

PROPOSED PLAN -
DRAFT REMEDIAL ACTION SELECTION REPORT

ACCUTHERM, INC. SITE
FRANKLIN TOWNSHIP, GLOUCESTER COUNTY, NEW JERSEY

New Jersey Department of Environmental Protection
Site Remediation Program
Publicly Funded Remediation Element
P.O. Box 413
Trenton, New Jersey 08625-0413

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I. BACKGROUND

A. Purpose

The purpose of this Proposed Plan - Draft Remedial Action Selection Report (RASR) is to present the New Jersey Department of Environmental Protection's (NJDEP) proposed remedial action(s) for the Accutherm, Inc. site (the site) in Franklin Township, Gloucester County, New Jersey. This Proposed Plan - Draft RASR has been prepared for public release. The NJDEP will perform community relations activities and solicit public comments on this Proposed Plan - Draft RASR. A Final RASR will be issued after public comments are received and evaluated.

For easy reference, Figure 3, Sample Location Map, from the Final Remedial Investigation Report is attached to this Proposed Plan - Draft RASR as **Attachment 1**.

The Final Remedial Investigation (RI) Report, dated January 2008, by The Louis Berger Group (Berger) is **Attachment 2** to this Proposed Plan - Draft RASR. That report documents the remedial investigation conducted by Berger for the NJDEP from March 2007 to August 2007, and evaluates potential remedial actions for the site. A summary of pertinent site information is presented in this Proposed Plan - Draft RASR; details can be found in **Attachment 2**.

B. Site Background

The Accutherm, Inc. site is located at 162 Station Avenue in Franklin Township, Gloucester County, NJ. The site consists of a single one-story building with basement on a cleared 0.4-acre corner lot. Accutherm, Inc. manufactured mercury thermometers at the site from approximately 1984 through 1993. As a result, the interior of the building became contaminated with mercury.

The Kiddie Kollege child care center began operating at the site in approximately February 2004. The child care center was closed on July 28, 2006 after NJDEP determined that mercury contamination existed in the building. After the Kiddie Kollege was closed, NJDEP and the property owner were unable to reach agreement on the terms of an Administrative Consent Order, under which the owner would investigate the site and implement necessary remedial actions. As a result, NJDEP proceeded to perform a remedial investigation of the property using public funds.

C. Enforcement History

NJDEP issued a Directive to Accutherm Inc. on April 7, 1995, ordering the company to remediate all discharges at the site. On May 3, 1995, Accutherm notified NJDEP that it had filed for bankruptcy. No cleanup was ever performed.

On July 27, 2006, Jim Sullivan, Inc. (JSI), the owner of record of the property, signed a Memorandum of Agreement (MOA) with NJDEP, under which JSI would investigate mercury contamination at the site. After further review of the site's history, NJDEP informed JSI on August 11, 2006 that the site had been deemed a priority site and that an MOA was not sufficient. JSI was requested to enter into an Administrative Consent Order (ACO) with NJDEP.

By letter dated August 15, 2006, JSI declined to enter into an ACO. On August 17, 2006, NJDEP issued a directive to JSI, directing it to pay NJDEP \$500,000 to conduct a remedial investigation and remedial action at the site. NJDEP and JSI subsequently discussed the terms of an ACO, but could not reach an agreement.

On October 6, 2006, JSI filed a lawsuit against the NJDEP and others, contending that JSI doesn't own the site and is therefore not liable for the costs of site cleanup. By letter dated October 10, 2006, JSI informed NJDEP that it would not agree to an ACO. NJDEP terminated JSI's MOA by letter dated October 18, 2006.

II. SUMMARY OF REMEDIAL INVESTIGATION (RI)

A. Overview

In November 2006, the NJDEP engaged The Louis Berger Group (Berger) to conduct a remedial investigation (RI) of the Accutherm, Inc. site. The details of the RI can be found in **Attachment 2**, the Final RI Report. A summary of the RI is presented here.

Based upon the site's history, mercury was the primary contaminant of concern during the RI. The RI included the following sampling and testing, most of which was conducted between May and July of 2007:

- a) a geophysical survey of the site
- b) test trenching and associated soil sample collection
- c) collection of shallow soil samples on neighboring properties (by NJDEP)
- d) collection of shallow soil samples around the property perimeter
- e) collection of deep soil samples near the building foundation
- f) collection of soil samples around the active septic leach field
- g) sampling of septic tank contents
- h) testing of air inside the building
- i) sampling of building materials
- j) collection of surface wipe samples on building surfaces
- k) installation and sampling of five on-site groundwater monitoring wells
- l) sampling of 4 private potable wells near the site (by NJDEP)

Attachment 1 shows the location of all exterior sample collection activities, with the exception of the potable well samples.

B. Remedial Investigation (RI) Findings

The major findings of the RI are summarized as follows:

1. Soil. No contamination above the applicable NJDEP Soil Cleanup Criteria (SCC) was found in any soil sample collected at the site, for mercury or any other contaminant. Low levels of mercury were detected in some soil samples both on the site and on neighboring residential properties. The NJDEP residential SCC for mercury is 14 milligrams per kilogram (mg/kg). The highest on-site detection of mercury was 2.5 mg/kg; the highest off-site detection was 1.7 mg/kg.
2. Septic Tank. Mercury was found at low levels in liquid and sludge samples collected inside the site septic tank. No mercury was detected in any of 5 soil samples collected directly outside the septic leach field.

3. Ground Water. Only minor ground water contamination was found. In July 2007, mercury was found in monitoring well MW-5 at a concentration of 2.6 micrograms per liter ($\mu\text{g/l}$), slightly above the New Jersey Ground Water Quality Standard of 2 $\mu\text{g/l}$. MW-5 is located near the septic leach field in the eastern part of the site. MW-5 was also sampled in June 2007, with mercury found at 1.4 $\mu\text{g/l}$.
4. Building Materials. Forty-nine (49) samples of sheet rock, carpet, wall insulation, plywood, concrete, and formica were collected inside the former Accutherm building for analysis for mercury. Additionally, 51 surface wipe samples were collected from the walls, floors, wooden joists, and furniture inside the building. All samples contained mercury, except for 2 of the material samples. Concrete samples collected from the basement walls had the highest concentrations of mercury.
5. Indoor Air. The air inside the former Accutherm building was screened for mercury. Airborne mercury concentrations in the entire basement and first floor greatly exceeded the NJDEP Residential Indoor Air Screening Level for mercury, which is 0.3 micrograms per cubic meter ($\mu\text{g/m}^3$). The maximum mercury concentrations recorded in the basement and the first floor were 305 $\mu\text{g/m}^3$ and 165 $\mu\text{g/m}^3$ respectively.

C. Conclusions

Based upon the soil and ground water sampling results, there are no known external sources of the airborne mercury found inside the former Accutherm building. NJDEP concludes that the continuing volatilization of mercury from building materials is the source of the airborne mercury concentrations inside the building. Airborne mercury will continue to exist at unhealthful levels inside the building until the contaminated building materials are remediated. The building cannot be occupied for any purpose in its current state.

NJDEP concludes that one or both of the septic leach fields are the source of the mercury contamination in monitoring well MW-5. No other wells in the area have mercury above the GWQS.

III. REMEDIAL ALTERNATIVES SELECTION EVALUATION (RASE)

A. Overview

Based upon the RI findings, remedial action is necessary to address the contaminated building materials at the Accutherm, Inc. site. NJDEP's remedial objective is to eliminate the threat of exposure to airborne mercury at the site, now and in the future. For that reason, NJDEP only considered remedial alternatives that would remove the mercury present in building materials from the site. Alternatives that would leave mercury in place, such as encapsulation (through the application of a chemical polymer), were eliminated from consideration, because future building renovations could cause releases of mercury under such alternatives.

NJDEP and Berger determined that there are 2 remedial alternatives worthy of consideration for the Accutherm, Inc. site: 1) demolition and disposal of the former Accutherm building, and 2) decontamination of the building for re-occupancy. Those two alternatives are discussed below.

Alternative #1 - Demolition and Disposal

This alternative would include the following:

- a) demolition and removal of the former Accutherm building in its entirety
- b) emptying of the septic tank
- c) demolition and removal of the septic tank
- d) removal of both septic leach fields
- e) post-excavation sampling for mercury in all work areas, followed by additional soil excavation if necessary
- f) transportation and disposal of all building materials, soil, etc. at approved facilities
- g) backfilling of all work areas with clean soil.

The estimated cost of **Alternative #1** is **\$549,450**. That amount includes a construction contingency of 20%. A construction contingency is an amount added to the construction cost estimate on most cleanup projects to account for uncertainties and unforeseen conditions (such as additional contamination and increased disposal costs) that are usually encountered after cleanup work starts.

Alternative #2 - Decontamination for Re-occupancy

This alternative would include the following:

- a) removal of all interior finishing materials, including sheet rock, carpets, and flooring
- b) removal of all heating, ventilation, and air conditioning (HVAC) equipment
- c) decontamination of the remaining building structure, including basement walls and floor, wall studs, and floor joists, using two applications of a mercury decontamination fluid
- d) confirmatory air sampling
- e) confirmatory wipe sampling of decontaminated materials
- f) emptying and cleaning of the septic tank
- g) removal of both septic leach fields, and replacement of the active field, after post-excavation sampling
- h) transportation and disposal of all interior finishing materials, HVAC equipment, soil, etc. at approved facilities
- i) backfilling of all work areas with clean soil
- j) replacement of interior finishing materials and HVAC systems.

The estimated cost of **Alternative #2** (including 20% construction contingency) is **\$553,500**. That figure includes 2 full applications of decontamination solution to building surfaces. Additional applications would be needed if confirmatory air and wipe sampling demonstrated the continued presence of mercury.

B. Ground Water

NJDEP believes that one or both of the septic leach fields are the source of the mercury contamination slightly in excess of the GWQS in monitoring well MW-5. Both alternatives include the removal of both septic leach fields, so the suspected source of mercury to ground water will be eliminated under either alternative. NJDEP will sample all 5 site monitoring wells quarterly for at least one year after remedial action is completed, primarily to monitor the mercury in MW-5. The cost of one year of quarterly monitoring is estimated to be **\$10,000**. This cost would be the same for either alternative and would need to be added to remedial cost estimates presented above.

C. Evaluation of Remedial Alternatives

Both alternatives are technically feasible and easily implementable. Either remedial alternative could be completed in less than 3 months from the time that remedial action starts. A brief remedial design effort of 6 months to one year would be needed for either alternative before remedial action would start.

Alternative 1 would completely eliminate any possibility of future exposure to mercury at the site, due to the removal of all contaminated building materials. **Alternative 2** is

considered to be less reliable. Even after decontamination, some mercury could remain in building materials, re-coalesce to the material surface, and be released to the air inside the building in the future. This phenomenon has been observed at other mercury cleanups. Thus, even after repeated thorough decontaminations, there would always be lingering doubts as to whether all of the mercury has been removed.

Alternative 1 has an additional advantage in that the soil directly beneath the building foundation could be sampled after demolition and removal of the building, to ensure that no mercury has migrated to contaminate the soil beneath the building.

Alternative 1 is estimated to be slightly less expensive than **Alternative 2**. However, the estimated cost of both alternatives is essentially the same, since the \$4,000 difference between the cost estimates is less than the construction contingency of about \$82,000 for each alternative. **Alternative 2**, however, could become significantly more expensive if additional iterations of decontamination are needed. Both alternatives are considered to be cost-effective.

V. PROPOSED REMEDIAL ACTION

A. Summary and Discussion

The NJDEP is proposing **Alternative 1, Demolition and Disposal**, as the preferred remedial action for the Accutherm, Inc. site. The complete demolition and removal of the former Accutherm, Inc. building and septic systems is seen as the most reliable, permanent, and cost-effective way to eliminate the threat of exposure to mercury at the site.

B. Community Relations and Public Participation

This Proposed Plan - Draft Remedial Action Selection Report has been prepared for public release. This document and its Attachments have been placed in repository at the office of the Franklin Township municipal clerk. NJDEP will accept public comments on the Proposed Plan - Draft Remedial Action Selection Report from February 1 through March 1, 2008. A Public Meeting is scheduled at 7:00 PM on Wednesday, February 13, 2008 at the Franklin Township Municipal Building. NJDEP will also accept verbal comments at the Public Meeting.

At the conclusion of the public comment period, NJDEP will issue a response to comments and a Final Remedial Action Selection Report for the Accutherm, Inc. site. NJDEP would then proceed to design and implement the approved remedial actions.

List of Attachments

1. Figure 3, Sample Location Map, from RI Report
2. Final Remedial Investigation Report, dated January 2008