EPA United States Environmental Protection Agency

U.S. Environmental Protection Agency
Davis Liquid Waste Superfund Site
Smithfield, Rhode Island

EPA Superfund Community Involvement — June 2010 Proposed Plan

You are Invited to Attend!

EPA will be holding a public informational meeting Thursday, June 3, 2010. EPA will present its proposed cleanup plan to you and will also answer any questions you might have regarding this cleanup proposal.

Public Information Meeting
Thursday-June 3, 2010 at 7:00 p.m.
Smithfield Town Hall
64 Farnum Pike, Smithfield, RI 02917

Formal Public Hearing
Tuesday-June 29, 2010 at 7:00 p.m.
Smithfield Town Hall
64 Farnum Pike, Smithfield, RI 02917

For questions or special needs contact EPA Community Involvement Coordinator Sarah White at 617-918-1026, or at toll-free number 1-888-372-7341 ext. 81026

Your Opinion Counts!

EPA will also be holding a **formal Public Hearing** on June 29, 2010 during which members of the public may provide oral or written comments on EPA's proposed plan. EPA will also accept written comments on this cleanup proposal from June 4, 2010 to July 3, 2010. You do not have to be a technical expert to comment. If you have a concern or preference regarding EPA's proposed cleanup plan, EPA wants to hear from you before making a final decision on how to protect your community.

Comments can also be sent by mail, e-mail, or fax
Send written comments postmarked no later than Saturday, July 3, 2010:

Byron Mah, Remedial Project Manager
U.S. EPA New England
5 Post Office Square, Suite 100
Mail Code: OSRR07-1
Boston, MA 02109-3912

E-mail comments to: mah.byron@epa.gov
Fax comments to: 617-918-0249

A Snapshot of the Cleanup Proposal Change

Based on new information collected at the Davis Liquid Waste Superfund Site (the Site) (Figure 1), EPA is proposing to amend the 1987 Record of Decision to change the cleanup approach for addressing contaminated groundwater. The 1987 Record of Decision selected groundwater extraction and treatment as a component of the groundwater remedy. EPA is proposing a fundamental change from extraction and treatment of contaminated groundwater to the following:

> **Injection of treatment reagents** to stimulate in-situ chemical and biological degradation of contamination in overburden and bedrock groundwater.

The pre-design investigations, the design of the remediation system, and long-term monitoring and institutional controls will also be required. The estimated total present value cost for this proposed change (including pre-design, long-term monitoring and land use restrictions) is approximately $11.3 million.

A Closer Look at EPA's Cleanup Proposal Change

The Site accepted hazardous waste for disposal between the late-1960s and early-1970s. These waste materials caused soil in the former Source Area to become highly contaminated with numerous contaminants including: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Some of the waste also migrated and entered into groundwater. The overburden and bedrock groundwater within and downgradient of the former Source Area were contaminated primarily by VOCs and some SVOCs, pesticides, and metals at levels that exceeded federal and state standards. Contamination was also found in nearby private drinking water wells.

In the 1987, EPA selected a cleanup plan (Record of Decision or 1987 ROD) that included three components: 1) an alternative drinking water supply system to address contamination in private wells; 2) treatment and/or excavation of contaminated soil; and 3) cleanup of the groundwater through extraction and treatment of contaminated groundwater. The first two components (alternative drinking water supply and treatment/excavation of contaminated soil) have been completed.

Because there were concerns regarding the effectiveness of groundwater extraction and treatment, additional data was collected that reevaluated this component of the 1987 ROD. This data, as well as additional information, are included in the 2010 Focused Feasibility Study (Feasibility Study). This Feasibility Study evaluates

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In accordance with the Comprehensive Environmental Response, Compensation and Liability Act (Section 117), the law that established the Superfund program, and the NCP 40 CFR §300.515(d (4), this document summarizes EPA's cleanup proposal. For detailed information on the options evaluated for use at the site, see the Davis Liquid Waste Superfund Site Focused Feasibility Study available for review online at www.epa.gov/region1/superfund/sites/Davis Liquid or at the information repositories at the Greenville Public Library, Greenville, Rhode Island and at EPA's 5 Post Office Sq. Office in Boston.

new alternatives to address contaminated groundwater and compares these alternatives with the alternative selected in the 1987 ROD.

EPA's Proposal:
Based on the alternatives evaluated in the Feasibility Study, EPA is proposing the following change to the cleanup approach for groundwater at the Davis Liquid Waste Superfund Site:

Alternative GW3B:
In-Situ Chemical Treatment, Enhanced Biodegradation (Core and Overburden Plume), Monitored Natural Attenuation (Bedrock Plume), Institutional Controls, and Five-Year Reviews

Each component of this proposed cleanup approach for groundwater is outlined below and is discussed in the Feasibility Study in greater detail in Section 4.2.4.

Alternative GW3B consists of:

Contaminated Groundwater Remediation

- Performing pre-design investigations to acquire additional information to support the design of the remediation;
- Injecting a treatment reagent into the former Source Area soil (plume core) to chemically degrade contaminants (VOCs such as chlorinated solvents) adsorbed to soil that are continuing sources of contamination to groundwater;
- Injecting the reagent into the overburden plume situated downgradient of the former Source Area to chemically degrade VOCs dissolved in groundwater; and
- Injecting the reagent into one bedrock well located in the former Source Area to address the most contaminated portion of bedrock plume ; and
- Injecting nutrients into the subsurface to stimulate the growth of microbes that can also degrade the VOC contaminants.

In addition, the proposed groundwater cleanup approach will also include:

Institutional Controls
Implementing land use controls to prevent the use of contaminated groundwater

Long-term Monitoring

- Long–term monitoring to evaluate groundwater in the former Source Area after treatment;
- Long–term monitoring to verify that a) contaminants are being degraded; b) groundwater contamination is not migrating to other parcels; and c) that the cleanup is effective in the long term after all treatment has been completed.
- Long-term sediment (including wetlands) and surface water monitoring will also be conducted.

Five-Year Reviews

EPA will review the effectiveness of the remedy every 5 years.

The estimated total present worth cost for this preferred cleanup plan, including construction, operation and maintenance, and long-term monitoring, is approximately $11.3 million.

Impacts to the Local Community from the Cleanup

Impacts to the community during implementation of the proposed groundwater cleanup plan are expected to be low. Treatment reagents are non-hazardous and non-toxic. Proper transport, handling, and storage will ensure the safety of the treatment reagents. All treatment reactions will occur in the subsurface and there is substantial distance between the treatment area and nearby residences.

Impacts to Wetlands

Section 404 of the Clean Water Act and Executive Order 11990 (Protection of Wetlands) require a determination that there is no practicable alternative to taking actions in a wetland before an alternative that results in destruction of wetlands can be selected. EPA has determined that significant contamination exists in close proximity to and perhaps in wetland areas of the Site. Because of this, EPA has determined that there is no practicable alternative to conducting work near and in these wetland areas. Once this determination is made, EPA must evaluate what the least damaging practicable alternative is for addressing contamination that impacts wetlands areas. All alternatives with the exception of the No Action alternative (GW1) will require monitoring wells either in or in close proximity to wetland areas. GW4 may have additional adverse impacts in that some dewatering of wetland areas could occur. GW3A, GW3B, and GW5 will all include construction/implementation either in or in close proximity to wetland areas that could potentially impact wetland areas in similar ways although not to the extent of GW4. Although GW2 has no impacts to wetlands beyond monitoring wells, it is not practicable because it does not meet ARARs or provide sufficient long-term protection.

Once EPA determines that there is no practicable alternative to conducting work in wetlands and proceeds with the least damaging practicable alternative, EPA is then required to minimize potential harm or avoid adverse effects to the maximum extent practicable. Through this Proposed Plan, EPA is specifically soliciting public comment concerning its determination that there is no practicable alternative to conducting work that may impact wetlands and that the proposed alternative (Alternative GW3B) is the least damaging practicable alternative. (GW3A and GW5 also meet this criterion.)

Description and History

Site Description

The Davis Liquid Waste Superfund Site is located in the Town of Smithfield, Rhode Island. The Site is located on approximately 10 acres in a semi-rural, residential section of Smithfield, approximately 6 miles northwest of Providence (Figure 1). The Site is bounded on the east and west by forested uplands, and on the north and south by wetlands and Nipsachuck Swamp and Latham Brook and also includes all areas where contamination has come to be located (Figure 2). Within a 1-mile radius of the Site, the land use is mostly semi-rural with low-density residential dwellings situated nearby. The Site consists of mostly undeveloped land vegetated by shrubs, trees, and wetland plants. The former Source Area is the area where past disposal of hazardous substances has occurred, and is approximated by the excavation footprint of the 1999-2001 source control cleanup (Fig. 3).

Site History

The Site was reportedly used for a 5-year period in the 1960s and early 1970s for the disposal of municipal solid wastes by the Town of Smithfield. Between 1976 and 1977, the owner, William Davis, used the Site to dispose of a variety of liquid and solid wastes containing hazardous substances. Wastes were directly discharged from tank trucks into unlined lagoons and seepage pits. Drums containing chemicals and laboratory containers were buried onsite or were crushed. Wastes and contaminated soil were reportedly excavated from the lagoons and pits, and were dumped at several onsite locations and covered with available soil.

Why Cleanup is Needed

Land Use

The Site (consisting of the former Source Area) is located on an undeveloped parcel. Contaminated groundwater extends of the former Source Area, and is present in three adjoining parcels. All four parcels with contaminated groundwater have been zoned by the Town of Smithfield for rural density residential use (R-200). There are currently no structures overlying the groundwater plumes. However, residential structures could be constructed on these properties and private drinking supply wells could be installed in the future.

Contaminants of Concern

Evaluation of groundwater sampling results (compiled from 2001 through 2008) indicate that overburden and bedrock groundwater within and downgradient of the former Source Area are contaminated by primarily VOCs and some SVOCs, pesticides, and metals at

A brief history of the Davis Liquid Waste Site is presented below:

1976 to 1977:	The Davis Liquid Waste Site was used by the owner to dispose of liquid and solid wastes that contained hazardous substances.
Mid-1970s:	Nearby residents complained to local and state officials about chemical odors emanating from the Site.
1978:	Drinking water supply wells were found to be contaminated with hazardous materials including VOCs.
1978:	Court Order closes the use of the Site as hazardous waste disposal facility.
1980:	Rhode Island Department of Environmental Management (RIDEM) performed investigations and collected groundwater and surface water samples. Six residences were provided with bottled water.
1983:	Site is added to the National Priorities List.
1986:	EPA removed and disposed of approximately 600 leaking drums that contained hazardous materials.
1986:	The Remedial Investigation was completed, which identified extensive contamination in on-site soil, overburden and bedrock groundwater, sediment, and surface water.
1987:	A feasibility study was completed that provided options to address contaminated onsite soil and groundwater.
1987:	The Record of Decision was issued that selected excavation and on-site high-temperature thermal destruction of contaminated soil, installation of an alternative water supply, and extraction and treatment of contaminated groundwater.
1994 and 1995:	Tire removal started and 9 drums of hazardous materials removed by EPA.
1996:	An Explanation of Significant Differences issued by EPA changed soil treatment to low-temperature thermal desorption.
1996:	A Consent Decree was negotiated between EPA and 54 Settling Parties, which required the Settling Parties to perform the soil remedial action.
1997:	A new water line was installed by EPA and RIDEM provided municipal water to 127 lots.
1997 to 2000:	The Settling Parties removed: 6.4 million tires; 5,000 tons of hazardous/municipal solid waste; 1,400 drums; and 15,000 laboratory containers for offsite disposal.
1999 to 2001:	78,000 tons of contaminated soils were excavated and thermally treated inside an enclosed treatment building, and backfilled at the Site. 20,000 tons of contaminated soil and wastes were sent offsite for disposal.
2001 to present:	The Settling Parties conducted groundwater and surface water investigations to collect information needed for the groundwater extraction and treatment design.
2008:	The Settling Parties collected additional soil data to further assess remaining VOCs contamination in the former Source Area.
2010:	The Focused Feasibility Study was completed and EPA issues this Proposed Plan.

levels that exceed federal and state drinking water standards, and exceeded the state groundwater quality regulations. VOCs present in groundwater include: tetrachloroethene; trichloroethene; cis-1,2-dichloroethene; vinyl chloride; benzene; and 1,1-dichloroethane. One SVOC, bis(2-chloroethyl)ether (BCEE), two pesticides (aldrin and dieldrin), and two metals (arsenic and manganese) were detected at elevated concentrations.

Contaminated Media

The soil cleanup component of the 1987 ROD was completed in 2001 and removed significant amounts of VOCs from the soil in the former Source Area above the water table. This unsaturated soil represented a primary source of groundwater contamination at the Site. However, investigations have shown that contaminated groundwater is still present within and beyond the former Source Area in both the overburden and bedrock aquifers (overburden groundwater is present in saturated soil located above the bedrock and bedrock groundwater is present in the bedrock fractures). Additional investigations of overburden groundwater in 2008 showed that saturated soil (below the water table) in the former Source Area still contains VOCs that continue to dissolve into and contaminate groundwater. The highest contaminant concentrations in overburden groundwater are present is located in the saturated soil beneath the former Source Area and is referred to at the "core plume". See Figure 4. Using data collected between 2001 through 2008, contaminated groundwater was determined to migrate north from the former Source Area and extends approximately 1,700 feet north as depicted in Figure 4.

Past studies have also shown that the natural degradation of the VOCs was occurring in the overburden and bedrock aquifers through reductive dechlorination. Reductive dechlorination is a process where microbes in the subsurface (in soil and groundwater) create the energy they need to live and reproduce by transferring electrons from naturally occurring chemicals to contaminants (VOCs). The naturally occurring materials are called electron donors and VOCs are the electron acceptors. However, the reductive dechlorination process at the Site was observed to be stalling because electron donors in the subsurface environment have been depleted. Electron donors can be added to help stimulate the reductive dechlorination process. In addition, arsenic and manganese are naturally occurring metals in the soil mineralogy at the Site. Because the reductive dechlorination of VOCs results in geochemical changes, arsenic and manganese are converted into a soluble form, which allows them to dissolve into and migrate with groundwater.

Risk and Exposure Pathways Considered

Exposure occurs when people eat, drink, breathe or have direct skin contact with a substance or waste material. Based on existing or reasonably anticipated future land use, EPA develops different exposure scenarios to determine potential risk, appropriate cleanup levels, and potential cleanup approaches to meet the site cleanup goals. Human health and ecological risk assessments have been prepared to determine if and where there are current or potential future unacceptable risk(s) at the Site from exposure to contamination based upon a number of circumstances or exposure scenarios.

Human Health Risks

The 1986 human health risk assessment considered the following exposure to contaminated groundwater scenarios and developed the following risk estimates:

- Current off-site resident using contaminated groundwater for tap water, which resulted in total carcinogenic and non-carcinogenic risks of 6 E-03 and Hazard Index (HI) of 2.1, respectively (see the "What's the Risk to Me?" text box for an explanation of risk); and

- Future on-site resident using contaminated groundwater for tap water, which resulted in total carcinogenic and non-carcinogenic risks of 1 E-01 and Hazard Index (HI) of 63, respectively.

Subsequently, a risk evaluation was prepared to support the Feasibility Study using more recent groundwater data. Using groundwater analytical data compiled between 2003 and 2008, the findings of the risk evaluation were:

- For the future on-site resident using contaminated groundwater for tap water exposure scenario, current data indicate that overburden and bedrock groundwater will pose elevated carcinogenic and non-carcinogenic risks. The most highly contaminated groundwater is located in the former Source Area and to the north of the former Source Area.

- The average carcinogenic and non-carcinogenic risks for a future resident that uses the overburden groundwater as a potable supply are 4.4 E-03 and HI of 10.28, respectively.

- In overburden groundwater, among the contaminants that pose health risks or exceed Federal drinking water standards or State groundwater quality standards are VOCs (vinyl chloride; tetrachloroethene (PCE), trichloroethene (TCE); cis-1,2-dichloroethene (cis-1,2-DCE); 1,1-dichloroethane (1,1-DCA)); SVOCs (bis(2-chloroethyl)ether (BCEE)); metals (arsenic, manganese), and pesticides (aldrin).

- The average carcinogenic and non-carcinogenic risks for a future resident that uses the bedrock groundwater as a potable supply are 1.7 E-03 and HI of 4.63, respectively.

- In bedrock groundwater, among the contaminants that pose health risks or exceed Federal drinking water standards or State groundwater quality standards are VOCs (vinyl chloride; PCE; TCE; 1,1-DCA; ethylbenzene; and benzene); SVOCs (BCEE); metals (arsenic, manganese); and pesticides (dieldrin).

Ecological Risk

During the Remedial Investigation, various contaminants (metals and VOCs) were detected in Site surface water and in Latham Brook, likely the result of contaminated groundwater discharge. The 1999 – 2001 source control action removed contaminated soil that could erode into the surface water bodies. Currently, contaminated groundwater continues to migrate from the former Source Area and discharges into the wetlands and Latham Brook. To prevent the continued discharge of groundwater contaminants into surface water bodies adjacent to the Site, additional sampling and evaluation of surface water and sediments that may be affected by the Site groundwater will be required.

More detailed risk summaries can be found in the Feasibility Study.

What's the Risk to Me?

In evaluating risks to humans, risk estimates for carcinogens (chemicals that may cause cancer) and non-carcinogens (chemicals that may cause adverse effects other than cancer) are expressed differently.

For carcinogens, risk estimates are expressed in terms of probability. For example, exposure to a particular carcinogenic chemical at a specific concentration may present a 1 in 10,000 chance of causing cancer over an estimated lifetime of 70 years. This can also be expressed as $1x10^{-4}$ (or 1E-04). The EPA acceptable risk range for carcinogens is $1x10^{-6}$ (or 1E-06 to 1E-04). to 1x10-4. In general, calculated risks higher than this range would require consideration of cleanup alternatives.

For non-carcinogens, exposures are first estimated and then compared to a reference dose (RfD). The RfD is developed by EPA scientists to estimate the amount of a chemical a person (including the most sensitive person) could be exposed to over a lifetime without developing adverse (non-cancer) health effects. This measure is known as a hazard index. A hazard index (HI) greater than 1 suggests that adverse effects are possible.

Cleanup Alternatives Considered for the Davis Liquid Waste Superfund Site

Once areas of risk have been identified at a site, cleanup alternatives are developed to address the identified risks and to achieve site-specific cleanup objectives. A short synopsis of each alternative considered is outlined below. A more detailed description and analysis of each alternative developed to reduce risks from contaminated groundwater is presented in the Feasibility Study.

Cleanup remedial action objectives developed to address groundwater contamination are summarized below:

- Prevent exposure to groundwater with contaminants that exceed drinking water standards or pose excessive cancer or non-cancer risks.
- Restore groundwater quality to drinking water standards or to acceptable risk levels.
- Prevent the further migration of contaminants beyond their current extent.

Alternative GW1 – No Action

The No Action alternative is required to be evaluated by EPA's Superfund regulations and is used as a baseline for comparison to other cleanup alternatives. This alternative would not include any further cleanup action. There are no costs associated with Alternative GW1. Times to attain cleanup goals (including federal and state drinking water standards) in the overburden and bedrock plumes are estimated to be 100 years and 80 years, respectively.

Alternative GW2 – Limited Action Institutional Controls, Long-Term Monitoring, Monitored Natural Attenuation, and Five-Year Reviews

Alternative GW2 was developed as an alternative that involves no treatment, but uses limited actions to prevent or control potential exposures to contaminated groundwater:

- Institutional Controls - Use of contaminated groundwater will be prohibited through use restrictions until contaminant concentrations have reached safe levels.
- Natural Attenuation – Contaminants in the contaminated saturated soil and groundwater will gradually diminish over time as the result of natural ongoing biological and geochemical processes. In time, groundwater contaminants will reach safe levels.
- Long-term Monitoring – Monitoring of groundwater and surface water and sediment will be performed to verify that natural attenuation of contaminants is ongoing and to evaluate where contaminated groundwater is migrating.
- Five-Year Reviews – Because contaminants have been left in place on the Site above safe levels, the Superfund law requires that a review of site conditions be performed every 5 years to assess the protectiveness of this alternative.

Times to attain cleanup goals (including federal and state drinking water standards) in overburden and bedrock groundwater are estimated to be 100 years and 80 years, respectively. The estimated cost of GW2 is $5.3 million (as a present value, also called net present value).

Alternative GW3A - In-Situ Chemical Treatment, Enhanced Biodegradation (Core), Monitored Natural Attenuation (Plumes), Institutional Controls, and Five-Year Reviews

Alternative GW3A uses active treatment of saturated soil in overburden groundwater at the former Source Area (plume core) and monitored natural attenuation in the remainder of the overburden and bedrock groundwater. GW3A consists of the following:

- Pre-design Investigations – Studies and on-site investigations will be performed to obtain information to support the design and implementation of this alternative.
- In-Situ Chemical Treatment – Treatment reagents will be used to provide electron donors so that the reductive dechlorination process in the subsurface can be enhanced. Electron donors commonly used include: very pure iron filings, molasses, sodium lactate, vegetable oil, or other organic carbon sources. The treatment reagents will be injected into saturated soil in overburden groundwater at the former Source Area (plume core). One bedrock well, OW-94, will also be treated because this is where the highest bedrock groundwater contamination occurs. Electrons are

released which chemically help to break down the chlorinated VOCs. By reducing VOCs in the plume core, the levels of VOCs in overburden groundwater will decrease. Arsenic and manganese are naturally occurring soil minerals that have been mobilized due to the presence of VOCs in groundwater. Once VOCs are degraded, the groundwater will return to normal conditions and the levels of arsenic and manganese in groundwater will also decrease. The treatment reagent, in conjunction with other chemicals, can also be effective in degrading other non-VOC chemicals including BCEE, aldrin, and dieldrin.

- Enhanced Biodegradation– The liquid used to deliver the treatment reagent contains nutrients and other chemicals that will promote the growth of naturally occurring microbes in soil and groundwater (Figure 5). These microbes are capable of biologically degrading the VOCs through reductive dechlorination, which will accelerate the achievement of cleanup goals.

- Natural Attenuation – For the overburden and bedrock plumes not directly addressed by treatment, contaminants will be naturally degraded by ongoing biological and geochemical processes.

- Institutional controls – Similar to Alternative GW2, use of contaminated groundwater will be prohibited through use restrictions until contaminant concentrations have reached safe levels.

- Long-term Monitoring – Monitoring of groundwater will be performed to evaluate groundwater in the former Source Area after treatment; verify that contaminants are being degraded; that groundwater contamination is not migrating to other parcels; and that the cleanup is effective in the long term after all treatment has been completed. Long-term sediment (including wetlands) and surface water monitoring will also be conducted.

- Five-Year Reviews – Similar to Alternative GW2, because contaminants have been left in place on the Site above safe levels, the Superfund law requires that a review of site conditions be performed every 5 years to assess the protectiveness of this alternative.

Times to attain cleanup goals in overburden and bedrock groundwater are estimated to be 45 years and 80 years, respectively. The estimated cost of GW3A is $9.9 million as a present value.

Alternative GW3B - In-Situ Chemical Treatment, Enhanced Biodegradation (Core and Overburden Plume), Monitored Natural Attenuation (Bedrock Plume), Institutional Controls, and Five-Year Reviews (EPA's preferred alternative)

Alternative GW3B is similar to Alternative GW3A but will also treat the overburden plume situated outside of the wetlands will be treated as well (Figure 6). The treatment reagent will also be introduced in one bedrock well in the former Source Area to address the most contaminated portion of the bedrock plume, while the remainder of the bedrock plume will be addressed through natural attenuation. GW3B consists of:

- Pre-design Investigations – Studies and on-site investigations will be performed to obtain information to support the design and implementation of this alternative.

- In-Situ Chemical Treatment – GW3B is similar to Alternative GW3A except that a larger area is treated. Treatment reagents will be used to provide electron donors so that the reductive dechlorination process in the subsurface can be enhanced. Electron donors commonly used include: very pure iron filings, molasses, sodium lactate, vegetable oil, or other organic carbon sources. For this alternative, both the saturated soil in the overburden groundwater at the former Source Area and the overburden goundwater situated outside the wetlands (Figures 5 and 6) will be treated by injecting treatment reagents into the subsurface. One bedrock well, OW-94, will also be treated because this is where the highest bedrock groundwater contamination occurs. The treatment reagent releases electrons, which chemically helps to break down the chlorinated VOCs. The treatment reagent, in conjunction with other additives, can also be effective in degrading other non-VOC chemicals including BCEE, aldrin, and dieldrin. Similar to GW3A, once VOCs are degraded, the groundwater will return to normal conditions and the levels of arsenic and manganese will decrease. By reducing the mass of VOCs and other contaminants throughout the overburden plume, groundwater will reach cleanup levels sooner.

- Enhanced Biodegradation – Similar to Alternative GW3A, by providing nutrients and other chemicals to promote growth, subsurface microbes will also help to biodegrade VOCs through reductive dechlorination in the former Source Area soil and in the overburden plume (Figure 5), which will help groundwater reach cleanup levels sooner.

- Natural Attenuation – For the bedrock plume the contaminants will be naturally degraded by ongoing biological and geochemical processes.

- Institutional controls – Similar to Alternative GW3A.

- Long-term Monitoring – Similar to Alternative GW3A.

- Five-Year Reviews – Similar to Alternative GW3A.

Times to attain cleanup goals in overburden and bedrock groundwater are estimated to be 40 to 45 years and 80 years, respectively. The estimated cost of GW3B is $11.3 million as a present value.

Alternative GW4 - Groundwater Extraction, Treatment, Discharge, Institutional Controls, Long-Term Monitoring, and Five-Year Reviews

Alternative GW4 resembles the 1987 ROD's selected groundwater remedy, extraction and treatment of contaminated groundwater. The 1987 ROD alternative relied partially upon being able to reinject treated groundwater back into the former Source Area to flush additional contamination from the saturated soil thereby reducing the time until cleanup objectives could be met. However, results of additional investigations after the 1987 ROD was issued indicated that it will be difficult to reinject treated groundwater to flush VOCs in the saturated soil. Under alternative GW4, treated groundwater would be discharged directly to Latham Brook rather than being reinjected GW4 consists of:

- Pre-design Investigations – Studies and on-site investigations will be performed to obtain information to support the design and implementation of this alternative.

- Groundwater Extraction – 23 extraction wells, pumping an estimated 30 gallons per minute, would be installed in both the overburden and aquifer plumes. Highly contaminated groundwater will be captured in the former Source Area to prevent its migration into downgradient areas. Extraction wells located at the plumes' periphery will keep contaminated groundwater from migrating further towards private homes.

- Groundwater Treatment – A treatment system will be constructed in the former Source Area to remove VOCs, SVOCs, metals, and pesticides from the extracted water. The treated groundwater will then be discharged into Latham Brook, in compliance with discharge standards.

- Institutional controls – Similar to Alternative GW2.

- Long-term Monitoring – Groundwater will be monitored to assess contaminant status and to verify that contaminated groundwater is not migrating beyond the capture zone of the extraction wells.

- Five-Year Reviews – Because contaminants are being left in place on the Site above safe levels, the Superfund law requires that a review of site conditions be performed every 5 years to assess the protectiveness of this alternative.

Times to attain cleanup goals in the overburden and bedrock groundwater are estimated to be less than 100 years and 80 years, respectively. The estimated cost of GW4 is $16.2 million as a present value.

Alternative GW5 - In-Situ Thermal Treatment (Core), Monitored Natural Attenuation (Plumes), Institutional Controls, and Five-Year Reviews

Alternative GW5 uses a thermal treatment process to desorb the organic contaminants (VOCs and SVOCs) from the saturated soil in the overburdern groundwater at the former Source Area. Once the VOC and SVOC mass is removed from saturated soil, contaminants in the overburden and bedrock groundwater would dissipate faster through natural attenuation. GW5 consists of the following:

- Pre-design Investigations – Studies and on-site investigations will be performed to obtain information to support the design and implementation of this alternative.

- In-Situ Thermal Treatment - A series of electrodes and vapor extraction wells would be installed throughout the former Source Area. An electrical current would be applied that passes through the natural materials generating heat due to electrical resistance. The subsurface is heated until steam is generated, which dissolves and vaporizes VOCs and other organic contaminants in the soil and groundwater. Thermal treatment reduces the VOCs and SVOCs in saturated soil in the former Source Area and prevents them from further contaminating groundwater, allowing the groundwater to reach cleanup goals sooner. Similar to GW3A and GW3B, once VOCs are removed by treatment (plume core) or degraded through natural attenuation, the groundwater will return to normal conditions and the arsenic and manganese levels will decrease.

- Soil Vapor Extraction (SVE) – SVE wells will be installed throughout the former Source Area to vacuum and collect the heated gases (VOCs and organics) generated by the in-situ thermal treatment.

- Ex-Situ Treatment – The recovered gases will be condensed and the liquid will be treated using granular activated carbon (GAC) to capture the VOCs. The recovered VOCs and spent GAC will be disposed of offsite.

- Natural Attenuation – For the bedrock plume and the overburden plume outside of the former Source Area, the contaminants will be naturally degraded by ongoing biological and geochemical processes.

- Institutional controls – Similar to Alternative GW3A.

- Long-term Monitoring – Similar to Alternative GW3A.

- Five-Year Reviews – Similar to Alternative GW3A.

Times to attain cleanup goals in the overburden and bedrock plumes are estimated to 45 years and 80 years, respectively. The estimated cost of GW5 is $28.7 million as a present value.

EPA's Nine Criteria for Choosing a Cleanup Plan

EPA uses nine criteria to evaluate alternatives and select a final cleanup plan. EPA has already evaluated how well each of the cleanup alternatives developed for the Davis Liquid Waste Superfund Site meets the first seven criteria (see Table 1). Once comments from the state and the community are received, EPA will select the cleanup plan. The evaluation criteria are:

1. Overall protection of human health and the environment: Will it protect you and the plant and animal life on and near the site? EPA will not choose a plan that does not meet this basic criterion.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): Does the alternative meet all federal and state environmental statutes, regulations and requirements? The chosen cleanup plan must meet this criterion.

3. Long-term effectiveness and permanence: Will the effects of the cleanup plan last or could contamination cause future risk?

4. Reduction of toxicity, mobility or volume through treatment: Using treatment, does the alternative reduce the harmful effects of the contaminants, the spread of contaminants, and the amount of contaminated material?

5. Short-term effectiveness: How soon will site risks be adequately reduced? Could the cleanup cause short-term hazards to workers, residents or the environment?

6. Implementability: Is the alternative technically feasible? Are the right goods and services (i.e. treatment machinery, space at an approved disposal facility) available for the plan?

7. Cost: What is the total cost of an alternative over time? EPA must find a plan that gives necessary protection for a reasonable cost.

8. State acceptance: Do state environmental agencies agree with EPA's proposal?

9. Community acceptance: What objections, suggestions or modifications do the public offer during the comment period?

Groundwater Cleanup Alternatives Comparison

The alternatives were compared with each other to identify how well each alternative met the evaluation criteria. A detailed comparative analysis is included in the Feasibility Study and a summary of this analysis is provided below (Table 1). Table 1 presents a general summary of the detailed evaluation of each of the six alternatives against seven of the nine criteria EPA uses to select a cleanup plan. A detailed discussion consistent with CERCLA requirements is provided in the Feasibility Study and summarized below.

1. Overall Protection of Human Health and the Environment

Alternative GW1 provides the least protection of human health and the environment because no actions will be taken. Alternative GW2 offers more protection than Alternative GW1 by using institutional controls (e.g., use restrictions) to prevent exposure to contaminated groundwater, and long-term monitoring to assess the contaminated groundwater status and the protectiveness of the institutional controls. While groundwater may eventually reach acceptable levels through natural processes under Alternative GW2, this process is expected to take more time than the active remediation alternatives. Alternatives GW3A, GW3B, and GW5 all employ active remediation to destroy or remove VOCs and other contaminants from the former Source Area (the plume core) so that the remaining overburden groundwater can reach cleanup goals sooner (than either Alternatives GW1 or GW2). Alternative GW3B will also actively treat a larger area of the overburden plume, which allows this alternative to attain the remediation goals in the overburden aquifer sooner than any other alternative. Alternative GW4, groundwater extraction and treatment, will address both the overburden and bedrock plumes. However, the time to reach cleanup goals in the overburden is similar to GW3A or GW5.

While remediation is ongoing under Alternatives GW3A, GW3B, GW4, and GW5, all use institutional controls to prevent exposure to contaminated groundwater, and long-term monitoring to assess the contaminated groundwater status during and after remediation, and the protectiveness of the institutional controls.

2. Compliance with ARARs

Alternatives GW1 and GW2 will not meet Federal and State drinking water and State aquifer standards in a reasonable time frame because they rely only on natural processes to gradually decrease contaminant levels in the overburden and bedrock plumes. Alternatives GW3A, GW3B, GW4, and GW5 will meet all ARARS and generally comply with drinking water ARARs sooner because contaminants will be degraded in-situ or will be actively removed from the subsurface, which will allow groundwater to reach the cleanup goals faster than GW1 or GW2, and meet Federal and State drinking water and State aquifer quality standards. Compliance with wetland requirements is discussed in the Section titled *Impacts to Wetlands* earlier in this proposed plan. Alternatives GW3A, GW3B, GW4, and GW5 would also be implemented so that they will comply with Federal and State regulations that govern the use, handling, treatment, or storage of chemicals during implementation of remedial actions.

3. Long-term Effectiveness and Permanence

Alternative GW1 would be the least protective because no measures will be taken to remove contaminants or to control exposures to contaminants in groundwater. GW2 would be more protective than GW1 because restrictions on groundwater use will reduce potential exposures to groundwater contaminants.

Alternatives GW3A, GW3B, GW4, and GW5 provide permanent reduction in the contaminant mass, and therefore will reduce risks to acceptable levels in the long term. Because GW3B will treat a larger portion of the overburden plume than GW3A, the magnitude of the residual risk for GW3B will be lower than for GW3A in the near term. Alternative GW4 uses physical groundwater extraction and treatment to permanently decrease contaminant concentrations in both the overburden and bedrock groundwater until safe levels are attained. GW5 will address the plume core, and will have the same risk reduction over the same timeframe as GW3A. For Alternatives GW3A, GW3B, GW4, and GW5, active remediation will provide permanent reduction in the contaminant mass in the overburden groundwater, and therefore will reduce risks to acceptable levels in the long term. Active remediation will permanently restore the groundwater quality thereby limiting future exposures to groundwater contaminants. Because GW3B will treat a larger portion of the overburden plume than GW3A or GW5, GW3B will be able to lower the risk of exposure to contaminated overburden groundwater faster than GW3A or GW5 contamination. Alternative GW4 adds an additional control measure because the extraction wells can also prevent further migration of the overburden and bedrock plumes.

In the interim until cleanup levels are achieved, all active remediation alternatives rely on institutional controls to prevent use of contaminated groundwater. All active remediation alternatives are dependent on the proper implementation, monitoring, and enforcement of institutional controls, coupled with periodic reviews of land use at the Site and adjacent parcels, to remain effective in the short term.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives GW1 and GW2 do not contain any measures to reduce the toxicity, mobility, or volume of contaminants through treatment. Therefore, Alternatives GW1 and GW2 would not comply with CERCLA's preference for treatment.

Alternatives GW3A, GW3B, GW4, and GW5 will reduce contaminant toxicity, mobility, and volume through treatment. Alternatives GW3A and GW3B use chemical treatment and enhanced biodegradation to degrade contaminants in the subsurface, and will satisfy the statutory preference for treatment. Because all treatment under Alternatives GW3A and GW3B are conducted in-situ (in the subsurface), there would be no need for additional handling of the contaminants. Alternative GW4 physically extracts the groundwater and removes the contaminants in an above-ground treatment plant. GW5 would use heat to recover contaminants from the subsurface. While both Alternatives GW4 and GW5 also satisfy the statutory preference for treatment, they both need to take additional steps to handle and dispose of the recovered chemicals and treatment residuals.

5. Short-Term Effectiveness

For Alternative GW1, there would be no construction risks to the community, site workers, or the environment because no action will be taken.Alternative GW2 consists of monitoring wells installation, sampling, and institutional controls and therefore would have minimal impact to the community. Well installation and sampling pose limited risks to site workers, and the use of proper personal protection equipment and appropriate health and safety protocols will protect the workers. and pose no risks to the community as these actions will no impact to them.

Although some risks to workers can occur during the implementation of Alternatives GW3A and GW3B because of the use of pressurized injection of treatment reagents, the risk of harm to the on-site worker can be minimized through proper engineering controls and health and safety procedures.The reagents (very fine iron and nutrient solution for example) are non-toxic. During treatment, no impact is anticipated to the public during implementation because the Site is relatively isolated from nearby populations.All chemical and biodegradation reactions will occur in the subsurface, and pose minimal impacts to site workers, nearby residents, and the environment. The use of treatment reagents under Alternatives GW3A and 3B will not have unacceptable impacts on subsurface and in groundwater. Impacts to wetlands are described in the Section titled Impacts to Wetlands earlier in this proposed plan.
Under Alternative GW4, there will be minimal risk to on-site workers and the environment from installation of extraction and monitoring wells, similar to Alternative GW2A's. Construction of the active groundwater extraction, treatment, and discharge system pose minimal risks to on-site workers and the community. Risks will generally be consistent with typical construction projects. Implementation of GW4, groundwater extraction, may have potential impacts to wetlands because the water table discharging to the wetlands could be depressed, decreasing the volume of groundwater feeding the wetlands.

With Alternative GW5, installation of the heating wells and application of electricity for the resistive heating array pose some risks to construction and remediation workers; however, these risks can be managed with proper engineering controls and health and safety procedures. No risk is anticipated to the public because the proposed treatment area is relatively isolated from the nearby population during implementation. Some impact to the wetlands may occur due to the heating of the subsurface.

The time periods required to achieve safe levels in groundwater are summarized in Table 2.

6. Implementability

Alternative GW1 would be the easiest to implement because no actions are required.

Alternative GW2 can be readily implemented because installing and sampling monitoring wells are common environmental investigation methods. Typically there are administrative implementability issues associated with implementing institutional controls. However, none of these issues is significant or would prevent implementation of these actions.

Alternatives GW3A and GW3B only require minimal construction. While specialized personnel, equipment, and materials are needed, these are commercially available and the actual implementation is not difficult. A number of firms are available to provide this service. Temporary injection boreholes are advanced in the treatment zone to deliver the treatment reagent. There would be no permanent features remaining after treatment is completed.

GW4 will require the construction of access roads, a groundwater extraction system, a groundwater treatment facility, groundwater discharge conduit, and all associated aboveground and underground utilities. Multiple vendors are available to design, construct, and operate groundwater extraction wells, the treatment system, and treated water discharge structures.

Alternative GW5 requires firms with specialized experience and equipment, which are limited. The number of firms with experienced personnel and equipment to perform the work is limited. Extensive upgrades to the nearby electrical system may be required to implement the in-situ electrical resistive heating. Because GW5 has a high power demand, fluctuations in the electrical supply or power failures can limit its reliability.

GW1 and GW2 are readily implementable. GW3A and GW3B, while more difficult to implement, can be more readily implemented than GW4 or GW5. Numerous items need to be constructed or installed, operated, and maintained under GW5 including: thermal wells and vapor extraction wells, vapor condensations system, and gas phase VOCs treatment systems. Because of the complexity of GW5, it is less implementable than GW4.

7. Cost
A cost summary for the alternatives is presented in Table 3. GW3A is the least expensive of the alternatives that meet the threshold criteria.

8. State Acceptance

RIDEM has reviewed the Feasibility Study prior to the issuance of this Proposed Plan. EPA and RIDEM have had substantive discussions regarding the Site and the cleanup. EPA has received input from RIDEM indicating that RIDEM supports GW3B as the Proposed Cleanup Alternative.

9. Community Acceptance

Community acceptance will be evaluated based on the feedback received during the comment period.

Table 2 Time to Achieve Cleanup Goals

Time to Attain RAOs (years)	GW1	GW2	GW3A	GW3B	GW4	GW5
Overburden	100	100	45	40-45	less than 100	45
Bedrock	80	80	80	80	80	80

Why EPA Recommends this Cleanup Proposal Change

Based on the results of the Remedial Investigation, the human health and ecological risk assessments, and the assessment of current groundwater data, and review of the Feasibility Study, EPA recommends this proposed groundwater cleanup plan for the Davis Liquid Waste Superfund Site because EPA believes it achieves the best balance among EPA's nine criteria used to evaluate various alternatives.

The proposed plan is protective of both human health and the environment while, at the same time, is cost effective. This cleanup plan provides both short and long-term protection of human health and the environment; attains Federal and State applicable or relevant and appropriate requirements (ARARs); reduces the toxicity, volume, and mobility of contaminated groundwater through treatment, to the maximum extent practicable; utilizes permanent solutions and uses institutional controls to prevent unacceptable exposure.

Alternative GW3B also has several attributes that makes it EPA's Preferred Alternative. GW3B will help to enhance and accelerate the ongoing reductive dechlorination process, a process that has already been effective at this site for the VOCs, which will hasten degradation of groundwater contaminants. The treatment reagents are non-toxic, and pose little threat to workers, nearby residents, or the environment. All treatment will be performed in-situ (below the ground surface) and treatment byproducts stay underground. GW3B would not generate treatment byproducts that will require more handling or disposal. Because Alternative GW3B would also address a much larger portion of the overburden groundwater, cleanup goals will be reached in a shorter timeframe than the other Alternatives including Alternative GW3A, which addresses only the former Source Area.

Next Steps

This summer/fall, EPA expects to have reviewed and evaluated all comments received on this proposal and will sign an Amended Record of Decision, which is a document that describes the chosen cleanup plan. The Amended Record of Decision and a summary of responses to any public comments (the Responsiveness Summary) will then be made available to the public at the Greenville Public Library and at EPA's Records Center in Boston, and via the internet. EPA will announce the final decision on the cleanup plan through the local media and via EPA's website.
After the Amended Record of Decision is signed, EPA will begin to negotiate with the Responsible Parties for the purpose of reaching an agreement to conduct the cleanup under EPA supervision. Before the cleanup work begins, each major component of the cleanup plan must be designed. That design process is expected to take 1 to 2 years.

How you can Comment on EPA's Cleanup Proposal

During the 30-day formal comment period, EPA will accept formal written comments and hold a hearing to accept formal verbal comments. EPA uses public comments to improve the cleanup proposal.

To make a formal comment you need only speak during the Public Hearing on Tuesday, June 29, 2010 at 7 pm at the Smithfield Town Hall or submit written comments during the 30-day comment period no later than July 3, 2010.

Provide EPA with your written comments about the Proposed Plan for the Davis Liquid Waste Superfund Site. postmarked no later than July 3, 2010 to:

Byron Mah, RPM
U.S. EPA New England
5 Post Office Square, Suite 100
Mail code: OSRR07-1
Boston, MA 02109-3912

Or, submit comments by e-mail to: mah.byron@epa.gov or Fax comments to: 617-918-0325

Although EPA cannot respond to comments submitted at this Public Hearing, EPA will respond to both your oral and written comments in the written Responsiveness Summary that will be included with the Amended Record of Decision. EPA will review the transcript of all formal comments received at the hearing, and all written comments received during the formal comment period, before making a final cleanup decision.

The fact that EPA responds to formal comments in writing at the time the Amended Record of Decision is issued, does not mean that EPA cannot answer questions. EPA will be holding an informational meeting on Thursday, June 3, 2010 at Smithfield Town Hall, prior to the formal hearing on June 29th, 2010.

Your formal comment will become part of the official public record. The transcript of comments and EPA's written responses will be issued in a document called a Responsiveness Summary when EPA releases the final cleanup decision.

Table 3 Alternatives Cost Estimates

Alternative	Meets Threshold Criteria	Capital Costs	Total Present Value (30 years at 7% discount rate)
GW1	No	$0	$0
GW2	No	$235,000	$5,330,000
GW3A	Yes	$4,379,000	$9,866,000
GW3B	Yes	$6,153,000	$11,280,000
GW4	Yes	$3,364,000	$16,214,000
GW5	Yes	$23,598,000	$28,693,000

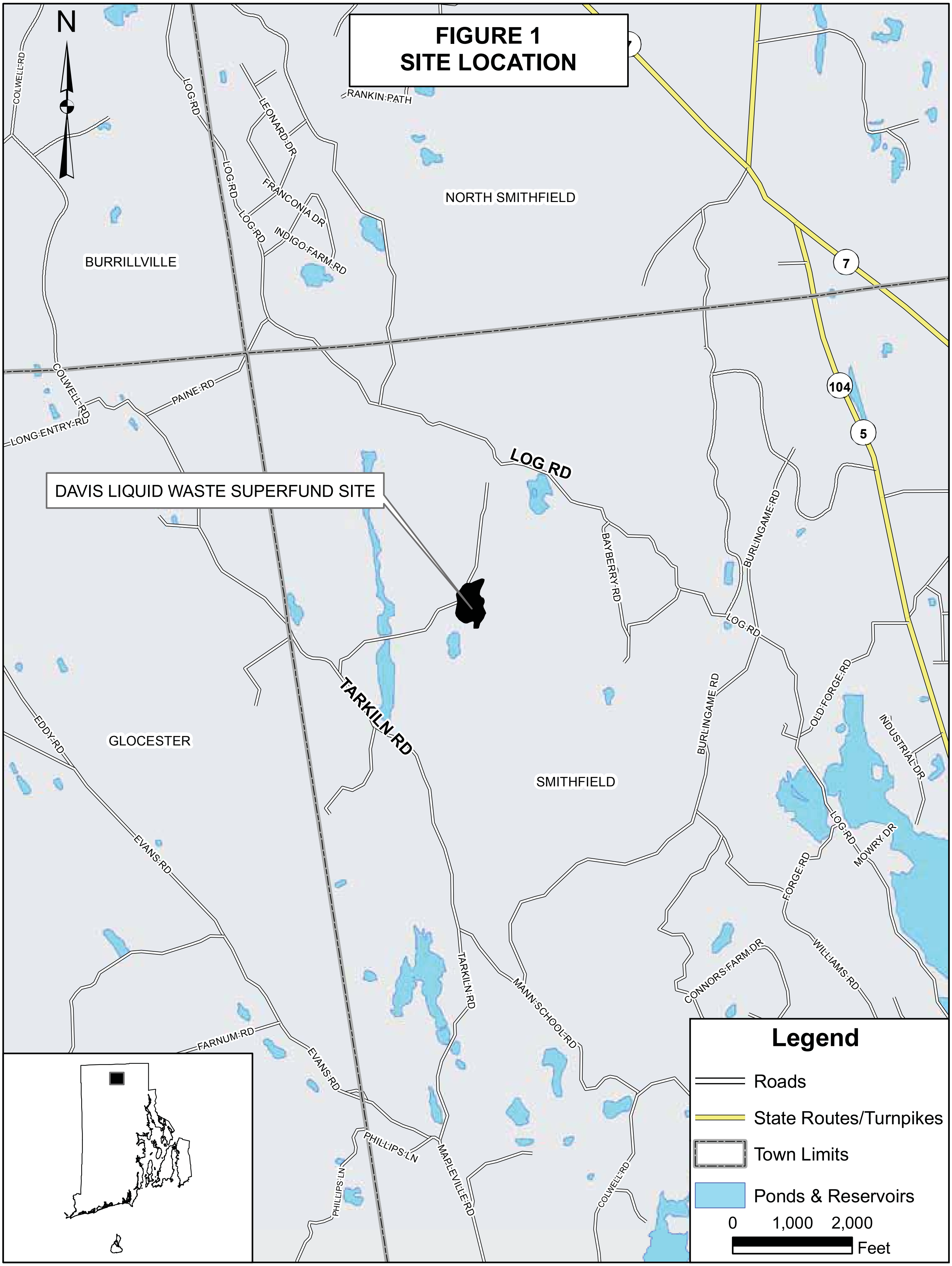


FIGURE 1
SITE LOCATION
N
DAVIS LIQUID WASTE SUPERFUND SITE
NORTH SMITHFIELD
BURRILLVILLE
GLOCESTER
SMITHFIELD
LOG RD
TARKILN RD
Legend
Roads
State Routes/Turnpikes
Town Limits
Ponds & Reservoirs
0 1,000 2,000
Feet

FIGURE 2
SITE AND SURROUNDING AREA

Overburden Monitoring Well
Bedrock Monitoring Well

50-87 Approximate Lot Boundary
Assessor's Map 18 Lot Nos. Shown

400 200 0 400 Feet

DAVIS LIQUID WASTE SITE
SMITHFIELD, RHODE ISLAND

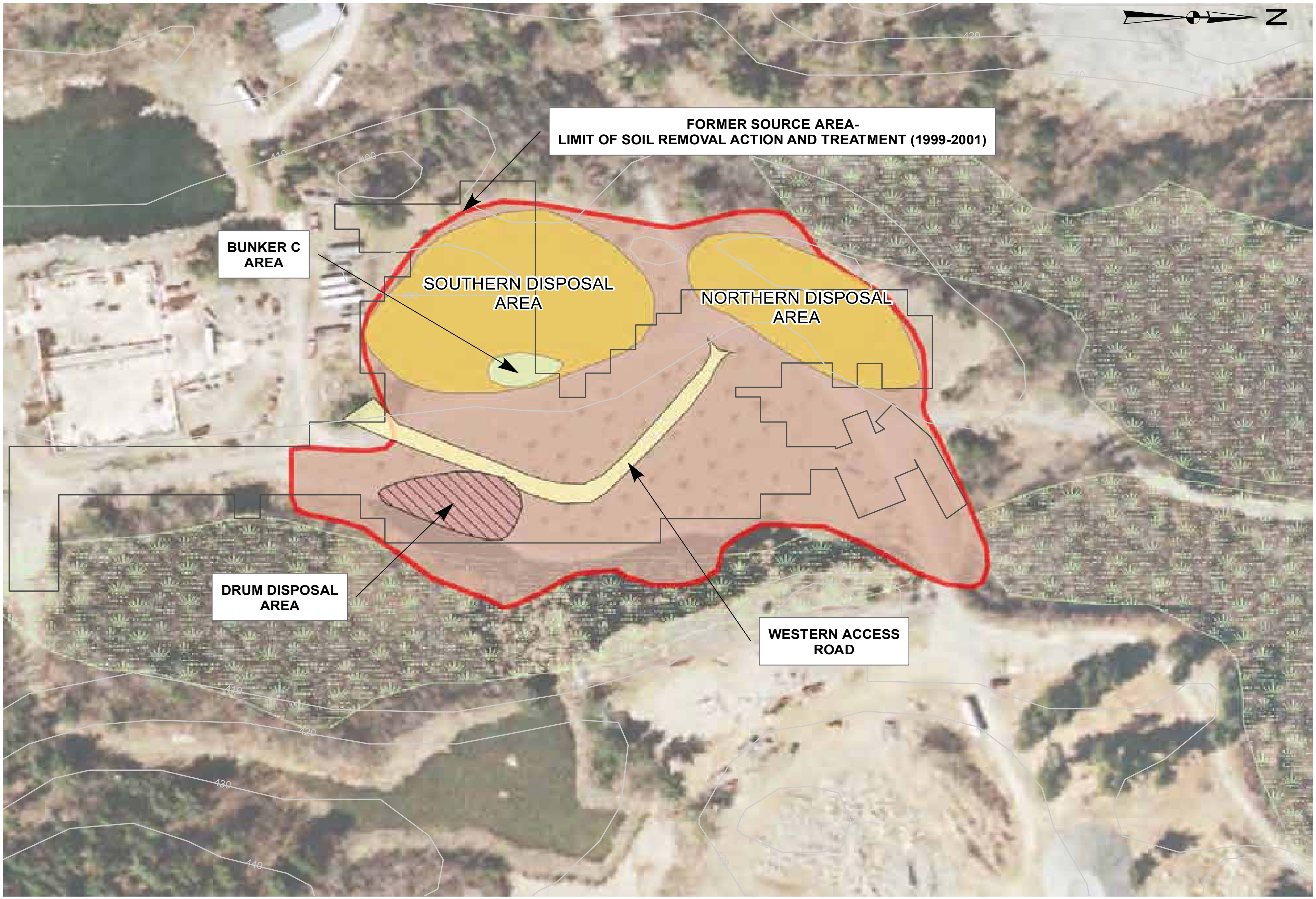


FIGURE 3

FORMER WASTE AREA LOCATIONS

Contour Interval

Limit of 1999 Preliminary Design Investigation

Approximate Wetland Areas

Approximate Limit of Former Source Area

150 75 0 150 Feet

DAVIS LIQUID WASTE SITE
SMITHFIELD, RHODE ISLAND

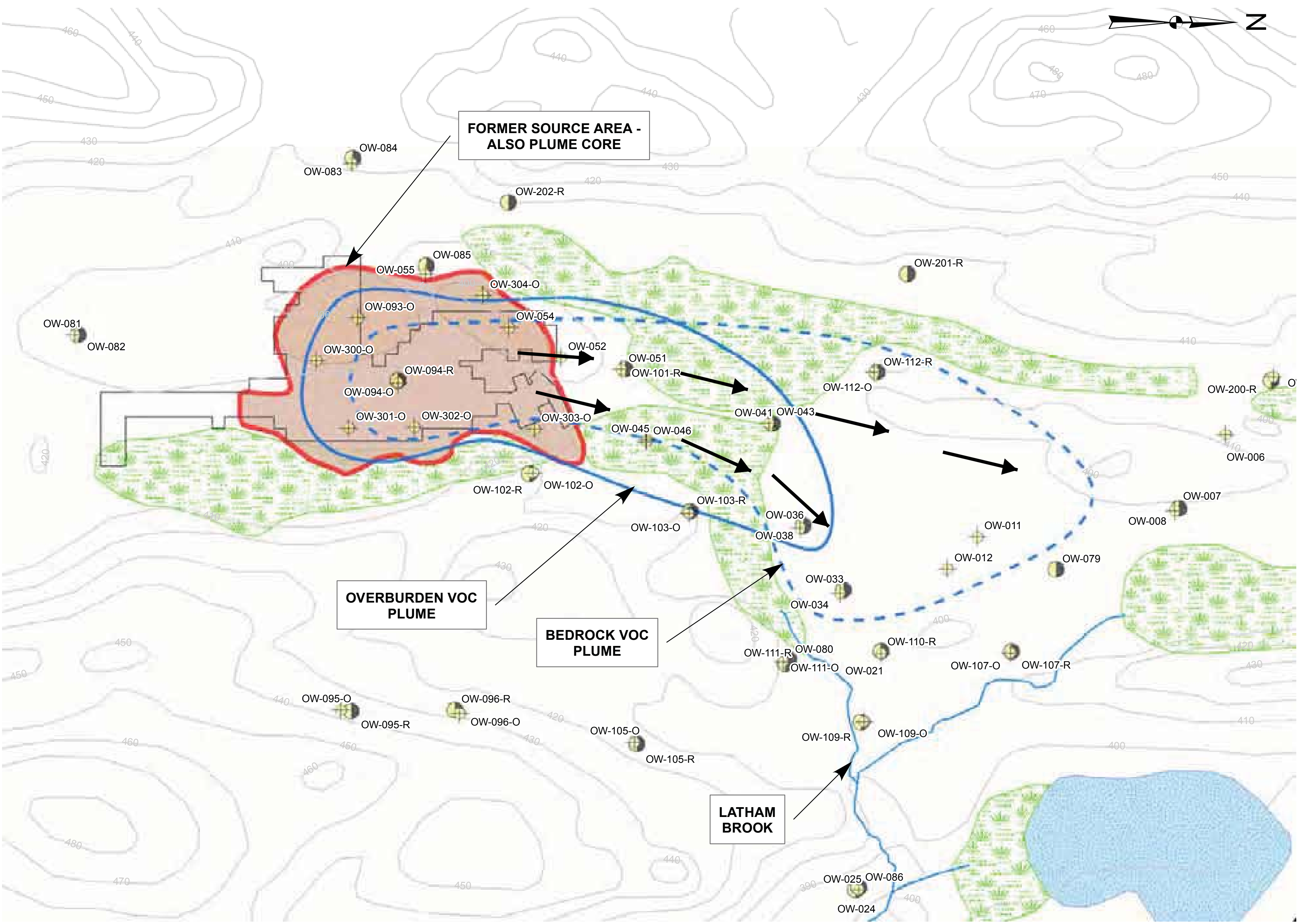


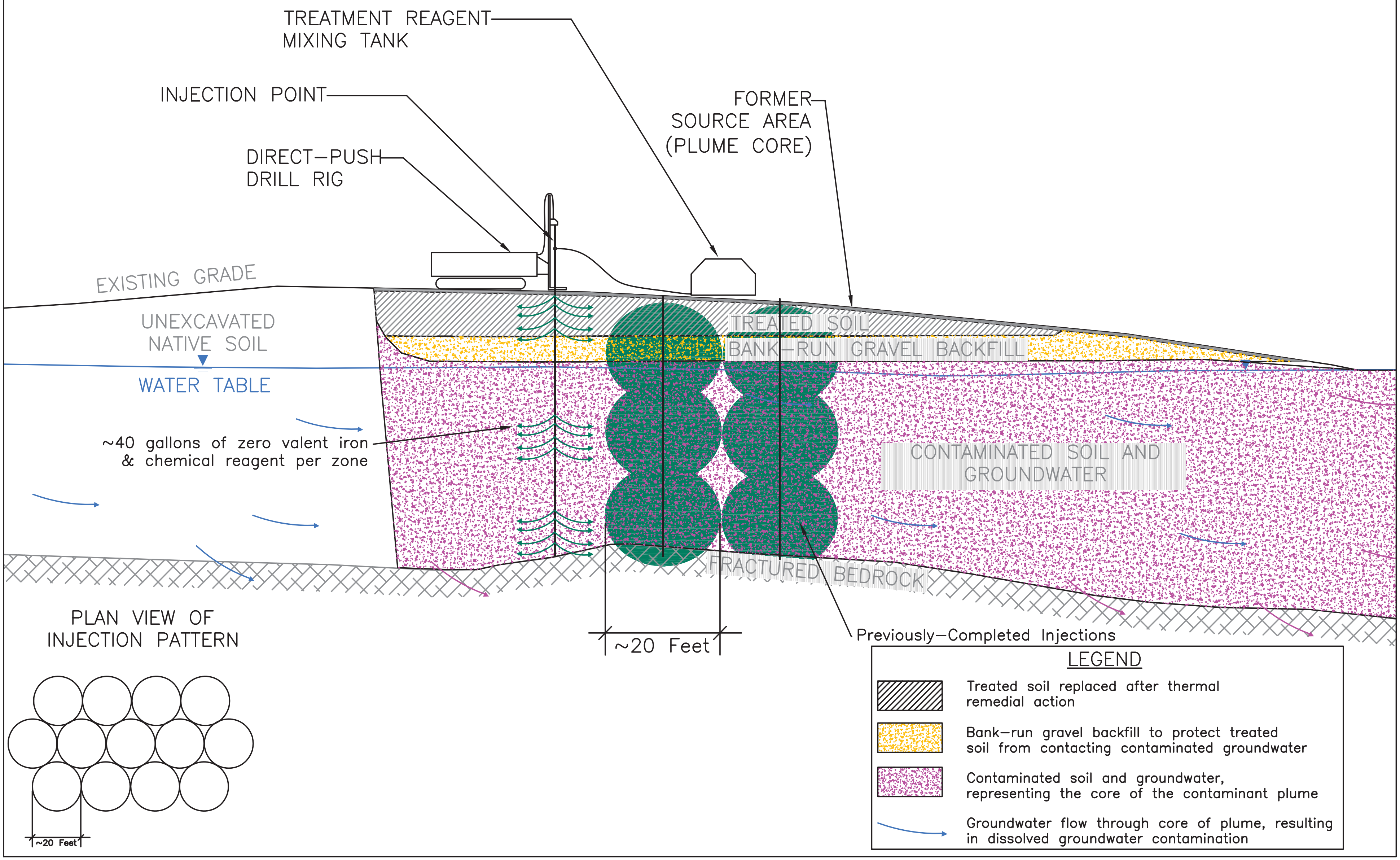
FIGURE 4
OVERBURDEN & BEDROCK VOC PLUMES

Direction of Groundwater Flow
Contour Interval
Limit of 1999 Preliminary Design Investigation
Approximate Wetland Areas
Approximate Limit of Former Source Area

300 150 0 300 Feet

DAVIS LIQUID WASTE SITE
SMITHFIELD, RHODE ISLAND

FIGURE 5
ALTERNATIVES GW3A & GW3B
CONCEPTUAL IN-SITE CHEMICAL AND ENHANCED
BIODEGRADATION INJECTIONS



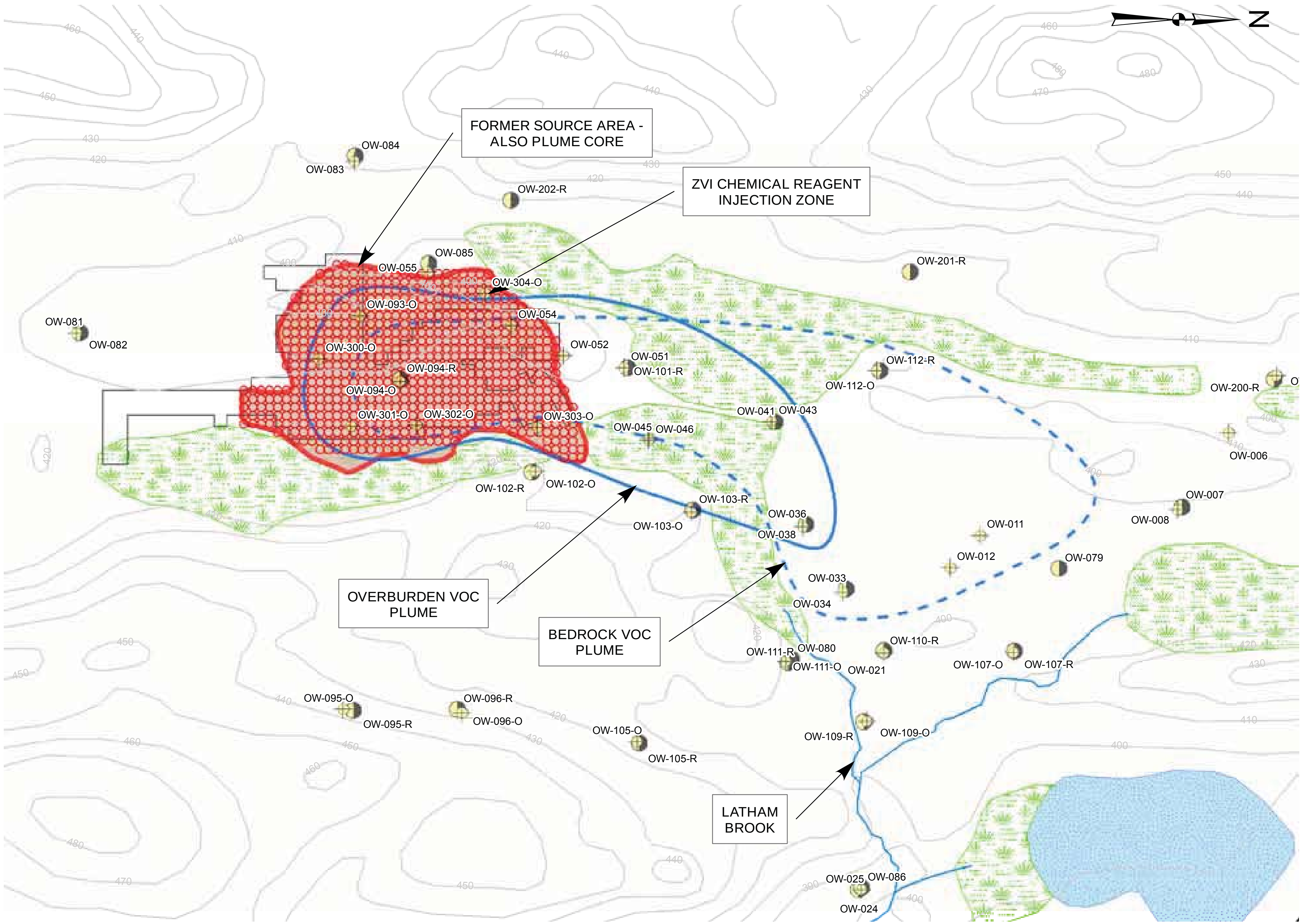


FIGURE 6
LAYOUT OF GROUNDWATER ALTERNATIVE GW3A

Contour Interval
Limit of 1999 Preliminary Design Investigation
Approximate Wetland Areas
Approximate Limit of Former Source Area

300 150 0 300 Feet

DAVIS LIQUID WASTE SITE
SMITHFIELD, RHODE ISLAND

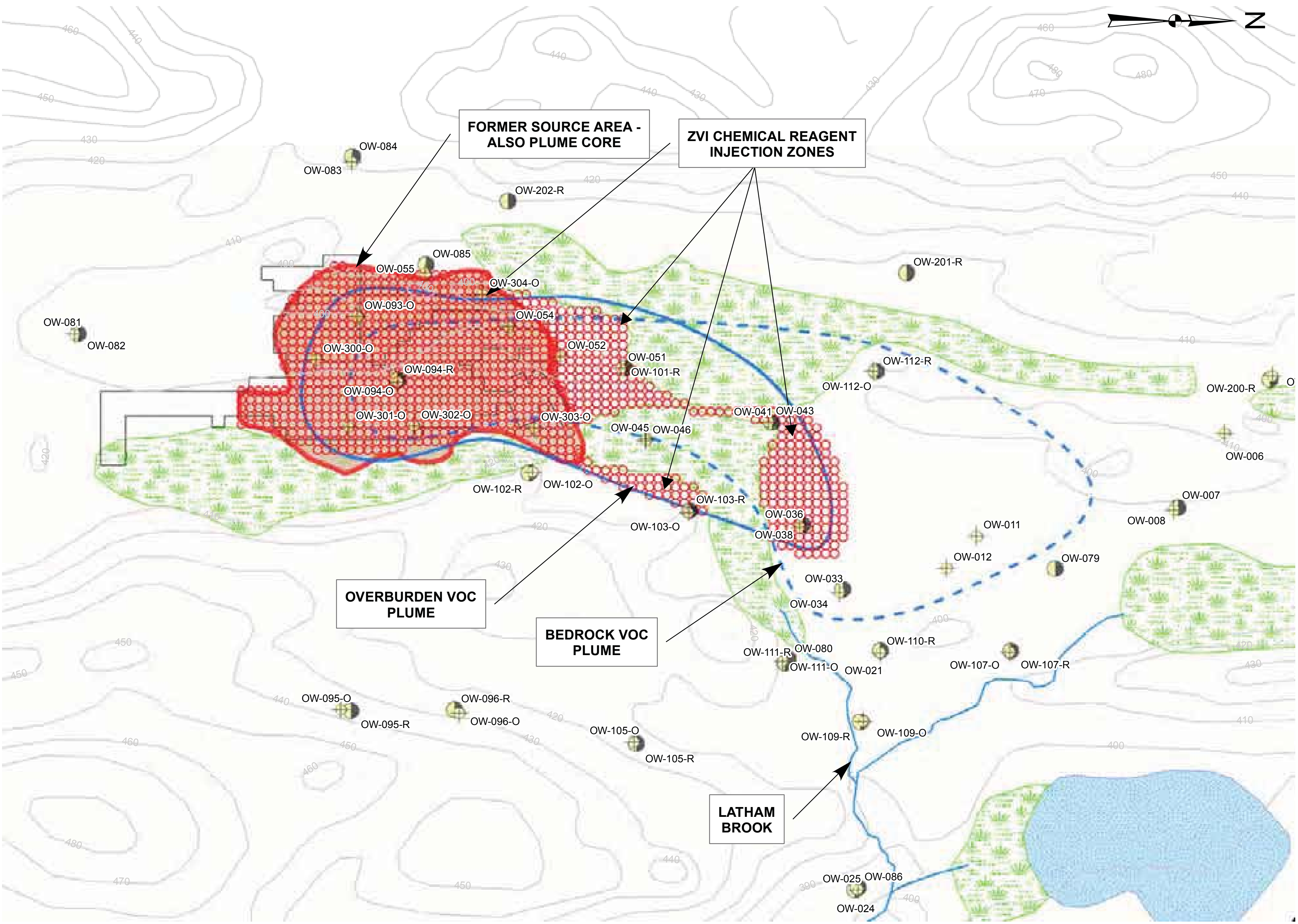


FIGURE 7

LAYOUT OF GROUNDWATER ALTERNATIVE GW3B

Contour Interval

Limit of 1999 Preliminary Design Investigation

Approximate Wetland Areas

Approximate Limit of Former Source Area

300 150 0 300 Feet

DAVIS LIQUID WASTE SITE
SMITHFIELD, RHODE ISLAND

Table 1*
Comparative Analysis of Alternatives Summary
Davis Liquid Waste Superfund Site
Smithfield, Rhode Island

Groundwater Remedial Alternative	Protection of Human Health & Environment	Compliance with ARARs	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, & Volume Through Treatment	Short-Term Effectiveness	Implementability	Cost (Total Present Value)	State Acceptance	Community Acceptance
GW1 - No Action	☐	☐	☐	☐	■	■	$0	TBD	TBD
GW2 - Limited Action - Institutional Controls, Monitored Natural Attenuation, and Five-Year Reviews	◩	☐	◩	☐	■	■	$4,950,000	TBD	TBD
GW3A - In-Situ Chemical Treatment and Enhanced Biodegradation (Core), Monitored Natural Attenuation (Plume), Institutional Controls, and Five-Year Reviews	■	■	■	■	◩	◩	$9,866,000	TBD	TBD
GW3B - In-Situ Chemical Treatment and Enhanced Biodegradation (Core, Overburden Plume), Monitored Natural Attenuation (Bedrock Plume), Institutional Controls, and Five-Year Reviews - *EPA's Choice*	■	■	■	■	◩	◩	$11,280,000	TBD	TBD
GW4 - Groundwater Extraction, Treatment, and Discharge, Long-Term Monitoring, Institutional Controls, and Five-Year Reviews	■	■	■	■	◩	◩	$16,214,000	TBD	TBD
GW5 - In-Situ Thermal Treatment (Core) and Monitored Natural Attenuation (Plume), Institutional Controls, and Five-Year Reviews	■	■	■	■	◩	◩	$28,693,000	TBD	TBD

Legend

☐	**Does not meet criterion**
◩	**Meets criterion**
■	**Best meets criterion**
TBD	**To be determined and addressed during the Public Comment Period.**

*Table 1 is a simplified summary of the evaluation of criteria EPA uses to assess alternatives and is included to facilitate understanding by the community. It is not, however a substitution for the detailed analysis EPA is required to provide under Superfund.

For More Information

To help the public understand and comment on the proposal for the Davis Liquid Waste Superfund Site, this publication summarizes a number of reports and studies. All of the technical and public information publications prepared to date for the Site are available at the following information repositories:

U. S. EPA Records Center
5 Post Office Square, Suite 100
Mail Code: OSRR02-3
Boston, MA 02109-3912
(617) 918-1440
Hours: 9:00 a.m.-5:00 p.m. Monday through Friday

Greenville Public Library
573 Putnam Pike
Greenville, RI 02828
(401) 949-3630
Hours: Monday through Thursday: 10 a.m. to 8 p.m.
Friday and Saturday: 10 a.m. to 5 p.m.
Sunday (Sept. – May): 1 p.m. to 5 p.m.

Information is also available for review online at: www.epa.gov/region1/superfund/sites/ (type Davis Liquid Waste into the Search box).

EPA United States Environmental Protection Agency

Davis Liquid Waste Superfund Site
Smithfield, Rhode Island

You are Invited to Attend!

Public Information Meeting
Thursday-June 3, 2010 at 7:00 p.m.
Smithfield Town Hall
64 Farnum Pike, Smithfield, RI

Formal Public Hearing
Tuesday-June 29, 2010 at 7:00 p.m.
Smithfield Town Hall
64 Farnum Pike, Smithfield, RI