

US EPA ARCHIVE DOCUMENT

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

IN THE MATTER OF:

Clinton Landfill, Incorporated
Illinois Route 51 South,
Rural Route Number 2
Box 216L, Clinton, Illinois 61727

Corporate Address:

Clinton Landfill, Incorporated,
4700 North Sterling Avenue,
Peoria, Illinois 61612-9071

PERMITTEE

**CHEMICAL WASTE LANDFILL
APPROVAL TO DISPOSE OF
POLYCHLORINATED BIPHENYLS
ISSUED PURSUANT TO
40 CFR § 761.75**

AUTHORITY

This chemical waste landfill approval (Approval) is issued by the United States Environmental Protection Agency (U.S. EPA) pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) of 1976, Public Law No. 94-469, 15 U.S.C. 2605(e)(1), and the federal PCB regulations promulgated there under. The regulations pertaining to chemical waste landfills, 40 CFR § 761.75, require that landfills used for the disposal of PCBs and PCB Items be approved by the U.S. EPA Regional Administrator. U.S. EPA Headquarters Delegation 12-5 authorizes the re-delegation of approval authority for PCB disposal facilities to regional division directors. Under EPA Region 5 Delegation 12-5, dated October 22, 2007, the approval authority for PCB disposal facilities was delegated to the Director, Land and Chemicals Division, Region 5, U.S. EPA.

Any and all information required to be maintained under or submitted pursuant to this Approval is not subject to the requirements of the Paperwork Reduction Act of 1980, 44 U.S.C. Section 3501, *et seq.*, because such information is collected by U.S. EPA, Region 5 from the Permittee for the purpose of assuring compliance with this Approval.

EFFECTIVE DATES

This Approval is effective upon the signature of the Director of the Land and Chemicals Division, Region 5, U.S. EPA. Clinton Landfill, Inc.'s authorization to dispose of PCBs and PCB Items in the chemical waste unit at Clinton Landfill #3 under this Approval will be valid for a period of five (5) years, unless such authorization is suspended or revoked, as provided herein, or unless the time period is modified by U.S. EPA. Upon signature, the issuance of this Approval shall be considered a final agency action.

BACKGROUND

Clinton Landfill, Incorporated (CLI) owns and operates several adjacent landfills along Illinois 51, south of the city of Clinton, DeWitt County, Illinois. Clinton Landfill #3 consists of a 157 acre landfill operating under a RCRA Subtitle D permit for land disposal of solid waste, issued by the Illinois Environmental Protection Agency (IEPA) on June 22, 2007¹ (Subtitle D landfill). Clinton Landfill #3 currently accepts PCB bulk product waste in accordance with 40 CFR § 761.62(b).

On October 19, 2007, CLI submitted an application to U.S. EPA for approval to dispose of other regulated PCB waste. CLI proposes to create a Chemical Waste Unit (CWU) on 22.6 acres within the Subtitle D landfill. The CWU would consist of two cells (CWU 1 and CWU 2) with synthetic liners each with its own leachate collection system, independent from the remaining solid waste disposal area.

On August 21, 2008, U.S. EPA issued a Preliminary Notice of Deficiency (NOD) concerning CLI's application. On January 6, 2009, U.S. EPA issued a supplement to the NOD. The NOD and the supplement to the NOD cited the need for additional information on groundwater monitoring, methane recovery, potential pathways to Salt Creek or to the Mahomet Aquifer, Site properties, leachate disposal, waste acceptance, and financial assurance. U.S. EPA specifically requested an evaluation of the potential for groundwater impact to the major water resources, and identified the Mahomet Aquifer and the large area clay pan protecting it as deserving special attention.

On March 2, 2009, CLI responded to the NOD and supplemental letter, providing U.S. EPA with additional information. U.S. EPA has reviewed this information and consulted with the IEPA. U.S. EPA believes that technical deficiencies noted earlier have been fully addressed. Geologic and groundwater information from the State of Illinois and from other sources supports the findings described below.

On January 8, 2010, IEPA approved a modification of the RCRA Subtitle D permit for Clinton Landfill #3, allowing CLI to accept PCB remediation waste within the CWU.

DEFINITIONS

Unless otherwise expressly provided herein, terms used in this Approval which are defined in TSCA or in regulations promulgated under TSCA shall have the meaning assigned to them in TSCA or in such regulations. Whenever terms listed below are used in this Approval, the following definitions shall apply:

ANNUAL REPORTING PERIOD: A regulatory interval based on the calendar year.

¹ Clinton Landfill #3 also has a certificate approving operation of the landfill, issued by Dewitt County on October 17, 2002.

APPLICATION: “Application to Develop and Operate a Chemical Waste Unit Within the Permitted Clinton Landfill No. 3,” consisting of 4 volumes and two sets of drawings, submitted by CLI on October 19, 2007; and “Response to Preliminary Notice of Deficiency and Subsequent Supplemental Letter,” consisting of a 15-page letter, together with 10 attachments, submitted by CLI on March 2, 2009 and a 16-page list of groundwater monitoring locations at Clinton Landfill #3, dated Sept. 22, 2010.

AQUICLUDE: A geologic unit through which virtually no water flows, such as “silty clay hardpan” found below 650ft MSL and Vandalia Till, lower Glasford Formation, Illinoian Age. An aquiclude may show signs of flow into it or from it but shows no signs of flow through it.

AQUIFER: A geologic formation or group of formations or part of a formation that is capable of yielding a significant amount of groundwater to a well or spring such as the Weldon Springs/Peoria Silt Aquifer or the Mahomet Aquifer

AQUITARD: A saturated but poorly permeable bed or part of a formation that resists groundwater flow but leaks enough to provide signs of communication across it based on tests (i.e. chemical or pump tests) made upon units adjacent to it. Aquitard beds do not yield water freely to a well or spring but do transmit water. Examples include, Tiskilwa Formation till members and upper Glasford Formation till members, Berry Clay and Radnor Clay-Till.

ARTESIAN CONDITIONS: Those hydraulic conditions where water naturally rises to elevations above the geologic unit which hosts the water.

BATCH: A specific volume that is handled as a whole and is sampled in a representative way.

BERRY CLAY: A natural inorganic, sticky, low-plastic weathered Radnor Till clay upon which a recompacted clay pad was contoured for geosynthetic membrane overlayment and CWU construction.

CELL: A specially prepared and lined excavation into which PCB wastes are to be disposed at the Facility under this Approval.

CLAY PAN: A continuous, laterally extensive, relatively impermeable thick geological formation of high clay content material.

CLAY PAN #1: Exposed soil together with the uppermost clay-bearing geological unit at the Site. Clay Pan #1 includes several aquitard units and is topped by clay loam material and consists of the Wedron Group, Tiskilwa Formation and water saturated Mason Group units, Wisconsin Episode. The pan surrounds the CWU extending from the surface to its base at approximately 660 ft MSL.

CLAY PAN #2: Local hardpan, an aquiclude, a compressed clay loam identified through drill testing by a rapid increase, a doubling to quadrupling of soil strength starting at an elevation of approximately 650-660 ft MSL. The pan consists of pre-Wisconsin Episode geological units such as till-clays, ancient soils, thin silts and water-bearing sands and minor aquifers associated

with the Radnor Till. It also includes the Vandalia Till member of the lower Glasford Formation. The pan extends down from the base of the CWU approximately 170 feet to the top of the Mahomet Aquifer, Middle Banner Formation at approximately 490 ft MSL.

CLI: Clinton Landfill Inc.

CLINTON LANDFILL #3: The 157 acre landfill operating under a RCRA Subtitle D permit for land disposal of municipal solid waste issued by the IEPA on June 22, 2007, which also accepts PCB Bulk Product Waste in accordance with 40 CFR § 761.62(b), and in which the CWU is located.

CLOSURE: The cessation of the use of the CWU for the disposal of PCB waste and non-MSW wastes and the implementation of interim and or final caps in accordance with the Closure and Post-Closure Plan.

CLOSURE AND POST-CLOSURE PLAN: The plan submitted as Section 8 of the Application and any subsequent modifications approved by U.S. EPA.

COMPATIBILITY: No detectable changes to the physical properties of the liner when exposed to PCB wastes under the conditions of operation in the CWU.

CWU: Chemical Waste Unit, the PCB waste disposal area for disposal of all PCB Remediation Waste. The CWU consists of two sub cells that are designed to cover 22.6 acres within the TSCA-regulated perimeter of Clinton Landfill #3.

D: Deep; a label used to denote a monitoring well screened in "Organic Soil", see "Organic Soil"

DISPOSAL: The placement of PCB waste in the CWU and the operation and maintenance of the CWU in accordance with the Approval.

DOWNSTREAM: The direction that water goes based on water table maps and the determination of maximum negative hydraulic gradient from a water table map or based on interpretations integrating land forms, water elevations and geologic units.

DRY WEIGHT: The weight of a sample excluding the weight of the water in the sample for all solids and semi-solids and fluids with a concentration of more than five tenths (0.5) percent solids content.

FACILITY: The boundaries of the 269 acres property identified in the DeWitt County siting approval within which Clinton Landfill #3 and the CWU is located.

FACTORS OF SAFETY: A ratio of the maximum strength of a piece of material or a part to the probable maximum load to be applied to it. For example, in soil engineering, the strength of existing soil divided by the strength necessary in the soil to assure stability is the factor of safety. Ratios less than 1.3 are not allowed for seismic load conditions and ratios less than 1.5 are not allowed for long term static loads.

FINAL CLOSURE: Placement of a RCRA-compliant permanent cap system above waste that is contoured to meet requirements for final slope.

FINANCIAL ASSURANCE: The assuring of the payment for maintenance, oversight, monitoring and other necessary activities for the perpetual effectiveness and integrity of the landfill and all of its containment systems. For this Approval, financial assurance means, using the financial assurance mechanisms specified in 40 CFR §§ 761.65(g), 264.143, 264.145, and 264.151.

FREE LIQUIDS: Fluids that drain freely from waste with a water content above its field capacity.

GLASFORD FORMATION: Thick clay making up the upper part of Clay Pan #2 containing thin sands and minor aquifers that does or could supply water to as many as 125 borings and wells cataloged by the State of Illinois in a 3 mile radius of the CWU.

GRADIENT: The change in elevation of a water table, hydraulic head or hydrostatic pressure per foot of distance between two points connected by a flow line; in practice, hydraulic slope. Indicates the sense of groundwater flow, coming or going and the direction flow will go based on a water table map, an aquifer map, the presumption of flow, and an understanding of streamlines, aquicludes and aquitards; see upstream, downstream, sidestream.

GROUNDWATER TABLE: For saturated soil under unconfined conditions, i.e., “water table” conditions, the elevation of the free water surface; for saturated soil under confined conditions i.e., “artesian conditions”, the potential elevation of the free water surface.

GUMBOTIL: Sticky, grey, slow-draining, and leached sub-soils found at the Site and ancient compressed equivalent units such as Berry Clay.

HISTORICAL HIGH WATER TABLE: The elevation for top-of-sand for the Mahomet Aquifer, top-of-sand elevations in the vicinity of Clinton Landfill #3 are between 483 and 490 feet MSL.

HYDRAULIC CONNECTION: An artificial water flow path such as a ditch, drill hole or pipe.

HYDROLOGIC CONNECTION: Any natural surface water flow path.

HYDROGEOLOGIC CONNECTION: A groundwater flow path such as recharge or seepage flow.

IEPA: Illinois Environmental Protection Agency

INTERIM CLOSURE: Cessation of placement of PCB waste and any other authorized waste and placement of an interim clay-soil cap that resists erosion and infiltration..

INCIDENTAL LIQUID: Liquids generated from solid waste as a result of transport, including liquids from rain, snow, load separation or condensation [40 CFR § 761.60(a) (1)].

LEACHATE: Water that filters through waste including water escaping waste during solidification.

LEACHATE COLLECTION SYSTEM: Pipes, plastic drainage grids and sand layers located below the waste sloped and leading to leachate collection sumps such as the Primary Leachate Collection System and the Redundant Leachate Drainage Layer.

LEACHATE ESCAPE: Any material flowing out of the clean-out risers, man-ways or other hydraulic pathways from the CWU; and/or PCB contact water that crosses the waste isolation berm whether or not it leaves the storm water settling basins.

LIQUID PCB: A homogenous flowable material that contains PCBs and no more than 0.5 percent by weight of non-dissolved material and which is regulated for disposal under 40 CFR Part 761, Subpart D.

LOWER RADNOR TILL SAND: (M) A 1-2 foot thick water-sand sub-unit of the upper Glasford Formation at the base of the Radnor Till, host to 25-30 drinking water wells within a 5 mile radius of the CWU. The unit is located approximately 18 feet below the base of the CWU's lowest liner and hosts groundwater that is monitored before it disperses into recent valley fill of Salt Creek Valley.

MAHOMET AQUIFER: A large, wide, buried valley aquifer that occupies much of Dewitt County. The aquifer is protected from surface activity by 150-170 feet of relatively impermeable clay.

M: Middle; a label used to denote wells screened in lower Radnor Till Sand. See "Sentinel Zone".

MAJOR MODIFICATION: A material change in the design or operation of the CWU. Such changes include, but are not limited to any change in ownership; an increase in the disposal capacity of the landfill; any change in the manner of waste placement; any significant change to closure/post closure estimates or commitment; any change to the closure/post-closure plan; or cap replacement.

MINOR MODIFICATION: A minor change in the design or operation of the CWU. Such changes include, but are not limited to: changing the groundwater, leachate or air monitoring sites; changes to any portion of the leachate collection, detection, or removal system; changes to waste acceptance procedures; or minor adjustments to the annual closure/post closure cost estimate.

MSL: Mean Sea Level, the standard vertical datum for local U.S. Geological Survey 7 ½ minute topographic maps.

MSW LANDFILL: The municipal solid waste disposal area of Clinton Landfill #3.

OSHA: Occupational Safety and Health Agency.

OPERATOR: Any person who operates, controls, or supervises a chemical waste landfill.

ORGANIC SOIL: (D), The deepest monitored unit, a dark-gray organic clayey silty fine-grained saturated but poorly water-bearing sand, found below the lower Radnor Till Sand, encountered at an elevation of approximately 630 ft. MSL it underlies the CWU by 20-25 ft. marking the base of the water-bearing hard Radnor Till silt-sands of the upper Glasford Formation and the beginning of comparatively dry Vandalia hardpan of the lower Glasford Formation.

OWNER: Any person who owns or leases a chemical waste landfill.

PCB(s): Polychlorinated Biphenyl(s) – Any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance.

PCB BULK PRODUCT WASTE: Waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was ≥ 50 ppm PCBs.

PCB CONTACT WATER: Fluid known or assumed to have contacted PCB waste.

PCB REMEDIATION WASTE: Waste containing PCBs as a result of a spill, release, or otherwise unauthorized disposal, at the concentrations specified in 40 CFR § 761.3. PCB remediation waste includes soil, rags, and other debris generated as a result of any PCB spill cleanup.

PCB WASTE: All PCB bearing material that is subject to the disposal requirements of 40 CFR Part 761, Subpart D.

PEORIA SILT: Interglacial wind-blown deposits and loess soils of varying thickness, in the vicinity of the CWU, overlies the Wedron Group ice-contact tills as fine sand dune-field remnants now supplying water to extinct watercourses and aquifers such as at Weldon Springs.

PERCHED AQUIFER: A clay-enclosed sand body, water sand or aquifer, capable of producing water but which is found at a higher elevation than the historic regional water table; under confined aquifer conditions, a water-sand enclosed by clay that will produce a consistent free water surface corresponding to that sand only.

PERMITTEE: Clinton Landfill Incorporated. In the event of a transfer of ownership of the CWU, if U.S. EPA does not require the transferee to apply for a new PCB TSCA disposal approval, the transferee becomes the Permittee for purposes of this Approval.

PERPETUAL CARE: Maintenance, oversight, monitoring, inspections and any other care of the CWU which will last in perpetuity or until all PCBs are removed from the CWU.

PERPETUITY: An infinite amount of time unless otherwise determined by U.S. EPA.

POST-CLOSURE PERIOD: The period of time beginning when the final cap has been installed over the Facility, including the CWU.

PLACEMENT OF PCBs: The transfer of PCB waste from off-site vehicles to the CWU, compaction to proper density, recording load placement positions and elevations and covering the waste as appropriate.

PPM: A unit of measure, parts per million, used to establish regulatory thresholds for material under TSCA based on use of an appropriate gravimetric reporting methodology such as wet weight or dry weight.

PRIMARY LEACHATE COLLECTION SYSTEM: The network of drains and sumps resting above the inner synthetic geomembrane that collects leachate that drains from the waste.

R: Roxana Silt; a label used to denote a monitoring well designation, see “Roxana Silt”.

RCRA: Resource Conservation and Recovery Act

REDUNDANT LEACHATE DRAINAGE LAYER: A leak detection and collection and removal system, the network of drains, geo-grids, and sumps located between synthetic geomembrane layers, designed to detect leaks and to collect and remove leakage.

REVOCATION OF DISPOSAL AUTHORITY: Permanent removal of the Permittee’s authority to dispose of PCBs in the CWU.

ROXANA SILT: “R” on well labels. The uppermost of four monitored water-bearing geological units. The Roxana Silt overlies ancient Berry Clay gumbotil and consists of the remains of an interglacial lake-stream depositional system of the Mason Group process-control stratigraphic system now overlain by time-stratigraphic tills of Wisconsin Age ice processes. Roxana Silt is a 2-10 foot thick sandy silt “outwash” unit which may contain a high level of organic material, often associated with overlying darker Robein Silt (lacustrine/bog) member. May have sufficient water to be considered an “upper aquifer” but is shallow and dissected in the vicinity of the CWU where it is insufficient and not accessible for development.

S: Shallow; a monitoring well label used to denote monitoring wells screened in the upper Radnor Till Sand, a geological unit located below the CWU.

SEMI-ANNUAL REPORTING PERIOD: A chronological system denoted by the beginning of the first and seventh calendar months of the year.

SENTINEL ZONE: Any one of four monitored geologic units located adjacent to and below the

landfill; most importantly the lower Radnor Till Sand or “M” unit; also includes Organic Soil (“D”), Roxana Silt (“R”) and upper Radnor Till Sand (“S”).

SIDESTREAM: Locations with independent lines of flow, any point missed by movement along a streamline, a distance measured across stream lines; refers to locations that do not fall along a particular stream line/line of flow as determined by reference to flow directions derived from a water table map, or based on interpretations integrating land forms, water elevations and geologic units.

SIGNIFICANT RAINFALL: One half inch or more of rainfall in twenty-four hours.

SITE: Clinton Landfill #3, including the CWU.

SLOPE FAILURE: Any movement of waste that changes final grade or which interferes with daily operations.

SOLIDIFICATION: The use of an additive material that permanently changes the waste to prevent the release of water or chemicals under the expected physical effects of the landfill process such as compression and leaching.

SUSPENSION OF DISPOSAL AUTHORITY: Temporary removal of the Permittee’s authority to place waste in the CWU.

TSCA LINER: An extra geosynthetic membrane layer that supplements the standard requirements of hazardous waste cells; the third membrane of a double-lined geocomposite.

UPPER AQUIFER: The first water bearing zone encountered below ground level. At the Site, the upper aquifer consists of water-saturated sand and silt and high-organic members of the upper Glasford Formation but may include the Robein Silt of the Mason Group offsite and upstream of the CWU, does not include thin saturated silt or sands of the Wedron Group such as Tiskilwa Till, backfilled and plugged.

UPPER RADNOR TILL SAND: (S) Thin discontinuous silty sand unit that “makes water” upon excavation, found near top of Glasford Formation but below Berry Clay. Over-excavated if found and backfilled with plug clay.

UPSTREAM: The direction from which water comes, maximum positive gradient as determined from a water table map or based on interpretations integrating land forms, water elevations and geologic units.

WASTE ANALYSIS PLAN: The method by which waste is identified, solidified, segregated, and disposed of, as specified in Attachment 4 of the March 2009 Response to EPA, “Additional Information for the Chemical Waste Landfill”, dated Feb. 2009.

WATER TABLE: The elevation of a free-water surface at which the pressure is equal to and responsive to atmospheric pressure.

WATER SAND: Any discontinuous water-bearing sand seam such as the upper and lower Radnor Till Sands that can yield water in an amount suitable for use even if it does not fit standard definition of aquifer.

WET WEIGHT: Reporting based on a wet weight measurement for fluids with solids content less than five tenths (0.5) percent.

FINDINGS

Based on the Administrative Record for this Approval, U.S. EPA hereby makes the following findings:

The CWU will occupy approximately 22.6 acres in the S ½ of the SW ¼ of the SW ¼ of Section 11 and the N ½ of the NW ¼ of the NW ¼ of Section 14, Township 19 North, Range 2 East of the Third Principal Meridian. The CWU is 2 miles south of Clinton on State Route 51, in DeWitt County, Illinois.

The proposed CWU meets the technical requirements for chemical waste landfills used for the disposal of PCBs and PCB Items set forth at 40 CFR § 761.75(b), as follows:

1. SOIL: The soil onsite meets the TSCA requirements at 40 CFR § 761(b) (1):

The landfill Site is located in a thick, relatively impermeable formation. The proposed CWU is immediately surrounded and underlain by a large-area clay pan consisting of at least two geological formations, each of which is a clay pan hosting one or more clay members that are relatively impermeable. The clay pan is equivalent to or more protective than 4 feet of in-place soil having the following properties, a permeability equal to or less than 1×10^{-7} cm/sec, percent soil passing a No. 200 Sieve >30, a Liquid Limit > 30, and a Plasticity Index >15.

The large-area clay pan has been deemed protective enough that municipal drinking water for the town of Clinton can safely be drawn from wells in the Mahomet Aquifer, only a mile or so away from municipal sewage disposal ponds. Each unit (Clay Pan #1 and Clay Pan #2) extends laterally further than the proposed CWU. Although the Clay Pan units are relatively impermeable, they both host water-bearing sand zones and minor aquifers. Each clay pan is a significant barrier to vertical infiltration but allows minor horizontal seepage. Zones of horizontal permeability within the clay pan are not significant. The sands that form them are thin and discontinuous. Exploratory drilling reveals that known permeable units are thin or missing in the area where the CWU is to be located. Drilling results and excavation show the Tiskilwa Formation grey clay till at a depth of 10-20 feet and blue-gray Berry Clay found between the Tiskilwa Formation and the Radnor Till at an elevation of approximately 660 ft MSL are relatively sticky, semi-plastic water resistant gumbotils that are ideal for landfill use.

2. SYNTHETIC MEMBRANE LINER: The liners proposed in Section 3 of the Application meet and exceed TSCA requirements at 40 CFR § 761.75(b)(2):

Although neither the hydrologic or geologic conditions at the proposed CWU require use of a synthetic membrane liner, a multiple synthetic membrane liner system will be installed that meets TSCA criteria. The system is a compound liner and leachate control system that constitutes a multiply laminated “double-hull” type arrangement that includes three high density polyethylene geosynthetic membranes, (two full and one partial), each 60 mils thick, a bentonite clay layer between them for self sealing punctures and two separate leachate collection systems.

3. HYDROLOGICAL CONDITIONS: The proposed CWU meets the requirements set out at 40 CFR § 761.75(b)(3):

- A) The bottom of the proposed CWU will be above the historical high water table.
- B) The proposed CWU is not in a flood plain, shore land or groundwater recharge area.
- C) There is no hydraulic connection between the Site and standing or flowing surface water.
- D) The Site will have monitoring wells and leachate collection.
- E) The bottom of the landfill liner system will be at least fifty feet from the historical high water table.

4. FLOOD PROTECTION: The proposed CWU meets the requirements set out at 40 CFR § 761.75(b) (4):

- A) The Site is above the 100 year flood water elevation.
- B) The proposed CWU will have diversion structures capable of diverting all of the surface water runoff from a 24-hour, 25-year storm.

5. TOPOGRAPHY: The proposed CWU meets the requirements set out at 40 CFR § 761.75 (b) (5):

- A) The Site is located on the remains of a Wisconsin Age glacial till, the Wedron Group, at the edge of what is now a dissected prairie terrace. The Site extends south onto forested slope land with low to moderate relief. The southern facing slopes of the proposed CWU will be built upon slope land to become the uppermost sidewalls of Salt Creek Valley. The existing natural slopes at the Site are stable and show no signs of landslides or slumping in the past or indications of future instability.
- B) The slopes are expected to become more stable because the main cause of instability is to be reduced or eliminated. Existing seepage pathways will be cut out and remaining seepage pathways will be blocked by new landfills. Geotechnical studies modeling slope stability using soil mechanics show the chosen location for the CWU is stable and safe for the proposed construction. Modeling takes into account worst case conditions and shows the cell will be safe even if the waste and the soil below the cell

is saturated and subjected to a “worst reasonable case” seismic event, one having a 2% chance of occurring in 50 years. Enclosing soil around and below the cell will be improved. The holding capacity of the cell and its low rate of groundwater transmission will contribute to the overall protectiveness of the Site in a way that naturally compensates for any risks that might develop should water from any source ever accumulate within the CWU.

6. MONITORING SYSTEMS: The proposed CWU meets the requirements set out at 40 CFR § 761.75(b) (6) for:

Water Sampling:

- A) Background groundwater sampling for water bearing units and drinking water aquifers closest to the proposed CWU has been conducted and PCBs were not detected. Quarterly data for the following units was taken for 2 years and submitted with the Application:
- i) Roxana Silt (Sangamonian interglacial unit, part of Mason Group),
 - ii) lower Radnor Till Sand (upper Glasford Formation),
 - iii) Organic soil (correlative with Roby Silt Member of Glasford Formation),
- B) The lower Radnor Till Sand and three adjacent water-saturated but unproductive permeable zones of the upper Glasford Formation and Mason Group are heavily monitored as part of the conditions of the RCRA Subtitle D permit and will be monitored as part of this Approval. Groundwater flow in the lower Radnor Till Sand is southward toward Salt Creek Valley where potentiometry suggests it dissipates into valley-fill sediments of Salt Creek.
- C) The monitoring plan proposed in the Application is designed to test the closest and best connected drinking water bearing sands, the upper Glasford Formation units. The plan does so. It is a best-possible early warning system based on worst-case and most stringent assumptions.
- D) Monitoring of the more commonly used but topographically higher Weldon Springs/Peoria Silt water-table aquifer was not conducted because the aquifer is not connected with the landfill. The unit was entirely removed at the surface of the CWU. In addition, because the floor and sumps of the proposed CWU are topographically lower than the Weldon Springs/Peoria Silt aquifer, the landfill is not a threat to it.
- E) Monitoring the Mahomet Aquifer was considered but is not believed appropriate under RCRA or TSCA because it is neither the first nor the most sensitive water resource. It is not vulnerable to contamination because it is self-protected. A groundwater pathway from outside the bottom liner of the CWU to the Mahomet Aquifer is not reasonable to assert. Suppositions of risk or calculations of PCB travel times to it are based on ways that have not been found and means that cannot reasonably be expected.
- F) Direct groundwater sampling of the Mahomet for indications of leaks from the landfill cannot be effective because:

- i) groundwater geochemical modeling shows the absorptive properties of the clay soil will completely attenuate leak-indicator chemicals within 2-3 feet of the base of the cell, and
- ii) the volume of water in the Mahomet Aquifer is so huge it cannot help but dilute the concentration of any hypothetical leachate volume release stream to below the threshold of detection.

G) No surface watercourse will receive contact water runoff from the proposed CWU if the CWU is operated in accordance with the conditions of this Approval. Salt Creek has therefore not been designated for monitoring. Monitoring will be conducted for non-contact water perimeter ditches.

Groundwater Monitoring Wells:

H) Underlying earth materials are not homogenous, and uniformly sloping in one direction. Therefore, groundwater monitoring must include more than three sampling points. TSCA requirements for groundwater monitoring wells will be satisfied by installation of the monitoring wells specified in CLI's Illinois State Municipal Solid Waste Landfill Permit No. 2005-070-LF, as modified January 8, 2010.

7. LEACHATE COLLECTION: The proposed CWU meets and exceeds the requirements set out in 40 CFR § 761.75(b)(7):

- A) The sampling plan proposed in the Application meets requirements for periodic sampling and chemical analysis of leachate.
- B) The compound leachate collection system exceeds TSCA requirements. The combination of a three-layer clay-composite liner system used with a compound leachate collection system for a cell set in a double stacked large area clay pan greatly exceeds TSCA requirements.
- C) The use of a compound leachate collection system exceeds requirements because its use is intended to apply to worst-case conditions where semi-liquid waste will be disposed of in a lined pit excavated into permeable soil, however such is not the case.
- D) The disposal plan is a best-case situation. Semi-solid waste will be placed in a lined pit excavated into low permeability soil, consisting of relatively thick, homogenous, low permeability silty clays with relatively thin and water-poor sands all resting upon ancient hard glacial till formations that are relatively unsaturated and have been demonstrated to maintain hydrologic isolation over geologic time periods.
- E) In addition to leachate collection and removal of mobile PCBs by gravity dewatering, the proposed surcharge load of non-PCB/MSW waste can be expected to drive water from the waste and so create a consolidated matrix hosting immobile PCBs.

8. CHEMICAL WASTE LANDFILL OPERATIONS: The proposed CWU meets the

requirements set out at 40 CFR § 761.75(b) (8) in that the Application presents a detailed explanation of the required procedures for:

- A) Recordkeeping and maintenance of manifest records in accordance with the PCB regulations and State rules;
 - B) Surface water handling;
 - C) Excavation and backfilling;
 - D) Establishing waste segregation burial coordinates (use of a coordinate system to record the location of PCB wastes);
 - E) Using, inspecting, repairing, decontaminating and replacing equipment used to identify, monitor, track, transport, dispose, and confine PCBs;
 - F) Use of roadways; maintenance;
 - G) Inspection of the CWU, groundwater monitoring around the CWU, and analysis and disposal of water extracted from the Primary Leachate Collection System and from the Redundant Leachate Drainage Layer;
 - H) Checking waste material for compatibility, free liquids and conformance with TSCA limits on solidification of bulk liquids and placement of containerized bulk liquids;
 - I) Solidification of incidental PCB waste that fails the paint filter test within the cell;
 - J) Use of safety features which act to prevent releases, or spills to water, soils, or other cells and use of a worker training program which encompasses procedures for safety, record keeping, sampling and analysis and which will ensure compliance with applicable safety and health requirements and regulations;
 - K) Spill prevention, cleanup and emergency response procedures;
 - L) Rejection of ignitable wastes;
 - M) Maintenance of records including PCB concentration of all liquid wastes and the 3-dimensional burial coordinates of all PCBs and PCB Items.
9. SUPPORTING FACILITIES: The proposed CWU meets the requirements set out at 40 CFR § 761.75(b)(9) because of the following:
- A) The proposal to place a 6 foot tall woven mesh fence or equivalent around the Site meets the requirements of 40 CFR § 761.75(b)(9)(i);
 - B) The procedures proposed to prevent track-out of waste meet the requirements of 40 CFR § 761.75(b) (9) (ii);
 - C) The proposal to cover all waste at the end of each day meets the requirements of 40 CFR § 761.75(b) (9) (iii),
10. OTHER INFORMATION: U.S. EPA makes the following findings, based on additional information that it required CLI to submit in accordance with 40 CFR § 761.75(c) (2):
- A) Water Use, (close by wells):
 - i) Review of groundwater use shows there are groundwater users within a one mile radius of the landfill. However, there are no drinking water wells that are or can be influenced by the proposed CWU.

- ii) A detailed review was conducted for wells within a one mile radius around the proposed CWU. Well databases from the State of Illinois Geological Survey, Water Survey and Department of Public Health show most wells are protected by full depth casing. Most of those not listed as fully cased had been test borings, abandoned wells or wells to be closed and did not need evaluation. Five wells were found whose use and construction history could not be determined so they were evaluated as if they were not protected. Two deep “on-site” wells, 10-1 and 10-2 are located at Clinton Landfill #2 and one, 14-2 is “off-site” but controlled by CLI and not considered vulnerable. Wells 10-5, 10-6, 10-10, 10-12, could be vulnerable and were therefore evaluated for potential exposure pathways.
- iii) The deep wells, 10-1, 10-2, 10-5 and 10-10 as well as any others within a mile radius of the CWU and developed in the Mahomet Aquifer are safe. There is no contaminant pathway between the proposed site where the CWU is located and water drawn from the Mahomet Aquifer by any wells in the 1 mile radius area. The Mahomet Aquifer, as determined by drilling and water well construction, is at least 170 feet below the base of the CWU. The depth-to-aquifer is based on an evaluation of known well screen elevations in the 3 mile radius area that show water is consistently produced from elevations lower than 490 ft MSL. The aquifer is isolated and well protected by watertight clay that is continuous and capable of maintaining an artesian head of approximately 110 ft. Favorable conditions for continued use of the Mahomet Aquifer for drinking water are known to exist because the watertight clays of the overlying upper Banner/lower Glasford aquiclude is known to resist pressurized groundwater flow at loads of 50 pounds per square inch and because geochemical studies by the Illinois State Geological Survey, Institute of Natural Resource Sustainability, show isolation of the whole western Mahomet Aquifer. Indications are compelling. Fluids will not migrate from the CWU to the Mahomet Aquifer even under worst case hypothetical scenarios. Without migration, there can be no way for drinking water risks to develop.
- iv) The shallow wells, 10-6, 10-12 and 14-2, as well as any others within a mile radius of the CWU and developed in the Glasford Aquifer are safe. The potentially vulnerable wells draw from an elevation between 629 and 652 ft MSL, corresponding to known water-sands of the upper Glasford Formation on which the CWU is to be built. Well 14-2 is owned and controlled by CLI but is evaluated anyway. Although the water-sands supplying 10-6, 10-12 as well as CLI’s 14-2 appear equivalent to silt-sands in the vicinity of the proposed CWU, in no case is water produced by the wells vulnerable to contamination. The wells produce from silt-sand units that are equivalent to the monitored units at the CWU but contain water that is independent. The wells in question are neither “downstream” nor “upstream” of the CWU. They are “sidestream” of the CWU and are therefore never at risk. Groundwater flow around and below the CWU bypasses the wells in consideration but not the groundwater monitoring wells,

- B) Water Use (protection of wells): The groundwater monitoring system is designed to test water-sands no matter which way water might go. Groundwater monitoring wells are located at the perimeter of the CWU every 200-300 feet effectively providing control in all directions. Monitoring wells sample from units with the highest water table elevation, the lowest elevation and points in between for each of 4 units, wherever they are present. Consequently, any wells drawing from units at the same stratigraphic interval as do wells 10-6, 10-12 and 14-2, i.e. upper Glasford Formation water sands are not only protected by the IEPA/U.S. EPA all-direction monitoring system but by the strategic “downstream” hydrologic position of the CWU therefore:
- i) No water-wells are or can be installed “downstream” of the CWU in any meaningful way.
 - ii) Units closest to the CWU all flow toward Salt Creek Valley but provide insufficient flow to support springs.
 - iii) Water users who are south of the CWU are protected from even hypothetical contaminants in upper Glasford Formation water sands because Salt Creek removed the sands entirely such that users below the landfill, in Salt Creek for instance, must rely on the much better protected Mahomet Aquifer approximately 150 feet below the valley floor.
 - iv) Well 14-2 is physically separated from the CWU by a deep ravine and its water may be provided by an adjacent lake. It is entirely independent of the CWU.
- C) Water Use (protection of water sands surrounding CWU): The uppermost water sands, Weldon Group Tiskilwa Till sands, Glasford upper Radnor Till Sand and the Mason Group Roxana Silt unit (possibly corresponding to water sands developed for well 14-2) are not pathways of potential contamination from the CWU, they are the opposite. They flow toward the CWU and are nuisances if they seep into the landfill during construction. The sands will be over excavated and backfilled with plug clay to make a water resistant excavation and water will go around the CWU from then on. The Roxana Silt, a potentially significant water-sand that may provide drinking water in some areas offsite and “upstream” of the CWU cannot provide water near or “downstream” of the CWU. The unit is unprotected, discontinuous, too shallow for development and is fully dissected and drained in spots. It appears to have been selectively eroded out and drained as a result of spring sapping along the wetter stretches of the rim of Clay Pan #1 that appears likely to have generated a small ravine nearby within the planned disposal footprint of Clinton Landfill #3. There is no way for the CWU to impact Glasford, Mason or even potential Wedron drinking water resources because in the vicinity of the CWU there are no water resources to be developed.
- D) Water Use (protection of groundwater in general): The area of the proposed CWU was found to be within a 10-mile groundwater resource protection zone around the town of Clinton. The purpose of the groundwater protection zone is to maintain favorable artesian conditions for groundwater production. The proposed CWU will not impact anything that would change the artesian conditions. On-site CLI wells that draw from the Mahomet Aquifer are in compliance with protection zone requirements. Off-site

there are no indications that water resources are or will be at risk from contamination by PCBs as a result of proposed disposal activity at the CWU.

- i) Water-bearing unconsolidated units: such as permeable parts of the upper Glasford Formation, the Mason Group and the Wedron Group are protected by aquitards. The aquitards generally produce insignificant volumes of water although there are localized thickened sand bodies between them that are capable of producing quantities suitable for domestic purposes. Wells in the EPA 3 mile radius database are all topographically above, side-gradient or up-gradient of the proposed CWU. Review within the area included geologic units supplying wells around Weldon Springs State Park and the area south of Coon Creek. Other wells associated with Clay Pan water-bearing units are south of Salt Creek. They are protected by Salt Creek Valley cutting across the water-bearing units. The Mahomet Aquifer, approximately 170 feet below the lowest geomembrane of the CWU, is usually a significant water resource, but bedrock mapping indicates that the aquifer is locally significantly thinned. It is missing or very thin in wells as close as a mile away from the CWU. Groundwater flow in deep sands below the landfill is fully isolated from it. Water in the Mahomet is chemically and physically independent of the proposed CWU. It is completely isolated from surface water and shallow groundwater. Disposal of PCBs at the proposed Site would not impact natural resources of the Mahomet Aquifer or put any users at risk.
- ii) Water bearing bedrock units: The uppermost hard rock unit, possibly Millersville Limestone of Pennsylvanian age, is not a water resource. Easy access to the Mahomet Aquifer water usually overlying it directly renders bedrock water undesirable.

E) Coal Units: Coal resources are reported but there are no indications of any planned utilization within a mile radius of the facility. The State of Illinois reports indicate that coal-bearing units exist deep below the landfill but are not identified as being economically attractive in the foreseeable future.

F) Notices and Certifications:

- i) U.S. Fish and Wildlife Service certified that the proposed CWU is not located in an area that has rare, threatened or endangered species.
- ii) The Permittee has filed the document, "Notification of PCB Waste Activity," Form 7710-53 (12-89), and received the unique U.S. EPA waste identification number.

G) Permits and Licenses; Permittee has the following

- i) State of Illinois Clean Water Act, National Pollution Discharge Elimination Program (NPDES) Permit No. ILR-10M818, Notice of Coverage for General Construction Site Activities;
- ii) U.S. Corps of Engineers, "Wetland determination of non-regulation" under Section 404, March 13, 2002 by J. Sniadach, COE Rock Island IL;
- iii) "Permit-Not-Required", jurisdiction notification letter, Illinois Dept. of Natural Resources, April 13, 2001;

- iv) State of Illinois Solid Waste Landfill RCRA Subtitle D License Modification #9 Permit No. 2005-070-LF dated January 8, 2010.

CONDITIONS OF APPROVAL

SCOPE OF WORK AND SITE LOCATION

11. Under the authority of this Approval, disposal of PCBs and PCB Items, other than PCB Bulk Product Waste, must be carried out entirely within the CWU.
12. The Permittee is authorized to dispose of PCB waste at the CWU until 2,529,506 cubic yards of air space as specified in the design plans for the CWU is used such that planned grades of the interim and final caps can be met.
13. Solidification of PCB waste may only be conducted within the CWU and only if the Permittee can demonstrate by air monitoring or other data that PCBs are not or cannot be released.

CONSTRUCTION OF LANDFILL

14. Containment requirements for the CWU
 - A) Liners – The Permittee must install:
 - i) Three 60-mil thick, high density polyethylene (HDPE) synthetic membrane liners:
 - a) a primary liner fully covering the excavation,
 - b) a secondary liner fully covering the primary liner,
 - c) a tertiary liner covering the floor and part of the side slopes of the secondary liner;
 - ii) a low permeability high plastic bentonite clay composite mat under the tertiary liner designed to make the liner self sealing.
 - B) Chemical compatibility of liners:
 - i) The HDPE liners must be compatible with the waste and chemicals used for solidification purposes.
 - ii) The clay must be compatible with the waste and chemicals used for solidification purposes.
 - C) Padding – The Permittee must install the following special precautions to ensure the integrity of the liners is maintained:
 - i) adequate soil underlining and soil cover to prevent excessive stress on synthetic liners and drainage media, pipes or sumps;
 - ii) geotextile material over the primary liner, designed and placed to maintain the liner's integrity and prevent ruptures of synthetic liners, pipes or sumps;
 - iii) an underlining of three feet of smooth contoured recompacted clay fill and/or contoured natural Berry Clay.
 - D) Leachate collection :

- i) The Permittee must install a compound leachate collection system that includes:
 - (a) drainage media and leachate collection pipes and sumps;
 - (b) a redundant leachate collection layer.
- ii) The leachate collection system must have sufficient drainage capacity to ensure that fluids will not accumulate to a depth that exceeds one foot.

CHEMICAL WASTE LANDFILL OPERATIONS

15. The Permittee must:
 - A) accept waste in accordance with:
 - i) 40 CFR 761 Subpart D ,
 - ii) Special Conditions included in Section III.A of the modified Illinois Approval Permit no. 2005-707-LF Modification 9 dated January 8, 2010;
 - iii) U.S. EPA requirements that waste:
 - (a) is not putrescible,
 - (b) is not gas generating,
 - (c) does not liberate PCBs;
 - iv) interim closure authorization for the CWU;
 - v) closure of Clinton Landfill #3 including approved disposal of waste under:
 - (a) 40 CFR 761.62, Bulk Product Waste, and
 - (b) RCRA Subtitle D, Municipal Solid Waste;
 - B) inspect each load of waste material to be disposed in the CWU for conformance with 40 CFR Part 761 Subpart D, including but not limited to the ban on liquid PCBs in landfills;
 - C) inspect, compare and reconcile each load of waste with the manifest, the manifest requirements at 40 CFR Part 761 Subpart K, and the load inspection requirements of the Waste Analysis Plan.
16. Placement of waste:
 - A) The Permittee must dispose of wastes in a way that does not lead to slope failure of the waste or perimeter berm structures, and must follow the special precautions below:
 - i) factors of safety for waste material properties such as density, cohesion and friction angle must remain at or above 1.5 for static and 1.3 for seismic conditions,
 - ii) standing water must not be allowed to collect upon the waste,
 - iii) final slope inclinations must not exceed that proposed in Slope Stability Analysis, dated January 23, 2009, provided as Attachment 6 in the March 2, 2009 Notice of Deficiency response submitted by CLI.
 - B) Any waste that fails the RCRA paint filter test (SW-846 Method BL), other than incidental liquids, must be solidified.
 - C) Incidental water produced during transport must be disposed with the waste or otherwise handled according to the TSCA regulations.
 - D) PCB waste must not be placed anywhere in the CWU if it is incompatible with the geomembrane.
 - E) PCB wastes must not be placed on top of wastes that are warmer than ambient air temperature.

LEACHATE WATER COLLECTION MONITORING AND DISPOSAL

17. Dilution of leachate is prohibited.
18. All leachate/water with a PCB concentration of fifty (50) ppm or greater must be stored and disposed in accordance with 40 CFR Part 761, Subpart D.
19. The Permittee must monitor leachate in the CWU each month, upon commencement of waste placement in each cell, by:
 - A) observing standing leachate levels in the primary and redundant leachate collection sumps L311P and L311R for CWU-1 and L309P and L309R for CWU-2;
 - B) estimating depths of the leachate over the liners; and
 - C) Recording the observations and estimations for each sump.
20. The Permittee must remove leachate from the collection sumps if the level of leachate rises above the invert of the collection pipe(s) at its lowest point(s).
21. Liquid in the Primary or the Redundant Leachate Drainage Layer must not exceed a depth of more than one foot above the lowest liner.
22. The Permittee must report the monthly volume of leachate removed from each collection sump.
23. The Permittee must analyze the leachate removed from each collection sump over the course of a month for PCBs.
24. Prior to removal of leachate/fluids from the Chemical Waste Unit Leachate Storage Tank, the Permittee must characterize the material in the tank for transportation and disposal by using available monitoring data for that leachate/fluid including some or all of the following parameters:
 - A) PCB (using the maximum concentration of the monthly analytical results),
 - B) pH,
 - C) Specific Conductance,
 - D) Physiochemical characteristics necessary to characterize the leachate for on-site management or treatment and disposal.
25. Semiannually, if leachate is present, the Permittee must collect leachate samples from the Primary Leachate Collection System at monitoring point L309P for CWU-1 and L311P CWU-2 if constructed. Analyze a composite of the raw untreated samples for:
 - A) PCB,
 - B) pH,
 - C) Specific Conductance,
 - D) Volatile Organic Compounds,
 - E) Semi-Volatile Organic Compounds,
 - F) Physiochemical characteristics necessary to characterize the leachate for treatment and disposal.

26. The Permittee must collect a semiannual leachate sample from the Redundant Leachate Drainage Layer for CWU-1 at L309R and CWU-2 at L311R and must measure and test the semiannual samples for:
- A) quantity of water removed;
 - B) PCB;
 - C) sufficient physiochemical characteristics of the water produced in order to determine whether a leak of the membrane has occurred and to characterize the water for treatment and disposal.
27. If any leachate monitoring, sampling or analysis conducted under the IEPA RCRA Subtitle D permit of January 8, 2010, meets the requirements of this Approval, U.S. EPA will accept that data for satisfying the conditions of this Approval.

SURFACE WATER MONITORING

28. Discharge of PCB contact water is prohibited.
29. Surface water from Sediment Basin B must be sampled at the following frequencies:
- A) at least once prior to first placement of waste in the CWU;
 - B) at least every quarter after placement of waste in the CWU;
 - C) semi-annually following closure of the CWU;
 - D) If no water is present, a 6 part composite sediment sample must be collected from Sediment Basin B.
30. All surface water samples or composite sediment samples must be analyzed for:
- A) PCB,
 - B) pH,
 - C) Specific Conductance,
 - D) Chlorinated organics.
31. Analytical results for any surface water or sediment must be included in the annual report required under Condition 58 of this Approval.
32. If any surface water monitoring, sampling or analysis conducted under the Clean Water Act permit meets the requirements of this Approval, U.S. EPA will accept that data for satisfying the conditions of this Approval.

GROUNDWATER MONITORING

33. The Permittee must monitor groundwater semi-annually for chemistry and hydrology at the following groundwater monitoring wells:

A) Existing wells:

Monitor	Up	Up	Side	Down	Down	Down	Down	Down
Roxana Silt (R):				G08R	G09R	G10R	G11R	G12R
lower Radnor (M):	G01M		G08M		G09M	G10M	G11M	G12M
Organic Soil (D):	G01D	G02D		G08D	G09D	G10D	G11D	G12D

B) New wells (to be installed per plan (re: Administrative Record...AR-246-Table 812.317-1), prior to commencement of waste disposal for each phase of landfilling):

Monitor	Up	Up	Up	Side	Down	Down	Down	Down	Down	Down	Down	Side	Down	Down	Down
Roxana Silt (R)			G07 R		G39 R	G40 R	G47 R	G48 R	G49 R	G50 R	G51 R		G52 R	G58 R	G59 R
upper Radnor (S)			G07 S										G52 S		
lower Radnor (M)		G05 M		G39 M		G40 M	G47 M	G48 M	G49 M		G51 M	G52 M		G58 M	
Organic Soil (D)	G03 D		G07 D		G39 D	G40 D	G47 D	G48 D	G49 D	G50 D	G51 D		G52 D	G5 D	G59 D

Side-“gradient”, Up-“gradient”, Down-“gradient” of the CWU

34. The semi-annual groundwater samples must be monitored for the following parameters:

- A) pH
- B) PCB
- C) Specific Conductance
- D) Volatile Organic Compounds
- E) Semi-Volatile Organic Compounds

35. When a well is used to measure water level elevations, the well must not be purged or otherwise disturbed prior to measuring the static water level.
36. The Permittee must submit the results of the groundwater monitoring to U.S. EPA semi-annually. The information must include a map of all monitored sites, a hydrologic map with the PCB analytical results posted on the map, and groundwater potentiometric maps.

SURFACE AND SOIL MONITORING AND SPILL CLEANUP

37. Spills must be cleaned up following the PCB remediation waste regulations at 40 CFR § 761.61, or, if applicable, the PCB Spill Cleanup Policy at 40 CFR Part 761, Subpart G.
38. If the perimeter runoff control sediment basins are dry, a composite of six sediment grab samples from Sediment Basin B must be taken in lieu of water as required by the Surface Water Monitoring section of this Approval and analyzed for PCB.

AMBIENT AIR MONITORING

39. Ambient air monitoring for PCB must be conducted as follows: Sample points around the perimeter of the Clinton Landfill No.3 Chemical Waste Unit must be initially sampled for PCBs three times each year at times judged to be most likely to observe PCB emissions from the CWU. The sampling time should include at least one day just after sunset on a hot evening (in July or August) with low or no wind, and one high traffic day. The air sampling units must be located to capture the most dust possible over a 12 hour period. Provided none of the initial sampling events yield results exceeding the background levels, the Permittee may request that the sampling frequency be reduced to annually. If the sampling frequency is reduced to annually, but any periodic sample result exceeds the analytical limit of resolution, the Permittee will revert to the initial frequency until three consecutive sample results are below the limit of resolution. The sample sites are referenced in Figure 7-3 of the Application. These sample sites are designated:
 - A) AA-1
 - B) AA-2
 - C) AA-3
 - D) AA-4
40. The sampling and analytical methodology must use USEPA method TO-4 or equivalent. The analytical method must achieve a minimum method of detection limit of two hundredths micrograms per cubic meter ($0.02 \mu\text{g}/\text{m}^3$)
41. Twenty-four hour time-weighted average perimeter monitoring using a notification level of three tens micrograms per cubic meter ($0.3 \mu\text{g}/\text{m}^3$) is acceptable.

SAMPLING

42. All water sampling required under this Approval must follow the PCB monitoring procedures set forth at Appendix M of the Application. Any proposed changes to such

procedures must be submitted to U.S. EPA for approval.

ANALYSIS

43. The PCB levels for any soil or solid sample collected in accordance with this Approval must be determined by using:
- A) procedures identified by SW-846 method 3500B (or future USEPA updates) for organic extraction and sample preparation;
 - B) procedures identified by SW-846 Method 3600C (or future USEPA updates) for sample extract cleanup, when necessary/appropriate;
 - C) SW-846 Method 8082 (as updated by USEPA) for analytical measurement.

The results must be reported as total PCB, on a dry weight basis (103-105°C), calculated by comparison to Aroclor standards identified by SW-846 Methods 8082 when Aroclors are present. Identified Aroclors used for calculation of total PCB also are to be reported.

44. The PCB levels for any water or leachate must be determined by using:
- A) SW-846 Method 3500 (or future USEPA updated) for organic extraction and sample preparation;
 - B) procedures identified by SW-846 Method 3600C (or future USEPA updates) for sample extract cleanup, when necessary/appropriate;
 - C) SW-846 Method 8082 (as updated by USEPA) for analytical measurement.
45. The results must be reported as total PCB calculated by comparison to Aroclor standards identified by SW-846 Methods 8082. Identified Aroclors used for calculation of total PCB are also to be reported.
46. Chlorinated organics in surface water must be analyzed by using SW-846 Method 8260B and any reported 1, 2 dichloroethene must include the sum of both isomers (cis and trans).
47. Chlorinated organics in primary leachate must be analyzed by using SW-846 Method 8260B for the volatiles list and by SW-846 Method 8270C for the semi-volatiles list.
48. Any other test methods for analyzing leachate monitoring samples must be specified in SW-846.
49. Chlorinated organics in groundwater must be analyzed by using SW-846 Method 8260A.
50. Laboratory analytical reports must include all analytical results for each sample subject to analysis and provide an explanation for unquantifiable results.
51. Statistical reports must include error analysis.
52. Upon demand, the Permittee must give U.S. EPA sample material. U.S. EPA may spike this material and Permittee must arrange for their laboratory to analyze the spiked samples. The laboratory the Permittee uses must submit the sample results to U.S. EPA and to the Permittee at the same time

RECORDKEEPING

53. The Permittee must complete and maintain the records for each year by July 1 of the following year, in accordance with 40 CFR Part 761 Subpart J, including, but not limited to:
- A) signed and numbered manifests accompanying each PCB waste shipment;
 - B) any Certificates of Disposal generated or received; and
 - C) semi-annual reports of all monitoring data and annual reporting required by this Approval
54. The Permittee must complete and maintain a written annual document log in accordance with 40 CFR Part 761 Subpart J, including, but not be limited to, the following:
- A) the name, address, phone number, U.S. EPA identification number of the CWU and the calendar year;
 - B) the unique manifest number of every manifest and unmanifested shipment of PCB waste received or generated during the calendar year and from each manifest the following information:
 - i) each PCB container and a description of the contents of each PCB container, including waste weight or volume and if possible, an estimate of the amount of pure PCB contained,
 - ii) each PCB Article Container and a description of the contents of each PCB Article Container, such as pipes, electric motors, pumps, etc.,
 - iii) the date the all of the PCB waste listed on the manifest was removed from service, if known,
 - iv) the date all of the PCB waste listed on the manifest was disposed of.
 - C) the quantity and PCB concentration of all leachate with a PCB concentration at or greater than one ppm, and
 - D) the disposal destination of all leachate with a PCB concentration at or greater than one ppm.
55. All required documents must be collected and maintained at the facility for at least twenty (20) years after the CWU is no longer used for the disposal of PCB waste.
56. The required documents must be kept at one central location, and must be made available for inspection by authorized representatives of U.S. EPA.

REPORTING

57. Semi-annual reports must be submitted to U.S. EPA within sixty (60) days of the end of each six month period. The reports must include the following data:
- A) all water elevation data, water table maps for the monitored aquifer and a north-south cross section showing the landfill, monitoring wells, the monitored aquifers, Salt Creek and the Mahomet Aquifer and all respective potentiometric and hydrologic elevations;
 - B) leachate/water volume and analytical results from the primary leachate collection

- system and the redundant leachate drainage layer;
- C) a tabular summary of all analytical results of groundwater sampling;
 - D) all PCB air monitoring results;
 - E) a summary of the number of cubic yards and kilograms of PCB waste disposed of in the CWU for the semi-annual reporting period in addition to the requirements listed in 761.180(b)(3).
58. An annual report must be submitted to U.S. EPA by July 15 of each year for the previous calendar year and must include all data from the previous annual report cumulatively in electronic or paper format in a graphic or tabular form. The annual report must contain a summary of the annual disposal log records, annual records and the following information:
- A) sample site locations for leachate/water, groundwater, air, surface water, storm water and sediment samples must be posted/plotted on maps and cross sections;
 - B) a graphical time plot of all analytical data from groundwater quality sampling;
 - C) piezometric surface elevation contour maps and cross sections for each sampling event, showing the CWU, and indicating groundwater flow direction and estimated flow rates using groundwater flow nets;
 - D) a graphical time plot of all leachate/water analytical data produced from the primary leachate collection system and the redundant leachate drainage layer;
 - E) a summary of final PCB concentration of each batch of leachate/water treated on-site;
 - F) a graphical comparison between leachate quantity pumped/generated during the reported year and the leachate quantities pumped/generated from previous years together with the concentration, treatment method, and fate of leachate with greater than or equal to one ppm PCB as pumped from the cell;
 - G) a summary of the number of cubic yards and kilograms of PCB waste disposed of that year, in addition to the requirements listed in 761.180(b)(3);
 - H) cumulative graphical time plots for all environmental monitoring data;
 - I) closure and post-closure financial assurance estimates adjusted annually for the forthcoming thirty (30) years; and
 - J) any additional information as found reasonably necessary by the Regional Administrator or the Director of the Land and Chemicals Division, Region 5, U.S. EPA, in order to determine whether the authority to dispose of PCBs in the CWU under the Approval should be suspended or revoked.

NOTICE

- 59. The Permittee must submit to U.S. EPA a copy of all reports sent to the State of Illinois related to the CWU.
- 60. Within one working day, the Permittee must notify U.S. EPA by telephone of any incident, anomaly, or accident that may affect the Permittee's ability to meet conditions of the Approval or that has or may result in the release of PCBs to the environment. The Permittee also must provide a written notification of the occurrence within seven (7) days.
- 61. The Permittee must notify U.S. EPA by telephone and in writing on the same day that notification is provided to IEPA when an observed increase in monitored constituents is

determined according to the provisions of the Groundwater Monitoring section of the IEPA RCRA Subtitle D permit, Section VIII.

62. The Permittee must notify U.S. EPA by phone if monthly liquid volume produced from the Redundant Leachate Drainage Layer exceeds the mean value plus three (3) standard deviations calculated from the last two years records for the sample point.
63. Within one working day, the Permittee must notify the EPA by telephone of any perimeter air station sample result of three tenths micrograms per cubic meter ($0.3 \mu\text{g}/\text{m}^3$) of PCB or greater. The Permittee also must provide a written notification within seven (7) days.
64. For the one working day telephone notification, the Permittee must contact U.S. EPA Regional Office, RCRA Branch, at (312) 886-0838. For the seven (7) day written notification, the Permittee must contact the Division Director for Land and Chemicals Division:

U.S. Environmental Protection Agency
77 W. Jackson (L-8J)
Chicago, Illinois 60604
Fax: 312-886-5820

65. If there is slope failure, runoff basin overtopping event, a new spring or anything else which poses a potential for an unreasonable risk of exposure to humans, animals, or the environment, the event must be reported to the U.S. EPA Regional Office, RCRA Program Branch at (312) 886-6838 by telephone within one working day and in writing within 7 days. In addition, the Permittee must abide by any other federal, state and local reporting requirements.

SAFETY AND HEALTH REQUIREMENTS

66. U.S. EPA may require the Permittee to undertake operational changes if twenty-four (24) hour perimeter air monitoring samples exceed five tenths micrograms per cubic meter ($0.5 \mu\text{g}/\text{m}^3$) of PCB.
67. U.S. EPA may require the Permittee to stop work temporarily if twenty-four (24) hour perimeter air monitoring samples exceed one microgram per cubic meter
68. PCBs must not be found in the air at the CWU at levels that constitute unacceptable work conditions according to OSHA regulations at 29 CFR § 1910.1000 Table Z1.
69. PCB dust and fallout debris must not exceed 10 ppm PCBs in areas designated at the Facility as Level D for personal protective equipment requirements. Remediation may be required if the proposed personal sampling and testing methods show personnel at Level D protection are being exposed to PCB at levels greater than the allowed OSHA levels. If PCBs are found to exceed 10 ppm, the Permittee must follow 40 CFR § 761.61(a) or (c) for the cleanup of remediation waste.
70. The CWU and all PCB waste must be managed in such a way as to prevent odors from being noticeable off-site.

71. The Permittee must follow the inspection guidelines the Inspection and Maintenance Plan described in the Additional Information Volume, Attachment 4, of the Application.
72. To minimize exposure to PCB, workers must use the safety procedures and protective clothing described in the Additional Information Volume, Attachment 4, of the Application.
73. The Permittee must conduct training and comply with Waste Management Regulations, Policies and Procedures as listed in the Additional Information Volume, Attachment 4, of the Application.
74. The Permittee must implement the OSHA Hazard Communication Program listed in the Additional Information Volume, Attachment 4 of the Application.

CWU SECURITY AND SUPPORTING FACILITIES (40 CFR 761.75(b)(9)(i))

75. The CWU must be:
 - A) Secured to restrict public access such that:
 - i) a 6 foot woven mesh fence or equivalent is placed in such a way that there is no public access to the CWU; and
 - ii) the fence is maintained.
 - B) Operated to prevent track-out of waste.
 - C) Operated to prevent spills and windblown material.

COMPLIANCE WITH GOVERNMENTAL REQUIREMENTS

76. Nothing in this Approval relieves the Permittee from the duty to comply with all applicable state and federal laws, including, but not limited to CERCLA, RCRA and TSCA and the regulations promulgated there under.
77. Any knowing or persistent failure of the Permittee to comply with all applicable federal laws, regulations, requirements or orders could result in the revocation of the Permittee's authority to dispose of PCBs in the CWU under this Approval.

MODIFICATIONS

78. Any major modification of this Approval requires the written approval of the Director of the Land and Chemical Division, Region 5, U.S. EPA. If there is any question as to whether a change in operations is a major or minor modification, the Permittee should raise such question to the Agency as soon as possible. In such cases, the Agency will determine whether a proposed change is major or minor. No oral modifications shall be granted.
79. Any minor modification of the TSCA disposal operations and monitoring procedures requires written approval of the Chief, RCRA Branch, Land and Chemicals Division, Region 5, U.S. EPA. No oral modifications shall be granted.

INSPECTION

80. The Agency reserves the right for its employees and authorized representatives to perform inspections, review records, and take samples at the CWU at any reasonable time.

CLOSURE POST-CLOSURE

81. The Permittee must comply with the Closure and Post-Closure Plan as submitted in Section 8 of the Application as modified by the terms of this Approval.
82. PCB waste may not be disposed of in the CWU after a total of 2,529,506 cubic yards of airspace has been used in a way that complies with the design drawings D1-D22 of the Application and volume estimates in Volume IV Appendix L of the Application.
83. At least 60 days prior to the date on which it expects to begin interim closure of the CWU, the Permittee must notify in writing the Director, Land and Chemicals Division, U.S. EPA, Region 5. The date on which it expects to begin interim closure must be no later than 30 days after the CWU receives the final volume of PCB waste.
84. One hundred and eighty (180) days prior to interim closure of the CWU, the Permittee shall submit an updated Closure and Post-closure Plan to U.S. EPA. This written plan shall describe in detail how the CWU will be capped for interim and for final closure. The interim cap must resist erosion and infiltration. If MSW waste is placed upon it, the cap may be modified to allow infiltration of MSW waste leachate that is compatible with PCB waste. If separation of solids and full drainage cannot be maintained, U.S. EPA may require final closure of the CWU with alternate material. .
85. One hundred and eighty (180) days prior to final closure of the CWU, the Permittee shall submit an appropriate and updated Closure and Post closure Plan to U.S. EPA. The written plan shall:
- A) describe how the CWU will be capped during final closure;
 - B) describe the care that will be provided in perpetuity after closure;
 - C) provide an updated closure and post-closure cost estimate;
 - D) provide a demonstration of financial responsibility to care for the CWU;
 - E) provide perpetual post-closure care.
86. The Permittee must submit a written request for a modification to authorize a change in the approved interim or final closure and post-closure plan if:
- A) new facilities or changes in operations affect the respective closure and post-closure plan; or
 - B) Premature or routine closure activities affect the respective closure and post-closure plan.

87. In addition to recording a notation on the deed to the landfill property as provided in the Closure and Post-closure Plan, the Permittee shall execute and record in the County Clerk and Recorder's Office, DeWitt County, Illinois, an environmental covenant pursuant to the Illinois Uniform Environmental Covenants Act (765 ILCS 122/1 – 122/15), running with the land, that prohibits use of the CWU property in any manner that would interfere with or adversely affect the implementation, integrity or protectiveness of the closure measures to be undertaken in accordance with the Closure and Post-closure Plan, including;
- A) extracting, consuming, exposing, or using in any way groundwater in the Sentinel Zone underlying the CWU without the prior written approval of U.S. EPA;
 - B) undertaking any type of excavation on the CWU without the prior written approval of U.S. EPA;
 - C) allowing or conducting any residential use of the CWU; and
 - D) any other restrictions that U.S. EPA determines are necessary to ensure the protectiveness of the CWU.
88. Each and every reference to “the appropriate regulatory agency” in the Closure and Post-closure Plan shall be understood to mean the United States Environmental Protection Agency.
89. Any change to the quarterly inspection schedule set forth in Closure and Post-closure Plan must be approved in advance by U.S. EPA.

FINANCIAL ASSURANCE

90. Prior to acceptance of PCB waste, the Permittee must submit cost and contingency estimates based on 2011 cost data and demonstrate proof of and payment for financial assurance for closure and post closure of the CWU in an amount acceptable to U.S. EPA. The financial assurance must meet the requirements of 40 CFR § 761.65(g) and, as referenced and applicable, 40 CFR §§ 264.143, 264.145 and 264.151. Failure to do so may result in a suspension of the authority to dispose of PCBs in the CWU, or, if the CWU is closed, may subject the Permittee to penalties. The Permittee may elect to satisfy the financial assurance requirements for closure and post-closure by using a single mechanism, in accordance with 40 CFR 264.146.
91. The Permittee must maintain financial assurance for closure until release in accordance with 40 CFR § 264.143(i).
92. The Permittee must maintain financial assurance for post-closure in perpetuity.
93. The Permittee must adjust the closure and post-closure cost estimate(s) for inflation annually within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Paragraph 91 of this Approval. Adjustments must be made in accordance with 40 CFR §§ 264.142(b) and 264.144(b). This may require an

increase in the financial assurance funding mechanism.

94. The Permittee must revise the closure and/or post-closure cost estimate(s) no later than 30 days after a request to modify the closure and post-closure plan under Paragraph 85 of this Approval has been approved by the Director, Land and Chemicals Division in accordance with Paragraph 78 of this Approval, if the change in the closure and post-closure plan increases the cost of closure and/or post-closure. The revised closure and/or post-closure cost estimate(s) must be adjusted for inflation as specified in Paragraph 94 of this Approval.

OWNERSHIP TRANSFER

95. The Permittee must notify U.S. EPA, at least one hundred and eighty (180) days before transferring ownership of the CWU.
96. The Permittee must similarly notify State and local agencies of the transfer of ownership before transferring ownership of the CWU.
97. At least sixty (60) days before the transfer, the prospective transferee must submit to U.S. EPA:
 - A) a written statement identifying the name, address and telephone number of the transferee;
 - B) copies of the transferee's last four (4) years of federal income tax returns, including all schedules;
 - C) a notarized affidavit signed by the transferee which states that the transferee will abide by the Approval;
 - D) a listing of past environmental violations by the transferee, its employees or assigns;
 - E) the qualifications of the principals and key employees;
 - F) proof of financial assurance acceptable to U.S. EPA and funding in a manner similar to that set forth at 40 CFR 761.65(g).
98. If the transferee is required to apply for a new PCB TSCA disposal approval, the transferee must submit to the Director of the Land and Chemicals Division, Region 5, U.S. EPA a complete TSCA application for disposal, closure and post-closure care.
99. Should either the Permittee or transferee fail to provide U.S. EPA with the required written documentation of sale or transfer within the time required, the authority to dispose of PCBs under this Approval may be suspended or revoked.

BANKRUPTCY

100. In the event that the Permittee, or its successor or assigns, declare bankruptcy, the

Permittee must immediately provide written notice of such to the Director of the Land and Chemicals Division, Region 5, U.S. EPA.

COMMUNITY RIGHT-TO-KNOW

101. Within thirty (30 days) from the issuance of this Approval, the Permittee must determine if DeWitt County or other authorities wish to receive copies of any or all reports required to be submitted under the Approval. The Permittee must make arrangements with the officials to receive the semi-annual and annual reports. The Permittee must notify U.S. EPA of the decision.

SEVERABILITY

102. All terms and/or conditions of this Approval are severable. If any provision(s) of this Approval or any application of any provision, is changed, amended, or held invalid, the remaining terms and conditions will still be valid and not affected thereby.

PCB DISPOSAL AUTHORITY SUSPENSION AND REVOCATION

103. Failure to comply with any provision of this Approval, TSCA, and federal PCB regulations found at 40 CFR Part 761, or any other applicable federal, State or local requirements may constitute a sufficient basis for suspension of the Permittee's authority to dispose of PCBs in the CWU.
104. The authority to dispose of PCBs in the CWU under this Approval may be revoked if the Director of the Land and Chemicals Division, Region 5, U.S. EPA determines that the CWU poses an unreasonable risk to human health or the environment from PCBs.
105. Violations of any applicable Federal or State laws or regulations; failure to comply with the terms and Conditions of Approval herein; failure of Permittee to disclose all relevant information or facts to the Agency, or for any other reason which the Director of the Land and Chemicals Division, Region 5, U.S. EPA deems necessary to protect public health and the environment may result in the suspension or revocation of the Permittee's authority to dispose of PCBs in the CWU.
106. U.S. EPA reserves the right to impose additional conditions if the Agency has reason to believe that the CWU presents an unreasonable risk to health or the environment from PCB or if U.S. EPA issues new regulations or standards for chemical waste landfills.
107. In order to protect human health and the environment from an unreasonable risk of injury from PCBs, the Director of the Land and Chemicals Division, U.S. EPA may require the

removal of some or all of the PCBs disposed of in the CWU.

108. Violation of the Approval, TSCA, or the PCB regulations may subject Permittee to civil or criminal enforcement action and associated penalties.
109. The Permittee must ensure that its agents, assigns, employees and contractors comply with the conditions of this Approval.

APPROVAL EXPIRATION

110. The Permittee's authority to dispose of PCBs in the CWU will expire five (5) years after the date the Approval is executed by the Director, Land and Chemicals Division, Region 5, U.S. EPA. If the Permittee wishes to continue to dispose of PCBs in the CWU after the initial expiration date, the Permittee must submit a written request to the Director, at least one hundred and eighty (180) days prior to the expiration date. If the Permittee submits a timely notice of intent to continue disposal of PCBs, its authority to dispose of PCBs will remain in effect beyond the expiration date, until U.S. EPA issues a decision regarding the Permittee's request.

PCB DISPOSAL AUTHORITY REINSTATEMENT

111. The Director of the Land and Chemicals Division, Region 5, U.S. EPA may reinstate the Permittee's authority to dispose of PCBs in the CWU if EPA determines that unsafe practices or conditions have been eliminated.

WAIVER

-
112. U.S. EPA waives no requirements under 40 CFR § 761.75 (b).

APPROVAL (40 CFR § 761.75 (c))

113. In accordance with 40 CFR 761.75 and the Findings above, U.S. EPA has determined that the Permittee's Application is consistent with TSCA and the Federal PCB regulations at 40 CFR Part 761, and that the CWU, when operated in compliance with the conditions of the Approval, will not present an unreasonable risk of injury to health or the environment from PCBs. The Permittee's Application to construct a Chemical Waste Landfill for disposal of PCB Waste is hereby approved.
114. Approval to dispose of PCB waste in the CWU is hereby granted to the Permittee, subject to the conditions of the Approval expressed herein and consistent with the material and data included in the Application.

Bruce F. Sypniewski, Acting Director
Land and Chemicals Division
United States Environmental Protection
Agency, Region 5

Date: _____