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June 23, 1994

Ms. Denise Gelston
S.M. Stoller Corporation
5700 Flatiron Parkway
Boulder, Colorado 80301

**RE: RESPONSES/COMMENTS TO STOLLER QUESTIONS ON THE GANDY
LANDFILL PROJECT**

Dear Ms. Gelston:

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has examined the questions you faxed to us. The following are the responses from HRMB. These responses and comments are preliminary in nature based upon currently available information or knowledge. The question numbers in bold print below correspond to the number of the enclosed questions found on the list of questions that you faxed to us on June 6, 1994.

Question 1: All new hazardous waste landfills constructed after 1992 are required to have two or more liners and a leachate collection and removal system above and between such liners. In anticipation of your Question 3, if there is to be an exemption or waiver from groundwater monitoring, HRMB would be very interested in a monitoring system within the immediately underlying and adjacent vadose zone, capable of detecting lateral and vertical migration of any hazardous constituents from the landfill. From a conservative standpoint, HRMB would use the double liner and leachate collection and removal regulatory requirements [40 CFR 264.301(c)] as the "point of departure" when evaluating any request for an exemption.

Question 2: The answer to all questions is **yes**, you are required to address all questions under this title. In addition:

a) Even if HRMB approves of an exemption from the double liner and leachate collection and removal requirement, an alternate design will be required in compliance with HWMR-7, Part V, 40 CFR §264.301(d). Therefore, an "Action Leakage Rate" [§264.302] would have to be addressed and stipulated in the Part B permit application. [NOTE: Action Leakage Rate = Maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 1 foot; §264.302(a)].

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b) Because a liner system will ~~now~~ be required [§264.301(d)], an approved "response action plan" must be addressed [§264.304].

c) A "Construction Quality Assurance Plan" [§264.19] is appropriate because a liner system, conforming to the requirements of §§264.301(c) or (d) for landfills, may be required.

Question 3: HRMB understands, from previous information that the facility will not receive bulk or non-containerized liquids for disposal. An exemption to groundwater monitoring may be possible (and must be proposed with detailed explanation by the facility), in general, if the facility does not plan to dispose of liquid waste (which could possibly be a significant component of recharge to groundwater), and has double liners, leachate collection systems above and between the liners.

Question 4: No response required.

Question 5: Regarding the regulatory requirement [§270.14(b)(11)(iii)] for identification of the 100-year floodplain, HRMB would require that you use topographic maps and calculations to determine the overbank flow area discharge capacity of the nearest surface water or drainage features (i.e. either a stream, river, or arroyo). Additional useful tools may include aerial and surface photos, and any archival/historical data relating to rainfall and/or flooding events. The calculated overbank flow area discharge capacity of the nearest drainage feature should serve to demonstrate that the Gandy landfill location is above the 100-year flood plain. A Federal Insurance Administration flood plain map is not required for the calculations to be performed.

Question 6: Modeling will be needed to support the regulatory evaluation of the technical validity of the Part B permit application. Since the facility is already considering the use of modeling (see Question 12), this question has already been answered. The objective of modeling, in keeping with currently available EPA guidance, should probably be to determine the time of travel (TOT) for a contaminant in fluid to migrate a certain distance (e.g. TOT_{100}) either laterally or vertically.

Question 7: HRMB cannot currently provide specific advice on the question of how to model a contaminant release. A conservative approach, however, is recommended. An example might be a continuous leak from the leachate collection system (constant head) in which the only barrier to fluid and contaminant

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migration is any geological liner (e.g. compacted clay liner) and the subsurface soils. Without a liner you would expect more than one point of hazardous waste release.

Question 8: It is HRMB's understanding, based upon EPA guidance, that a typical period of interest for the modeling simulation is 100 years.

Question 9: The facility should adopt a conservative approach. The facility should provide information, as part of the model selection process, with your rationale for the specific choice, to enable HRMB to determine if wastes might migrate vertically or laterally from the landfill in the fluid and/or vapor phase(s). With respect to modeling of individual contaminants in waste mixtures, HRMB again recommends the conservative approach: modeling using the hazardous constituent(s) which may be most mobile in the unsaturated zone.

Question 10: HRMB understands the necessity of concurrence upon an adequate geological model prior to determination of an appropriate contaminant transport model. The geological model, therefore, should be based upon site-specific geological (and possibly geotechnical) data. HRMB agrees that a geological model may have to be evaluated and accepted prior to contaminant transport model selection and implementation (phased approach).

Question 11: HRMB does not currently have examples of acceptable modeling studies related to hazardous waste disposal facilities.

Question 12: HRMB does not currently have a preference. The facility will have to provide the rationale for proposing a particular model. HRMB will adhere to EPA guidance, however, which suggests the following criteria for model selection:

- a) Facility should be familiar with operation of appropriate code.
- b) Data required by code must be available.
- c) Code should be applicable to specific problem.
- d) Code should be acceptable and documentable.

If facility is considering the use of the SUTRA or VS2DT codes, facility must ensure that the above criteria are taken into account and that HRMB becomes familiarized with the code.

Question 13: 40 CFR 270.10(j) is addressing the "risk" aspect related to a possible release from the landfill. HRMB does not have any guidance, per se, but does not believe this requires an extensive risk characterization. The citation appears to be

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reasonably self explanatory.

Question 14: HRMB would like to review and comment upon any and all soil boring/coring programs planned. In addition to drill hole density, this review would also be conducted upon types of sampling and logging for geological characterization, geotechnical samples, and environmental background samples (i.e. an adequate site characterization must be ensured).

Question 15: HRMB may require copies of all data related to the geological/geotechnical site investigation, although summary tables may be appropriate in some cases. Additionally, prior to conducting the downhole geophysical surveys, HRMB would like the opportunity to review the types and purposes of the proposed downhole logging. Both geophysical logs and lithological sheets would be preferred.

Question 16: HRMB would like the opportunity to review the proposed types of geotechnical analyses to determine their applicability. HRMB understands that in-situ analyses are generally preferable to laboratory analyses, but that certain analyses (e.g. grain size analysis) can only be conducted in the laboratory.

Question 17: HRMB does not currently require splits of any drill cuttings or cores collected at the facility. These materials, however, should be available (i.e. archived) for examination at the facility. Color photographic documentation of cutting and cores (correlated with geophysical and geological logs) would be appropriate.

If you have further questions regarding any of the above questions you may contact Mr. Cornelius Amindyas of my staff at (505) 837-4308.

Sincerely,


Barbara Hoditschek, Manager
RCRA Permits Program
Hazardous and Radioactive Materials Bureau

Enclosure

cc: Benito Garcia, Chief, HRMB