DSWA NSWMC-2 CIL 02.B

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

SOLID & HAZARDOUS WASTE
MANAGEMENT BRANCH

TELEPHONE: (302) 739-9403
FAX NO.: (302) 739-5060

FILE COPY

January 6, 2006 Hand Delivered

Ms. Anne M. Germain, P.E.
Manager of Engineering
Delaware Solid Waste Authority
1128 S. Bradford Street
P.O. Box 455
Dover, Delaware 19903-0455

Subject: Permit Renewal, DSWA Northern Solid Waste Management Center-2
Reference: Permit SW-06/01

Dear Ms. Germain:

The Solid & Hazardous Waste Management Branch herby issues the attached permit SW-06/01, in accordance with the Secretary's Order No. 2006-A-0002. This permit is a renewal of permit SW-01/01 and incorporates the modifications requested in the DSWA's application, *Major Modification Request for the Cherry Island Landfill*, dated June 15, 2004. If you have any questions concerning the permit, please contact Robert Hartman at (302) 739-9403.

Sincerely,

Nancy C. Marker
Environmental Program Manager II
Solid & Hazardous Waste Management Branch

NCM:RH:dd
DSWA\General Correspondence\RH06004

cc: James Short, Environmental Program Manager I, SHWMB
Susan Baker, Paralegal, SHWMB
Frank Gavas, Hydrologist III, SHWMB
Paul Foster, Environmental Program Manager II, AQM
Robin Roddy, DSWA Facility Manager, NSWMC-2

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

SOLID & HAZARDOUS WASTE
MANAGEMENT BRANCH

TELEPHONE: (302) 739-9403
FAX NO.: (302) 739-5060

Permit SW-06/01
Permit Type: Sanitary Landfill

Effective Date: January 6, 2006

Expiration Date: January 6, 2016

Permittee: Delaware Solid Waste Authority
P.O. Box 455
1128 S. Bradford Street
Dover, Delaware 19901

Pursuant to 7 Del. C., Chapter 60, Section 6003 and the *Delaware Regulations Governing Solid Waste*, Delaware Solid Waste Authority (DSWA) is hereby granted approval to operate the Cherry Island Landfill (CIL) located at the Northern Solid Waste Management Center-2 (NSWMC-2), Cherry Island, Wilmington, Delaware, subject to the terms and conditions of this permit. All terms and conditions of this permit are enforceable by the Department of Natural Resources and Environmental Control (Department).

Robert Hartman — 1/6/2006

Robert Hartman
Environmental Scientist IV
Solid & Hazardous Waste Management Branch
(302) 739-9403

Date

Nancy C. Marker — 1/6/2006

Nancy C. Marker
Environmental Program Manager II
Solid & Hazardous Waste Management Branch
(302) 739-9403

Date

Table of Contents

Section			Page Number
I.	**General Conditions**		4
	A.	Permit replaced	4
	B.	Applicability	4
	C.	Application documents	4
	D.	General conditions	4
II.	**Operations**		7
	A.	General operations	7
	B.	Protection of installations	8
	C.	Staffing	8
	D.	Equipment	8
	E.	Landfilling Plan	8
	F.	Storm water management	9
	G.	Acceptable wastes	9
	H.	Prohibited wastes	10
	I.	Waste Inspection	10
	J.	Scavenging	10
	K.	Salvaging	10
	L.	Daily Cover	11
	M.	Intermediate Cover	11
	N.	Gas Extraction System	12
	O.	Leachate Collection System	13
	P.	Protection of Geotechnical Instruments	13
	Q.	Dust Control	13
	R.	Litter Control	13
	S.	Health and Safety	13
	T.	Contingency	14
	U.	Training	14
	V.	Temporary Exposed Geomembrane Cover	14
III.	**Monitoring**		15
	A.	Surface water monitoring	15
	B.	Ground water monitoring	16
	C.	Leachate collection, treatment, disposal and monitoring	18
	D.	Analytical procedures	19
	E.	Landfill gas monitoring	19
	F.	Geotechnical monitoring	19

Table of Contents (continued)

Section			Page Number
IV.	**Reporting**		20
	A.	Financial assurance	20
	B.	Annual report	20
	C.	Additional reports	22
	D.	Emergency reporting	23
	E.	Assessment of corrective measures	24
V.	**Recordkeeping**		25
	A.	General recording and maintenance	25
	B.	On-site records	25
VI.	**Landfill Capping System**		26
	A.	Capping requirements	26
VII.	**Closure and post-closure care**		26
	A.	Permit Renewal and Limits of Final Grade	26
	B.	Notification	26
	C.	Closure	27
	D.	Permit Modification	27
	E.	Final Lines and Grades	27
	F.	Final Report	27
	G.	Deed Notation	28
	H.	Citation for Renewal	28
VII.	**Landfill Expansion Construction**		28
	A.	Planning, Design, and Construction	28
	B.	Design Report	28
	C.	Final Report for Expansion Construction	28
	Permit Synopsis		29

I. GENERAL CONDITIONS:

A. Pursuant to Sections 4.A and 5 of the *Delaware Regulations Governing Solid Waste* (DRGSW), the Department of Natural Resources and Environmental Control (Department) hereby issues Permit SW-06/01 to the Delaware Solid Waste Authority (DSWA), 1128 S. Bradford Street, Dover, DE 19901 for the continued operation of the Cherry Island Landfill (CIL) located at the Northern Solid Waste Management Center-2 (NSWMC-2), Cherry Island, Wilmington, Delaware. This permit incorporates the requirements of, and replaces permit SW-01/01.

B. This permit applies to:

1. Operation and maintenance of NSWMC-2, including Phases I through Va.
2. Environmental and geotechnical monitoring, recordkeeping, and reporting for the NSWMC-2.
3. Disposal requirements for asbestos containing materials in Phase IA.
4. Cherry Island Landfill Expansion Project to stabilize Phase III, IV and V using a mechanically stabilized earthen (MSE) berm.
5. Solid waste management, including waste diversion and recycling.

C. This permit was issued in accordance with the following documents:

1. Secretary's Order No. 2006-A-0002, issued by the Department on January 6, 2006.
2. DSWA letter, *Major Modification Request for the Cherry Island Landfill…*, dated June 15, 2004 and supplemental information provided by the DSWA as follows:
   a. *Responses to Comments to Permit Application Cherry Island Landfill Expansion Project, Wilmington, Delaware*, dated May 12, 2005.
   b. *Responses (Addendum) to Comments to Permit Application Cherry Island Landfill Expansion Project, Wilmington, Delaware*, dated June 20, 2005.
3. Other plans, letters, procedures, and policy specifically referenced in this permit.
4. Secretary's Order No. 2004-A-0051, issued by the Department on October 21, 2004.
5. *Permit Modification Application for Temporary Exposed Geomembrane Cover* dated May 2004 and revised November 10, 2004 in accordance with Secretary's Order No. 2004-A-0051.

D. This permit is issued subject to the following general conditions:

1. Operations at NSWMC-2 shall be conducted in compliance with all federal, state, county, and municipal environmental statutes, ordinances, and regulations, including, but not limited to: *Delaware Regulations Governing Solid Waste, Delaware Regulations Governing Hazardous Waste, Delaware Regulations Governing the Control of Water Pollution, the Delaware Surface Water Quality Standards*, and the *Delaware Regulations Governing the Control of Air Pollution*.

2. Access to NSWMC-2 site by unauthorized persons shall be prevented by barriers, fences, and gates, or other suitable means. Access for the purpose of disposal of solid waste shall be limited to those times when an attendant is on duty and to those persons authorized to use the site for the disposal of solid waste. The Department may, at any reasonable time, enter NSWMC-2 to verify compliance with the permit and DRGSW.

3. This Permit may be revoked upon violation of any condition of the permit or any requirement of DRGSW after notice and opportunity for hearing in accordance with 7 Del. C., Chapter 60.

4. A copy of the most current version of this permit shall be maintained in the scale houses and the on-site administrative office of NSWMC-2.

5. Permit SW-06/01 shall expire no later than January 6, 2016.

6. Solid Waste Management Plan responsibilities:

   a. Outreach: Within 3 months of issuance of this permit, DSWA shall establish a Citizens Advisory Board (CAB) composed of residents who live within 5 miles of the NSWMC-2.

      (1) Members of the CAB shall be selected by (a) the Senator representing the district adjacent to NSWMC-2 (currently Senatorial District #2); (b) the Representative representing the district adjacent to the NSWMC-2 (currently Representative District #2); (c) Wilmington City Council; (d) Wilmington Mayor's Office; (e) New Castle County Executive; (f) New Castle County Council Chair; and (g) the Governor of Delaware.

      (2) The Department and DSWA shall provide a regular "ex-officio" (i.e. non-voting) member.

      (3) DSWA shall meet with this board at least quarterly, prepare meeting minutes and post the minutes on the DSWA web site, and present the issues discussed at these meetings to the DSWA Board of Directors for their consideration.

      (4) Annually, the DSWA Chief Executive Officer or Chief Operating Officer shall present to the CAB an overview of the status of solid waste management in Delaware and the status of NSWMC-2 operations.

      (5) The CAB will establish and abide by a charter for providing advice to DSWA and related state agencies and private sector companies on issues related to the operation of the NSWMC-2, minimizing impacts resulting from landfill operations and capacity, the role of NSWMC-2 in the overall state-wide Solid Waste Management Plan, and recycling and resource recovery options.

b. Yard waste diversion: DSWA shall ban disposal of all yard waste from the NSWMC-2 effective no later than January 1, 2007. The NSWMC-2 yard waste ban shall be advertised in a manner to effectively educate the public and waste haulers, using technical support from academic extension and composting experts, regarding the ban's effective date and alternatives for yard waste management. To the extent no private sector alternatives for the sustainable management of the banned yard waste becomes available, DSWA will provide for a yard waste composting and mulching facility(ies) and operation(s) capable of managing diverted yard waste to that extent. If it is necessary for the DSWA to manage any yard waste generated as a result of the ban, the DSWA shall determine and implement a competitive tipping fee for the management of this material. The tipping fee shall be set at a rate to encourage recycling and discourage disposal, and not compete with private sector alternatives. "Yard waste" means plant material resulting from lawn maintenance and other horticultural gardening and landscaping activities and includes grass, leaves, prunings, brush, shrubs, garden materials, Christmas trees, and tree limbs up to 4 inches in diameter.

c. Removal of household hazardous waste (HHW) from the waste steam: Beginning immediately, DSWA shall provide at least quarterly HHW collection events in New Castle County. The DSWA will coordinate these events to ensure they are done safely, in compliance with applicable regulatory requirements, and with a frequency and user-friendliness that maximizes the amount of HHW collected.

d. Pine Tree Corners Transfer Station Waste: Within 6 months of issuance of this permit, wastes collected at the Pine Tree Corners Transfer Station (PTCTS) shall not be delivered to the NSWMC-2 for disposal, and DSWA shall not accept solid wastes from PTCTS for disposal at the NSWMC-2 after this date.

e. DSWA shall provide funding to the Department for hiring and retaining an Environmental Compliance Specialist for inspecting operations at the NSWMC-2. The DSWA shall reimburse the Department for these costs within 30 days of the date of each itemized statement submitted by the Department.

f. By September 1, 2006 DSWA will update the DSWA Solid Waste Management Plan (SWMP) 7 Del. C. 6404 (j). The updated SWMP will incorporate the final recommendations of the solid waste Management. Technical Working Group (SWMTWG) established on October 24, 2005 by Governor Ruth Ann Minner (Note the SWMTWG final report is due May 15, 2006.)

g. Recyclables diversion: Within six months of issuance of this permit, DSWA shall submit to the Department, the Recycling Public Advisory Council, the Citizens Advisory Board, and for public comment, a comprehensive recycling plan to maximize recycling and diversion of materials from landfill disposal with a goal of recycling 40 percent of the municipal solid waste (MSW) stream in New Castle County by December 31, 2007. The plan shall address both commodity (e.g. aluminum, steel, plastic, cardboard, newsprint, paper) and construction and

demolition wastes (C&D, which is not MSW). The plan will include specific goals, with interim milestones, and include all possible efforts within the partial or complete control of the DSWA as granted in 7 Del. C. Chapter 64. The plan shall seek to incorporate existing recommendations made by the Recycling Public Advisory Council on how to advance recycling and shall be incorporated into the updated State Solid Waste Management Plan.

h. Recyclables processing: DSWA shall, no later than March 1, 2006, establish and operate a facility for accepting, processing and marketing single stream recyclable materials generated in Delaware. It shall be the goal of the DSWA to operate said single stream processing facility without charging a tip fee for received materials as an incentive to promote recycling.

i. Curbside Recycling: DSWA shall support and promote an extended curbside recycling program within six months of issuance of this permit by doing the following:

(1) Offering curbside collection in Sussex County.

(2) Seeking to maximize participation in the curbside collection service by:

(a) identifying and evaluating changes in operations and marketing to maximize the user-friendliness and minimize the cost,
(b) implementing a promotion plan that sets goals, provides incentives and uses a variety of routine and creative mechanisms to advertise and enlist participation, and
(c) considering placement of advertisements for the curbside collection program at all DSWA drop-off sites and in the next and all subsequent issues of the yellow page recycling advertisements.

(3) Educating all waste haulers that DSWA now accepts single stream recyclables so the waste haulers can offer convenient and cost effective curbside recycling to their customers should they choose to do so.

(4) Performing an evaluation of partnering with private sector recycling operations, such as the RecycleBank incentive-based recycling program, and reporting the results of that evaluation to the Department, the RPAC and the Citizens Advisory Board within six months of issuance of the permit.

II. OPERATIONS:

A. Operations at NSWMC-2 shall be conducted in accordance with this permit and the *Cherry Island Landfill Plan of Operations,* dated January 2005 (the Operations Plan). Operations shall be conducted in a manner protective of human health and the environment.

B. DSWA shall operate the NSWMC-2 in a manner that will protect the landfill liner system, the gas extraction system, the leachate collection and disposal system, the geotechnical installations, and the exposed temporary geomembrane cover. The DSWA shall take special precautions while placing the first lift of waste over areas lined with membrane liner to ensure that the liner is not damaged by operations or by waste placement.

C. Staffing: Sufficient numbers and types of personnel, as specified in the Operations Plan, shall be available at the site to insure capability for operation in accordance with the DRGSW, the Operations Plan, and this permit.

D. Equipment necessary to ensure the operations of the landfill in accordance with the Operations Plan and the requirements of DRGSW shall be maintained at the site by DSWA. All NSWMC-2 pump stations shall include one main pump and one back-up pump. DSWA shall rely on the capacity of the landfill collection system for the short-term power outages. For long-term power outrages, DSWA shall use portable generators. Permitting of these generators shall be in accordance with the *Delaware Regulations Governing the Control of Air Pollution.*

E. Landfilling Plan:

1. DSWA shall fill and grade the landfill in accordance with the *Permit Drawings For Landfill Expansion* dated April 2003 and revised May 2005, by GeoSyntec Consultants, Project MEO250, including drawing 78 of 89 (*Landfill Final Development and Grading Plan,* June 2004) which limits the maximum elevation of the landfill to no higher than 195 feet msl. DSWA shall incorporate the grading required for the installation of the temporary exposed geomembrane in accordance with the *Proposed Grading Plan (Phases III – V)*, File No. 0250F1211-2, Figure 2 of the *Permit Modification Application for Temporary Exposed Geomembrane Cover* dated May 2004, by GeoSyntec Consultants Project ME0250.

2. Prior to filling waste above 125 ft-msl, the DSWA shall evaluate the stability of the landfill, particularly the undrained shear strength of the dredge/alluvium and shall provide those findings to the Solid & Hazardous Waste Management Branch. The DSWA shall not fill waste above 125 ft-msl, unless they can demonstrate that appropriate shear strengths have been achieved and that the landfill will remain stable.

3. DSWA may allow the placement of dredge spoils by the U.S. Army Corps of Engineers over existing intermediate cover in expanded Wilmington North Spoils Basin on toe of slopes of Phase I, II, and V (reference DSWA letter dated August 19, 2003). The DSWA shall not allow placement of dredge spoils above elevation 67 feet msl in this area.

F. Stormwater Management, Erosion and Sediment Control. DSWA shall provide for stormwater management, erosion and sediment control at the facility to include those controls cited in the Operations Plan (including Appendix E, *Stormwater/Surface Water Monitoring Plan…*) and the *Erosion and Sediment Control Plan for Cherry Island Landfill Expansion Project* (prepared by GeoSyntec Consultants and dated May 2005). DSWA shall implement the following minimum controls:

1. DSWA shall take all necessary steps to identify and prevent the discharge of pollutants from the waste and cover into surface water, particularly the Delaware and Christina Rivers, and the DSWA shall initiate corrective actions to confirm, quantify and remediate such discharges.

2. DSWA shall maintain a surface water management system on the landfill to prevent erosion of the waste and cover, prevent the collection of standing water, prevent run-off from the waste and minimize run-on into the waste. Run-off from active landfill areas where waste is exposed shall be directed to the leachate collection system.

3. DSWA shall properly operate, manage, and maintain all devices, structures and ponds designed to monitor or manage storm water.

4. The stormwater conveyance and discharge system (SCDS) shall be kept free of debris, waste, and sediment buildup. DSWA shall inspect the SCDS at a minimum frequency of once per month, and immediately after severe rainfall (e.g. rainfall capable of destroying SCDS components or causing significant erosion or sediment run-off). SCDS Inspection/Maintenance forms shall be completed for each inspection and included in the facility log. DSWA shall provide for the inspection of the SCDS as well as the correction of problems identified and inspections shall include:

   a. Berms and swales shall be inspected for erosion, sedimentation and debris.
   b. Silt fences shall be inspected for damage, accumulated debris and to ensure that fencing is firmly anchored.
   c. Culverts and pipes shall be inspected for siltation, blockage and debris.
   d. Control structures shall be inspected for siltation, debris, and damage.

5. DSWA shall maintain automated stormwater monitoring systems designed to measure the flow of stormwater during precipitation events.

G. Acceptable Wastes. NSWMC-2 is permitted to accept the following wastes for disposal at the facility in accordance with DRGSW.

1. Municipal solid waste defined as household waste and solid waste that is generated by commercial, institutional, and industrial sources and is similar to household waste.
2. Non-hazardous industrial wastes or sludges, oil spill debris or other related wastes not included in the municipal solid waste stream which have been accepted in accordance with *the Delaware Solid Waste Authority Policy on Special Solid Wastes*, Revised 10/27/05.

3. Only Phase IA is permitted to accept asbestos containing wastes for disposal. Asbestos containing wastes shall be managed in accordance with the "Asbestos Policy revised April 15, 2002, and in accordance with the *Delaware Regulations Governing the Control of Air Pollution*. Asbestos containing wastes from DSWA's Central Solid Waste Management Center (CSWMC) and Southern Solid Waste Management Center (SSWMC) are permitted to be disposed in Phase IA of NSWMC-2.

H. Prohibited wastes: DSWA shall exercise reasonable care to ascertain whether waste accepted at the facility is prohibited waste, and shall not accept the following prohibited waste:

1. Regulated hazardous waste.
2. Infectious waste (Regulated medical waste).
3. Licensed radioactive material (as described in the Delaware Radiation Control Regulations), and any radioactive material considered source, special nuclear, or by-product material as defined by Atomic Energy Act of 1954.
4. Liquid waste as restricted by 40 CFR Part 258.28

I. Waste inspection of all incoming loads as well as random waste screening shall be in accordance with the *Delaware Solid Waste Authority Solid Waste Screening Program*, dated September 19, 1997 and the Operations Plan. All landfill personnel responsible for waste inspection, including weigh masters, heavy equipment operators, and inspector/spotters, shall comply with these procedures.

J. Scavenging on the landfill is prohibited.

K. Salvaging operations. Salvaging shall be conducted in accordance with the Operations Plan in a manner protective of human health and the environment and shall not interfere with the proper disposal of wastes at the facility. Conditions for salvaging operations include:

1. C&D Salvaging: Construction and demolition (C&D) debris consists of the materials generated during the construction, renovation, and demolition of buildings, roads and bridges. Acceptable C&D debris includes that portion of the C&D waste stream that is acceptable for the process where it is to be beneficially used.
   a. The DSWA shall maintain adequate fire prevention measures for the C&D stockpile area.
   b. The DSWA shall take adequate measures to prevent the migration of wind-blown wastes from the C&D stockpile and shall remove litter and windblown trash from the salvaging area daily.
   c. Loads of acceptable C&D debris that are free from unacceptable materials may be diverted to the C&D stockpile. Prior to sending loads to the C&D stockpile, DSWA shall exercise reasonable care to ascertain whether the C&D materials are acceptable.
   d. The DSWA shall inspect all loads delivered to the C&D stockpile and shall reject or remove and properly dispose of unacceptable materials. Unacceptable materials,

for the purpose of this permit, include: the contents of buildings, appliances, asbestos, liquids, garbage, municipal solid waste, batteries, mercury switches, lighting ballasts, loose paper, gas cylinders, mercury lamps, infectious waste, special waste, radioactive waste, explosives, special waste and all hazardous waste. Unacceptable materials also include those materials specifically deemed by the processor or user as unacceptable.

e. DSWA shall stage and manage the C&D stockpile as specified in the Operations Plan. DSWA shall manage the size of the C&D stockpile to limit the threat of fire, to enable adequate litter control, to limit visual impact to adjacent residences and to prevent stormwater runoff from the waste.

L. Daily Cover:

1. The DSWA shall place a six-inch layer of suitable material over all solid waste by the end of each working day. The material shall control odors, disease vector breeding, animal attraction, blowing litter, scavenging, and reduce the potential for fires. No solid waste shall remain exposed after the end of an operating day.

2. DSWA shall ensure that the daily cover layer which remains in place under waste shall not preclude leachate flow downwards towards the leachate collection system.

3. At least weekly, the DSWA shall inspect exposed daily covers that remain in place for more than two days and shall maintain daily covers as necessary to control odors, disease vector breeding, animal attraction, blowing litter, scavenging and fires. The DSWA shall implement adequate surface water management controls to prevent erosion of the cover and shall maintain cover soils to prevent wastes from being exposed.

4. Tarps may be used as alternate daily cover in accordance with the Operations Plan. DSWA shall ensure that adequate litter controls are used when the tarps are removed from wastes.

5. The DSWA may use alternate daily cover only if those covers perform as well as standard daily cover soil and are used and maintained in a manner that does not present an increased threat to human health or the environment. Additionally, DSWA shall store, use, and maintain alternate daily cover material in accordance with the Operations Plan. DSWA shall not use an alternative daily cover without the written approval of the Department's Solid & Hazardous Waste Management Branch, and the DSWA shall maintain written approvals of all alternative covers used at the landfill in accordance with condition V.C. of this permit.

M. Intermediate Cover:

1. DSWA shall apply intermediate cover to any area that receives daily cover and is not expected to receive either additional solid waste or a capping system within six months. Intermediate cover shall consist of at least 12 inches of compacted soil

(total), or an appropriate alternative material approved by the Department for use as an intermediate cover. Intermediate cover shall control odors, disease vector breeding, animal attraction, blowing litter, scavenging and reduce the potential for fires. Intermediate cover shall prevent leachate from entering storm water management systems or surface waters.

2. DSWA shall ensure that intermediate cover layer which remains in place under waste shall not preclude leachate flow downwards towards the leachate collection system.

3. DSWA shall inspect intermediate covers weekly and shall maintain all intermediate cover as necessary to control odors, disease vector breeding, animal attraction, blowing litter, scavenging and fires. The DSWA shall implement adequate surface water management controls to prevent erosion of the cover and shall maintain cover soils to prevent wastes from being exposed.

4. Tarps:

   a. DSWA may use tarps for alternative intermediate cover as long as they are properly anchored, comply with the requirements of DRGSW, and their use controls odors, disease vector breeding, animal attraction, blowing litter, scavenging, fires, and prevents leachate from entering storm water management systems or surface waters.
   b. In the event that the use of tarps for intermediate cover results in a violation of the permit or DRGSW, the Department may require that DSWA terminate the use of tarps for intermediate cover. DSWA shall, within 30 days of such notification, install standard intermediate cover in those areas.

5. The DSWA may use alternate intermediate covers only if those covers perform as well as standard intermediate cover soil and are used and maintained in a manner that does not present an increased threat to human health or the environment. Additionally, DSWA shall store, use, and maintain alternate intermediate cover material in accordance with the Operations Plan. DSWA shall not use an alternative daily cover without the written approval of the Department's Solid & Hazardous Waste Management Branch, and the DSWA shall maintain written approvals of all alternative covers used at the landfill in accordance with condition V.C. of this permit.

N. DSWA shall operate and maintain the gas extraction system, flares, and landfill gas processing and distribution project to control odors. Malodorous gaseous emissions from the landfill shall be controlled to the extent that there is no perceivable landfill odor beyond the property boundary. DSWA shall maintain a permit for the operation of the extraction system and the landfill gas processing and distribution project in accordance with the *Delaware Regulations Governing the Control of Air Pollution*.

O. DSWA shall operate and maintain the leachate collection and disposal system, including the alarm system in accordance with this permit and the Operations Plan. DSWA shall clean-up all leachate spills immediately or within a time frame approved by the

Department on a case-by-case basis.

P. DSWA shall protect, maintain and properly utilize the geotechnical monitoring instruments at the facility.

Q. Dust Control. DSWA shall operate the landfill in a manner to prevent dust emissions from causing a condition of air pollution (injurious to human, plant, or animal life or unreasonably interfering with the enjoyment of life and property).

1. DSWA shall provide for dust controls at the facility to include dust controls cited in the Operations Plan.

2. DSWA shall operate the landfill to minimize soil/alternate cover material from being tracked onto public roads. DSWA shall inspect facility egress points at least daily to identify if materials are being tracked off-site and to gauge the extent of the problem (e.g. how far is mud/etc being tracked). In the event that soil/alternate cover material is tracked onto public roads, at a minimum, DSWA shall provide for street cleaning of that area on the day the problem is identified.

R. DSWA shall provide for litter removal and general cleanliness of the entire site to include litter controls cited in the Operations Plan. DSWA shall implement the following minimum controls:

1. DSWA shall inspect for litter on the facility daily (each operating day) and ensure that litter is picked up quickly and properly disposed.
2. DSWA shall collect any off-site litter attributable to landfill operations.
3. DSWA shall inspect 12th Street (from Hay Road to Northeast Boulevard) and the off ramps from I-495 to 12th Street daily. DSWA shall remove litter along these roads as frequently as necessary to these areas clean. At minimum, DSWA shall remove litter daily (each operating day) from the I-495 off ramps adjacent to the facility (west and east ramps), and from along 12th street to the westernmost on/off ramps. At a minimum, DSWA shall remove litter at least two times per week along 12th Street, from the westernmost on/off ramps to Northeast Boulevard.

S. Health and Safety:

1. The DSWA shall operate in accordance with the Health and Safety Plan (Revision October 25, 2000) attached to the Operations Plan (Appendix J).
2. Employees at the site shall work under appropriate health and safety guidelines established by the Occupational Safety and Health Administration.
3. Use of personal protective equipment shall be in accordance with 29 CFR Part 1910.132 as a minimum.
4. First aid equipment shall be maintained and available in the scale house(s), in the administrative office and in the maintenance building.
5. Emergency telephone numbers of nearby ambulance, hospital, police and fire services shall be prominently displayed by at least one telephone in each of the following on-

site locations: the scale houses and the administrative office.

6. Any confined space entry done by employees or contractors shall be done in accordance with 29 CFR Part 1910.146.

T. Contingency:

1. The DSWA shall provide for fire prevention and controls to include those measures cited in the Operations Plan.
2. The DSWA shall appoint and maintain at least one Emergency Coordinator and at least one alternate Emergency Coordinator at NSWMC-2. The Emergency Coordinator shall be responsible for directing all emergency response measures necessary to protect human health and the environment, and DSWA shall ensure that at least one Emergency Coordinator is available at all times.

U. Training: All personnel (except the secretary) assigned duties at NSWMC-2 shall receive, as a minimum, the training listed below. Unless otherwise specified by a nationally recognized training provider (for example, the American Red Cross as a training provider for First Aid), training shall be required initially and annually thereafter. Initial training for waste screening shall be completed within 60 days of hiring and all other initial training shall be completed within 180 days of hiring:

1. Operational and contingency procedures
2. Waste screening
3. Health and safety procedures
4. Fire prevention and protection
5. Emergency first aid
6. CPR training

V. Temporary Exposed Geomembrane Cover shall be installed and maintained in accordance with *Permit Modification Application for Temporary Exposed Geomembrane Cover* dated May 2004 and revised).

1. The DSWA shall install temporary geomembrane cover in Phases III, IV, and V as shown in the *Permit Modification Application for Temporary Exposed Geomembrane Cover* dated May 2004, Figure 3 (*Exposed Geomembrane Details*, File 0250F1217-2) and Figure 10 (*Exposed Geomembrane Installation Plan*, File 0250F1218-2). Sandbags or other anchoring devices shall be installed and maintained to prevent wind uplift from winds up to 78 mph (60 mph with no landfill gas vacuum applied) while not exceeding allowable strain on the geomembrane (as shown in Task 7 of the *Permit Modification Application for Temporary Exposed Geomembrane Cover* dated May 2004).

2. The temporary geomembrane cover shall be installed and maintained to minimize infiltration of precipitation, minimize soil erosion, and provide effective suppression of fugitive landfill gas emissions. The DSWA shall install the temporary geomembrane cover, landfill gas surface collectors, bird protection and replacement

geotechnical instruments in accordance with the *Procedures for Temporary Exposed Geomembrane Cover Installation* described in Section 3.2 and *Implementation Sequence and Schedule* described in Section 3.3 of the *Permit Modification Application for Temporary Exposed Geomembrane Cover* dated May 2004.

3. DSWA shall install and repair the temporary geomembrane cover in accordance with manufacturer's recommendations.

4. DSWA shall inspect the temporary geomembrane cover monthly for mechanical damage, signs of distress, UV damage, and tears or punctures. Within 7 days of discovery, DSWA shall repair damaged geomembrane or replace missing geomembrane.

III. MONITORING:

A. Surface Water Monitoring:

1. The DSWA shall conduct stormwater monitoring in accordance with the *Stormwater Surface Water Monitoring Plan for the Cherry Island Landfill (CIL) Expansion*, (The Surface Water Monitoring Plan), Appendix E of the Operation Plan (contained in Volume 12 of the permit application submittal revised June 2004). In addition to the monitoring described in the Surface Water Monitoring Plan for Stage 1 of the monitoring, DSWA shall collect samples during two additional storm events per year (during Stage 1) at sampling points "Va" and "SW-6" and analyze those for the parameters described as "SW-Ex" (Surface water Expanded Listing) as well as for field parameters, (F2).

2. Quarterly, during January, April, July, and October surface water elevations shall be obtained from the USGS gauge on the Delaware River, immediately south of the mouth of the Christina River. The elevation data will be used to:

   a. Construct ground water flow maps (where river elevations are critical in determining whether the ground water in the various permeable horizons monitored is discharging to the rivers or not, and;

   b. Verify that surface water samples for monitoring are collected when any possible influence of the landfill on surface water is being measured (i.e., when the tide is going out and any ground water discharges are being carried downstream to the surface water sampling station).

3. Quarterly, during January, April, July, and October field parameters shall be measured and water quality samples shall be collected from the Delaware River upstream and downstream of the landfill (i.e., the northernmost and southernmost property boundaries abutting the river, respectively). Field parameters shall include pH, ORP, DO, specific conductance, temperature and turbidity. The samples collected shall be analyzed for indicator parameters pH (lab check), specific conductance (lab check), ammonia-

nitrogen, nitrate-nitrogen, total alkalinity, phenolphthalein alkalinity, TDS, COD, chloride, dissolved silica, calcium, iron, magnesium, manganese, potassium, sodium, sulfate and TOC.

4. Quarterly, during January, April, July, and October, the outer perimeter drainage ditches around the landfill and along the Delaware and Christina River banks shall inspected for the presence of discolored seeps which may be indicative of landfill leachate. Any seeps noticed shall be analyzed for field parameters including temperature, pH, specific conductance and ORP.

B. Ground Water Monitoring:

1. The DSWA shall maintain and protect all monitoring wells in accordance with the *Delaware Regulations Governing the Construction of Water Wells*.

2. Installation of new wells and abandonment of any monitoring well due to construction activities shall be performed in accordance with the *Delaware Regulations Governing the Construction of Water Wells*.

3. Prior to the initial sampling event, DSWA shall determine the locations and elevations of new groundwater monitoring wells. The location of each well shall be tied into the Delaware State Coordinate Plane and the elevation of each well shall be tied into the National Geodetic Vertical Datum.

4. Ground Water Sampling:

b. Quarterly, during January, April, July, and October, the DSWA shall measure water elevations in the following monitoring wells. Equi-potential showing maps shall be prepared for each aquifer showing the location of each well, the contoured potentiometric surface and the directions of ground water flow in each zone. These maps shall include an outline of the site boundaries and each active and closed area within the landfill:

LC-100	LC-116	P-102A
LC-101A	UC-100	P-104A
LC-102	UC-102A	P-105
LC-104A	UC-106	P-106
LC-105	UC-108	P-108
LC-114	P-100A	P-116
LC-115	P-101A	

c. Quarterly, during January, April, July and October, DSWA shall measure field parameters in the following monitoring wells. Field parameters to be measured include: specific conductance, temperature, pH, DO, ORP and turbidity:

LC-100	LC-116	P-104A
LC-101A	UC-102A	P-105
LC-102	UC-106	P-106
LC-104A	UC-108	P-108
LC-105	P-100A	P-116
LC-114	P-101A	
LC-115	P-102A	

d. Annually, during April, the DSWA shall collect groundwater samples from the following groundwater monitoring wells. Samples shall be analyzed for indicator parameters: pH (lab check), specific conductance (lab check), ammonia-nitrogen, nitrate-nitrogen, total alkalinity, phenolphthalein alkalinity, TDS, COD, chloride, dissolved silica, calcium, iron, magnesium, manganese, potassium, sodium, sulfate and TOC:

LC-100	LC-116	P-104A
LC-101A	UC-102A	P-105
LC-102	UC-106	P-106
LC-104A	UC-108	P-108
LC-105	P-100A	P-116
LC-114	P-101A	
LC-115	P-102A	

e. All samples shall be collected in a manner that minimizes sample turbidity. All wells to be sampled shall be maintained as necessary so that they will produce low turbidity samples.

f. Samples shall be collected, prepared, and analyzed in accordance with the "*DSWA Groundwater Sampling Procedures*" provided as part of the *Environmental Monitoring Plan*, Appendix E of the Operation Plan (contained in Volume 12 of the permit application submittal revised June 2004.

g. Tracer Test

(1) DSWA shall perform a tracer test per the design specifications of the *Draft Tracer Test Work Plan Revision 02, Cherry Island Landfill Expansion Project* (the Tracer Test Work Plan) submitted by GeoSyntec Consultants and dated July 2004 including the additional considerations discussed in correspondences dated May 20, 2005 to the DSWA from GeoSyntec Consultants and Terra-Dynamics Consulting, Inc. which addressed the Department's concerns regarding the work plan.

(2) The purpose of the tracer test shall be to further the understanding of the groundwater flow regime beneath the CIL, in particular, the relationship between the Columbia and Potomac aquifers and to assist in determining the potential impact to groundwater resources beneath the site.

C. Leachate Collection, Treatment, Disposal and Monitoring:

1. The DSWA shall monitor leachate in accordance with the *"Monitoring Program for the Northern Solid Waste Management Center at Cherry Island"*, Appendix E of the Operation Plan (contained in Volume 12 of the permit application submittal revised June 2004).

2. DSWA shall monitor all leachate collection system flowmeters, pumps, controls, recording devices and wet-wells each operating day to ensure proper functioning and to record flows. DSWA shall inspect for leakage from valves, flowmeters, connections at riser locations, and wet-wells each operating day. The results of the monitoring and inspections shall be recorded in the facility log.

3. Cleaning and Assessment of the system:

   a. DSWA shall ensure that all accessible collection pipes are cleaned at least annually with a self-propelled, high pressure jetting system. DSWA shall be responsible for the identification, assessment, and reporting of all blockages encountered as well as identification of any areas found to be inaccessible during the annual cleanings. The Department may, at its discretion, waive the annual cleaning event for any particular year if, after demonstration by the DSWA, it determines that cleaning is not required.

   b. At least once every four years, all accessible leachate collection pipes shall be inspected by camera to assess their condition. This shall include a written assessment of the condition of the leachate collection pipes to include an assessment of clogging of pipe perforations and the location, cause, and effect of blockages encountered. In the event that such an assessment supports the DSWA claim that less frequent cleanings are needed, the DSWA may initiate a request for a permit modification to reduce the cleaning frequency.

4. Monthly, field parameters shall be measured and water quality samples of leachate collected from the NSWMC-2 Main Pump Station (MPS). Field parameters to be measured shall include specific conductance, temperature, pH, and ORP and samples shall be analyzed for indicator parameters pH (lab check), specific conductance (lab check), ammonia-nitrogen, nitrate-nitrogen, total alkalinity, phenolphthalein alkalinity, TDS, COD, chloride, dissolved silica, calcium, iron, magnesium, manganese, potassium, sodium, sulfate and TOC.

5. Semiannually, in April and October, additional representative samples of NSWMC-2 shall be collected from MPS and analyzed for the parameters, listed in Table 1 "Leachate Supplemental Parameters", attached to this permit.

6. DSWA shall maintain all necessary permits and approvals for leachate storage and disposal.

7. The leachate collection system shall be capable of measuring the rate and quantity of leachate flow from the Main Pump Station and North-Central Pump Station on a daily basis, and shall be capable of sampling the leachate from these two pump stations.

8. DSWA shall measure and record the quantity of leachate pumped to the City of Wilmington's wastewater treatment plant (WWTP) on a weekly basis.

9. DSWA shall record the quantities of leachate being transferred from CSWMC and SSWMC to NSWMC-2 for disposal in the City of Wilmington's WWTP.

D. Analytical Procedures: All leachate, ground water and surface water analysis required by this permit shall be done in accordance with the most current legal edition of EPA Publication Number SW 846. If SW 846 does not contain a test method for a required parameter, that parameter shall be tested according to methods described in the most recent edition of the EPA Publication *Methods of Chemical Analysis for Water and Wastes* or of *Standard Methods for Examination of Water and Wastewater*.

E. Landfill Gas Monitoring:

1. The operation, maintenance, and monitoring of the gas extraction system and the landfill gas processing and distribution project shall be done in accordance with the current permit(s) issued pursuant to the *Delaware Regulations Governing the Control of Air Pollution*.

2. Gas migration monitoring (Section 5.E.1.c. DRGSW) shall be performed at least quarterly and shall be done in accordance with Cherry Island *Gas Monitoring Plan* dated April 2000 (August 2001 revision).

3. The concentration of landfill gas in facility structures (except gas recovery systems) and at the facility boundary shall not exceed 25% of the Lower Explosive Limit (LEL).

F. Geotechnical Monitoring:

1. DSWA shall conduct a geotechnical monitoring program under the direction of a Professional Engineer registered in the State of Delaware who specializes in geotechnical engineering.

2. DSWA shall protect and maintain all geotechnical monitoring instruments and shall report any damage to these instruments in accordance with the Emergency Reporting requirements of section IV of this permit. DSWA shall not decommission or abandon geotechnical monitoring instruments (i.e. inclinometers, piezometers, settlement plates) without the written approval of the Department. Location of geotechnical instruments that must be maintained are shown on drawing 86 of 89, Attachment B, of the *Geotechnical Monitoring Plan for Cherry Island Landfill Expansion Project* (the Geotechnical Monitoring Plan), dated September 2003, and submitted in Volume 12 as

Appendix G to the Operations Plan.

3. The DSWA shall monitor the structural integrity and stability of the landfill and landfill/MSE Berm foundation and shall take all necessary measures to identify and preclude unintended slope movement. The DSWA shall report this monitoring in accordance with the reporting requirements of this permit. The DSWA shall determine whether or not the required strength gains are occurring and shall report that to the Department in accordance with the reporting conditions required by this permit. This program shall be in accordance with the Geotechnical Monitoring Plan and include:

   a. Quarterly, in January, April, July, and October, DSWA shall monitor the network of geotechnical instruments at the landfill. Monitoring shall include all geotechnical monitoring instruments and locations identified in Drawing 86 of 89, Attachment B of the Geotechnical Monitoring Plan.

   b. Starting October 2001 DSWA shall perform the Cone Penetration Tests (CPTs) and Field Value Shear Tests (FVSTs) at the locations within the limits of Phases III, IV, and V and around the perimeter of NSWMC-2. as determined by a Professional Engineer registered in the State of Delaware who specializes in geotechnical engineering

   c. CPTs will be performed at a three-year interval and FVSTs shall be performed adjacent to at least two of the Cone Penetrometers at six-year intervals.

   d. One month prior to starting CPTs, DSWA shall submit a plan showing locations where CPTs will be performed.

   e. During construction of the MSE berm, DSWA shall verify strength gains as necessary to assess the foundation's capability to support the next stage of construction (i.e. subsequent berm lift or section).

IV. REPORTING:

A. Financial Assurance: No later than December 31st of each year, DSWA shall submit their financial statements for the most recently completed fiscal year along with an updated and reasonably accurate cost estimate of closure and post-closure care for NSWMC-2. Cost estimates shall be adjusted for inflation except for new cost estimates not previously made. DSWA shall provide a detailed listing of all projected costs used to estimate the closure and post-closure care costs for NSWMC-2.

B. No later than April 30th of each year, DSWA shall submit an annual report and include, the following information:

   1. The weight and types of wastes landfilled.
   2. The weights and types of daily and intermediate landfill cover materials.

3. A list of transporters that hauled waste to or from the facility. The list shall include only those transporters with at least one vehicle having a gross vehicle weight of over 26,000 pounds.
4. The weight (or volume) and types of materials salvaged.
5. The estimated remaining landfill capacity.
6. Any deviations from the Operations Plan.
7. All construction or corrective work conducted on the site in accordance with approved plans or to achieve compliance with DRGSW and this permit.
8. A combined groundwater, surface water, storm water, gas, leachate collection system and geotechnical monitoring report including the following information:

    a. Gas monitoring data from the past year to include:

        (1) Gas migration monitoring done in accordance with condition III.E.2 of this permit.
        (2) A summary of the facility's compliance with the permit issued pursuant to the *Delaware Regulations Governing the Control of Air Pollution*.
        (3) Gas monitoring data collected from the landfill gas extraction system (submitted via electronic media only).

    b. Tabulation of all data listed below from the past and all preceding years. All data should be submitted on paper and/or magnetic media or a combination of both in a format that is acceptable to the Department. Data submitted shall include:

        (1) Leachate flow and quality including field parameters.
        (2) Ground water elevation and quality data including field parameters.
        (3) Surface water elevation, flow rate, and quality data including field parameters.
        (4) Rainfall data from the site weather station.
        (5) Storm water flow and quality data including field parameters.

    c. Graphical presentations (quality versus time plots) of leachate, ground water, and surface water quality parameters pH, TDS, COD, TOC, chloride, sulfate, ammonia-nitrogen, and iron.
    d. Graphical presentations (flow rate or volume versus time plots) of leachate collected. Rainfall data shall also be plotted on each graph.
    e. Potentiometric maps for each aquifer for each quarter for the past year.
    f. A discussion of any problems encountered during fieldwork, any deviations from the sampling procedures and of any problems with QA/QC procedures. Copies of field notes, laboratory data sheets, and chain-of-custody forms shall be maintained by the DSWA and made available to the Department within a reasonable time upon request.
    g. A discussion of landfilling activities during the past year relevant to operation of the leachate collection system, the gas collection system, the exposed geomembrane and including:

(1) Modifications, if any, to the leachate collection, or gas collection systems.
(2) Cleanings and inspections (with assessment) of the leachate collection system.
(3) A drawing showing the location and extent of the surface collectors and exposed geomembrane.
(4) A discussion of the general procedures used for repair of the exposed geomembrane, and identification and discussion of all significant repairs or replacements required during the year.

h. A discussion of the ground and surface water monitoring results, including whether the results indicate a contaminant release from the landfill to ground water or surface water.
i. A discussion of the leachate collection system monitoring results, including whether the results indicate that the system is performing within design specifications.
j. A discussion of the geotechnical monitoring results for the reported year, including an assessment of landfill stability concerns (with conclusions) as well as a determination of the effects of waste placement and construction activities.
k. Recommendations for future monitoring, maintenance and modifications needs for the groundwater monitoring wells, geotechnical instrumentation, gas collection system, the surface water/stormwater monitoring system, and the leachate collection system.
l. A discussion of the tracer test results.

9. A discussion of the solid waste management activities conducted as the result of conditions I.6.b, I.6.c, I.6.f, I.6.g, I.6.h, and I.6.i of this permit.

C. Additional Reports:

1. The results of ground water, storm water, surface water, and leachate samples analyzed per Section III of this permit shall be submitted to the Department within sixty (60) days of the sampling date. Electronic files on magnetic media containing the results of all required analysis for groundwater, leachate, and surface water shall accompany this submittal. The electronic files will be in a format amenable for use by both DSWA and the Department.
2. The results of the potentiometric head elevations and the maps prepared for each aquifer per Section III of this permit shall be submitted to the Department within sixty (60) days of the date of sampling.
3. Year-to-date weekly flow measurements for leachate collection system and rainfall data shall be submitted to the Department quarterly along with the results of the quarterly ground and surface water analyses.
4. Within sixty days of the end of each quarter, the DSWA shall submit to the Department, the data as well as conclusions and recommendations resulting from assessment of the data collected from geotechnical monitoring per Section III.F. of this permit.
5. Within 60 days of completing PVTs and FVSTs in accordance with Section III.F. of

this permit, DSWA shall report the rate and magnitude of strength gained by the soundings.

6. If DSWA is unable to comply with any of the reporting requirements listed within the permit, DSWA must provide written notice and justification to the Department two weeks prior to the reporting deadline.
7. Upon discovery, DSWA shall report to the Department any intentional or accidental deviation from any approved plan.
8. Prior to filling waste above 125 ft-msl, the DSWA shall evaluate the stability of the landfill, particularly the undrained shear strength of the dredge/alluvium and shall provide the data and a written evaluation containing findings, conclusions and recommendations, to the Solid & Hazardous Waste Management Branch. The DSWA shall not fill waste above 125 ft-msl, unless they can demonstrate that appropriate shear strengths have been achieved and that the landfill will remain stable when filled to the proposed grade.
9. DSWA shall submit the Final Report for the tracer test within 90 days of completion of the test (reference sections 5.3 and 7 of the Tracer Test Work plan)
10. Within 30 days of completion of the quarterly survey used by DSWA to estimate remaining landfill capacity, the DSWA shall provide the following information to the Department by electronic mail or regular mail.

    a. Solid waste landfilled (by month during the quarter).
    b. Estimated remaining capacity in cubic yards.
    c. Estimated remaining capacity in years or months.

D. Emergency Reporting:

1. The DSWA shall notify the Department immediately in the event of:

    a. Fire or explosion involving the landfill or its control systems.
    b. Receipt of prohibited waste at any CIL disposal area.
    c. Leachate spills exceeding ten gallons.
    d. Gas levels of 25% LEL or greater detected at the facility boundary or within any structures (as required by Condition III.E.3 of this permit).
    e. Damage to geotechnical monitoring instruments or components.
    f. A determination that the foundation of the MSE Berm is not capable of supporting anticipated loads.

2. If any event listed in Section IV.D.1 of this permit occurs during business hours, DSWA should report to the Department's Solid and Hazardous Management Branch by telephone to 302-739-9403. At all other times report is to be made to the Division of Air and Waste Management's TOLL-FREE 24-HOUR LINE 1-800-662-8802.

3. DSWA shall submit a written notification to the Department no later than five business days following any event requiring "Emergency Reporting". The notification shall include the following:

a. Date and time of occurrence/discovery.
b. Date and time of reporting.
c. Agencies notified.
d. Materials and quantities involved.
e. Narrative describing how the incident occurred and the actions taken by the DSWA and other response personnel.
f. Report of injuries/damage.
g. Proposal for follow-up, repair, or remedial actions required and a schedule.

E. Assessment of Corrective Measures:

1. DSWA shall notify the Department within seven (7) days after verified analytical data has confirmed that a release has taken place. Confirmation samples shall be collected from the appropriate monitoring points within 14 days of receipt of written approval by the Department. These samples shall be analyzed under a priority schedule for the indicator parameters and Table 1 analytes and any other parameters deemed appropriate by DSWA and the Department. DSWA shall notify the Department of the results of the confirmation sampling within seven (7) days of receipt of the results.

2. If confirmation sampling does not indicate that a release has taken place, another round of sampling shall take place to determine whether the results of analysis from the first or second sampling events were anomalous. This re-sampling sampling event shall take place within two (2) weeks of DSWA sending written notification to the Department of their intent to re-sample. The samples shall be analyzed under a priority schedule. DSWA shall notify the Department of the results of the re-sampling within seven (7) days of receipt of the results.

3. If the re-sampling indicates that no release has taken place, no further action shall be taken by the Department, and monitoring of the sampling location(s) shall be returned to its/their normal monitoring schedule. If the confirmation or re-sampling round of sampling does indicate that a release has taken place, DSWA shall perform an assessment of corrective measures within ninety (90) days of confirmation of the release. This assessment shall include:

a. Identification of the nature and extent of the release (which may require construction and sampling of additional wells, geophysical surveys or other measures).
b. Re-assessment of contaminant fate and potential contaminant receptors (wells and/or receiving streams).
c. Evaluation of feasible corrective measures to:

(1) Prevent exposure to potentially harmful levels of contaminants (exceeding performance standards).
(2) Reduce, minimize or prevent further contaminant releases.
(3) Reduce, minimize or prevent the off-site migration of contaminants.

V. RECORDKEEPING:

A. The following information must be recorded and maintained by DSWA until the end of the post-closure period. This information must be available for inspection, with reasonable notice, by representatives of the Department:

1. Monitoring, testing, and analytical data required by this permit and DRGSW.
2. Copies of field notes, laboratory data sheets and chain of custody forms for each sample analyzed.
3. The quantity and type of wastes received quarterly.
4. Locations of monofilled wastes.
5. Drawings showing the locations and extent all intermediate covers and of daily covers left in-place.
6. Surveys showing the lines and grades of the landfill and indicating remaining capacity.

B. The following information shall be kept on site or made available to the Department within a reasonable period of time after being requested by the Department:

1. Records of odor complaints received by the facility manager concerning the landfill during the last 3 years.
2. Records that document that required training have been provided to all staff.
3. Records of DSWA's periodic inspections of the facility during the last three years to include inspections of the leachate and gas systems, leachate seeps, landfill gas migration, the salvaging stockpile areas, daily and intermediate covers, and the temporary exposed geomembrane cover.
4. A record of the transporters (company name, address, and telephone number) hauling wastes to and from the facility. Records shall include only those transporters with at least one vehicle having a gross vehicle weight of over 26,000 pounds. DSWA shall begin generating these records on May 1, 2001. DSWA shall retain these records for a period of three years.
5. Current environmental permits, including the wastewater discharge permit.

C. DSWA shall incorporate Department approvals for alternate covers (daily and intermediate) into the Operations Plan at least two days prior to the cover material first arriving at the facility. Incorporation shall be accomplished by inserting approvals into Appendix K of the Operations Plan. Approvals which have been replaced or which have expired are invalid and shall be removed from Appendix K no later than close of business on the date of expiration, or receipt of the revised Approval. For the purpose of the issuance of Permit SW-06/01, DSWA shall replace all missing or expired approvals in Appendix K no later than July 6, 2006 and may continue to use alternative cover materials previously cited in conditions II.P.2 and II.Q of permit SW-01/01 until that date.

VI. LANDFILL CAPPING SYSTEM:

A. Capping Requirements:

1. Upon closure of NSWMC-2 or part thereof, a capping system shall be installed that will control emissions of gas, promote vegetative cover, and minimize infiltration and percolation of water into, and prevent erosion of the waste throughout the post-closure care period.
2. The capping system shall be in place 180 days following final waste disposal activity.
3. The capping system shall be designed in accordance with DRGSW and must be approved by the Department prior to installation.
4. All components of the cap, including the gas control system, shall be constructed in accordance with a Construction Quality Assurance Plan, Closure Plan, and Closure Schedule approved by the Department. A Certification Final Report shall be completed by a third party CQA Consultant and submitted for Department review within 60 days after the landfill has been completed.

VII. CLOSURE AND POST-CLOSURE CARE:

A. The DRGSW limit the duration of an operating permit for a landfill to 10 years. Since the NSWMC-2 expansion will result in landfill operations at this facility in excess of 10 years, the following conditions are hereby imposed for any renewal of this permit. If the Department determines that the DSWA is operating the landfill protective of public health and the environment, the permit shall be renewed subject to the requirements of the Delaware Regulations Governing Solid Waste (or successor). The Department will grant no further permit renewals for expansion of the landfill greater than the lines and grades shown on the Final Grading Plan, (GeoSyntec Consultants *Landfill Final Development and Grading Plan*, drawing 78 of 89, Project ME0250, dated June 2004) which limits the elevation of the landfill to 195 feet msl. If the DSWA wishes to renew this permit they shall submit the following to the Department no later than July 6, 2015.

1. A permit application form for renewal including a detailed summary of all violations, enforcement actions, and corrective actions completed or ongoing at the facility.
2. The latest annual environmental monitoring report showing the results of surface water and groundwater monitoring. This report shall include an assessment of the landfill's impact on groundwater and surface water and whether current waste containment measures and stormwater controls are adequate to protect public health and the environment.
3. The latest annual geotechnical monitoring report showing the results of the geotechnical monitoring. This report shall include an assessment of the stability of the landfill, and whether current stability measures and monitoring are adequate to protect public health and the environment.
4. Landfill capacity estimate as compared to the Final Grading Plan.

B. One year prior to the anticipated closure of the facility, the DSWA shall provide a written notice of intent to close the landfill, anticipated post-closure use of the facility and a proposed schedule. At least 180 days prior to the expected date when wastes will no longer be accepted for disposal at the NSWMC-2, DSWA shall submit a comprehensive closure plan to the Department.

C. DSWA shall close the landfill in accordance with the requirements of the DRGSW in a manner that will minimize the need for further maintenance and that will minimize the post-closure escape of solid waste constituents, leachate, and landfill gas. The DSWA shall close the facility in accordance with the approved closure plan and the approved closure schedule. The DSWA shall include in the closure plan:

1. A description of the methods, procedures, and processes that will be used to close the landfill in accordance with the performance standard listed above (condition VII.C.)
2. Construction and material technical specifications and design drawings.
3. A construction quality assurance plan.
4. A closure schedule.
5. A description of the capping system to be used and the construction and installation methods.
6. A plan for control or recovery of landfill gas.
7. Stormwater controls.
8. A post-closure care plan. The DSWA shall include the following in the post-closure care plan:
   (a) A detailed description of the monitoring and maintenance activities required including maintenance of the landfill gas and leachate management system, maintenance of the vegetation, and maintaining the environmental monitoring systems on the site.
   (b) An environmental sampling plan with performance criteria to demonstrate when the post-closure care period should be allowed to end.
   (c) Contact information for all parties responsible for post-closure care at the facility.
   (d) A description of the planned uses of the facility during the post-closure care period.
   (e) Description and plan for corrective actions, if applicable.

D. The DSWA shall not commence closure activities before receiving the necessary permit modification to the solid waste permit.

E. DSWA shall close the landfill in accordance with the lines and grades shown on the Final Grading Plan which limit the elevation of the landfill to 195 feet msl (GeoSyntec Consultants *Landfill Final Development and Grading Plan*, Project ME0250, dated June 4, 2004; Drawing 78 of 89 of the Permit *Drawings for Landfill Expansion, contract SO1445NC;* and also contained in Volume 8, Appendix VIb-A of the permit application package).

F. When closure is completed, DSWA shall submit a final report for the Departments

approval. The final report shall certify that the closure of the landfill was completed in accordance with the closure plan. The final report shall be certified correct by the construction quality assurance engineer who must be a Professional Engineer registered in Delaware. The landfill will not be considered closed until the Department has provided its written notification that the closure has met the requirements of the solid waste permit and the DRGSW.

G. DSWA shall record a notation on the deed to the facility property, or on some other instrument that is normally examined during the title search, that will in perpetuity notify any potential purchaser of the property that the land has been used as a solid waste disposal site, and the use of the land is restricted under DRGSW.

H. Any permit renewal for the operation of the NWMC-2 shall include specific conditions for the closure of the facility to include all the items listed in conditions VII.B. through VII.G. above.

VIII. LANDFILL EXPANSION CONSTRUCTION:

A. The planning, design, and construction of the landfill expansion shall be consistent with the requirements of the DRGSW.

B. The expansion shall be constructed in accordance with the *Design Report Permit Document Revisions for Cherry Island Landfill Expansion Project*; dated June 2004 and revised May 2005, the approved *Technical Specifications* and the approved *Construction Quality Assurance Plan.* Revisions to these documents related to leachate or landfill gas collection and transmission, waste containment systems, foundation improvements, stormwater management systems, environmental monitoring systems or devices, or geotechnical monitoring systems or devices, shall require Department approval in writing or by documentation in the minutes of the construction progress meeting or similar record approved by the Solid and Hazardous Waste Management Branch.

C. DSWA shall submit a final report for the Departments approval, after construction has been completed and prior to the placement of solid waste outside of the current limit of disposal as shown on GeoSyntec Consultants, *Site Plan-Existing Conditions*, (Project ME0250, Drawing 3 of 89, dated April 3, 2003, and part of the *Permit Drawings for Landfill Expansion, contract SO1445NC,* and also contained in Volume 8, Appendix VIb-A of the permit application package). The final report shall certify that the construction of the cell was completed in accordance with the *Design Report Permit Document Revisions for Cherry Island Landfill Expansion Project*; dated June 2004 and revised May 2005, the approved *Technical Specifications*, *Construction Quality Assurance Plan*, and the Permit Drawings for Landfill Expansion (dated April 2003 and Revised May 2005). The final report will include conclusions regarding the structural stability the landfill. The final report shall be certified correct by the construction quality assurance engineer, who must be a Professional Engineer registered in Delaware. The DSWA shall not place wastes outside the current limits of disposal until the Department has provided its written

notification that the construction and the final report meet the requirements of the permit and the DRGSW.

Attachment: Table 1 Leachate Supplemental Parameters (Modified January 10, 2000)

PERMIT SYNOPSIS

January 6, 2006. Permit SW-06/01 was issued to the Delaware Solid Waste Authority for the continued operation of the NSWMC-2. This permit incorporates the requirements of, and replaces permit SW-01/01 and limits the height expansion of the landfill to 23 feet above the limits imposed by that permit.

RH: dtd
DSWA\Cherry Island Landfill\Permits\RH06002.doc

TABLE 1
LEACHATE SUPPLEMENTAL PARAMETERS
(Modified January 10, 2000)

1)	Antimony	58)	Methylene bromide (Dibromomethane)	115)	2-Methylnaphthalene
2)	Arsenic	59)	Methyl chloride (Chloromethane)	116)	2-Methylphenol (o-Cresol)
3)	Barium	60)	Methylene chloride (Dichloromethane)	117)	3/4 Methylphenol (m/p-Cresol)
4)	Beryllium	61)	Methyl iodide (Iodomethane)	118)	4-Chloro-3-methylphenol
5)	Cadmium	62)	4-methyl-2-pentanone	119)	2-Naphthylamine
6)	Chromium (Total)	63)	Styrene	120)	N-Nitrosodi-n-propylamine
7)	Cobalt	64)	1,1,2,2-Tetrachloroethane	121)	N-Nitrosodimethylamine
8)	Copper	65)	1,1,1,2-Tetrachloroethane	122)	N-Nitrosodiphenylamine
9)	Lead, Total	66)	Tetrachloroethene	123)	Naphthalene
10)	Magnesium	67)	Tetrahydrofuran	124)	Nitrobenzene
11)	Mercury	68)	Toluene	125)	Benzo (b) fluoranthene
12)	Molybdenum	69)	1,1,1-Trichloroethane	126)	2-Nitrophenol
13)	Nickel	70)	1,1,2-Trichloroethane	127)	4-Nitrophenol
14)	Silver	71)	Trichloroethene	128)	Pentachlorophenol
15)	Selenium	72)	Trichlorofluoromethane	129)	Phenanthrene
16)	Thallium	73)	1,2,3-Trichloropropane	130)	Phenol
17)	Tin	74)	Vinyl Acetate	131)	Pyrene
18)	Vanadium	75)	Vinyl chloride	132)	Pyridine
19)	Zinc	76)	Tot. Xylenes	133)	1,2,4-Trichlorobenzene
20)	Cyanide (Total)	77)	3,3'-Dichlorobenzidene	134)	2,4,6-Trichlorophenol (2,4,6 T)
21)	Sulfides	78)	1,2-Diphenylhydrazine	135)	Acrolein
22)	Phenols (Total)	79)	Acenaphthene	136)	o,p'-DDD
23)	Acetone	80)	Anthracene	137)	p,p'-DDD
24)	Acetophenone	81)	Benzidine	138)	4,4'-DDE
25)	Acrylonitrile	82)	Benzo (a) anthracene	139)	4,4'-DDT
26)	Benzene	83)	Benzo (a) pyrene	140)	2,4,5-T
27)	Benzyl Alcohol	84)	Benzo (g,h,i) perylene	141)	2,4,5-TP (Silvex)
28)	Bromochloromethane	85)	Benzo (k) fluoranthene	142)	2,4-D
29)	Bromoform	86)	4-Bromophenyl phenyl ether	143)	Aldrin
30)	Bromomethane	87)	Butylbenzyl Phthalate	144)	alpha-BHC
31)	Dibromochloromethane	88)	Ideno (1,2,3-cd) pyrene	145)	delta BHC
32)	Dichlorobromomethane	89)	Bis (2-chloroethoxy) methane	146)	beta-BHC
33)	2-Butanone	90)	Bis (2-chloroethyl) ether	147)	gamma BHC (Lindane)
34)	Carbon disulfide	91)	Bis (2-chloroisopropyl) ether	148)	alpha Endosulfan
35)	Carbon tetrachloride	92)	2-Chloronaphthalene	149)	beta Endosulfan
36)	Chlorobenzene	93)	2-Chlorophenol	150)	Endosulfan Sulfate
37)	Chloroethane	94)	4-Chlorophenyl Phenyl Ether	151)	2,4,5 Trichlorophenol
38)	Chloroform	95)	Chrysene	152)	Chlordane
39)	1,2-Dibromo-3-chloropropane	96)	Di-n-Butylphthalate	153)	Dieldrin
40)	1,2-Dibromoethane	97)	Di-n-octyl Phthalate	154)	Dimethoate
41)	1,2-Dichlorobenzene (ortho)	98)	Dibenz (a,h) anthracene	155)	Heptachlor
42)	1,3-Dichlorobenzene (meta)	99)	2,4-Dichlorophenol	156)	Heptachlor epoxide
43)	1,4-Dichlorobenzene (para)	100)	Diethylphthalate	157)	Endrin
44)	trans-1,4-Dichloro-2-butene	101)	2,4-Dimethylphenol	158)	Endrin Aldehyde
45)	1,1-Dichloroethane	102)	Dimethylphthalate	159)	Methoxychlor
46)	1,2-Dichloroethane	103)	2-Methyl-4,6-Dinitrophenol	160)	PCB-1016
47)	1,1-Dichloroethene	104)	2,4-Dinitrophenol	161)	PCB-1221
48)	1,2-Dichloroethene	105)	2,4-Dinitrotoluene	162)	PCB-1232
49)	cis-1,2-Dichloroethene	106)	2,6-Dinitrotoluene	163)	PCB-1242
50)	trans-1,2-Dichloroethene	107)	Bis(2-ethylhexyl)phthalate	164)	PCB-1248
51)	1,2-Dichloropropane	108)	Fluoranthene	165)	PCB-1254
52)	1,3-Dichloropropane	109)	Fluorene	166)	PCB-1260
53)	cis-1,3-Dichloropropene	110)	Hexachlorobenzene	167)	Toxaphene
54)	trans-1,3-Dichloropropene	111)	Hexachlorobutadiene	168)	2-Chloroethyl vinyl ether
55)	Diethyl Ether	112)	Hexachlorocyclopentadiene	169)	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
56)	Ethylbenzene	113)	Hexachloroethane		
57)	2-Hexanone (Methyl butyl ketone)	114)	Isophorone		