

ATTACHMENT B

**RIDEM/OFFICE OF WASTE MANAGEMENT
RESPONSES TO COMMENTS
RECEIVED FOR THE REMEDIAL ACTION
WORK PLAN
AND 50% DESIGN DRAWINGS**

FORMER JAMESTOWN LANDFILL

JANUARY 2006

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Table of Contents

1.	The Scope of the Regulatory Review Process	3
2.	The Significance of Groundwater	5
3.	Local Government and Community Issues	6
4.	Sole Source Aquifer	9
5.	EPA Designation of the Site	10
6.	Disclaimers in the GZA Report	11
7.	Pump Testing	11
8.	Hydrogeological Assessment of the Island	11
9.	Relationship between RIDEM and USEPA	12
10.	Office of Water Resources Permitting Issues	12
11.	The Uniqueness of Jamestown	13
12.	Excavation	14
13.	Paving of the Road	14
14.	Monitoring Well Construction and Sampling	15
15.	Dispute over Issues at June 14, 2005 Meeting	16
	CONTAMINANTS DETECTED IN GROUNDWATER	16
	LOT 47 PUMP TEST	17
	DIRECTION OF GROUNDWATER FLOW AT VIERA FARMS	17
	ONSITE SEWAGE SLUDGE DISPOSAL	18
16.	Karst Aquifer	18
17.	Projected Pumping Rates of Lot 47 Well	18
18.	Brownfields Laws and Regulations	19
19.	Possible Impact from Highway Barn Activities	19

20.	Private Well Sampling and Contingency Plans	20
21.	Hiring of Consultants	20
22.	Landfill Closure Policy	20
23.	Other Similar Uses at Landfills	21
24.	Information located at the NECC.org Site	22
25.	Cancer Rates in Jamestown	22
26.	Lot 47 and Summit Avenue as Part of the Site	23
27.	The Application of Health Based Standards	23
28.	The Viera Farms Property	24
29.	Geophysical Methodologies	25
30.	Coastal Resource Management Council Review	25
31.	Closure at the Block Island Landfill	25
32.	Closure at the Woonsocket Landfill	25
33.	Alteration of Surface Water Flow	26
34.	Characterization of the Landfill as Relatively Benign	26
35.	Passive soil gas sampling for VOC's	26
36.	Placement of Drainage Collection and Discharge Locations	27

1. The Scope of the Regulatory Review Process

The general steps in the Department's Site Remediation Approval Process include the following components:

- The site is investigated.
- Data is compiled and a Site Investigation Report (SIR) is submitted for Review/Approval. Said Report is also required to propose conceptual remedies.
- The Department issues a "Program Letter" which triggers formal Public Notice and Comment on the SIR.
- The Department issues a "Remedial Decision Letter" after evaluating public comment and reaching a final decision on the SIR and proposed remedy
- A "Remedial Action Work Plan" (RAWP) is submitted for Review/Approval, that provides additional engineering details on the remedy.
- The remedy is implemented.

Remedial Design and Environmental Monitoring Plan

The Site Investigation Report with the associated conceptual remedy for the Jamestown Landfill were approved in 2004. These approvals went through the appropriate public notice and comments periods and the Department received comments from NECC members as well as others. Once the remedy is chosen, the *Site Remediation Regulations* do not require any other public notice or public comment periods to occur during the remedy design phase. The remedy, which was approved in a Remedial Decision Letter dated April 22, 2004, included the following key elements:

- Increasing the thickness of the cap to a minimum of two feet of soil.
- Re-grading of the site to meet minimum and maximum slope requirements of the solid waste regulations.
- Development and implementation of a revised groundwater monitoring plan.
- Design and implementation of a storm water management system to reduce ponding and erosion.
- Establishment of an Environmental Land Use Restriction to ensure the long-term implementation of the remedy and prevent residential development at the site.
- Implementation of a Post Closure Environmental Monitoring Plan (EMP)

During the February 11, 2004 public meeting and the April 19, 2004 response to public comments letter, the Town of Jamestown offered to conduct an additional public workshop at the 50% design phase of the Remedial Action Work Plan in order to allow further public input into the remedy design.

The Post Closure Environmental Monitoring Plan (EMP) that was part of the remedy was approved on November 10, 2004 after a process of review, comment, discussion and resubmission. The Department reserves the right to require changes to the remedy or the EMP if conditions change, new data becomes available or the regulations change. Barring these things, the Department is reviewing the 50% Design only as it affects implementation of the approved remedy. There has been criticism that the Department seems to have already made up its mind to support the remedy and monitoring. It is true that the Site Investigation and EMP were approved by the Department after appropriate review and public comment and therefore, the Department did render a final decision on these documents. The Department reviewed the 30% Design (that included the barn) and is currently reviewing the 50% Design to determine if it is compatible with the remedy and complies with the Regulations.

Given the Town's decision to hold an additional workshop, the Department has also reviewed the recent public comments submitted to determine if any changes to the remedy selected and/or EMP are warranted, based on new information provided and/or information that alters the Department's previous understanding of site conditions. Throughout the 30 years of monitoring, the data has been evaluated and will continue to be evaluated using approved EPA statistical procedures. Those protocols also include triggers to potentially require additional incremental remedial measure should significant statistical exceedances occur. Based on the current data, the Department does not anticipate that this will occur.

The Department's regulations call for a total of 30 years of post closure monitoring. The Town has agreed to 30 years of monitoring following approval of the remedy. In that period, if the Department sees changes in contaminant concentrations or aquifer characteristics it will reevaluate the monitoring well network accordingly.

Also, the Department had requested the Town sample private wells in the area to provide an additional layer of protectiveness. During the Site Investigation, the Town attempted to gain access to the Viera Farms property to sample the monitoring wells. It was reported to the Department by the Town that access to the monitoring wells on the Viera Farms Property was refused by the property owners. As a result, additional monitoring wells were installed on the landfill property to monitor groundwater quality in the southerly direction. If there were private drinking water wells on the Viera Farms property, sampling of those wells would have also been requested.

Financial Responsibility for the Landfill

Throughout the process, the Department considers the Town to be the responsible party for the landfill based on our *Regulations as well as state and federal statutes*. Therefore, the cost of investigation and remediation of the landfill or any areas impacted by the landfill is the Town of Jamestown's responsibility.

2. The Significance of Groundwater

The Department received the most number of comments relating to the importance of groundwater to the residents of the area. In Rhode Island 25-30% of the population relies on groundwater as their primary source of drinking water, and the State's regulations reflect this importance. Consequently, *RIDEM Rules and Regulations for Groundwater Quality*, Section 8 has the following prohibitions:

8.1 Groundwater shall be maintained at a quality consistent with its classification. No person shall take actions that violate or cause to violate the standards established in the Rules and Regulations.

8.3 No person shall operate or maintain a facility in a manner that may result in a discharge of any pollutant to groundwater without the approval of the Director.

The *Remediation Regulations* and *Solid Waste Regulations* are both structured to provide special protection to drinking water aquifers, which are designated as GA and GAA. The area surrounding the Jamestown Landfill is classified by RIDEM as GA, indicating it is designated to be suitable for drinking water use by the public without treatment.

The Department's Groundwater Regulations do allow groundwater beneath an inactive landfill to be reclassified, which is a recognition of the potential impacts past filling activity could have on the groundwater's current quality. On October 15, 2004 the Town of Jamestown submitted a request to the Office of Water Resources to reclassify the site as GB (the request was revised on December 6, 2004). In June of 2005, after a public comment period, the groundwater at the site was reclassified to GB. By policy and regulatory mandate the Department does not allow degradation to any aquifer and approved remedies are designed to reduce any likelihood that contamination will occur.

Although the groundwater underneath the landfill is GB, groundwater monitoring is required to ensure that it will not cause degradation to adjacent GA areas. **Therefore, the landfill closure program has viewed groundwater protection to be of paramount importance when evaluating remedies for landfills in GA and GAA aquifers.**

Many of the comments imply that the Department's procedures at other sites should not apply here because the area is served by private wells with no municipal water system in place. It should be noted that the Department has dealt with and continues to deal with many sites both on islands (such as Prudence Island, Block Island and Aquidneck Island) and in other areas where residents rely on the groundwater as their only source of drinking water. The Department has overseen the installation of what it believes is a significant and adequately spaced groundwater monitoring well network over the site as well as a private well sampling program.

The Department believes that the current storm water management at the site is not adequate and has observed both ponding and erosion at the site. These conditions increase infiltration through the landfilled materials, that is a potential risk to the underlying groundwater. The remedy approved in 2004 requires improvements to this storm water management system to address these concerns. This remedy went through an exhaustive review, as well as, public comment period.

In spite of the problems, the monitoring wells show very small levels of contamination within the site. Nevertheless, the Department is anxious to see the remedy implemented since we believe the measures will improve groundwater and surface water conditions at and around the site.

There have been comments that the proposed highway barn should be forbidden as it may contaminate wells miles away from the site. Many of the commenters believe either that there is a highly concentrated plume of contaminants at the landfill, something the extensive investigation has not shown to be the case, or that the contaminant plume will become more concentrated as it leaves the site, which is contrary to scientific principles. The data collected to date, over multiple years has detected only low levels of some contaminants during several monitoring events. Also in the last three rounds of sampling, all the monitoring wells at the site have met drinking water standards. The assertion that a highway barn will mobilize huge quantities of contaminants for such long distances is not reasonable given the nature of contaminants present and the hydrogeology of the area.

Furthermore, if the remedy is delayed, given the current ponding and erosion, it is almost certain that such a delay will result in continued leachate discharge to the aquifer. Although current levels are relatively low, the Department believes that to allow these higher levels of leachate generation to continue to occur to prevent the very unlikely scenario is scientifically justifiable, especially since the site is surrounded by a GA aquifer.

The Department believes the final remedial measures proposed, as conditioned, will be protective of the groundwater resource. The remedy calls for improvements of storm water management as well as better erosion controls. The Department is also requiring the plan be altered to pave additional areas. In addition, said remedy includes 30 years of continued long term monitoring of the groundwater, with appropriate and automatic regulatory triggers incorporated for any significant statistical exceedance found in future groundwater results.

A “blanket” or state imposed prohibition on the Town’s reuse of their property is therefore not supportable based on the existing environmental conditions known at the site.

3. Local Government and Community Issues

Town Jurisdiction and Authorities

The Department has received a significant number of comments urging the Department to use good scientific and engineering principles to guide the review process. Many of these comments expressed concern that the Department is or may be influenced more by political pressure than science to reject the project and overturn the will of the voters of Jamestown and their elected government.

The Department respects the Town of Jamestown's authority, as a municipality of the State of Rhode Island to govern those areas within local jurisdictional control. For this reason, the Department's environmental review has not considered the pros and cons of the site versus any alternative locations the Town may have chosen for their highway barn facility. The Department's review is also **not** considering such aspects as aesthetics of the proposed barn, traffic, zoning, cost estimates or whether the site is ideally situated for efficiency. Such issues are clearly within the Town's jurisdiction and the Department is without legal authority to override the Town in such local matters. The Department has jurisdiction over matters involving Individual Sewerage Disposal System or ISDS, wetlands and storm water management at any site that must be complied with to construct such a facility. As discussed in Response #10, the town will need to file appropriate applications with the Office of Water Resources to be in compliance with these rules. Unlike the Office of Water Resources, the Landfill Closure Program only has authority over construction as it affects the landfill closure. If the highway barn were to be proposed on a parcel that did not contain a landfill or was not contaminated, the Landfill Closure Program would have no jurisdiction to comment on any aspects of the construction. However, given the fact that the barn is proposed for a property that falls under the Department's jurisdiction and we have concurred with the proposed remedy, the construction and operation of the highway barn facility must be consistent with the remedy.

The Department has received requests to invest a local citizen's group with authority to oversee the project. The Department does not have the authority to delegate control of the oversight of the project to private parties. However, the Town may have its own requirements regarding citizen input into such projects.

There were comments at the public workshop regarding the possibility that operation of the garage and trucks may result in punctured gas tanks or improperly stored equipment, and these were given as reasons to move the garage to another, uncontaminated property. As all of Jamestown is underlain by GA aquifers in fractured bedrock, to require the barn to be moved based on speculative environmental concern would move these risks but not minimize them. Actually, if problems did occur at the garage at the landfill, the monitoring well network could give an early warning of such contamination, something another site may not provide. The Department does not require monitoring wells at highway barns, even those over Sole Source Aquifers such as Block Island.

History of Violations by the Town of Jamestown

The Department has also received comments that Jamestown is an environmentally irresponsible municipality and therefore cannot be trusted to maintain the landfill as required. The Department permits over 40 active solid waste management facilities, as well as oversees, numerous inactive facilities, such as the Jamestown Landfill. These facilities are owned/operated by municipalities and private parties. There is not one active or inactive solid waste management facility in all of Rhode Island that has not had deficiencies.

As part of one comment, the Department was asked to indicate the number of violations Jamestown has been cited for in the past 15 years. Other comments have inquired or commented regarding past violations where the Town was cited by the Department and USEPA. The Office of Waste Management and the Office of Compliance and Inspection have reviewed their records and have found no Notices of Violation or other formal enforcement actions regarding the landfill property since its closure in 1984. The Office of Waste Management did send written notifications to the Town documenting non-compliance on the dates listed below:

- December 14, 1998- Letter of Deficiency regarding exposed waste, standing water and sandblasting grit stored at the landfill.
- March 31, 1987- Letter notifying Town of improper brush handling and seepage of hydraulic oil at the transfer station.
- May 14, 1987- Letter notifying Town lack of staffing during operating hours, improper brush handling and waste storage in the leaf composting area.
- July 24, 1987- Letter notifying the Town of white goods and metal being stored on the ground at the transfer station.

Such Letters of Deficiency are used to document non-compliance so that the owner/operator can address the problem. The deficiencies, if not addressed may become violations subjecting the owner/operator to formal enforcement action and penalties (i.e. Notice of Violation and Penalty). The Town was also sent letters in 1986 and 1988 regarding its lack of quarterly monitoring of groundwater.

The Department has records of inspections from 1976 to 1984 of the landfill during its active life. These inspection records and associated letters and Notices of Violation show the Town was cited for a number of violations. Most of the violations involve lack of daily cover, improper cover of brush, bulky waste and construction debris, and windblown trash. There were also issues regarding odors, lack of equipment (fire extinguisher, communications and working bulldozer), salvage material being mixed with brush, erosion, surface water ponding, not maintaining a 200 foot buffer and lack of proper access restriction.

One comment concluded that because a group of alleged violations that were identified by residents at the informal workshop and were not disputed, they must be true. The documents in question were never subsequently provided to the Department. Therefore the Department cannot confirm or deny their contents.

It is also important to note that while Jamestown has volunteered to join the Program, there are many towns with landfills in areas served by private wells that have done no study or remediation on their landfills at all.

4. Sole Source Aquifer

The Department has received numerous letters pointing out that Jamestown is a Sole Source Aquifer. While there can be no disagreement that much of the northern portion of the island is served by private wells, and that there is no municipal water system serving this portion of the community, the area is not, (by RIDEM regulations) classified as a Sole Source Aquifer. The commenters may be relying on an earlier statement by MACTEC on behalf of the North End Concerned Citizens where they made an assertion that it is an “immutable fact” that the island is a “geologic sole source aquifer”. While the Department has searched and found no definition or reference in literature to a “geologic” Sole Source Aquifer, a Sole Source Aquifer is defined by RIDEM’s *Rules and Regulations for Groundwater Quality* as follows:

"Sole source aquifer" means an aquifer designated by the United States Environmental Protection Agency as the sole or principal source of drinking water for the area above the aquifer and including those lands where the population served by the aquifer live; that is, an aquifer which is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should the aquifer become polluted.

The Department **cannot** designate a sole source aquifer. Only the USEPA has that authority. Rhode Island has three such designated sole source aquifers: Block Island Aquifer, Pawcatuck Basin Aquifer System and the Hunt-Annaquatucket Pettaquamscutt. The North End Concerned Citizens were made aware of this and it was suggested they petition EPA for this designation. The Department recently learned that the NECC group submitted a request for Sole Source Aquifer designation to the EPA in January 2006. The Department has not yet seen a copy of the request for Sole Source Aquifer designation. If such designation is approved, it would not impact this project, because the landfill closure program views GA aquifers as critical to protect, however, it may influence siting of other facilities in the area. The Department does not disagree that the additional support of such aquifer designation may be beneficial. Islands are unique in that their aquifers are to some degree isolated. While Block Island has a greater physical separation than Jamestown, Conanicut Island’s bedrock aquifer is still isolated from the mainland and from Aquidneck Island. It is also worthy to note that the Sole Source Aquifers EPA has designated in Rhode Island all occur within glacial outwash deposits,

that unlike the till around this site, are much more capable of quickly transmitting contaminants in the overburden.

Information on Sole Source Aquifer Designation can be found at the following web site: <http://www.epa.gov/safewater/ssanp.html>.

As discussed in response #2, the area is classified as a drinking water aquifer (GA) and the residents, as previously stated, rely on private wells for drinking water. As is explained in response #2, the Department views any degradation of this aquifer as unacceptable and contrary to the *Regulations*. The reason the Department is raising this issue is that there are many other sites in the program that are in areas where residents rely solely on groundwater and have no public water lines available but are not designated as Sole Source Aquifers by USEPA.

5. EPA Designation of the Site

A review of the comments indicates that a significant number of people have been informed that the site was determined by EPA to be a “toxic waste site” or is a “CERCLIS contaminated landfill.” Other comments have identified it as a superfund site. We believe it is important to clarify EPA’s assessment of the site. The site was placed on CERCLIS (EPA’s inventory of **potentially** contaminated sites to be investigated) on March 11, 1988. All the current and recently active landfills within the state at that time were placed on that list in the late eighties and early nineties in order to determine **if** they posed a risk to human health and the environment. The fact that EPA maintains that listing on CERCLIS does not mean EPA has determined it contains hazardous waste or presents an environmental threat. There also may be some confusion between a listing on EPA’s CERCLIS list versus nomination to EPA’s National Priorities List (commonly known as the “Superfund” list). The later, unlike the former, does restrict the owner’s property rights because it indicates that EPA has determined the site is a threat to human health and the environment. On September 5, 2001, EPA changed the designation of the site to State Lead. This designation indicates two conclusions made by EPA:

- USEPA will take no further action for the site under CERCLIS as it has determined the site does not present an imminent hazard to human health or the environment.
- USEPA has concluded that the site’s environmental risk makes it a low priority and therefore appropriate to be given State Lead.

Many comments have drawn parallels with Superfund sites in Rhode Island and Massachusetts as well as Love Canal in New York. They ask why things are done differently at the Jamestown Landfill. The answer is that it is being handled differently by both the Department and USEPA because the Jamestown Landfill is very different when compared to actual Superfund sites. As opposed to contaminant levels at the Jamestown

Landfill hovering at the detection limit (in the low part per billion range), many of the Superfund sites with contaminants levels significantly above health based standards with large, concentrated contaminant plumes. It has also been documented at several of these Superfund sites that tens of thousands of gallons of industrial waste were historically disposed, as opposed to the disposal of municipal waste. There obviously exists a large amount of misinformation through the community that such a large, concentrated plume exists and is threatening the water supplies of the Town. To act on this belief would be to not only make unsupported assumptions but to ignore a wealth of data to the contrary.

The Department received numerous comments that the site has been shown to be contaminated with vast quantities of toxic waste. There was even a comment that the installation of the barn will cause explosions that will release poisons that will harm people miles away. Such scenarios run contrary to a vast array of sampling data and historical information known about the Jamestown Landfill.

6. Disclaimers in the GZA Report

The Department has read the disclaimers in Section 9 and Appendix A of the document. They basically state that conclusions are based on available data and that interpolations and extrapolations are subject to limitations. Such disclaimers are standard wording in the fields of engineering and hydrogeology and do not invalidate the plan presented.

7. Pump Testing

The Department received several comments relative to pump testing. A pump test was performed on the proposed Lot 47 potable well to test its influence at the proposed pumping rate on wells within the landfill. In the field of hydrogeology, pump tests are used primarily for two purposes:

- To test the capacity of a well to produce water in a certain aquifer.
- To explore the limits of influence pumping one well has on other wells in the aquifer. This is important for the placement of capture wells in pump and treat systems and for evaluating the effect of pumping a supply well on the aquifer.

Pump tests are not normally used to delineate or characterize plumes at a site. Given that the Department's review, however, has been based on the conditions presented, a condition will be included in the final approval limiting the pump rate of the well on Lot 47 to below 200 GPM, unless a further demonstration is provided. The well on Lot 47 is also included in the revised long term monitoring plan for the site.

8. Hydrogeological Assessment of the Island

The hydrogeology of the landfill has been extensively studied, including analysis of the stratigraphy and fracture characteristics. Some commenters have asked why the Department has not mandated a study of the entire island and its water supply. The Department requires investigation to be focused and conducted as necessary and appropriate. The Department required investigation of the hydrogeology of the site and surrounding areas. To require the Town to bear the expense to investigate and study all of the island, which would include the Downtown Area and Beavertail Point, that have no relevance on the remedy for the site, would be arbitrary and capricious.

Geophysical analysis of fractures in the borehole for MW-7 was done to understand the fractures and locate the monitoring well screens with MW-7. The geophysical results were analyzed and debated by geologists from both GZA and RIDEM until the screened intervals were agreed upon.

The Department's initial concurrence with the results and scope of the investigation when a **Program Letter** was issued on May 30, 2003. After receiving public comment and additional information from residents, the Town and GZA, the Department issued its final approval, in the form of a **Remedial Decision Letter** almost one year later on April 22, 2004.

9. Relationship between RIDEM and USEPA

Some comments have stated the USEPA is the governing agency over RIDEM. As discussed in response #5, RIDEM and USEPA have worked cooperatively at the site. However, it is not correct to say EPA is the governing agency over RIDEM or the Town of Jamestown. The USEPA works with RIDEM but does not supervise the agency. If the USEPA believes its regulations have been violated, it is free to enforce any regulations it believes have been violated consistent with the Memorandum of Understanding between the two Agencies. In some programs, through state regulations, the Department also has the power to enforce USEPA regulations. It should be noted that the Department is not aware of any violations of USEPA regulations at this site. As discussed in response #5, in the 18 years the site was on the CERCLIS list, USEPA never required **any** actions of the Town under that program.

10. Office of Water Resources Permitting Issues

In addition to the Office of Waste Management issues, the placement of impermeable surfaces, such as a building and paved road, bring into play the regulations of the Department's Office of Water Resources. While efforts to reduce infiltration are an important component of decreasing leachate generation, such measures, by definition create a need for storm water runoff controls. While such storm water controls could be normally be approved as part of the remedial design without a permit application to the Office of Water Resources, in this case, aspects of the Town's plans go beyond the requirements for remediation alone, and therefore these components of the project do not

qualify for exemption provisions contained within the regulations. The Town therefore must file a Preliminary Determination Application with the RIDEM Wetlands Program. The current review suggests there will need to be alterations made to the detention basin and associated discharge in the vicinity of North Main Road to meet the requirements of those regulations. Also the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations will need to be complied with for storm water discharge and building drains and other aspects of construction. Similarly, any Individual Sewage Disposal System (ISDS) onsite will need to comply with ISDS Regulations. As these reviews will be part of the specific permitting by the Office of Water Resources, these comments and issues will be addressed jointly by the Office of Waste Management and the Office of Water Resources in the course of their permit review process.

11. The Uniqueness of Jamestown

Many comments have been about the unique nature of Jamestown since it is an island. The Department believes each site is unique. As previously stated, all landfills, including this one are unique. This is why a Site Investigation Report is required to understand the unique nature of the site. Some factors unique to this site warrant an increased level of concern. For instance, it is an island and the site is surrounded by a GA aquifer. Other factors point to lower hazards such as the following:

- Very low levels of contamination have been found in the soils and groundwater at the site compared to most landfills in the state.
- Borings from the site show it to be underlain by a low permeability till that overlies weathered schist that tends to isolate bedrock fractures at the interface between the overburden and bedrock.
- The area overall is characterized by very poorly permeable soils derived from meta-sedimentary rock of the Rhode Island Formation that has caused the notoriously high failure rate of septic systems in the area.

There have also been comments that the area has no parallel in Rhode Island because the houses cannot be connected to municipal water lines due to the distance from the water lines. There are other site remediation and landfill closure sites further from municipal water lines that have no other readily available source. This is the reason for the Department is as strict as it is with groundwater in GA areas.

When considering the uniqueness of each landfill, the Department tries to bear in mind all the factors that make it unique in order to understand the site. The Department was aware of all the above factors (both those that raise and lower its risks) when it oversaw and approved the investigations.

By the Department's Regulations, Jamestown is not classified as a sole source aquifer as explained in response #4. As explained in our response #2, the Department has dealt with sites on islands where residents rely solely on groundwater, as well as sole source

aquifers. As is also explained in response #4, the Department does give GA aquifers, such as this, the highest level of protection. It should be noted that if the site received sole source designation, it would not forbid the Town from constructing a highway barn at the site, as other designated sole source aquifers have such structures built on them.

Regarding the existence of highly fractured bedrock, all of Rhode Island is underlain by fractured bedrock. Therefore the presence of fractured bedrock in Jamestown does not make this aquifer unique in Rhode Island. The ubiquitous existence of fractured bedrock within the state has given the Department a depth of experience in dealing with such aquifers. This experience will continue to be used to evaluate the project. The consultant for the NECC had made a statement that the aquifer is “highly” fractured but has not provided any information as to how that judgment was made. In hydrogeology, such qualifiers are usually used to speak about units in relative terms such as a highly fractured zone overlying more competent bedrock.

12. Excavation

The Department by policy and regulations requires that if waste is excavated from an inactive landfill, it must be disposed of in accordance with RIDEM Solid Waste Regulations. The Department has allowed such re-interment of waste where an impermeable cap is being placed (such as the Woonsocket landfill). Therefore at this site, the Department will require that all solid waste that is removed be disposed of properly off site at a licensed facility. The Town has requested to screen the solid waste from soils so that soil screenings can be reused at the site for grading and shaping material. The Department will require that the soils be properly sampled and are placed under the upper paved storage area, provided laboratory analysis can confirm the samples meet RIDEM standards. The proposal calls for sampling of Total Petroleum Hydrocarbons, Volatile Organic Compounds, Semi-Volatile Organic Compounds, Polychlorinated Biphenyls, RCRA 8 metals, flashpoint, pH and reactivity. If any of these contaminants exceed RIDEM standards, they will need to be disposed of offsite at an appropriately licensed facility. Sampling will be done at the frequency of one sample per 500 cubic yards, which is compliant with standard Department procedures and past approvals at other sites.

In addition to laboratory analysis of the soils, waste must be field-tested onsite for Volatile Organic Compounds. Such testing, which was also done during test pitting of the site, is a routine precaution. Field-testing for Volatile Organic Compounds does not detect metals, such as lead and antimony and semi-volatile organic compounds that have been found at this site. Metals and semi-volatile compounds do not spontaneously volatilize and therefore do not present the same inhalation risk to workers and residents as volatile compounds.

13. Paving of the Road

Following its review of the 30% Design, the Department requested that the road be paved. After discussions with the Town, the Department is still not willing to waive this requirement. Given the nature of the vehicles that will use the road, the Department maintains its position that the road must be paved. This reasonable requirement is consistent with good engineering practice. All storage, work, truck parking and service areas are to be paved.

The Department believes the road must be paved if trucks will routinely drive on top of the landfill as was stated in comments for the 30% design. Such a restriction is consistent with the Department's requirements at similar sites and with standard engineering practice. The Department also requested paving of the composting area. It is our understanding that the Town is evaluating moving the entire composting area to another site.

14. Monitoring Well Construction and Sampling

Lack of Overburden Wells

As explained in response #1, the Department re-opened aspects of the Environmental Monitoring Plan Review that were affected by the garage or new environmental data provided. Several commenters have asked why there are no overburden wells. The saturated overburden is not deep enough to allow the installation of overburden monitoring wells, so shallow wells are screened in bedrock.

Sampling with Water Supply Pumps

Some comments have questioned the reason why conventional water supply pumps were not used for monitor well sampling. The reason is it would be contrary to both EPA and DEM sampling protocols and would be poor engineering practice. A standard supply well pump will cause volatile organic compounds to escape into the air resulting in underestimating or completely missing this important group of chemicals.

Furthermore, monitoring wells are placed to intercept contaminants at discrete zones within the aquifer. Water supply wells, on the other hand, are designed to draw water from as many different zones within the aquifer as possible. The more water that is mixed in from other zones in the aquifer, the more dilute the sample will become. This causes the sampling to underestimate contaminants present and also homogenizes the results to make them far less meaningful as an indicator of contaminant distribution.

As explained in *response #2*, groundwater is of primary concern to the Department in reviewing this project, which is why the Department is insisting on proven and scientifically valid sampling methodologies.

Construction of Wells within Fill Areas

Some wells, such as EA-1B and the onsite "deep well," were installed within the fill area. Such construction is not recommended under current RIDEM and EPA protocols. In

addition to providing an incomplete picture of contaminant migration, such locations can provide a preferential pathway for potential contaminants to migrate to the bedrock. Given the nature of the area, the Department required that these wells be closed and that other wells be placed at the perimeter of the landfill in accordance with current requirements to better monitor landfill contaminant migration. There have been comments received from the NECC that these wells should be part of the EMP while simultaneously MACTEC, the consultant on behalf of the NECC, has pointed out that these wells were not properly installed and asked that historical data from these wells be discarded. The Department has not been persuaded by either argument. These wells were not constructed according to current standards and should be properly abandoned, but the history of contaminants detected in them is relevant and was considered as part of the Department's evaluation.

Construction of Cluster Wells and Well Pairs

There have been comments as to why no cluster wells, or well pairs have been installed at the site. The most recent well installation (GZ-7) was constructed as a well pair to monitor two different fracture zones in the bedrock. As explained above, construction of pairs to monitor overburden and bedrock is not possible due to the proximity of the water table to the bedrock interface.

15. Dispute over Issues at June 14, 2005 Meeting

On July 14, 2005 the NECC along with their consultant (MACTEC) had a meeting with the Director in which Jamestown officials and their consultant (GZA) were also present. On July 8, 2005 GZA, on behalf of the Town submitted a rebuttal to the NECC presentation. On August 16, 2005 MACTEC sent a response to the GZA response. It contained strongly worded responses to GZA's responses. Some of these responses have been quoted or paraphrased as comments. Our analysis of some of the disputes is shown below. To the extent that those comments bring out technical disagreements, the Department is considering these comments. To the extent that the comments contain personal attacks the Department feels that these lower the quality of the debate and the Department will not respond or consider such attacks as appropriate for the review process.

Contaminants detected in groundwater

MACTEC made the assertion that the following contaminants have been found in landfill monitoring wells above standards: chlorobenzene, 1,2-dichloropropane, vinyl chloride, toluene, bis(2-ethylhexyl)phthalate ("BEHP"), arsenic, beryllium, chromium, lead, barium, cadmium, copper and nickel.

GZA submitted a subsequent response indicating that 1,2 dichloropropane, and BEHP have not exceeded standards. In the last 8 rounds only antimony, cadmium, and lead have exceeded MCL's. Copper has also exceeded the MCLG (aesthetic standard).

The Department reviewed the correspondences. BEHP was detected in one sample at well EA-2D on December 7, 2000 above the MCL of 6 ug/l and GZA was mistaken in their assertion that it had not been detected above MCL's, although they believe, based on its detection only once, that it may be derived from plastic in the wells and not the site. Although 1,2 dichloropropene was not detected above MCL's, 1,2-dichloropropane, the chemical MACTEC had listed, was present. It should also be noted that some of the chemicals listed by MACTEC are not believed to be site related and may reflect natural background conditions, specifically beryllium and barium.

Lot 47 Pump Test

In MACTEC's presentation they asserted the placement of monitoring wells was inadequate and pump testing has not been done. As part of GZA's response they asserted that the Lot 47 well had been extensively tested and will not impact groundwater flow. MACTEC's response quotes GZA's Transaction Screen Report of 1999 that states that exactly what fractures the well draws from cannot be determined and construction or pumping of the well could alter the groundwater flow. Then in their response, GZA maintains that they do not believe that the well will affect the groundwater flow.

MACTEC said either the laws of hydrogeology have changed or one of the statements must be false. The Department does not believe this is the case. It is very reasonable to believe that at low rates, the well will not impact groundwater flow but if the rate were increased or pumping from other nearby sources increased, it could at some point affect the groundwater flow. The critical term GZA used in 1999 (prior to the pump test) is that the well "**may** have an additive effect on groundwater migration patterns" [emphasis added]. That being said, GZA cannot say with absolute certainty, as they say in this response, that the well **will not** impact groundwater flow. It can be reasonably concluded that it will not have an affect at the proposed flow rate, however at some higher flow rate the radius of influence will most certainly be expanded. In consideration of possible increased pumping rate or the possible cumulative affects of pumping additional wells, a condition will also be added to the final approval that requires the Lot 47 well pump rate be maintained below 200 gpm, the test rate, unless/until alternate data is proved to indicate a higher pumping rate does not pose a threat. The Department also reserves the right to require placement of additional wells based on changes in aquifer use.

Direction of Groundwater Flow at Viera Farms

GZA's response indicated the Viera Farms wells are not down gradient and may contain VOC's from onsite disposal. MACTEC in their response pointed out that GZA said in their 1992 site assessment that Viera Farms was down gradient of the landfill and the landfill was the probable source.

MACTEC is correct in their assertion that GZA, in their study of the Viera Farms property in 1992 did conclude that there was no onsite source of the VOC's observed. While GZA did not actually state in their response 9 that the VOC's came from an on-site source, however, it is implied by their statements that there is on-site disposal and that the

wells are not down gradient. To that extent, the Department believes it makes an inaccurate implication.

Having looked at the data, the Department believes that while the Viera Farms is not technically down gradient of the landfill, it is very close and cross gradient of it, and the Department reviews and approval have taken this into consideration. Also surface water flow followed by infiltration may affect groundwater in areas not downgradient of the site.

See response #28 for the Department's analysis of the Viera Farms data.

Onsite Sewage Sludge Disposal

In their presentation, MACTEC indicated that waste was landfilled until 1987. The GZA response was that landfilling stopped in 1984 with sludge accepted until 1985. MACTEC in their response quoted the Screening Site Inspection done by EA in 1991 and a letter from RIDEM in 1999 showing that sewage sludge disposal took place well after that.

The Department reviewed the information and found that much of the issue relates to the semantics of the term "disposal". The Screening Site Inspection Report indicates GZA is correct that landfilling of solid waste stopped in 1984 and disposal of sewage sludge in trenches ceased in 1985. The acceptance for disposal MACTEC refers to in their rebuttal (also quoting the Site Inspection) involves the mixture of sewage sludge and wood chips as part of a composting operation, not a landfilling operation. The Site Inspection Prioritization report of October 1992 also supports this conclusion.

16. Karst Aquifer

Some comments refer to underground "lakes" or underground "pools" making up the aquifer in Jamestown. The commenters seemed to be misinformed about the nature of this aquifer. Underground pools of water are characteristic of karst topography, which we do not have in this area. The groundwater in this area is both stored and transmitted in fractures. Physical disturbance is not the mechanism by which such aquifers are threatened. The primary mechanisms of contamination are diffusion of contaminants into the fractures and migration of the groundwater, either by natural flow or pumping of the aquifer. The current monitoring strategy is designed to detect such contaminants migration based on sound geological principles.

17. Projected Pumping Rates of Lot 47 Well

We have received public comments that the pumping at the site may exceed the pumping rate that was done for the pump test on Lot 47. The Department agrees and believes that the EMP should be modified to include that supply well. Appendix D of the 50% Design does propose addition of this well to the Environmental Monitoring Plan. The approval

will also be conditioned to restrict the pumping rate of the Lot 47 well consistent with the data provided.

18. Brownfields: Laws and Regulations

The Department has received comments that the Brownfields approach is a bad concept. The Rhode Island General Assembly passed the Industrial Property Remediation and Reuse Act (CHAPTER 23-19.14) and it is not within the power of the Department to override or ignore the laws of the State of Rhode Island. Similarly, some comments have said that this statute was never meant to apply to sole source aquifers. In reading the statute and legislative intent, there is no suggestion that it was meant to exempt any part of Rhode Island. Regarding sole source aquifer designation, please refer to response #4.

There have also been comments that it is the responsibility of the Department to find uses for sites that have been properly remediated. The selection of the end use is not the Department's responsibility in the oversight process, it is the role of the town. The Department's role is exclusively to ensure the remedy is protective of the human health and the environment based on the end use proposed by the property owner (consistent with local zoning requirements).

19. Possible Impact from Highway Barn Activities

As explained in response #3, if the barn were built on a non-contaminated site that did not contain a landfill, the OWM would have no jurisdiction over the matter whatsoever. Therefore, the Department's role only relates to how the highway barn will affect the landfill closure. These wells may prove useful in detecting any possible contamination from the transfer station or proposed barn even though their original purpose was to monitor the landfill. If there should be a truck accident or other incident that may cause a leak of gasoline or hydraulic fluid, this would be completely unrelated to the landfill. If Jamestown moved the location to lot 47 or any other location in the Town, such monitoring wells would not be required. Virtually every other community in Rhode Island (including New Shoreham which is a designated sole source aquifer) maintains a public works garage and none of them were required to install a network of wells around the facility upon construction. Therefore it would be arbitrary and capricious of the Department to require it here.

Some commenters have asked if an uncontaminated property can be found. As we stated in response #3, this is the Town's decision. From a wider environmental perspective, it would not be logical to locate the proposed DPW facility over an uncontaminated site should be found so that if contamination occurs it will occur over a pristine and unmonitored portion of a GA aquifer is flawed.

The location of the highway barn does increase the complexity of the continued operations of the public works facility and of the closure. A closure where subsequent

uses are passive has a more predictable set of site expectations. A more complex closure has certain financial, scheduling and technical impacts (or aspects) that are being left to the town to consider.

20. Private Well Sampling and Contingency Plans

Officials of both RIDEM and RIDOH have had discussions with both the NECC and the Town of Jamestown regarding private well sampling and contingency planning. The Department also received a comment from RIDOH offering to work with the Town on contingency planning and incorporating that into the process. The Town has paid for the entire cost of the private well sampling program. As per RIDEM Remediation Regulations, the Department considers the Town responsible for the cost of private well sampling and if contamination occurred due to landfill activity, the Town is responsible for the cost of remediation.

One such meeting occurred on June 14, 2005 at RIDEM Headquarters. There have been several comments that quote Dr. Robert Vanderslice of the RIDOH as saying it is not a matter of **if** but **when** this project causes contamination of private wells. We have spoken to Dr. Vanderslice directly regarding his statement. Dr. Vanderslice said he was advising the Town on the wording of contingency plans in general in regards to how to deal with positive results in wells (whether contamination from piping, onsite activities or offsite sources) and **was not** drawing any conclusions regarding this landfill or this project. Another comment attributes this same quote to Dr. Sullivan at the meeting. Dr. Sullivan also denies making such a statement.

The Department's Regulations also include EPA approved methods to statistically evaluate the groundwater data throughout the entire post closure monitoring period. That ongoing evaluation process is designed to trigger additional incremental response actions, should environmental data suggest they are warranted.

21. Hiring of Consultants

Some commenters have said that they wish the Department would prohibit the Town from using GZA to work on the project. One reason given is that they have already had involvement with the landfill closure. Another reason is the disputes discussed in response #15.

It is totally outside the Department's authority to tell the Town whom they may hire as a consultant or Town employee. Similarly the Department would not tell the NECC that they couldn't hire MACTEC in the future. Both parties are within their rights to hire whomever they wish.

22. Landfill Closure Policy

There have been comments that the closure is not compliant with the Landfill Closure Policy. Our policy contains the following statement:

As some of the requirements of Rule 2.1.09 of the Solid Waste Regulations may not be applicable to all of these inactive landfills, the Department may grant a variance from one or more of these requirements, as long as all documentation and information necessary to support the variance has been provided.

The Department concluded in 2004 with its Remedial Decision Letter that the SIR provided the necessary documentation to support the variance in conjunction with the remedy. Specifically sufficient documentation was provided to show that the environmental risks were adequately addressed by the proposed remedy. Therefore, the requirements of the regulations and the policy have been met. To apply the policy to mean that this site, although it contains lower levels of contaminants than many other sites in GA areas, must have an engineered cap would be inconsistent and unjustified.

23. Other Similar Uses at Landfills

The Department received many comments that the proposed industrial use has not been allowed at any other site where residents rely on groundwater as their only source of drinking water. The Department compiled the below listed information of other landfills over GA aquifers where municipal water lines are not available. In addition to the above listed characteristics, some are located over community wellhead protection areas. Some, like the Richmond public works garage, were simply built on the landfill property with no hydrogeologic studies at all.

The Department has also received comments that this site cannot be compared to sites such as Hopkinton and Exeter because those sites can easily be connected to municipal water lines. Neither community has ever made that representation to us and in fact, neither municipality even has a municipal water system (Hopkinton has a very limited tie in to the Richmond system that services only Main Street in Hope Valley). Furthermore the sites are approximately 4.3 and 6.3 miles away from the nearest municipal water systems. Therefore, to connect to an existing municipal system, these communities would have to physically and legislatively create an entire municipal water system, have another municipality give them water and build at least 4 to 6 miles of municipal water lines just to connect to a neighboring system (if capacity existed). To do so would hardly, as the comment implies, be a simple matter compared to Jamestown.

Landfill Use/Reuse Data for sites in GA Areas not Served by Municipal Water Lines

<i>Name</i>	<i>Within Wellhead Protection areas?</i>	<i>Current Usage</i>
Burrillville Landfill No.1	N	Leaf and yard waste composting facility, transfer operation and D.O.T. salt storage
Burrillville Landfill No.2	N	Vacant- engineered cap.
Exeter Landfill No. 1	N	Vacant
Exeter Landfill No. 2	N	Transfer Station
Foster Landfill	N	Vacant
Glocester Landfill	Y	Transfer station, leaf and yard waste composting operation, and animal shelter.
Hope Town Dump	N	Vacant
Jamestown Landfill	N	Transfer station, leaf and yard waste composting operation, proposed DPW Garage.
Little Compton Town Dump	N	Western portion of landfill contains leaf and yard composting operation. Transfer station and firearms qualifying range on-site also proposed cell phone tower.
Narrow Lane (Charlestown) Landfill	N	Mostly vacant some storage of gravel.
New Shoreham Landfill	N	Transfer station and recycling center
Ninigret National Wildlife Refuge Landfill	Y	Wildlife Refuge
North Scituate Town Dump	N	Vacant
Portsmouth Melville Dump	N	Vacant
Prudence Island Landfill (Disposal Area)	N	South Prudence Bay Island Park
Richmond Landfill	Y	Storage of DPW stockpiles on landfill, dog park, Ball field (proposed)
DPW Transfer Station operations partially encroach on fill area, also possible encroachment of Public Works Garage.		
Scituate Town Landfill	N	Vacant
West Greenwich Landfill	N	Transfer station expansion proposed to go onto filled area

24. Information located at the NECC.org Site

A number of comments have referenced the above listed web site, particularly in reference to the workshop of February 1, 2006. The Department has reviewed this web site and the characterizations of the meeting are from our view both inaccurate and filled with ad hominem attacks against the speakers at the meeting. We feel this lowers the quality of the debate to name calling, therefore it should not be considered a factual reference. Furthermore, some of the information on this website is inaccurate and is being used to instill a sense of fear rather than provide factual and rational information.

25. Cancer Rates in Jamestown

The Department has received a number of comments regarding cancer rates in Jamestown and particular cancer diagnoses. It is the Department’s role to keep contaminants, particularly carcinogens, from releasing to the environment, including the groundwater.

Explaining cancer rates in general, or individual cases involves complex factors such as genetics, lifestyle, socio-economic status as well as environmental exposure. If any cases of cancer are suspected to have an environmental cause, we would ask that the physician who diagnosed the disease please call Dr. Robert Vanderslice (222-3424) to ensure that the RI Department of Health has the opportunity to conduct the appropriate follow-up. The state has also coordinated with US Department of Health and Human Services in the past, the federal counterpart to the state Department of Health.

26. Lot 47 and Summit Avenue as Part of the Site

Some comments have pointed out the ambiguity as to whether two adjacent properties (Lot 47 and Summit Avenue) are part of the site or not. As these sites do not have waste, they are not inherently under the jurisdiction of the Office of Waste Management. Historically some documents, like the Screening Site Inspection, do list Lot 47 as part of the site. To the extent that they have drainage structures on them that are part of storm water management, they are jurisdictional regarding any storm water or RIPDES permits, therefore, for these permits, they are part of the site. The relationship to this property increases in importance with increased storm water discharge if the site is developed with the barn and associated paving requirements.

In the exchange of letters discussed in response #15, MACTEC criticized GZA for referring to Lot 47 as part of the site, saying it is “indicative of their lack of attention to detail”, and yet in the same documents, MACTEC refers to the supply well on Lot 47 as an “On-Site” well. This is indicative of how confusing the definition of “site” can be.

27. The Application of Health Based Standards

The Department, like many other environmental agencies, has become conscious in recent years of the role of environmental justice in decision making. As explained in response #11, the Department views each site as unique. For this reason, some sites, such as those over drinking water aquifers or those with high levels of contamination, may be required to construct more rigorous source control measures than other landfills based on the threat posed to environmental or human health receptors.

The Department, as well as the Department of Health, have adopted standards, such as EPA’s MCL’s that specify contaminant levels in drinking water, below which exposure to humans are acceptable in terms of calculating risk. There have been comments that the MCL’s should be discarded and stricter levels should be created and enforced for private wells around this site. Some comments have further stated that drinking water standards should be created and enforced for this project for compounds that are not presently regulated.

MCL’s are legally enforceable in both law and regulations for both public water supplies and for determining compliance with drinking water aquifer standards that are well

supported by current science following lengthy public notice. The Department does not have the authority to rewrite statutes and can only adopt new regulations after careful scientific study. Issuing drinking water standards that are either unique to a particular site or are not adequately supported by scientific documentation is inappropriate for a least two significant reasons:

- Requirements that place unreasonable burdens on a single property owner will likely be found to be arbitrary and capricious in violation of statutes and
- A drinking water standard that provided more protection to one community would affect say that the health of that community is more important than the health of other communities.

The concept of environmental justice is based on the concern that some groups, particularly those in minority or low-income communities are subjected to more environmental contamination. To create separate numbers that apply only for this project would be to violate the concept of equal protection and environmental justice.

28. The Viera Farms Property

In 1992, GZA performed an environmental assessment of the adjacent property, known as Viera Farms. The site had been issued a violation for illegally filling wetlands in 1986. As part of this evaluation, monitoring wells near the landfill were monitored and found to contain low, part per billion levels of VOC's including 3 ppb of vinyl chloride which is above the Maximum Contaminant Level (MCL) of 2 ppb. Based on the proximity of the wells to the landfill and the contaminants detected, the Department believes that the landfill was and is the source of the contaminants. The original GZA study concluded the same. However, the lack of laboratory analysis of the illegal fill material cited in the 1986 Notice of Violation creates the possibility that the fill brought on-site by Viera Farms is the source of the contamination. It has been the Department's experience that illegal dumping is rarely if ever accompanied by analysis of the fill being dumped. Therefore, it cannot be positively ruled out that the fill material was uncontaminated given the presence of many of these compounds (such as toluene, xylene and vinyl chloride) in many different types of materials. Given the fact that detections were in the low ppb range, and their occurrence was sporadic, it is difficult to definitively rule out either the Viera Farms fill or the landfill as a source of the VOC's.

In short the Department does not accept GZA's 2005 implication that the Viera Farms is the source of the contamination. However, the Department also does not accept the contention of the NECC that there is irrefutable proof that the landfill is the source of the contamination found in these wells.

At the time the EMP was being designed, the Town reported that they had been denied access to the Viera Farms property for the purposes of well sampling. The Viera Farms monitoring wells were not included in the approved EMP as it was determined that monitoring wells at the perimeter of the landfill provides a better early warning system of contaminant detection than offsite wells and avoids the issue of disposal at the Viera Farms property.

29. Geophysical Methodologies

Form letter 3 claims that other communities have used sonar and x-ray viewing to complete hydrogeologic studies prior to constructing buildings on landfills and ask that this should be done here. The commenters are misinformed regarding sonar and x-ray analyses that supposedly have been done with other communities for their bedrock fracture studies. Neither is an effective technique in investigating bedrock fractures or aquifers and neither has been used at any sites in Rhode Island to our knowledge. See *response #8* regarding geophysical studies that have been done at this site.

30. Coastal Resource Management Council Review

The Department has determined that the site is not within the jurisdictional area of CRMC; therefore a permit from the agency will not be required. All sites within the state do eventually drain to coastal areas, however this is not the criterion that make a site jurisdictional to the CRMC.

31. Closure at the Block Island Landfill

The Department has received comments that the Block Island Landfill should be the model for closure in Jamestown and that their consultant should be hired here. The landfill on Block Island was never closed or capped. The Town has not yet volunteered to join the landfill closure program. Also a building was constructed on the site without a geological or hydrogeological study submitted to the Department. Unlike the Jamestown Landfill, this landfill is still undergoing investigation under the federal CERCLIS program, and the Department is involved in that investigation. Investigatory activities occurred on Block Island as recently as the summer of 2005. As part of the investigation, the Department found exceedances of GA standards for lead, beryllium, cadmium, chromium, nickel and thallium in 2005. Historically, onsite wells have also shown exceedances of methylene chloride, trichloroethene and 1,2-dichloroethane. Given the above, the assumption that the Block Island Landfill should be the model that the Jamestown Landfill should follow is questionable.

32. Closure at the Woonsocket Landfill

A newspaper article was submitted regarding the different closure mechanisms of the Woonsocket Landfill and another landfill located along the Blackstone River in

Worcester. RIDEM is overseeing the construction of an engineered cap on the Woonsocket landfill as the nature of hazardous waste and other site-specific characteristics, such as groundwater results, justified it to protect human health and the environment. As explained in *response #4*, every landfill is unique. The Department cannot comment on the decision of the Massachusetts DEP on the landfill in Worcester, as the Department was not involved with the decision.

33. Alteration of Surface Water Flow

The Department has received comments that the proposal will alter the direction of surface water flow. This is correct. The SIR demonstrated that existing surface water flow patterns cause ponding over the landfill leading to infiltration into waste and leachate generation. The remedy is intended to alter this pattern in order to divert surface water flow to areas that are downgradient of waste storage areas. As explained in *response #10*, storm water management will have to comply with all The Department's RIPDES and Wetlands Regulations.

34. Characterization of the Landfill as Relatively Benign

At the public workshop for the 50% Design, personnel from the Department made a statement that, in comparison to many landfills in the program, this site is relatively benign. The Department has received comments questioning what information this statement is based on. Some comments have also said it shows a lack of objectivity. The landfill has been the subject of extensive study that included sampling of groundwater, soils and sediments. The levels of contaminants found at this landfill are low by comparison to many landfills in the Landfill Closure Program. In the last 3 rounds of groundwater sampling, all onsite-monitoring wells met drinking water standards. In the Department's experience it is very unusual for a landfill to contain such low levels of contamination. While the Department strives to be objective, it does not view this as incompatible with drawing reasonable scientific conclusions based on years of data. See also *response #5*.

35. Passive soil gas sampling for VOC's

A comment was received by Loitherstein Environmental that further delineation of the chlorinated organic compounds in groundwater should be done using passive soil gas sampling. It is unclear what information was reviewed to formulate the comment and proposal. Volatile organic compounds at the landfill typically occur in the low part per billion range. Chlorinated volatile organic compounds are a very small component of the organic compounds historically detected. As discussed in *response #1*, assessment work

was found to be adequate. The Department believes an additional soil gas survey is not advisable when contaminant levels are being found around the detection limit.

This comment came with a proposal and cost estimate for Loitherstein Environmental to perform the work. Although it was not the intent of the public comment to solicit bid proposals, as explained in comment #21, both the Town and the NECC are free to hire the consultants they wish.

36. Placement of Drainage Collection and Discharge Locations

Some comments have stated that the catch basin will discharge storm water to the waste underneath the soil cap.. The Department's review of the 50% Design shows that all catch basins discharge to points downgradient of the landfill (points west of the fill material or east of the surface water divide). It is also our understanding that storm water detention basin #2 is upgradient of waste east of the landfill but will be lined so as to prevent direct infiltration. However this basin design needs to undergo further review with the Office of Water Resources as per response #10.

Also, there have been comments that discharging storm water to wetlands or lot 47 is discharging "contaminated water" to these sites. The purpose of collecting storm water is to collect the rainwater **before** infiltration, thereby eliminating the potential risk of contamination. It is not accurate to refer to the rainwater channeled away from the landfill as "contaminated" because it flows on top of or near a landfill, and has not come in contact with the waste.