Superfund Records Center
SITE: Laurel Park
BREAK: 8.3
OTHER: 48619

Five-Year Review Report

Second Five-Year Review Report
for
Laurel Park Landfill Superfund Site
Naugatuck, Connecticut

September 2003

PREPARED BY:

United States Environmental Protection Agency
Region 1
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Approved by: Date:

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September 19, 2003

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Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Laurel Park Landfill Superfund Site		
EPA ID: CTD980521165		
Region: 1	**State:** CT	**City/County:** Naugatuck/ New Haven
SITE STATUS		
NPL Status: **X** Final Deleted Other (specify)		
Remediation Status (choose all that apply): Under Construction Operating Complete **X**		
Multiple OUs? Yes **X** No	**Construction completion date:** 09/ 11 /1998	
Has site been put into reuse? Yes **X** No		
REVIEW STATUS		
Lead Agency: **X** EPA State Tribe Other Federal Agency _____		
Author name: William Lovely		
Author title: Remedial Project Manager	**Author affiliation:** U.S. Environmental Protection Agency	
Review Period: 12 / 24 / 2002 to 9 / 22 / 2003		
Date(s) of inspection: 06/ 06 / 2003		
Type of Review: **X** Post-SARA Pre-SARA NPL-Removal Only Non-NPL Remedial Action Site NPL State/Tribe-lead Regional Discretion		
Review number: 1 (first) **X** 2 (second) 3 (third) Other (specify) _____		
Triggering Action: Actual RA Onsite Construction at OU #_____ Actual RA Start at OU#_____ Construction Completion **X** Previous Five-Year Review Report Other (specify) Signing of ROD		
Triggering action date (from WasteLAN): 09 / 30 / 1998		
Due date (five years after triggering action date): 09/ 30 / 2003		

* ["OU" refers to operable unit.]

Five-Year Review Summary Form, cont'd.

Issues: There is noticeable erosion along the eastern edge of downchute #3.

An increasing trend in metals concentrations was observed in 6 monitoring wells.

Leachate is not being effectively captured in the vicinity of EW-16 and EW-20.

The current groundwater sampling protocol is outdated.

Recommendations and Follow-up Actions:

Investigate cause of erosion and repair as necessary.

Install groundwater extraction pumps in EW-16 and/or EW-20, and continue to monitor the groundwater.

Change groundwater sampling protocol to low-flow method.

Protectiveness Statement:

The remedy at the Laurel Park Landfill Superfund Site currently protects human health and the environment because the cap and leachate collection system are effectively containing the contaminants on-site, and the installation of the public water line along Hunters Mountain Road helps to ensure that nearby residents are not exposed to contaminants which may remain in the groundwater. Long-term protectiveness of the remedy will be verified through continued groundwater monitoring and routine site inspections, which are included as part of the site's operation and maintenance activities.

1.0 Introduction

As requested by the Environmental Protection Agency (EPA), a five-year review was conducted of the remedial actions selected for the Laurel Park Landfill, in Naugatuck, Connecticut.

The purpose of the five-year review is to determine whether the remedy being implemented at the Site remains protective of human health and the environment. The methods, findings, and conclusions of the five-year review are documented in this Five-Year Review Report. In addition, this report presents issues identified during the review and provides recommendations to address them.

This Five-Year Review Report was prepared pursuant to CERCLA §121 and the National Contingency Plan. CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that the action is appropriate at such site in accordance with section [104]or [106], the president shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews and any actions taken as a result of such reviews.

The Agency interpreted this requirement further in the National Contingency Plan (NCP); 40 CFR § 300.430 (f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the second five-year review for the Site. The triggering action for this statutory review is the completion of the last five-year review in 1998. The five-year review is required due to the fact that contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

2.0 SITE CHRONOLOGY

TABLE 1

DATE	EVENT
9/8/83	Site listed on the National Priorities List (NPL)
2/87	Remedial Investigation (RI) completed.
5/88	Feasibility Study (FS) completed.
6/30/88	EPA issued a Record of Decision (ROD) for the Site.
4/89	The public water supply line is completed.
12/89	Leachate transportation line to the Naugatuck Publicly Owned Treatment Works (POTW) sanitary interceptor sewer completed.
7/29/96	Remedial Design completed.
7/96	Construction of the remedial action (i.e., landfill cap, leachate collection and transfer systems, groundwater extraction system) initiated.
9/11/98	Construction activities specified in the ROD are complete. EPA issues the first Five-Year Review for the Site.

3.0 BACKGROUND

The Laurel Park Landfill Superfund Site (the Site) is located in Naugatuck, Connecticut, approximately one mile southwest of the Naugatuck River and Connecticut Route. The actual landfill area covers approximately 19 acres of a 35-acre property. A map depicting the location of the Site is presented as Attachment 1.

3.1 <u>Physical Characteristics</u>

The Laurel Park landfill lies on the upper north and west slopes of Huntington Hill. Chain-link fencing is located around the perimeter of the landfill cap area. Twenty-one groundwater extraction wells of which thirteen are active are located along the northern and eastern edge of the landfill cap. The landfill cap consists of a multi-barrier cover system with a vegetative grass cover as the top layer. A leachate collection system consisting of perforated pipe and drainage media surround the landfill cap. Most of the area immediately bordering the Site is forested. About 50 homes are located within one-

half mile radius of the Site, primarily to the north, east, and southeast of the landfill, with the closest residents located approximately 1,000 feet to the north and southeast of the Site.

The Site is located within the Naugatuck River drainage area. Surface water from the landfill flows to two tributaries of the Naugatuck River-Spruce Brook and Long Meadow Pond Brook, which are located one-half west and one mile north of the landfill respectively. Groundwater in the vicinity of the Site flows predominately within the shallow bedrock toward the northwest, northeast and southeast. The shallow bedrock is fairly weathered and was found to vary from a depth of zero to approximately 70 feet below the land surface around the perimeter of the landfill. A map depicting the site features is presented as Attachment 2.

3.2 Land and Resource Use

From the late 1930's until 1987 the Site was used as an active landfill. The Site is currently a closed landfill and will likely remain as such due to the need to protect the integrity of the landfill cap and because the Site is privately owned. Adjacent land use is dominated by residential development. Groundwater in the area is no longer used as a drinking water supply as a result of the completion of the public water supply line in the Spring of 1989. The Naugatuck River, which ultimately receives the surface water runoff from the Site, is classified as restricted recreational use water with a goal of becoming recreational use water.

3.3 History of Contamination

The Site consists of an active landfill that was active from the 1930s until 1987. The landfill is classified primarily as a sanitary landfill, but does contain approximately 20 percent industrial waste. Operational problems at the landfill were reported in the early 1960's. Complaints included chemical spills on roads leading to the landfill, large quantities of black acid smoke, odor, and blowing litter. The complaints culminated in a lawsuit filed in 1961 (Lanoette et al. v. Harold Murtha et al.) which alleged in part that the operation of the waste dumps created a nuisance. Judgment in the case was handed down in 1964 and the landfill owner was ordered to cease open burning of certain wastes, except at certain times, and to pay several thousand dollars in damages. However, the judgment did not require that the landfill stop accepting wastes. Consequently, Laurel Park Inc. (LPI) was incorporated in 1966 and continued to operate the Site as a landfill until 1987.

3.4 Initial Response

On April 16, 1987, LPI informed the Connecticut Department of Environmental Protection (CTDEP) that they had ceased accepting wastes. Prior to this, the Connecticut Superior Court in Hartford issued a judgment on February 1, 1983, ordering LPI to take the following steps as conditions for allowing it to continue disposing of solid waste:

- Immediately prepare a proposal for groundwater monitoring and implement the proposal upon approval by CTDEP.

- Install and maintain a leachate collection and treatment system, upon approval of plans by CTDEP, by October 31, 1983.

- Submit to CTDEP a performance bond covering the cost of installing and maintaining the leachate system for five years.

- Supply potable (i.e., bottled water) to certain specifically identified neighboring residents.

- Provide a municipal water system to those residents if LPI applies for and receives permission for horizontal expansion of the landfill.

As a result of the judgment, the LPI completed the construction of a leachate collection and treatment system in 1984 and provided bottled water to area residents whose private water supply was affected by the Site. Subsequently, in May 1987, EPA entered into an Administrative Order on Consent (AOC) with the State of Connecticut, the Borough of Naugatuck and the Uniroyal Chemical Company (the largest generator of waste at the Site) to design and install the waterline referenced in the 1983 judgment described above. The waterline was completed in the Spring of 1989 and residents whose private water supply was at risk from contamination were allowed to connect.

3.5 Basis for Taking Action

The Remedial Investigation/ Feasibility Study (RI/FS) was conducted from 1985 to 1987. The RI/FS concluded that the existing leachate collection system was only partially effective in capturing leachate. Consequently, leachate continued to contaminate soil, surface water, and groundwater in the vicinity of the Site.

Based on the sampling conducted as part of the RI, the consumption of groundwater from monitoring wells on the property and residential wells in the vicinity of the Site represented the most significant risk to human health. Volatile organic compounds (VOCs), organics, and metals were detected in groundwater at concentrations well above levels considered to be protective. Moreover, because the landfill did not have a barrier to prevent precipitation from coming into contact with the landfill wastes, the generation of leachate would continue and the potential existed for further degradation of groundwater quality to levels that would endanger public health if consumed.

4.0 REMEDIAL ACTIONS

4.1 Remedy Selection

The selected remedy for the Site was contained in the 1988 ROD and included both source control and management of migration (or groundwater control) components:

- grading and placement of a RCRA cap over the entire landfill;
- construction of a leachate collection/groundwater extraction system;
- treatment of the leachate and the contaminated groundwater at the Naugatuck Watter Pollution Control Facility (NWPCF);
- monitoring; and
- institutional controls.

4.2 Remedy Implementation

In a Consent decree (CD) signed with EPA on August 13, 1992, the Potentially Responsible Parties, now know as the Laurel Park Coalition (LPC), agreed to perform the remedial design/ remedial action (RD/RA) specified in the 1988 ROD. Prior to the effective date of the CD, the LPC completed the installation of a dedicated sewer line in December 1989 to provide leachate discharge to and treatment at the NWPCF in accordance with the 1988 ROD. On July 29, 1996 EPA approved Remedial Design (RD) for the remaining items specified in the 1988 ROD.

Construction activities commenced in 1996 and included the construction of the RCRA cap over the landfill wastes and the construction of the new leachate collection/ groundwater extraction system. Construction of the leachate collection system and installation of the groundwater extraction wells was completed during the 1996 construction season. The leachate collection system was cleaned and video-inspected and the groundwater extraction system completed (including pumps and associated appurtenances) during the 1997 construction season. Construction of a RCRA cap over the entire landfill was completed in 1998 and environmental monitoring commenced.

The Site achieved construction completion status when the Preliminary Closeout Report was signed on September 11, 1998.

4.3 Operation and Maintenance

The LPC conducting long-term monitoring and maintenance activities according to: the Operation and Maintenance (O&M) plan that was approved by EPA on December 7, 1998 and the Long-term Monitoring Plan that was approved by EPA on November 25, 1998. The primary activities associated with O&M and long-term monitoring include:

- Monthly inspections of the landfill cap, leachate collection/ groundwater extraction systems, and other components of the remedy; and

- Triennial groundwater sampling events.

5.0 PROGRESS SINCE LAST REVIEW

This is the second Five-Year Review for the Site. The previous Five-Year review was completed in September 1998. All issues identified in that review have been addressed. Significant activities completed since the last five-year review included EPA's approval of the Final Remedial Construction Report on December 21, 1998 and the As-Recorded Drawings on January 6, 1999.

6.0 FIVE-YEAR REVIEW PROCESS

6.1 Administrative Components

EPA, the lead agency for this five-year review, notified CTDEP and the PRPs in early 2003 that the five-year review would be completed. The Five-Year Review Team was led by William Lovely of EPA, Remedial Project Manger, for the Laurel Park Landfill Superfund Site, and included staff from TRC, EPA's technical support contractor. Sheila Gleason, of the CTDEP was also part of the review team.

From February 2003, the review team established the review schedule whose review components included:

- Community Involvement;
- Document Review;
- Data Review;
- Site Inspection;
- Local Interviews; and
- Five-Year Review Report Development and Review.

The schedule extended through July 30, 2003.

6.2 Community Involvement

EPA mailed letters on May 29, 2003 announcing EPA's review of the Laurel Park Landfill Site cleanup. The mailing included the residents along Hunters Mountain Road and the Town Mayor. Additional copies of the fact sheet were made available to the general public at the Naugatuck Town Hall. The fact sheet described the Five-Year Review process and how the community can contribute during the review process. EPA did not receive any comments from the community.

6.3 Document Review

The five-year review consisted of a review of relevant documents including O&M records and monitoring data. A more detailed description of the documents reviewed is presented in Section 2.0 of the Technical Memorandum, which is included as Attachment 3.

6.4 Data Review

As part off the review, EPA evaluated the data collected by the LPC to confirm that contaminants within the landfill are being contained by the cap and leachate collection system. Technical assistance on the data review was provided by TRC. A summary of the data review is provided below.

Groundwater Monitoring

Groundwater monitoring is used to assess whether contaminated leachate continues to flow from the landfill, and if the levels of detected constituents are increasing or decreasing. This includes monitoring of the water table elevation to evaluate whether the generation of leachate has been reduced/eliminated and if the water table has been lowered under the landfill cap. Groundwater is gauged, sampled, and analyzed triennially for general chemistry, volatile organic compounds (VOCs), and metals.

As part of the five-year review, EPA evaluated all groundwater data collected from 1998 through 2002. The review included a statistical analysis of the results to evaluate the effectiveness of the remedy. Overall, the statistical analysis indicated that most monitored chemicals show no statistically significant trend in concentration over the last 5 years. Some wells show modest downward or upward trends in chemical concentration. Examples of wells with decreasing trends include benzene in wells OW-5 and MW-13. Increasing trends are apparent in wells BH-7 and MW-3 for toluene, wells OW-2 and MW-12S for nickel, and wells MW-10 and BH-7 for iron. In addition, wells OW-2 and MP-9 also showed an increasing trend for chromium.

The apparent increase in toluene and some of the metals may be attributed to the effect of landfill leachate on groundwater chemistry. Landfills typically go through stages where biological processes result in the generation of methane gas and anaerobic conditions. These conditions favor the biological degradation of chlorinated solvents but more easily aerobically degraded solvents such as benzene, toluene, ethylbenzene and xylene can persist. The anaerobic conditions are also expected to increase the mobilization of most metals. Later, as aerobic conditions return, the aerobically degraded chemicals will be preferentially degraded and the metals will precipitate. In addition to biodegradation, the spread

of groundwater contaminants will be restricted by sorption to organic matter, natural chemical reactions, dispersion, and capture by the treatment system.

The rising levels of some metals in groundwater are not unexpected and should mostly be contained by the groundwater extraction system, as half of the referenced wells are downgradient of the leachate collection system, but upgradient of the groundwater extraction system. A few remote monitoring wells, downgradient of the extraction system, show exceedences of the Connecticut GWPC including well OW-4 for nickel and MW-13 for benzene. At OW-4 the nickel levels are statistically increasing over time and may be indicative of a failure to contain landfill impacts at this point. The slight exceedence at MW-13 has been historically present and may be indicative of a slug of material previously existent at the location of MW-13. In both cases the groundwater exceedences were only slightly above the GWPC and would be expected to naturally attenuate to below GWPC within a short distance from the landfill.

Surface Water Monitoring

Prior to the landfill cap construction, most surface drainage for the landfill and leachate flowed to the unnamed stream and to the Long Meadow Pond Brook watershed. VOC contamination was apparent in the unnamed stream with decrease in concentrations downstream of the site (ROD, 1988). Based on an Endangerment Assessment, contact with surface water and sediment was determined to constitute a relatively minor exposure pathway based on contaminant concentrations and frequency of use (ROD, 1988). The long term monitoring does not include this media.

Construction of the landfill cap and the collection and discharge of leachate to the Naugatuck Sewage Treatment Facility have eliminated the discharge of contaminants to surface water receptors. With continued maintenance of the landfill cap and leachate collection system, future compliance regarding surface water and sediments can be expected without additional remedial action.

Air Monitoring

Analytical data for landfill gas samples collected by the LPC in 2001 were evaluated to identify any applicable air regulations. Because the reported releases of contaminates are very low, applicable state and federal air regulations do not require any actions at this site.

6.5 Site Inspection

EPA performed an inspection of the Site on June 6, 2003. The purpose of the inspection was to assess the protectiveness of the remedy, including the integrity of the cap and leachate collection system. A Five-Year Review checklist was used to document the observations made during the inspection. The report is

based on observations made during the visual inspection of the landfill surface. A summary of the site inspection is provided below.

- **Landfill surface –** The landfill surface was generally in good condition with some rodent holes. It was recommended that an area with sparse vegetation be reseeded and that a localized low point in the cover system continue to be monitored.
- **Benches** – The benches appeared in good condition with only minor vegetation and sedimentation.
- **Letdown Channels (downchutes)** – Three of the four downchutes were observed to be in good condition. Downchute #3 appeared to have flow bypass conditions which may be undermining the area and depositing sediments. Continued monitoring was recommended to identify further signs of settlement or degradation with future repair if conditions worsen.
- **Cover penetrations** – There did not appear to be any problems with the cover penetrations, which include leachate collection system manholes, passive gas vent structures and monitoring wells. Potential settlement was observed at MW-1 and continued monitoring was suggested.
- **Cover drainage layer** – The riprap outlet for the drainage layer appeared to be in good condition.
- **Leachate collection and groundwater extraction systems** – The above ground portions of the systems were in good condition. Fourteen of the leachate collection system manholes were inspected and were in good condition structurally.
- **Perimeter ditches and off-site discharge –** The perimeter ditches appeared to be operating as designed and were in good conditions with the exception of minor sedimentation.

Recommendations of corrective actions based on the inspection included the continued monitoring of potential settlement, erosion and sediment areas and the continuation of existing programs including the rodent control and groundwater extraction system maintenance programs. The overall conclusion based on the site inspection is that the components of the landfill cover system are working as designed.

6.6 Interviews

On June 6, 2003, Mr. Russ Dirienzo, the LPC's operation and maintenance contractor was interviewed to identify any current operational/maintenance issues.

Mr. Dirienzo indicated that overall, there have been no major issues with O&M. According to Mr. Dirienzo, leachate monitoring results have indicated the presence of a localized, contaminant "hot-spot" in the vicinity of monitoring wells

OW-1 and PW-1. Contaminants include benzene, chlorobenzene, trichloroethylene, and tetrachloroethylene. Mr. Dirienzo noted that extraction wells EW-5 and EW-9 have been producing lower than expected flows.

Another issue discussed during the interview was the ongoing repair and maintenance of Downchute #3. During the summer of 2001, repairs were made to an area of erosion along the eastern edge of Downchute #3 (where stormwater was breaching Bench #3B and eroding the landfill slope). Repairs consisted of installing a geomembrane flap at the junction between Bench #3B and the top of Downchute #3, covering the area with topsoil and erosion control blankets, and reseeding the area. There was evidence of additional erosion at the eastern edge of Downchute #3, downslope from the repair area based on sediments deposited at the base of the Downchute. Mr.Dirienzo indicated that he has been monitoring potential settlement in a low spot near the bend in the lower half of Downchute #3 (approximately 6 inches below relative grade) and further settlement was not evident.

7.0 TECHNICAL ASSESMENT

7.1 Question A: Is the Remedy Functioning as Intended by the Decision Documents?

The remedial action objectives specified in the 1988 ROD included both source control measures and management of migration measures to mitigate existing and future threats to public heath and the environment. These response objectives are:

Source Control

1. Preventing or minimizing the further release of contaminants in groundwater, surface water, sediments, soil and air.

2. Eliminating the threats posed to human health and the environment from the source area itself.

Management of Migration Measures

1. Preventing or minimizing further migration of contaminants in groundwater, surface water, sediments, soil and air.

2. Eliminating or minimizing the threats posed to human health and the environment from the current extent of contamination.

On September 11, 1998 EPA completed a Preliminary Close-Out report, which stated that all construction activities specified in the ROD have been conducted, and that the remedy is considered operational and functional. Since that time, the

LPC has been performing environmental monitoring and routine site inspections as required by the remedy. The results of these activities have been submitted to and reviewed by EPA and its technical consultant. Based on that review, the remedy is functioning as intended. The landfill cap and O&M of the leachate collection and groundwater extraction systems have achieved the remedial objectives to minimize the migration of contaminants and prevent direct contact with or ingestion of contaminants.

Operation and maintenance of the cap and leachate collection and groundwater extraction systems has been, and continues to be effective. Issues identified during the routine site inspections have been corrected or continue to be monitored.

The only system that offers the potential for optimization is the groundwater extraction system. There does not appear to be any opportunity for optimizing the groundwater extraction system as currently configured. The installation of pumps within extraction wells EW-16 and EW-20 may be considered in the future to ensure the capture of landfill contamination. No other opportunities have been identified.

The only indications of potential issues are the slightly increasing trend in some contaminant concentrations. Otherwise, the various components of the landfill cover system and leachate collection and groundwater extraction systems are working as designed.

Institutional controls include the ownership of the surrounding land to provide a buffer zone, the public supply of water to nearby residents, and the fencing of the site to prevent unauthorized access. No activities were observed that would have violated the institutional controls.

7.2 Question B: Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives Used at the Time of the Remedy Selection Still Valid?

Changes in Standards and To Be Considereds

The 1988 ROD, page 29, identifies the following laws, regulations and guidance as applicable to the remedy. Changes in standards since the 1988 ROD do not appear to change the protectiveness of the remedy.

- Resource Conservation and Recovery Act (RCRA) Part 264. The landfill cap and all subsequent repairs and modifications to the cap were designed in accordance with applicable RCRA requirements. EPA approved the cap on July 24, 1998, and the LPC continues to perform O&M as

necessary. Groundwater monitoring is performed in accordance with the RCRA Groundwater Protection Standard specified in 40 CFR 264.97.

- Clean Water Act. Leachate from the landfill is transported to Town of Naugatuck Publicly Owned Treatment Works (POTW) where it is commingled with other wastes, then treated in accordance with the regulatory criteria (i.e., NPDES permit).

- Clean Air Act. Landfill gas emissions at the site continue to be well below concentrations that would trigger requirements under the federal Clean Air Act.

- Safe Drinking Water Act; EPA Groundwater Protection Strategy. New applicable or relevant and appropriate requirements (ARARs) promulgated since the 1985 ROD and 1990 sROD include Maximum Contaminant Levels (MCLs) and non-zero Maximum Contaminant Level Goals (MCLGs). The MCLs listed for each of the groundwater contaminants monitored at the site continue to be valid.

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics

The exposure assumptions used to develop the Human Health Risk Assessment included: (1) ingestion of groundwater; (2) direct contact with leachate; (3) inhalation of the contaminants from the soil, groundwater, surface water, and leachate by workers or other individuals, and (4) consumption of fish. With the expansion of the public water supply in 1989, and completion of the landfill cap, leachate collection system, and security fence, the potential ingestion of contaminated groundwater remains the only valid exposure scenario. Assumptions used to assess the risk of groundwater contamination (including groundwater cleanup levels) remain valid and are likely to overstate the risk in light of the groundwater sampling results, and the fact that all residences are connected to the existing public water supply.

7.3 Question C: Has Any Other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?

As part of the review, EPA evaluated the current Long-Term Monitoring Plan (1998) being implemented at the site. Based on that review, EPA has determined that the sampling protocol needs to be updated to improve the representativeness of the groundwater sampling results. Consequently, future groundwater sampling events should be performed using the Low Stress (low flow) Purging and Sampling Procedure Specified in section 2.5 of the Technical Memo, which is included as Attachment 3.

Technical Assessment Summary

According to the data reviewed, the site inspection, and site interview, the remedy is functioning as intended by the ROD. There have been no changes in the physical conditions of the site, ARARs, or assumptions used in the baseline risk assessment that would affect the protectiveness of the remedy. In addition, a statistical analysis of the groundwater data did not produce any results to suggest that additional remedial measures are warranted other than the possible installation of groundwater extraction pumps within EW-16 and EW-20.

8.0 ISSUES

Based on the activities conducted during this Five-year review, the issues identified in Table 2 have been noted.

Table 2: Issues

Issues	Affects Current Protectiveness	Affects Future Protectiveness
Erosion along the eastern edge of downchute #3	No	No
Increasing trend in contaminant concentrations in MW-3, BH-7, OW-2, MW-12S, MP-9, and MW-10	No	Yes
Leachate not being effectively captured in the vicinity of EW-16 and EW-20	No	Yes
Outdated groundwater sampling protocol	No	No

9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

In response to the issues noted above, it is recommended that the actions listed in Table 3 be taken:

Table 3: Recommendations and Follow-up Actions

Issue	Recommendation and Follow-up Action	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness	
					Current	Future
Erosion along the eastern edge of downchute #3	Investigate cause and repair as necessary.	PRP (LPC)	EPA & CTDEP	On-going, complete prior to the next Five-Year Review.	No	No
Increasing trend in contaminant	Continue to sample groundwater and	PRP (LPC)	EPA & CTDEP	On-going, complete prior to	No	Yes

concentrations 6MWs	investigate cause of trend.			the next Five-Year Review.		
Leachate not being effectively captured in the vicinity of EW-16 and EW-20	Install pumps in EW-16 and EW-20 to improve containment. Continue to monitor the trend in PW-1 and OW-2 or take appropriate action if necessary.	PRP (LPC)	EPA & CTDEP	Complete by Spring 2004.	No	Yes
Outdated ground-water sampling protocol	Change sampling protocol to low-flow method.	PRP (LPC)	EPA & CTDEP	Spring 2004 ground-water sampling event	No	No

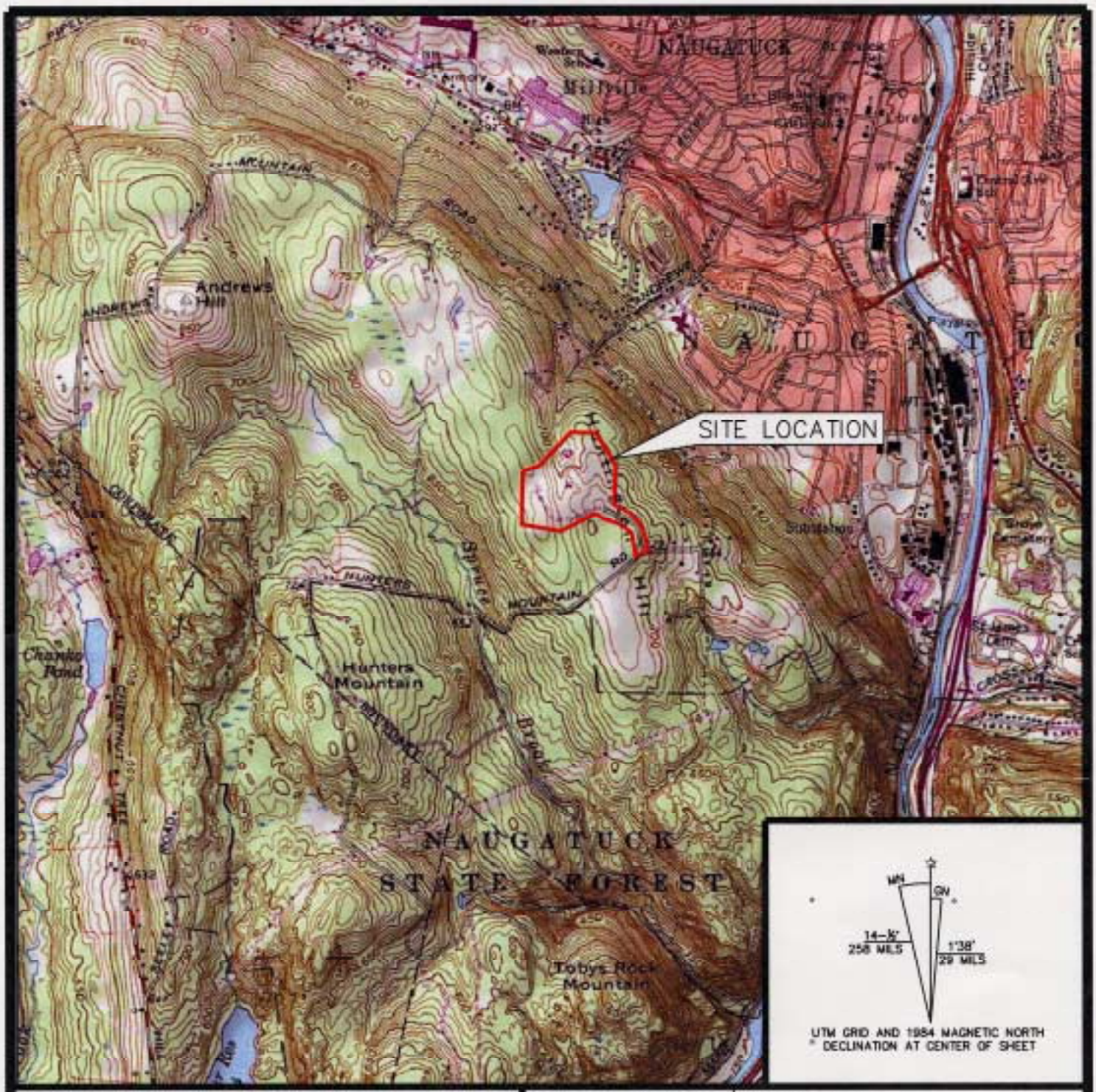
10.0 PROTECTIVENESS STATEMENT(S)

The remedy at the Laurel Park Landfill Superfund Site currently protects human health and the environment because the cap and leachate collection/ groundwater extraction systems are effectively containing the contaminants on-site, and the installation of the public water line along Hunters Mountain Road helps to ensure that nearby residents are not exposed to contaminants which may remain in the groundwater. Long-term protectiveness of the remedy will be verified through continued groundwater monitoring and routine site inspections, which are included as part of the site's operation and maintenance activities.

11.0 NEXT REVIEW

The next five-year review will be conducted by September 2008.

Attachments



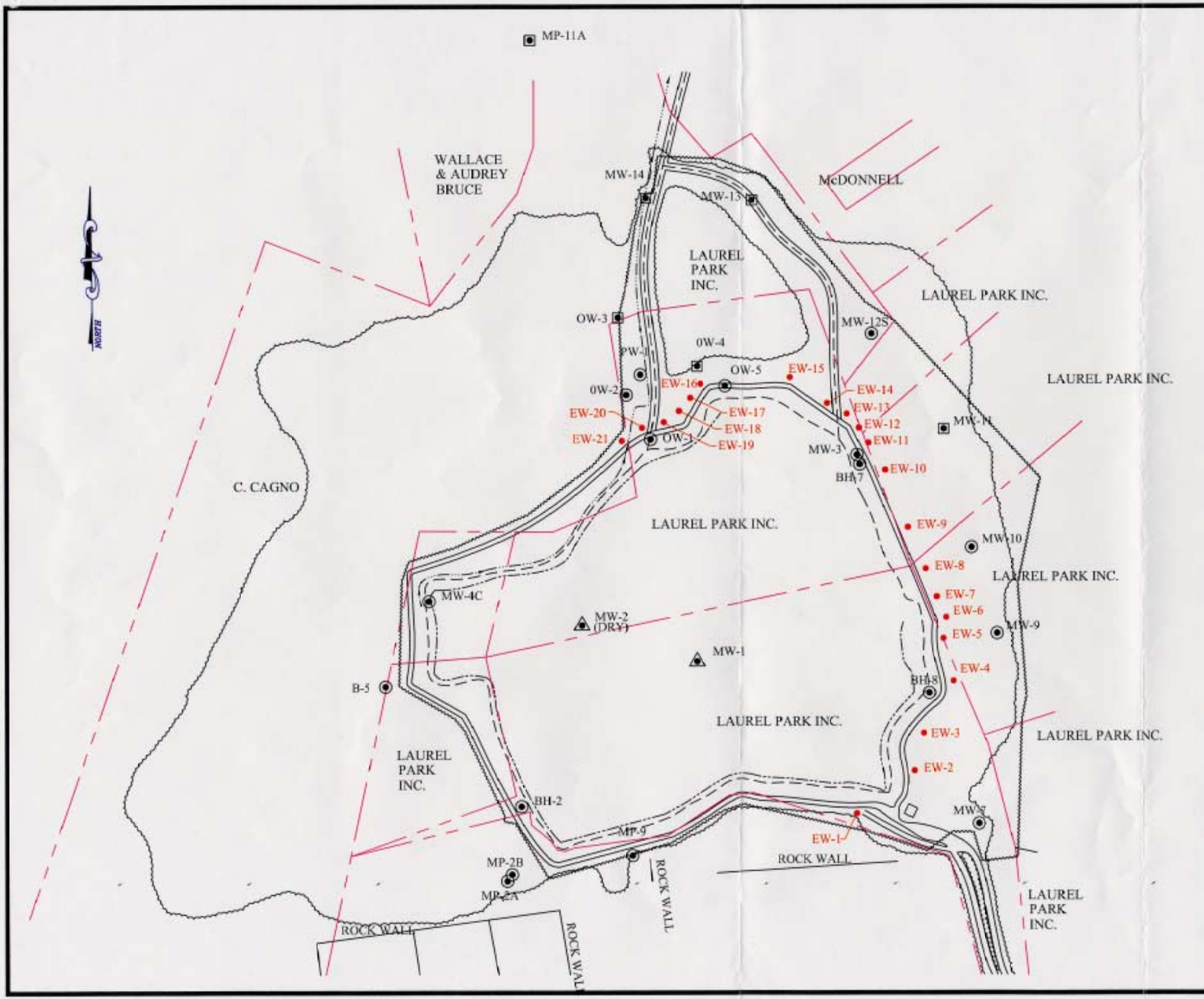
DATE	4/07/03
REV. NUMBER	N/A
REV. DATE	N/A
DRAFTED BY:	SRM
PROJ. NO	00-109-3
DOC. NO.	6699F1
SCALE	1:24,000
	0 INCHES 1/2
SHEET	1 OF 1

FIGURE 1
SITE LOCATION

LAUREL PARK LANDFILL
HUNTERS MTN. ROAD
NAUGATUCK, CONNECTICUT

SMC ENVIRONMENTAL

USGS TOPOGRAPHIC SERIES BY TOPO!
NAUGATUCK, CONNECTICUT 1984
PHOTOREVISED 1984



LEGEND:

- PROPERTY BOUNDARY
- EXTENT OF LANDFILL
- FENCE
- ACCESS ROAD
- LIMIT OF VEGETATIVE COVER
- DRAINAGE PATH
- LEACHATE COLLECTION SYSTEM
- MW-1 LANDFILL MONITORING WELL
- MW-13 REMOTE MONITORING WELL
- MW-3 PERFORMANCE AND COMPLIANCE MONITORING WELLS
- EW-1 EXTRACTION WELL
- EQUIPMENT AND STORAGE BUILDING

NOTES:

SITE PLAN PREPARED FROM INFORMATION OBTAINED AND MEASUREMENTS TAKEN BY SMC ENVIRONMENTAL.

ALL LOCATIONS, DIMENSIONS, AND PROPERTY LINES DEPICTED ON THIS PLAN ARE APPROXIMATE. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION OR LAND CONVEYANCE PURPOSES.

HORIZONTAL, AND VERTICAL LOCATIONS OF WELLS, AND SELECTED SITE FEATURES DETERMINED THROUGH REPRESENTATIVES OF S.M.C.

SMC ENVIRONMENTAL

DATE:	4/28/03
REV. NUMBER:	N/A
REV. DATE:	N/A
DRAFTED BY:	SRM
PROJECT NO:	C100-109-3
DOC NO:	6699F2
SCALE:	1"=250'

0 INCHES 1

FIGURE 2
SITE PLAN

LAUREL PARK LANDFILL
NAUGATUCK,CONN.

SHEET 1 OF 1