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SOLID WASTE
OPERATIONS DIVISION

**Phase I Report
for Refuse Disposal Permit Application
Proposed Sparrows Point Works Industrial Waste Landfill
Sparrows Point, Maryland**

Prepared For

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June, 2010

**Severstal Sparrows Point
Proposed Sparrows Point Works Industrial Waste Landfill
Phase I Report
June 2010**

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1.0 INTRODUCTION

Severstal Sparrows Point LLC (Severstal) is filing a Refuse Disposal Permit application (Appendix A) for the construction and operation of an industrial waste landfill to be located at the Sparrows Point facility. The purpose of the application is to provide future landfill capacity for the proper management and disposal of nonhazardous industrial waste generated during steel production and associated manufacturing activities at the site. Once permitted and built, this landfill will be utilized for solid waste management requirements allowing for the existing Greys Landfill and Coke Point Landfill to be phased out and secured.

This report presents the permit application and meets the requirements of a Phase I Report as addressed in COMAR 26.04.07.06. Although an application for an industrial landfill permit need not be submitted in phases, Severstal has elected to submit a Phase I Report in order to obtain comments and insight from MDE, information which will improve the site investigation and design process.

2.0 DESCRIPTION OF PROPOSED ACTIVITY

2.1 Type of Landfill

The proposal is to construct an industrial waste landfill as defined by COMAR 26.04.07.19.

2.2 Area Served

The proposed Sparrows Point Works Industrial Waste Landfill will provide a long-term and reliable nonhazardous industrial waste disposal site for steel production and associated manufacturing operations at the Sparrows Point facility.

2.3 Estimated Waste Capacity

It is estimated that the proposed landfill will provide approximately 5,000,000 cubic yards of landfill capacity.

2.4 Types of Waste to be Accepted

The proposed landfill will accept non-hazardous industrial waste from commercial, industrial, construction, demolition and other activities occurring on the Sparrows Point facility property. The following wastes will be prohibited from disposal at the landfill (specific waste acceptance determinations will be completed as applicable);

- Controlled hazardous substances (CHS) as regulated and listed in COMAR 26.13;
- Liquid wastes and wastes containing free liquids;
- Infectious waste from hospitals, laboratories, and other health care facilities unless specifically authorized by MDE;
- Radioactive materials as defined in COMAR 26.12.01;

- Septage, sewage sludge, processed sewage sludge, and any other product containing these materials, unless authorized by a sewage sludge utilization permit;
- Automobiles;
- Drums or tanks, unless empty and flattened or crushed with the ends removed, or empty with the tops removed;
- Animal carcasses;
- Chemical or petroleum spill cleanup material, unless;
 - The nature of the spilled substance is known;
 - The spill cleanup material is demonstrably not a CHS; and
 - The spilled material is contained in an absorbent of sufficient excess volume that the material deposited at the landfill will not exhibit free liquids;

Asbestos may be disposed of in the proposed landfill if it is packaged, transported and disposed of as follows:

- Where possible, material is bagged and labeled at the generation point as asbestos waste in accordance with COMAR 26.11.21.
- It will be transported to the proposed landfill by truck and deposited in an appropriate location. A load checker views the load before it is dumped and during the dumping process to assure that no asbestos becomes airborne.
- Once the waste is on the ground, a loader will cover it with sufficient soil-like waste or soil. Cover material is placed over the deposited bags of asbestos before it is driven over to assure no asbestos fibers are released to the atmosphere.
- All personnel involved with the disposal and management of asbestos waste will be trained in accordance with 40 CFR 1910.120. They are equipped with the appropriate personal protective equipment during the disposal and covering activities.

2.5 Recycling

It is anticipated that recycling of various iron- and steel-bearing waste materials will occur to promote the efficiency and sustainability of the steelmaking operations at Sparrows Point. Although several processes are in planning stages at this point, salvaging and segregation operations will occur for some waste streams at the proposed landfill.

3.0 DESCRIPTION OF SITE

The site is located in the southern portion of Baltimore County on the Sparrows Point steel mill facility property. The site location is shown on the required USGS topographic map (Figure 1), although the base map is significantly out of date. An aerial photograph showing a more current depiction of site conditions is provided as Figure 2

The proposed area consists of approximately 60 acres located on the northern section of the property proximate to Peninsula Highway.

3.1 Site Features

The site topographic map (Figure 3) is based on photogrammetry of an aerial photograph dated June 8, 2009. The map is presented at a scale of 1 inch equals 120 feet in order to fit the site on a reasonably sized sheet. Ground surface contours are presented at 10-foot intervals for clarity.

The site topographic map (Figure 3) does not show any springs, seeps, rock outcrops, sink holes, overhead power transmission lines, or potable water wells on the proposed landfill site. All areas less than 8 feet in elevation are outlined to show the 100 year floodplain. Surface impoundments located on the south and west sides of the site are used for storm water management. The impoundment on the south side of the site has an adjacent drainage feature. An additional water feature or wetland area is located in a wooded area in the northeast corner of the site. Wetlands may be present in several areas around the perimeter of the subject site. Qualified scientists will perform wetland delineation during future landfill permitting investigations.

Roadways, concrete pads, on-site buildings, and storage containers are also identified on the site topographic map. The types of vegetation shown on the map are trees and brush. The base map does not provide definitions of these types of vegetation. The forested areas are assumed to be locations where there are growths of trees above six feet. The brush areas are assumed to have brush and shrubs and include areas of phragmites. No utilities are shown on the map.

The critical area boundary is depicted as a line running in a roughly southwest-northeast orientation to the west of the proposed landfill. The critical area within the site is defined as Intensely Developed Area (IDA) by the Critical Area Commission. IDA is defined with the following characteristics:

- Existing urban, industrial, commercial and other developed areas;
- Little existing natural habitat;
- Water quality is already impaired;
- Intense development is permitted, regulated by underlying zoning;
- No clearing limits; establish vegetation where possible;
- Construction on slopes greater than 15% can be permitted;
- No lot coverage limits; and
- Stormwater management required as necessary to reduce pollutant loadings by 10%.

Figure 3 also shows several proposed features, including the outline of the proposed landfill and the general location of two likely stormwater management facilities associated with landfill development.

3.2 Area Land Uses

Land use in the area surrounding the proposed landfill location is depicted on the Area Land Use Map (Figure 4). The land use/land cover data was obtained from the Maryland Department of Planning (MDP) and dated 2002. The land use/land cover classifications provided by MDP were interpreted from high altitude aerial photography and satellite imagery. The proposed landfill site is classified as industrial land. Abutting land uses are industrial, including streets and highways. Other land uses within 0.5 mile of the site include deciduous forest, wetlands, open urban land, and open water (Bear Creek to the west and northwest.)

The following land use classifications as defined by MDP were mapped on or within ½ mile of the site:

Deciduous forest

Forested areas in which the trees characteristically lose their leaves at the end of the growing season. Included are such species as oak, hickory, aspen, sycamore, birch, yellow poplar, elm, maple, and cypress.

Industrial

Manufacturing and industrial parks, including associated warehouses, storage yards, research laboratories, and parking areas.

Open urban land

Urban areas whose use does not require structures, or urban areas where non-conforming uses characterized by open land have become isolated. Included are golf courses, parks, recreation areas (except areas associated with schools or other institutions), cemeteries, and entrapped agricultural and undeveloped land within urban areas.

Water

Rivers, waterways, reservoirs, ponds, bays, estuaries, and ocean.

Wetlands

Forested or non-forested wetlands, including tidal flats, tidal and non-tidal marshes, and upland swamps and wet areas. Note that the base mapping is prepared based on high-altitude imagery, and no ground-truthing of mapped wetlands was performed. The base mapping from MDP erroneously reflects a wetlands area atop the operating Greys Landfill, adjacent to the proposed landfill. Qualified scientists will perform wetland delineation during future landfill permitting investigations.

3.3 Area Zoning

Zoning in the area surrounding the proposed landfill is depicted on the Area Zoning Map (Figure 5). The zoning data were obtained from Baltimore County 'My Neighborhood' zoning data, dated 10/1/2008. The proposed landfill site and all abutting areas are zoned for Heavy Manufacturing. Other areas within 0.5 mile of the site are zoned Resource Conservation Critical Areas with a small area of Light Manufacturing. The following zoning classifications as defined by Baltimore County were mapped on or within ½ mile of the site:

Density Residential

Permit low, medium and high density urban residential development. Numeral in each classification indicated maximum number of units per acre. No standard unit lot size is required except for small tracts.

Manufacturing Light

Permits light industrial uses such as assembly plants, processing, etc.

Manufacturing Heavy

The most permissive industrial classification.

Intent: To provide areas for industrial uses that require assembling, compounding, manufacturing, packaging, or processing of goods and services.

Typical Uses Permitted by Right: Industrial uses requiring assembly, production, processing, packaging, or treatment of various elements, boat yard, laboratory, office, medical clinic, equipment and material storage yard, brewery, adult entertainment subject to locational criteria.

Typical Uses Permitted by Special Exception: Landfill, truck stop and trucking facility.

Notes: Heavy manufacturing operations provided they are located 300 feet from any residential zone and 200 feet from any business zone. Any industrial use not previously listed, provided they are 1,000 feet from any residential zone and 500 feet from any BL, BM, or MR zone.

Resource Conservation Critical Area

To meet the criteria of the Critical Area Law as approved by the Chesapeake Bay Critical Area Commission for protecting water quality, natural habitats, and wildlife populations.

3.4 Site Soils

According to the USDA Soil Survey of the Baltimore County, Maryland (1976), the soils at the site consist of Made land (Figure 6). Made land is comprised of land areas that have been created by man. Most of the Made land in Baltimore County has been made from industrial byproducts, primarily slag and cinders. Large areas of Made land have been used for industrial sites, rail yards, parking lots and miscellaneous buildings.

3.5 Site Geology

The surficial geology of the site may contain local deposits of fill. The fill material is underlain by the unconsolidated sedimentary deposits of the Pleistocene-aged Talbot Formation (CH2MHill, 2002). The Talbot Formation consists of interbedded layers of clay, silt, and sand which were deposited in deep valleys eroded into the upper surface of the Cretaceous-aged Patapsco Formation.

High density clay and sand units of the Patapsco Formation underlie the Talbot Formation. The Patapsco Formation regionally is described as variegated multi-colored silts and clays interbedded with lenses of sand with minor components of gravel. The Patapsco Formation is generally considered to be a non-marine deposit, deposited in lakes, swamps, flood plains, and river channels. This environment of deposition results in complexes of lenticular channel sands embedded within lower-permeability materials, rather than laterally continuous sheets of like materials (DNR, 1987). The materials of the Patapsco Formation are characterized by higher density than the materials of the Talbot Formation. Red- to brown-colored sand and clays and white clay can distinguish the Patapsco deposits from overlying Talbot deposits. The elevation of the top of the unit varies beneath the site but may be expected at an elevation of about -20 feet to -50 feet (CH2MHill, 2002).

The Arundel Clay underlies the Patapsco Formation. It is estimated that the Arundel Clay is present at roughly 300 feet below original grade at the site, and that the Arundel Clay is over 100 feet thick in this area (DNR, 1987). The Arundel Clay, where present, is considered to be a regional aquitard to groundwater flow.

The Patuxent Formation underlies the Arundel Clay and overlies bedrock, which is at a depth likely to be over 700 feet below grade at this site (DNR, 1987).

4.0 REFERENCES CITED

CH2MHill, 2002. Site-Wide Investigation Release Site Characterization Study

Department of Natural Resources, 1987. The Quantity and Natural Quality of Ground Water in Maryland.

United States Department of Agriculture, 1976. Soil Survey of Baltimore County, Maryland.

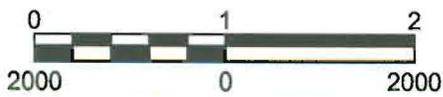


SCALE: 1" = 2000' - 0"

SOURCE MAPS:

- SPARROWS POINT, MD - 7.5'
USGS TOPOGRAPHIC MAP 1974
- CURTIS BAY, MD - 7.5'
USGS TOPOGRAPHIC MAP 1974
- BALTIMORE EAST, MD - 7.5'
USGS TOPOGRAPHIC MAP 1974
- MIDDLE RIVER, MD - 7.5'
USGS TOPOGRAPHIC MAP 1998

 SITE LOCATION



SCALE: 1" = 2000'

REFUSE DISPOSAL PERMIT APPLICATION
SEVERSTAL, SPARROWS POINT, MD

**SPARROWS POINT WORKS
INDUSTRIAL LANDFILL**

PHASE I REPORT
SITE LOCATION MAP

JUNE 2010

FIGURE 1



SCALE: 1" = 1000' - 0"

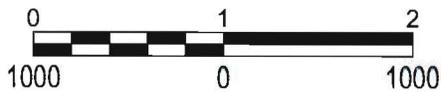
NOTE:

AERIAL PHOTO DATED MAY 07, 2008.

LEGEND:



SITE LOCATION



SCALE: 1" = 1000'

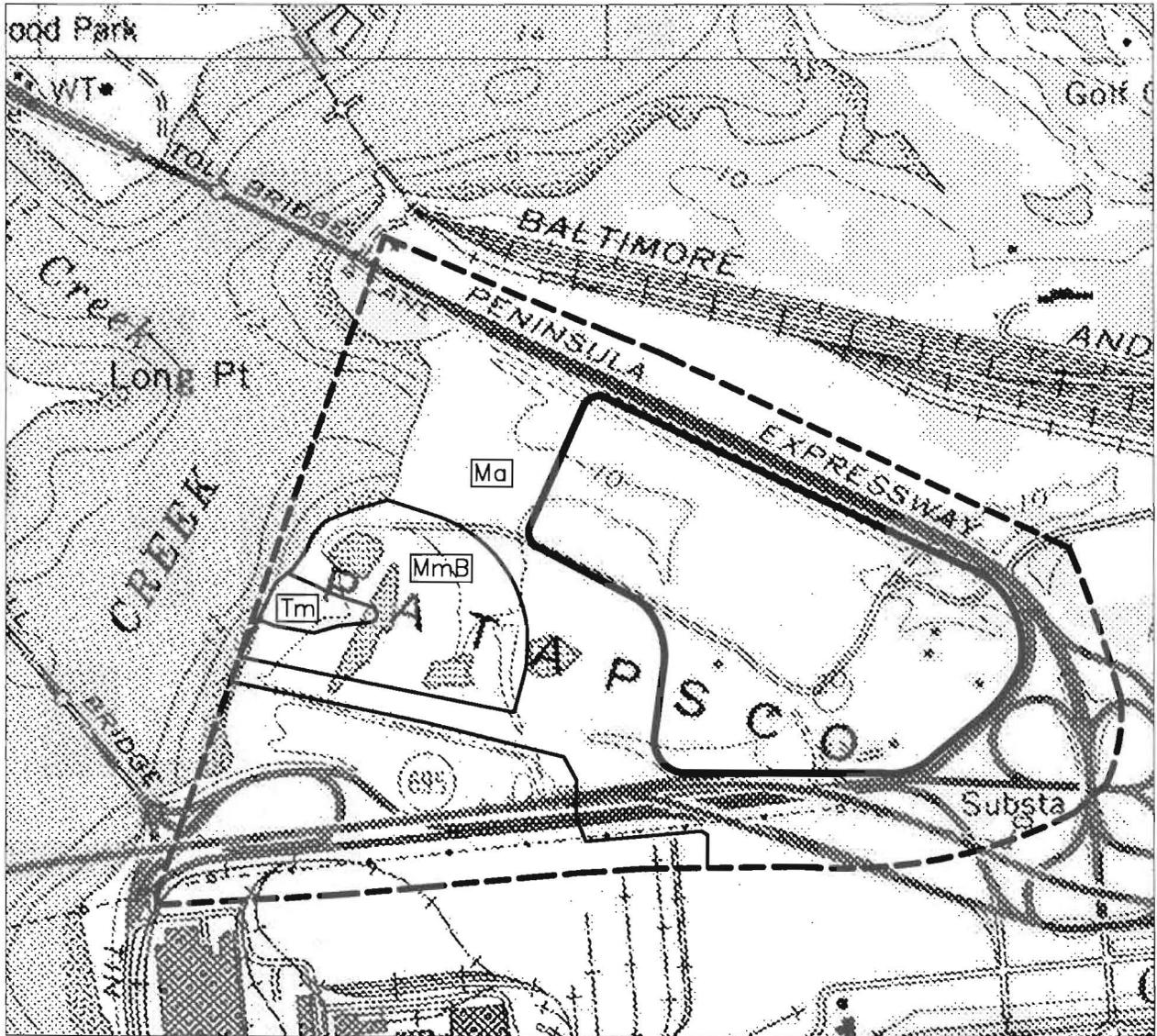
REFUSE DISPOSAL PERMIT APPLICATION
SEVERSTAL, SPARROWS POINT, MD

**SPARROWS POINT WORKS
INDUSTRIAL LANDFILL**

PHASE I REPORT
SITE LOCATION AERIAL PHOTO

JUNE 2010

FIGURE 2



SCALE: 1" = 1000' - 0"

NOTE:

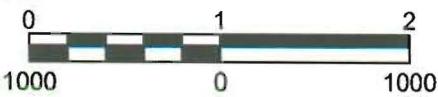
1. SOIL SURVEY OF BALTIMORE COUNTY MARYLAND - U.S. DEPARTMENT OF AGRICULTURE, NATIONAL RESOURCE CONSERVATION SERVICE - 1976
2. SPARROWS POINT, MD - 7.5' USGS TOPOGRAPHIC MAP, 1974

SOIL LEGEND:

SYMBOL	NAME
Ma	MADE LAND
MmB	(FORMERLY) MATTAPEX-URBAN LAND COMPLEX, 0-5% SLOPES
Tm	TIDAL MARSH

 PROPOSED LANDFILL BOUNDARY

 SOIL MAPPING BOUNDARY



SCALE: 1" = 1000'

REFUSE DISPOSAL PERMIT APPLICATION
SEVERSTAL, SPARROWS POINT, MD

**SPARROWS POINT WORKS
INDUSTRIAL LANDFILL**

PHASE I REPORT

SOIL SURVEY MAP

JUNE 2010

FIGURE 6

Appendix A

Refuse Disposal Permit Application

MARYLAND DEPARTMENT OF THE ENVIRONMENT
 1800 Washington Boulevard • Suite 735 • Baltimore, Maryland 21230-1719
 410-537-3375 • 800-633-6101 x3375 • <http://www.mde.state.md.us>

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Land Management Administration • Solid Waste Program

PLEASE MAIL THIS FORM TO THE "MARYLAND DEPARTMENT OF THE ENVIRONMENT - CUSTOMER SERVICE CENTER"
 For office use only

Refuse Disposal Permit Application

Authority: Title 9, Environment Article, Annotated Code of Maryland, and Code of Maryland Regulations (COMAR) 26.04.07
 Municipal landfills also see 40 CFR Part 258 and EPA guidance for additional requirements.

Application for: New Permit Renewal Permit

Existing Permit No. _____ Issued Date: ____/____/____ Expiration Date: ____/____/____

Applicant's Legal Name: SEVERAL SPARROWS POINT, LLC

Applicant's Status: Individual Corporation Government Other:

Federal Employer Identification No.: 20-0653633
 Maryland State Department of Assessments and Taxation (SDAT) ID No.: Z07965652
 Please note that a business/entity must be registered to do business in Maryland before a permit can be issued. The business or entity's information provided in this application must match the information in the SDAT register.

Proof of workers' compensation coverage is required under § 1-202 of the Environment Article. Please provide one of the following:
 (1) A copy of a Certificate of Compliance issued by the Maryland Workers' Compensation Commission; or
 (2) Workers' Compensation Insurance Policy/Blnder Number: 1929417

Applicant's Mailing Address: 1430 SPARROWS POINT BLVD City: SPARROWS PT State: MD Zip Code: 21219

Applicant's Telephone No.: (410) 398-6622 Facsimile No.: (410) 398-6529

Emergency Contact Name & Title: RUSSELL BECKER, ENV. MANAGER Telephone No.: (410) 398-6622

Facility/Site Name: SPARROWS POINT WORKS INDUSTRIAL LANDFILL

Facility/Site Address: 1430 SPARROWS POINT BLVD City: SPARROWS PT State: MD Zip Code: 21219

County: BALTIMORE Maryland Grid Coordinates: 1458454 / 574012

County Zoning Map No.: 111 A3 Lot/Parcel No.: _____ Deed/Liber/Folio No.: _____

State Legislative District: 6 Local Council / Election District: 7th Councilmanic

Bay Tributary Watershed Code: 02130903 Latitude/Longitude (Deg/Min/Sec): 39-14-29 / 76-29-04

Site Acreage: 600 Facility Acreage (Estimated): 3200

Type of Solid Waste Acceptance Facility

- Municipal Landfill¹
- Rubble Landfill^{1,3}
- Industrial Landfill¹
- Land Clearing Debris Landfill¹
- Incinerator^{1,2}
- Transfer Station¹
- Processing Facility²
- Processing Facility & Transfer Station^{1,2}

Notes: 1. Financial Security is required for a privately owned facility. 2. Air Quality Permit may be required. 3. Groundwater Discharge Permit may be required.

Proposed Days & Hours of Operation: 7 DAYS, 24 HOURS DAY

Provide a brief description of solid waste handling and other activities to be conducted at this facility: Non-hazardous industrial waste from commercial, industrial, construction, demolition generated from the property

If available, attach the following documentation required for permit issuance:
 A written statement from the County in which the proposed facility is to be located, demonstrating that the proposed facility meets all applicable County zoning and land use requirements and is in conformity with the County Solid Waste Management Plan, in accordance with §9-210(a)(3) of the Environment Article.
 For an incinerator, a written statement from the County where the proposed facility is to be located, demonstrating that the County has an approved Recycling Plan in accordance with §9-204.1 and §9-505 of the Environment Article.
 For a rubble landfill, a written statement from the County in which the proposed facility is to be located, demonstrating that the

County has specified in the County Solid Waste Plan the types of waste that may be disposed of in the facility, in accordance with §9-210(c) of the Environment Article.

Provide the estimated amount of solid waste to be accepted in Tons (T) or Cubic Yards (CY) from the following facilities and sources:

A. Intermediate Facilities:

Processing Facilities _____
 Transfer Stations _____
 Incinerators _____

B. Origin Of Waste By Region:

Within Jurisdiction 200,000 CY/YR
 Out-of-County in Maryland _____
 Out-of-State (Specify Name) _____

Please indicate the estimated amount of solid waste in Tons (T) or Cubic Yards (CY) to be accepted at this facility. This list will be used to determine the type of permit and the list of acceptable materials that will be allowed under the permit for which you are applying.

Type of Waste	1 st Year (units)	5 th Year (units)
Residential (household refuse, domestic waste, garbage, etc.)		
Commercial (waste from businesses, stores, offices, etc.)		
Industrial (non-hazardous sludge, dust, off-spec products, etc. from industrial or manufacturing operations or processes)	150,000 (CY)	
Construction and Demolition (lumber, masonry, drywall, etc.)		
Land Clearing Debris (stumps, limbs, leaves, earthen material, etc.)		
Agricultural (crop residue, manure, unprocessed materials, etc.)		
Institutional (non-hazardous waste from schools, hospitals, etc.)		
Special Medical Waste (infectious waste from hospitals, doctor's offices, research labs, etc.)		
Animal Carcasses (road kills, farm animals, etc.)		
Bulky Waste (appliances, furniture, etc.)		
Litter (street sweepings, municipal wastebaskets, etc.)		
Scrap Tires (automobiles, trucks, etc.) - Requires a separate license for handling or managing tires.		
Sewage Sludge or Septage - Requires separate permit for sewage sludge utilization.		
Water Treatment Plant Sludge (alum precipitate, etc.)	50,000 (CY)	
Hazardous Waste (from chemical plants, gas stations, etc.)		
Asbestos (shingles, insulation, etc.) - Requires special training and handling	100 (CY)	
Incinerator Ash (from incinerators, waste-to-energy incinerators, special medical waste incinerators, boilers, etc.)		
Fly Ash (pollution abatement equipment dusts & bottom ash from coal fired electric generating plants)		
Other (list):		
Total	200,100 (CY)	

By signing this form, I the applicant or duly authorized representative, do solemnly affirm under the penalties of perjury that the contents of this application are true to the best of my knowledge, information, and belief. I hereby authorize the representatives of the Department to have access to the site of the proposed facility for inspection and to records relating to this application at any reasonable time. I acknowledge that depending on the type of facility applied for, other permits or approvals may be required.

Russell Becker
 Signature of Applicant
RUSSELL BECKER
 Applicant's Name (Print)

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 OPERATIONS DIVISION

6/8/10
 Date
DIVISION MANAGER, ENV AFFAIRS
 Title

Privacy Act Notice: This Notice is provided pursuant to the Federal Privacy Act of 1974, 5 U.S.C. §552. a. Disclosure of your Social Security Number or Federal Employer Identification Number on this application is mandatory pursuant to the provisions of §1-203 (2003), Environment Article, Annotated Code of Maryland, which requires the Maryland Department of the Environment to verify that an applicant for a permit has paid all undisputed taxes and unemployment insurance. Social Security or Federal Employer Identification Numbers will not be used for any purposes other than those described in this Notice.

For questions regarding this application form, please contact the Department at (410) 537-3375