Kearney

MANAGEMENT CONSULTANTS

A. T. KEARNEY, INC.

699 PRINCE STREET/P.O. BOX 1405
ALEXANDRIA, VIRGINIA 22313
703/836-6210
TWX 7108329824

Ms. Karen Schwinn
Regional Project Officer
U.S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, California 94105

January 8, 1984

Reference: EPA Contract No. 68-01-6515;
Work Assignment R09-009; IT Corporation,
Baker Facility, EPA I.D. No. CAD 08 968 0250

Dear Karen,

Enclosed are the results of the A. T. Kearney team RCRA permit application completeness check for the above referenced application. As you can see from the length of the comments, the application was seriously deficient.

Please call if you have any questions or concerns regarding the technical quality of the work.

Sincerely,

Kay M. Holub

Kay M. Holub
Manager

Enclosure

cc: S. Jackson, U.S. EPA
J. Grieve
S. Gorton
D. Arnold
G. Gers
J. Davies, Harding-Lawson

KMH/ss

IT Corporation - Baker Facility
CAD 08 968 0250
Completeness Check

A. PART A APPLICATION: 270.10(d), 270.11(a) and (d), 270.13

Submit a revised Part A application which corrects the deficiencies discussed in the following paragraphs.

The original Part A application indicates that storage and disposal impoundments with a capacity of 156,000,000 gallons are used to handle hazardous wastes at the facility. According to the Part B application, however, the impoundments have a capacity of 95,000,000 gallons. Explain the difference in impoundment capacity shown in the Part A and the Part B. Specify whether the difference is due to closure of impoundments.

According to the Part B, the impoundments are used to treat hazardous waste through solar evaporation. Only one impoundment will be used eventually for disposal. Therefore, Section III of Form 3 must be revised as follows:

- Replace process code S04 with process code T02
- Correct the design capacity shown for S04
- Replace the design capacity shown for process code D83 (total capacity of all impoundments) with the design capacity of the impoundment to be used for disposal.

In addition, Section III of Form 3 must indicate all other hazardous waste management processes (i.e., containers, tanks, waste piles, and landfill) which are used during treatment, storage, and disposal activities.

The wastes listed in Section IV of Form 3 of the original Part A application appear to be the wastes handled at the IT Corporation - Vine Hill facility, rather than the effluents piped from Vine Hill to Baker. The Part A must identify only the wastes actually handled at Baker.

When revising the list of wastes handled at the facility, include only wastes currently regulated by the U.S. EPA. The original Part A included the following waste streams, which have been deleted or suspended from 40 CFR Part 261:

F017
F018
K063
K074
K075
K078
K079
K080
K081
K082
K086
P055
P090
U013

Numerous wastes containing chlorinated hydrocarbons are identified on the Part A including U226 and U228. However, page states that no chlorinated hydrocarbons are accepted at the facility. Clarify this discrepancy and amend the Part A if appropriate.

B. FACILITY DESCRIPTION

B-2a General Requirements: 270.14(b)(19)

The federal regulations require that the Part B application include a topographic map showing the facility and a distance of 1,000 feet around it at a scale no greater than one inch equals 200 feet. This map must

show contours at intervals sufficient to indicate the pattern of surface water flow. Although Plate 1 is a topographic map showing contours, it is not at the correct scale, and the other plates are not topographic maps.

Provide a topographic map at the required scale. (It would be sufficient to revise Plate 4 to show contours.) The map must also show the following items, if applicable:

- o Injection and withdrawal wells (in addition to the monitoring wells)
- o Locations of all hazardous waste management units, including containers, tanks, waste piles, and landfills
- o Storm, sanitary, and process sewerage.

In addition, specify the location at which the wind data shown on page 8 of Volume I were recorded and the period of time over which the data were recorded.

B-2b Additional Requirements for Land Disposal Facilities: 270.14(c)(3), 270.14(c)(4), 264.95, 264.97

The topographic map must also show the following:

- o Waste management area boundaries
- o Proposed point of compliance as defined under §264.95
- o Extent of the plume of contamination that has entered the underlying groundwater from a regulated unit (if applicable).

C. WASTE CHARACTERISTICS

C-1 Chemical and Physical Analyses: 270.14(b)(2), 264.13(a)

For each hazardous waste to be stored, treated, or disposed at the facility, provide a description of the waste and its hazardous characteristics. Each waste stream must be identified separately along with

its correct EPA Hazardous Waste Number. A laboratory report detailing the chemical and physical analyses of a representative sample of each waste must be provided. Material safety data sheets may be submitted in lieu of chemical and physical analyses for the waste designated as "P" and "U" wastes (40 CFR §261.33). The chemical and physical analyses must provide all data/information necessary to properly treat, store or dispose of the waste, including information on incompatibility.

List all incompatible wastes, their resulting reactions and provide the references used to determine incompatibility and the reactions.

Identify which individual types of wastes go to which hazardous waste units.

C-1a Containerized Waste: 270.15(b)(1)

If containers of waste are to be stored in an area meeting the containment requirements of 40 CFR §264.175(c), provide test procedures and results or other documentation or information to show that the wastes do not contain free liquids.

C-1b Waste in Tanks: 264.191

Specify the maximum specific gravity of wastes to be treated in tanks.

C-2 Waste Analysis Plan: 270.14(b)(3), 264.13(b) and (c)

The waste analysis plan which has been submitted appears to be the plan for the Vine Hill facility and not the Baker facility. The waste analysis plan must detail the methodologies for conducting the analyses required to properly treat, store, or dispose of hazardous waste at the Baker facility. The plan must be amended to address the following deficiencies.

C-2a Parameters and Rationale: 264.13(b)(1)

List the parameters which will be analyzed for each waste (i.e., flash point, pH, toxic constituents, specific gravity, etc.) received at the Baker facility. Identify the rationale for selecting specific parameters.

C-2b Test Methods: 264.13(b)(2)

Table I.3.1 on page 93 of Volume I does not include flash point as a parameter. Since ignitable wastes are handled at the facility, explain the test method used to determine the flash points of ignitable wastes.

Test methods must be identified for each parameter specified in the wasted analysis plan. Revise Table I in accordance with the changes made to the plan in response to comment C-2a.

Many of the test methods listed in Table I on page 27 of Volume I are IT Corporation Analytical Methods. Demonstrate that these methods are equivalent to EPA's test methods identified in EPA document SW-846. (See 40 CFR §260.21.)

Specify the test methods that are used to determine whether the wastes in incoming containers are compatible with the container material.

C-2c Sampling Methods: 264.13(b)(3), 261 Appendix I

Specify the methods to be used to collect representative samples of each waste, including the methods to be used to collect heterogeneous wastes.

On page 24 of Volume I, the waste analysis plan states that samples of wastes are taken with a Coliwasa sampler. Since Coliwasa samplers should only be used to sample free flowing liquids and slurries, identify the sampling equipment that is used for solids.

C-2d Frequency of Analyses: 264.13(b)(4)

In addition to inspecting each load of incoming waste, identify the frequency with which the initial analysis (generator provided or IT's pre-disposal data) of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date.

C-2e Additional Requirements for Wastes Generated Off-Site: 264.13(c)

On page 90 of the application it is stated that materials are pumped directly from Vine Hill ponds to Baker without providing analysis first. The waste

analysis plan must detail the procedures used to inspect and/or analyze each movement of hazardous waste received at the facility (i.e., waste generated off-site including other IT facilities).

The waste analysis plan must state the procedures which will be used to determine the identity of each movement of waste managed at the facility. The present plan states that samples will be collected and analyzed for "all applicable parameters" and a few examples are provided. Revise the waste analysis plan to identify which parameters of each type of waste treated, stored or disposed of at the facility, will be tested for. Specify the number of samples to be taken for each movement of waste.

C-2f Additional Requirements for Ignitable, Reactive or Incompatible Wastes: 264.13(b)(6), 264.17

Describe the methods used to meet additional waste analysis requirements necessary for treating, storing, or disposing of incompatible wastes.

D. PROCESS INFORMATION

On page 88, the application states that containers and tanks will be used on occasion for waste treatment. It also states that, during pond cleaning, waste piles and landfilling may be used at the site.

As noted in the introductory general comments, the hazardous waste management permit will cover only hazardous waste processes actually in use at the facility. Processes that may be used will not be covered by the permit unless the permit application demonstrates that they will be designed, constructed, operated, and maintained in conformity with 40 CFR Part 264.

Therefore, with respect to the planned activities involving containers, tanks, waste piles, and landfills, submit the information discussed in the following comment sections:

- D-1, Containers
- D-2, Tanks
- D-3, Waste Piles
- D-6, Landfills.

D-1 Containers

If the containers used to store/treat hazardous waste will hold liquids or wastes containing free liquids, submit the information described in comments D-1a(1) - D-1a(4). If the containers will hold only wastes that do not contain free liquids, submit the information described in comments D-1b(1) - D-1b(4).

D-1a(1) Description of Containers: 264.171, 264.172

Provide the following information about the containers used to treat/store hazardous waste.

- o Approximate number of each type of container
- o Construction materials
- o Dimensions and useable volumes
- o DOT specifications or other manufacturer specifications
- o Liner specifications (if applicable)
- o Container condition (new, used, reconditioned)
- o Markings and labels.

D-1a(2) Container Management Practices: 264.173

Describe the container management practices used to ensure that hazardous waste containers are always kept closed during storage, except when adding or removing waste, and are not opened, handled, or stored in a manner that may cause them to rupture or to leak. Include a discussion of procedures for transporting containers across the facility, aisle space maintained between rows of containers, and, if containers are stored in more than one area, the maximum number, volume, and stacking height of containers in each area.

D-1a(3) Secondary Containment System Design and Operation: 270.15(a), 264.175(b)

Under the Part 264, Subpart I requirements for containers, a container storage area must be designed and operated to meet the requirments of §264.175(b).

The Part B permit application must demonstrate that a storage area meeting these secondary containment requirements exists or will be built. Provide design and profile drawings of the existing or planned container storage area(s), showing the secondary containment system. Indicate on the drawings the areas in which incompatible wastes will be stored, and show the aisle space configuration.

D-1a(3)(a) Requirement for the Base or Liner to Contain Liquids: 264.175(a)(1)

Demonstrate the capability of the base to contain liquids, including:

- Statement that base is free of cracks or gaps
- Demonstration of imperviousness of base to wastes and precipitation
- Base design and materials of construction
- Engineering evaluation of structural integrity of base.

D-1a(3)(b) Containment System Drainage: 270.15(a)(2), 264.175(a)(2)

The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids. If containers are elevated, describe the size and load bearing capacity of the pallets or other device on which the containers are stored.

D-1a(3)(c) Capacity: 270.15(a)(3), 264.175(b)(3)

Provide calculations which demonstrate that the containment system will have sufficient capacity to contain 10 percent of the volume of the containers or the volume of the largest container, whichever is greater. This demonstration must discuss the following:

- o Volume of largest container
- o Total volume of containers
- o Containment structure capacity
- o Volume displaced by containers and other structures in the containment system.

D-1a(3)(d) Control of Run-on: 270.15(a)(4), 264.175(b)(4)

Run-on into the containment system must be prevented, unless the collection system has sufficient excess capacity in addition to that required in the above paragraph to contain any run-on that might enter the system. Describe the dikes, berms, drainage system, etc., used to prevent run-on, or provide calculations demonstrating that the containment system has sufficient excess capacity to contain run-on. (A 24-hour/25-year storm event can be used as the basis for the calculations.)

D-1a(4) Removal of Liquids from Containment System: 270.15(a)(5), 264.175(b)(5)

Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in a timely manner to prevent overflow of the containment system. Describe the procedures and equipment used during liquids removal. Provide sump, pump, and piping drawings, if applicable. Specify the methods for determining whether the removed material is a hazardous waste and for handling it as such.

D-1b(1) Test for Free Liquids: 270.15(b)(1)

For areas that store containers of wastes that do not contain free liquids, the test procedures and results or other documentation or information must show that the wastes do not contain free liquids.

D-1b(2) Description of Containers: 264.171, 264.172

Provide the following information about the containers used to treat/store hazardous waste.

- Approximate number of each type of container
- Construction materials
- Dimensions and useable volumes
- DOT specifications or other manufacturer specifications
- Liner specifications (if applicable)
- Container condition (new, used, reconditioned)
- Markings and labels.

D-1b(3) Container Management Practices: 264.173

Describe container management practices used to ensure that hazardous waste containers are always kept closed during storage except when adding or removing waste, and are not opened, handled, or stored in a manner that may cause the container to rupture or to leak. Include a discussion of procedures for transporting containers across the facility, aisle space maintained between rows of containers, and, if containers are stored in more than one area, the maximum number, volume, and stacking height of containers in each area.

D-1b(4) Container Storage Area Drainage: 270.15(b)(2), 264.175(c)

Describe how the storage area is designed or operated to drain and remove liquids unless containers are otherwise kept from contact with standing liquids. If containers are elevated, describe the size and load bearing capacity of the pallets or other devices on which the containers are stored.

D-2 Tanks

D-2a Description of Tanks: 270.16, 264.191

Provide plan and profile drawings of the hazardous waste storage or treatment tank and tank structural supports. Provide all sizes and dimensions including: diameter, length-weld line to weld line, plate thickness, structural number sizes, bolt sizes and bracing. Detail connections to the foundation including base plate sizes, grouting and the support structures to the tank.

Identify the following information for each tank: identification number; vertical/horizontal/other; capacity in gallons (nominal, design and maximum operating capacities); age; design and operating conditions for pressure, temperature, corrosion allowance and specific gravity; tank material of construction; tank specifications (i.e., A.S.M.E., A.P.I., Underwriters, etc.); roof design; tank lining, if applicable; waste type to be stored in each tank; instrumentation (i.e., liquid level, pressure and temperature gauges, tank venting); overfill equipment, waste feed cut-off system or the freeboard maintained in open top tanks; pumping rates; previous use of tank (specify material handled and length of service).

D-2b Tank Corrosion and Erosion: 270.16(b), 264.192(a)

Document the existing shell thickness. Specify the actual or estimated corrosion and erosion rates. If an estimated rate is used, provide the basis for such a determination. Identify any other materials (i.e., treatment reagents) added to the storage/treatment tanks.

D-2c Tank Management Practices: 270.16(d) and (e), 264.192(b)

Describe the tank owner's or operator's operating practices and controls to prevent overfilling (such as a waste feed cut-off system or bypass system to a standby tank) and to maintain sufficient freeboard to prevent overtopping of uncovered tanks by wave or wind action or by precipitation.

Provide a piping and instrumentation digram (P&ID) indicating the following information, if applicable: each tank with its identification number; each process pipe with its identification number, material of construction, pressure rating code, and size; each valve, by means of a symbol that indicates the valve type; steam tracing and steam traps; and all instrumentation and interconnections between instruments and controls.

A process flow diagram (PFD) indicating the following type of information must also be submitted: each item of major equipment; the name of each item, identifying number, critical dimensions, performance requirements, and capacities; direction of waste stream flow, mass balance between inlet and outlet stream; the required pressure and temperature conditions for each item; flow rate and properties of each process stream; flow rate and conditions of supply for steam, cooling water and other utilities; and batch sizes and operating cycles for batch processes.

D-3 Waste Piles

D-3a List of Wastes: 270.18(a)

Provide a list of all hazardous wastes placed or to be placed in waste piles.

D-3b(1) Enclosed Dry Piles: 270.18(b), 264.250(c)

If an exemption is requested from the requirements to install a liner and leak detection system and the Subpart F groundwater monitoring requirements, demonstrate that neither run-off nor leachate is generated from the pile. The demonstration must address the following items.

D-3b(1)(a) Protection From Precipitation: 270.18(b), 264.250(c)

Demonstrate that the pile is inside or under a structure that provides complete protection from precipitation.

D-3b(1)(b) Free Liquids: 270.18(b), 264.250(c)(1)

Demonstrate that neither liquids nor materials containing free liquids are placed in the pile.

D-3b(1)(c) Run-on Protection: 270.18(b), 264.250(c)(2)

Demonstrate that the pile is protected from surface water run-on by the structure or in some other manner.

D-3b(1)(d) Wind Dispersal Control: 270.18(b), 264.250(c)(3)

Demonstrate how the pile design and operation controls wind dispersal of wastes.

D-3b(1)(e) Leachate Generation: 270.18(b), 264.250(c)(4)

Demonstrate that the pile will not generate leachate through decomposition or other reactions.

D-3b(2) Liner Exemption Request: 270.18(c)(1), 264.251(b)

If an exemption is requested from only the liner requirement, document the design and operating practices that will, in conjunction with local aspects, prevent the migration of hazardous constituents into ground or surface waters at any future time.

D-3c Liner Engineering Report: 270.18(c)(1), 264.251(a)(1)

For all new waste piles provide a description of the liner system, demonstrating that the flow of liquids through the liner(s) will be prevented. (Only existing portions of existing facilities are exempt from the liner requirements.)

D-3c(1) Liner Description: 270.18(c)(1), 264.251(a)(1)

Describe the type of liner, its material, USCS-type data for soil liners, the liner's thickness and, for synthetics, the manufacturer and the product's name.

D-3c(2) Liner Location Relative to High Water Table: 270.18(c)(1), 264.251(a)(1)

Provide data showing seasonal fluctuations in the depth to the water table and the location of the seasonal high water table in relation to the liner system.

D-3c(3) Calculation of Required Soil Liner Thickness: 270.18(c)(1), 264.251(a)(1)

For units utilizing a primary soil liner, demonstrate that the thickness of the soil liner is sufficient to retard liquid flow through it such that leachate would be wholly contained throughout the active life of the unit. Calculations using either numerical simulation techniques (unsaturated flow conditions) or D'arcy Law-derived transit time equations (saturated flow conditions) should be provided.

D-3c(4) Liner Strength Requirements: 270.18(c)(1), 264.251(a)(1)

Provide the results of calculations defining the minimum strength requirement for liners considering:

- Internal and external pressure gradients
- Stresses resulting from settlement, compression or uplift
- Climatic conditions (freeze-thaw stress)
- Installation stresses
- Operating stresses.

D-3c(5) Liner Strength Demonstration: 270.18(c)(1), 264.251(a)(1)

Provide data showing that the liner exceeds the calculated minimum strength requirement.

D-3c(6) Liner/Waste Compatibility Testing Results: 270.18(c)(1), 264.251(a)(1)

Provide the results of liner/waste compatibility testing demonstrating that liner strength and performance are still adequate after exposure to waste leachates. Both primary and secondary leachates should be used in this testing.

D-3c(7) Liner Installation: 270.18(c)(1), 264.251(a)(1)

Describe the procedures for installing the liner(s).

D-3c(7)(a) Synthetic Liner Seaming: 270.18(c)(1), 264.251(a)(1)

Describe the techniques to be utilized to bond membrane liner seams and the strength and chemical compatibility of the seams.

D-3c(7)(b) Soil Liner Compaction: 270.18(c)(1), 264.251(a)(1)

Describe the procedures for installing the soil liner and compacting the liner to achieve the desired permeability. Include the maximum height of lifts to be placed.

D-3c(7)(c) Installation Inspection/Testing Programs: 270.18(c)(1), 264.254(a)

Describe the inspection, monitoring, sampling and testing methods (and frequencies) to be employed during liner installation to assure that the liner system as installed meets the design requirements.

D-3c(8) Liner Coverage: 270.18(c)(1), 264.251(a)(1)(iii)

Demonstrate that the liner will be installed to cover all surrounding earth likely to be in contact with the waste or leachate.

D-3c(9) Liner Exposure Prevention: 270.18(c)(1), 264.251(a)(1)

Demonstrate that the liner will not be exposed to wind or sunlight or, if exposure is to be permitted, that such exposure will not result in unacceptable liner degradation.

D-3c(10) Synthetic Liner Bedding: 270.18(c)(1), 264.251(a)(1)

Demonstrate that sufficient bedding will be provided above and below the liner to prevent rupture during installation and operation.

D-3d(1) Liner Foundation Design Description: 270.18(c)(1), 264.251(a)(1)(ii)

Describe the liner foundation design and materials of construction. Describe the capability of the foundation to support any expected static and dynamic loadings.

D-3d(2) Subsurface Exploration Data: 270.18(c)(1), 264.251(a)(1)(ii)

The engineering characteristics of the foundation materials should be verified through subsurface explorations. These efforts should be described and may include:

- Test borings
- Test pits or trenches
- In situ tests
- Geophysical exploration methods.

D-3d(3) Laboratory Testing Data: 270.18(c)(1), 264.251(a)(1)(ii)

Results from sufficient index testing should be provided to classify the site materials. Other lab test data should be provided to evaluate the engineering properties of the foundation materials, particularly for strength, hydraulic conductivity, compressibility, and other important design parameters.

D-3d(4) Engineering Analyses: 270.18(c)(1), 264.251(a)(1)(ii)

Engineering analyses should be provided which are based on the data gathered through subsurface exploration and laboratory testing programs.

D-3d(4)(a) Settlement Potential: 270.18(c)(1), 264.251(a)(1)(ii)

Provide estimates of the total and differential settlement, including immediate settlement, primary

consolidation and secondary consolidation. Stresses imposed by liners, wastes and equipment should be considered.

D-3d(4)(b) Bearing Capacity and Stability: 270.18(c)(1), 264.251(a)(1)(ii)

Provide estimates of the bearing capacity and stability of the foundation, demonstrating that allowable bearing capacity will not be exceeded.

D-3d(4)(c) Potential for Bottom Heave or Blow-out: 270.18(c)(1), 264.251(a)(1)(ii)

Provide estimates of the potential for bottom heave or blow-out due to unequal hydrostatic or gas pressures.

D-3d(4)(d) Construction and Operational Loading: 270.18(c)(1), 264.251(a)(1)(ii)

Demonstrate that the foundation is capable of providing adequate support for construction equipment and operating equipment (e.g., dredges).

D-3d(5) Foundation Installation Procedures: 270.18(c)(1), 264.251(a)(1)(ii)

For installed foundations, provide a description of the foundation installation procedures.

D-3d(6) Foundation Installation Inspection Program: 270.18(c)(1), 264.251(a)(1)(ii)

Describe the inspection, monitoring, sampling and testing methods (and frequencies) to be employed during foundation installation to assure that the foundation as installed meets the design requirements.

D-3e Leachate Collection and Removal System: 270.18(c), 264.251(a)(2)

Provide information describing the design and operation of a system to collect and remove leachate from new portions of existing waste piles and from new waste piles.

D-3e(1) System Design and Operation: 270.18(c), 264.251(a)(2)

Describe the design features of the leachate collection and removal system and how the system will function to remove collected leachate in a timely manner. Describe the features that will prevent leachate depth over the liner from exceeding one foot.

D-3e(2) Chemical Resistance: 270.18(c), 264.251(a)(2)

Demonstrate that the leachate collection and removal system components are chemically resistant to the waste managed in the pile and the leachate expected to be generated.

D-3e(3) Strength of Materials: 270.18(c), 264.251(a)(2)

Demonstrate that system components are of sufficient strength and thickness to prevent collapse under expected static and dynamic loadings.

D-3e(4) Prevention of Clogging: 270.18(c), 264.251(a)(2)

Demonstrate that the system design and operation will prevent clogging throughout the active life of the pile.

D-3e(5) Installation: 270.18(c), 264.251(a)(2)

Describe the methods to be employed to install the leachate collection and removal system. Include a description of the inspection program to be implemented to assure installation in accordance with design requirements.

D-3e(6) Maintenance: 270.18(c), 264.251(a)(2)

Describe anticipated maintenance activities that will be used to assure proper leachate management system operation throughout the pile's expected active life.

D-3f Run-on Control System: 270.18(c)(2), 264.251(c)

Describe the system that will be used to prevent run-on onto active portions of piles.

D-3f(1) Calculation of Peak Flow: 270.18(c)(2), 264.251(c)

Identify the peak surface water flow expected to result from a 25-year design storm. Describe the data sources and methods used to make the peak flow calculation.

D-3f(2) Design and Performance: 270.18(c)(2), 264.251(c)

Describe the run-on control system design. Demonstrate that system design will prevent run-on from reaching active portions of the unit.

D-3f(3) Construction: 270.18(c)(2), 264.251(c)

Describe the methods to be employed to construct the run-on control system. Include descriptions of any construction inspection program to be utilized to assure construction in accordance with design requirements.

D-3f(4) Maintenance: 270.18(c)(2), 264.251(c)

Describe any maintenance activities required to assure continued proper run-on system operation throughout the unit's active life.

D-3g Run-off Control System: 270.18(c)(3), 264.251(d)

Describe the run-off control system to be used to collect and control run-off from active portions.

D-3g(1) Calculation of Peak Flow: 270.18(c)(3), 264.251(d)

Identify the total run-off volume expected to result from a 24-hour 25-year storm. Describe data sources and methods used to make the peak flow calculation.

D-3g(2) Design and Performance: 270.18(c)(3), 264.251(d)

Describe the run-off collection and control system design. Demonstrate that the system has sufficient capacity to collect and hold the total run-off volume calculated in D-3g(1).

D-3g(3) Construction: 270.18(c)(3), 264.251(d)

Describe the methods to be employed to construct the run-off collection and control system. Include descriptions of any construction inspection program to be employed to assure construction in accordance with design requirements.

D-3g(4) Maintenance: 270.18(c)(3), 264.251(d)

Describe any maintenance activities required to assure continued proper run-off system operation throughout the unit's active life.

D-3h Management of Collection and Holding Units: 270.18(c)(4), 264.251(e)

Describe how collection and holding facilities associated with run-on and run-off control systems will be emptied or otherwise managed expeditiously after storms to maintain system design capacity.

D-3i Control of Wind Dispersal: 270.18(c)(5), 264.251(f)

If the pile contains any particulate matter which may be subject to wind dispersal, describe how the pile is covered or otherwise managed to control wind dispersal.

D-3j Double-Liner Exemption: 270.18(d), 264.252

If an exemption from the Subpart F groundwater monitoring requirements is sought, provide design data for a double-liner system incorporating a leak detection system between liners and a leachate collection and removal system above the top liner (liners should be described in D-3c and leachate collection/removal systems in D-3e).

D-3j(1) Leak Detection System Design: 270.18(d), 264.252(a)(3)

Describe the design of the leak detection system and the materials of construction.

D-3j(1)(a) Grading: 270.18(d), 264.252(a)(3)

Demonstrate that the leak detection points are appropriately located. Show that the drainage media in which the leak detection system is to operate is appropriately graded to assure that leakage at any point in the liner system could be detected.

D-3j(1)(b) Pipe Network Spacing: 270.18(d), 264.252(a)(3)

If a pipe network is utilized to collect leakage, describe the layout and spacing of that network.

D-3j(1)(c) Pipe Material Strength: 270.18(d), 264.252(a)(3)

Demonstrate that any piping utilized between the liners will have sufficient strength to prevent collapse from anticipated static and dynamic loadings.

D-3j(1)(d) Pipe and Pipe Perforation Sizes: 270.18(d), 264.252(a)(3)

If a piping network is utilized, demonstrate that pipe and pipe perforation sizes are sufficient to allow free liquid access to the drainage system yet avoid clogging of the perforations and pipes by the drainage media.

D-3j(1)(e) Drainage Media Specifications and Performance: 270.18(d), 264.252(a)(3)

Demonstrate sufficient gradation of drainage media and filter materials to allow free liquid access to leak detection points or piping system. Demonstrate that drainage media thickness and hydraulic conductivity allow sufficient head to promote drainage.

D-3j(2) Leak Detection System Operation: 270.18(d), 264.252(a)(3)

Demonstrate that the leak detection system operation will provide for timely detection of liquids entering the space between the liners. Describe automated system features and any required operator interactions or monitoring.

D-3k Subpart F Exemption for Inspectable Piles: 270.18(d), 264.253

If an exemption from the Subpart F groundwater monitoring requirements is sought for an inspectable pile, provide design data for a liner and a leachate collection and removal system (described in D-3c and D-3e, respectively).

Describe the procedures for periodic removal of wastes from the pile to allow for inspection of the liner.

D-31 Treatment Within the Pile: 270.18(f)

If any treatment is accomplished in the pile, provide the following descriptions.

D-31(1) Treatment Process Description: 270.18(f)

Describe the process by which wastes are treated and the effect of the treatment on the wastes.

D-31(2) Equipment Used: 270.18(f)

Describe any equipment or other materials required to initiate or promote treatment.

D-31(3) Residuals Description: 270.18(f)

Describe the nature and quantity of the wastes remaining in the pile after treatment is complete.

D-4 Surface Impoundments

D-4a List of Wastes: 270.17(a)

The list of wastes provided in Volume I, Table I-2-1 is a list of materials which are acceptable for receipt but not necessarily the wastes which are placed in the Baker site. Table I-2-2 lists the hazardous wastes which were received at the Vine Hill Processing facility in 1982. Provide a list of all hazardous wastes placed or to be placed in surface impoundments at the Baker facility.

D-4e(3) Water Balance Study: 270.17(b)(2), 264.221(c)

The water balance study presented in Volume II, Attachment 5 shows a capacity versus time curves for various rainfall return frequencies. The rainfall amounts are based on a given year's accumulation, not on any particular storm. Provide the results of water balance studies showing that adequate freeboard will be available following a 100-year/24-hour storm unless foolproof controls are employed to prevent overtopping.

D-4e(4) Freeboard Requirements: 270.17(b)(2), 264.221(c)

Freeboard requirements associated with normal and extreme wind activity should be determined unless automatic controls are utilized and freeboard equals or exceeds two feet. The water balance presented accounts for accumulative receipt of wastes and precipitation accumulation. Provide run up due to wind/wave within ponds to show that adequate freeboard exists under extreme wind activity.

D-4f(1) Engineer's Certification: 270.17(e), 264.226(c)

The application contains Attachments 2 and 7 which present summaries of the compaction control during the construction of Pond A levees and the raising of the levees of Ponds B and C. The consulting engineers' reports summarize that the earthwork was done in accordance with the specifications. Attachment 3 provides a slope stability analysis report for Pond D perimeter levees. This report concludes that the perimeter levees are expected to be generally stable against slope failure under static and seismic loadings. These reports do not present written certification of structural integrity. Furthermore, no mention is made of Pond E. Provide written certification by a qualified engineer attesting to the structural integrity of all dikes.

D-4f(2) Dike Design Description: 270.17(b)(3), 264.221(d)

A general levee design is presented in Volume II, Attachment 1. This is a memorandum for the initial site evaluation only and does not include actual "as-built" design information. Cross-sectional drawings

included within the slope stability studies for Pond D levees are provided in Volume II, Attachment 3. It is not clear whether or not these are idealized levee cross-sections or representative of actual design features. Attachment 4 of Volume II describes the "average" levee dimensions. Apparently no "as-builts" have been provided in the application and a slope stability analysis has been performed only for the Pond D perimeter levees. Provide data and/or drawings specifying design layout of the dikes and their components including materials of construction. Determine the capability of the dikes to withstand failure from expected static and dynamic loadings and the effects of erosion.

D-4f(3) Erosion Protection: 270.17(b)(3), 264.221(d)

Provide a demonstration that the dikes are designed and constructed to minimize erosion and prevent failure due to excessive erosion. These demonstrations should consider the erosion potential from rainfall, surface water run-off, any contact between impounded wastes and the dikes, and potential leakage through the dikes. Describe procedures for correcting erosion problems identified during the units' operating life.

D-4f(5) Stability Analyses: 270.17(b)(3), 264.221(d)

Volume II, Attachment 1 describes the general soil conditions, presents engineering properties of the subsurface soils, and provides general levee design recommendations but does not indicate whether or not any analyses were performed for bearing capacity or settlement. Provide a description of, and the results from, stability analyses for the following conditions:

- Foundation soil bearing failure or settlement
- Failure in the dike slopes.

D-4f(6) Strength and Compressibility Test Results: 270.17(b)(3), 264.221(d)

Reports presented in Volume II, Attachments 3 and 4 provide permeability data based on field and laboratory testing of the dike materials. These reports do not provide strength or compressibility test data of the dike materials. Provide results of strength and compressibility tests on the dike materials together with a description of the sampling procedures and test methods.

D-6 Landfills

D-6a List of Wastes: 270.21(a)

Provide a list of all hazardous wastes placed or to be placed in landfills.

D-6b Exemption Request: 270.21(b)(1), 264.301(b)

If an exemption is requested from the requirements for new landfills to install a liner and leachate collection and removal system, document the design and operating practices that will, in conjunction with local aspects, prevent the migration of hazardous constituents into ground or surface waters at any future time.

D-6c Liner Engineering Report: 270.21(b)(1), 264.301(a)

Provide a description of the liner system, demonstrating that any flow of liquids into and through the liner(s) will be prevented. Only existing portions of existing facilities are exempt from the liner requirements.

D-6c(1) Liner Description: 270.21(b)(1), 264.301(a)

Describe the type of liner, its material, the liner's thickness, and the manufacturer and the product's name.

D-6c(2) Liner Location Relative to High Water Table: 270.21(b)(1), 264.301(a)

Provide data showing seasonal fluctuations in the depth to the water table and the location of the

seasonal high water table in relation to the liner system.

D-6c(3) Liner Strength Requirements: 270.21(b)(1), 264.301(a)

Provide the results of calculations defining the minimum strength requirement for liners considering:

- Internal and external pressure gradients
- Stresses resulting from settlement, compression or uplift
- Climatic conditions (freeze-thaw stress)
- Installation stresses
- Operating stresses.

D-6c(4) Liner Strength Demonstration: 270.21(b)(1), 264.301(a)

Provide data showing that the liner exceeds the calculated minimum strength requirement.

D-6c(5) Liner/Waste Compatibility Testing Results: 270.21(b)(1), 264.301(a)

Provide the results of liner/waste compatibility testing demonstrating that liner strength and performance are still adequate after exposure to waste leachates. Both primary and secondary leachates should be used in this testing.

D-6c(6) Liner Installation: 270.21(b)(1), 264.301(a)

Describe the procedures for installing the liner(s).

D-6c(6)(a) Synthetic Liner Seaming: 270.21(b)(1), 264.301(a)

Describe the techniques to be utilized to bond membrane liner seams and the strength and chemical compatibility of the seams.

D-6c(6)(b) Installation Inspection/Testing Programs: 270.21(b)(1), 264.303(a)

Describe the inspection, monitoring, sampling and testing methods (and frequencies) to be employed during liner installation to assure that the liner system as installed meets the design requirements.

D-6c(7) Liner Coverage: 270.21(b)(1), 264.301(a)(1)(iii)

Demonstrate that the liner will be installed to cover all surrounding earth likely to be in contact with the waste or leachate.

D-6c(8) Liner Exposure Prevention: 270.21(b)(1), 264.301(a)(1)(i)

Demonstrate that the liner will not be exposed to wind or sunlight or, if exposure is to be permitted, that such exposure will not result in unacceptable liner degradation.

D-6c(9) Synthetic Liner Bedding: 270.21(b)(1), 264.301(a)(1)(i)

Demonstrate that sufficient bedding will be provided above and below the liner to prevent rupture during installation and operation.

D-6d(1) Liner Foundation Design Description: 270.21(b)(1), 264.301(a)(1)(ii)

Describe the liner foundation design and materials of construction. Determine the capability of the foundation to support any expected static and dynamic loadings.

D-6d(2) Subsurface Exploration Data: 270.21(b)(1), 264.301(a)(1)(ii)

The engineering characteristics of the foundation materials should be verified through subsurface explorations. These efforts should be described and may include:

- Test borings

- o Test pits or trenches
- o In situ tests
- o Geophysical exploration methods.

D-6d(3) Laboratory Testing Data: 270.21(b)(1), 264.301(a)(1)(ii)

Results from sufficient index testing should be provided to classify the site materials. Other lab test data should be provided to evaluate the engineering properties of the foundation materials, particularly for strength, hydraulic conductivity, compressibility, and other important design parameters.

D-6d(4) Engineering Analyses: 270.21(b)(1), 264.301(a)(1)(ii)

Engineering analyses should be provided which are based on the data gathered through subsurface exploration and laboratory testing programs.

D-6d(4)(a) Settlement Potential: 270.21(b)(1), 264.301(a)(1)(ii)

Provide estimates of the total and differential settlement, including immediate settlement, primary consolidation and secondary consolidation. Stresses imposed by liners, wastes and equipment should be considered.

D-6d(4)(b) Bearing Capacity and Stability: 270.21(b)(1), 264.301(a)(1)(ii)

Provide estimates of the bearing capacity and stability of the foundation, demonstrating that allowable bearing capacity will not be exceeded.

D-6d(4)(c) Potential for Bottom Heave or Blow-out: 270.21(b)(1), 264.301(a)(1)(ii)

Provide estimates of the potential for bottom heave or blow-out due to unequal hydrostatic or gas pressures.

D-6d(4)(d) Construction and Operational Loading: 270.21(b)(1), 264.301(a)(1)(ii)

Demonstrate that the foundation is capable of providing adequate support for construction equipment and operating equipment (e.g., dredges).

D-6d(5) Foundation Installation Procedures: 270.21(b)(1), 264.301(a)(1)(ii)

For installed foundations, provide a description of the foundation installation procedures.

D-6d(6) Foundation Installation Inspection Program: 270.21(b)(1), 264.301(a)(1)(ii)

Describe the inspection, monitoring, sampling and testing methods (and frequencies) to be employed during foundation installation to assure that the foundation as installed meets the design requirements.

D-6e Leachate Collection and Removal System: 270.21(b)(1), 264.301(a)(2)

Provide information describing the design and operation of a system to collect and remove leachate from new portions of landfills.

D-6e(1) System Design and Operation: 270.21(b)(1), 264.301(a)(2)

Describe the design features of the leachate collection and removal system and how the system will function to remove collected leachate in a timely manner.

D-6e(2) Maximum Leachate Head: 270.21(b)(1), 264.301(a)(2)

Describe the design and operating features that will prevent leachate depth over the liner from exceeding one foot.

D-6e(3) Chemical Resistance: 270.21(b)(1), 264.301(a)(2)

Demonstrate that the leachate collection and removal system components are chemically resistant to the waste managed in the landfill and the leachate expected to be generated.

D-6e(4) Strength of Materials: 270.21(b)(1), 264.301(a)(2)

Demonstrate that system components are of sufficient strength and thickness to prevent collapse under expected static and dynamic loadings.

D-6e(5) Prevention of Clogging: 270.21(b)(1), 264.301(a)(2)

Demonstrate that the system design and operation will prevent clogging throughout the active life of the landfill.

D-6e(6) Installation: 270.21(b)(1), 264.301(a)(2)

Describe the methods to be employed to install the leachate collection and removal system. Include a description of the inspection program to be implemented to assure installation in accordance with design requirements.

D-6e(7) Maintenance: 270.21(b)(1), 264.301(a)(2)

Describe anticipated maintenance activities that will be used to assure proper system operation throughout the landfill's expected active life.

D-6f Run-on Control System: 270.21(b)(2), 264.301(c)

Describe the system that will be used to prevent run-on onto active portions of landfills.

D-6f(1) Calculation of Peak Flow: 270.21(b)(2), 264.301(c)

Identify the peak surface water flow expected to result from a 25-year design storm. Describe the data sources and methods used to make the peak flow calculation.

D-6f(2) Design and Performance: 270.21(b)(2), 264.301(c)

Describe the run-on control system design. Demonstrate that system design will prevent run-on from reaching active portions of the unit.

D-6f(3) Construction: 270.21(b)(2), 264.301(c)

Describe the methods to be employed to construct the run-on control system. Include descriptions of any construction inspection program to be utilized to assure construction in accordance with design requirements.

D-6f(4) Maintenance: 270.21(b)(2), 264.301(c)

Describe any maintenance activities required to assure continued proper run-on system operation throughout the unit's active life.

D-6g Run-off Control System: 270.21(b)(3), 264.301(d)

Describe the run-off control system to be used to collect and control run-off from active portions.

D-6g(1) Calculation of Peak Flow: 270.21(b)(3), 264.301(d)

Identify the total run-off volume expected to result from a 24-hour/25-year storm. Describe data sources and methods used to make the peak flow calculation.

D-6g(2) Design and Performance: 270.21(b)(3), 264.301(d)

Describe the run-off collection and control system design. Demonstrate that the system has sufficient capacity to collect and hold the total run-off volume calculated in D-3g(1).

D-6g(3) Construction: 270.21(b)(3), 264.301(d)

Describe the methods to be employed to construct the run-off collection and control system. Include descriptions of any construction inspection program to be employed to assure construction in accordance with design requirements.

D-6g(4) Maintenance: 270.21(b)(3), 264.301(d)

Describe any maintenance activities required to assure continued proper run-off system operation throughout the unit's active life.

D-6h Management of Collection and Holding Units: 270.21(b)(4), 264.301(e)

Describe how collection and holding facilities associated with run-on and run-off control systems will be emptied or otherwise managed expeditiously after storms to maintain system design capacity.

D-6i Control of Wind Dispersal: 270.21(b)(5), 264.301(f)

If the landfill contains any particulate matter which may be subject to wind dispersal, describe how the landfill is covered or otherwise managed to control wind dispersal.

D-6j Double-Liner Exemption: 270.21(c), 264.302

If an exemption from the Subpart F groundwater monitoring requirements is sought, provide detailed plans and an engineering report explaining the location of the saturated zone in relation to the landfill. Also provide design data for a double-liner system incorporating a leak detection system between liners and a leachate collection and removal system above the top liner (liners should be described in D-6c and leachate collection/removal systems in D-6e).

D-6j(1) Leak Detection System Design: 270.21(c), 264.302(a)(3)

Describe the design of the leak detection system and the materials of construction.

D-6j(1)(a) Grading: 270.21(c), 264.302(a)(3)

Demonstrate that the leak detection points are appropriately located. Show that the drainage media in which the leak detection system is to operate is appropriately graded to assure that leakage at any point in the liner system could be detected.

D-6j(1)(b) Pipe Network Spacing: 270.21(c), 264.302(a)(3)

If a pipe network is utilized to collect leakage, describe the layout and spacing of that network.

D-6j(1)(c) Pipe Material Strength: 270.21(c), 264.302(a)(3)

Demonstrate that any piping utilized between the liners will have sufficient strength to prevent collapse from anticipated static and dynamic loadings.

D-6j(1)(d) Pipe and Pipe Perforation Sizes: 270.21(c), 264.302(a)(3)

If a piping network is utilized, demonstrate that pipe and pipe perforation sizes are sufficient to allow free liquid access to the drainage system yet avoid clogging of the perforations and pipes by the drainage media.

D-6j(1)(e) Drainage Media Specifications and Performance: 270.21(c), 264.302(a)(3)

Demonstrate sufficient gradation of drainage media and filter materials to allow free liquid access to leak detection points or piping system. Demonstrate that drainage media thickness and hydraulic conductivity allow sufficient head to promote drainage.

D-6j(2) Leak Detection System Operation: 270.21(c), 264.302(a)(3)

Demonstrate that the leak detection system operation will provide for timely detection of liquids entering the space between the liners. Describe automated system features and any required operator interactions or monitoring.

D-6k Bulk or Noncontainerized Free Liquids: 270.21(h), 264.314(a)

If bulk or noncontainerized free liquids are to be placed in the landfill, demonstrate that the requirements of either D-6k(1) or D-6k(2) are met.

D-6k(1) Leachate Collection and Removal System: 270.21(h), 264.314(a)(1)

A liner meeting the requirements of D-6c must be installed and a leachate collection and removal system must be installed and operated as described in D-6e.

D-6k(2) Free Liquid Elimination: 270.21(h), 264.314(a)(2)

Describe how, before landfilling, the wastes are treated or stabilized so that free liquids are no longer present.

D-61 Containers Holding Free Liquids: 270.21(h), 264.314(b)

If containers holding free liquids are to be landfilled, describe how the requirements of D-61(1), or D-61(2), or D-61(3), or D-61(4) will be met for all landfilled containers with free liquids.

D-61(1) Removal of Free-Standing Liquid: 270.21(h), 264.314(b)(1)

Describe how all free-standing liquid will be removed, eliminated, absorbed or solidified.

D-61(2) Restriction to Small Containers: 270.21(h), 264.314(b)(2)

Demonstrate that containers will be very small.

D-61(3) Nonstorage Containers: 270.21(h), 264.314(b)(3)

Demonstrate that the containers are designed to hold free liquids for use other than storage (e.g., batteries, capacitors).

D-61(4) Labpacks: 270.21(h), 264.314(b)(4)

Describe how it will be assured that labpacks to be landfilled containing free liquids meet the following requirements.

D-61(4)(a) Inside Containers: 270.21(h), 264.314(b)(4), 264.316(a)

Demonstrate how it will be assured that inside containers:

- Are securely sealed and not leaking;
- Will not react with, be decomposed by, or ignited by the waste; and

- o Meet DOT specifications.

D-61(4)(b) Overpack: 270.21(h), 264.314(b)(4), 264.316(b)

Demonstrate that overpacking consists of:

- o Metal, DOT containers, with open heads no larger than 110 gallons; and
- o Sufficient absorbent material.

D-61(4)(c) Absorbent Materials: 270.21(h), 264.314(b)(4), 264.316(c)

Demonstrate that the absorbent materials used are not capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers.

D-61(4)(d) Incompatible Wastes: 270.21(h), 264.314(b)(4), 264.316(d)

Demonstrate that incompatible wastes will not be placed in the same outside containers.

D-61(4)(e) Reactive Wastes: 270.21(h), 264.314(b)(4), 264.316(e)

Demonstrate how reactive wastes, other than cyanide-bearing and sulfide-bearing wastes, will be treated or rendered nonreactive prior to packaging.

D-6m Containerized Wastes: 270.21(i)

If containerized wastes are to be landfilled, describe how either: it will be assured that all containers are at least 90 percent full when placed in the landfill, or containers will be crushed, shredded or similarly reduced in volume to the maximum practical extent before burial.

E. GROUNDWATER MONITORING

E-2 Interim Status Period Groundwater Monitoring Data, 270.14(c)(1), 265.90 - 265.94

During its operation under interim status, facility personnel have conducted a groundwater monitoring program approved by the CRWQCB in place of the program defined in 40 CFR Part 265, Subpart F. Therefore, the interim status groundwater monitoring data is deficient and must be supplemented as described below.

As analyses were not performed for the complete list of parameters in 40 CFR §265.92(b), provide analytical results for the following parameters: Barium, Fluoride, Selenium, Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D, 2,4,5-TP Silvex, Radium, Gross Alpha, Gross Beta, Coliform Bacteria, Iron, Manganese, Sodium, and Total Organic Halogens. In addition, results for pH, Specific Conductance, Total Organic Carbon, and Total Organic Halogens must be the arithmetic mean of four measurements.

Provide a description of the design and construction of each well (e.g., depths of screen and casing, depths at which water was encountered, filter pack and sealing materials placement, dates of construction, boring logs, etc.). Although a generalized well detail is provided in Attachment 6, Plate No. 6 for Monitoring Wells Nos. 8, 12, 13, and 14, design and construction descriptions of the remaining 10 monitoring wells (i.e., 1-7 and 9-11) are not included in the application.

Provide an indication of which wells are downgradient of the disposal area, and which are upgradient. Attachment No. 8 includes a Water Level Contour Map which indicates the groundwater level elevations through the ponds. Due to the hydrogeologic setting of the area, it appears that there is no upgradient area. The Water Level Contour Map is based on extrapolation between widely scattered points of known groundwater elevation and may not be indicative of the actual flow directions.

Provide a description of the statistical procedures used (if applicable) in processing the data submitted (as in the use of a student's t-test and the level of significance used). Included in Attachment No. 8, page 4 is a discussion on the failure of the application of a student's t-test for determining the probable range of variation of groundwater quality data. Furthermore, it is suggested on page 6 that once reliable data is obtained, then a statistical analysis should be straight-forward. A method of providing a sound basis for statistical analysis is needed.

E-3 Aquifer Identification: 270.14(c)(2)

Describe the hydrogeologic properties in specific regard to groundwater flow rate, and provide the supporting data used to identify this information. Information has been provided in Attachment No. 8, Water Level Contour Map, which provides water level data. Hydraulic gradients and groundwater flow direction may be determined from such information, but groundwater flow rates need to be described, along with supporting data.

E-4 Contaminant Plume Description: 270.14(c)(4), Part 261, Appendix VIII

Attachment 8, page 3 indicates which mentions that it appears that the facility has not had an obvious effect on water quality. This statement was based on a comparison of water-quality analyses of Well 1 (interior of site) with that of Wells 11 and 12 (south end of ponds). Since the limits of contaminated groundwater have not been determined, this statement is not supportive of an accurate representation of background water quality nor does it preclude the existence of a plume of contamination.

Provide a description of any plume of contamination that has entered the groundwater from a regulated unit. Identify the concentrations of Part 261, Appendix VIII constituents (throughout the plume or the maximum concentration of each Appendix VIII constituent) for the plume of contamination delineated on the topographic map.

E-5 Detection Monitoring Program: 270.14(c)(6), 264.98

Provide sufficient information, supporting data, and analyses documenting the absence of hazardous constituents in the groundwater to support the implementation of a detection monitoring program at the present time.

E-5a Indicator Parameters, Waste Constituents, Reaction Products to be Monitored For: 270.14(c)(6)(i), 264.98(a)

Although a list of indicator parameters is presented in the facility's Waste Discharge Requirements, there is no evidence that the parameters monitored will provide a reliable indication of the presence of hazardous constituents in groundwater. See comments for E-5a(1) and E-5a(2).

E-5a(1) Hazardous Waste Characterization: 264.98(a)(1)

The list provided is for the Vine Hill Facility and does not indicate the effluent which is discharged to the Baker site (see comment D-4a). Identify the type, quantity, and concentrations of constituents in wastes managed at the regulated unit.

E-5a(2) Behavior of Constituents: 264.98(a)(2)

Provide a description of the expected mobility, stability, and persistence of waste constituents, or products, in the unsaturated zone beneath the waste management area.

E-5b Groundwater Monitoring Program: 270.14(c)(6)(ii), 264.97, 264.98

Although a groundwater monitoring program is described, it does not address the individual elements necessary to comply with the detection monitoring. See comments E-5b(1) and E-5b(2).

E-5b(1) Description of Wells: 264.97(a) and (c)

Wells 8, 12, 13, and 14 are described in detail, but the construction of the remainder of the wells are

not presented. Provide the construction details of all monitoring wells. (See comment E-2.)

E-5b(2) Representative Samples: 264.97(a)(1) and (2)

Provide details supporting the representative nature of the groundwater quality at (1) background monitoring, and (2) the compliance monitoring point.

E-5b(3) Locations of Background Groundwater Monitoring Wells That Are Not Upgradient: 264.97(g)(3)

The application does not specify which wells are upgradient or which wells are downgradient, nor does it delineate the waste management area. For wells that are not located upgradient from the waste management area, demonstrate either that the hydrogeologic conditions do not allow determination that the wells are upgradient, or that sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells.

E-5c Background Values: 270.14(c)(6)(iii), 264.98(c)

No background values have been provided in the application. Submit background values for each proposed monitoring parameter or constituent, or procedures to calculate such values. Submit the information identified in comments E-5c(1) or E-5c(2).

E-5c(1) Data Currently Available: 264.98(c)

See comments E-5c(1)(a) through E-5c(1)(d).

E-5c(1)(a) Background Groundwater Quality Data: 264.98(a)(4), 264.98(c)

Specify the concentrations and coefficients of variation for each of the proposed monitoring parameters or constituents in the background groundwater quality.

E-5c(1)(b) Sampling Frequency: 264.97(g)(1)

Demonstrate that background groundwater quality for each parameter or constituent is based on data obtained through quarterly sampling of wells.

E-5c(1)(c) Sampling Quantity: 264.97(g)(4)

Demonstrate that a minimum of one sample from each well and a minimum of four samples from the entire system is taken each time the system is sampled.

E-5c(1)(d) Background Values: 264.98(c)(2)

Show that the background values for each monitoring parameter or constituent will be expressed in the form necessary to determine statistically significant increases.

E-5c(2) Plan for Establishing Groundwater Quality Data: 270.14(c)(6)(iii), 264.98(c)

Submit a plan for establishing background values. The plan must address the following items.

E-5c(2)(a) Well Location: 264.98(c)

Indicate the wells to be used to collect the background groundwater quality data.

E-5c(2)(b) Sampling Frequency: 264.97(g)(1)

Demonstrate that background groundwater quality for each parameter or constituent is based on data obtained through quarterly sampling of wells.

E-5c(2)(c) Sampling Quantity: 264.97(g)(4)

Demonstrate that a minimum of one sample from each well and a minimum of four samples from the entire system is taken each time the system is sampled.

E-5c(2)(d) Background Values: 264.98(c)(2)

Show that the background values for each monitoring parameter or constituent will be expressed in the form necessary to determine statistically significant increases.

E-5d Sampling, Analysis and Statistical Procedures: 270.14(c)(6)(iv), 264.97(d), (e) and (h), 264.98(d), (e), (f) and (g)

Volume I, page 185 describes the groundwater sampling procedures, sample preservation, and general chain-of-custody guidelines. Submit procedures for shipment of samples, analytical methods, and chain-of-custody controls according to comments E-5d(2), (3), and (4).

E-5d(2) Sample Preservation and Shipment: 264.97(d)(2)

Describe the procedures and techniques used for sample shipment.

E-5d(3) Analytical Procedure: 264.97(d)(3)

Describe the analytical techniques that will be used for each monitoring parameter. (The methods specified in the most recent edition of "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" [SW-846] must be used.)

E-5d(4) Chain of Custody: 264.97(d)(4)

Volume I, page 185 includes a statement that appropriate chain-of-custody procedures will be used. Describe the procedures for chain-of-custody control for all samples collected.

E-5d(5)(a) Sampling Frequency: 264.98(d)

Demonstrate that sampling of each monitoring well at the compliance point will be performed semi-annually during the active life of a regulated unit.

E-5d(5)(b) Compliance Point Groundwater Quality Values: 264.98(d)

Show that the groundwater quality values will be expressed in the form necessary to determine statistically significant increases.

E-5d(6) Annual Determination: 264.98(e)

Specify the procedure for the annual determination of the uppermost aquifer flow rate and direction.

E-5d(7) Statistical Determination: 264.98(g)

Specify the procedures to be used to determine whether there has been a statistically significant increase over background values for each parameter or constituent monitored at the compliance point.

E-5d(7)(a) Statistical Procedure: 264.98(g)(1), 264.97(h)

Specify the statistical comparison procedures which will be used to evaluate whether there has been a statistically significant increase over background values for each parameter or constituent monitored at the compliance point.

E-5d(7)(b) Results: 264.98(g)(2)

Provide an estimate of the time period, subsequent to sampling completion, within which the results of the statistical analysis will be available.

F. PROCEDURES TO PREVENT HAZARDS

F-1a(2)(a) Barrier: 264.14(b)(2)(i)

State the height of the fences that surround the facility.

F-1a(2)(b) Means to Control Entry: 264.14(b)(2)(ii)

Specify whether the gate at the main entrance to the facility is locked when the facility is manned. If not, describe the procedures used to control entry through that gate by non-company personnel.

F-2a General Inspection Requirements: 264.15(a) and (b), 264.33

Provide the inspection schedule including frequency of inspections and types of problems to be inspected, for the following items:

- Security devices (fence, gates, warning signs)
- Personnel protection equipment

- o Structural equipment in addition to the surface impoundment dikes, if any
- o Spill control equipment.

Specify the items inspected and the types of problems inspected during quarterly inspections.

The contingency plan specifies that the safety showers, eyewashes, and Scott air pacs will be inspected daily, but these items do not appear on the daily inspection form. Clarify whether these items are inspected daily; if they are not, specify the frequency of inspections of them.

F-2b(1) Container Inspection: 264.174

Demonstrate that the containers and the container storage area will be inspected weekly for leaks, spills, and deterioration caused by corrosion or other factors.

F-2b(2) Tank Inspection: 264.194(a) and (b)

Demonstrate that the following items are inspected daily or weekly, as specified:

F-2b(2)(a) Tank Construction Materials: 264.194(a)(4)

The construction materials of the above-ground portions of the tank to detect corrosion or erosion and leaking of fixtures and seams (weekly).

F-2b(2)(b) Tank Surrounding Area: 264.194(a)(5)

The area immediately surrounding the tank to detect obvious signs of leakage (weekly).

F-2b(2)(c) Tank Overfilling Control Equipment: 264.194(a)(1)

Overfilling control equipment (e.g., waste-feed cut-off systems and bypass systems) to ensure good working order (daily).

F-2b(2)(d) Tank Monitoring Data: 264.194(a)(2)

Data gathered from monitoring equipment (e.g, pressure and temperature gauges) where present to ensure that the tank is operated according to design specifications (daily).

F-2b(2)(e) Tank Level of Waste: 264.194(a)(3)

The level of waste in uncovered tanks to ensure maintenance of sufficient freeboard to prevent overtopping by wave or wind action, or by precipitation (daily).

F-2b(2)(f) Tank Condition Assessment: 264.194(b)

Submit the schedule and procedure for assessing the condition of the tank. This procedure must be adequate to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength.

F-2b(2)(g) Tank Interior Inspection: 264.194(b)

Describe the procedures for emptying a tank to allow entry and inspection of the interior to detect corrosion or erosion of the tank sides and bottom.

F-2b(3) Waste Pile Liner Inspection for Exemption from Groundwater Protection Requirement: 270.18(d), 264.253(a)(3)

The wastes in the pile must be removed periodically, and the liner must be inspected for deterioration, cracks, or other conditions that may result in leaks. The frequency of inspections must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates, and subsurface stability).

F-2b(4) Waste Pile Inspection: 264.254(b)

Describe how each waste pile, while in operation, will be inspected weekly and after storms to detect evidence of any of the following:

F-2b(4)(a) Leak Detection Systems: 264.254(b)(1)

The presence of liquids in leak detection systems were present.

F-2b(4)(b) Run-on and Run-off Control System: 264.254(b)(2)

Deterioration, malfunctions, or improper operation of run-on and run-off control systems.

F-2b(4)(c) Wind Dispersal System: 264.254(b)(3)

Proper functioning of wind dispersal control systems, where present.

F-2b(4)(d) Leachate Collection and Removal System: 264.254(b)(4)

The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

F-2b(5) Surface Impoundment Inspection: 264.226(b), 264.226(c)

Document inspection procedures for the following:

F-2b(5)(a) Condition Assessment: 264.226(b)

Describe how each surface impoundment, while in operation, will be inspected weekly and after storms to detect evidence of any of the following:

F-2b(5)(a)(1) Overtopping Control System: 264.226(b)(1)

Deterioration, malfunctions, or improper operation of overtopping control system.

F-2b(5)(a)(2) Impoundment Contents: 264.226(b)(2)

Sudden drop in the level of the impoundment contents.

F-2b(5)(b) Structural Integrity: 264.226(c)

The weekly inspection schedule includes provisions for inspection of the entire surface impoundment, including the construction material. Specify the procedure to be followed for assessing the structural integrity of the surface impoundment dike, including the portion of any dike which provides freeboard.

Prior to issuance of the permit, and after any extended period of time during which the impoundment was not in service, the owner or operator must obtain a certification from a qualified engineer. The certification must establish that the dikes will withstand the stress of the pressure exerted by the types and amount of wastes to be placed in the impoundment and will not fail due to scouring or piping without dependence on any liner system included in the surface impoundment construction.

F-2b(7) Landfill Inspection: 264.303(b)

Demonstrate that while the landfill is in operation it will be inspected weekly and after storms to detect evidence of any of the following:

F-2b(7)(a) Run-on and Run-off Control System: 264.303(b)(1)

Deterioration, malfunctions, or improper operation of run-on and run-off control systems.

F-2b(7)(b) Leak Detection System: 264.303(b)(2)

The presence of liquids in leak detection systems, where present.

F-2b(7)(c) Wind Dispersal Control System: 264.303(b)(3)

Proper functioning of wind dispersal control systems, where present.

F-2b(7)(d) Leachate Collection and Removal System: 264.303(b)(4)

The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

F-3a(1) Internal Communications: 264.32(a)

On page 107, the contingency plan specifies that facility personnel will be notified of an emergency via a communications or alarm system. On page 130, the plan specifies that telephones and a radio will be used to notify personnel of an emergency; an alarm system is not described. Clarify whether there is an alarm system at the facility, and if there is, describe it. Also see comment G-4a.

F-3a(3) Emergency Equipment: 264.32(c)

Demonstrate that spill control equipment is available at the facility.

F-3a(4) Water for Fire Control: 264.32(d)

Demonstrate that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems.

F-4b Run-off: 270.14(b)(8)(ii)

Describe procedures, structures, or equipment used to prevent run-off from the container, tank, waste pile, and landfill areas to other areas of the faciilty or to the environment.

F-4d Equipment and Power Failure: 270.14(b)(8)(iv)

Describe procedures or equipment used during a power failure to supply emergency lighting.

F-5b General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste: 270.14(b)(9), 264.17(b)

On page 134, the application states that "incompatible wastes are prevented from reaction at the Baker site by analysis and compatibility testing prior to discharge." Provide additional detail on this procedure, including an indication of what triggers testing, the nature of the analysis, and a detailed description of compatibility testing.

F-5d Management of Incompatible Wastes in Containers: 270.15(d), 264.177

If incompatible wastes are stored/treated in containers, demonstrate that the containers are separated by dikes, berms, walls or other devices. In addition, describe the procedures used to ensure that incompatible wastes and materials are not placed in the same container or in an unwashed container that previously held an incompatible waste.

F-5f Management of Incompatible Wastes in Tanks: 270.16(f), 264.199(b)

Certify that incompatible wastes and materials are not stored in the same tank or in an unwashed tank that previously held an incompatible waste or material.

F-5h Management of Incompatible Wastes Placed in Waste Piles: 270.18(h), 264.257(a)

If incompatible wastes, or incompatible wastes and materials are to be placed in the waste pile, provide a demonstration that such activities will not:

- o Generate extreme heat or pressure, fire, explosions, or violent reactions;
- o Produce uncontrolled toxic or flammable emissions in significant quantities;
- o Damage the unit's structural integrity; or
- o Otherwise threaten human health or the environment.

F-5l Management of Incompatible Wastes Placed in Landfills: 270.21(g), 264.313

If incompatible wastes, or incompatible wastes and materials are to be placed in the landfill, provide a demonstration that such activities will not:

- o Generate extreme heat or pressure, fire, explosions, or violent reactions;
- o Produce uncontrolled toxic or flammable emissions in significant quantities;
- o Damage the unit's structural integrity; or
- o Otherwise threaten human health or the environment.

This demonstration must be thoroughly documented.

G. CONTINGENCY PLAN

G-1 General Information

Because the contingency plan must be distributed to all outside agencies that may provide assistance to the facility during an emergency, it must be a discrete document independent of the rest of the permit application. Therefore, in addition to the name and location of the facility, the plan must provide, up front, a facility contact and a description of facility operations.

G-2 Emergency Coordinators: 264.52(d), 264.55

According to the information on page 105 of Volume I, the three persons identified as emergency coordinators are stationed at Vine Hill. The procedures for alerting the fire department, however, specify that the emergency coordinator preferably will be an on-site management person. Clarify this apparent contradiction.

G-4a Notification: 264.56(a)

The contingency plan specifies that facility personnel are to be notified of an emergency via the communications or alarm systems. However, the plan does not describe an alarm system and does not specify the communications equipment (pager or radio) carried by personnel other than the foreman. Describe the methods used to notify facility personnel of an emergency.

G-4b Identification of Hazardous Materials: 264.56(b)
G-4c Assessment: 264.56(c) and (d)

On page 107 (items 3 and 4), the contingency plan states that facility records will be used to identify the wastes involved in an emergency and to assess possible hazards. Describe the types of records (e.g., records of wastes currently in each pond) that are available for this purpose.

G-4d Control Procedures: 264.52(a)

Specify the procedures to be followed to absorb or to contain spilled material until a vacuum truck arrives.

Specify the procedures to be followed for containing, absorbing, and removing spilled wastes when a vacuum truck cannot be used.

G-4e Prevention of Recurrence or Spread of Fires, Explosions, or Releases: 264.56(e)

On page 107 of Volume I (item 6), the contingency plan states that measures will be taken to prevent the spread or recurrence of fires, releases and explosions of hazardous waste. Describe in detail the specific actions to be taken.

G-4f Storage and Treatment of Released Material: 264.56(g)

On page 107 of Volume I (item 8), the contingency plan states that the treatment, storage or disposal of recovered waste will be provided for after the emergency. Describe the steps to be taken in managing waste affected by the emergency. Also, specify how surrounding areas will be decontaminated, as well as how contaminated soil or debris will be managed.

G-4h Post-Emergency Equipment Maintenance: 264.56(h)(2)

Describe the procedures to be used to ensure that all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed. Describe how contaminated rinsate and residues are managed.

G-4i Container Spills and Leakage: 264.52, 264.171

Specify procedures to be used when responding to container spills or leakage, including procedures and timing for expeditious removal of spilled waste and repair or replacement of the container(s).

G-4j Tank Spills and Leakage: 264.194(c)

Describe the procedures for responding to tank spills or leakage, including a description of how spilled waste will be cleaned up and how the tank(s) will be repaired.

G-4k(1) Double-lined Waste Piles: 264.252(b)

Describe the procedures to be followed in the event a liquid leaks into the leak detection system of a double-lined waste pile, including the following:

G-4k(1)(a) Notification: 264.252(b)(1)

Procedures for notifying the Regional Administrator in writing within seven days.

G-4k(1)(b) Remedial Action: 264.252(b)(2)(i)

Procedures for removing accumulated liquid, repairing or replacing the liner which is leaking and obtain a certification from a qualified engineer that to the best of his/her knowledge and opinion, the leak has been stopped.

G-4k(1)(c) Detection Monitoring Program: 264.252(b)(2)(ii)

Procedure for enacting a groundwater detection program.

G-4k(2) Inspectable Piles: 264.253

Specify the remedial procedures which will be used if deterioration, a crack, or other condition is identified that is causing or could cause a leak. Address the following:

G-4k(2)(a) Notification: 264.253(b)(1)

Procedures for notifying the Regional Administrator in writing within seven days.

G-4k(2)(b) Remedial Action: 264.253(b)(2)(i)

Procedures for repairing or replacing the liner (base) obtaining a certification from a qualified engineer that, to the best of his/her knowledge and opinion, the liner (base) has been repaired and leakage will not occur.

G-4k(2)(c) Detection Monitoring Program: 264.253(b)(2)(ii), 264.98

Procedures for enacting a groundwater detection program.

G-41(1) Emergency Repairs: 264.227

On page 131 of Volume I, the contingency plan simply repeats portions of 40 CFR §264.227(b). Provide a detailed description of how you will accomplish each of the identified emergency actions. This description must include the following:

G-41(1)(a) Stopping Waste Addition: 264.227(b)(1)

Procedures for stopping waste additions to the impoundment.

G-41(1)(b) Containing Leaks: 264.227(b)(2)

Procedures for containing any leakage.

G-41(1)(c) Stopping Leaks: 264.227(b)(3)

Procedures for stopping the leak.

G-41(1)(d) Preventing Catastrophic Failure: 264.227(b)(4)

Procedures to stop or prevent catastrophic failure.

G-41(1)(e) Emptying the Impoundment: 264.227(b)(5)

Procedures for emptying the impoundment, if necessary.

G-41(2) Certification: 264.227(d)(1), 264.226(c)

Specify the procedure which will be followed for recertifying the dike's structural integrity, in the event the impoundment is removed from service as a result of actual or imminent dike failure.

G-41(3) Repairs as a Result of Sudden Drop: 264.227(d)(2)

Specify the procedure which will be followed in the event the impoundment is removed from service as the result of a sudden drop in the liquid level. (The regulations require that a liner be installed in compliance with §264.221(a) or §264.222.)

G-4n Landfill Leakage: 264.52, 264.302(b)

Describe the procedures to be followed in the event a liquid leaks into the leak detection system of a double-lined landfill including:

G-4n(1) Notification: 264.302(b)(1)

Procedures for notifying the Regional Administrator in writing within seven days.

G-4n(2) Remedial Action: 264.302(b)(2)(i)

Procedures for removing accumulated liquid, repairing or replacing the liner which is leaking, and obtain a certification from a qualified engineer that to the best of his/her knowledge and opinion, the leak has been stopped.

G-4n(3) Detection Monitoring Program: 264.302(b)(2)(ii)

Procedure for enacting a groundwater detection program.

G-5 Emergency Equipment: 264.52(e)

Provide a physical description of each item on the list of emergency equipment, and outline the capabilities of each item. The list must include the following:

- Internal communication or alarm systems
- Personnel protection equipment
- Spill control equipment
- Decontamination equipment
- First aid kit.

Also, specify the location of the spill control and personnel protection equipment.

G-6 Coordination Agreements: 264.52(c), 264.37

Describe the coordination agreements with local police and fire departments, hospitals, contractors, and state and local emergency response teams to familiarize them with the facility and actions needed in case of emergency. Document refusal to enter into a coordination agreement.

G-7 Evacuation Plan: 264.52(f)

Describe the signals to be used to commence an evacuation. In addition, provide alternate evacuation routes in case primary exit routes are blocked. The plan must also describe the "safe assembly areas" to be used to account for all evacuated personnel. The map on page 116 must clearly delineate primary and alternate evacuation routes and the location of the "safe assembly areas".

G-8 Required Reports: 264.56(j)

The emergency incident report must include the extent of injuries. Revise the list of topics to be addressed (page 109, Item 4) to include this item.

H. PERSONNEL TRAINING

H-1a Job Title/Job Description: 264.16(d)(1), 264.16(d)(2)

Provide a job description for each position at the facility related to hazardous waste management.

H-1b Training Content, Frequency, and Techniques: 264.16(c) and (d)(3)

Provide an outline of the topics covered in each segment of the "new hire" and continuing training. Specify the training techniques used (classroom, on-the-job, or both).

Describe the content of training provided to the General Manager, Site Manager, Site Supervisors, Senior Operations Clerk, Purchaser/Inventory Clerk, and General Operator Foreman. Specify the frequency of training provided to these persons and the training techniques used.

H-1c Training Director: 264.16(a)(2)

Demonstrate that the training director has training or experience in hazardous waste management and emergency response.

H-1d Relevance of Training to Job Position: 264.16(a)(2)

Demonstrate that facility personnel are instructed in hazardous waste management procedures (including contingency plan implementation) relevant to their positions.

H-1e Training for Emergency Response: 264.16(a)(3)

Provide additional detail about the training program to show that all site personnel will receive emergency training in the following areas:

- o Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment
- o Key parameters for automatic waste feed cut-off systems (if appropriate)
- o Communications or alarm systems
- o Response to fires or explosions
- o Response to groundwater contamination
- o Shutdown of operations.

H-2 Implementation of Training Program: 264.16(b) and (d)(4)

Demonstrate that all current IT-Baker employees have successfully completed "new hire" and continuing training.

I. CLOSURE AND POST-CLOSURE REQUIREMENTS

I-1b Partial and Final Closure Activities: 264.112(a)(1)

State whether closure of the containers, tanks, waste piles, or landfill will occur prior to closure of the impoundments and if so, when partial closure will occur.

I-1c Maximum Waste Inventory: 264.112(a)(2)

Specify the maximum inventory of waste in storage or treatment in containers, tanks, and waste piles.

I-1d Inventory Removal, Disposal or Decontamination of Equipment: 264.112(a)(3), 264.114

Describe the equipment and procedures to be used when removing waste, including contaminated soils and subsoils, from the ponds. Specify the criteria and procedures for determining that the ponds have been decontaminated, including a description of any sampling and analysis to be performed.

Specify whether the piping used to transport waste to Baker from Vine Hill will be decontaminated or disassembled and disposed. If the former, describe the procedures for decontaminating the piping, and specify the criteria and procedures for determining that it has been decontaminated. If the latter, specify where the piping is to be disposed.

Describe how all other facility equipment and structures and contaminated soil will be decontaminated or disposed at closure. Specify the criteria and procedures for determining that decontamination is complete. Specify the fate of hazardous residues and rinsate.

I-1d(1) Closure of Containers: 264.178

Show that at closure, all hazardous waste and hazardous waste residue will be removed from the containment system, and how remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues will be decontaminated or removed.

I-1d(2) Closure of Tanks: 264.197

Show that at closure, all hazardous waste and hazardous waste residue will be removed from tanks, discharge control equipment, and discharge confinement structures, and that the facility will be decontaminated.

I-1d(3) Closure of Waste Piles: 270.18(i), 264.258

Describe how all hazardous waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate will be removed or decontaminated at closure and managed as hazardous waste. If any wastes, waste residues or contaminated materials or soils will remain after closure, provide plans for closing the pile as a landfill [I-1e] and provide post-closure plans [I-2]. Piles without liners or with liners that do not meet the requirements of D-3c must also provide contingent plans for closing the facility as a landfill [I-1e] and a contingent post-closure plan [I-2], except for dry, enclosed piles meeting the requirements of D-3b(1) or piles for which a liner exemption is sought in accordance with D-3b(2).

I-1d(4) Closure of Surface Impoundments: 270.17(g), 264.228

Describe how all hazardous waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate will be removed or decontaminated at closure and managed as hazardous waste. If any wastes, waste residues or contaminated materials or soils will remain after closure provide plans for closing the surface impoundment as a disposal unit [I-1e] and provide post-closure plans [I-2]. Surface impoundments without liners or with liners that do not meet the requirements of D-4c must also provide contingent plans for closure as a disposal unit [I-1e] and a contingent post-closure plan [I-2], except for impoundments requesting a liner exemption.

I-1e Closure of Disposal Units: 270.14(b)(13), 270.17(g), 270.18(i), 270.21(e), 264.228(a)(2), 264.228(c)(1)(i), 264.258(c), 264.310(a)

I-1e(1)(b) Waste Stabilization: 264.228(a)(2)(ii)

The application must describe the methods to be used to stabilize remaining wastes in the disposal pond, and wastes placed in the pond from other ponds, to support the final cover, including:

- Stabilization methods, equipment and materials
- Required bearing strength of stabilized waste
- Demonstration of stabilized waste bearing strength
- Methods for bearing strength determination during closure.

I-1e(2) Cover Design: 264.228(a)(2)(iii), 264.310(a)

The applicant must describe the cover design and installation procedures. This submission should include:

- Drawings showing cover layers, thicknesses, slopes and overall dimensions
- The common name, species and variety of the proposed cover crop
- Descriptions of synthetic liners to be used, including chemical properties, strength thickness and manufacturers specifications
- Description of rationale for cover selection
- Descriptions of and specifications for protective materials placed above and below synthetic liners
- Clay liner construction plans including lift sequencing.

Although partial information has been submitted, provide the clay liner characteristics for each cover, including thickness and permeability.

I-1e(3) Minimization of Liquid Migration: 264.228(a)(2)(iii), 264.310(a)

For cover designs different than EPA-recommended designs (refer to Permit Applicant's Guidance Manual), provide engineering calculations showing the proposed cover will provide long-term minimization of liquid migration through the cover.

I-1e(4) Maintenance Needs: 264.228(a)(2)(iii), 264.310(a)

The applicant must demonstrate that the cover system he intends to provide will function effectively with minimum maintenance needs.

I-1e(5) Drainage and Erosion: 264.228(a)(2)(iii), 264.310(a)

The applicant must provide the following information:

- Data demonstrating that the proposed final slopes will not cause significant cover erosion.
- Descriptions of drainage materials and their permeabilities.
- Engineering calculations demonstrating free drainage of precipitation off of and out of the cover.
- Estimation of the potential for drainage-layer clogging.

I-1e(6) Settlement and Subsidence: 264.228(a)(2)(iii), 264.310(a)

The applicant must describe potential cover settlement and subsidence, considering immediate settlement, primary consolidation, secondary consolidation, and creep and liquefaction. Include the following information:

- Potential foundation compression.
- Potential soil liner compression.

- o Potential waste consolidation and compression resulting from waste dewatering, biological oxidation and chemical conversion of solids to liquids.

Describe the effects of potential subsidence/settlement on the ability of the final cover to minimize infiltration.

I-1e(7) Cover Permeability: 264.228(a)(2)(iii), 264.310(a)

The applicant must demonstrate that the cover system will have a permeability less than or equal to that of the liner system. The applicant must provide details of the existing liner in order to assess its permeability.

I-1e(8) Freeze/Thaw Effects: 264.228(a)(2)(iii), 264.310(a)

The applicant must identify the average depth of frost penetration (if applicable) and describe the effects of freeze/thaw cycles on the cover.

I-1f Schedule for Closure: 264.112(a)(4)

The applicant must provide a revised schedule for final closure, including total time to close the facility and time required for intervening closure activities based on the revisions to the closure plan, as requested. This will allow tracking of the progress of closure.

I-1g Extensions for Closure Time: 264.113(a), 264.113(b)

The applicant, on page 143, suggests that closure will take between 18 and 36 months to complete. The applicant must submit a petition for extension of closure time for a schedule for closure which exceeds the 90 days for treatment, removal or disposal of wastes and/or the 180 days for completion of closure activities which justifies that a longer period of closure time is required.

I-2a Inspection Plan: 264.118(a), 264.228(b), 264.228(c)(1)(ii), 264.258(b), 264.258(c)(1)(ii), 264.310(b)

The applicant must provide more detail and describe the inspections to be conducted during the post-closure care period, their frequency, the inspection procedure, and the logs to be kept. The following items, as applicable, should be included in the inspection plan:

- Security control devices
- Erosion damage
- Cover settlement, subsidence and displacement
- Vegetative cover condition
- Integrity of run-on and run-off control measures
- Cover drainage system functioning
- Leak detection system
- Leachate collection and removal system
- Gas venting system
- Well condition
- Benchmark integrity.

The rationale for determining the length of time between inspections should be provided.

I-2b Monitoring Plan: 264.228(b), 264.228(c)(1)(ii), 264.258(b), 264.258(c)(1)(ii), 264.310(b)

The applicant must describe the monitoring to be conducted during the post-closure care period, including the procedures for conducting the groundwater monitoring and evaluating the data gathered.

I-2c Maintenance Plan: 264.228(b), 264.228(c)(1)(ii), 264.258(b), 264.258(c)(1)(ii), 264.310(b)

The applicant must describe the preventative and corrective maintenance procedures, equipment requirements and material needs. Include the following items in the maintenance plan, as applicable:

- Repair of security control devices
- Erosion damage repair
- Correction of settlement, subsidence and displacement
- Mowing, fertilization and other vegetative cover maintenance
- Repair of run-on and run-off control structures
- Well replacement.

Describe the rationale to be used to determine the need for corrective maintenance activities.

I-3 Notice in Deed: 270.14(b)(14), 264.120, 264.117(c), 264.119

Existing facilities must submit a copy of the notice or notation recorded in the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that (1) the land has been used to manage hazardous wastes; (2) its use is restricted; and (3) the survey plot and record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility has been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Regional Administrator of the U.S. Environmental Protection Agency.

I-4 Closure Cost Estimate: 270.14(b)(15), 264.142

Provide a breakdown of the individual tasks and costs that comprise the closure cost estimate for this facility. This breakdown must include costs of labor, including managerial and administrative expenses and the independent certified engineer's expenses. If the cost estimate does not include labor costs, revise it to include them. In addition, note that the closure cost estimates may need to be revised to address deficiencies specified herein.

I-6 Post-Closure Cost Estimate: 270.14(b)(6), 264.144

Provide a breakdown of the individual tasks and costs that comprise the post-closure cost estimate. This breakdown must include costs of labor, including managerial and administrative expenses, if any. If the cost estimate does not include labor costs, revise it to include them. Again, note that the post-closure cost estimate may need to be revised to address deficiencies specified herein.

I-8a(1) Endorsement or Certification: 264.147(a)(1)

Submit a signed duplicate original of the Hazardous Waste Facility Liability Endorsement, with the wording specified by §264.151(i), or of a Certificate of Liability Insurance, with the wording specified by §264.151(j).

J. OTHER FEDERAL LAWS: 270.14(b)(20), 270.3

Demonstrate compliance with the requirements of applicable Federal laws such as the Wild and Scenic Rivers Act, National Historic Preservation Act of 1966, Endangered Species Act, Coastal Zone Management Act, and Fish and Wildlife Coordination Act.

Facility Name IT Corporation - Baker Facility
ID No. CAD 08 968 0250
Date Part B Received
Date Completeness Review Due

RCRA PART B PERMIT APPLICATION CHECKLIST

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
A. PART A APPLICATION		Y	N		Volume I, pp. 12-35; see comments
B. FACILITY DESCRIPTION					
B-1	General description	Y	Y		Volume I, pp. 2-3
B-2	Topographic map				
B-2a	General requirements	Y	N		Volume I, pp. 7-9, 16, 116-117; Plates 1-4; see comments
B-2b	Additional requirements for land disposal facilities	Y	N		Vol. II, Attach. 8, Plates 4-5; see comments
B-3	Location information				
B-3a	Seismic considerations			X	
B-3b	Floodplain standard	Y	Y		Volume I, pp. 4-5; Volume II, Attachment 9
B-3b(1)	Demonstration of compliance	Y	Y		Volume I, pp. 4-5; Volume II, Attachment 9
B-3b(1)(a)	Flood proofing and flood protection measures	Y	Y		Volume I, pp. 4-5; Volume II, Attachment 9
B-3b(1)(b)	Flood plan			X	
B-3b(2)	Waiver			X	
B-3b(3)	Plan for future compliance with floodplain standard			X	
B-4	Traffic information	Y	Y		Volume I, pp. 4, 6; Plate 3
C. WASTE CHARACTERISTICS					
C-1	Chemical and physical analyses, including sampling/analysis methods	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
C-1a	Containerized wastes	N			See comments
C-1b	Waste in tanks	N			See comments
C-1c	Waste in piles			X	
C-1d	Landfilled wastes	N			See comments D-6k(2)
C-1e	Wastes incinerated and wastes used in performance tests			X	
C-1f	Wastes to be land treated			X	
C-2	Waste analysis plan				pp. 89-93; see comments
C-2a	Parameters and rationale	Y	N		p. 93; see comments
C-2b	Test methods	Y	N		p. 93; see comments
C-2c	Sampling methods	Y	N		p. 91; see comments
C-2d	Frequency of analyses	Y	N		p. 91; see comments
C-2e	Additional requirements for wastes generated off-site	N			See comments
C-2f	Additional requirements for ignitable, reactive or incompatible wastes	N			p. 134; see comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D. PROCESS INFORMATION					
D-1	Containers				See comments
D-1a	Containers with free liquids				
D-1a(1)	Description of containers	N			See comments
D-1a(2)	Container management practices	N			See comments
D-1a(3)	Secondary containment system design and operation				
D-1a(3)(a)	Requirement for the base or liner to contain liquids	N			See comments
D-1a(3)(b)	Containment system drainage	N			See comments
D-1a(3)(c)	Containment system capacity	N			See comments
D-1a(3)(d)	Control of run-on	N			See comments
D-1a(4)	Removal of liquids from containment systems	N			See comments
D-1b	Containers without free liquid				
D-1b(1)	Test for free liquids	N			See comments
D-1b(2)	Description of containers	N			See comments
D-1b(3)	Container management practices	N			See comments
D-1b(4)	Container storage area drainage	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-2	Tanks				
D-2a	Description of tanks	N			See comments
D-2b	Tank corrosion and erosion	N			See comments
D-2c	Tank management practices	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-3	Waste piles				
D-3a	List of wastes	N			See comments
D-3b(1)	Enclosed dry piles				See comments
D-3b(1)(a)	Protection from precipitation	N			See comments
D-3b(1)(b)	Free liquids	N			See comments
D-3b(1)(c)	Run-on protection	N			See comments
D-3b(1)(d)	Wind dispersal control	N			See comments
D-3b(1)(e)	Leachate generation	N			See comments
D-3b(2)	Liner exemption request	N			See comments
D-3c	Liner engineering report				See comments
D-3c(1)	Liner description	N			See comments
D-3c(2)	Liner location relative to high water table	N			See comments
D-3c(3)	Calculation of necessary soil liner thickness	N			See comments
D-3c(4)	Liner strength requirements	N			See comments
D-3c(5)	Liner strength demonstration	N			See comments
D-3c(6)	Liner/waste compatibility testing results	N			See comments
D-3c(7)	Liner installation				See comments
D-3c(7)(a)	Synthetic liner seaming	N			See comments
D-3c(7)(b)	Soil liner compaction	N			See comments
D-3c(7)(c)	Installation inspection/testing programs	N			See comments
D-3c(8)	Liner coverage	N			See comments
D-3c(9)	Liner exposure prevention	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-3c(10)	Synthetic-liner bedding	N			See comments
D-3d	Liner foundation report				See comments
D-3d(1)	Liner foundation design description	N			See comments
D-3d(2)	Subsurface exploration data	N			See comments
D-3d(3)	Laboratory testing data	N			See comments
D-3d(4)	Engineering analyses				See comments
D-3d(4)(a)	Settlement potential	N			See comments
D-3d(4)(b)	Bearing capacity and stability	N			See comments
D-3d(4)(c)	Potential for bottom heave or blowout	N			See comments
D-3d(4)(d)	Construction and operational loadings	N			See comments
D-3d(5)	Foundation installation procedures	N			See comments
D-3d(6)	Foundation installation inspection program	N			See comments
D-3e	Leachate collection and removal system				See comments
D-3e(1)	System design and operation	N			See comments
D-3e(2)	Chemical resistance	N			See comments
D-3e(3)	Strength of materials	N			See comments
D-3e(4)	Prevention of clogging	N			See comments
D-3e(5)	Installation	N			See comments
D-3e(6)	Maintenance	N			See comments
D-3f	Run-on control system				See comments
D-3f(1)	Calculation of peak flow	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-3f(2)	Design and performance	N			See comments
D-3f(3)	Construction	N			See comments
D-3f(4)	Maintenance	N			See comments
D-3g	Run-off control system				See comments
D-3g(1)	Calculation of peak flow	N			See comments
D-3g(2)	Design and performance	N			See comments
D-3g(3)	Construction	N			See comments
D-3g(4)	Maintenance	N			See comments
D-3h	Management of collection and holding units	N			See comments
D-3i	Control of wind dispersal	N			See comments
D-3j	Double-liner exemption				See comments
D-3j(1)	Leak detection system design				See comments
D-3j(1)(a)	Grading	N			See comments
D-3j(1)(b)	Pipe network spacing	N			See comments
D-3j(1)(c)	Pipe material strength	N			See comments
D-3j(1)(d)	Pipe and pipe perforation sizes	N			See comments
D-3j(1)(e)	Drainage media specifications and performance	N			See comments
D-3j(2)	Leak detection system operation	N			See comments
D-3k	Inspection exemption	N			See comments
D-3l	Treatment within the pile				See comments
D-3l(1)	Treatment process description	N			See comments
D-3l(2)	Equipment used	N			See comments
D-3l(3)	Residuals description	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-4	Surface impoundments				
D-4a	List of wastes	Y	N		Volume I, pp. 10, 31-86; see comments
D-4b	Liner exemption request			X	
D-4c	Liner engineering report				
D-4c(1)	Liner description			X	
D-4c(2)	Liner location relative to high water table			X	
D-4c(3)	Calculation of necessary soil liner thickness			X	
D-4c(4)	Liner strength requirements			X	
D-4c(5)	Liner strength demonstration			X	
D-4c(6)	Liner/waste compatibility testing results			X	
D-4c(7)	Liner installation				
D-4c(7)(a)	Synthetic liner seaming			X	
D-4c(7)(b)	Soil liner compaction			X	
D-4c(7)(c)	Installation inspection/testing programs			X	
D-4c(8)	Liner coverage			X	
D-4c(9)	Liner exposure prevention			X	
D-4c(10)	Synthetic-liner bedding			X	
D-4d	Liner foundation report				
D-4d(1)	Liner foundation design description			X	
D-4d(2)	Subsurface exploration data			X	
D-4d(3)	Laboratory testing data			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-4d(4)	Engineering analyses				
D-4d(4)(a)	Settlement potential			X	
D-4d(4)(b)	Bearing capacity and stability			X	
D-4d(4)(c)	Potential for bottom heave or blowout			X	
D-4d(4)(d)	Construction and operational loadings			X	
D-4d(5)	Foundation installation procedures			X	
D-4d(6)	Foundation installation inspection program			X	
D-4e	Prevention of overtopping				Volume I, pp. 180-181
D-4e(1)	Design features	Y	Y		Volume I, pp. 180-181; Volume II, Attach. 5
D-4e(2)	Operating procedures	Y	Y		Volume I, p. 181
D-4e(3)	Water balance study	Y	N		Volume I, p. 181; Volume II, Attachment 5; see comments
D-4e(4)	Freeboard requirements	Y	N		Volume I, p. 181; Volume II, Attachment 5; see comments
D-4e(5)	Outflow destination			X	
D-4f	Dike stability				Volume I, p. 181; Volume II, Attachments 2, 3, 4, and 7
D-4f(1)	Engineer's certification	N			See below
D-4f(2)	Dike design description	Y	N		Volume II, Attach. 1, Appendix; see comments
D-4f(3)	Erosion protection	N			See comments
D-4f(4)	Subsurface soil conditions	Y	Y		Volume II, Attachments 1, 3, and 4
D-4f(5)	Stability analyses	Y	N		Volume II, Attachment 3; see comments
D-4f(6)	Strength and compressibility test results	Y	N		Volume II, Attachment 3; see comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-4f(7)	Dike construction procedures			X	
D-4f(8)	Dike construction inspection program			X	
D-4g	Request for Subpart F exemption				
D-4g(1)	Leak detection system design			X	
D-4g(1)(a)	Grading			X	
D-4g(1)(b)	Pipe network spacing			X	
D-4g(1)(c)	Pipe material strength			X	
D-4g(1)(d)	Pipe and pipe perforation sizes			X	
D-4g(1)(e)	Drainage media specifications and performance			X	
D-4g(2)	Leak detection system operation			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-6	Landfills				See comments
D-6a	List of wastes	N			See comments
D-6b	Liner exemption request	N			See comments
D-6c	Liner engineering report				See comments
D-6c(1)	Liner description	N			See comments
D-6c(2)	Liner location relative to high water table	N			See comments
D-6c(3)	Liner strength requirements	N			See comments
D-6c(4)	Liner strength demonstration	N			See comments
D-6c(5)	Liner/waste compatibility testing results	N			See comments
D-6c(6)	Liner installation				See comments
D-6c(6)(a)	Synthetic liner seaming	N			See comments
D-6c(6)(b)	Installation inspection/testing programs	N			See comments
D-6c(7)	Liner coverage	N			See comments
D-6c(8)	Liner exposure prevention	N			See comments
D-6c(9)	Synthetic-liner bedding	N			See comments
D-6d	Liner foundation report				See comments
D-6d(1)	Liner foundation design description	N			See comments
D-6d(2)	Subsurface exploration data	N			See comments
D-6d(3)	Laboratory testing data	N			See comments
D-6d(4)	Engineering analyses				See comments
D-6d(4)(a)	Settlement potential	N			See comments
D-6d(4)(b)	Bearing capacity and stability	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-6d(4)(c)	Potential for bottom heave or blowout	N			See comments
D-6d(4)(d)	Construction and operational loadings	N			See comments
D-6d(5)	Foundation installation procedures	N			See comments
D-6d(6)	Foundation installation inspection program	N			See comments
D-6e	Leachate collection and removal system				See comments
D-6e(1)	System design and operation	N			See comments
D-6e(2)	Maximum leachate head	N			See comments
D-6e(3)	Chemical resistance	N			See comments
D-6e(4)	Strength of materials	N			See comments
D-6e(5)	Prevention of clogging	N			See comments
D-6e(6)	Installation	N			See comments
D-6e(7)	Maintenance	N			See comments
D-6f	Run-on control system				See comments
D-6f(1)	Calculation of peak flow	N			See comments
D-6f(2)	Design and performance	N			See comments
D-6f(3)	Construction	N			See comments
D-6f(4)	Maintenance	N			See comments
D-6g	Run-off control system				See comments
D-6g(1)	Calculation of peak flow	N			See comments
D-6g(2)	Design and performance	N			See comments
D-6g(3)	Construction	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-6g(4)	Maintenance	N			See comments
D-6h	Management of collection and holding units	N			See comments
D-6i	Control of wind dispersal	N			See comments
D-6j	Subpart F exemption				See comments
D-6j(1)	Leak detection system design				See comments
D-6j(1)(a)	Grading	N			See comments
D-6j(1)(b)	Pipe network spacing	N			See comments
D-6j(1)(c)	Pipe material strength	N			See comments
D-6j(1)(d)	Pipe and pipe perforation sizes	N			See comments
D-6j(1)(e)	Drainage media specifications and performance	N			See comments
D-6j(2)	Leak detection system operation	N			See comments
D-6k	Bulk or noncontainerized free liquids				See comments
D-6k(1)	Leachate collection and removal system	N			See comments
D-6k(2)	Free liquid elimination	N			See comments
D-6l	Containers holding free liquids				See comments
D-6l(1)	Removal of free-standing liquid	N			See comments
D-6l(2)	Restriction to small containers	N			See comments
D-6l(3)	Nonstorage containers	N			See comments
D-6l(4)	Labpacks				See comments
D-6l(4)(a)	Inside containers	N			See comments
D-6l(4)(b)	Overpack	N			See comments
D-6l(4)(c)	Absorbent materials	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
D-61(4)(d)	Incompatible wastes	N			See comments
D-61(4)(e)	Reactive wastes	N			See comments
D-6m	Containerized wastes	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E. GROUNDWATER MONITORING					
E-1	Exemption from groundwater protection requirements				Volume I, p. 181
E-1a	Surface impoundment			X	
E-1b	Waste piles			X	
E-1c	Landfill			X	
E-1d	No migration			X	
E-2	Interim status period groundwater monitoring data	Y	N		Volume I, pp. 183-205, 222-227; see comments
E-3	Aquifer identification	Y	N		Volume II, Attachment 1, p. 4; Attachment 8, p. 2; see comments
E-4	Contaminant plume description	N			See comments
E-5	Detection monitoring program	N			See comments
E-5a	Indicator parameters, waste constituents, reaction products to be monitored	Y	N		Volume I, pp. 195, 198; see comments
E-5a(1)	Hazardous waste characterization	Y	N		Volume I, pp. 10, 39-86; see comments
E-5a(2)	Behavior of constituents	N			See comments
E-5a(3)	Detectability	Y	Y		Volume I, p. 186
E-5b	Groundwater monitoring program	Y	N		Volume I, pp. 185-197; see comments
E-5b(1)	Description of wells	Y	N		Volume II, Attachment 6; see comments
E-5b(2)	Representative samples	N			See comments
E-5b(3)	Locations of background groundwater monitoring wells that are not upgradient	N			See comments
E-5c	Background values	N			See comments
E-5c(1)	Data currently available	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E-5c(1)(a)	Background groundwater quality data	N			See comments
E-5c(1)(b)	Sampling frequency	N			See comments
E-5c(1)(c)	Sampling quantity	N			See comments
E-5c(1)(d)	Background values	N			See comments
E-5c(2)	Plan for establishing groundwater quality data				See comments
E-5c(2)(a)	Well location	N			See comments
E-5c(2)(b)	Sampling frequency	N			See comments
E-5c(2)(c)	Sampling quantity	N			See comments
E-5c(2)(d)	Background values	N			See comments
E-5d	Sampling, analysis and statistical procedures	Y	N		Volume I, p. 185; see comments
E-5d(1)	Sample collection	Y	Y		Volume I, p. 185
E-5d(2)	Sample preservation and shipment	Y	N		Volume I, p. 185; see comments
E-5d(3)	Analytical procedure	N			See comments
E-5d(4)	Chain of custody	Y	N		Volume I, p. 185; see comments
E-5d(5)	Additional requirements for compliance point monitoring				
E-5d(5)(a)	Sampling frequency	N			See comments
E-5d(5)(b)	Compliance point groundwater quality values	N			See comments
E-5d(6)	Annual determination	N			See comments
E-5d(7)	Statistical determination	N			See comments
E-5d(7)(a)	Statistical procedure	N			See comments
E-5d(7)(b)	Results	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E-6	Compliance monitoring program				
E-6a	Waste description			X	
E-6b	Characterization of contaminated groundwater			X	
E-6c	Hazardous constituents to be monitored			X	
E-6d	Concentration limits			X	
E-6e	Alternate concentration limits				
E-6e(1)	Adverse effects on groundwater quality			X	
E-6e(2)	Potential adverse effects			X	
E-6f	Groundwater monitoring system			X	
E-6f(1)	Description of wells			X	
E-6f(2)	Representative samples			X	
E-6f(3)	Locations of background groundwater monitoring wells that are not upgradient			X	
E-6f(3)(a)	Inability to determine upgradient			X	
E-6f(3)(b)	Representative samples of background groundwater quality			X	
E-6g	Background values			X	
E-6g(1)	Data currently available				
E-6g(1)(a)	Background groundwater quality data			X	
E-6g(1)(b)	Sampling frequency			X	
E-6g(1)(c)	Sampling quantity			X	
E-6g(1)(d)	Background values			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E-6g(2)	Plan for establishing groundwater quality data				
E-6g(2)(a)	Background data			X	
E-6g(2)(b)	Well location			X	
E-6g(2)(c)	Sampling frequency			X	
E-6g(2)(d)	Sampling quantity			X	
E-6g(2)(e)	Background values			X	
E-6h	Sampling, analysis and statistical procedures			X	
E-6h(1)	Sample collection			X	
E-6h(2)	Sample preservation and shipment			X	
E-6h(3)	Analytical procedure			X	
E-6h(4)	Chain of custody			X	
E-6h(5)	Additional requirements for compliance point monitoring				
E-6h(5)(a)	Sampling frequency			X	
E-6h(5)(b)	Testing for Appendix VIII hazardous constituents			X	
E-6h(5)(c)	Compliance point groundwater quality values			X	
E-6h(6)	Annual determination			X	
E-6h(7)	Statistical determination			X	
E-6h(7)(a)	Statistical procedure			X	
E-6h(7)(b)	Results			X	
E-7	Corrective action program				

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E-7a	Characterization of contaminated groundwater			X	
E-7b	Concentration limits			X	
E-7c	Alternate concentration limits				
E-7c(1)	Adverse effects on groundwater quality			X	
E-7c(2)	Potential adverse effects			X	
E-7d	Corrective action plan				
E-7d(1)	Location			X	
E-7d(2)	Construction detail			X	
E-7d(3)	Plans for removing wastes			X	
E-7d(4)	Treatment technologies			X	
E-7d(5)	Effectiveness of correction program			X	
E-7d(6)	Reinjection system			X	
E-7d(7)	Additional hydrogeologic data			X	
E-7d(8)	Operation and maintenance			X	
E-7d(9)	Closure and post-closure plans			X	
E-7e	Groundwater monitoring program			X	
E-7e(1)	Description of wells			X	
E-7e(2)	Representative samples			X	
E-7e(3)	Locations of background groundwater monitoring wells that are not upgradient			X	
E-7f	Background values			X	
E-7f(1)	Data currently available				

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E-7f(1)(a)	Background groundwater quality data			X	
E-7f(1)(b)	Sampling frequency			X	
E-7f(1)(c)	Sampling quantity			X	
E-7f(1)(d)	Background values			X	
E-7f(2)	Plan for establishing groundwater quality data				
E-7f(2)(a)	Background data			X	
E-7f(2)(b)	Well location			X	
E-7f(2)(c)	Sampling frequency			X	
E-7f(2)(d)	Sampling quantity			X	
E-7f(2)(e)	Background values			X	
E-7g	Sampling, analysis and statistical procedures			X	
E-7g(1)	Sample collection			X	
E-7g(2)	Sample preservation and shipment			X	
E-7g(3)	Analytical procedure			X	
E-7g(4)	Chain of custody			X	
E-7g(5)	Additional requirements for compliance point monitoring				
E-7g(5)(a)	Sampling frequency			X	
E-7g(5)(b)	Testing for Appendix VIII hazardous constituents			X	
E-7g(5)(c)	Compliance point groundwater quality values			X	
E-7g(6)	Annual determination			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
E-7g(7)	Statistical determination			X	
E-7g(7)(a)	Statistical procedure			X	
E-7g(7)(b)	Results			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
F. PROCEDURES TO PREVENT HAZARDS					
F-1	Security				
F-1a	Security procedures and equipment				
F-1a(1)	24-hour surveillance system			X	
F-1a(2)	Barrier and means to control entry				
F-1a(2)(a)	Barrier	Y	N		Volume I, p. 96; see comments
F-1a(2)(b)	Means to control entry	Y	N		Volume I, p. 96; see comments
F-1a(3)	Warning signs	Y	Y		Volume I, p. 96
F-1b	Waiver				
F-1b(1)	Injury to intruder			X	
F-1b(2)	Violation caused by intruder			X	
F-2	Inspection schedule				
F-2a	General inspection requirements	Y	N		Volume I, pp. 97-101, 129, 130; see comments
F-2a(1)	Types of problems	Y	N		Volume I, pp. 98, 99, 129, 130; see comments to F-2a
F-2a(2)	Frequency of inspections	Y	N		Volume I, pp. 98, 99, 129, 130; see comments to F-2a
F-2b	Specific process inspection requirements				
F-2b(1)	Container inspection	N			See comments
F-2b(2)	Tank inspection				See comments
F-2b(2)(a)	Tank construction materials	N			See comments
F-2b(2)(b)	Tank surrounding area	N			See comments
F-2b(2)(c)	Tank overfilling control equipment	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
F-2b(2)(d)	Tank monitoring data	N			See comments
F-2b(2)(e)	Tank level of waste	N			See comments
F-2b(2)(f)	Tank condition assessment	N			See comments
F-2b(2)(g)	Tank interior inspection	N			See comments
F-2b(3)	Waste pile liner inspection for exemption from groundwater protection requirement	N			See comments
F-2b(4)	Waste pile inspection				See comments
F-2b(4)(a)	Leak detection systems	N			See comments
F-2b(4)(b)	Run-on and run-off control system	N			See comments
F-2b(4)(c)	Wind dispersal system	N			See comments
F-2b(4)(d)	Leachate collection and removal system	N			See comments
F-2b(5)	Surface impoundment inspection				
F-2b(5)(a)	Condition assessment				See comments
F-2b(5)(a)(1)	Overtopping control system	Y	N		Volume I, p. 131
F-2b(5)(a)(2)	Impoundment contents	Y	N		Volume I, p. 131
F-2b(5)(a)(3)	Leak detection system			X	
F-2b(5)(a)(4)	Deterioration	Y	N		Volume I, p. 98
F-2b(5)(b)	Structural integrity	Y	N		Volume I, p. 98; see comments
F-2b(6)	Incinerator inspection				
F-2b(6)(a)	Incinerator and associated equipment			X	
F-2b(6)(b)	Incinerator waste feed cut-off system and associated alarms			X	
F-2b(7)	Landfill inspection				See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
F-2b(7)(a)	Run-on and run-off control system	N			See comments
F-2b(7)(b)	Leak detection system	N			See comments
F-2b(7)(c)	Wind dispersal control system	N			See comments
F-2b(7)(d)	Leachate collection and removal system	N			See comments
F-2b(8)	Land treatment facility inspection				
F-2b(8)(a)	Run-on and run-off control system			X	
F-2b(8)(b)	Wind dispersal control system			X	
F-3	Waiver or documentation of preparedness and prevention requirements				
F-3a	Equipment requirements				
F-3a(1)	Internal communications	Y	N		Volume I, pp. 130, 133; see comment
F-3a(2)	External communications	Y	Y		Volume I, pp. 130, 133
F-3a(3)	Emergency equipment	Y	N		Volume I, pp. 87, 119, 129, 130, 133; see comme
F-3a(4)	Water for fire control	N			See comments
F-3b	Aisle space requirement	Y	Y		Volume I, p. 6
F-4	Preventive procedures, structures, and equipment				
F-4a	Unloading operations			X	
F-4b	Run-off	Y	N		Volume I, pp. 180-181; see comments
F-4c	Water supplies	Y	Y		Volume I, p. 179
F-4d	Equipment and power failure	Y	N		Volume I, pp. 121, 125, 127-128; see comments
F-4e	Personnel protection equipment	Y	Y		Volume I, p. 133

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
F-5	Prevention of reaction of ignitable, reactive, and incompatible wastes				
F-5a	Precautions to prevent ignition or reaction of ignitable or reactive wastes			X	
F-5b	General precautions for handling ignitable or reactive waste and mixing of incompatible waste	Y	N		Volume I, p. 134; see comments
F-5c	Management of ignitable or reactive wastes in containers			X	
F-5d	Management of incompatible wastes in containers	N			See comments
F-5e	Management of ignitable or reactive wastes in tanks			X	
F-5f	Management of incompatible wastes in tanks	N			See comments
F-5g	Management of ignitable or reactive wastes placed in waste piles			X	
F-5h	Management of incompatible wastes placed in waste piles	N			See comments
F-5i	Management of ignitable or reactive wastes placed in surface impoundments			X	
F-5j	Management of incompatible wastes placed in surface impoundments	Y	N		Volume I, p. 134; see comments to F-5b
F-5k	Management of ignitable or reactive wastes placed in landfills			X	
F-5l	Management of incompatible wastes placed in landfills	N			See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
F-5m	Management of ignitable or reactive wastes placed in land treatment units			X	
F-5n	Management of incompatible wastes placed in land treatment units			X	
G. CONTINGENCY PLAN					
G-1	General information	Y	N		Volume I, p. 104; see comments
G-2	Emergency coordinators	Y	N		Volume I, pp. 105, 107; see comments
G-3	Implementation	Y	Y		Volume I, pp. 108, 110, 113
G-4	Emergency response procedures				
G-4a	Notification	Y	N		Volume I, pp. 107, 108, 110-113, 130; see comments
G-4b	Identification of hazardous materials	Y	N		Volume I, p. 107; see comments
G-4c	Assessment	Y	N		Volume I, p. 107; see comments
G-4d	Control procedures	Y	N		Volume I, pp. 108-113; see comments
G-4e	Prevention of recurrence or spread of fires, explosions, or releases	Y	N		Volume I, p. 107; see comments
G-4f	Storage and treatment of released material	Y	N		p. 107; see comments
G-4g	Incompatible waste	Y	Y		Volume I, p. 109
G-4h	Post-emergency equipment maintenance	Y	N		Volume I, p. 109; see comments
G-4i	Container spills and leakage	N			See comments
G-4j	Tank spills and leakage	N			See comments
G-4k	Waste pile spills and leakage				
G-4k(1)	Double-lined waste piles				See comments

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
G-4k(1)(a)	Notification	N			See comments
G-4k(1)(b)	Remedial action	N			See comments
G-4k(1)(c)	Detection monitoring program	N			See comments
G-4k(2)	Inspectable piles				
G-4k(2)(a)	Notification	N			See comments
G-4k(2)(b)	Remedial action	N			See comments
G-4k(2)(c)	Detection monitoring program	N			See comments
G-41	Surface impoundments spills and leakage				
G-41(1)	Emergency repairs				
G-41(1)(a)	Stopping waste addition	Y	N		Volume I, p. 131; see comments
G-41(1)(b)	Containing leaks	Y	N		Volume I, p. 131; see comments
G-41(1)(c)	Stopping leaks	Y	N		Volume I, p. 131; see comments
G-41(1)(d)	Preventing catastrophic failure	N			See comments
G-41(1)(e)	Emptying the impoundment	N			See comments
G-41(2)	Certification	N			See comments
G-41(3)	Repairs and a result of sudden drop	N			See comments
G-41(4)(a)	Existing portions of surface impoundment	N			See comments to G-41(3)
G-41(4)(b)	Other portions of surface impoundment			X	
G-41(5)	Double-lined surface impoundments				
G-41(5)(a)	Notification			X	
G-41(5)(b)	Remedial action			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
G-41(5)(c)	Detection monitoring program			X	
G-4m	Incineration spills and leakage			X	
G-4n	Landfill leakage				
G-4n(1)	Notification	N			See comments
G-4n(2)	Remedial action	N			See comments
G-4n(3)	Detection monitoring program	N			See comments
G-5	Emergency equipment	Y	N		Volume I, p. 119; see comments
G-6	Coordination agreements	N			See comments
G-7	Evacuation plan	Y	N		Volume I, pp. 114, 116; see comments
G-8	Required reports	Y	N		Volume I, p. 109; see comments
H. PERSONNEL TRAINING					
H-1	Outline of the training program				
H-1a	Job title/job description	Y	N		Volume I, p. 136; see comments
H-1b	Training content, frequency, and techniques	Y	N		Volume I, pp. 138, 139; see comments
H-1c	Training director	Y	N		Volume I, p. 140; see comments
H-1d	Relevance of training to job position	Y	N		Volume I, p. 138; see comments
H-1e	Training for emergency response	Y	N		Volume I, p. 138; see comments
H-2	Implementation of training program	Y	N		Volume I, p. 138; see comments
I. CLOSURE AND POST-CLOSURE REQUIREMENTS					
I-1	Closure plans				
I-1a	Closure performance standard	Y	Y		Volume I, p. 142

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
I-1b	Partial and final closure activities	Y	N		Volume I, p. 143; see comments
I-1c	Maximum waste inventory	Y	N		Volume I, p. 142; see comments
I-1d	Inventory removal, disposal or decontamination of equipment	Y	N		Volume I, p. 143; see comments
I-1d(1)	Closure of containers	N			See comments
I-1d(2)	Closure of tanks	N			See comments
I-1d(3)	Closure of waste piles	N			See comments
I-1d(4)	Closure of surface impoundments	Y	N		Volume I, p. 143; see comments
I-1d(5)	Closure of incinerators			X	
I-1d(6)	Closure of land treatment facilities				
I-1d(6)(a)	Continuance of treatment			X	
I-1d(6)(b)	Vegetative cover			X	
I-1e	Closure of disposal units	N			Volume I, p. 143; see below
I-1e(1)	Disposal impoundments	N			See comment I-1(e)(1)(b)
I-1e(1)(a)	Elimination of liquids	Y	Y		Volume I, p. 143
I-1e(1)(b)	Waste stabilization	N			See comment
I-1e(2)	Cover design	N			See comment
I-1e(3)	Minimization of liquid migration	N			See comment
I-1e(4)	Maintenance needs	N			See comment
I-1e(5)	Drainage and erosion	N			See comment
I-1e(6)	Settlement and subsidence	N			See comment
I-1e(7)	Cover permeability	N			See comment

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
I-1e(8)	Freeze/thaw effects	N			See comments
I-1f	Schedule for closure	Y	N		Volume I, p. 143; see comments
I-1g	Extensions for closure time	N			See comments
I-2	Post-closure plan				
I-2a	Inspection plan	Y	N		Volume I, p. 146; see comments
I-2b	Monitoring plan	Y	N		Volume I, p. 146; see comments
I-2c	Maintenance plan	Y	N		Volume I, p. 146; see comments
I-2d	Land treatment			X	
I-3	Notice in deed	Y	N		Volume I, pp. 147, 148; see comments
I-4	Closure cost estimate	Y	N		Volume I, pp. 150, 157; see comments
I-5	Financial assurance mechanism for closure				
I-5a	Closure trust fund	Y	Y		Volume I, pp. 151-155
I-5b	Surety bond				
I-5b(1)	Surety bond guaranteeing payment into a closure fund			X	
I-5b(2)	Surety bond guaranteeing performance of closure			X	
I-5c	Closure letter of credit			X	
I-5d	Closure insurance			X	
I-5e	Financial test and corporate guarantee for closure			X	
I-5f	Use of multiple financial mechanisms			X	
I-5g	Use of financial mechanism for multiple facilities			X	

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
I-6	Post-closure cost estimate	Y	N		Volume I, pp. 150, 157; see comments
I-7	Financial assurance mechanism for post-closure care				
I-7a	Post-closure trust fund	Y	Y		Volume I, pp. 151-155; see comments
I-7b	Surety bond				
I-7b(1)	Surety bond guaranteeing payment into a post-closure trust fund			X	
I-7b(2)	Surety bond guaranteeing performance of post-closure care			X	
I-7c	Post-closure letter of credit			X	
I-7d	Post-closure insurance			X	
I-7e	Financial test and corporate guarantee for post-closure care			X	
I-7f	Use of multiple financial mechanisms			X	
I-7g	Use of a financial mechanism for multiple facilities			X	
I-8	Liability requirements				
I-8a	Coverage for sudden accidental occurrences				
I-8a(1)	Endorsement or certification	N			See comments
I-8a(2)	Financial test for liability coverage			X	
I-8a(3)	Use of multiple insurance mechanisms			X	
I-8b	Coverage for nonsudden accidental occurrences				
I-8b(1)	Endorsement or certification	N			See comments to I-8a(1)

		Provided (Y/N)	Adequate (Y/N)	Not Applicable	Comments
I-8b(2)	Financial test for liability coverage			X	
I-8b(3)	Use of multiple insurance mechanisms			X	
I-8c	Request for variance			X	
I-9	State mechanisms				
I-9a	Use of state-required mechanism			X	
I-9b	State assumption of responsibility			X	
J. OTHER FEDERAL LAWS		N			See comments
K. PART B CERTIFICATION		Y	Y		Follows Transmittal Letter