City Expansion, Atlantic City, NJ

Office Projects
Lutron Corporate Campus and Training Facility, Coopersburg, PA
Lower Makefield Corporate Center, Langhorne, PA
1000 Chesterbrook Boulevard, Tredyffrin Township, PA
Applebrook Corporate Center, East Goshen, PA
Tri-Pointe Office Complex, Cherry Hill, NJ
Bahamas Financial Centre, Nassau, Bahamas
1525 Locust Street, Philadelphia, PA

Mixed-Use Projects
La Trobada, Mixed-use Urban Development Project, Spain
Reading Headhouse, Adaptive Reuse, Philadelphia, PA
Covent Garden Market, Retail/Office, Kitchener, Ontario, Canada

Retail Projects
Neshaminy Mall, Bensalem, PA
Raleigh Springs Mall, Memphis, TN
Galleria at White Plains, Reconstruction, White Plains, NY
South Hills Village, Expansion/Renovation, Pittsburgh, PA
Park City Center, Renovation, Lancaster, PA
Robinson Town Center, Pittsburgh, PA

Cope Linder Architects

G. BARRY ESSLINGER, ASLA
Partner/Landscape Architecture and Planning

Responsibilities: Mr. Esslinger is responsible for all landscape architectural, streetscape, and planning projects and for the overall administration of this work. Concerns investigated by Mr. Esslinger include balancing development objectives with natural resource management, zoning, land planning, and the interaction of the physical and natural environment. Mr. Esslinger has participated in the design of numerous streetscape and planning projects, and has particular insight into the land development and approvals process, having spent 12 years on the Upper Dublin Township, Montgomery County, PA Planning Board, with six of those years as Chairman.

Education: Pennsylvania State University, Bachelor of Science in Landscape Architecture, 1963

Registration: CLARB, PA, MA, NJ, VA, DE, CT, NY, FL, Professional Planner: NJ

Professional Memberships:
Member, American Society of Landscape Architects
Executive Committee, Urban Land Institute
Member, American Planning Association
Member, Pennsylvania Planning Association

Experience:
Cope Linder Architects - 36 years
Other firms - 5 years

Major Professional Assignments:

Landscape Architecture/Master Planning/Streetscapes
Chestnut Hill BID Vision Plan, Philadelphia, PA
Richmond Streetscape, Richmond, VA
Lighting the Benjamin Franklin Parkway, Philadelphia, PA
Center City District Streetscape Improvement Program, Philadelphia, PA
East Market Street Streetscape Improvements, Philadelphia, PA
Market Street Gateway, Upper Darby/Millbourne Borough, PA
Downtown Office District Lighting Improvements, Philadelphia, PA
Streetscape Design, City Ave Special Services District, Bala Cynwyd, PA
Streetscape Improvements, Middletown, DE
Temple University, Ambler Campus Master Plan, Ambler, PA
Masterplan for Campus Amenities, Temple University, Philadelphia, PA
Streetscape Design Guidelines and Implementation of Physical Improvements, Coatesville, PA
Vanguard Corporate Headquarters, Tredyffrin Township, PA
Hewlett-Packard. New Castle County, DE
Comprehensive Economic Recovery Program (CERP) Study, Greater Coatesville, PA
Meridian Operations Center, Reading, PA
Penn's Landing Master Plan and Great Plaza, Philadelphia, PA

Cope Linder Architects

ELLEN A. LEVIN, RA
Associate / Project Designer

Responsibilities: Ms. Levin has served as project architect and lead designer in a wide range of challenging projects for a variety of clients from institutional to corporate. She has extensive experience in interior design and programming, as well as construction documentation and administration for large scale projects. Working closely with the project team she is especially effective in determining an appropriate and cost effective design for the Owner's program. Ms. Levin also leads our office's development of new computer applications in design and 3-dimensional representation.

Education: Cornell University, Bachelor of Architecture, 1988

Registration: PA

Experience: Cope Linder Architects – 9 years
Other firms – 8 years

Major Professional Assignments:

Hospitality/Gaming Projects
Mirage at Renaissance Point, Atlantic City, NJ
Caesars Atlantic City Expansion, Atlantic City, NJ
Hilton Garden Inn, Philadelphia, PA

Institutional Projects
Fox School of Business and Management, Temple University, Philadelphia, PA (Conceptual Design)
Terra Building Facade Replacement, University of the Arts, Philadelphia, PA
High Tech High Charter School, Philadelphia, PA
Thomas Jefferson University Life Science Center, Philadelphia, PA
Federal Correctional Complex, Allenwood, PA
Congregation Micah Synagogue, Nashville, TN

Corporate Projects
Rhone Poulenc Rorer, Collegeville, PA
Merrill Lynch Headquarters, Interiors, Indianapolis, IN
Merrill Lynch Interiors, Columbus, OH
Glaxo, Inc., Stevenage, United Kingdom

Residential Projects:
Rittenhouse Place, Philadelphia, PA

Cope Linder Architects

JOSEPH T. SCHWINDT, JR., RA, CCS
Senior Associate/Project Manager/Specification Writer

Responsibilities: Mr. Schwindt has been responsible for projects range from high-rise and low-rise office, hotel, and mixed-use buildings, institutional and academic buildings, to residential and retail buildings. As Project Manager, he maintains a close working relationship with each client throughout the course of the project, assisting in the evaluation of client needs, developing project solutions which are within the programmatic constraints of the budget and schedule, and overseeing the incorporation of these solutions during the construction of the project. His hands-on involvement ensures that the full resources Cope Linder Associates are available to each client.

Education: Drexel University, Bachelor of Science, 1966
Certified Construction Specifier, 1989

Registration: PA, NJ, NCARB

Professional Memberships: Construction Specifications Institute
American Society of Testing Materials (ASTM)
Member, International Council of Shopping Centers

Experience: Cope Linder Architects – 12 years
Other firms - 30 years

Major Professional Assignments:

Hospitality/Residential Projects
The Borgata, Atlantic City, NJ
Hilton Garden Inn, Philadelphia, PA
Sheraton Headquarters Hotel, Atlantic City, NJ
The Regency, Atlantic City, NJ

Office Projects
1000 Chesterbrook Boulevard, Tredyffrin Township, PA
Bahamas Financial Centre, Nassau, Bahamas
ARAMARK Tower (One Reading Center), Philadelphia, PA
1525 Locust Street, Philadelphia, PA
IBM Offices, Research Triangle Park, Raleigh, NC
Crown Cork & Seal Headquarters, Philadelphia, PA

Retail Projects
Raleigh Springs Mall, Memphis, TN
Concord Mall Renovation and Expansion, New Castle County, DE
Park City Center Renovation and Expansion, Lancaster, PA
Sears Corporate Specification, Hoffman Estates, IL

Institutional/Academic Projects
Rutgers Student Union, Camden, NJ
Ruthgers Classroom-Office Building, Camden, NJ
Montgomery County Community College Master Planning
Bryn Mawr Hospital, Bryn Mawr, PA, West Wing Expansion

Cope Linder Architects

JENNIFER A. DRUMMOND
Intern Architect/Designer

Responsibilities: Ms. Drummond has played a key role in a wide variety of projects, ranging from preliminary design to construction documentation. Conceptual design presentation is Ms. Drummond's particular specialty, and in this role she has been responsible for many of the graphic presentations in our current work.

Education:
Kent State University, Master of Architecture 1999
Kent State University, Bachelor of Architecture, 1998

Experience: Cope Linder Architects - 4 years

Major Professional Assignments:

Hospitality/Gaming Projects:
Park Place at the Boardwalk, Atlantic City, NJ
Caesars Atlantic City Facade Renovation, Atlantic City, NJ
Dover Downs Hotel, Dover, DE

Urban Design:
Market Street Gateway, Upper Darby, Millbourne Borough, PA
City Avenue Special Services District, Streetscape Design, Bala Cynwyd PA
Center City District Streetscape Improvement Program, Philadelphia, PA

Institutional Projects
High Tech High Charter School, Philadelphia, PA

Residential Projects:
The Moravian at Independence Park, Philadelphia, PA
Rittenhouse Place, Philadelphia, PA
19th & Green Streets Townhouses, Philadelphia, PA

YEARS EXPERIENCE WITH FIRM: 8 WITH OTHER FIRMS: 20

EDUCATION

Bachelor of Architecture, University of Newcastle upon Tyne, UK, 1973
Master of Architecture in Advanced Study, Massachusetts Institute of Technology, 1976
Master of City Planning, Massachusetts Institute of Technology, 1976

PROFESSIONAL REGISTRATIONS

AICP: No. 3935 (1978)
R.A.: Pennsylvania - 008176-X (1979)

CURRENT RESPONSIBILITIES

Vice President and Philadelphia Office Manager and Leader of the Planning Practice, company-wide, responsible for interdisciplinary planning projects that involve land use and transportation planning of highway, transit, intermodal, and site development projects. Has a wide range of experience in urban design, site and building feasibility studies, and context-sensitive design solutions. Responsibilities also include community involvement programs associated with planning studies and environmental documents.

SUMMARY OF PROJECTS

Allegheny West Industrial Corridor Planning Study, Philadelphia, PA, *City of Philadelphia/The Allegheny West Foundation.* Project Manager for an interdisciplinary planning study, which includes traffic and goods movement, streetscape improvements, and site design for a series of industrial and residential developments within the Allegheny West neighborhood of Philadelphia.

Ardmore Transit Center Planning and Design Services, Lower Merion Township, Montgomery County, PA, *Township of Lower Merion/Hillier Group Architecture New Jersey, Inc.* Project Manager for our firm on an urban design team to plan for a mixed-use project at the Ardmore train station. Our portion of the study included making recommendations for improved pedestrian flow and access to the proposed development. Pedestrian improvements were recommended along and across Lancaster Avenue and across the train tracks to connect Suburban Square with downtown Ardmore. Improvements to intersection and roadway geometry were recommended to solve existing congestion problems, provide access to the proposed development, and improve safety for pedestrians without reducing the through capacity on Lancaster Avenue.

CHOP Traffic Consultation Services, Philadelphia, PA, *Children's Hospital of Philadelphia (CHOP)/Hillier Group Architecture New Jersey, Inc.* Principal Consultant to Hillier responsible for providing traffic planning input to a master plan for a site adjacent to the existing hospital.

Neighborhood Transformation Initiative, Demolition Program Management, Philadelphia, PA, *City of Philadelphia/Hill International, Inc.* Project Manager for our firm's portion of this innovative and comprehensive program to strategically demolish dangerous and abandoned properties in Philadelphia and attract new development to the resulting vacant parcels. Our firm developed a cutting-edge geographic information system (GIS) decision model to aid the City in making the complex decisions about which properties to demolish. The model allows both City Council members and City employees to prioritize a number of different criteria and view the resulting model output that highlights which

buildings should be targeted for demolition under different scenarios. The model has been very successful in allowing individuals representing diverse areas of the city the flexibility to use different criteria, based on their local priorities, for decision making. In addition, our role includes the preparation of demolition specification packages for the City to put out to bid.

30th Street Station Gateway Circulation Study, Philadelphia, PA, *City of Philadelphia Department of Streets.* Project Manager for a multimodal traffic study of the circulation system around SEPTA's 30th Street Station, which involved examining all vehicular, bicycle, and pedestrian traffic and all modes of transit. The study also included circulation to and from SEPTA's Market Street Elevated and Trolley Station. The purpose of the study was to develop recommendations to reduce congestion around 30th Street Station caused by a mix of station-destined and through-traffic.

Downtown Vehicular and Pedestrian Management Plan, Reading, PA, *Berks Area Reading Transportation Authority.* Project Manager for a study to make recommendations for circulation and parking during special events held at the new Sovereign Center and the Performing Arts Center in downtown Reading. The study included an analysis of downtown vehicular circulation as well as parking availability. Recommendations included a new traffic circulation plan for implementation during special events, new signal timing plans, a wayfinding signage system, improved pedestrian circulation, and transit enhancements such as shuttle buses to access downtown parking garages and remote parking lots.

I-95, Section AFC, Philadelphia, PA, *Pennsylvania Department of Transportation, District 6-0.* Manager responsible for the urban design and streetscape aspects of this project, including the surface design of proposed sound barriers. Generated computer graphics and other visual displays to explain to the public the visual impact of various sound barriers on the surrounding residential communities.

Truck Route Studies, Camden/Wyoming, Harrington, and Laurel, DE, *Delaware Department of Transportation (DelDOT).* Manager responsible for providing project oversight for three truck route studies. Each study involved working with an existing historic town to develop a route for trucks that balances the needs of the town with those of the trucking industry. The project included developing a project needs document, an initial environmental assessment of alternatives, and 20 percent design of a recommended alternative route. Considered alignments that included upgrades to existing streets as well as new roadway construction.

Wissahickon Transportation Center Reconfiguration/Renovation, Philadelphia, PA, *Southeastern Pennsylvania Transportation Authority (SEPTA).* Project Planner responsible for conceptual analysis to reconfigure and renovate this transportation center to improve the flow of buses through the facility, vehicular flow along Ridge Avenue, and the safety and overall condition of SEPTA facilities for patrons. Project requirements included analyzing traffic and pedestrian patterns to mitigate circulation conflicts, planning alternative vehicular and pedestrian circulation patterns around the station, and developing architectural and civil improvements.

City Hall Station Renovations, Philadelphia, PA, *Southeastern Pennsylvania Transportation Authority.* Subconsultant Task Manager responsible for conducting a pedestrian flow analysis that involved a detailed survey of current pedestrian use and circulation within the existing station and the development of recommendations for improved pedestrian flow based on a level-of-service analysis.

Frankford Transportation Center Parking Study, Philadelphia, PA, *Southeastern Pennsylvania Transportation Authority.* Task Manager responsible for determining parking needs during the reconstruction of this facility. The study determined existing on- and off-street parking occupancy;

analyzed the parking needs of customers, employees, and contractors; and made recommendations to accommodate parking during the different construction phases.

Norristown Transportation Center Parking Demand Analysis, Norristown, PA, *Southeastern Pennsylvania Transportation Authority.* Task Manager responsible for reviewing parking demand analysis conclusions from a number of planning studies conducted to determine the need for additional rail service. Estimated the increased demand for parking resulting from changing ridership on the existing R-6 commuter rail line. The parking demand analysis was performed to determine the overall need for a parking garage at the facility.

Fort Washington Station Parking Demand Analysis, Fort Washington, PA, *Southeastern Pennsylvania Transportation Authority.* Task Manager responsible for a study to determine parking demand at this station as part of an initiative to support a condemnation proceeding against the existing garage and promote a sketch design of a new at-grade parking facility.

U.S. Route 13/113 Corridor Preservation Plan, Kent and Sussex Counties, DE, *Delaware Department of Transportation (DelDOT).* Manager of Public Involvement and Land Use Planning responsible for this study to preserve capacity on 60 miles of highway corridor. The project involved working individually with 2 counties and 13 separate municipalities to develop land use plans for each community that meet its economic goals, conform to growth management criteria established by the state, and adhere to DelDOT corridor preservation standards.

Strategic Development Plan for Downtown Dover's West Side, Dover, DE, *City of Dover.* Project Manager working with City officials to create a redevelopment plan for an economically distressed section of Dover's downtown. The plan examined individual and assembled redevelopment sites, suggested viable reuse options, and outlined design guidelines to regenerate economic growth and mixed-use development in a transit and pedestrian-oriented urban environment.

U.S. Route 40 Corridor Study, New Castle County, DE, *Delaware Department of Transportation.* Project Manager responsible for the public involvement and land use aspects of this study that developed a concept of "activity centers" along the U.S. Route 40 corridor to reduce local trip-making by increasing use of transit and bicycle/pedestrian modes and "trip-sharing." In addition, these activity centers create a sense of place and community identity for residents in the area.

Open-End Public Involvement and Transportation Contract, DE, *Delaware Department of Transportation.* Project Manager responsible for public involvement on transportation projects statewide. Transportation problem-solving services were provided on a task-order basis.

EXPERIENCE PRIOR TO GANNETT FLEMING

Edwards and Kelcey, Inc.

Light Rail Transit Feasibility Study, Bergen County, NJ, *Bergen County.* Planner responsible for station area planning and analysis, including the creation of preliminary concepts for station area development packages that would be implemented by public-private partnerships. The purpose of these packages is to generate transit-supportive land use at station areas.

WILMAPCO, Regional Parking and Land Use Study, New Castle County, DE, and Cecil County, MD, *Wilmington Area Metropolitan Planning Organization (WILMAPCO).* Project Manager for a study

that examined parking in typical urban, small town, and suburban situations and at the same time allowed for increased transportation choices and reduced reliance on single-occupant vehicles.

Burlington-Camden-Gloucester Corridor Study/Major Investment Study, NJ, *New Jersey Transit.* Planner responsible for conducting the environmental screening of station sites and potential yard locations for this 40-mile-long corridor. Work involved sketching plans for all the station sites, including parking and circulation layouts. Assessed the potential of these sites for joint development using the principles of transit-sensitive design. Authored a candidate station screening report and participated in preparation of the major investment study document.

Environmental Assessment (EA), Mail Processing and Distribution Center, Johnstown, PA, *United States Postal Service (USPS).* Planner responsible for conducting an EA for a new postal facility following USPS guidelines.

Milford Bypass Public Involvement, Milford, DE, *Delaware Department of Transportation (DelDOT).* Project Manager responsible for assisting DelDOT in developing an access plan for the Milford Bypass, which met local access needs, accommodated the requirements of the local comprehensive plan, and satisfied DelDOT's design criteria. Managed a series of meetings with a community advisory committee to develop the most cost-effective solution that satisfied the requirements of both DelDOT and the community.

Lancaster Pike Public Involvement, New Castle County, DE, *Delaware Department of Transportation (DelDOT).* Project Manager responsible for working with DelDOT and a community advisory committee to resolve design issues associated with the widening of Lancaster Pike through a historic area of New Castle County. Managed a series of meetings and directed the production of a project newsletter. Worked with the project engineers to develop bridge designs and highway cross sections that would be sensitive to the cultural setting and environmental constraints of the project area.

Weehawken Tunnel Station, Union City, NJ, *New Jersey Transit.* Planner assisting in the preparation of an environmental assessment in accordance with Federal Transit Administration guidelines. Contributed analysis of land use and development impacts.

U.S. Route 322 Improvement, Chester County, PA, *East Bradford Township.* Planner responsible for managing the categorical exclusion evaluation in compliance with Pennsylvania Department of Transportation guidelines. Investigations included examination of cultural and environmental impacts resulting from a road widening and intersection alignment.

I-95 Corridor Environmental Impact Statement (EIS), Philadelphia, PA, *Pennsylvania Department of Transportation, District 6-0.* Manager for Public Involvement responsible for collecting data and editing portions of the draft EIS document for the first phase of this project.

Greensburg Mail Processing Center Environmental Assessment (EA), Greensburg, PA, *United States Postal Service (USPS).* Project Manager responsible for drafting a Level II EA for a new 70,000-square-foot mail processing center to be constructed in the Greensburg-Hempfield Business Park approximately 30 miles east of downtown Pittsburgh. The EA, prepared under USPS guidelines to comply with NEPA, addressed the following environmental issues: geology and soils, including prime farmland; drainage and water quality; natural habitat and impacts to fish, wildlife, and plants; historic and archaeological resources; land use relationships to zoning; and noise and air quality.

Kise, Franks & Straw, Inc.

Final Environmental Impact Statement (FEIS) and Community Involvement, U.S. Route 13 Relief Route (DE Route 1), DE, *Delaware Department of Transportation.* Project Manager for the final three years of this ten-year project. Managed the public involvement activities associated with final alignment changes. This task included overseeing production of a project newsletter, running small community meetings and public workshops, and administering an 800-number hotline. Also coordinated the update of the FEIS and the preparation of the 404 Permit for Phase II of the project.

Pennsylvania Turnpike/I-95 Interchange, Bucks County, PA, *Pennsylvania Turnpike Commission.* Manager of the public involvement process for a multiconsultant team on this complex and controversial project. Initiated a community advisory committee with representation from all the adjacent communities. This committee met with the client and consulting team to review the project on a regular basis and served to quiet opposition, which had surfaced as a result of earlier studies. Managed the production of a project newsletter, video, and graphics and organized large-scale public workshops. Also participated in preparing the draft environmental impact statement, specifically in the areas of land use and zoning.

New Jersey Statewide Long-Range Transportation Plan, NJ, *New Jersey Department of Transportation.* Planner participating in an innovative long-range process designed to set the direction for transportation in New Jersey through the year 2020. Specifically integrated land use considerations into the transportation plan. An important element of the planning process was a comprehensive public outreach program to identify the concerns of the transportation customer and reflect those concerns in a transportation plan sensitive to the needs of all New Jersey residents.

Route 1 Corridor Preservation Program, Kent and Sussex Counties, DE, *Delaware Department of Transportation.* Project Manager for an innovative program to protect the capacity of DE Route 1 south of Dover. The purpose of the program was to develop a long-range strategy that allowed growth to take place without either reducing capacity or restricting options for future improvements. This program was specially funded by the Federal Highway Administration as a demonstration project. Developed a series of project area maps that identified key environmental features affecting future improvements. Worked with a team to monitor proposals and encourage developers to create compatible plans for land use, shared parking, traffic access, and circulation. Also designed a corridor preservation brochure and helped create a video script to explain the project to local residents and land owners.

Cross County Metro Feasibility Study, Philadelphia, PA, *Southeastern Pennsylvania Transportation Authority (SEPTA).* Planner participating with a team of consultants studying the feasibility of a new circumferential transit service connecting the northern suburbs of Philadelphia and intersecting SEPTA's radial commuter rail lines serving Philadelphia. Studied existing and proposed land use within the transit corridor and developed an enhanced land use scenario, based on the principles of transit-sensitive land use design, which would increase the number of residents and jobs within the transit corridor.

Delaware Turnpike (I-95) Draft Environmental Impact Statement (DEIS), DE, *Delaware Department of Transportation.* Manager of the public involvement process responsible for organizing and conducting two workshops and publishing a project newsletter. Also served on a team of consultants in the preparation of a DEIS with responsibility for producing the land use, visual, farmland, and historic impact section of the environmental documents.

Management Action Plan for Schuylkill River Heritage Park, Philadelphia, PA, *Schuylkill River Greenway Association.* Project Manager for a plan to increase recreation and open space and to interpret

the industrial history of the Schuylkill River corridor from the Pennsylvania anthracite mines in Schuylkill County to the Port of Philadelphia. Assisted in establishing goals for the project; assembled inventories of historic resources, open space, and cultural landscapes; and developed alternative plans to address the boundary, principle interpretive themes, management structure, and operational strategy for the park, all in accordance with guidelines established by the Pennsylvania Department of Community Affairs.

Reuse Plan for the Naval Air Warfare Center (NAWC), Warminster, PA, *Naval Facilities Engineering Command, Atlantic Division.* Planner participating on a multidisciplinary team studying the impact that closure of the NAWC would have on the Lower Bucks County community. Responsibilities included analyzing the reuse potential for the buildings and the vacated air field.

Downtown Development Study, Pottstown, PA, *Pottstown Downtown Development Corporation.* Project Manager for the preparation of a site plan for a mixed-use development adjacent to the existing business district consisting of office, retail, residential, shared parking, and open space. This plan was part of an economic redevelopment study for a coalition of business interests.

Independent Consultant

Development Plan for Maine Technology Park, Orono, ME, *Mainetech Development Corporation.* Project Manager for the design and approval of a 50-acre research and development park at the University of Maine consisting of 500,000 square feet of office research space, a convenience shopping center, and a 120-room hotel and conference center. Oversaw the design and construction of the first office building in the technology park.

Aerospace Technology Park, Cleveland, OH, *Flagship Properties, Inc.* Project Manager responsible for the conceptual design of a 1-million-square-foot research and development park adjacent to the NASA Lewis Research Center at Cleveland Hopkins International Airport.

Connecticut Technology Park, University of Connecticut, Storrs, CT, *ConnTech Development Corporation.* Project Manager of the consultant team selected to prepare a master plan for a 390-acre research and development park adjacent to the university, consisting of 1.2 million square feet of office/research space, a hotel conference center, a retail shopping center, and 250 housing units. Prepared several site plans and feasibility studies for prospective hotels and convenience shopping centers.

Celeron Square, Highland Heights, KY, *Flagship Properties, Inc.* Project Manager responsible for the design and approval of a 120-unit apartment complex. Work included obtaining annexation, rezoning, and site plan approval.

Comprehensive Evaluation of Sunrise Development Company Land Inventory, Cleveland, OH, *Sunrise Development Company.* Planner responsible for the land use planning aspects of a comprehensive evaluation of all land holdings of Sunrise Development Company, a subsidiary of Forest City Enterprises. Work consisted of a variety of highest- and best-use analyses, feasibility studies, land development plans, rezoning applications, cost estimates, and fiscal impact assessments for the company's land holdings valued at approximately $60 million.

Mixed-Use Development Plan, Cameron Glen, Loudoun County, VA, *Forest City Enterprises.* Planner participating on a team of consultants in the planning and rezoning for a 1,600-acre, mixed-use development that included a regional shopping center, offices, and industrial buildings and approximately 4,000 housing units.

PROFESSIONAL AFFILIATIONS AND PUBLICATIONS

American Planning Association
Transportation Research Board
    Context-Sensitive Design Subcommittee
Women's Transportation Seminar

Gibbons, S., and S. Garrigan. "Retrofitting an Existing Automobile-Oriented Suburban Area for Transportation Choices." *ITE*, March 1998.

HONORS AND AWARDS

Recipient of 50 Best Business Women of Pennsylvania Award, 2001.

YEARS EXPERIENCE WITH FIRM: 7 WITH OTHER FIRMS: 8

EDUCATION

B.S., Transportation Engineering, University of Sarajevo, 1988
M.S., Civil Engineering, University of Wyoming, 1992

PROFESSIONAL REGISTRATION

E.I.T.: Pennsylvania (1994)

CURRENT RESPONSIBILITIES

ITS Regional Manager and **Traffic Engineer** responsible for multimodal studies, design, and construction management projects with emphasis on intelligent transportation system (ITS) implementation. Also responsible for traffic planning and design including the development of simulation models such as SYNCHRO for analysis and public presentations.

SUMMARY OF PROJECTS

Norristown Transportation Center Intermodal Parking Facility, Norristown, PA, *Southeastern Pennsylvania Transportation Authority (SEPTA).* Traffic Engineering Task Manager for a traffic and pedestrian impact study in conjunction with the design of a new multi-deck, 500-vehicle parking garage at SEPTA's Norristown Transportation Center, which serves SEPTA's Route 100 suburban rail line, R6 regional rail line, and numerous suburban bus routes. Project responsibilities included a traffic operations and trip generation analysis; a capacity analysis for signalized intersections in the proposed facility's immediate vicinity; and a pedestrian-vehicle conflict analysis. Completed an additional traffic and pedestrian impact analysis for the construction-phase parking arrangement involving use of a nearby temporary parking lot to accommodate displaced vehicles.

Ardmore Transit Center Planning and Design Services, Lower Merion Township, Montgomery County, PA, *Township of Lower Merion.* Traffic Engineering Task Manager responsible for the analysis of existing traffic operations during planning and design of the Ardmore Transit Center to serve SEPTA's regional rail system in suburban Philadelphia. Project responsibilities also included evaluation of pedestrian accessibility; completion of a trip generation study; and definition of infrastructure needs related to congestion management, public transportation usability, and pedestrian and vehicle linkages in the vicinity of the transit center.

Bridgeport Community Revitalization Plan, Bridgeport, Montgomery County, PA, *Borough of Bridgeport.* Traffic Engineering Task Manager responsible for analyzing existing traffic and pedestrian operations within the commercial areas of the borough to identify operational deficiencies as part of a project to develop a community revitalization plan. Tasks also included observing and analyzing traffic operations during the AM and PM peak hours and completing a traffic operations report for inclusion in the revitalization plan.

Downtown Vehicular and Pedestrian Traffic Management Plan, Reading, PA, *Berks Area Reading Transportation Authority (BARTA).* Task Manager responsible for the development of the City of Reading's traffic management plan, which included the development of new traffic circulation patterns. In addition to improving overall downtown traffic flow, this new circulation is based on a two-contra-flow ring operation, which provides a natural flow of vehicles to the closest parking facility during a

special event. The proposed traffic management plan also included newly developed signal timing plans that serve general traffic demands as well as event-specific traffic operations. In order to provide better management of both downtown and incoming traffic, a comprehensive wayfinding signing system was developed. More advanced systems, such as highway advisory radio and dynamic message signs, were investigated to further improve event traffic flow management. Additional services involved improvements in public transportation and parking operations, including an analysis of advanced technologies for fare collection and payment of parking and shuttle services and development of a special event bus routing and scheduling plan. Also investigated pedestrian movements and made recommendations to improve pedestrian traffic flow and safety.

30th Street Station Gateway Circulation Study, Philadelphia, PA, *City of Philadelphia, Department of Streets.* Task Manager responsible for the operational analysis for the 30th Street Station, a multimodal facility located between the central business district and West Philadelphia that provides access to Amtrak national rail service; SEPTA regional rail, subway, trolley, and bus lines; and the New Jersey Transit Atlantic City Line. Due to the station's location, it attracts significant taxi, vehicular, and pedestrian traffic. Unfortunately, the station suffers from severe traffic congestion, inadequate parking and signage, and unsafe conditions for pedestrians. Planned development in the immediate station area will only exacerbate these deficiencies. Tasks included addressing the operational issues for each of the transportation modes at 30th Street Station in order to evaluate needed improvements and suggest effective solutions for traffic and pedestrian circulation in and around the station. In order to achieve this goal, an exhaustive data collection and analysis effort was conducted. Used simulation software to model the traffic operations in the station area and to develop and evaluate proposed improvements.

Wissahickon Transportation Center Reconfiguration/Renovation, Philadelphia, PA, *Southeastern Pennsylvania Transportation Authority (SEPTA).* Task Manager responsible for performing a conceptual analysis of the transportation center to improve the flow of buses through the facility, optimize vehicular flow along Ridge Avenue, and provide a means to protect SEPTA patrons from both the elements and the vehicles passing through the facility. Several alternatives were developed, including a revised bus circulation pattern within the transportation center and the relocation of bus stops on Ridge Avenue. Circulation alternatives were limited by the existing transportation building, the need for bus parking, and patrons' safety and comfort. The possible alternate locations of bus stops on Ridge Avenue were limited by available space, close proximity to traffic signals, extensive pedestrian activities, and a high number of buses turning into and out of the facility. Advanced technologies and traffic operations systems were used to provide the most efficient bus, traffic, and pedestrian operations. Cost estimates were provided for the alternatives.

Canal Streetcar Line Operating Plan, New Orleans, LA, *New Orleans Regional Transit Authority.* Team Leader responsible for the Canal Streetcar simulation. Prepared the operating plan for the proposed Canal Streetcar Line, including the Riverfront Streetcar Line and related bus services, in the city of New Orleans. The Canal Streetcar Line serves the central business district in New Orleans as well as much of the Riverfront development. Most major hotels and tourist attractions are within walking distance of the line. The route operates along the western edge of the popular French Quarter and is close to many of the city's famous restaurants. The operating plan was completed in conjunction with final design of the line. Close coordination between the two design teams was required to make sure the physical characteristics of the line met the operational requirements. An important modification in the track design was required to make sure the desired operating schedule could be maintained. All streetcar operations were modeled using a VISSIM computer simulation model.

Harry Hines Boulevard Bus Preferential Study, Dallas, TX, *Dallas Area Rapid Transit (DART).* Project Manager responsible for conducting the transit preferential treatment study and for coordinating

with DART. Harry Hines Boulevard is a very heavily traveled thoroughfare and one of the busiest bus route locations in Dallas. A segment of Harry Hines Boulevard was modeled using traffic simulation software to determine the effectiveness of transit signal priority (TSP) in improving DART bus operations, both on the test corridor and systemwide. The project involved an extensive data collection effort, including corridor geometry, turning movement volumes, existing signal timing plans, bus travel time, and station and bus stop dwell time. Research on the implementation of TSP in numerous cities in the United States and abroad provided valuable guidance for TSP application on this project. Additionally, several different leading simulation software packages were evaluated to determine which would best serve the needs of this particular project. Since accurate bus detection is an essential part of any TSP scheme, several bus detection systems and technologies were evaluated, and a recommendation was made as to the means of bus detection best suited for this project. The selected simulation software, VISSIM, was used to model different priority logic schemes for the corridor to assess the benefits of each and to determine which provided the best overall results for the corridor. Based on these benefits, recommendations were made as to the best course of action for both the test corridor and systemwide DART bus operations.

EXPERIENCE PRIOR TO GANNETT FLEMING

Urban Engineers, Philadelphia, PA

Advanced Traveler Information System - Phase II, Statewide PA, *Pennsylvania Turnpike Commission (PTC).* Project Manager responsible for overall coordination, technical review, and project schedule. The project was completed under an accelerated schedule (three months for 90 percent design) as a response to the client's needs. The main ITS elements of the project included highway advisory radio (HAR), variable message sign, and closed-circuit television systems. The project integrated new and existing ITS elements. In addition to adjustments made at the existing control center, capability to control ITS elements from a new backup control center was incorporated. HAR system design included coordination of three HAR units to cover critical traffic diversion areas. Additional elements in the project included integration of HAR with PTC's existing roadway and weather condition systems.

Traffic and Incident Management System, Cumberland, Dauphin, and York Counties, PA, *Pennsylvania Department of Transportation, District 8-0.* Project Manager responsible for preparation of contract specifications to provide a completely functional traffic and incident management system, including closed-circuit television (CCTV), highway advisory radio, portable variable message sign, and portable traffic management systems (TMS) for the city of Harrisburg. The system was designed under severe budget constraints to provide fully portable TMS. Main system control was based on laptop computers and a wireless communications system allowing control to be accomplished from any place within the city, including an incident management vehicle. This vehicle's CCTV camera provides incident detection, traffic counts, and video surveillance capabilities. The power system for all ITS elements, excluding the vehicle, is based on a combination of solar- and fuel cell-generated energy.

I-476 Traffic and Incident Management System, Delaware and Montgomery Counties, PA, *Pennsylvania Department of Transportation, District 6-0.* Deputy Project Manager for construction services involving closed-circuit television, ramp metering, and mainline incident detection systems for a 21-mile section of I-476. This project included installation of high-speed digital T-1 telephone, spread spectrum radio, and fiber optic communications. Responsible for monitoring the system integrator's effort to develop a new central computer system. Coordinated a major public relations program, including development of the project brochure with emphasis on ramp metering operation.

Integrated Traveler Information System - Phase I, Chester and Montgomery Counties, PA, *Pennsylvania Turnpike Commission (PTC).* Project Designer responsible for the design and development of plans, specifications, and estimates for the highway advisory radio (HAR) and variable message sign (VMS) systems implemented by the PTC to meet the traveler information needs for the Mainline Schuylkill River Bridge Rehabilitation Project. Developed a technology evaluation report to assist in selecting the appropriate technology for the VMS system. Responsible for the master diversion route plan development. The diversion plan determined which of the ITS elements would be included for every freeway section incident. The incidents were separated by incident severity, and VMS and HAR messages were developed for each scenario. Conducted training for the PTC operators.

I-95 Traffic and Incident Management System, Philadelphia, PA, *Pennsylvania Department of Transportation, District 6-0.* Project Designer responsible for the evaluation of the variable message sign (VMS) system benefits to the traveling public. Also responsible for evaluation of software, hardware, and life-cycle cost estimates for the fiber optic and light-emitting diode (LED) sign technologies. Conducted comparisons of the manufacturer's projected and field-measured rate of LED sign fading. This unique test showed significantly faster fading of the LED-based VMS than manufacturer's expectations. The results were published in the *International Municipal Signal Association Journal.*

Travel Demand Model, PA and NJ, *Delaware Valley Regional Planning Commission.* Project Manager responsible for oversight of three surveying teams and scheduling and operation for five continuous months of surveying. The main goal of this project was to collect travel time data for 1,700 miles of roadway in the nine-county region. The survey examined travel time and delays during peak and off-peak periods. Roadways were stratified by area type and functional classification. Used the average daily traffic method to measure travel time, running time, distance traveled, and delay characteristics along selected routes.

Route 10 Trolley Study, Philadelphia, PA, *Southeastern Pennsylvania Transportation Authority (SEPTA).* Project Manager responsible for this two-phase study. In the first phase, physical roadway improvements were designed to improve trolley operation and bicycle safety. The design involved traffic signal improvements, including adding a special trolley phase and bicycle lane design. The second phase of the project included evaluation of the trolley priority treatment on vehicle operations. Used a microscopic simulation model to evaluate different priority treatment techniques. Evaluated existing timing plans and operations. Determined both the required hardware/software cost to implement priority treatment and the benefits to SEPTA. The study concluded that by implementation of priority treatment, SEPTA can eliminate one trolley from peak-hour operation and still maintain the same service schedule. Responsibilities also included coordination between the City of Philadelphia traffic personnel and SEPTA personnel. The results from this project were presented at the Transportation Research Board and Institute of Transportation Engineers conferences.

Edwards & Kelcey, Philadelphia, PA

ITS Integration and Incident Management Plan for the George Washington Bridge, NY and NJ, *Port Authority of New York and New Jersey.* Project Designer involved in the conceptual design of an integrated ITS for this bridge. The goal of this project was to develop a completely functional hardware and software specification for the system. Work involved complete inventory of the existing operation plan at the facility, along with a review of the existing ITS and communication-related subsystems. A review and assessment of all proven ITS technologies that could have potential value were documented in a technical memorandum. From this work, the benefits and costs of each incremental technology were evaluated to determine the appropriate mix of new and existing components to be deployed. The project

also included the development of a strategic implementation plan and a revised operations plan for the facility.

Metropolitan Area Guidance Information and Control (MAGIC) System, Northeastern NJ, *New Jersey Department of Transportation.* Project Designer responsible for the development of a traffic control system along a portion of I-80. The MAGIC system relies on variable message signs, closed-circuit television, highway advisory radio, ramp metering, loop detectors or alternative detection technologies, and operations improvements to identify and coordinate diversion links through a traffic operations center.

Traffic Control System Network Upgrade, Newark, NJ, *City of Newark.* Project Designer responsible for the development and field-installation of two new sets of timing plans for the 118 signalized intersections in downtown Newark. Also used PASSER II-90 to evaluate existing phasing for a major arterial street and employed TRANSYT-7F computer software to develop overall timing plans.

New Jersey ITS Regional Traffic Information Center, NJ, *New Jersey Department of Transportation.* Project Designer responsible for the establishment of preplanned diversion scenarios and responses for various incidents along the Metropolitan Area Guidance Information and Control (MAGIC) corridor. Also developed diversion scenarios for the incidents on the region's five major interchanges. Each of the plans have different levels of action; implementation depends on the traffic demand and available reserve capacity on surrounding state routes. In addition, for each action and appropriate location, variable message signs were strategically placed and message contents were defined to provide clear and simple guidance for rerouted traffic.

Urban Traffic Control System (UTCS) Network Upgrade, Stamford, CT, *City of Stamford.* Project Designer responsible for the development and field-installation of a new set of timing plans for the Stamford central business district consisting of 45 intersections operating on a state-of-the-art UTCS network. Five new timing plans were developed using TRANSYT-7F and operate under the traffic responsive selection algorithm. Performed various traffic signal improvements throughout the city. Responsibilities included field observation, data collection, improvements design, and field-testing and installation.

McGuinness Boulevard Project Development/Identification and Final Design, Brooklyn, NY, *New York City Department of Transportation.* Project Designer responsible for using TRANSYT-7F software to develop three new timing plan sets. The goal of the project was to reduce a significant number of car-pedestrian accidents occurring as a result of excessive car speed. New signal timing plans were developed to provide traffic calming on this corridor that also accommodates significant pedestrian activities.

I-81/Route 17 Interchange, Binghamton, NY, *New York State Department of Transportation.* Project Designer responsible for providing the overall traffic analysis for both the existing and proposed scenarios to improve the interchange of Route 17 and I-81, which contains a weaving section with a heavy traffic flow and a significant number of accidents. This project sought to explore different options to eliminate or to find a better alternative to this weaving movement by evaluating many geometrical layouts. The project involved conducting a weaving section analysis, freeway capacity analysis, and ramp capacity analysis. Origin-destination data was collected using a "lights-on" and license plate matching technique.

Foley Square Courthouse, New York, NY, *New York City Department of Transportation.* Project Designer responsible for intersection capacity analyses.

Philadelphia International Airport Landside Master Plan, Philadelphia, PA, *City of Philadelphia, Division of Aviation.* Project Designer responsible for traffic operational analysis for off-airport and on-airport roads as part of this project to conduct a feasibility study and to evaluate the alternative options to relocate/remove PA Route 291, which is located near the Philadelphia International Airport and is standing in the way of the Airport's expansion plan. In conjunction with this purpose, the project also required conducting an evaluation of the overall traffic impact of each proposed scenario on the surrounding streets and freeways. The operational analysis included on-airport parking garages and lots, outlying parking, public transportation (rail and bus), rental car operations, surface transportation requirements for air cargo facilities, courtesy shuttle buses, and coverage area of external roads.

Citywide Signal System Expansion, Stamford, CT, *City of Stamford.* Project Designer responsible for the citywide signal system expansion project, which was designed to add more than 70 intersections to the City of Stamford's existing traffic control system. Responsibilities included determining the number of spare twisted-pair connections, evaluating the required communications capabilities, performing field inspections for the cable runs, and providing cable run design. Conducted feasibility evaluations for different communications systems, including fiber optic and wireless communications.

Route 120 Relocation, Hackensack, NJ, *Hackensack Meadowlands Development Commission*. Project Designer responsible for the areawide traffic operations and for development of a simulation model that was used to determine elapsed time from the end of a sports event at the stadium to the time all vehicles left the vicinity of the stadium. The goal of this project was to address the traffic congestion problems in the stadium vicinity by redesigning the surrounding roadways and freeways, which constantly experienced heavy traffic flow and congestion, especially during sporting events. The simulation model was used to predict improvements in stadium vicinity clearance time based on a new parking lot design and the relocation of Route 120. Project tasks also involved investigating the traffic impacts of the proposed scenarios on the surrounding streets and freeways, including the New Jersey Turnpike toll operations.

St. Paul Incident Management, St. Paul, MN, *City of St. Paul.* Project Designer responsible for designing logic for "smart" incident detection and diversion routing by using information from freeway detectors, as well as information from arterial streets system detectors. The project was conceived under the Minnesota Department of Transportation Guidestar program as a demonstration of the effectiveness of providing a preplanned diversion routing program of freeway traffic onto signalized urban arterials during serious incidents. The junction of I-94 and I-35E in downtown St. Paul is instrumented with state-of-the-art automatic detection on the main line and entrance/exit ramps, ramp meters, closed-circuit television surveillance, and motorist information systems to promptly detect an occurring incident, which would allow sufficient time for St. Paul Traffic Management Center personnel to implement and monitor special diversion timing schemes on the designated routes.

I-95 Corridor Coalition Project No. 3, Surveillance Requirements/Technology. Project Designer responsible for the layout of surveillance conceptual designs in urban and rural areas, as well as determining the cost associated with each design.

I-95 Corridor Coalition Project No. 8, Traveler Information Services (TIS). Project Designer responsible for developing a three-level pre-trip planning module that functions for all types of travelers, both commercial carriers and private individuals. The system produces real-time information providing the best trip option according to the user's preference.

Burlington-Gloucester Corridor Study, Burlington County, NJ, *New Jersey Transit (NJT).* Project Designer responsible for the pedestrian capacity analysis, preliminary engineering design, and capital cost

for the 16th and Locust Street Station in Philadelphia. Assisted in the structural and track improvements for an alternative connecting the existing PATCO and proposed NJT corridors.

Various Intersection Improvement Designs, *Various Clients.* Project Designer responsible for performing and implementing numerous intersection, corridor, and network operation improvement designs, which included retiming of existing signal plans, improving intersection geometry and safety, and increasing intersection capacity. Designed various intersection communications systems based on the wireless, fiber, and twisted-pair systems. Implemented advanced vehicle detection systems that effectively use video and radar equipment. Developed and evaluated a wide range of advanced signal control logics. Many intersection improvements involved intersections with complex multimodal requirements that required innovative methods and implementation of advanced technologies.

University of Wyoming

Wyoming Bicycle Safety Study. Research Team Leader responsible for identifying and analyzing bicycle accidents in Wyoming from 1986-1990 and for suggesting ways to improve bicycle safety. The data for this study was taken from the Wyoming Accident Report System and analyzed using SPSS software. Examined the correlations among variables such as age, sex, safety equipment, injuries, lighting conditions, control devices, and location of accidents.

Development and Validation of a Microcomputer-Based Network Simulation Model for the New Castle County Study Area, New Castle County, DE. Research Team Leader responsible for estimating roadway volumes in the New Castle County area using the TRANPLAN software package. A comparative assessment was made of each highway assignment technique's ability to accurately simulate actual 1985 highway conditions. Particular attention was paid to the reliability of each assignment technique under the variety of traffic operation settings that existed within the study area.

Autotrans, Vares, Bosnia

Maintenance Facility Design, Autotrans, Vares, Bosnia. Project Designer responsible for designing the layout of a maintenance facility for 150 trucks and buses. Used statistical analysis to determine required capacity for periodic and other vehicle maintenance. Since the new maintenance facility was allocated to a long and very narrow property, the facility layout was impacted by limitations of vehicle turning radii. Established one-way traffic flow throughout the maintenance facility. Specified all necessary equipment for the facility operations.

PROFESSIONAL AFFILIATIONS, PRESENTATIONS, AND PUBLICATIONS

Institute of Transportation Engineers (ITE)

Ivanovic, M. et al. "Transit Signal Priority on a Fully-Actuated Signalized Corridor Utilizing Advanced Priority Logic and Detection Systems." Technical paper accepted for presentation and publication at the 9th World Congress on Intelligent Transport Systems, Chicago, USA, October 2002.

Ivanovic, M. et al. "An Overview of Transit Signal Priority." White paper prepared by the Advanced Traffic Management Systems Committee and Advanced Public Transportation Systems Committee of the Intelligent Transportation Society of America, July 2002. (http://www.itsa.org/committe.nsf/4c2db16e002c2592852562060003177 2/493aa4e21d77827585256b9d00463eec?OpenDocument).

Ivanovic, M. "Communications Systems." Graduate Program Presentation, University of Delaware, Department of Civil Engineering and Transportation.

Ivanovic, M. "Advanced Traffic Control Systems." Graduate Program Presentation, University of Delaware, Department of Civil Engineering and Transportation.

Ivanovic, M. "ITS Technologies Characteristics and Applications." Graduate Program Presentation, University of Delaware, Department of Civil Engineering and Transportation.

Ivanovic, M. "Applications of the Microsimulation Software in Transportation." Graduate Program Presentation, University of Pennsylvania, Department of Systems Engineering.

Ivanovic, M., T. Halterman, M. Yedlin, and F. M. Childs. "Assessing the Impact of Signal Preemption and Coordination on LRT Operations Using Stimulation." Presented at the Transportation Research Board Annual Meeting, January 1997 and at the ITE Conference, Toronto, Canada, August 1998.

Jehanian, Karen, Miomir Ivanovic, and Karl D. Ziemer. "LED-Based Variable Message Sign Intensity Testing." *IMSA Journal*, July-August 1997.

Anderson, R., M. Ivanovic, and E. Wilson. "The Need to Consider Missing Data in Transportation Research." *Civil Engineering Systems*, Vol. 12, pp. 37-48.

YEARS EXPERIENCE WITH FIRM: 2 WITH OTHER FIRMS: 5

EDUCATION

B.A., Geography and B.A., Political Science (Dual Major), State University of New York at Geneseo, 1998
M.R.P, Urban and Regional Planning, State University of New York at Albany, 2001

PROFESSIONAL REGISTRATION

AICP: No. 019570 (2005)

CURRENT RESPONSIBILITIES

Community Planner with a broad range of experience in community, regional, and transportation planning. Work includes day-to-day management and development of multimunicipal comprehensive plans and redevelopment plans.

SUMMARY OF PROJECTS

Zoning Ordinance Amendments Implementing the Paoli Community Master Plan, Chester County, PA, *Tredyffrin Township and Willistown Township*. Project Manager responsible for assisting a multi-municipal task force that includes officials from Tredyffrin and Willistown Township's in their effort to create Transit Oriented Development Zoning regulations for a brownfield site in Chester County, PA. The project included public meetings, monthly task force meetings, mapping and the development of zoning ordinance regulations for a 50 acre undeveloped tract of land surrounded by existing older residential neighborhoods and a mixed-use corridor along PA 30 (Lancaster Pike).

Town Center Zoning Ordinance Amendments, Montgomery County, PA, *New Hanover Township.* Assisted the Township Planning Commission to develop zoning ordinance amendments for a recently created Town Center Zoning District. The ordinance amendments included changes to the existing zoning to reinforce the Town Center intent of the district, addition of regulations requiring streetscaping, roadway widths and roadway design, as well as amendments to provide flexibility in design to encourage a Traditional Neighborhood design by future developers while still providing reasonable controls and potential for input by Township officials.

Comprehensive Open Space Plan, New Hanover Township, Montgomery County, PA. *New Hanover Township Board of Supervisors.* Planner responsible for helping the Township update their current Open Space Plan to conform to the new standards of the Green Fields/Green Towns program initiated by Montgomery County. This plan will update the existing plan to provide direction on open space planning in the Township given the changes over the past five years and the changes expected to occur into the future. This update will also make the Township eligible for the latest round of funding developed by the county to help municipalities preserve open space.

On-Call Municipal Planning Services, New Hanover Township, Montgomery County, PA. *New Hanover Township Board of Supervisors.* Planner responsible for assisting project manager in the day-to-day planning activities taking place within the Township. Activities include subdivision and land development reviews, technical information request assistance and other day-to-day requests.

Multimunicipality Comprehensive Planning Services, Delaware County, PA, *County of Delaware/Township of Nether Providence.* Planner responsible for assisting the project manager in the day-to-day activities and the development of the transportation, land use and zoning, and natural features chapters of the multimunicipality comprehensive plan for Nether Providence Township, Rose Valley, Rutledge, and Swarthmore.

Lansdowne Borough Redevelopment Area Plan, Lansdowne, PA, *Borough of Lansdowne*. Planner responsible for field view survey and data collection. This information, which was entered into a database to create a parcel-by-parcel detail sheet, will be used by the Borough Project Committee and the Borough Planning Commission to determine the redevelopment potential of the downtown area surrounding Lansdowne Avenue and Baltimore Avenue.

EXPERIENCE PRIOR TO GANNETT FLEMING

Montgomery County Planning Commission, Norristown, PA

Pottstown Metropolitan Regional Comprehensive Plan, Montgomery County, PA, *Pottstown Metropolitan Regional Planning Commission*. Assistant Project Manager responsible for the development of plan sections addressing socioeconomic conditions, existing and future land use, municipal overview, residential housing, fair share, and build-out areas. Tasks also included geographic information system (GIS) mapping and community survey development and analysis. The comprehensive plan unites the region in working together to revitalize the Borough of Pottstown, maintain the existing built-up areas, and effectively manage sprawling development in the rural areas.

On-Call Planning Services, Douglass Township, Montgomery County, PA, *The Board of Supervisors for Douglass Township.* Project Manager responsible for site plan reviews, zoning and subdivision ordinance amendment review, geographic information system (GIS) mapping, updates to the township's comprehensive plan, coordination with the Pottstown Metropolitan Regional Comprehensive Plan, and the authoring of a conservation subdivision ordinance for the rural resource-suburban growth edge of Douglass Township.

On-Call Planning Services, Montgomery Township, Montgomery County, PA, *The Board of Supervisors for Montgomery Township.* Project Manager responsible for site plan reviews, zoning and subdivision ordinance amendment review, geographic information system (GIS) mapping, and the creation of a bed and breakfast inn ordinance intended to help preserve existing historic residential structures along major roadways within the township by providing a commercial-type use that is compatible with the existing structure.

Montgomery County Comprehensive Plan, Montgomery County, PA. Planner responsible for a significant amount of the writing, editing, and formatting of the highway and mass transit sections of the comprehensive plan, which facilitates setting priorities in the revitalization of older communities, maintaining the existing developed areas, and managing sprawling development in the rural areas. Attended meetings held with consultants and the Pennsylvania Department of Transportation to discuss local and regional planning issues related to proposed designs of major roadways throughout the county.

River Street Planning and Development, Troy, NY

Citywide Comprehensive Plan, Troy, NY, *City of Troy.* Planner assisting the project manager by authoring the chapters on emergency responders and public infrastructure. Also developed geographic information system (GIS) mapping for some portions of the plan.

Comprehensive Plan, Town of Poestenkill, NY, *Town of Poestenkill.* Planner assisting the project manager by authoring the transportation, infrastructure, municipal overview and special boundaries, community survey analysis, and floodplain sections of the plan. Also researched and wrote the mining chapter, which was included to assist in the effort to move forward on mine reclamation within the town. The plan aided the Town of Poestenkill in managing its natural resources and guiding growth.

Local Waterfront Revitalization Plan, Villages of Seneca Falls and Waterloo, NY, *Villages of Seneca Falls and Waterloo.* Planner assisting the project manager by authoring sections on water quality, floodplain, erosion and sediment pollution control, steep slopes, existing zoning, and municipal subarea overview. This plan provided methods to resolve natural and man-made barriers along the waterfront in an effort to capture potential tourism dollars that could be generated by the high level of recreational boat traffic passing through the villages.

Local Waterfront Revitalization Plan and Comprehensive Plan, Town of Waterford, NY, *Town of Waterford.* Planner assisting the project manager by authoring the socioeconomic, floodplain and wetlands, history, infrastructure, transportation, water quality, and waterways sections of the plan and by developing the geographic information system (GIS) mapping for the project. The comprehensive plan provided methods to maintain the housing and commercial uses in the interior of the town, while the waterfront plan discussed techniques to capture the potential tourism dollars generated by the high level of recreational boat traffic that passes by the town at the junction of the Hudson and Mohawk Rivers.

Jefferson County Planning Department, Watertown, NY

County Planning Board Presentations. Planner charged with reviewing land development site plans and presenting the issues of countywide significance to the County Planning Board.

County Economic Development Plan. Planner responsible for assisting senior staff in updating the County's economic development plan by collecting data and writing specific sections.

Community Technical Assistance, Alexandria Bay and Deferiet, NY, *Villages of Alexandria Bay and Deferiet.* Planner assisting senior staff in updating the comprehensive plan for each municipality by collecting data and writing sections of each plan.

Fair-Housing Workshops. Planner charged with developing fair-housing workshops and organizing a task force committee to discuss issues of fair housing in Jefferson County.

Regional Snowmobile Trail Association Meetings. Planner responsible for attending regional meetings on behalf of the County to discuss issues related to the use, maintenance, liability, and funding of snowmobile trails in the region.

S. Sudheer Yadlapati Resume

YEARS EXPERIENCE WITH FIRM: 2 WITH OTHER FIRMS: 0

EDUCATION

Bachelor of Architecture, Indian Institute of Technology, 2001
M.S., Civil Engineering, University of Virginia, 2003

CURRENT RESPONSIBILITIES

Traffic Designer responsible for traffic analysis and building simulation models for transportation projects.

SUMMARY OF PROJECTS

Ardmore Transit Center Planning and Design Services, Lower Merion Township, Montgomery County, PA, *Township of Lower Merion.* Traffic Engineer responsible for the analysis of existing traffic operations during planning and design of the Ardmore Transit Center to serve SEPTA's regional rail system in suburban Philadelphia. Project responsibilities also included evaluation of pedestrian accessibility; completion of a trip generation study; and definition of infrastructure needs related to congestion management, public transportation usability, and pedestrian and vehicle linkages in the vicinity of the transit center. The project involved analysis and simulation of traffic network operations utilizing SYNCHRO/SIMTRAFFIC and VISSIM software packages.

S.R. 0081, Section 397, Luzerne County, PA, *Pennsylvania Department of Transportation, District 4-0.* Traffic Engineer responsible for preliminary and final redesign study of I-81 Exit 178, Avoca/Airport Interchange, including relocating S.R. 2059 to connect directly with the Navy Way Road extension. Responsibilities included data collection efforts using ATRs, manual traffic counts and OD studies, trip generation study and traffic analysis. Traffic analysis included, analyzing the feasibility of signals and roundabouts on road networks in the interchange area using SYNCHRO/SIMTRAFFIC and VISSIM software packages.

I-95 Toll Plaza Study, Newark, DE. *Delaware Department of Transportation.* The project involved studying a new toll plaza design. The existing toll plaza originally consisted of six (6) southbound toll lanes, six (6) northbound toll lanes, and three (3) reversible lanes. Currently the plaza operates, in each direction, with a varying number of mixed-use toll lanes (depending on traffic) and two (2) dedicated EZ-Pass toll lanes. The new design involves evaluation of two (2) Open Road Tolling (ORT) lanes flanking a proposed toll plaza configuration of five (5) cash pay toll booths in the northbound direction and six (6) cash pay toll booths in the southbound direction. Responsibilities include capacity analysis, identifying throughput capacity of toll booths, and identifying the toll plaza queues for future years using microscopic simulation. Extensive simulation was conducted for this project utilizing VISSIM simulation software.

EXPERIENCE PRIOR TO GANNETT FLEMING

University Of Virginia, School of Engineering and Applied Science
Graduate Research Assistant

- Worked on the development of variable speed limit control logics for work zones using VISSIM 3.60. This project is funded jointly by the Virginia Transportation Research Council and FHWA
- Evaluated and optimized signal timing plans of 5 major intersections on I-29 using Synchro, TRANSYT-7F and VISSIM
- Conducted a feasibility study on a Bus Information System for the University Transit Service in Charlottesville

- Optimized the signal timing plan of an isolated signalized intersection using neural networks and genetic algorithm.

National Remote Sensing Agency Hyderabad, India
Intern

- Developed a GIS database from aerial photographs and topography maps for the Nehru zoological park, Hyderabad. Was also part of the team that suggested on future expansions for the park.
- Route modification of NRSA bus service network. Responsible for collection and analysis of Travel time data of its various routes and drafted a report on necessary modifications

Department of Architecture and Regional Planning, IIT Kharagpur, India
Research Assistant

- Master plan for MANU University. Involved in the design and planning of the phase wise development of the road network for the university campus
- Was part of a team that drafted a proposal for Calcutta new city center project aiming for sustainable development in the region

PROFESSIONAL AFFILIATIONS AND PRESENTATIONS

ITS America
Institute of Transportation Engineers

Byunkyu "Brian" Park and Sudheer Yadlapati. *Development and testing of Variable speed limit logics at work zones using simulation.* Transportation Research Board, 82nd Annual meeting, Washington D.C. (No: 03-3484)

Byunkyu "Brian" Park and Sudheer Yadlapati. *Simulation based evaluation of VSL control Logics at work zones*. Virginia Section of Institute of Transportation Engineers Fall meeting, October 2002, Wintergreen, Virginia.

KEATING **Environmental Management, Inc.**

J. Stuart Wiswall, P.G.

Registration
Licensed Professional Geologist DE, KY, PA, NC, SC, VA Certified North Carolina Hazardous Waste Site Manager

Credentials
B.S., Geology, Colgate University, 1978
Graduate course work, Hydrology, Wright State University, 1992

Certified OSHA 29 CFR 1910.120

Fields of Competence
Phase I and Phase II Environmental Site Assessments
Brownfield site redevelopment
Development, implementation and interpretation of hydrogeologic investigations.
Fate and Transport modeling
Design, installation and operation of soil and groundwater remediation systems.
Underground storage tank closure and assessment.
Monitored Natural Attenuation
Compliance Audits.
Spill Prevention, Control and Countermeasure Plans.

Experience Summary
Professional

Twenty-one years of project management experience in the petroleum and environmental industries. Proven expertise in assessment, remedial design and implementation of corrective action for soil, sediment and groundwater contamination. Extensive experience with environmental projects conducted under Federal (CERCL, RCRA), Brownfields and state voluntary programs in DE, IL, NC, NJ, OH, PA, SC and VA.

Professional Affiliations

American Association of Engineering Geologists
American Association of Petroleum Geologists
National Groundwater Association

Key Projects

Certification and Redevelopment of Brownfield Site - Obtained Brownfield certification for vacant property in Delaware with confirmed chlorinated solvent, petroleum contamination. Developed Sampling and Analysis Plan for field investigation and prepared Remedial Investigation Report that include vapor migration analysis resulting in issuance of Certificate of Completion of Remedy and associated liability relief for owner. Site was subsequently sold and redeveloped as retail operation.

School Site Assessment and Redevelopment – Developed site investigation and remedial alternatives for site affected by adjacent Superfund site being considered for $60MM school redevelopment project in New Jersey. Employed Triad approach for rapid site assessment to delineate and characterize buried waste-disposal lagoon and drum disposal area. Worked with state regulators to develop cost-effective remedial measure appropriate for end-use.

Superfund Site Groundwater Remediation System – Responsible for rehabilitation and operation of groundwater pump and treat system at former railroad maintenance yard to address PCB and fuel oil affected groundwater. Project included selection and installation of pumps, trenching and installation of collection piping to treatment building, restoration and operation of carbon treatment system, and monitoring and maintenance of on-site infiltration gallery. Managed monthly sampling of monitoring wells and annual sampling of private supply wells with data interpretation ad reporting to EPA.

Toluene Remediation at Industrial Site – Project Manager for $3.5MM investigation and remediation of a toluene release from a solvent recovery system at an international printing firm. Project included closure of 18 USTs up to 50,000-gallons in capacity. Designed and installed free product recovery system**,** series of recovery wells for plume control and air sparging/soil vapor extraction system for soil and groundwater remediation.

Jet Fuel Spill at International Airport – Developed Work Plan for clean-up assessment following an emergency response related to release of 40,000 gallons of jet fuel to surface water and wetlands. Prepared sampling protocol and monthly reporting to EPA during duration of project.

Natural Attenuation of Chlorinated Solvent Plume–

Designed and provided oversight for an evaluation of the occurrence and enhancement of reductive dechlorination of a solvent plume at a former manufacturing facility. Project involved collecting groundwater quality measurements to fill data gaps and evaluate conditions for natural attenuations. Designed bench scale studies to determine appropriate substrate modification requirements.

Superfund Site Soil Investigation – Designed soil sampling program to determine the extent of soil contamination at former coking plant. Used data in remedy design to define location, volume of soil requiring removal.

KEATING **Environmental Management, Inc.**

Terrence J. McKenna, P.E.

Registration
Professional Engineer in DE, PA and NJ
PADEP Certified for Storage Tank Closure Activities
NJDEP Certified for Underground Storage Tanks Systems
Certified OSHA 29 CFR 1910.120
Certified EPA/AHERA, Pennsylvania and City of Philadelphia Asbestos Building Inspector
Certified EPA/AHERA and Pennsylvania Management Planner

Credentials
B.S., Civil Engineering, University of Dayton, 1991

Fields of Competence
Brownfield investigation, remediation and reuse/redevelopment.
Investigation and characterization of subsurface soil and hydrogeologic conditions.
Property acquisition due diligence, including environmental assessments and property condition assessments.
Expert witness testimony.
Design, installation and closure of underground storage tank systems.
Groundwater flow and solute transport modeling.
Asbestos investigation, management and abatement.
Management and direction of projects performed under Federal (CERCLA, RCRA and TSCA) and State environmental programs.
Construction management, cost controls, value engineering, quality assurance, scheduling and estimating.
Waste and storm water collection, conveyance, and treatment system design.
Lead based paint assessment.

Experience Summary

Professional

Fifteen years of experience providing environmental engineering/consulting, construction management and real estate development services to both the private and public sectors. Experience involves the implementation and management of remedial investigations and corrective action activities at CERCLA, RCRA, municipal, and industrial sites; Brownfields revitalization under the regulatory oversight of numerous State agencies; closure/remediation of both aboveground and underground storage tanks; analysis and design of waste and storm water collection, conveyance and treatment systems; the design of RCRA/CERCLA composite lining systems and final covers for various municipal and industrial sites; design and implementation of civil/site tasks related to land development for residential and industrial sites; performance of environmental site assessments and property condition assessments in support of real estate transactions; and the performance/development of both asbestos and lead based paint investigations, management plans and abatement.

Civic

Member, Upper Providence Township, Montgomery County, PA Zoning Hearing Board, 2000-present

Key Projects

Brownfields – Lead technical consultant for a $300+ million redevelopment of a former industrial property into a state-of-the-art electric generating facility. Project involved the investigation of historical use of the site, assessment of soils and both shallow and deep aquifers, and development of a public participation plan.

Lead technical consultant for a $100+ million redevelopment of a former rail yard into a state-of-the-art port to serve as the North American hub of a major transportation company. Project involved the investigation of historical use of the site, soils and groundwater. Risk-based standards were subsequently developed to demonstrate attainment with Brownfields regulations.

Lead technical consultant for the investigation of an industrial property that was developed on a former municipal landfill. The activities included the assessment of site soils and historic fill (ash, cinders, demolition debris) and the demonstration that the lead-contaminated materials were stable, did not impact site soils and were not a hazard to human health or the environment.

Subsurface Assessment-Participated in the evaluation of subsurface conditions proximate to the former City of Philadelphia Northwest Incinerator. Project included the evaluation of soils for metals and dioxin and the development of reports for presentation to the Zoning Hearing Board.

Testimony-Provided expert witness testimony in defense of a "rebuttable presumption" that the owner of a UST was responsible for subsurface contamination on a neighboring property under the PA Storage Tank and Spill Prevention Act.

Environmental Due Diligence-Lead consultant/manager of a technical group that provided environmental due diligence services to a major financial institution in the mid-Atlantic region. Environmental risk consulting services were provided on real estate being evaluated for potential loans, as well as the institution's owned real estate portfolio.

PCB Transformers-Lead consultant/manager of a PCB transformer investigation, remediation and replacement project for the 5th largest school district in the U.S. Tasks involved the preparation of work plans, investigation reports, remedial specifications, oversight of remedial activities, and negotiating with USEPA Region III representatives.

Superfund-Project manager for the construction of a 10+ million PRP funded groundwater remediation system. Project involved the implementation of the design specifications and drawings, management of construction activities, implementation of construction quality control/quality assurance activities, acquisition of required permits and deed restrictions, and certification of the completed installation.

KEATING

KATIE A. ABRAHAMSEN

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Philadelphia, PA 19107
(570) 815-1284
kabrahamsen@keatingnet.com

EDUCATION

Boston University, Boston, MA, 2003-2005
M.C.P., Master of City, Community, and Regional Planning, May 22, 2005

- GPA: 3.85/4.0
- Metropolitan College Award for Excellence in Graduate Studies for City Planning
- Related Course Work: Real Estate Development; Urban Finance and Budgeting; Urban Economic Issues and Analysis; Urban Transportation Policy and Planning; Urban Problems and Policy Processes; Courts, Society, and Criminal Procedure; Urban Analytical Methods; Community Development; Urban and Regional Land Use; Urban and Environmental Planning and Design; History of Planning Theory.

Boston College, Chestnut Hill, MA, 1998-2002
B.S., Environmental Geoscience, *magna cum laude,* May 21, 2002

- Major GPA: 3.864/4.0
- Phi Beta Kappa, Cross and Crown Honor Society, Golden Key National Honor Society, National Society of Collegiate Scholars, Ford Scholarship, Dean's List, Sophomore Scholar, Dean's Scholar
- Related Course Work: Geoscience and Public Policy, Environmental Policy, Environmental Law, American Environment, Environmental Geoscience, Environmental Hydrology, Geology, Spanish, Environmental Oceanography, Earth Materials, Chemistry, Environmental Geology, Climate Change, Site Characterization

EXPERIENCE

Keating Development Company, Philadelphia, PA
Assistant Project Manager, September 1, 2005 - Current

Massachusetts Department of Housing and Community Development, Boston, MA
Intern, May 24, 2005 – June 24, 2005

- Conducting and writing case studies for three towns in Massachusetts that are implementing smart growth initiatives and principles.

The City Government of Scranton, Scranton, PA
Intern, May 24, 2004 – July 30, 2004

- Attended weekly cabinet meetings and construction meetings for development projects in the downtown of Scranton; set up and ran the summer pool pass program; aided the city planner in approving construction plans for both commercial and residential buildings; applied for the Hometown Streets million dollar grant for the city.

Vanderweil Process & Industrial Design-Construction, LLC, Milford, MA
Document Control Engineer, November 3, 2003 – April 30, 2004

- Worked on-site at the Gillette Factory construction project; answered requests for information from engineers, contractors, and owners of various projects; documented submittals of materials and supplies; read and marked design plans; maintained contact with clients and subcontractors; updated online databases.

Fluor Daniel Corporation, Waltham, MA
Administrative Assistant, April 21, 2003 - October 31, 2003

- Worked full-time at the construction site of the new Raytheon Corporate Headquarters; updated filing systems, responded to inquiries, attended weekly meetings, managed

contractors' monthly bills and payments.

Development Management Corporation, Boston, MA
Personal Assistant, March 18, 2003 - April 18, 2003
- Worked at the construction and financial headquarters for the development project of the Regent Hotel in Boston; updated computer filing system and answered phones.

GZA GeoEnvironmental, Inc. Laboratories, Hopkinton, MA
Environmental Chemistry Laboratory Assistant, October 3, 2002 - February 7, 2003
- Prepared contaminated soil and water samples for various tests, including tests for mercury, formaldehyde, and heavy metals.

Office of Residential Life at Boston College, Chestnut Hill, MA
*Clerk to Director of Off-Campus Housing***,** Summer-Fall 2001
- Updated and entered housing listings in databases; responded to inquiries and answered phones; organized and aided in housing fairs.

Abrahamsen, Moran, and Conaboy, P.C. Attorneys at Law, Scranton, PA
*Legal Intern***,** Summers of 1999, 2000
- Attended depositions, court dates, and various other meetings for legal matters; wrote complaints, letters, and depositions; answered phones and interacted with clients; responded to client inquiries.

ACTIVITIES

Ignacio Volunteers Dominican Republic Summer Service Trip, Summer 2001
- Taught a 5th grade class of 25 students at a summer camp in Spanish; volunteered in a nursing home, home for mentally and physically challenged children, and a school in a Haitian sugar plantation.

Appalachia Volunteers, Habitat for Humanity, Spring Break 2000, 2001
- Group Leader 2001: organized daily activities; handled group finances; led nightly reflections.

Ignatian Society, Fall 1998-2002
Social Chair, Spring/Fall 2001
- Organized social events; handled and collected finances; promoted interaction between students and fellow Jesuits; promoted Jesuit ideals on and off-campus.

Student Judicial Board, Fall 2000/ Spring 2001
- Listened to complaints; debated on decisions; decided on educational enforcements.

4Boston, Commonwealth Tenants' Association Alternative Program, Fall 2001 - Spring 2002
- Provided role models for children by organizing weekly water quality testing.

PULSE, St. Francis/St. Philip Parish After School Program, Fall 2000/Spring 2001
- Tutored children; organized educational games; learned about social justice and urban housing.

ADDITIONAL SKILLS

- Proficient in Spanish.
- Computer Skills including Microsoft Word, Microsoft Excel, Microsoft PowerPoint, GIS, Prolog.

Resume of Robert Henderson

Vice President Development

Bob Henderson is responsible for project concept development, working with Keating and client staff. Activities include site and area analysis, project programming, and design concept development and review.

Bob's experience spans 30 years and every phase of project planning, design, development and construction. His range of experience is broad, including;

- Mixed-Use/Residential: The Phoenix in Philadelphia, the Clarendon Phoenix in northern Virginia, the Heldrich Center in New Brunswick, NJ, and Old Town Square in Oakland, CA.

- Redevelopment initiative on behalf of U.S. Postal Service and General Services Administration for a major reuse of two blocks that effectively result in more than 2,000,000 sq.ft.

- Justice Facilities: Courthouses in Allentown, Wilkes-Barre, Pensicola, New Brunswick, NJ Waco, TX and Lynchburg, VA.

- Office Campus developments in New Brunswick, NJ and Conshohocken, PA

Prior to joining Keating, Bob was a partner in a local architectural practice for 12 years. The project portfolio was diverse, including multi-family residential, justice facilities, an airport modernization, office building renovation, and flex office/warehouse design.

Early in his career, Bob managed a variety of urban planning and design projects – housing development master plans and downtown redevelopment plans for Skidmore Owings and Merrill.

Education
Bachelor of Architecture, University of Illinois
Masters of Architecture, University of Pennsylvania
Masters of City Planning, University of Pennsylvania
L'Ecole de Beaux Arts, Fontainebleau, France

Thomas D. Carboni, PE

Civil Engineer

Registrations: Professional Engineer PA, NJ

Memberships: Urban Land Institute

Education: BS, 1984, Virginia Military Institute, Civil Engineering
Graduate Studies, 1985, The Pennsylvania State University, Engineering

Mr. Carboni is a Senior Civil Engineer with more than 20 years of engineering design, and construction support experience in land development; highway, bridge and transit reconstruction; and rehabilitation projects. His responsibilities have included managing civil/transportation staff, project engineering and project managing for highway and bridge projects located in PA, NJ, DE and LA. He also has planning and design experience in transit engineering, and transit station rehabilitation projects for mass transit and rail agencies including: SEPTA, Amtrak, CSX and PATCO. Mr. Carboni's project experience includes:

Eagle Pointe Development, Westrum Development Company, Philadelphia, PA - Project Manager for the redevelopment of the former Byberry State Hospital site located in northeast Philadelphia. This 130-acre site will be redeveloped into an "active adult" residential community comprised of approximately 439 housing units (55 singles, 96 condominiums, 80 quads and 208 townhomes) on 55 acres, and 25 acres of "open space" with fitness trails and environmental gardens. The remaining 50 acres will be developed separately by another developer for commercial/office use. This project will initially involve demolition and removal of 27 large administrative and patient housing buildings with infrastructure. The project requires the approval of the Philadelphia Zoning Board and Planning Commission for the new residential community including design of streets and alleys. Extensive utility coordination is required with the Philadelphia Water Department (PWD) for sanitary and domestic water service. Significant permitting is required to comply with PADEP/NPDES stormwater and erosion control regulations.

PIDC - Basin Bridge Complex, Philadelphia Navy Yard, Philadelphia, PA - Project Manger for this "fast-track" project which requires the design and construction of a one story 34,800 SF pre-engineered building on a piled support foundation and supporting utilities to be constructed at a previous tank storage site (6 acres) located at the northwestern section of parcel 4 in the Navy Yard. This project required interviewing, architectural and engineering facility programming for two relocated clients (Moran Towing and River Associates), and provisions for a third tenant to occupy the new building. Extensive civil/site engineering and coordination were required to provide for proposed domestic water, fire protection, sanitary sewer, electrical and communication services. Coordination was required with the PWD, L&I and DEP for site impacts and utilities. Project is currently progressing to final design.

Metro Development Company, 1601 Vine Street Development, Philadelphia, PA - Project Manager for surveying and geotechnical engineering for Due Diligence for the development of an existing surface parking lot into a multi-story office and residential complex with a parking garage.

Nicola Court Development, Cranbury, NJ - Project Engineer and contractor providing civil/site, foundation and sanitary sewer design/construction of six luxury home sites in a private residential housing development. Homes varied between 4,500 and 7,000 s.f. of interior space and were built on six acre lots. Secured land development, zoning and sewer permits.

Shadow Oaks Development, Cranbury, NJ. Project Engineer and contractor providing civil/site, utility and foundation design/construction for residential home reconstruction.

Stormwater Drainage Study for Ship Bottom Borough, New Jersey Department of Transportation, Ocean County, NJ - Project Civil Engineer for this comprehensive storm water drainage study. The Borough of Ship Bottom located on Long Beach Island has experienced severe flooding after heavy storms. Most flooding occurs along Eighth Street and Ninth Street that are the only access roads to and from the island. During periods of heavy flooding, these access routes are nearly impassible, especially during high tidal periods. This drainage problem presented many challenges because of low lying elevations and the lack of exiting stormwater drainage information. However, several solutions to the problem were analyzed and presented in a report that was reviewed by State and Federal officials.

Bethayres Station Parking Lot Expansion, Southeastern Pennsylvania Transportation Authority, Bethayres, PA - Project Engineer for this site development project, which consisted of expanding the capacity of the existing parking lot from 62 to 156 parking, stalls. The project involved the construction of an additional 28,000 sq. ft. of asphalt pavement within the 100-year flood plain (no net fill was allowed), a storm water drainage system, a new lighting system; and landscaping. The project also required a presentation and approval of the local township zoning board.

Lansdale Station Parking Expansion, Southeastern Pennsylvania Transportation Authority, Lansdale, PA - Project Manager for this site development project which consisted of constructing a 400+ stall parking facility within an existing Conrail freight storage yard. The location of the parking area required construction of two access driveways (700 l.f. total length) both of which crossed active tracks, requiring crossing signals/gates. Other improvements to the site included an adequate storm water drainage system with on-site detention, a new lighting system, landscaping, installation of three new stub-end tracks (1600 l.f. total length) and construction of a loading dock with ramp. Environmental and community concerns associated with this project were addressed in a detailed Environmental Assessment Report and a Traffic Impact Report.

Delaware Avenue Extension - Erie Street Reconstruction, New Jersey Department of Transportation, Camden, NJ - Project Manager for the preliminary and final design of a new 1,000-foot extension of Delaware Avenue to Erie Street along the Delaware waterfront in North Camden. The project also included widening a 1,000-foot section of Erie Street to 2nd Street. Project elements included an on-site detention storm water drainage system, building demolition, pavement design, and design of a suitable roadway alignment that addressed the concerns of local residents and community organizations that would be impacted by the construction.

Reconstruction of the Market Street Elevated, Southeastern Pennsylvania Transportation Authority, Philadelphia/Upper Darby, PA - Project Civil Engineer responsible for managing and coordinating the civil engineering design for the extensive reconstruction of a two mile long section of the Market Street Elevated structure from 45th Street to the 69th Street Terminal, five elevated stations and one at-grade station. Project tasks include preliminary engineering; a structural alternatives analysis; environmental assessment; community assessment; contractibility analysis; final engineering/design; utility relocations; street reconstruction; cost estimates; construction packaging; and construction support services.

William B. Fahber, PLS

Surveyor/ROW Design Technician

Registrations: Professional Land Surveyor PA, NJ, DE, MD

Education: Drexel University, Civil Engineering (Pursuing)
AutoCAD, MicroStation, Global Positioning Systems
NJ Map Filing Law
Amtrak, CSX, and Conrail Safety Training Experience

Mr. Fahber has 42 years experience in land surveying. Included in this experience is a thorough knowledge of county courthouse research in deeds, wills, maps, road returns, and orphan court rulings to obtain current property descriptions, determine intent and order of precedence in very old lot divisions and areas of conflict, and to investigate the existence of missing properties and lots with no known current owner. He has drawn up subdivision and right-of-way maps that conform to municipal and county planning standards, and he has written legal descriptions for conveyance by deed. Mr. Fahber has performed field work which involved topographic surveys, cross sections, construction, route and design field surveys, ground control, field editing, stockpile volume calculations, geodetic traverse control surveys based on N.J. Plane Coordinate System. Mr. Fahber's relevant experience includes the following:

Crossroads Redevelopment Project, Pennsauken Township, Camden County, NJ, DVRPC – Survey Team Leader for complex highway access improvements at the site of a new civic center that will replace the Pennsauken Mart. Responsible for review and approval of topographic and baseline surveys and right of way plans. Established ground control for aerial surveys comprised of five flight lines. All work in accordance with NJ Map Filing Law.

Alexander Road over Northeast Corridor, West Windsor Township, Mercer County, New Jersey Department of Transportation – Team Leader currently responsible for the review of topographic and baseline surveys, design of highway profiles, horizontal baseline geometry, grades, cross sections, earthwork, and quantity calculations associated with the roadway improvements. Additional responsibilities include the review and final approval of right-of-way plans (ROW) including ETM, GPPM, IPMs, and parcel descriptions for impacted parcels. Work was performed in accordance with NJ Map Filing Law and NJDOT Surveying Manual for mapping requirements.

Middletown (DE) Streetscape, Town of Middletown, DE – Performed field surveys and prepared topographic base plans for the design of new sidewalk and streetscape for downtown Middletown. The project involves the design of streetscape improvements along Main Street in Middletown, Delaware. The improvements include new curb, sidewalks, decorative lighting, and landscaping.

Marlton Circle Elimination (Routes 70 & 73), Evesham Township, Burlington County, New Jersey Department of Transportation – Team Leader currently responsible for the review of topographic and baseline surveys, design of highway profiles, horizontal baseline geometry, grades, cross sections, earthwork, and quantity calculations associated with the roadway improvements. Additional responsibilities include the review and final approval of right-of-way plans (ROW) including ETM, GPPM, IPMs, and parcel descriptions for impacted parcels. Work was performed in accordance with NJ Map Filing Law and NJDOT Surveying Manual for mapping requirements.

Route 47 & Route 9 Improvements, New Jersey Department of Transportation, Middle Township, Cape May County, NJ – Survey Team Leader for a series of complex intersection improvements along Route 47 and US 9. Responsible for the review of topographic and baseline surveys, design of highway profiles, horizontal baseline geometry, grades, cross sections, earthwork, and quantity calculations associated with the roadway improvements. Additional responsibilities include the review and final approval of right-of-way plans (ROW) including ETM, GPPM, IPMs, and parcel descriptions for 70 impacted parcels. Work was performed in accordance with NJ Map Filing Law and NJDOT Surveying Manual for mapping requirements.

Route 47 and 40 Bridge Replacement and Intersection Improvements, New Jersey Department of Transportation, Franklin Township, Gloucester County, NJ – Survey Team Leader for design of reverse jughandle, a new bridge over Conrail, center left-turn lane, left-turn storage at two intersections. Responsible for preparation of right-of-way plans including deed research, identification of easements and road dedications to establish ROW parcel maps, entire tract maps, general property parcel maps, IPMs, and agreements for 55 impacted parcels. Work was performed in accordance with NJ Map Filing Law and NJDOT Surveying Manual for mapping requirements.

Route 47 Intersection Improvements, New Jersey Department of Transportation, Glassboro, Gloucester County, NJ – Survey Team Leader for a series of complex intersection improvements along Route 47 and US 322. Responsible for preparation of right-of-way plans including deed research, identification of easements and road dedications, to establish ROW parcel maps, entire tract maps, general property parcel maps, IPMs, and agreements for 45 impacted parcels. Work was performed in accordance with NJ Map Filing Law and NJDOT Surveying Manual for mapping requirements.

Route 44 & Fowler Lane Drainage Improvements, New Jersey Department of Transportation, West Deptford Township, Gloucester County, NJ – Team Leader responsible for the review of topographic and baseline surveys, design of highway profiles, horizontal baseline geometry, grades, cross sections, earthwork, and quantity calculations associated with the roadway improvements. Additional responsibilities include the review and final approval of right-of-way plans (ROW) including ETM, GPPM, IPMs, and parcel descriptions for impacted parcels. Work was performed in accordance with NJ Map Filing Law and NJDOT Surveying Manual for mapping requirements.

Interchange with U.S. Route 130 and the New Jersey Turnpike (6/6A), The RBA Group – Senior Highway Designer responsible for stormwater calculations using TR-55 manual (Urban Hydrology for Small Watersheds), construction plans, earthwork summary, quantity calculations, and cost estimate. (2000)

Greentree Road, Section 2, New Jersey Department of Transportation, Washington Township, NJ – Team Leader responsible for the development of right-of-way documents for widening of the road. Extensive research effort to obtain road returns, all utility and ingress-egress easements and road widening easements of record, and current owner list and deeds. Supervised drafting of topography and right-of-way plans. The project included the contract document preparation for the reconstruction, widening, and intersection improvements for 1.8 miles of roadway on County Route 651 (Greentree Road) in Gloucester County, NJ. This work involved roadway design, drainage design, utility relocations, right-of-way engineering and plan preparation, public involvement, and traffic control.

Thomas G. May, PE

Vice President, Environmental Services

Registrations: Professional Engineer PA, NJ, MD, DE
OSHA, 40-Hours, Hazardous Waste Operations Training
Licensed Operator, Water and Wastewater Treatment PA
HUD, Lead-Based Paint Maintenance Training Program PA
DEP Water System Operator PA
OSHA, 8-Hour Refresher Course

Memberships: Water Environment Federation
Pennsylvania Water Environment Association
American Society of Civil Engineers
Consulting Engineers Council of Pennsylvania
Society of American Military Engineers

Education: MS, 1970, Northwestern University, Environmental Health Engineering
BS, 1969, Michigan Technological University, Civil Engineering
Certificate, 1997, Dale Carnegie Course

Mr. May has over 35 years of technical and management experience, with a strong record of accomplishment for federal and state agencies, industries, commercial establishments, and local governments. Skills and management accomplishments range from preliminary assessments, feasibility studies, environmental impact statements and assessments, wetland studies, and natural resources investigations to sampling and waste characterization, agency coordination, and permitting. Mr. May has managed projects ranging from $500 task orders to $3 million multidisciplinary programs as well as an engineering and environmental planning department with more than 20 engineers and scientists. Mr. May has directed more than 30 Act 2 investigations and remediation programs throughout Pennsylvania. He has directed work on contaminated sites that achieved cleanup under a host of different cleanup goals, including Background Standard, Statewide Health Standard, Site Specific Standard, Special Industrial Area, and Chapter 245 (UST Regulations). Mr. May's relevant experience includes the following:

Tidal Schuylkill River Master Plan, Schuylkill River Development Council, Philadelphia, PA - Served as the project's wetlands and natural resources consultant for developing a long range river enhancement plan for a several mile stretch of urban waterfront. Urban Engineers was part of team led by EDAW, Inc. that won a prestigious national Merit Award from the American Society of Landscape Architects in the analysis and planning category. The Plan included environmental initiatives such as a greenway, trails, open space, and wildlife habitat.

Wetlands and Shallow Water Mitigation Program, Philadelphia Regional Port Authority, Philadelphia, PA - Served as Technical Consultant for a large wetlands and shallow water mitigation program for the proposed filling of portions of the Delaware River at Philadelphia Piers 122 and 124 (both over 1,000 ft long). Helped develop strategy for agency negotiations and permit applications. Identified 17 potential mitigation sites along the Delaware River and 3 sites on the Schuylkill River.

Tidal Schuylkill River Master Plan, Schuylkill River Development Council, Philadelphia, PA - Served as the project's wetlands and natural resources consultant for developing a long range river enhancement plan for a several mile stretch of urban waterfront. Urban Engineers was part of team led by EDAW, Inc. that won a prestigious national Merit Award from the American Society of Landscape

Architects in the analysis and planning category. The Plan included environmental initiatives such as a greenway, trails, open space, and wildlife habitat.

North Delaware Riverfront Redevelopment Project, City of Philadelphia Capital Program Office, Philadelphia, PA - Developed environmental cleanup information for the North Delaware riverfront Redevelopment Project sponsored by the City of Philadelphia Planning Commission (several miles of waterfront). Project included identification of contaminated sites and development of remediation costs. This project was one of the major initiatives promoted by the current City administration.

Phase I Environmental Site Assessments at Northern Liberties, Liberty Homes Philadelphia, Inc., Philadelphia, PA - Supervised Phase I Environmental Site Assessments for four separate properties located in the Northern Liberties section of Philadelphia to determine the potential presence of hazardous and/or other environmentally sensitive materials on the sites. Project included several site visits, interviews, and review of historical documents, aerial photographs, historical Sanborn Maps, City of Philadelphia maps, and environmental regulatory files.

Brownfields Environmental Consulting Services, Philadelphia Commerce Department, Philadelphia, PA - Responsible for the overall direction and supervision of this task order contract focused on remediation of brownfields sites in Philadelphia. City used an EPA brownfields grant and Pennsylvania Act 2 monies to fund site characterization, cleanup plans, and remediation at several brownfields sites. Urban's work included Phase I site assessments as well as the gamut of Act 2-related tasks such as site characterization, risk assessment, development of cleanup plan, attainment sampling, and agency negotiation. Emergency remediation measures were also conducted at some of the sites. Urban also assisted the City in crafting a Buyer-Seller Agreement that allowed the City to sell a brownfields site to a national package express company so that the site could be placed back into productive use. Eighteen brownfields sites within the City of Philadelphia were addressed under Mr. May's direction.

Site Assessment and Remedial Program for PCE-Contaminated Site, House of Corrections, City of Philadelphia, PA - Supervised an investigation, remedial action plan, and bio-remediation related to a series of spills of tetrachloroethylene (PCE) that originated from dry-cleaning operations. Project included the development of a conceptual model of the site including geological and hydrogeological characteristics utilizing extensive subsurface investigation, sampling program, slug testing of installed monitoring wells, and dissolved phase fate and transport analysis. Identified remedial alternatives for the site and recommended approach for the site remediation. Implemented low-cost bio-remediation cleanup resulting in dramatic reduction of PCE in a short timeframe. (2000-2002)

Act 2 Site Investigation and Remedial Action Plan, Celotex Site, Department of Commerce, Philadelphia, PA - Managed the entire Act 2 process for this large, heavily contaminated site, one of the first sites slated for redevelopment by the City of Philadelphia's Brownfield Initiative. Extensive sampling of soil and groundwater was conducted and future movement of contamination was predicted. A remedial action plan was developed to cost-effectively mitigate contamination problems and allow the site to be developed and used as a major overnight express delivery terminal. This project was honored with three awards: the 2002 Governor's Award for Environmental Excellence, the 2003 Honor Award from the American Council of Engineering Companies for the Best Environmental Project, and the 2003 Outstanding Project in the Delaware Valley by the Pennsylvania Society of Professional Engineers.

Joseph F. Musil Jr, PE, PP

Environmental Engineer

Registrations:
Professional Engineer PA, NJ
Professional Planner NJ
OSHA, 40-Hr., Hazardous Waste Operations
Emergency Response Training
OSHA, 8-Hr. Refresher, HWO and ERT
Tank Testing Corrosion Specialist Certified NJ

Memberships:
American Society of Civil Engineers
National Association of Environmental Professionals
New Jersey Society of Municipal Engineers
Pennsylvania Association of Environmental Professionals - Board of Directors
Society of American Military Engineers

Education:
MS, 1981, New Jersey Institute of Technology, Environmental Engineering
BS, 1974, Newark College of Engineering, Mechanical Engineering
Certificate, 2004, Dale Carnegie Course

Mr. Musil has over 30 years of diversified work in both the private and public sectors for industrial and manufacturing facilities, engineering consultants, government agencies, and local government municipalities. His responsibilities have included management of multi-million dollar construction projects, environmental and OSHA site compliance, and review of government procurement center activities. Mr. Musil has managed the environmental permitting process for international corporations and large public works projects. His in-depth knowledge of the permitting process has saved clients time and money in navigating through the maze of environmental and safety regulations facing project planning, construction, and operation. He has written contract administration and construction documents for utility construction, roadway improvements and restoration, bridge crossings, and has been directly responsible for management of projects from conception, to design, through the bidding phase, construction, inspection, and contractor claims/disputes litigation. He has conducted constructability reviews and assisted owners in claims avoidance, and compliance with environmental and construction permit requirements. He has participated in local government committee meetings (Town Council Meetings), drafted proposed Municipal Ordinances, and has represented the elected body in actions taken to address non-compliance issues. Mr. Musil's relevant experience includes the following:

Stormwater Management Program at Salt Storage Facilities, Pennsylvania Department of Transportation, District 5-0 Allentown, PA - Working in conjunction with the District's Facilities Management Staff lead a team of hydraulic engineers and environmental professionals to design and permit a comprehensive stormwater management and run off control program at the Strausstown, PA salt storage yard. Improvements included site grading to control runoff to salt storage areas, drainage and pavement improvements to enhance winter operations. This projects employed fast-track design efforts to allow PENNDOT's Paving Contractors to perform the work with minimal deign constrains and supervision.

Environmental Permitting Service - Waterfront and Barry Park Improvements, City of Chester, PA - Working with the Project Architects, prepared environmental assessments, endangered species surveys, and waterfront development permits. The project included a new fishing pier, prefabricated arched bridge over a tidal tributary and rehabilitation of boat ramps in the Delaware River. This 1.4 million dollar project is the first phase of a major waterfront park using Coastal Greenway and Community Development Funds.

Site Planning and Land Development Approvals, Pennsylvania Department of Transportation District 6-0, West Chester, PA - As part of an open-end contract with PENNDOT, evaluated project requirements, existing site conditions and local Township requirements for Planning and Zoning Board approvals. Developed site grading and stormwater management plans to meet the new Phase 2 standards for non-net increase in site runoff.

Philadelphia Naval Business Center Infrastructure Demolition and Site Preparation, Philadelphia Industrial Development Corporation– Team Leader responsible for on-site environmental evaluations, preparation of permitting documents and bid documents for the demolition of over 80 buildings. Sixty of these buildings were listed as contributing resources to a National Historic Site. As part of the environmental and permitting process air, noise, cultural resource and land use concerns were documented and evaluated. Full compliance with environmental assessment, Section 106 Cultural Resource evaluation standards, and socioeconomic and land use issues was required. Included a facility-wide NPDES Discharge Permit for Construction Activities including negotiation of a Programmatic Agreement with the State Historic Preservation Officer to allow the demolition of the historic buildings. The NPDES Permit also included conditions on temporary construction dewatering, threatened and endangered species protection and wetland and coastal water protection. The demolition bid documents included asbestos removal, PCB cleanups, protection of on-site landfills and recapping where necessary, worker health and safety protection, and established the construction contractor as a co-permittee on regulatory permits.

Permit Coordination, Historic Fort Mifflin on the Delaware, Essington, PA– Team leader for the planning and design of new public mooring facilities at this local historical site on the Delaware River. Conducted meetings with federal, state, county and local permit authorities, and coordinated required design documents. As team leader coordinated the preparation of design documents, permit applications, reports and studies for the new piers.

Environmental Permitting, Kvaerner Philadelphia Shipyard, Philadelphia, PA– Served as lead environmental and regulatory professional during the design and construction of this new 114-acre $150 million industrial center. Responsibilities included coordination of all environmental permits, BOCA building permits, US Navy approvals, and OSHA compliance. Directing a staff of 12 professionals and sub-consultants, Mr. Musil developed an expedited regulatory compliance strategy and then prepared the necessary permit applications and notices required to obtain approval of the project site for demolition, construction, and operations. This high profile facility, which is the cornerstone project for redevelopment of the former Philadelphia Naval Base, required more than 20 separate federal, state, and local permits and approvals. This site was also classified as an Act 2 (Brownfields) site by the Commonwealth of Pennsylvania; hazardous materials found onsite needed to be considered in light of Act 2 risk level criteria and handled by either the Navy (former site owner) or Kvaerner, depending on the contamination level found.

Charles J. Odgers, III, PE, PLS

Vice President/Survey Practice Leader

Registrations: Professional Land Surveyor PA, NJ
Professional Engineer PA

Education: BS, 1987, Drexel University, Civil Engineering
Certificate, 2005, Dale Carnegie Course

Mr. Odgers is a Professional Land Surveyor and Professional Engineer with 27 years of experience in the development of major infrastructure projects including long and short span bridges, highways, rail lines and airports. He enjoyed a 24-year career with the Delaware River Port Authority, where he served in such positions as Manager of Maintenance and Construction and Assistant Chief Engineer. During this time, Mr. Odgers supervised a group of professional engineers responsible for the management of facility capital construction contracts, supervision of bridge structural modifications, routine and in-depth facility biennial inspections and prepared minor designs for modifications and/or additions to DRPA and PATCO facilities. As Assistant Chief Engineer, he would stand-in for the Chief Engineer, supervise the various engineering managers and provide quality control for the Design, Construction and Maintenance and Administration Units of the DRPA Engineering Department. In addition, Mr. Odgers is an Adjunct Professor at Drexel University teaching in the Civil and Architectural Engineering Curriculum and Fundamentals of Engineering and Professional Engineering license examination review courses. A sample of Mr. Odgers' design, construction and survey project management experience follows:

PATCO High Speed Line, Delaware River Port Authority, Philadelphia, PA to Lindenwold, NJ - Chief Inspector and Party Chief for the construction and rehabilitation work to establish this 14-mile rapid transit rail line. Tasks included construction inspection and verifying the survey layout of new facilities.

Commodore Barry Bridge, Delaware River Port Authority, Chester, PA to Bridgeport, NJ - Served as Chief of Surveys, Chief Inspector and ultimately, Assistant Chief Construction Engineer, for the design and construction supervising consultant, during the construction of the 3288-foot long cantilever truss bridge over the Delaware River. Tasks included construction inspection supervision and verifying the construction layout.

Widening of the Garden State Parkway, New Jersey Highway Authority, Cheesequake, NJ - Resident Engineer for the dualization of approximately two miles of the Parkway at the Cheesequake Service Area. This included the construction of two new three-lane roadways, realignment and reconstruction of two existing two-lane roadways, interchange ramps, and overpass bridges.

Borough Engineer, Borough of Wildwood Crest, Wildwood Crest, NJ - As the Resident Borough Engineer, provided engineering and survey expertise to the Borough Administration. Over a four-year period, designed and supervised the construction of several new streets and reconstructed nearly all the other Borough streets. Also managed a complete sewer system evaluation survey for North Wildwood, Wildwood Villas, Wildwood and Wildwood Crest. This enabled them to become members of the Cape May County Municipal Utilities Authority.

Augustine Bridge Demolition and Reconstruction, Delaware Department of Transportation, Wilmington, DE - Resident Engineer for the demolition and reconstruction of the 800-foot long truss

highway bridge over Brandywine Creek. This project won the American Institute of Steel Construction Prize Bridge Competition for the reconstructed category.

Regional Intermodal Transfer Facility Construction, Delaware River Port Authority, Philadelphia, PA - Project Manager and Project Surveyor for the construction of an intermodal yard to transfer containers and cargo among ships, truck and rail. This facility was constructed on property leased from Conrail and as such it was necesarry to survey and maintain elaborate lease boundary lines so as to avoid interfering with operations of Conrail and other railroads.

Construction Management of Capital Improvements, Delaware River Port Authority, Camden, NJ - Administered construction contracts for DRPA facilities. Provided liaison and guidance to consultant construction managers. Provided training and supervision of in-house construction inspection personnel.

Bridge Engineering, Delaware River Port Authority, Camden, NJ - Managed professional engineers in the capacity of Bridge Engineers, providing engineering expertise to the Bridge Directors and supervising any structural modifications to the bridges.

Biennial Inspections of DRPA Facilities, Delaware River Port Authority, Camden, NJ - Supervised the routine Biennial Inspections and occasional in-depth inspection of such facilities as the PATCO High Speed Line, Betsy Ross Bridge, Benjamin Franklin Bridge, Walt Whitman Bridge and Commodore Barry Bridge by consultants and in-house personnel.

Designs of Capital Improvements, Delaware River Port Authority, Camden, NJ - Prepared minor designs for modifications and/or additions to DRPA and PATCO facilities. Conducted engineering studies, which included structural, maintenance and operational aspects. Reviewed consultant-prepared designs and studies. Participated in the design process to anticipate potential problems and provide a smooth transition for construction of capital projects.

Corporate Designee, Delaware River Port Authority, Camden, NJ - Provided deposition testimony, background research and technical expertise in assisting DRPA's Legal Department in the defense of the DRPA in litigation.

Property Surveys, Delaware River Port Authority, Camden, NJ - Performed land boundary surveys to subdivide, establish or reestablish DRPA property lines, for conveyance, lease and land use agreements. Provided metes and bounds descriptions and appropriate plans to the DRPA Legal Department for disposition. Made recommendations as to which lands should be declared surplus.

Walt Whitman Bridge Reconstruction and Redecking Corridor Improvement Project, Delaware River Port Authority, Philadelphia, PA to Gloucester, NJ - Project Manager for a five-phase reconstruction project over a 12-year period to upgrade the 2000 foot main span suspension bridge and approach roadways and structures. This $176 million project included pier widening and strengthening, supporting structure modifications (providing a redundant support system at the pin/hanger locations), bearing replacement (incorporating seismic resistant bearings), reinforced concrete deck slab widening and replacement on the main span approaches and approach roadway overpass structures. The approach roadways were resurfaced and entrance/exit ramps were relocated and/or rehabilitated. State-of-the-art traffic control messaging and other devices were provided throughout the corridor.

Jennifer L. Pesch

Environmental Engineer

Registrations: OSHA Hazardous Waste Operations, 40-Hour Training
ACOE Wetland Delineation & Management 38-Hour Trai
City of Philadelphia Asbestos Investigator
Pennsylvania Asbestos Building Investigator
AHERA Building Inspector
City of Philadelphia Asbestos Project Inspector
New York Asbestos Building Inspector
Amtrak Safety Training for Contractors

Memberships: American Society of Civil Engineers
Society of Women Engineers

Education: BS, 2001, The Pennsylvania State University, Environmental Systems Engineering

Ms. Pesch's background includes Phase I and Phase II Environmental Site Assessments, Baseline Remedial Investigations, asbestos and lead air monitoring, wetland identification and delineation, and well monitoring. She has also performed geoprobe installations, soil and groundwater sampling, and soil core sampling. Ms. Pesch attended the Army Corps of Engineers Wetland Delineation and Management Training, the EPA/AHERA/Pennsylvania Asbestos Building Inspector Course, the Philadelphia Asbestos Project Investigator Course, the New York State Asbestos Inspector Course, and the Amtrak Safety Training. Highlights of Ms. Pesch's relevant experience include the following:

Wetland Investigation and Delineation at Croydon Station, Southeastern Pennsylvania Transportation Authority, Bristol Township, PA - Performed a wetlands investigation of the proposed developable area near the SEPTA Croydon Station. Reviewed national, state, and local hydric soils lists, National Wetland Inventory plant lists, Bucks County Soil Survey, and maps of the area. Conducted detailed field survey to identify site's plant, soil, and hydrologic information needed to prepare US Army Corps of Engineers Data Forms. Prepared a Wetlands Report and maps detailing the wetland investigation and delineation.

Phase I Environmental Site Assessments at Northern Liberties, Liberty Homes Philadelphia, Inc., Philadelphia, PA - Conducted Phase I Environmental Site Assessments for four separate properties located in the Northern Liberties section of Philadelphia to determine the potential presence of hazardous and/or other environmentally sensitive materials on the sites. Performed several site visits, interviews, and reviewed historical documents, aerial photographs, historical Sanborn Maps, City of Philadelphia maps, and environmental regulatory files.

Phase II Site Characterization of the Clearfield Maintenance Yard, Pennsylvania Department of Transportation District 2-0, Clearfield County, PA - Performed geoprobe soil sampling, well installation, groundwater sampling, well surveying, water quality screening, and aquifer permeability tests (slug tests). Delineated the horizontal and vertical extent of the soil and groundwater petroleum impact that resulted from a former UST release. Utilized AutoCAD 2000i to prepare site plans and to illustrate the soil and groundwater contamination onsite. Initially, the impacted soils were compared to state-mandated health standards however an alternative statewide health standard was developed using the

Synthetic Precipitate Leaching Program (SPLP) in order to drastically reduce remediation costs. PADEP approved the Site Characterization and Remedial Action Plan.

Baseline Remedial Investigation of 3200 East Tioga Street, Philadelphia Industrial Development Corporation, Philadelphia, PA - Performed groundwater monitoring and sampling activities and established that contamination existed prior to the redevelopment of the site. Prepared a Notice of Intent to Remediate and associated documents. Performed site visits, reviewed past reports for the site, utilized AutoCAD to create site plans and interpreted laboratory results. Collected and analyzed soil-gas air samples in the impacted area as part of a vapor intrusion sampling program. The Baseline Environmental Report was submitted to and approved by the PADEP.

Phase II Site Characterization and Remediation of the Alto Sign Property, City of Philadelphia, Philadelphia, PA - Conducted a fate and transport analysis to evaluate future migration of the plume and the potential impact to adjacent properties. Utilized subsurface and surface water modeling computer-based software programs to develop a Human Health and Ecological Risk Assessment for the site (i.e., EPA's BIOCHLOR). PADEP approved the Site Characterization Report and the start of attainment sampling, which is necessary for site closure and liability protection.

Phase II Site Characterization of the Don's Salads Site located at 49th Street and Jefferson Street, City of Philadelphia, PA - Conducted soil sampling and utilized the Global Positioning System (GPS) to map out soil sampling locations on the site. Reviewed regulatory files and created tables to illustrate laboratory analytical results for the Site Characterization Report.

Phase II Site Characterization for the Hunting Park Maintenance Facility, Pennsylvania Department of Transportation District 6-0, Philadelphia, PA - Monitored and sampled groundwater from new and existing wells on the site. Produced quarterly sampling progress reports for client and agency review.

Phase I Environmental Site Assessment at Red Bell Brewery, City of Philadelphia, Philadelphia, PA - Analyzed a multistory building for potential environmental hazards which included asbestos containing material, PCBs/PCB containing equipment, lead, underground storage tanks (UST), aboveground storage tanks (AST), solid waste disposal areas, and other potential hazardous substances. Estimated the site remediation cost for asbestos abatement, UST and AST removal and disposal, PCB light ballast removal and disposal, and miscellaneous drum removal.

Permitting activities for Barry Bridge Park, Chester Economic Development Authority, Chester, PA - Prepared the US Army Corps of Engineers Nationwide Permit, PA Department of Environmental Protection Maintenance and General Permit, NPDES General Stormwater Permit, and an Erosion and Sediment Control Plan for landside and waterside improvements at Barry Bridge Park. Completed the necessary forms and checklists and municipality and resource agency coordination. Compiled maps, deeds, past permits, records of decision, and other required documents for the permit packages.

Phase I Environmental Site Assessment for Halpern Properties, Westrum Development Corporation, Philadelphia, PA - Analyzed a building currently used for smelting operations for potential environmental hazards, including asbestos containing material. Performed site visits, interviews, and reviewed historical documents, aerial photographs, historical Sanborn Maps, City of Philadelphia maps, and environmental regulatory files.

Spencer Finch, EIT, LEED

Environmental Specialist

Registrations: LEED Accredited Professional
Fundamentals of Engineering Examination PA

Memberships: National Brownfields Association
American Society of Civil Engineers
American Society of Mechanical Engineers
Penn TSEAC
Philadelphia Design Advocacy Group
Society of Automotive Engineers
Society of American Military Engineers
Delaware Valley Green Building Council

Education: MSE, 2002, Penn State University, Environmental Engineering
BS, 1996, University of Pennsylvania, Mechanical Engineering
BA, 1995, Albright College, Political Science
Certificate, 2004, Dale Carnegie Course
Certificate, 2003, Urban Engineers, Inc., Project Management Training

Mr. Finch's experience includes brownfield redevelopment activities, region-wide planning efforts, risk assessments for PADEP Act 2 standard attainment, indoor air quality investigations, emergency responses, UST management, site characterization, geotechnical investigations, soil/water/sludge sampling and analysis, and Phase I/II Environmental Site Assessments. Highlights of Mr. Finch's experience include:

Reading Viaduct Feasibility Study, City of Philadelphia, Commerce Department - Project Manager for this complex project, which included the following tasks: site survey, utility survey, site characterization of railroad embankment, site characterization of subsurface under street grid, human health risk assessment, ecological screening risk assessment, estimating for viaduct demolition and/or reuse, and site feasibility study. The viaduct itself is an abandoned elevated structure, less than a mile long, but sitting squarely at the edge of the fast-redeveloping Center City neighborhood of Philadelphia. Options for this structure include complete demolition to provide additional land for redevelopment; partial demolition; or reuse, probably as an elevated greenway with biking and walking paths and gardens, to be accessed by the construction of new stairways and ramps.

Phase I Environmental Site Assessments for two Research/Manufacturing Sites, Middlesex County and Passaic County, NJ, Morgan, Lewis, & Bockius, LLP - Project Manager and field reconnaissance specialist for this project, which involved the completion of environmental site assessments (ESAs) for two research/manufacturing facilities for a confidential client of the Morgan, Lewis Bockius law firm. The project involved complex negotiations with the multiple stakeholders involved in the project, negotiations with the existing property owner to provide greater access for the field reconnaissance, and analysis of complex manufacturing operation plans and a large number of air, water, stormwater, and waste permits.

1900 and 1925-43 Allegheny Avenue, City of Philadelphia, Commerce Department - Project Manager for the Baseline Remedial Investigation of the site, a former lead-acid battery and clothing industrial site located in the North Philadelphia section of the city. The investigation was delayed for two years by the presence of an unstable building structure that had to be demolished before work proceeded. In addition, the close location of two major Septa regional rail lines made coordination and safety issues key to the project. Finally, four previously-unidentified underground storage tanks (USTs) were discovered during the investigation and had to be removed or closed in place.

Cramco (Proposed Manufacturing Building Expansion), Site Investigation, Stage 1 - Project Manager for the site investigation of an abandoned railroad embankment located next to the existing Cramco manufacturing facilities in the Port Richmond section of Philadelphia. (Cramco manufactures casual dining, garden and pool furniture; as well as smaller decorative items). The expansion of the existing manufacturing facility was seen as an essential component of the manufacturer's growth strategy. The railroad embankment would be the most convenient location since it was located right next door to the original plant and would thus provide significant capital investment savings by not having to split in half or move the entire assembly line. The investigation of the embankment was broken up into two stages. This first stage served as a preliminary screen for potential soil contaminants. No significant contaminants were found, and thus a complete soil and groundwater characterization could be completed in Stage 2. This strategy was proposed by Urban and helped Cramco keep initial environmental costs low, while completing one more step in a well thought-out process that was to result in the decision to purchase the site or not.

49th Street and Jefferson Street Site, City of Philadelphia, Commerce Department - Project Manager for the site investigation. This property consists of an approximately 3-acre site that was formerly part of an approximately 50-acre Pennsylvania Reading Railroad (PRR) yard and is now part of the West Parkside Business Park Keystone Opportunity Zone (KOZ). The site is currently vacant and covered by vegetation, while neighboring parcels have received new access streets and new utility service, and have been redeveloped for light industrial use. Urban was asked by the City Commerce Department to develop an environmental investigation with a scope targeted to a proposed food manufacturing facility. In addition, the site's proposed buyer required that environmental due diligence and a geotechnical investigation also be performed to determine the suitability of the site for development. In response to these needs, Urban developed a scope which combined elements of typical Phase 1 Environmental Site Assessments (ESAs), Phase 2 ESAs, and geotechnical investigations.

Kensington and Tacony Rail to Trail Project, Philadelphia Industrial Development Corporation and Pennsylvania Environmental Council, Philadelphia, PA - Conducted the Human Health Risk Assessment, and supervised the completion of the Ecological Risk Assessment for this project. The focus of the project was to identify the future risks posed by the conversion of an abandoned railroad right-of-way into a bike path and riverfront park. The K&T, as the right-of-way is known, is located in an area that was formerly covered with heavy Industries, but now sits half idle and blocks public access to the Delaware River. The Risk Assessments will pave the way for the reuse of the property and the revitalization of the North Delaware riverfront.

Michael J. Gabor, PE

Vice President, Marine Engineering Services

Registrations: Professional Engineer PA

Memberships:
American Society of Civil Engineers
American Society of Highway Engineers
Port of Philadelphia Maritime Society, Board of Directors
Port of Wilmington Maritime Society
Society of American Military Engineers
Mariners' Advisory Committee for the Bay & River, Delaware
Seamen's Church Institute, Board of Directors
Maritime Academy Charter High School, Board of Directors

Education:
BS, 1961, Pennsylvania State University, Civil Engineering
Certificate, 1997, Dale Carnegie Course

Mr. Gabor is Vice President of the Marine Engineering Services Division providing pier inspection, design, construction management, constructability reviews, master plan studies, and estimating services for municipal and privately-owned waterfront facilities. His experience includes participating as a project engineer, superintendent, and manager of the construction and/or maintenance of virtually every pier facility on the Delaware River and Bay and the Schuylkill River. A representative sample of this work is as follows:

Philadelphia Cruise Terminal Pier 2, Delaware River Port Authority, Philadelphia Naval Shipyard - As a result of a damage to the outshore end of this finger pier, Urban was retained to perform damage and maintenance surveys, and design a breasting dolphin outshore of the existing pier. Participated in performing the surveys, designing the breasting dolphin, a mooring dolphin, and the catwalk joining the two dolphins. In addition, performed construction management services associated with the installation of the breasting dolphin.

Bartram's Garden Dock, Capital Program Office, Philadelphia, PA - Administered an above and below water survey of the existing concrete bulkhead, approximately 300 feet in length, to determine whether the bulkhead could be incorporated into the design of a new dock to accommodate tourist and ferry vessels.

Fort Mifflin on the Delaware - Participated in the design of a berthing facility for accommodating up to 100 foot long commercial tourist vessels and ferries. Provided construction management services for the installation of this facility.

Pier Inspections, Philadelphia Regional Port Authority, Philadelphia, PA - Provided project oversight associated with the inspection of 12 piers to determine their structural soundness. Included were the 3,170-foot-long Tioga Marine Terminal, the 520-foot long former Watson Malone Timber Pier, the 550-foot-long Piers 38 and 40 South, the 900-foot-long Pier 78 South, the 1,000-foot-long Pier 80 South, the 950-foot-long Pier 82 South, the 1,230- foot-long Pier 96 South, the 1,500-foot-long Pier 98 South, the 1,140-foot-long Pier 100, and the 855-foot-long Pier 84 South.

Sun Oil, Marcus Hook, Philadelphia, Hog Island and Fort Mifflin - Mr. Gabor has participated in condition, maintenance, and damage surveys at all water structures operated by this major Philadelphia area based fuel refinery. He has participated in the design and construction of a critical pier collapse restoration at the Philadelphia Refinery's Case Wharf. This structure supports 21 pipelines and a 20' high masonry retaining wall.

Spring Garden Street Pier Condition Survey, Department of Licenses and Inspections, Philadelphia, PA - Oversaw a condition survey of the pier, the site of a former City-owned incinerator, to determine its suitability to for entertainment and berthing facilities. Determined that the pier needed to be rehabilitated prior to use, including the encasement of the “H” pile foundation and the steel “H” piles encased in concrete.

Pier 34 South, Pier Collapse, Department of Licenses and Inspection, Philadelphia, PA - Oversaw a study to determine the condition of the remainder of Pier 34 following the collapse of the outshore 130 feet of the 555-foot-long pier into the Delaware River. Oversaw a topside survey of the building structure and the 300-lineal foot asphalt parking lot, including a diver's condition survey in an effort to determine the probable cause of the pier collapse. Provided testimony to the Grand Jury on two occasions, including the providing of opinions regarding the temporary support endeavor, events leading up to the collapse, and the probable cause of the collapse.

Design of Waterfront Structures, Philadelphia Regional Port Authority - Philadelphia Regional Port Authority (PRPA) participated in the design of capital improvements and repairs at each of the fourteen (14) piers owned by the PRPA. Specifically, Mr. Gabor participated in the design of repairs and recommendation for restricted use at Tioga II - "H" pile deterioration; Pier 179 North - post land and water access warning signs; Piers 38 and 40 South - repairs to relieving platform along the marginal face; Pier 84 South - repairs to the outshore relieving platform; Pier 96 South - restrict access to the upriver apron; Pier 98 South - restrict access to the upriver apron; Pier 100 South - limit deck loading to 50 lbs/sf; Bulkhead between Piers 98 and 100 South - restrict access to 25' inshore of the face of the seawall; Packer Avenue Marine Terminal - participated in the design of the load testing procedure of existing pipe piles in anticipation of the support of crane rail foundations to accept new high capacity container cranes; Remove existing bits and design the installation of ten (10) proposed 100 ton bollards; Design new support piles to renew existing damage pipe piles; Participated in assembling a master plan for Piers 122 and 124 South, including the estimating of demolition costs and the preliminary design of a marginal bulkhead; Design of raker pile supported, steel sheet pile bulkhead between Pier 179 North and Tioga II.

Tioga Marine Terminal, Philadelphia - Participated in the design of a berthing facility that included one (1) breasting dolphin and two (2) mooring dolphins, including 550 l.f. of pipe pile supported walkway. Additionally, the designing of twenty-two (22) each, 100 ton, land and water, bollard foundations was required for the side-by-side berthing of two (2) U.S. Navy, LMSR vessels.

Beckett Street Terminal, South Jersey Port Corporation - Provided preliminary design for the renewing and the cost estimating of the partial collapse of a portion of this 1000' foot long, marginal pier facility. Additionally, provided the design of an in-water, mooring facility for approximately 700 foot long vessels.