

Beacon Heights  
8.3  
26575

**BEACON HEIGHTS SITE  
FIVE-YEAR REVIEW  
BEACON FALLS, CONNECTICUT**

**Prepared for:**

**U.S. Environmental Protection Agency  
Region I ARCS  
John F. Kennedy Federal Building  
Boston, Massachusetts 02203-2211**

**Prepared by:**

**Roy F. Weston, Inc.  
187 Ballardvale Street  
Wilmington, Massachusetts 01887**

**Contact No. 68-W9-0018  
Work Assignment No. 18-1R25  
Document Control No. 4100-18-BCGS**

**December 14, 1992**

**Revision April 19, 1993  
Work Order No. 4100-18-86**

## **TABLE OF CONTENTS**

### **EXECUTIVE SUMMARY**

#### **1.0 INTRODUCTION**

**1.1 Statutory Requirements**

**1.2 Scope of Work**

#### **2.0 BACKGROUND**

#### **3.0 FIRST OPERABLE UNIT**

**3.1 Water Main Extension**

**3.2 Groundwater Monitoring and Institutional Controls**

#### **4.0 INVESTIGATIVE FINDINGS**

**4.1 Document Review**

**4.2 Site Visit (Interviews, Site Inspection)**

#### **5.0 ASSESSMENT OF EFFECTIVENESS**

#### **6.0 SUMMARY**

## EXECUTIVE SUMMARY

Certain requirements under the Comprehensive Environmental Response Compensation and Liability Act, as amended, (CERCLA) call for the preparation of a review of remedial actions taken at Superfund Sites within five years after the initiation of those actions. Such a Review is now required for the assessment of the first remedial action or operable unit taken at the Beacon Falls Landfill Superfund Site.

The first operable unit completed under the Potentially Responsible Party's (PRP's) remedial action initiatives, addressed in part, the off-site remedy for the protection of public health. That unit consisted of the extension of the public water supply to residents bordering the site, whose drinking water was, or was in danger of becoming, contaminated by leachate emanating from the site.

The review of the remedial action indicated that the initial response adequately protected the residents in the immediate area from exposure by ingestion through their private water supplies. However, without implementation of on-site controls, i.e., capping of the landfill, off-site exposure is still possible, either through direct contact with the leachate and/or ingestion of leachate contaminated runoff in adjacent streams and brooks.

Implementation of the other components of the selected off-site remedy are also needed to alleviate the potential for exposure. Detection monitoring, necessary to assess the extent and degree of contaminant migration, has not been conducted since 1984, leaving no means of evaluating the first operable unit's effectiveness to protect groundwater supplies downgradient of the extended service area.

Institutional controls called for in the 1985 Record of Decision (ROD) to prevent use of the aquifer in the area downgradient of the site, are in place.

The intent of the first operable unit directive, contained in the 1987 Consent Decree (Consent Decree), was to initiate remedial action providing a public water supply to those residents in immediate danger of exposure to contaminated leachate. Thus, this assessment of the First Operable Unit's effectiveness is favorable. However, implementation of the remaining essential elements to alleviate the imminent and substantial endangerment to the public health and the environment must occur.

**BEACON HEIGHTS LANDFILL  
SUPERFUND SITE, FIRST OPERABLE UNIT  
FIRST FIVE-YEAR REVIEW REPORT**

**1.0 INTRODUCTION**

**1.1 Statutory Requirements**

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA), as amended by section 121(c), and section 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), both require the preparation of a five-year review report of remedial actions initiated at Superfund Sites on or after October 17, 1986. The review must be completed within five years of the initiation of the remedial action, and every five years thereafter, for sites which will not allow for unlimited use and unrestricted exposure after attainment of the performance standards stated in the ROD.

As a matter of policy, review also will be conducted for pre-October 17, 1986 remedial actions meeting the above criteria, and for all remedial actions where the site will be released from standards specified in the ROD but taking five or more years to attain (e.g., long-term remedial actions). Sites previously deleted from the National Priorities List (NPL) also will be examined to determine the appropriateness of five-year reviews. OSWER Directive 9355.7-02, "Structure and Components of Five-Year Reviews" (May 23, 1991), sets forth the need for policy reviews, as well as the minimum requirements for statutory and policy five-year reviews.

The Environmental Protection Agency (EPA) has established a three-tier approach to conducting five-year reviews, the most basic of which provides a minimum protectiveness evaluation (Level I Review). The second and third levels (Level II and Level III) of review are intended to provide the flexibility to respond to varying site-specific considerations, employing further analysis. The EPA will determine the level of review required at each site. The EPA contemplates that a Level I review will be appropriate in all but a relatively few cases where site-specific circumstances suggests another level.

In the event that a need for further analysis is indicated by site conditions during the review, specific site-related components of a higher level of review may be authorized.

**A Level I five-year review is required at the Beacon Heights Landfill Site, Beacon Falls, Connecticut to confirm that the remedial action completed as Operable Unit I, as presented in the ROD and Consent Decree, adequately protects the public health or welfare and the environment.**

**A further objective of this five-year review is to consider site-specific factors (e.g., scope of operation and maintenance, frequency of repairs, changes in monitoring indicators), and how they relate to site protectiveness. As appropriate, recommendations for additional response actions may be proposed to reduce the potential for remedial action failure.**

## **1.2 Scope of Work**

**EPA determined that the level of investigation for the Five Year Review Report for the Beacon Heights Site would be Level I. Specific tasks performed as part of this review were as follows:**

- a. Project planning which includes preparation of a Work Plan and the review of guidance concerning the preparation of Five Year Plans,**
- b. Review of all applicable documents available regarding the site,**
- c. Review of applicable or relevant and appropriate standards,**
- d. Site visit including interviews and a site inspection, and**
- e. Preparation of the Five Year Review report.**

## 2.0 BACKGROUND

The Beacon Heights Landfill Site (the Site) is located approximately ten miles south of Waterbury, Connecticut and two miles east of the intersection of Connecticut Routes 8 and 42 in Beacon Falls, Connecticut. The actual landfill area covers approximately 34 acres of an 82 acre parcel.

From the 1920's until 1970, a small portion of what is now known as the Beacon Heights Site was known as "Betkoski's Dump." It consisted of approximately 6 acres of active dumping and open burning in the northwest corner of the Site. During this period of operation, there were general complaints and concerns, due to fumes, smoke, and blowing litter. The Site was not regulated by the State of Connecticut until 1970.

In 1970 Beacon Heights, Incorporated (BHI) purchased the Site, which included the Betkoski Dump area. BHI and its owner, Harold Murtha, owned and operated the Site as Beacon Heights Landfill and expanded the landfill area to approximately 34 acres. On-site soil generated by this expansion was used as cover material for the landfill. Wastes were placed directly onto bedrock and covered with soil, and waste materials were no longer burned.

A slide of soil and buried waste occurred on the northwest side of the landfill in 1972 due to both landfill operations and the changed surface and groundwater patterns from construction of the access road. This slide created groundwater and leachate discharge points in the north/northwest areas of the landfill. Several of these discharge points still persist in the slide area.

From 1973 until the Site closed in July, 1979 specified areas or cells were used for the disposal of various waste materials rather than placing waste directly onto bedrock. Cover material was placed over all working areas.

In 1977, the Connecticut Department of Environmental Protection (CT DEP) approved spreading of waste water sludge from the Naugatuck municipal/industrial waste water treatment facility over covered areas of the landfill. These activities continued until the summer of 1984.

The State of Connecticut began regulating the Site in 1970. In 1972 and 1973 BHI was ordered by CT DEP to develop plans for eliminating pollution from the landfill and surrounding groundwater.

CT DEP attempted to close the landfill and regulate industrial liquids and chemicals disposed at the landfill by issuing additional orders to BHI in 1975 and 1976. These orders cited contamination of well water and Hockanum Brook tributaries as a result of landfill operations. BHI submitted an engineering report describing an improved landfill operating plan but no groundwater monitoring plan.

These activities culminated in a Consent Order between BHI and CT DEP to close the facility by July 1, 1979. This Consent Order was signed on June 20, 1979 and entered as a final order of the Connecticut Commissioner of Environmental Protection on July 24, 1979. BHI complied with the consent decree and the landfill was closed in July, 1979.

Forty-four residential wells along Skokorat and Blackberry Hill Roads were sampled by EPA in 1984. Samples were analyzed for Hazardous Substance List (HSL) organic and inorganic parameters. Two contaminated residential wells located along Skokorat were resampled in November 1984. These wells revealed benzene at concentrations ranging from 32 to 131 micrograms per liter (ug/l). As a result of EPA sampling, CT DEP provided bottled water to these residences as a temporary safe drinking water source. Other organic compounds detected in some of the residential well samples were below levels that would indicate any health risks. To provide more data on the nature of residential well contamination, some of those wells were resampled in January 1985. These results generally confirmed the results of the previous samples. Benzene was detected in the same wells again in the range of 42 to 89 ug/l. Low levels of other organic compounds were also identified in a limited number of wells.

EPA conducted several sampling activities in 1981 and 1982, associated with the preparation of a preliminary study. This sampling was intended to evaluate Site conditions, collect preliminary sample data, and identify the potential for immediate health risk as a consequence of the Site. The Site was listed on the EPA's NPL List on September 1, 1983. As a result of the listing, the Site became eligible for remedial actions under the CERCLA.

The EPA conducted a Remedial Investigation (RI) at the Site from March 1984 through April 1985 to supplement previous investigations and to provide sufficient data to perform a Feasibility Study (FS). The RI/FS was released to the public in April 1985.

Based on the RI/FS studies, EPA issued the ROD, documenting the selected remedial actions for the Site. The remedy included:

- Excavating Betkoski's dump and other contaminated soils for consolidation with the main landfill prior to closure.
- RCRA capping of the consolidated wastes, including gas venting (with air pollution controls if determined necessary in a supplementary Record of Decision document, and stormwater management controls.
- Installing a perimeter leachate collection system.
- Extending a public water supply line along Skokorat Road and along Blackberry Hill Road to service current residences.
- Enclosing the Site with security fencing.
- Installing a more extensive groundwater monitoring system.
- Collecting of leachate and transporting it to a licensed waste water treatment facility or on-site treatment followed by discharge to a tributary of the Hockanum Brook.
- Further studies and a supplemental Record of Decision (supplemental ROD), selecting the manner and location of leachate treatment (on-site or off-site), the extent of excavation of contaminated soils, and the need for air pollution controls on the landfill gas vents would be prepared.

After the ROD was signed, EPA issued an Administrative Order in October, 1986 in response to contamination discovered in several residential wells and as a precaution against further leachate contamination. The order required the PRPs for the site to offer residents in the vicinity of the landfill the opportunity to connect to the municipal water supply system. Fifty-five residences were hooked up to the municipal water system, and the domestic water supply wells previously serving those homes were decommissioned.

In September 1987, the United States entered a Consent Decree with 32 PRPs, now known as the Beacon Heights Generators Coalition (BHGC), under which those PRPs agreed to perform the remedial action at the Site. Among other things, the Consent Decree required the PRPs to perform pre-design studies to gather the information which forms the basis for the determinations made in this supplemental ROD.

Because BHI denied Site access to BHGC for these studies and other remedial activities, remedial investigation work was not performed until a court order was issued in October 1988 requiring BHI to provide access.

In March 1990, BHGC submitted a final draft of the Pre-Design Study Report to the EPA. A proposed Plan regarding the decisions to be made in a supplemental ROD was drafted and the ROD was signed in September, 1990. Since that time, BHGC has completed the design of the remedy.

### 3.0 FIRST OPERABLE UNIT

The Five Year Review report is intended to investigate and report on the effectiveness of remedial actions taken at each Superfund site. The first remedial action or operable unit at the Site was the installation of a water main to serve the homes adjacent to the site whose wells were determined to be impacted by contaminated leachate from the Site. Specifically, the residents served were those along Skokorat and Blackberry Hill Roads.

The ROD issued for the site called for the installation of the water main as part of the off-site remedies. The other off-site remedies consisted of long term monitoring of groundwater contaminant migration, and State and local institution controls on groundwater use in the impacted area. The combination of these steps along with source controls was determined to minimize and mitigate the threat posed by the off-site contamination.

#### 3.1 Water Main Extension

Extension of public water to the impacted homes required installing a new water main approximately 7,000 feet along Skokorat Road to connect to the Town of Seymour's water system, and extending the water main along Blackberry Hill Road approximately 8,200 feet to the Town of Bethany. All residences along both roads would be connected to the new mains unless the homeowners refused. The list of the residences which were connected to the water mains are shown in Table 1. In addition, the PRPs were to fill and cap the existing residential wells of those homes connecting to the water main.

The area of coverage for the new water lines was initially based on the hydrogeologic setting of the landfill. The indeterminate nature of local contaminant flow in the bedrock mandated that the coverage extend beyond both the impacted area and the area of inferred impact. This was determined necessary to allow for local disturbances in flow patterns due to pumping of private wells or quirks in stratigraphy. These influences could have caused contaminants to flow toward deep bedrock receptor wells upgradient of the landfill.

Consequently, it was decided to extend the water line to the limits of residential development on Blackberry Hill Road in order to encompass these more distant potential receptors. The next possible receptor was 3,000 feet from the end of the waterline. Homes past the end of the water main extension would require extremely deep wells to penetrate the bedrock formation that could carry groundwater from the landfill, and such homes were far enough away to avoid influences of pumping or other disturbances on local contaminant flow patterns. The Skokorat Road waterline was extended to connect to the Seymour Water

System for the same reasons.

The waterline extension required upgrading of the Skokorat pumping station in Seymour and installation of individual services to all residences.

### 3.2 Groundwater Monitoring and Institutional Controls

In addition to the water main extension, the ROD also called for long term groundwater monitoring, and certain institutional controls which were to be enacted by the State of Connecticut and the Town of Beacon Falls. It was assumed that, due to the specific technical constraints posed by the site hydrogeology, an effective groundwater extraction and treatment system could not be implemented. Approximately 10 to 15 varying depth groundwater monitoring wells were to be installed adjacent to and downgradient of the site to monitor the effectiveness of the final cap over the landfill and to track any further spread of groundwater contamination. Several of the wells would be located below the junction of Skokorat Road and Blackberry Hill Road to assess the potential for future groundwater contaminant migration to this area, which contains several streets which lack municipal water service and thus where private wells provide drinking water supply. Monitoring was to be performed for a period of 30 years, or until determined unnecessary by EPA after thorough review of the data. The long term monitoring data which would be obtained from these wells could form the basis for establishment of Alternate Concentration Limits (ACL's), if needed to protect other groundwater users beyond the current limits of groundwater contamination emanating from the site.

Once the landfill was capped, it was expected that the groundwater contamination would attenuate and dilute to insignificant levels. In the unlikely event that contamination in these monitoring wells did not reduce after the cap was completed, EPA reserved the right to perform further testing or studies on the extent of contamination in the bedrock aquifer.

In order to ensure the long term protection of public health in the area surrounding the site, strict institutional control over the extraction and use of groundwater within the area of influence of the landfill would be carried out under State institutional controls, which are authorized by sections 2532 and 2533 of the Connecticut General Statutes. For public supplies, the Connecticut Department of Health Services (DOHS) must approve any well site prior to drilling. Prior to use of new well(s), extensive testing is required, and the data reviewed and approved by DOHS before use of the well is allowed.

For private water supplies, State approval is not needed. However, a permit for use would be required from the Beacon Falls Health Department (Valley Health). In addition, the Connecticut state building codes requires all new homes to connect to a municipal water supply if one is available within 200 feet of the residence.

TABLE I

LIST OF RESIDENCES TO BE PROVIDED  
WITH A PUBLIC WATER SUPPLY

<u>SKOKORAT ROAD</u>	
N/F Charles Dierling 42 Skokorat Road Beacon Falls, CT 06403	N/F Alan Moir 228 Kokorat Road Beacon Falls, CT 06403
N/F Harry & Patricia Miller 72 Skokorat Road Beacon Falls, CT 06403	N/F Francis & Ginette Austin 234 Skokorat Road Beacon Falls, CT 06403
N/F Victor & Ella Kohanski 84 Skokorat Road Beacon Falls, CT 06403	N/F George R. Jr., & Gladys L. Leeper 240 Skokorat Road Beacon Falls, CT 06403
N/F James Rush 106 Skokorat Road Beacon Falls, CT 06403	N/F Owen G Getchell 428 Skokorat Road Beacon Falls, CT 06403
N/F Hanford N. Jr. & Carol Cable 188 Skokorat Road Beacon Falls, CT 06403	N/F Arthur Norton 430 Skokorat Road Beacon Falls, CT 06403
N/F Bradley & Carol Zittell 192 Skokorat Road Beacon Falls, CT 06403	N/F Raymond D. Sokoloski 432 Skokorat Road Beacon Falls, CT 06403
N/F Rutan Stabley 200 Skokorat Road Beacon Falls, CT 06403	N/F James & Carol Tiso 336 Skokorat Road Beacon Falls, CT 06403
N/F Louis Weisenbacher 206 Skokorat Road Beacon Falls, CT 06403	N/F Joseph E. Devonshuk Jr. 440 Skokorat Road Beacon Falls, CT 06403
N/F Joseph S. Jr. & Laurie Hennessey 214 Skokorat Road Beacon Falls, CT 06403	N/F Kevin Swan 95 Skokorat Road Beacon Falls, CT 06403
N/F Lloyd & Florence Simmons 222 Skokorat Road Beacon Falls, CT 06403	N/F Mark E. Taylor 11 Skokorat Road Beacon Falls, CT 06403

N/F George Shelton 199 Skokorat Road Beacon Falls, CT 06403	N/F Dorothy Dojny 557 Skokorat Road Beacon Falls, CT 06403
N/F Alton W. & Nancy Hennessey 403 Skokorat Road Beacon Falls, CT 06403	N/F Elizabeth Todd (Birchwood Kennels) 558 Skokorat Road Beacon Falls, CT 06403
N/F Alton F. & Jean B. Hennessey 407 Skokorat Road Beacon Falls, CT 06403	N/F Robert Ingianni 561 Skokorat Road Beacon Falls, CT 06403
N/F Ronald Doolittle & Deborah Birch 433 Skokorat Road Beacon Falls, CT 06403	N/F James Martin 567 Skokorat Road Beacon Falls, CT 06403
N/F Sharon A. Bosley 463-465 Skokorat Road Beacon Falls, CT 06403	N/F Eugene McEvoy 643 Skokorat Road Beacon Falls, CT 06403
N/F Gerald Hall 467-469 Skokorat Road Beacon Falls, CT 06403	N/F David Ferla 641 Skokorat Road Beacon Falls, CT 06403
N/F Audrey Betkoski (Charles Betkoski - Occupant) 497 Skokorat Road Beacon Falls, CT 06403	N/F Norman Caffrey 645 Skokorat Road Beacon Falls, CT 06403
N/F Albert Beckwith 473 Skokorat Road Beacon Falls, CT 06403	N/F Joseph Sender 647 Skokorat Road Beacon Falls, CT 06403
N/F John Zamboli 525 Skokorat Road Beacon Falls, CT 06403	N/F Chester Borkowski (new house) Skokorat Road Beacon Falls, CT 06403
N/F Charles Berger 655 Skokorat Road Beacon Falls, CT 06403	N/F Robin Tylinski 653 Skokorat Road Beacon Falls, CT 06403
N/F Edward Chatfield 212 Skokorat Road (mail address property in Beacon Falls) Seymour, CT 06488	N/F Elizabeth Todd 551 Skokorat Road Beacon Falls, CT 06403

<b><u>BLACKBERRY HILL ROAD</u></b>	
N/F Frank Benson 181 Blackberry Hill Road Beacon Falls, CT 06403	N/F Frank & Ruby Russell 412 Blackberry Hill Road Beacon Falls, CT 06403
N/F Ms. Jane Betkoski (Occupant) 231 Blackberry Hill Road Beacon Falls, CT 06403	N/F Edward Hoadley 361 Blackberry Hill Road Beacon Falls, CT 06403
N/F Louise Russell 273 Blackberry Hill Road Beacon Falls, CT 06403	N/F Robert Russell 420 Blackberry Hill Road Beacon Falls, CT 06403
N/F Arthur Daigle 357 Blackberry Hill Road Beacon Falls, CT 06403	N/F Audrey Betkoski 238 Blackberry Hill Road Beacon Falls, CT 06403
N/F Arthur Daigle 359 Blackberry Hill Road Beacon Falls, CT 06403	N/F Robert Violano 400 Blackberry Hill Road Beacon Falls, CT 06403
N/F Russell Fitcher 401 Blackberry Hill Road Beacon Falls, CT 06403	
N/F Jemru & Louise Russell 429 Blackberry Hill Road Beacon Falls, CT 06403	
N/F Eloise Betkoski 196 Blackberry Hill Road Beacon Falls, CT 06403	

## **4.0 INVESTIGATIVE FINDINGS**

### **4.1 Document Review**

A review of the documents pertaining to the Beacon Heights Site from those documents available in EPA's files, was conducted. The documents reviewed were:

**Consent Decree, including Attachments and Appendices,**

**Record of Decision,**

**supplemental Record of Decision,**

**Remedial Investigation,**

**Feasibility Studies, and**

**Pre-design Studies.**

The ROD chose Alternatives 9 & 13 of the FS as the selected off-site remedy. Alternative 9 called for the water main extension and Alternative 13 required the establishment of groundwater monitoring and enactment of institutional controls. The implication in the ROD was that both of these alternatives would be implemented concurrent with the design and construction of the on-site remedy, capping of the landfill and leachate collection.

In the Consent Decree, Appendix A, II, it was agreed that the PRPs would complete the extension of the public water supply. However, there was no mention of implementing the groundwater monitoring program as discussed in the FS and called for in the ROD. Appendix A of the Consent Decree, Section IV.A.2.e gave the directive that the PRP's were to develop a Groundwater Monitoring Program in compliance with applicable sections of 40 CFR §264, Subpart F, and Attachment I of

- 40 CFR §264, Subpart F, provides the administrative controls necessary to implement and enforce a Groundwater Monitoring Program in connection with a hazardous waste disposal facility.
- Attachment I called for the closure of the Beacon Heights landfill and identifies associated activities.

The only reference to the implementation of a groundwater monitoring program associated with the off-site remedy is contained in a single sentence in the Attachment, under the heading Post-Closure and Groundwater Monitoring. It states "Five monitoring wells at the intersection of Blackberry Hill and Skokorat Roads will be integrated in the monitoring plan to serve as a detection system for the residents on Cook Lane and Burton Road who will not be served by the proposed public water supply extensions."

The ROD established a timetable for the completion of the remedial activities for the site as follows: Phase I, the Water Main Extension (off-site remedy), to be complete by September 1986, and Phase 2, Source Control Mitigation (on-site remedy), to be complete by March 1988. The Consent Decree superseded this schedule and established the estimated time of completion for RD/RA activities as being 28 months from the signing date of the Appendices and Attachments therein. That set the completion date for RD/RA activities at or about September 1989.

The final agreement between the BHGC and the Bridgeport Hydraulics Co. for the water main extension was signed in August 1988. The construction of the water mains was completed by the end of 1989.

#### 4.2 Site Visit (Interviews, Site Inspections)

Interviews were conducted with personnel from the Bridgeport Hydraulic Co. who own and operate the water mains installed as part of the First Operable Unit. Based on interviews, the water mains and associated piping are functioning as designed and as intended by the ROD. Costs incurred to date for the operation and maintenance of the system are consistent with the expenditures at similar facilities.

The system, or at least the Skokorat pump station, installed as part of the water main extension, is considered by the Bridgeport Hydraulics Co. as a showcase facility.

All residences abutting the installed water mains, have been tied into the extension. Lot 99, a vacant lot on Skokorat Road belonging to Mr. Kevin Swan, was provided a service tap for future use.

Cook Lane and Burton Road were identified in the Consent Decree attachments as being residential areas where detection monitoring was recommended as an early warning system to pending well contamination. These two streets are still without public water and receive their water from private wells.

The site visit conducted as part of the investigation, revealed the recent establishment of a Public Water Supply Watershed (PWSWS) by the Ansonia Derby Water Company adjacent to the Site boundaries. The south east corner of the property extends into that watershed.

The RI report did not identify the presence of the PWSWS. Alternative 13 of the selected off-site remedy had outlined institutional controls to be implemented by the DOHS. These controls were recommended adjunctively with the selected on and off-site remedies, to circumvent the possibility of public water wells being installed in the surrounding area. However they do not seem to be applicable to surface water supplies. Local public health officials were to oversee and regulate the permitting of private well installations. Together, these institutional controls were deemed to be satisfactory for the protection of the public's health.

However, given the location of the site, the multi-directional nature of the fractures and joints in the underlying bedrock, and the potential of the bedrock aquifer to migrate in many directions and at varying rates, there exists the potential, albeit remote, for contaminant migration across the watershed boundary and into the Ansonia Derby's PWSWS. This could place the users of that supply at some risk of exposure. There are no institutional controls in place or proposed to prevent this occurrence.

## 5.0 ASSESSMENT OF FIRST OPERABLE UNITS EFFECTIVENESS

Residents currently on the public water supply system are effectively protected from exposure to site generated contamination due to ingestion. Residents downgradient of improvements, who are not presently serviced by the water utility, are still potentially at risk, if their drinking water source is common with, and their pumping rates influence the contaminated aquifer plume. Exposure to leachate contamination through direct contact and/or ingestion, via the neighboring brooks, streams and stormwater runoff is still prevalent, as the selected on-site remedy which would reduce leachate generation and transport leachate to the Beacon Falls wastewater treatment facility, has yet to be implemented.

The ground and surface water monitoring program, deemed by the ROD to be necessary to monitor and evaluate the exposure risk potential for those residences not included in the water main extension, has not been implemented. The last comprehensive sampling event to characterize and delineate the extent of the contaminant migration and assess the impact of the site on private drinking water supplies and surface waters, was conducted seven years ago as part of the RI.

Institutional controls, to prevent local utilities or individuals from installing wells for use as a drinking water supply, down and into the contaminated aquifer, have been formerly implemented. Surface waters were not included in the institutional controls called for in the ROD.

## 6.0 SUMMARY

The institution of the First Operable Unit, installation of a public water supply to the residences adjacent to the landfill was successful and is satisfactory, in and of itself. However, the water main, by itself, remains only partially effective as an off-site remedy as intended, without the completion of the final closure of the landfill and collection and treatment of the leachate.

Actual or threatened releases of hazardous substances in the form of contaminated leachate from this site, not addressed by implementing the water main extension response action, effectively presents, a continued endangerment to the public health and the environment.