Prepared for:

DELAWARE RECYCLABLE PRODUCTS, INC.
246 Marsh Lane
New Castle, Delaware 19720

PERMIT MODIFICATION APPLICATION

VOLUME 3 of 3

for

VERTICAL EXPANSION

DRPI Industrial Landfill
New Castle, Delaware

Prepared by:

Geosyntec consultants

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Geosyntec Project No.: ME1571

July 2018

C.H. Pendleton

CARRIE HALE PENDLETON
REGISTERED
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DELAWARE
PROFESSIONAL ENGINEER

PART VII

HYDROGEOLOGIC ASSESSMENT REPORT

VII. HYDROGEOLOGIC ASSESSMENT REPORT

As stated in DRGSW Section 4.2.1.5, a hydrogeological assessment investigation must be performed and a report must be presented and signed by a Delaware Professional Geologist. Accordingly, Blazosky Associates, Inc., prepared a Hydrogeologic Assessment Summary in October 2004, Revised in 2005, for Delaware Recyclable Products, Inc., (DRPI) as part of the Cell 6 expansion and it is included on CD along with Attachments VII-1 to -10.

Summary tables for historical groundwater elevations and quality data from 1995 through 2017 from the DRPI Industrial Waste Landfill 2017 Annual Report prepared by Taylor Geoservices on February 28, 2018, are presented as Attachment VII-11. Current groundwater contour maps from the 2017 Annual Report (Taylor, 2018) are also included in Attachment VII-11.

HYDROGEOLOGIC ASSESSMENT REPORT AND ATTACHMENTS VII-1 TO VII-10, BY BLAZOSKY ASSOCIATES, INC., 2004, REVISED FEBRUARY 2005

Taylor GeoServices, Inc. *Geology, Biology, Environmental & Mapping Services*
938 Lincoln Avenue, Suite 203, Springfield, PA 19081 • Phone: 610-543-1590 • Fax: 610-543-3374

Via Overnight Delivery

October 18, 2004

Mr. David Espinoza
GeoSyntec, Inc.
10015 Old Columbia Road
Suite A-200
Columbia, MD 21046
(410) 381-4333

RE: DRPI Industrial Waste Landfill
Proposed Cell 6 Expansion Hydrogeologic Assessment Summary
Final Document

Dear David:

Please find enclosed 6 copies of the above referenced final report document. Three of these are the revised versions of the document that you returned to me and three are the additional new copies that you requested. I believe Jeff Shanks has one of the original documents that was sent to you in August of this year. I will work directly with Jeff to make the necessary revisions to his copy so that it is update with the enclosed versions.

David, if you have any question regarding the content of the document, pleas feel free to contact me directly at Taylor GeoServices. Thank you.

Sincerely,

Taylor GeoServices, Inc.

Andrew J. Sokol, P.G.
Project Technical Consultant

Enclosures

Prepared for:

WASTE MANAGEMENT
Delaware Recyclable Products, Inc.
198 Marsh Lane
New Castle, Delaware 19720

Volume 6: PERMIT APPLICATION PART VII - HYDROGEOLOGIC ASSESSMENT REPORT *for* Cell 6 Expansion DRPI Industrial Landfill New Castle, Delaware

Blazosky Associates, Inc.
One Davis Road, Suite 200
Valley Forge, Pennsylvania 19481

Project Number ME0319
October 2004
Revised February 2005

PROPOSED CELL 6 EXPANSION HYDROGEOLOGIC ASSESSMENT SUMMARY

DELAWARE RECYCLABLE PRODUCTS, INC.
DRPI INDUSTRIAL WASTE LANDFILL
Permit SW 99/02

OCTOBER 2004

Prepared for:

WASTE MANAGEMENT

DRPI INDUSTRIAL WASTE LANDFILL
198 MARSH LANE
NEW CASTLE, DE 19720

Minquadale Borough
New Castle County, Delaware

Prepared By:

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WASTE MANAGEMENT

DELAWARE RECYCLABLE PRODUCTS, INC.
DRPI INDUSTRIAL WASTE LANDFILL

PROPOSED DISPOSAL CELL 6 EXPANSION
HYDROGEOLOGIC ASSESSMENT SUMMARY

CERTIFICATION STATEMENT

On behalf of Waste Management **Blazosky Associates, Inc.** (**BAI**), has prepared this *Hydrogeologic Assessment Summary* for the proposed Disposal Cell 6 Expansion at the Delaware Recyclable Products, Inc. (DRPI) Industrial Waste Landfill.

This Report has been prepared using newly acquired geologic and hydrogeologic information acquired by **BAI** as well as historic data that was previously acquired by others and which was accepted by the Delaware Department of Natural Resources and Environmental Control (DNREC)

The relevant information pertaining to site-specific geologic and hydrogeologic conditions contained within this document has been reviewed by a professional geologist registered in the state of Delaware. The seal and signature of the professional geologist are affixed below.

Signature: _____ Date: 10/18/04
Andrew J. Sokol, P.G.

State of Delaware
Professional Geologist Registration Number S4-0000974
Expiration Date September 30, 2006

BLAZOSKY Associates Inc.

WASTE MANAGEMENT

DELAWARE RECYCLABLE PRODUCTS, INC.
DRPI INDUSTRIAL WASTE LANDFILL

PROPOSED DISPOSAL CELL 6 EXPANSION
HYDROGEOLOGIC ASSESSMENT SUMMARY

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PROPOSED DISPOSAL CELL 6 EXPANSION HYDROGEOLOGIC ASSESSMENT SUMMARY

NARRATIVE

1.0 Introduction

The Delaware Recyclable Products, Inc. (DRPI) Industrial Waste Landfill is located in Minquadale Borough, New Castle County, in Northern Delaware. The site location is approximately two miles south of Wilmington, Delaware along U.S. Route 13 and to the south of Interstate 495 and the Christina River (refer to Figure 1, Site Location Map). The site has been an active landfill since approximately 1983 and currently consists of five disposal cells. Prior to this, the area occupied by the DRPI Landfill was a sand and gravel quarry, which began operation sometime in the late 1940s or early 1950s. A separate dry waste landfill also exists immediately to the south of the DRPI Landfill and was operated by the Petrillo Brothers, Inc. (Petrillo) from the late 1970s through the late 1980s. Two other industrial properties also exist between the DRPI and Petrillo sites.

As indicated during several meetings and through active communications with the Delaware Department of Natural Resources and Environmental Control (DNREC), DRPI is seeking to expand the DRPI Landfill to the south over the Petrillo Dry Waste Landfill and the other two industrial properties. As part of this landfill expansion permitting effort, DRPI contracted with **Blazosky Associates, Inc. (BAI)** to conduct the hydrogeologic assessment portion of the solid waste disposal permit application.

The purpose of this report is to summarize the existing geologic and hydrogeologic data and present some limited new data that was acquired as part of this permitting process. The scope of the hydrogeologic assessment work for the proposed Disposal Cell 6 expansion was presented to DNREC in a work plan dated August 8, 2003. This work plan was ultimately approved by DNREC with some minor modifications via a comment letter dated September 11, 2003.

Because the DRPI Landfill has been in operation for several years and has expanded twice since its inception, a significant amount of geologic and hydrogeologic information already

exists for the site. Additionally, as part of groundwater evaluation work required by DNREC for closure, several geologic and hydrogeologic investigations have also been conducted on the Petrillo Dry Waste Landfill property. Therefore, since the proposed Cell 6 Expansion Area is located immediately adjacent to the existing permitted DRPI disposal area and on the Petrillo Dry Waste Landfill, subsurface information from the previous investigations conducted on both sites was extensively relied upon in the preparation of this document. The only new information presented in this document includes subsurface and groundwater quality data collected from three new monitoring wells, which were installed within the proposed Disposal Cell 6 Expansion Area in November and December 2003. Supplemental hydrogeologic test data was also collected from several wells and piezometers located throughout the proposed expansion area and is presented herewith.

The locations of the piezometers, monitoring wells and other subsurface monitoring installations used to prepare this permit application, are shown on both of the attached groundwater contour maps for the shallow (Figure 2) and deep (Figure 3) flow systems. Drill logs for the three new monitoring wells that were installed in 2003 and data from single well drawdown and slug tests are included in Attachments 1 and 2 respectively. Drill logs and other subsurface data collected during previous investigations can be found within several documents that were previously submitted to DNREC by various entities. A list of these documents is presented in Section 4.0 of this report.

Additionally, a geologic fence diagram has been developed for the proposed expansion area and is based on site-specific test boring information. All of the attached figures, the above summarized data and this narrative report together form the hydrogeologic assessment summary for the proposed Disposal Cell 6 expansion.

2.0 Petrillo Site History

As depicted on the attached groundwater contour maps, a sizable portion of the proposed Cell 6 Expansion Areas lies mostly on top of the former Petrillo Dry Waste Landfill. Therefore, a brief discussion regarding the history of this landfill is warranted.

Based on information provided within the 1989 Operation and Closure Plan prepared by Duffield Associates, the Petrillo Dry Waste Landfill began operating in the late 1970s or early 1980s as a construction and demolition debris landfill. The entire original Petrillo site is

described as being 43-acres in size, however, only approximately 21-acres were used for landfilling. Following several operational changes and orders from DNREC to cease landfilling, the Petrillo site was closed in 1989. A closure plan was developed and included plans for final grading and revegetation of the site, the installation and monitoring of groundwater wells and gas vents, and post closure maintenance.

Currently there is a large-scale concrete mixing plant located in the northcentral portion of the Petrillo property. Although this plant is no longer operational, much of the infrastructure associated with it still remains. The other portions of the site are littered with scrap steel items ranging from cement mixers to steel beams. The land surface is also poorly vegetated in some areas with concrete wastes exposed at the surface, especially along the southern boundary where there is a steep scarp forming a ravine through which an intermittent stream flows.

3.0 Regional and Local Settings

As presented within the October 1994 GeoSyntec report, the DRPI landfill and the proposed Cell 6 Expansion Area lie entirely within the Atlantic Coastal Plain Physiographic Province. Also as presented within that report, the two prevalent geologic units in the area are the Cretaceous Potomac Formation, which is unconformably overlain by the Pleistocene Columbia Formation. A more detailed description of these formations as they occur on the DRPI site is presented in subsequent sections of this report.

The sites are also situated between the Delaware and Christina Rivers. The Christina River flows to the north of the site on the north side of Interstate I-495. A large tidal marsh that is directly connected to the Christina River lies immediately to the west of the DRPI Disposal Cell 5. Based on topography of the site and observed groundwater flow directions within the upper most flow zone, shallow groundwater and surface water ultimately discharge to these two points. The Delaware River, which lies approximately 2.8 miles to the east and also 3.6 miles to the south of the DRPI site is the discharge point for the regional groundwater flow system.

Other features within the proposed expansion area include an active steel fabrication facility (Summit Steel Corporation), a portion of which was once used to process municipal waste incinerator ash material. According to DNREC records, the waste ash processing area of this property was properly cleaned and no further action letter was reported issued to Summit

Steel. The Summit Steel facility is located within a topographically low area between the DRPI Landfill site and the Petrillo Dry Waste Landfill. A section of Marsh Lane also traverses between the two landfills in an east-west direction. At its eastern end, this road lies within a broad ravine with a local relief of about 40 feet.

4.0 Site Specific Geology/Hydrogeology

The geology/hydrogeology of the DRPI and Petrillo properties has been well documented through several prior investigations. The results of these investigations are summarized in the following reports:

- Hydrogeologic Assessment Report for Proposed Cell 4, Delaware Recyclable Products, Inc., October 1994, GeoSyntec Consultants, Atlanta, Georgia
- Hydrogeologic Assessment, C&J Associates Permit Application, March 1993, WIK Associates, Inc, New Castle, Delaware.
- Landfill Closure Report, Petrillo Dry Waste Landfill, New Castle, Delaware, November 1999, Duffield Associates, Inc. Wilmington, Delaware.
- Supplemental Combined Site Groundwater Characterization Report, DRPI Industrial Waste Landfill and Petrillo Brothers, Inc. Dry Waste Landfill, November 2000, Blazosky Associates, Inc., Valley Forge, Pennsylvania.
- Groundwater Analytical Data Summary, DRPI Industrial Waste Landfill, October 1999, Blazosky Associates, Inc., Valley Forge, Pennsylvania.
- Lower Potomac Aquifer Groundwater Characterization, Petrillo Brothers Dry Waste Landfill, October 2001, Blazosky Associates, Inc. Valley Forge, Pennsylvania.
- Revised Site Wide Subsurface Monitoring Installation Summary, Waste Management, DRPI Industrial Waste Landfill June 1999, Revise June 2002, Blazosky Associates, Inc. Valley Forge, Pennsylvania.

In summary, the work documented in these reports demonstrates that unconsolidated sands, silts and clays of the Columbia and Potomac Formations, underlie the proposed Cell 6 expansion area. These formations unconformably overlie the Wissahickon schist (GeoSyntec, 1994). Sands and gravels of the Columbia Formation remain in thin remnants across the Petrillo property and are absent from most all of the DRPI property as the result of decades of surface mining. As documented in several of the above reports, the Potomac Formation

consists of sands, silts and clays and is divided into two separate units, the Upper Potomac and the Lower Potomac. As described further in the following section of this summary, much of the upper unit is absent from the area of concern.

5.0 Stratigraphic Evaluation

As described within the previous subsurface investigation reports conducted for DRPI (GeoSyntec, 1994) and the Petrillo site (**BAI** and Duffield), the stratigraphy beneath both sites consists of four separate stratigraphic units. These are the 1) Potomac Formation, 2) the Columbia Formation, 3) Holocene Sediments, and 4) fill sediments. In addition to these four units, there is also an extensive layer of dry waste material deposited over a large portion of the proposed expansion area. Additionally, there is some silty clay fill material located on the surface of portions of the western side of the expansion area that is currently owned by DRPI. This silty-clayey fill was removed from the DRPI site during construction of Disposal Cell 5 and stockpiled within a portion of the proposed expansion area owned by DRPI.

In order to evaluate the stratigraphic units that underlie the DRPI site as they relate to the proposed Cell 6 expansion, a three-dimensional geologic fence diagram has been developed in place of the cross sections that were originally proposed. This fence diagram, which is included within this application as Figure 3, was specifically requested by DNREC in their letter approving the work plan.

5.1 Potomac Formation

As depicted on the fence diagram, the early Cretaceous age Potomac Formation is the most prevalent stratigraphic unit beneath both the DRPI site and the proposed expansion area. It is described as unconformably overlying bedrock that is correlated as the lower Paleozoic age Wissahickon Schist. The Potomac Formation itself is described as fluvial in origin and is regionally divided into upper and lower units. As depicted on the fence diagram, the Upper Potomac is thickest through the central part of the proposed expansion area where it is approximately 60 feet thick. It appears to thin on the western side of the site where it is only approximately 20 feet thick. It appears that the upper part of the Potomac has been eroded and replaced by the overlying Columbia on both the western and eastern sides of the proposed expansion area.

The lower portion of the Potomac, or the Lower Potomac, underlies the upper unit and is identified near the base of the fence diagram by two continuous sand layers. Previous studies describe the Lower Potomac as a single continuous sand layer as identified at the bottom of Monitoring Well MW-7(D). However, more recent drilling at wells C1-S1(D) and MW-101(D) has identified that the sand layer located approximately 10 to 20 feet above the basal sand encountered in well MW-7(D) is also representative of the Lower Potomac. This conclusion is based on the similar potentiometric head levels between MW7(D) and the head levels recorded in both wells C1-S1(D) and MW-101(D).

5.2 Columbia Formation

Immediately above the Potomac Formation is the Pleistocene age Columbia Formation, which is also a fluvial deposit. The Columbia, however, was extensively mined for its sand and gravels beginning in the 1950s. Therefore, much of it has been removed from the DRPI site and portions of the proposed expansion area leaving the Potomac Formation at the surface. Much of the Columbia was also likely removed from the central portion of the proposed expansion area as part of construction of the industrial facilities that currently occupy that area.

The only location where the Columbia remains in quantity is in the southeastern corner of the DRPI site at the location of monitoring well MW-7(S) and (D). The Columbia is also believed to be in place under the eastern portions of the proposed expansion area where quarrying was not conducted and under the adjacent residential development located along marsh lane. Here, sands and gravels of the Columbia are approximately 20 to 30 feet thick. Based on drill log information from this location the Columbia is described to consist of yellow-brown to orange fine to coarse sands and gravels.

5.3 Sediments, Fill Material and Dry Waste

Both naturally deposited sediments of Holocene age and recent fill material are present over much of the surface of the DRPI site and proposed expansion area. The sediments are described as being derived from stream deposits, while the fill material is

sourced from the extensive mining and landfilling operations that have occurred on the sites over the past 50 years.

A veneer of dry waste material, reportedly consisting mostly of concrete wastes and wood debris, is also present over much of the Petrillo property and within the proposed expansion area. This waste was landfilled by Petrillo over 20 to 25 acres of the proposed expansion area from the late 1970s to about 1989. The thickness of this waste is estimated to be between 10 and 30 feet through the central portion of the proposed expansion area and is based on information from historic aerial photographs and the drill logs for three gas vents that were installed into the upper portion of the waste as part of a previous site investigation. Waste thicknesses of this range were also encountered in Wells DMW-2 and MW-102(S).

5.4 Geologic Fence Diagram; Detailed

The Geologic Fence Diagram (Figure 3) consists of three separate generalized cross sections, which are labeled as; cross section A–A', B-B' and C-C'. Section A-A' runs approximately north-south across both properties and cuts across the middle of DRPI's disposal cells 1, 2, 3 and 4. The length of the A-A' section is roughly 3,700 feet. The 2,600 foot cross section B-B' is aligned east-west along the boundary between the DRPI and Petrillo properties (Marsh Lane). The final and third cross section labeled C-C' runs along the southwestern border of the proposed Cell 6 expansion area and is approximately 1,200 feet in length.

Several stratigraphic layers are depicted on the fence diagram including the waste/fill layer over portions of the DPRI site, dry waste over portions of the Petrillo property, the Columbia Formation and the Potomac Formation (Upper and Lower). A review of the diagram depicts varying thicknesses of the Columbia Formation remaining underneath the proposed Cell 6 expansion area. Moving down stratigraphically, into the Upper Potomac, it is obvious that there is a single prominent sand layer within the Upper Potomac unit. The Upper Potomac is labeled on the fence diagram and is represented by an extensive clay and silty clay beneath the Columbia in the proposed expansion area. Although saturated, this entire Upper Potomac stratigraphic layer is described as a confining unit for the underlying Lower Potomac unit. This description as

a confining unit is supported by an observed difference in potentiometric head levels in groundwater monitoring installations that are completed separately above and below the confining layer as identified on the fence diagram. The demarcation between the Upper and Lower Potomac Formations is depicted with a dashed gray line on the fence diagram.

As described above in Section 5.1, two separate sand layers that appear to be relatively continuous across both the DRPI and Petrillo properties define the Lower Potomac itself. Additional data from the newly installed wells MW-101(S), MW-101(D), MW-102(S), DMW-1 and DMW-2 support existing data of a single upper sand layer in the Upper Potomac Formation underlain by two sand layers in the Lower Potomac Formation.

6.0 Supplemental Site Investigation Work

As part of this permit application, and as proposed in the approved work plan, some additional site investigation work has been conducted. This included the installation of three additional monitoring wells; MW-101(S), MW-101(D) and MW-102(S), the collection and analyses of slug test and single well drawdown test data, the collection and analyses of groundwater samples from the three new monitoring wells, and the monthly collection of water level data for one calendar quarter. Summaries of the work performed as part of these activities are presented in this section.

6.1 Monitoring Well Installation

As part of the investigation work required by DNREC for the proposed Cell 6 Expansion, three additional monitoring wells were installed between November 24 and December 2, 2003. Uni-Tech Drilling Co. Inc. of Malaga, New Jersey was contracted by DRPI to install the wells. Due to the saturated nature of the subsurface, sands silts and clays, mud rotary drilling techniques were employed. This drilling technique was used at the site before and has been found to be quite successful with regard to maintaining the borehole during drilling and well construction.

Monitoring wells MW-101(S) and MW-101(D) were installed along the southwestern edge of the proposed Cell 6 expansion area. The purpose of these two

wells was to provide a nested hydrogeologic pair in this area of the DRPI property such that the hydrogeologic characteristics of both the shallow flow zone and the deeper flow zone in this vicinity could be assessed. As depicted on the two attached groundwater contour maps (Sheet 1 and 2), two wells (MW-4(S) and MW-4(D)) were previously located near this area. Both MW-4(S) and MW-4(D), however, were decommissioned to accommodate construction of Cell 5E. Therefore, new wells were deemed necessary so that current groundwater conditions in the area could be assessed. Since the previous wells were installed to characterize both the shallow and deep flow zones, specifications for the new wells, MW-101(S) and 101(D), were based on data from them. Well MW-101(D) was constructed at a depth of 82 feet below the ground surface. However, well MW-101(S) was constructed at a depth of 36 feet below the ground surface which is slightly deeper than the depth to which well MW-4(S) was installed.

As stated above, the third new well, MW-102(S), was installed in the southern portion of the proposed Cell 6 expansion area immediately adjacent to well DMW-2. Well MW-102(S) was installed at a depth of 59 feet bgs. The purpose of this well was to characterize water quality within the shallow flow zone beneath the southern portion of the Petrillo property.

As seen on the groundwater contour maps, all three of the new wells were placed outside the limits of the proposed Cell 6 disposal area such that all three could be incorporated into the permanent compliance monitoring plan for the site. Each well was constructed with flush threaded 2-inch diameter schedule 40 PVC well screen and casing. In order to preclude vertical communication between water bearing zones during drilling and well installation, steel casing was grouted in place through the overlying sediments and waste material (MW-102(S)). Drilling to target depths was then commenced inside the grouted steel casings.

During drilling, split spoon samples were collected at varying intervals depending on the geologic conditions encountered: typical intervals ranged from continuous to every four feet. Standard Penetration Test (SPT) data was also collected during drilling at MW-101(S). This data along with lithologic information are presented on the drill logs for each well, which are included in Attachment 1. As seen on these drill logs, unconsolidated silts, sands and clays were encountered at each location. Soil and gravel

fill material were also encountered from the surface to a depth of 8 feet in both MW-101(S) and 101(D). Concrete and wood wastes were encounter from the surface to a depth of 34 feet in well MW-102(S). A more detailed discussion regarding the lithologies encountered in the subsurface is presented above in Section 5.0.

Following installation, each monitoring well was developed using a combination of an electric submersible pump and an air drive well development pump. Well development using the air drive pump was conducted on wells MW-101(S) and 101(D). During the development procedure, the pump was periodically surged within the saturated interval of the well. This surge action induced a strong positive-negative pressure action within the well that permitted fine sediment to be removed via continuous pumping. The surge action also served to set the sandpack around the well casing and purge it of sediments that may have become embedded during well construction. Similar procedures were employed using the submersible pump while developing well MW-102(S).

6.2 Aquifer Testing

Although a considerable amount of hydrogeologic data has been compiled for the two defined groundwater flow zones at the DRPI site, some additional hydrogeologic testing was conducted as part of the proposed Cell 6 expansion permitting process. At the request of DNREC, this new data has also been compared to available, previous data. The findings from this investigation and the results of the comparison to previous data are discussed further in this section.

6.2.1 Methodology

As part of the assessment for the Cell 6 Expansion, **BAI** conducted pumping tests on three wells located on the Petrillo property (MW-1(S), MW-2(D) and DMW-1). A pumping test was also conducted on one well located on the southern side of the DRPI property (C1-S1D). Slug testing was also performed on two piezometers (P-1(S) and P-3R(S)) located on the south side of the DRPI Disposal Cell 1. The data resulting from these tests was then compared with the historic hydrogeologic data previously collected from the DRPI site.

Aquifer testing conducted as part of this investigation was performed on February 11 and 12, 2004 and also on June 30, 2004. These tests consisted of short duration single well pumping tests and slug testing of piezometers. Installations on which testing was performed are summarized in the following table:

Installation I.D.	Test Type	Formation Monitored
MW-1(S)	Single Well Pumping Test	Upper Potomac
MW-2(D)	Single Well Pumping Test	Lower/Upper Potomac
DMW-1	Single Well Pumping Test	Lower Potomac
C1-S1(D)	Single Well Pumping Test	Lower Potomac
P-1(S)	Slug Test	Upper Potomac
P-3R(S)	Slug Test	Columbia

The single well drawdown pumping tests were conducted using a Redi-Flow-II® electric submersible pump and either an electronic pressure transducer or an electric water level meter for obtaining water level measurements. The duration of each pumping test typically lasted between 2.5 to 4 hours. Recovery data was also recorded at some of the wells following cessation of pumping. Slug testing was performed in a similar manner using transducers to collect depth to water level measurements following the introduction of a measured one-gallon "slug" of water. Analysis of the pumping test data was performed using the Cooper-Jacob Modified Nonequilibrium Equation (1946). Relevant calculation sheets and graphs are included in Attachment 2. Because no change in depth to water levels were observed in the piezometers that were slug tested or in the pumping test of well MW-1S, these data were not evaluated. A discussion regarding this is presented in the following sections.

6.2.2 Results Discussion

The historic hydraulic conductivity values previously developed by GeoSyntec (1994) were calculated using analysis from Shelby tube samples, pumping and slug

testing. Testing data was developed for the Upper and Lower Potomac beneath DRPI and are summarized in their 1994 Hydrogeologic Assessment Report for Disposal Cell 4.

As part of this evaluation for the proposed Cell 6 Expansion, some additional aquifer testing of the two groundwater flow zones was conducted by **BAI**. This testing consisted of conducting short duration single well pumping tests at monitoring wells MW-1(S), MW-2(D), DMW-1 and C1-S1(D) and slug testing at piezometers P-1(S) and P-3R(S).

Although partially screened through a thin remnant zone of the overlying Columbia Formation sands, well MW-1(S) is representative of the shallow Upper Potomac Aquifer. Also, well MW-2(D) is screened to the base of the Upper Potomac Formation but has a borehole sandpack that extends beneath the bottom of the screen down into the Lower Potomac Formation. As discussed further in section 6.4, geologic and laboratory analytical data indicate that despite its construction, MW-2(S) is representative of the shallow aquifer.

Piezometers P-1(S) and P-3R(S) were also used for additional slug testing in the Upper Potomac however, the results from these piezometers indicate poor well yield. The poor yield observed in these two piezometers is attributed to possible well bore skin effects. Both piezometers were installed approximately 10 years ago and have not been developed since their initial installation. Consequently, data from these two tests were determined not to be representative of hydraulic properties consistent with the shallow aquifer. A review of water level measurements collected from these two piezometers on March 4, 2004 showed a return of the water levels to near historic static conditions as measured in January and February. Although these piezometers did not yield representative hydraulic data, the water level measurements from them are considered to be representative of the shallow aquifer.

As seen on the calculation sheet in Attachment 2, well MW-1(S) was pumped for approximately three hours at a constant rate of 2 two gallons per minute with only 0.01 feet of drawdown observed. Because only minimal drawdown (0.01ft) was observed in this well an accurate hydraulic conductivity (K) value could not be determined for this well. Pumping of the well at a greater rate was also not possible at the time due to constraints of the small diameter pump used.

Well MW-2(D) was also pumped for approximately three hours but at a rate of one gallon per minute with a maximum drawdown of approximately 4.8 feet. Also as observed on the graph for this well, some minor fluctuations in water levels were observed near the end of the test. These fluctuations are believed to be associated with minor decreases and resulting manual adjustments in the pumping rate as the pump used was sensitive to head level changes. Based on the pumping rate of one gallon per minute and the observed drawdown of 1.59 feet between 3.5 minutes and 10.5 minutes the K value at well MW-2(D) was calculated to be 4.18×10^{-4} cm/sec. Comparatively, the GeoSyntec 1994 aquifer test work resulted in K values for the Upper Potomac Aquifer ranging from 5.0×10^{-3} cm/sec to 5.75×10^{-5} cm/sec.

Pumping tests were also conducted in two wells within the Lower Potomac Aquifer: DMW-1 and C1-S1(D). A brief step pumping test was also performed at DMW-1. The step test was conducted for a total of four hours with variable pumping rates (Q) over this time period. Based on the step test, a pumping rate of 4 to 5 gallons per minute was determined to be appropriate for DMW-1. The drawdown versus time graph for this step test is presented in Attachment 2.

The short duration pumping test of DMW-1 was conducted on June 30, 2004. During this test, DMW-1 was pumped at a constant of 4 gpm for approximately 2.5 hours. This rate was found to be the maximum capable for the particular Redi-Flow-II® pump that was used. Additionally, the test was ceased after 140 minutes due to a mechanical failure of the pump.

Results from pumping test of DMW-1 are summarized in Attachment 2 along with the other data from the well. Based on analyses using the Cooper Jacob method the resulting hydraulic conductivity was determined to be 1.12×10^{-3} cm/sec. This value is similar to the historic k values determined from the DRPI site.

The pumping test for deep well C1-S1(D) was conducted for approximately 2.5 hours at a rate of 4 gpm. Recovery data from this well was also evaluated as a check. Analysis of the pumping and recovery test results indicated K values of 7.94×10^{-4} cm/sec for the pumping data and 8.80×10^{-5} cm/sec for the recovery data.

In comparison of similar Lower Potomac Formation wells, GeoSyntec reported K values for deep wells MW-4D and MW-7D of 3.51 x 10^{-5} cm/sec and 5.6 x 10^{-3} cm/sec, respectively.

Additionally, previous K values were reported for the confining sequence between the Upper and Lower Potomac Formations. During this most recent round of aquifer testing, no tests were performed on wells in the Petrillo property that were screened only within the confining layer. However, as part of the **BAI** single well pumping tests, pressure transducers were installed in surrounding monitoring wells when available to monitor drawdown in the observation wells that were screened above or below the confining layer, opposite the pumping well. No drawdown was recorded in any of these wells for any of these tests. Most notably, during the four hour pumping test conducted in February 2004 at the deep well DMW-1 (during the last two hours of which the pumping rate was 5 gpm), there was no measurable drawdown in MW-1(D) which is screened in the lower sand of the Upper Potomac. Nor was there any communication with MW-1(S) or MW-2(D).

In summary, the new aquifer data appear to be consistent with previous data and support two separate aquifers beneath the Petrillo property with no evidence of inter-communication.

6.3 Groundwater Sampling

On December 16, 2003, groundwater samples were collected from all three of the newly installed monitoring wells (MW-101(S), MW-101(D) and MW-102(S)). The wells were sampled using standard low-flow purging techniques. A Grundfos Redi-Flo-II® submersible pump was used to purge MW-102(S) and MW-101(D). Well MW-101(S) was purged and sampled using a peristaltic pump. Field measurements consisting of pH, specific conductivity, turbidity, temperature, dissolved oxygen and oxidation reduction potential were periodically monitored during the purge events at each well. All samples were collected into laboratory supplied bottle ware and were shipped via overnight courier to Severn Trent Laboratories (STL) in Amherst, New York for analyses. Results from these analyses are discussed below in Section 6.1.

6.4 Groundwater Level Monitoring and Groundwater Contour Maps

Monthly groundwater level measurements were obtained from existing subsurface monitoring installations located throughout the DRPI site and the proposed expansion area. Water levels were also obtained from the three new monitoring wells that were installed in November and December of 2003. As proposed, these levels were obtained monthly over a calendar quarter beginning in January 2003. Additional, historic groundwater level data from existing site installations has also been included with all relevant water level data presented on Table 1.

Of noteworthy interest, the groundwater level in the Petrillo monitoring well MW-2D, which was drilled by Duffield Associates, Inc. in 1999, is not considered to be representative of either the shallow or deep flow zones. During drilling, this well was apparently advanced into the underlying sands of the Lower Potomac Formation. The borehole was then backfilled with sand up to a depth corresponding to the sand layer in the Upper Potomac where it was screened. Therefore, since this well was constructed with a porous media across the basal silty clay of the Upper Potomac, it does not exhibit groundwater levels that are characteristic of the shallow flow zone. Therefore, the groundwater levels observed in this well were not used to construct either contour map.

In addition, the groundwater level at well MW-101(S) was also found to be somewhat inconsistent with the shallow flow zone. As seen in Table 1, the groundwater levels in MW-101(S) are at elevations ranging between 5.76 ft MSL to 8.27 ft MSL. In comparison, groundwater levels at the nearby gas monitoring probe GP5-2 range between 15.72ft MSL and 17.52ft MSL. Historic groundwater elevations in the previously existing well MW-4(S), which was located just to the north of GP5-2, were also more similar to those observed in GP5-2 (around 20 ft MSL). The difference in the groundwater elevations between well MW-101(S) and GP5-2 and the old MW-4(S) well are attributed to well MW-101(S) being screened at a greater depth (28ft to 39ft) than GP-5 (5ft to 23ft) and MW-4(S) (9ft to 14ft). Additionally, well MW-101S is also screened within a sandy layer that was not encountered in GP5-2 and MW-4(S). Although found to be continuously saturated from just below ground surface, this deeper sand layer encountered in well MW-101(S) does not appear to exhibit the same potentiometric head levels as the over lying sediments through which GP5-2 and MW-

4(S) are screened. Therefore, it is concluded that some localized perched conditions occur above the sand layer in the vicinity of MW-101(S). This conclusion can also be evidenced by wetland type conditions throughout the surface area surrounding well MW-101S and GP5-2. These observed saturated surface conditions in the area are likely attributed to poor vertical drainage through the shallow fine grained sediments.

Groundwater contour maps were prepared for both shallow and deep zones and the subsurface monitoring installations that were used to prepare the contours are highlighted on each map. As seen, there is clearly a marked contrast between the two maps owing to the two separate flow regimes.

The shallow groundwater contour map depicts an overall gradient to the north-northwest with a resultant discharge of shallow groundwater to the Christiana River and adjacent tidal marsh lake. The effects of the continuous dewatering beneath Cells 4 and 5 of the DRPI are also obvious on the shallow groundwater contour map.

The groundwater contour map for the deep flow zone (Lower Potomac Aquifer) shows a very flat gradient (0.0001) with groundwater flow toward the east-southeast. Historically, the deep zone has always exhibited a flat gradient and has varied in flow direction from south to east-southeast. The reasons for the varying flow direction have been attributed to groundwater pumping from off site locations. It has also been presented (GeoSyntec 1994) that the deep flow zone is minimally influenced by tidal conditions. This tidal influence, however, is based on limited groundwater and tidal observation data and its overall influence was concluded to not be more than a few hundredths of a foot.

7.0 Historic Groundwater Quality

A total of four previous groundwater characterization investigations have focused on the Petrillo property and southern portion of the DRPI site. Two of these investigations were conducted separately but simultaneously by Duffield and **BAI** in 1999. Both the third and fourth investigations were conducted by **BAI** in 2000 and 2001 respectively. Analytical results from all four of these sampling events are summarized on Tables 2A and 2B.

Although separate, the first two investigations conducted by Duffield and **BAI** in 1999 were related in that the work performed by Duffield focused on the Petrillo property, while work

performed by **BAI** focused primarily on the southern portion of the DRPI site. The goal of both investigations was to characterize the shallow groundwater quality and flow underneath the Petrillo and DRPI properties. However, because the investigations were conducted independently, DNREC requested that a more comprehensive combined assessment of both properties be performed. Therefore, **BAI** conducted a third investigation in 2000 that focused on both properties as one site.

Results of the groundwater characterization from this third report indicated that several of the monitoring wells located on the Petrillo property (MW-2D, MW-3 and MW-4) exhibited elevated concentrations of some metals and other typical leachate indicator parameters (TDS, Ammonia, Chloride, Total Alkalinity, Specific Conductance and Iron). Methyl Tert Butyl Ether (MTBE) was also identified in these wells at extremely low concentrations just above the laboratory detection levels. None of the reported concentrations for these parameters, however, were found to exceed their Maximum Contaminant Levels (MCLs) for drinking water as established by the US Environmental Protection Agency (USEPA).

In March 2001, DNREC concurred with the findings of the third investigation, however they requested that some additional work be performed. The additional work regarded the characterization of the deeper groundwater flow system, which was not addressed by any of the previous investigations. Therefore, in October 2001 **BAI** submitted the Lower Potomac Aquifer Groundwater Characterization, which summarized the installation of two downgradient deep monitoring wells (DMW-1 and DMW-2) and the subsequent sampling and results. Drilling data and water level measurements supported that these additional deep monitoring wells were installed within the upper confined sand layer of the Lower Potomac Aquifer. Based upon the laboratory analytical results from this sampling event, which are presented on Tables 2A and 2B, no parameters of concern were detected in these two deep monitoring wells. The analytical data indicate that the quality of the groundwater within the deep zone at well DMW-1 and DMW-2 are similar to the quality at the other locations on the DRPI site where the deep zone is monitored (MW-4R(D), MW-7(D), MW-9(D) and C1-S1D).

7.1 Recent Groundwater Quality Data Analysis

As stated above in Section 5.1, two of the three new wells installed in 2003 (MW-101(S) and MW-102(S)) monitor the shallow flow zone (Upper Potomac Aquifer),

while the third new well (MW-101(D)) monitors the deep flow zone (Lower Potomac Aquifer). The samples collected from these three wells in December 2003 were analyzed for an extensive list of chemical parameters commonly associated with solid waste landfills. The results from this latest groundwater sampling event are also presented in Tables 2A and 2B.

Based on review of all of the analytical results presented in Tables 2A and 2B, it appears that the groundwater within the proposed expansion area is of relatively good quality. Neither the deep flow zone (Lower Potomac Aquifer) beneath either site or the shallow zone beneath the southern portion of the DRPI site exhibit evidence of negative impacts. The two new shallow wells (MW-101S and MW-102S) along with some of the previously existing wells on the Petrillo Property, however, do exhibit higher concentrations of the major cation and anion parameters. A comparison of these parameters between the Petrillo shallow wells [MW-1(S), MW-2(D), MW-3, MW-4, MW-102(S) and Piezometer P-1], the southern DRPI shallow wells [MW-2(S), MW-4(S) and MW-101(S)] and all of the deep wells on the Petrillo property and southwestern side of the DRPI site [MW-4(D), DMW-1, DMW-2 and MW-101(D)] is presented in the table below.

As seen in the summary table below, the average concentrations of these parameters are higher in the shallow wells on the Petrillo property in comparison with the shallow wells on the south side of the DRPI Site and the deep wells on both sites.

Average Cation and Anion Parameter Concentrations

Parameter	Petrillo Shallow Wells	DRPI Shallow Wells	Petrillo and DRPI Deep Wells
(Cations)			
Sodium	66.2 mg/l	9.1 mg/l	9.5 mg/l
Potassium	19.8 mg/l	1.0 mg/l	2.1 mg/l
Calcium	94.3 mg/l	6.0 mg/l	14.1 mg/l
Magnesium	47.9 mg/l	1.6 mg/l	3.4 mg/l
(Anions)			
Chloride	75.2 mg/l	5.6 mg/l	10.4 mg/l
Alkalinity, Total	449.3 mg/l	27.3 mg/l	35.0 mg/l
Sulfate	20.1 mg/l	20.7 mg/l	12.4 mg/l

Averaged from the most recent sampling event of each well.

In addition to the above summary table, Piper diagrams and graphical Stiff plots of the major cations and anions (in milliequivalents) for each of the above referenced wells have also been produced and are included as Attachment 3 to this narrative. The Piper diagrams for each of the data sets from the most recent sampling of each of the above wells indicates a wide variability in ion concentrations. Because of this variability, the Piper diagrams do readily demonstrate an obvious chemical signature. The DRPI shallow wells do tend to plot along the central axis of the upper diamond plot, while the Petrillo wells plot out on either side of the axis.

The graphical Stiff plots, however exhibit the most pronounced contrast between the three groups of wells. The plot that compares all of the relevant shallow wells clearly shows a difference in chemistry between the DRPI wells (MW-2(S), MW-4(S) and MW-101(S)) and the downgradient Petrillo wells (MW-3 and MW-4). The upgradient shallow wells (MW-1(S) and MW-102(S)) on the Petrillo site also appear to be more similar to the three DRPI wells. The other notable characteristic is seen in the Petrillo well MW-2(D). As indicated above in Section 6.4, this well is screened in the upper flow zone, however, it was drilled down to the basal clay of the Upper Potomac and then backfilled with sand to the base of it screen interval. Although the reason for this construction is unknown, the water chemistry in this well, as depicted on the Stiff plot, is clearly similar to that of the Petrillo wells completed in the shallow flow zone.

The Stiff diagrams also graphically depict a notable difference between the deep and shallow flow zones. As seen on these diagrams, the deep flow zone wells all exhibit significantly lower milliequivalents per liter concentrations of both the major cation and anion groups than do the shallow flow system wells.

8.0 Proposed Groundwater Monitoring Network

Because the proposed Cell 6 Expansion is going to increase the aerial extent of the DRPI landfill, it is observed that additional groundwater monitoring points will be required to provide effective compliance monitoring. Several existing monitoring points will also be properly decommissioned to permit development of the expansion.

Based on the conceptual design of the proposed Cell 6 Expansion area, only seven existing monitoring wells within the Cell 6 Expansion area [MW-1(S), MW-1(D), DMW-1, DMW-

2, MW-102(S), MW-101(S) and MW-101(D)] and one gas probe (GP5-2) are proposed to remain. All other wells, piezometers and gas probes will be properly decommissioned. Those proposed to be decommissioned include Wells C1-S1D, MW-2(S), MW-3, MW-4 and MW-2(D); Gas Probes GP5-1, GP-6, GP-5 and GP-3R(S); Piezometers P-1(S), P-2R(S) and P-3(S).

Because the seven wells that are proposed to remain are located such that they will effectively monitor both the upper and lower groundwater flow zones, no additional groundwater monitoring points are proposed to be installed. Several new gas probes are however proposed to be installed. The locations and construction specifications for these probes are presented within the engineering design portion of the application package that was prepared by GeoSyntec.

In accordance with the current groundwater monitoring plan for the DRPI site, it is proposed that the three new deep monitoring wells DMW-1, DMW-2 and MW-101D be sampled annually for the same groundwater quality parameters as the existing DRPI site wells. Groundwater levels will be collected semi annually such that the required groundwater contour maps can be generated.

With regard to the new monitoring wells in the shallow flow system, three of these [MW-101(S), MW-102(S) and MW-1(S)] are proposed to be sampled for groundwater quality. Well MW-101(S) is located downgradient of the proposed Cell 6 Expansion Area and will effectively monitor shallow groundwater flowing from the western side of the site. As with the other DRPI shallow wells, well MW-101(S) is proposed to be monitored on a semi-annual basis. The other two wells are both located upgradient of the expansion area and will provide information pertaining to background groundwater quality. Although, background or upgradient groundwater quality monitoring has not been a part of the DRPI groundwater monitoring plan in the past, it is considered applicable for the proposed expansion. This is primarily because no groundwater underdrain system will be incorporated into the design of the proposed Cell 6. These wells are proposed to be sampled on an annual basis following the same schedule as the deep DRPI monitoring wells. Details regarding revisions to the DRPI groundwater monitoring plan are presented within the Revised Groundwater, Surface Water and Leachate Monitoring and Reporting Program Plan, which is included in Attachment 5. For reference, the proposed groundwater monitoring network will consist if the following wells:

Proposed Monitoring Well Network

Shallow Wells	Deep Wells	Piezometers/Wells Groundwater Level Monitoring Only
MW-4RS	MW-4RD	MW-7S
C4-N1S	MW-7D	MW-8S
C5-N1S	MW-9D	C4-E1RS
C5-W1RS	MW-101D	P-8
C5-W2S	DMW-1	
MW-1S	DMW-2	
MW-101S		
MW-102S		

8.1 Well Relocation Contingency

Two monitoring wells, MW-7(S) and MW-7(D), are currently located on the southeast side of the DRPI site. Both wells were installed on property that was and is currently owned by Corrado American, Inc. Based on communications with DRPI personnel, it appears that the property on which the wells are located maybe be sold in the near future to New Castle County for development of a new county police barracks. Should this real estate transaction occur, there may be a need to abandon and relocate both wells MW-7(S) and MW-7(D).

The planned contingencies for this event would be to either modify the well heads and maintain the wells at their present locations or to relocate both wells across Marsh Lane and slightly southwest of their present locations. This contingency location is on property owned by DRPI. Both replacement wells would be installed such that they monitor the same groundwater zones in which they are presently installed. Detailed well specifications for replacement wells and a work plan for the decommissioned of the existing wells will be submitted to DNREC prior to the conduct of the work.

9.0 Summary

The considerable amount of existing data from the DRPI facility combined with new and existing data from the Petrillo property support previous conclusions regarding the definitions of groundwater flow zones. Additionally, available geologic drill log data was used to construct the three-dimensional geologic fence diagram, which depicts subsurface conditions beneath

both the DRPI site and the proposed expansion area. Based on a review of this fence diagram, it is apparent that the stratigraphy is similar with some distinct differences.

Work conducted as part of this investigation has established the existence of a lower sand horizon in the Upper Potomac Formation. This horizon appears to be thickest in the southern portion of the Petrillo property, thinning northward and disappearing completely beneath the DRPI facility. The Lower Potomac beneath the Petrillo property contains two significant sand horizons, which are prevalent across the entire proposed Cell 6 expansion. However, the upper horizon appears to become discontinuous through the DRPI facility. It is likely that additional deep drilling would support the existence of the lower sand horizon in the Lower Potomac to be prevalent and extensive across the southern portion of the DRPI facility.

Furthermore, the latest round of groundwater sampling and groundwater level monitoring supports earlier conclusions that the two flow zones are separate and each has different chemical signatures with no evidence of significant water quality degradation.

TABLES

WASTE MANAGEMENT
DELAWARE RECYCLABLE PRODUCTS, INC.
DRPI INDUSTRIAL WASTE LANDFILL

PROPOSED DISPOSAL CELL 6 EXPANSION
HYDROGEOLOGIC ASSESSMENT SUMMARY

BLAZOSKY Associates inc.

TABLE 1

WASTE MANAGEMENT
DELAWARE RECYCLABLE PRODUCTS, INC.
DRPI INDUSTRIAL WASTE LANDFILL
PROPOSED CELL 6 EXPANSION

HISTORIC GROUNDWATER ELEVATION SUMMARY

Monitoring Point Identification	TOC PVC Elevation (ft NGVD)	Surface Elevation (ft NGVD)	1/24/96	4/17/96	7/2/97	10/21-22/97	1/29/97	4/29/97	7/21/97	10/23/97	1/27/98	4/16/98	7/23/98	10/20/98	2/4/99	4/7/99	10/14/99	4/5/00 & 4/18/00*	10/30/00	4/18/01	10/24/01	4/17/02	10/23/02	4/17/03	10/30/03	1/27/04	2/11/04	3/18/04	4/21/04 4/27/04	Max	Min	Median	Range
DRPI Site Deep Wells																																
MW-4R(D)	28.90	26.50	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	0.97	DI	1.18	0.51	1.98	0.31	-0.71	0.41	-0.71	2.24	2.40	1.10	2.76	2.77	2.77	-0.71	1.10	3.48
MW-7(D)	58.57	56.45	0.30	0.45	0.18	0.45	1.53	3.08	0.27	-0.01	1.39	2.25	0.45	-0.35	-0.01	-0.64	0.81	-0.09	-0.85	0.97	-1.13	-0.81	-1.1	-0.81	1.45	2.06	2.11	2.41	2.53	3.08	-1.13	0.45	4.21
MW-9(D)	40.70	38.10	0.51	1.10	0.44	0.74	1.34	2.60	0.32	0.08	1.24	1.88	0.44	-0.14	-0.09	-0.22	0.81	0.09	-0.55	1.28	-0.76	-0.5	-0.63	-0.50	1.24	1.73	1.70	2.02	2.08	2.60	-0.76	0.59	3.36
C1-S1(D)	37.37	33.60	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	-0.41	1.3	0.22	-0.87	1.82	-1.13	0	-0.18	0.00	2.45	2.29	2.31	2.58	2.70	2.70	-1.13	0.76	3.83
Shallow Wells																																
MW-2(S)	34.20	32.20	26.77	27.08	26.74	27.24	27.22	27.22	27.22	27.22	26.66	26.81	26.95	27.23	26.99	26.89	27.19	27.19	27.49	27.78	27.45	27.29	NM	27.29	29.38	29.70	29.12	29.52	29.85	29.85	26.66	27.22	3.19
MW-4R(S)	29.32	26.70	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	9.75	12.23	2.14	14.7	12.07	16.08	10.79	12.95	11.99	12.95	14.01	14.22	13.96	15.04	16.37	16.37	2.14	12.95	14.23
MW-7(S)	59.24	57.07	33.94	34.44	34.50	34.71	35.30	35.79	34.93	34.10	34.00	34.43	34.38	33.82	33.68	33.93	34.06	35.14	34.87	34.94	34.44	33.48	33	33.48	35.94	36.13	36.22	36.08	36.40	36.40	33.00	34.47	3.40
MW-8(S)	38.51	39.26	30.71	31.53	30.68	30.24	30.85	31.36	29.91	29.40	29.85	29.87	29.67	29.31	29.55	29.73	29.91	NM	29.74	30.33	29.53	29.59	29.63	29.59	30.59	31.03	31.21	30.94	31.13	31.53	29.31	29.91	2.22
C4-E1R(S)	30.92	28.10	NI	NI	21.42	21.49	27.53	21.32	21.30	21.23	21.24	21.09	21.29	21.16	20.93	20.75	21.1	20.73	21.1	20.8	21.11	20.65	20.99	20.65	21.00	20.60	20.44	20.48	20.67	27.53	20.44	21.09	7.09
C4-N1(S)	24.70	22.00	15.05	15.93	15.97	13.64	13.06	8.15	10.56	9.23	13.62	14.36	10.58	9.32	11.31	12.33	12.8	15.27	10.49	15.69	9.63	13.71	13.28	13.71	15.88	15.08	15.32	16.07	16.86	16.86	8.15	13.63	8.71
C5-W1R(S)	19.74	17.4	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	7.74	8.26	6.69	7.35	7.24	7.35	8.17	5.78	NM	8.14	8.16	8.26	5.78	7.55	2.48
C5-W2(S)	20.46	17.80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	6.89	6.24	6.50	6.61	4.57	6.56	1.63	5.82	4.51	5.82	7.04	7.72	6.86	6.91	6.77	7.72	1.63	6.56	6.09
C5-N1(S)	32.96	29.80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	14.03	14.38	14.48	15.33	12.19	14.62	10.64	12.71	12.45	12.71	16.15	14.76	16.13	15.62	16.41	16.41	10.64	14.48	5.77
Piezometers																																
P-1(S)	36.62	34.00	26.20	26.57	26.71	26.79	26.62	27.09	26.47	26.11	26.16	26.67	27.04	26.98	26.41	26.54	27.13	27.63	26.84	28.12	26.74	26.54	26.67	26.54	26.54	26.19	26.02	25.97	26.45	28.12	25.97	26.60	2.15
P-2R(S)	35.64	32.60	NI	NI	26.75	32.34	32.12	32.73	31.94	31.53	32.36	32.64	32.21	32.10	32.60	32.48	32.75	33.3	33.05	33.36	32.95	32.24	32.13	32.24	33.92	33.79	33.86	33.73	33.94	33.94	26.75	32.60	7.19
P-3(S)	42.46	40.00	33.54	34.36	34.31	34.77	35.17	35.72	34.66	32.82	34.24	34.29	34.27	32.80	34.02	33.94	34.37	35.4	34.92	35.44	34.61	33.47	33.2	33.47	36.66	36.26	36.71	36.36	36.63	36.71	32.80	34.49	3.91
P-4	49.27	47.50	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	35.22	36.28	35.21	35.83	36.28	35.21	35.53	1.07
P-8	25.04	22.00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	8.99	8.64	9.31	9.24	9.31	8.64	9.12	0.67
Gas Probes																																
GP-1	45.90	43.40	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	33.62	34.39	34.00	NM	34.39	33.62	34.00	0.77
GP-2	54.40	51.80	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	36.07	36.21	36.08	NM	36.21	36.07	36.08	0.14
GP-3	52.50	50.50	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	37.23	37.42	37.20	NM	37.42	37.20	37.23	0.22
GP-11	36.94	34.60	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	25.01	26.04	24.85	25.55	26.04	24.85	25.28	1.19
GP-12	25.10	23.00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	17.52	18.87	18.69	19.92	19.92	17.52	18.78	2.40
GP-16	40.10	37.80	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	15.82	15.90	15.51	NM	15.90	15.51	15.82	0.39
GP-17	41.30	39.20	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	32.21	32.30	32.44	NM	32.44	32.21	32.30	0.23
GP5-1	36.19	33.5	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	28.08	27.93	27.89	32.82	32.82	27.89	28.01	4.93
GP5-2	21.32	18.33	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	15.72	17.52	16.53	16.56	17.52	15.72	16.55	1.80
GP5-3	20.04	17.35	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	7.08	7.39	7.39	NM	7.39	7.08	7.39	0.31
GP5-6	20.59	17.70	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	3.64	3.79	4.20	NM	4.20	3.64	3.79	0.56
Expansion Area Deep Wells																																
DMW-1	63.25	61.00	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	2.46	2.56	2.69	3.06	3.06	2.46	2.63	0.60
DMW-2	58.11	55.67	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	2.01	2.05	2.23	2.62	2.62	2.01	2.14	0.61
MW-101D	22.10	24.50	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	2.25	DI	0.19	0.30	2.25	0.19	0.30	2.06
Intermediate Wells																																
MW-1D	63.72	61.00	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	NM	NM	29.97	30.32	29.99	30.34	30.34	29.97	30.16	0.37
MW-2D	36.62	34.00	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	NM	NM	3.21	3.36	3.49	3.83	3.83	3.21	3.43	0.62
Shallow Wells																																
MW-1S	63.93	61.60	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	NM	NM	35.93	36.14	35.85	36.15	36.15	35.85	36.04	0.30
MW-3	38.14	35.30	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	NM	NM	33.54	33.71	33.54	33.74	33.74	33.54	33.63	0.20
MW-4	39.79	37.30	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NM	NM	NM	NM	NM	NM	NM	NM	NM	34.19	34.38	34.25	34.45	34.45	34.19	34.32	0.26
MW-101S	22.00	24.84	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	8.27	7.54	DI	5.76	8.27	5.76	7.54	2.51
MW-102S	54.70	57.43	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	29.87	30.18	38.12	29.41	38.12	29.41	30.03	8.71

NM Denotes Not Measured

NI Denotes Not Installed

DI Denotes Data Invalid; data not considered valid due to recording error

*Groundwater elevations for the four deep monitoring wells were collected on 4/18/00 while all other levels were obtained on 4/5/00

BLAZOSKY Associates • inc.

TABLE 2A

DELAWARE RECYCLABLE PRODUCTS, INC.
INDUSTRIAL WASTE LANDFILL

PROPOSED CELL 6 EXPANSION
GROUNDWATER ANALYTICAL DATA SUMMARY

(Inorganic Parameters)

Parameter	Unit of Measure	PETRILLO PROPERTY INSTALLATIONS															DRPI PROPERTY INSTALLATIONS											
		MW-1S		MW-1D		MW-2		MW-3		MW-4		P-1		DMW-1	DMW-2	MW-102S	MW-2S				MW-4S				MW-4D				MW-101D	MW-101S
		09/02/99	04/05/00	09/02/99	04/05/00	09/02/99	04/06/00	09/02/99	04/06/00	09/02/99	04/06/00	09/03/99	04/06/00	08/28/01	08/28/01	12/16/03	11/03/92	01/23/95	07/07/99	04/06/00	11/03/92	02/03/95	07/07/99	04/05/00	11/03/92	02/03/95	07/07/99	04/05/00	12/16/03	12/16/03
FIELD																													
pH	Std. Units	6.08	5.25	5.93	5.34	7.28	7.64	7.32	6.64	7.15	6.73	6.68	6.59	6.00	6.24	7.2	6.29	7.81	4.64	5.21	DATA NOT AVAILABLE	DATA NOT AVAILABLE	5.55	5.69	DATA NOT AVAILABLE	DATA NOT AVAILABLE	6.25	6.11	6.03	7.00
Specific Conductance	umhos/cm	385	349	754	364	1602	1478	1580	2100	753	1716	549	546	117	193	358	62.3	492	64	35			245	139			100	105	74	141
Temperature	degrees C	16.3	14.3	15.8	13.7	19.4	17.5	18.7	15.4	19.2	13	18.6	11.2	15.93	14.7	12.7	13.7	21.3	18.2	14.85			19.2	10.17			15.5	12.8	14.03	13.1
Turbidity	NTU	82.7	3.57	8.35	69	237	38.1	318	15.8	5.6	2.97	773.00	4.48	19	6.7	24.5	6.6	2.16	>200	13.0			>200	28			28.4	9.4	4.2	21.1
Oxidation-Reduction Potential (ORP)	mV	-246	204.2	-427	178.3	-366	183.1	-375	193.3	-334.0	212.7	-289.0	-90.0	168.0	167.0	121	NA	NA	222.8	299.1			245.0	-11.5			178.5	124.4	209.0	-8.0
Dissolved Oxygen (DO)	%	76.2	62.8	18.1	10.6	27.3	23.7	18.5	1.8	18.6	1.4	18.1	0.1	NA	NA	NA	NA	NA	NA	2.2			NA	3.9			NA	15.7	NA	NA
Dissolved Oxygen (DO)	mg/l	NA	6.96	NA	1.09	NA	0.21	NA	0.17	NA	0.15	NA	0.01	6.31	2.70	3.01	NA	NA	6.81	2.40			4.02	0.44			5.76	1.64	4.03	2.02
LABORATORY *(Inorganics)*																														
Total Calcium	mg/l	16	14.0	11.0	25.2	71	85.6	180	211	96	188	28	25.3	10.2	18	22.4	NA	NA	7.15*	2.0	NA	NA	12.05*	2.2	NA	NA	22.07*	10.7	<5	136
Dissolved Calcium	mg/l	NA	15.3	NA	29.6	NA	95.9	NA	215	NA	193	NA	24.0	10.0	17.6	22.6	NA	NA	NA	2.0	NA	NA	NA	2.3	NA	NA	NA	14.60	<5	13.8
Total Magnesium	mg/l	6.9	8.1	4.9	11.6	51	80.3	59.0	94.9	30.0	70.5	14.0	13.4	2.5	6.1	6.46	NA	NA	1.8	0.50	NA	NA	6.80	2.6	NA	NA	4.4	2.2	<5	<5
Dissolved Magnesium	mg/l	NA	8.3	NA	13.3	NA	86.6	NA	99.1	NA	73.6	NA	12.8	2.4	6.0	6.7	NA	NA	NA	0.55	NA	NA	NA	2.6	NA	NA	NA	1.9	<5	<5
Total Potassium	mg/l	3.1	3.9	2.9	4.1	29.0	37.4	15.0	22.4	9.3	32.0	3.1	2.3	2.0	2.6	<5	NA	NA	2.06*	0.81	NA	NA	3.77*	0.39	NA	NA	1.42*	1.7	<5	<5
Dissolved Potassium	mg/l	NA	4.3	NA	5.9	NA	42.2	NA	25.8	NA	38.9	NA	2.4	2.0	2.8	4.9	NA	NA	NA	0.34	NA	NA	NA	0.42	NA	NA	NA	2.3	1.3	2.0
Total Sodium	mg/l	33	34.8	10.0	21.4	83	126	28	76.0	18.0	41.9	49.0	65.0	11.2	14.1	41.3	NA	NA	3.7	4.3	NA	NA	27.6	17.6	NA	NA	4.3	5.1	0.0088	0.0056
Dissolved Sodium	mg/l	NA	37.3	NA	23.5	NA	130	NA	77.8	NA	44	NA	67.9	10.8	13.6	40.6	NA	NA	NA	3.2	NA	NA	NA	18.2	NA	NA	NA	5.5	8.24	5.81
Total Iron	mg/l	<0.05	0.10	<0.05	0.40	<0.05	0.2	11	53.9	38	40.0	29.0	37.9	0.26	0.063	0.155	NA	NA	14.8	0.47	612	NA	53	1.9	2.0	NA	1.3	0.1	0.104	8.3
Dissolved Iron	mg/l	NA	<0.060	NA	<0.060	NA	0.34	NA	51.1	NA	33.0	NA	33.4	<0.060	<0.060	<0.1	0.291	0.2	NA	0.34	NA	NA	NA	0.86	NA	NA	NA	<0.060	<0.1	8.19
Total Manganese	mg/l	0.32	0.34	<0.01	0.018	2.800	2.1	1.2	2.0	4.6	3.8	4	4.4	0.0	0.0	0.077	NA	NA	NA	0.014	NA	NA	NA	0.11	NA	NA	NA	0.0050	0.0325	0.104
Dissolved Manganese	mg/l	NA	0.33	NA	0.014	NA	2.2	NA	2.0	NA	3.5	NA	4.2	0.014	0.024	0.0756	0.0148	0.0115	NA	0.013	NA	NA	NA	0.11	NA	NA	NA	0.0028	0.033	0.1
Ammonia (As N)	mg/l	0.1	<0.050	<0.1	<0.050	6.3	7.1	0.6	3.0	0.9	2.7	1.4	1.0	<0.050	<0.050	<0.020	0.0538	<0.05	0.1	<0.050	NA	NA	0.092	<0.050	NA	NA	<0.050	<0.050	<0.020	<0.020
Chemical Oxygen Demand (COD)	mg/l	<20	<5.0	<20	6.8	100	71.4	44	79.6	46	59.0	110.0	15.0	<5.0	<5.0	<10	<5.0	<5.0	29.7	<5.0	720	45	33.6	<5.0	<20	<5.0	18.90	<5.0	<10	<10
Chloride	mg/l	69	56.6	27.0	52.9	100	131	48	111	35	39.6	76.0	67.0	16.6	15.8	46.1	4.19	4.4	10.8	4.3	14.5	510	16.3	8.0	6.1	5.4	4.6	3.5	5.7	4.4
Total Dissolved Solids	mg/l	290	184	150	188	980	695	1010	1140	580	934	490	294	57	105	222	59	51	49	38.0	304.0	NA	375.0	70.0	179.0	NA	49.0	40.0	64	76
Nitrate (As N)	mg/l	2.5	6.0	1.3	1.3	0.2	0.10	0.60	0.060	<0.1	<0.050	<0.1	0.050	3.900	2.200	2.900	<0.05	<0.05	0.110	0.080	NA	NA	<0.050	<0.050	NA	NA	1.9	1.7	2.400	<0.050
Specific Conductance (25° C)	umhos/cm	NA	333	NA	355	NA	1440	NA	1800	NA	1480	NA	519	142	211	380	66.8	67	64	36	155	NA	207	108	100	NA	106	104	84	1230
Sulfate	mg/l	28	23.2	22.0	55.1	17	6.2	<5	10.9	33.0	23.6	8.4	16.6	10.8	27.0	39.9	7.45	7.3	<1.0	8.4	NA	NA	2.8	12.6	NA	NA	8.9	5.0	6.7	41.0
Alkalinity, Bicarbonate (As $CaCO_3$)	mg/l	NA	25.0	NA	45.1	NA	774	NA	991	NA	668	NA	177	24	45	61	NA	NA	17	9.2	NA	NA	67	38.8	NA	NA	41.0	36.0	<10	34
Alkalinity, Carbonate (As $CaCO_3$)	mg/l	NA	<5.0	NA	<5.0	NA	<5.0	NA	<5.0	NA	<5.0	NA	<5.0	<5.0	<5.0	NA	NA	NA	<5.0	<5.0	NA	NA	<5.0	<5.0	NA	NA	<5.0	<5.0	NA	NA
Alkalinity Total (As $CaCO_3$)	mg/l	35	25.0	19.0	45.1	690	774	930	991	480	668	240	177	24	45	60.9	12.8	12.2	17.3	9.2	NA	NA	67	38.8	NA	NA	41.00	36.00	<10	34
Phenolics, Total	mg/l	NA	<0.050	NA	<0.050	NA	<0.050	NA	<0.050	NA	<0.050	NA	<0.050	<0.050	<0.050	<0.005	NA	NA	<0.050	<0.050	NA	NA	<0.05	<0.050	NA	NA	<0.050	<0.050	<5.0	<5.0
Total Suspended Solids	mg/l	NA	<4.0	NA	66.5	NA	52.0	NA	78.0	NA	62.5	NA	25.5	9	13.5	NA	NA	NA	90.5	<4.0	NA	NA	413	19.5	NA	NA	86.0	4.0	NA	NA
Total Organic Carbon (TOC)	mg/l	NA	<1.0	NA	1.5	NA	25.1	NA	24.6	NA	17.6	NA	4	1.2	1.7	<1.0	<1.0	3.1	3.3	<1.0	31	54	8.2	1.20	2.00	1.40	1.6	<1.0	<1.0	<1.0
Flouride	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Total Arsenic	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01	<0.01
Dissolved Arsenic	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
Total Barium	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2	<200
Dissolved Barium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.023	0.031
Total Cadmium	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005
Dissolved Cadmium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0010
Total Chromium	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01	<0.01
Dissolved Chromium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0028	<0.0020
Total Copper	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.025	<0.025
Dissolved Copper	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050
Total Lead	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005
Dissolved Lead	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
Total Mercury	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00020	<0.00020
Dissolved Mercury	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00017	<0.00017
Total Selenium	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01	<0.01
Dissolved Selenium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
Total Silver	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.025	<0.025
Dissolved Silver	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0030	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0030	<0.0030
Total Zinc	µg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.020	<0.020
Dissolved Zinc	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.028	<0.020
pH	Std. Units	6	5.34	7.30	5.30	8.30	7.82	7.00	6.94	7.00	6.91	7.3	6.67	6.05	6.2	6.84	6.1	6.7	5.3	5.92	7.2	NA	5.5	5.66	7.30	NA	5.80	6.11	6.34	6.86

NA - Not Analyzed

* Values reported for total calcium and total potassium on 7/7/99 were not specifically requested in the initial analytical run. The reported values were verbally provided by Severn Trent on 8/4/00 and are based on a review of the original metals scan that was performed. The results are considered accurate as reported in this table.

NTU = Nephalemetric Turbidity Units

mV = Milli-Volts

mg/l = milligrams per liter

µg/l = micrograms per liter

BLAZOSKY ASSOCIATES INC.

TABLE 2B

DELAWARE RECYCLABLE PRODUCTS, INC.
INDUSTRIAL WASTE LANDFILL

PROPOSED CELL 6 EXPANSION
GROUNDWATER ANALYTICAL DATA SUMMARY
(Volatile Organic Compounds)

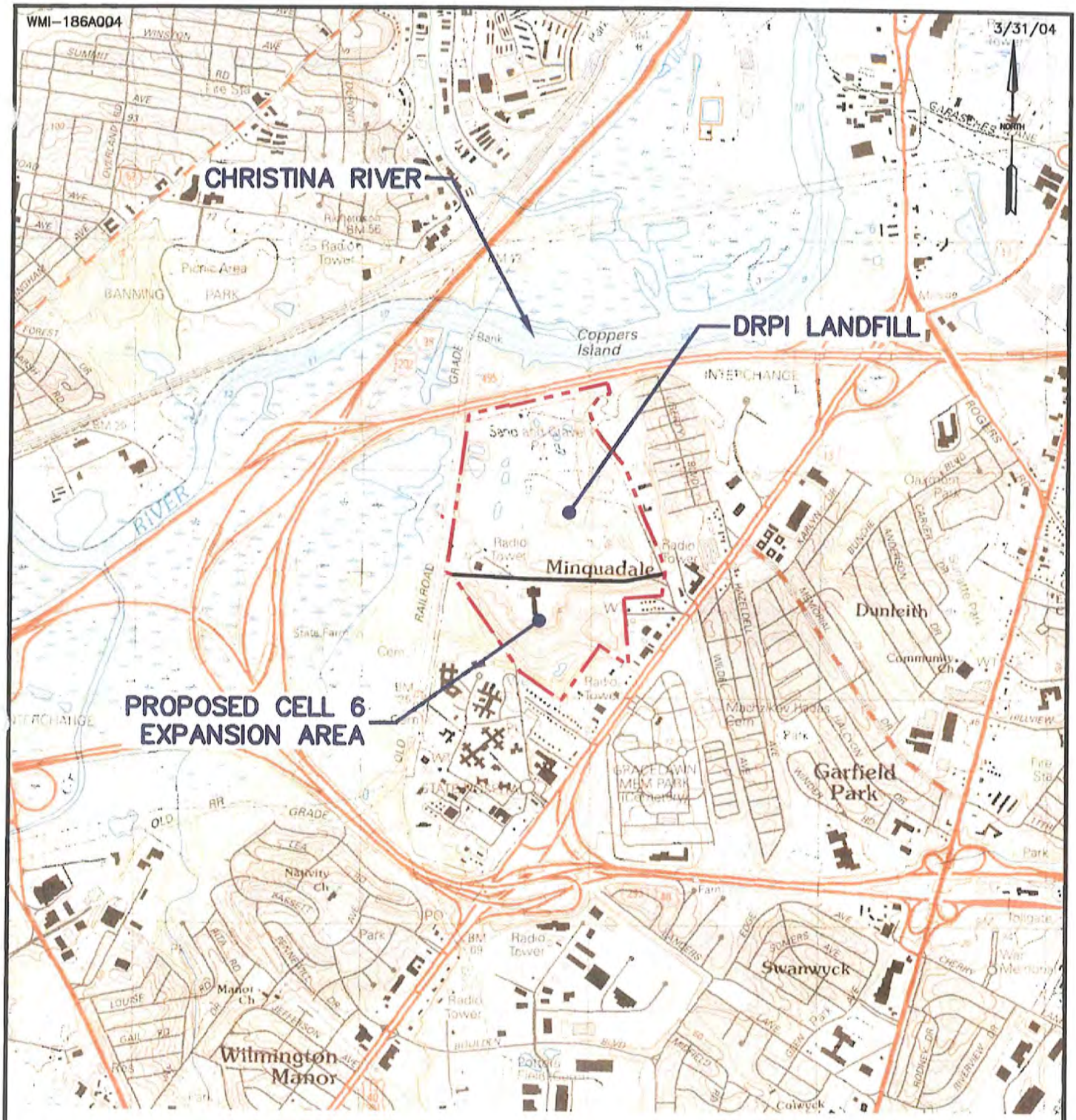
Parameter *(Volatiles)*	Unit of Measure	PETRILLO PROPERTY INSTALLATIONS															DRPI PROPERTY INSTALLATIONS											
		MW-1S		MW-1D		MW-2		MW-3		MW-4		P-1		DMW-1	DMW-2	MW-102S	MW-4S						MW-4D				MW-101D	MW-101S
		9/2/99	4/5/00	9/2/99	4/5/00	9/2/99	4/6/00	9/2/99	4/6/00	9/2/99	4/6/00	9/3/99	4/6/00	08/28/01	08/28/01	12/16/03	7/7/99	4/6/00	11/3/92	2/3/95	7/7/99	4/5/00	11/3/92	2/3/95	7/7/99	4/5/00	12/16/03	12/16/03
1,1,1-Trichloroethane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5
1,1,2,2-Tetrachloroethane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	ug/l	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloroethane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	ug/l	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	ug/l	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dibromoethane (EDB)	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
cis-1,2-Dichloroethene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Benzene	ug/l	<2	<5	<2	<5	<2	<5	<2	<5	<2	<5	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dichlorobromomethane	ug/l	NA	<5	NA	<5	NA	<5	NA	<5	NA	<5	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1	<1
Bromoform	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10
Bromomethane	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,3-Dichloropropene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methylene chloride	ug/l	2 J	<5	<5	<5	5 J	<5	2 J	<5	2 J	<5	4 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	ug/l	<5	<10	<5	<10	<5	<10	<5	<10	<5	<10	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,3-Dichloropropene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Xylenes	ug/l	<5	<10	<5	<10	<5	<10	<5	<10	<5	<10	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/l	NA	<5	NA	<5	NA	<5	NA	<5	NA	<5	NA	<5	<5	<5	NA	NA	<5	NA	NA	NA	<5	NA	NA	NA	<5	NA	NA
Methyl tert butyl ether (MTBE)	ug/l	<5	<5	<5	<5	5 J	<5	5 J	<5	2 J	6	<5	<5	<5	<5	<1	NA	<5	NA	NA	NA	<5	NA	NA	NA	<5	NA	NA
Carbon Tetrachloride	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5
Chlorobenzene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Chloroethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Chloromethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
3-Chloropropene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Dichlorodiflouromethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Methyl Ethyl Ketone	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Methyl Isobutyl Ketone	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Trichlorofluoromethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
1,2,3-Trichloropropane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Acetone	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Acrylonitrile	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Bromochloromethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5
Carbon Disulfide	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	<20
Chloroform	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1
1,2-Dibromo-3-Chloropropane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1
trans-1,4-Dichloro-2-butene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1
2-Hexanone	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1
Dibromomethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5
Iodomethane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5
Styrene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1
Vinyl Acetate	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5

NA - Not Analyzed
J-Denotes Estimated Trace Value
Methylene Chloride is considered to be a laboratory artifact at the reported concentrations present on this table.
µg/l = micrograms per liter

FIGURES AND PLAN SHEETS

WASTE MANAGEMENT
DELAWARE RECYCLABLE PRODUCTS, INC.
DRPI INDUSTRIAL WASTE LANDFILL

PROPOSED DISPOSAL CELL 6 EXPANSION
HYDROGEOLOGIC ASSESSMENT SUMMARY



MAP TAKEN FROM U.S.G.S. 7.5 MINUTE, WILMINGTON SOUTH, DEL.–N.J. (1997) QUADRANGLE.

2000 1500 1000 0 2000

SCALE 1" = 2000'

BLAZOSKY ASSOCIATES INC.
Balanced Environmental Solutions

DELAWARE RECYCLABLE PRODUCTS, INC.

DRPI INDUSTRIAL WASTE LANDFILL
PROPOSED CELL 6 EXPANSION AREA

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

SITE LOCATION MAP

BALANCED ENVIRONMENTAL SOLUTIONS
State College, PA, 814-238-2060; Pittsburgh, PA, 724-733-2060; Delaware Valley, PA, 610-783-0125

FIGURE 1

NORTH

NOTES

1. BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 12-31-03 BY AIR SURVEY, DULLES, VIRGINIA.
2. HORIZONTAL GRID IS DELAWARE STATE PLANE COORDINATE SYSTEM.
3. DATUM IS N.G.V.D. 1929.
4. ONLY INSTALLATIONS IDENTIFIED IN RED WERE USED TO COMPILE THIS CONTOUR MAP.
5. WELLS MW-4S AND MW-4D LOCATED TO THE SOUTH OF CELL 5E WERE ABANDONED IN APRIL OF 2003 AS PART OF THE CELL 5E CONSTRUCTION.
6. WELL MW-8S IS LOCATED INSIDE THE CORRADO AMERICAN, INC. MAINTENANCE BUILDING AND IS FLUSH MOUNTED WITH THE CONCRETE FLOOR IN THE BUILDING.

GROUNDWATER ELEVATIONS

(4/27/04)

DRPI INSTALLATIONS

OBSERVATION POINT	GROUNDWATER ELEVATION (N.G.V.D.)	SURFACE ELEVATION	TOP OF CASING	NORTHING	EASTING
MW-2(S)	29.85	32.20	34.20	622126.06	455869.69
MW-4R(S)	16.37	26.70	29.32	624632.10	455633.30
MW-7(S)	36.40	57.07	59.24	622385.88	457262.34
MW-8(S)	30.38	38.51	39.26	323807.06	457029.50
P-1(S)	26.45	34.00	36.62	622095.00	455678.00
P-2R(S)	33.94	32.60	35.64	622101.20	456371.70
P-3(S)	36.63	40.00	42.46	622143.00	457056.00
P-8(S)	9.24	22.00	25.04	624783.90	456480.50
C4-E1R(S)	20.67	28.10	30.92	624215.70	456307.30
C4-N1(S)	16.86	22.00	24.70	624606.20	455285.00
C5-W2(S)	6.77	17.80	20.46	623671.80	454413.10
C5-N1(S)	16.41	29.80	32.96	624395.60	454680.70
C5-W1R(S)	8.16	17.40	19.74	622839.00	454301.32
GP5-2	16.56	18.33	21.32	621845.20	454602.15

PETRILLO INSTALLATIONS

OBSERVATION POINT	GROUNDWATER ELEVATION (N.G.V.D.)	SURFACE ELEVATION	TOP OF CASING	NORTHING	EASTING
MW-1(S)	36.15	61.60	63.93	621075.50	456722.50
MW-3	33.74	35.30	38.14	622001.80	456314.00
MW-4	34.45	37.30	39.79	621991.00	456482.70
MW-102S	29.41	54.70	57.43	620712.30	455949.70

LEGEND

- PROPERTY BOUNDARY
- 880 EXISTING CONTOUR (C.I.=10')
- EXISTING FENCE
- EXISTING ROADWAY
- 35 GROUNDWATER CONTOUR (C.I.=5')
- PIEZOMETER (DRPI)
- SHALLOW ZONE MONITORING WELL (DRPI)
- GAS MONITORING PROBE (DRPI)
- DEEP ZONE MONITORING WELL (DRPI)
- PETRILLO PIEZOMETER/WELL
- PETRILLO MONITORING WELL
- PETRILLO GAS MONITORING PROBE

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

EDWARD J. LAYTON — COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL GEOLOGIST — PG003956

Andrew J. Sokol 974 — STATE OF DELAWARE — REGISTERED PROFESSIONAL GEOLOGIST

WASTE MANAGEMENT

REVISIONS

BLAZOSKY ASSOCIATES INC. — Balanced Environmental Solutions

DELAWARE RECYCLABLE PRODUCTS, INC.

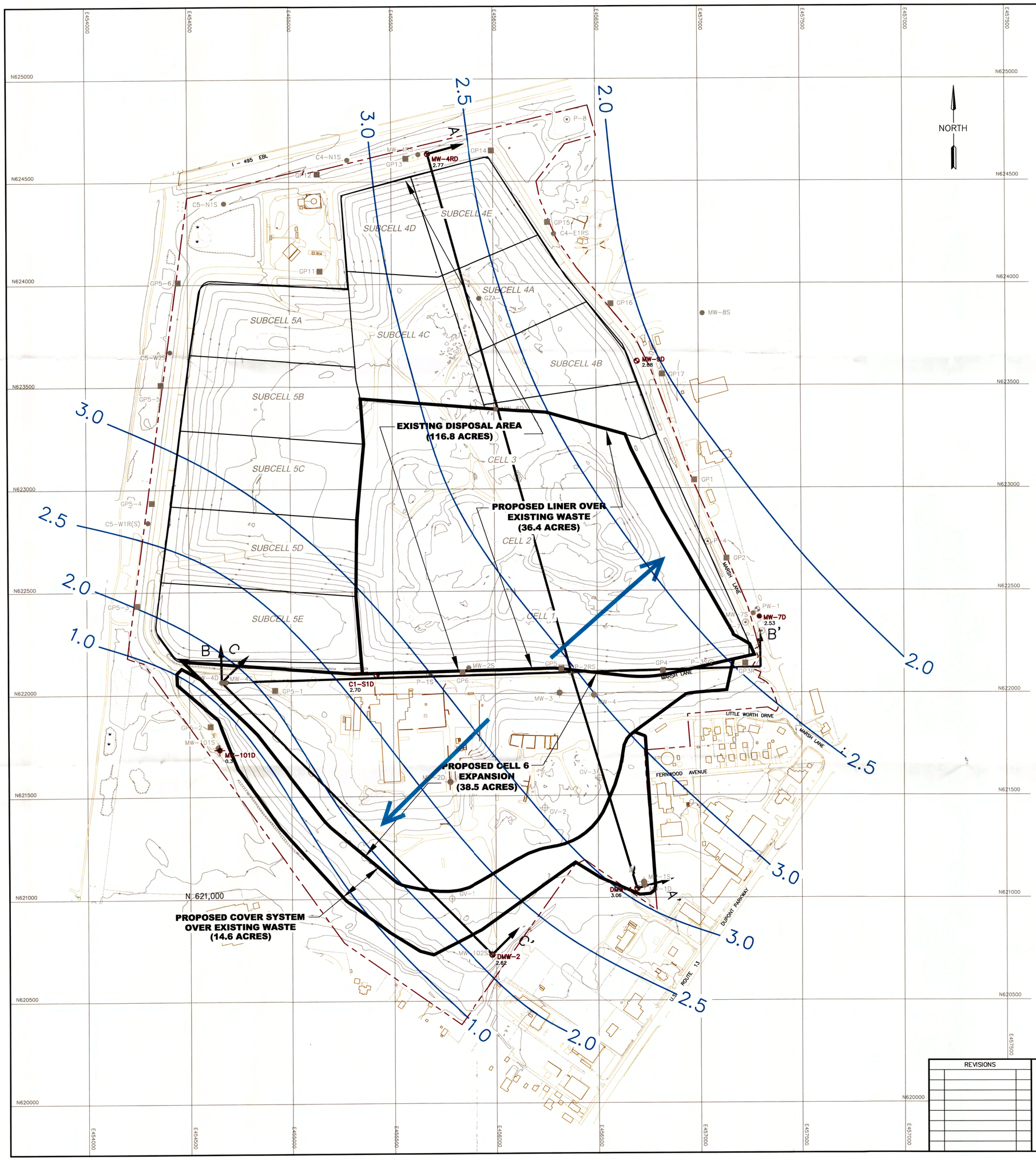
DRPI INDUSTRIAL WASTE LANDFILL
CELL 6 EXPANSION AREA

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

SHALLOW-ZONE GROUNDWATER CONTOUR MAP
APRIL 27, 2004

BALANCED ENVIRONMENTAL SOLUTIONS
State College, PA.,Telephone:814/238-2060; Delaware Valley, PA.,Telephone:610/783-0125

DATE:	2/18/04
DRAWN BY:	DA
CHECKED:	EJL
BAI DRAWING NO:	WMI-186E003
SHEET NO.	1 OF 3



NOTES

1. BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 12-31-03 BY AIR SURVEY, DULLES, VIRGINIA.
2. HORIZONTAL GRID IS DELAWARE STATE PLANE COORDINATE SYSTEM.
3. DATUM IS N.G.V.D. 1929.
4. ONLY INSTALLATIONS IDENTIFIED IN RED WERE USED TO COMPILE THIS CONTOUR MAP.
5. WELLS MW-4S AND MW-4D LOCATED TO THE SOUTH OF CELL 5E WERE ABANDONED IN APRIL OF 2003 AS PART OF THE CELL 5E CONSTRUCTION.
6. WELL MW-8S IS LOCATED INSIDE THE CORRADO AMERICAN, INC. MAINTENANCE BUILDING AND IS FLUSH MOUNTED WITH THE CONCRETE FLOOR OF THE BUILDING.

GROUNDWATER ELEVATIONS

(4/27/04)

OBSERVATION POINT	GROUNDWATER ELEVATION (N.G.V.D.)	SURFACE ELEVATION	TOP OF CASING	NORTHING	EASTING
MW-4R(D)	2.77	26.50	28.90	624634.9	455677.6
MW-9(D)	2.08	38.10	40.70	623640.3	456739.9
MW-7(D)	2.53	56.45	58.57	622404.8	457282.69
C1-S1(D)	2.70	33.60	37.37	622093.5	455418.3
MW-101(D)	0.30	22.10	24.50	621730.1	454647.5
DMW-1	3.06	61.00	63.25	621054.8	456716.6
DMW-2	2.62	55.67	58.11	620725.6	455978.2

LEGEND

- PROPERTY BOUNDARY
- 880 EXISTING CONTOUR (C.I.=10')
- EXISTING FENCE
- EXISTING ROADWAY
- 3.0 GROUNDWATER CONTOUR (C.I.=0.5')
- PIEZOMETER (DRPI)
- SHALLOW ZONE MONITORING WELL (DRPI)
- GAS MONITORING PROBE (DRPI)
- DEEP ZONE MONITORING WELL (DRPI)
- PETRILLO PIEZOMETER/WELL
- PETRILLO MONITORING WELL
- PETRILLO GAS MONITORING PROBE

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL GEOLOGIST EDWARD J. LAYTON GEOLOGIST PG003958

STATE OF DELAWARE REGISTERED PROFESSIONAL GEOLOGIST Andrew J. Sokol 974

WASTE MANAGEMENT

REVISIONS

BLAZOSKY ASSOCIATES INC. Balanced Environmental Solutions

DELAWARE RECYCLABLE PRODUCTS, INC.

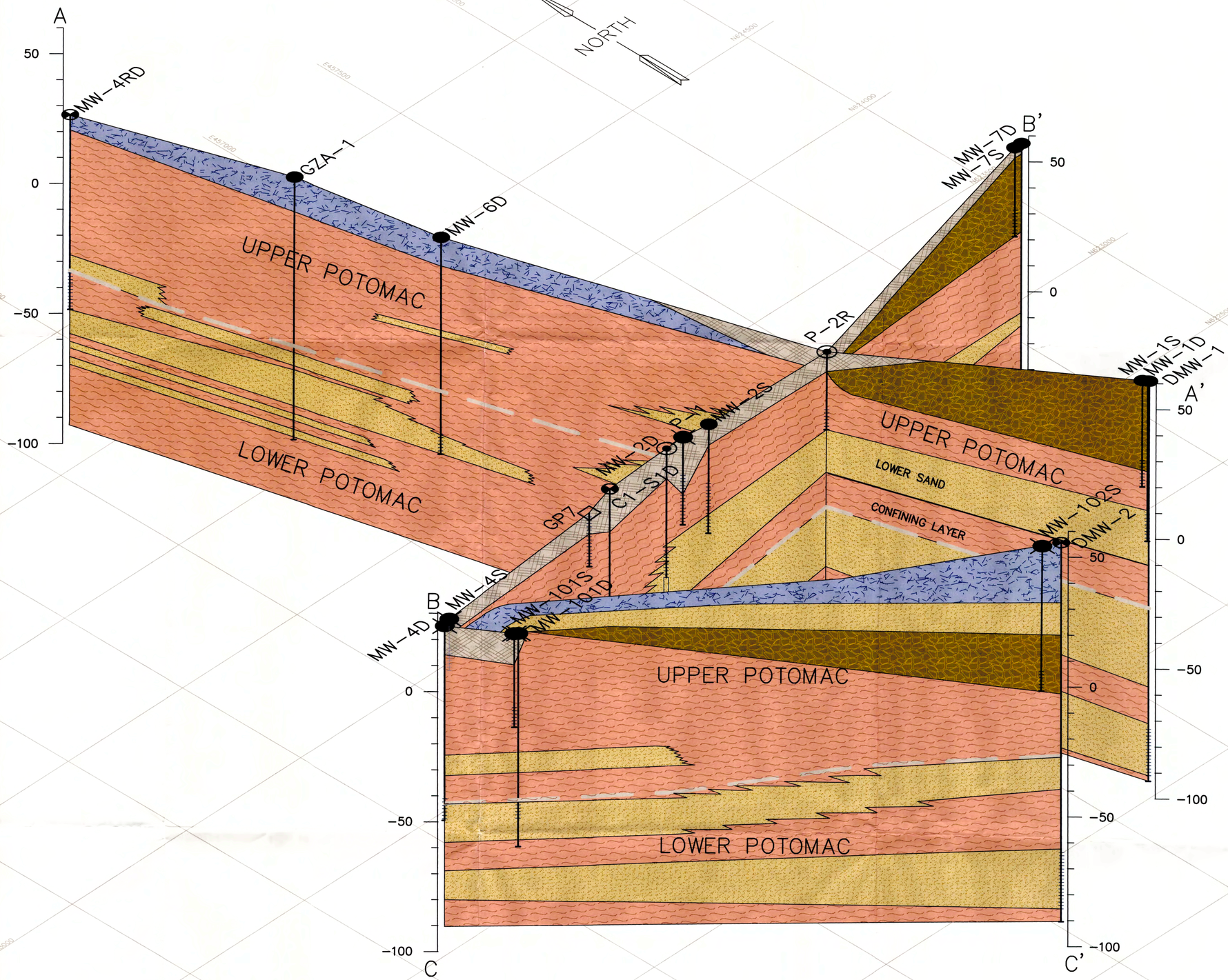
DRPI INDUSTRIAL WASTE LANDFILL
CELL 6 EXPANSION AREA

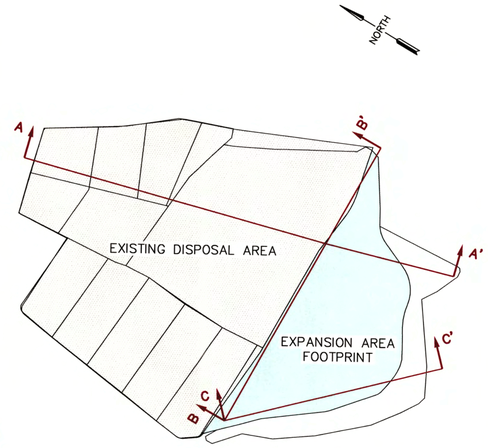
MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

DEEP-ZONE GROUNDWATER CONTOUR MAP
APRIL 27, 2004

BALANCED ENVIRONMENTAL SOLUTIONS
State College, PA., Telephone: 814/238-2060; Delaware Valley, PA., Telephone: 610/783-0125

DATE:	2/18/04
DRAWN BY:	DA
CHECKED:	EJL
BAI DRAWING NO:	WMI-186E004
SHEET NO.	2 OF 3





CROSS SECTION LOCATION KEY

1" = 600'

NOTES

1. HORIZONTAL GRID IS DELAWARE STATE PLANE COORDINATE SYSTEM.
2. DATUM IS N.G.V.D. 1929.
3. BORINGS HAVE BEEN BROUGHT INTO CROSS SECTIONS PERPENDICULAR TO THE CROSS SECTION.
4. BORINGS ARE SHOWN AT ACTUAL ELEVATION AND TOTAL DEPTHS.
5. MW-101(S) AND MW-101(D) HAVE BEEN PROJECTED 240' NORTHEAST INTO CROSS-SECTION C-C'.
6. GP-7 HAS BEEN PROJECTED 80' SOUTH INTO CROSS-SECTION B-B'
7. MW-2D HAS BEEN PROJECTED 500' NORTH INTO CROSS-SECTION B-B'.
8. MW-7(S) AND MW-7(D) HAVE BEEN PROJECTED 260' SOUTH INTO CROSS-SECTION B-B'.

LEGEND

- CLAY
- SAND
- WASTE
- SAND AND GRAVEL
- FILL

INTERPRETED UPPER/ LOWER POTOMAC FORMATION BOUNDRY

HORIZONTAL GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

VERTICAL GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DELAWARE PROFESSIONAL GEOLOGIST — Edward J. Sokol — 974

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL GEOLOGIST — EDWARD J. LAYTON — PG003958

WASTE MANAGEMENT

REVISIONS			

BLAZOSKY Associates - inc. Balanced Environmental Solutions

DELAWARE RECYCLABLE PRODUCTS, INC.

DRPI INDUSTRIAL WASTE LANDFILL
CELL 6 EXPANSION AREA

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

GEOLOGIC FENCE DIAGRAM

BALANCED ENVIRONMENTAL SOLUTIONS
State College, PA.,Telephone:814/238-2060; Delaware Valley, PA.,Telephone:610/783-0125

DATE:	2/18/04
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BAI DRAWING NO:	WMI-186E001
SHEET NO.	3 OF 3