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FIVE-YEAR REVIEW REPORT

Pinette's Salvage Yard Superfund Site
Washburn, Maine

September 2000

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Five-Year Review Report
For
Pinette's Salvage Yard Superfund Site
Aroostook County, Maine

September 2000

Prepared by

Region I
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LIST OF ACRONYMS

ARARs	Applicable or Relevant and Appropriate Requirements
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEP	Department of Environmental Protection
DRI	Deletion Remedial Investigation
EMPC	Estimated Maximum Possible Concentration
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
HASP	Health and Safety Plan
IRA	Immediate Removal Action
MCLs	Maximum Contaminant Levels
MCLGs	Maximum Contaminant Level Goals
MEG	Maximum Exposure Guideline
MOM	Management of Migration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Act
OUs	Operable Units
PCBs	Polychlorinated Biphenyls
RALs	Risk Action Levels
RCRA	Resourse Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SDWA	Safe Drinking Water Act
SRI	Supplemental Remedial Investigation
SVOCs	Semivolatile Organic Compounds
TSCA	Toxic Substances Control Act
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

The first five-year review at the Pinette's Salvage Yard Superfund Site in Washburn, Maine was completed in September 2000. The results of the five-year review indicate that the remedy is protective of human health and the environment provided that institutional controls are implemented. Overall, the concentrations of most contaminants in groundwater remain below ROD Cleanup Levels. A few deficiencies that do not impact the protectiveness of the remedy are noted. In particular, the concentrations of PCBs in two on-site wells remain slightly above ROD Cleanup Levels. However, hydrogeology data indicates that groundwater at the site does not migrate toward domestic wells on properties near the site.

Institutional controls will be implemented to prohibit the construction of drinking water wells on-site and on adjacent property which may be impacted by contamination from wells BMW-5 and DMW-5. Wells BMW-5 and DMW-5 are near the center of the Pinette's site. The extent of where institutional controls will be installed is currently being evaluated. The placement of institutional controls will ensure that the remedy remains protective. These institutional controls, such as deed restrictions and/or easements, will remain in place in the future.

The site inspection indicated that certain monitoring wells at the site are in disrepair and in need of maintenance. Also, the site fencing is in need of repair. Neither of these issues adversely impacts the protectiveness of the remedy.

I. Introduction

EPA Region I has conducted the first five-year review for groundwater, implemented at the Pinette's Salvage Yard Superfund Site (Pinette's Site) in the town of Washburn in Aroostook County, Maine. This review was conducted from August 2000 to September 2000. This report documents the results of the review.

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify deficiencies found during the review, if any, and identify recommendations to address them.

This review is required by statute. EPA must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121(c), as amended, 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 often 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."

The NCP, in Part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR), 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 first five-year review for the Pinette's Salvage Yard Superfund Site. The triggering action for this review was the completion of the soil removal Source Control Remedial Action at the site. Due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unrestricted use and unlimited exposure, the five-year review is required.

In conducting this five-year review, relevant existing documents related to project objectives, cleanup goals, and implementation of the remedial actions at the site have been examined. The primary documents that have been reviewed include:

- EPA Five-Year Review Guidance Document (October 1999),
- Record of Decision (ROD) (1989),
- Explanation of Significant Differences (June 1996),

- Groundwater Data from Maine Department of Environmental Protection (DEP) (June 1999, September 1999),
- Summary of Environmental Data and Evaluation Report (June 1996),
- Memorandum from Richard Willey, EPA Hydrogeologist, to Almerinda Silva, Remedial Project Manager, re: Current Groundwater Quality Concerns at the Pinette's Salvage Yard Superfund Site (March 13, 2000),
- Memorandum from Ann Marie Burke, EPA Toxicologist, to Almerinda Silva, Remedial Project Manager, re: Review of Validated Data for Groundwater Sampling Conducted in June 1999, for the Pinette's Salvage Yard Superfund Site (October 6, 1999), and
- Memorandum from Ann Marie Burke, EPA Toxicologist, to Almerinda Silva, Remedial Project Manager, re: Human Health Risk Screen for Groundwater Data Collected on 6/99 and 9/99 for the Pinette's Salvage Yard Superfund Site (February 3, 2000).

A comprehensive list of all of the documents that have been reviewed during preparation of this report is presented in Attachment 1.

This five-year review has been prepared in accordance with the recent EPA draft guidance document: Comprehensive Five-Year Review Guidance (EPA, October 1999). The report reflects the fact that there is no active remediation of groundwater ongoing at the Pinette's Site

II. Site Chronology

Table 1: Chronology of Site Events

Date	Event
April 1980	Initial discovery of the problem by Maine DEP
December 1982	NPL listing by EPA
October 1983	Removal Action initiated by EPA Region I
1985	Deletion Remedial Investigation (DRI) initiated
November 1987	Phase I Supplemental Remedial Investigation complete
November 1988	Phase II Supplemental Remedial Investigation complete
March 1989	Remedial Investigation and Feasibility Study complete
May 1989	ROD signature
June 1993	ROD Amendment for Source Control
November 1993	Completion of the Source Control Remedial Action work

June 1996	Explanation of Significant Differences for Groundwater promulgated
September 2000	First five-year review report

III. Background

The Pinette's Salvage Yard Superfund Site is located on Gardner Creek Road (a.k.a. Wade Road) approximately one mile southwest of the town of Washburn, Aroostook County, Maine, in the northeastern corner of the state (see Attachment 2, Figures 1, 2 and 3). The town of Washburn has an estimated population of approximately 2,000 residents, and consists of various family-owned and operated stores, an elementary school and high school, Town Hall and medical center.

A portion of the site has been utilized as a vehicle repair and salvage yard. Damaged vehicles have been stored and/or dismantled, from which recovered parts were sold. This portion of the site is situated within the parcel of land, currently owned by Roger J. Pinette and Cynthia C. Pinette (granted, with warranty covenants, as joint tenants), which consists of approximately 9.45 acres.

In June 1979, three electrical transformers from Loring Air Force Base located near Limestone, Maine, were removed from the base under a written agreement with a private electrical contractor. Allegedly, the transformers were brought to Pinette's site where they apparently ruptured while being removed from the delivery vehicle. Approximately 900 to 1,000 gallons of dielectric fluid containing polychlorinated biphenyls (PCBs) spilled directly onto the ground.

In April 1980, the Maine DEP determined that the site was contaminated with PCBs and associated volatile organic contaminants (VOCs). Additional sampling by the Maine DEP in August 1981 and the USEPA in May 1982 confirmed the presence of PCB contamination at the site. In December 1982, the site was placed on the National Priorities List (NPL).

On October 4, 1983, EPA Region I authorized an Immediate Removal Action (IRA) for the Pinette's site. Approximately 1,050 tons (800 cu.yds.) of PCB-contaminated soil and assorted debris were removed for disposal during the period from October 4 to November 4, 1983. The IRA was performed to excavate those soils grossly contaminated by PCBs (i.e., soils containing 50 parts per million (50 ppm) or greater of PCBs, as determined by on-site analysis). Those soils that were excavated were then transported to the Model City, New York secure hazardous waste landfill facility.

In 1985, a Deletion Remedial Investigation (DRI) was initiated at the Pinette's site to determine if any residual PCB contamination existed and whether this residual contamination was reduced sufficiently to warrant the deletion of the site from the National Priorities List (NPL). This investigation resulted in the determination by the EPA, in consultation with the Maine DEP, that the site was not suitable for deletion

from the NPL. The results of the DRI were released to the public in October 1987. The DRI revealed additional contamination and thus triggered a need for additional studies, namely Phase I and Phase II field investigations.

Based on the levels of residual PCB contamination discovered during the DRI, the EPA, in consultation with the Maine DEP, determined that a Supplemental Remedial Investigation (SRI) was warranted at the Pinette's Site. The Supplemental RI was performed using a two-phased approach. Phase I and Phase II field investigations were conducted to address any outstanding data requirements and objectives, so that the data would be of sufficient quality and quantity to support the preparation of a Feasibility Study (FS). The Phase I field investigations were performed from September 1987 through November 1987. Phase II field activities were completed in November 1988. The Final Supplemental Remedial Investigation and Public Health Evaluation Report (Ebasco, 1989a), and the Draft Final Feasibility Study Report (Ebasco, 1989b) were distributed for public comment in March 1989.

Detectable concentrations of PCBs, benzene, chlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and chloromethane were identified within both the shallow and deep till aquifers at the site (Ebasco, 1989a). These detectable concentrations of organic chemicals were found to be localized within and slightly downgradient of the spill area (in the vicinity of well cluster 5 as depicted in Figure 3), but north of Gardner Creek Road. No detectable concentrations of PCBs were identified in filtered samples obtained at the site, although PCBs were detected in unfiltered samples. The distribution of PCBs detected in the groundwater was limited only to the approximate spill area.

IV. Remedial Actions

A. Remedy Selection

On May 30, 1989, the USEPA signed a Record of Decision (ROD) for the Pinette's Salvage Yard Superfund Site. In support of development of the ROD, a number of potential exposure pathways were analyzed for risk and threats to public health and the environment in the Public Health Evaluation (Ebasco, 1989a) for the Pinette's Site. As a result of these assessments, remedial response objectives were developed to mitigate existing and future threats to public health and the environment. These response objectives were:

- provide adequate protectiveness to human health against risks associated with direct contact or incidental ingestion of contaminants in the surface and subsurface soil, sediments, and from current and potential future migration of contaminants from soils to groundwater, sediments and surface water;

- provide adequate protectiveness to human health from potential risks associated with inhalation of VOCs and PCBs potentially released from the site;

- provide adequate protectiveness to human health from risks associated with potential future consumption of groundwater;

- provide adequate protectiveness to the environment, including plants and terrestrial and aquatic wildlife, from potential adverse impacts associated with contact with contaminated surface soils/sediments, and from current and future distribution of contaminants migrating in groundwater, sediments, and surface water;

- ensure adequate protection of groundwater, air, and surface water from the continued release of contaminants from soils/sediments; and

- comply with chemical-specific, location-specific, and action-specific ARARs and other guidance for surface and subsurface soils, groundwater, air, and surface water for both existing and future site conditions.

The cleanup approach, selected in the ROD, for the site included two primary components: Source Control and Management of Migration. The Source Control component (as amended in June 1993) has been completed. The Source Control component of the 1989 ROD originally called for on-site solvent extraction treatment and off-site incineration of contaminated soils, but was amended in 1993 for off-site land disposal and off-site incineration. (Refer to the 1989 Record of Decision and the 1993 ROD Amendment for a complete description of the original Source Control components.)

A.1 Management of Migration Remedy

The Management of Migration (MOM) component of the 1989 ROD required that contaminated groundwater containing concentrations above specified target cleanup goals be extracted from the ground and treated on-site using filtration and carbon adsorption. The 1989 ROD required active groundwater treatment to reduce the concentration of VOCs to their cleanup goals as a means of reducing the migration of PCBs.

The MOM remedy required that groundwater contamination at the site be actively addressed by utilizing groundwater collection and carbon adsorption treatment. The system was to first entail construction of shallow interceptor trenches and deep extraction wells to collect the contaminated groundwater. Collected groundwater was to then be pumped through a granular filter to remove suspended/colloidal particulate matter.

Following this preliminary filtration step, the groundwater was to be treated by carbon adsorption to remove the organic contaminants found in the groundwater. All treated groundwater was to then be discharged back into the shallow aquifer through the use of shallow recharge trenches. The entire aquifer

collection system was to extract approximately eight to sixteen gallons per minute for approximately two years.

Additionally, the ROD required the establishment of institutional controls on the site for groundwater. These controls were to include a complete prohibition on the use of the on-site groundwater for drinking water purposes both during and, if necessary, following overall site remediation.

The Management of Migration portion of the selected remedial action was designed primarily to provide adequate protectiveness to human health from effects associated with potential future use of on-site groundwater, if left untreated. This was and is especially important since residents living in the immediate vicinity of the site use residential well water as a potable drinking water source and no municipal water supply system currently serves these residents. Additionally, the continued presence and/or migration of the other organic contaminants in the on-site groundwater could potentially mobilize the relatively immobile particulate-bound PCBs also present in the groundwater.

The groundwater cleanup levels specified in the ROD focused on the levels of groundwater contamination at the site, the current (at the time of the ROD) and potential future-use of the groundwater, and the time required to achieve the overall site remediation goals. Based on the contaminants found in the on-site groundwater, and as discussed in the ROD, the following contaminants and their respective MCL or State of Maine Maximum Exposure Guideline (MEG) were identified as appropriate groundwater cleanup goals (as stated in the 1989 ROD):

Contaminant	MCL/MEG	
Benzene	5	ppb (ug/L)
1,4-Dichlorobenzene	27	ppb
Chlorobenzene	47	ppb
PCBs	0.5	ppb

A ROD Cleanup Level for 1,2,4-trichlorobenzene of 680 ppb was also established. Finally, groundwater cleanup goals were established for lead (5 ppb), based on the then proposed MCL for lead, and for chloromethane (10 ppb), based upon the analytical detection limits of this compound in water. The ROD indicated that because the PCBs in the groundwater at the Pinette's site were found to be adsorbed onto soil particles, they were likely to be difficult to collect for groundwater treatment. The ROD also indicated that while EPA would collect and treat as much of the PCBs as technically feasible, it would probably be impossible to collect enough particulate-bound PCBs in order to reach the target cleanup goal. Therefore, in accordance with Section 117(a)(2) of CERCLA, the ROD invoked a waiver from compliance with the State of Maine Maximum Exposure Guideline for PCBs of 0.5 ppb based on the technical impracticability, from an engineering perspective, of attaining this level.

B. Remedy Implementation

As discussed in the subsequent USEPA Explanation of Significant Differences (ESD), promulgated in 1996 for groundwater at the site, monitoring results subsequently demonstrated that the primary objective of the Management of Migration component of the ROD (to reduce the migration of PCBs) was achieved without active treatment.

Groundwater sampling data collected during the MOM Pre-design studies (1993, 1994 and 1995) following the completion of the source control remedy (see the 1996 Summary of Environmental Data and Evaluation Report) indicated that the concentrations of VOCs had decreased to below or near the cleanup level established in the 1989 ROD. Decreases in VOC levels were attributable to the natural attenuation/degradation of contaminants, to the extraction and treatment of over one million gallons of contaminated groundwater during Source Control remedial activities, and to improved groundwater sampling techniques.

The ESD also noted, that in monitoring wells, the maximum concentration of lead detected in unfiltered samples since EPA began using low flow sampling in 1995 was 14.5 ppb, below the cleanup level (as amended by the ESD) of 15 ppb. Also as indicated in the ESD, the maximum concentration of PCBs in unfiltered monitoring well samples detected since the low flow sampling began was 8.5 ppb, which was still above the ROD Cleanup Level of 0.5 ppb. VOCs for which ROD Cleanup Levels had been established for the site were not detected in unfiltered samples above cleanup levels since low flow sampling began.

The 1989 ROD required active groundwater treatment to reduce the concentration of VOCs to their ROD Cleanup Levels as a means of reducing the migration of PCBs. The Pre-design monitoring results demonstrated that the primary objective of the Management of Migration component of the ROD had been achieved - PCB migration had been sufficiently reduced. The concentrations of VOCs were already below their cleanup levels. Furthermore, the migration of PCBs was sufficiently reduced; downgradient wells had not shown any contamination. Consequently, the ESD determined that there was no need to actively treat the groundwater.

The ESD recognized that despite the noted improvements, groundwater at the Pinette's site still contained concentrations of PCB contaminants which would pose an unacceptable risk if ingested. Therefore, to prevent the ingestion and use of contaminated groundwater, the ESD indicated that institutional controls (e.g., deed restrictions and/or easements) would be established to prevent the installation of domestic wells on the site.

Based upon a recommendation from the Agency for Toxic Substance and Disease Registry (ATSDR), the ESD indicated that residential well sampling did not need to be continued. Contaminants in residential wells were determined not to be at levels of public health concern. In addition, it was noted that the site-related groundwater had been shown not to flow toward domestic wells in the site area.

Finally, the ESD required that five-year reviews of the site be conducted to ensure that the remedy remained protective. At a minimum, groundwater samples were to continue to be collected from the monitoring well network to support five-year reviews. The five-year reviews were to determine whether the institutional controls were being effective and enforced, whether residential wells should be sampled, whether site conditions changed over time with respect to potential migration which would warrant a different remedial approach, or whether the institutional controls could be removed.

C. System Operations

As discussed above, the ESD indicated that active groundwater treatment was not required for the Pinette's Site. However, in accordance with the ESD, groundwater monitoring has continued at the site to support the five-year review process. Groundwater monitoring was conducted during multiple sampling rounds in 1999 and is further discussed in Section 6D.

Also, as required by the ESD, institutional controls are in the process of being implemented at the Pinette's Site to prohibit the establishment of domestic wells for drinking water. The exact location and extent of where institutional controls, such as deed restrictions and/or easements, will be established is currently being evaluated.

D. Progress Since the Last Five-Year Review

This is the first five-year review for the Pinette's Site.

V. Five-Year Review Process

The Pinette's Salvage Yard Superfund Site five-year review was led by Ms. Almerinda Silva, Remedial Project Manager for the Pinette's Site. The following team members assisted in the review:

- Ms. Ann Marie Burke, EPA Toxicologist
- Mr. Man Chak Ng, EPA Attorney
- Mr. Richard Willey, EPA Hydrogeologist
- Ms. Mary Jane O'Donnell, EPA Section Chief
- Ms. Lynn Cayting, Maine DEP Project Manager
- Metcalf & Eddy (M&E) RAC Team, Technical Staff

This five-year review consisted of the following activities: a review of relevant documents (see Attachment 1), interviews with site residents, a site inspection, an ARAR review, a risk review, and evaluation of recent groundwater monitoring data. The Maine DEP conducted the 1999 groundwater sampling efforts. The completed five-year review report is available in the information repository.

VI. Five-Year Review Findings

A. Interviews

The following individuals were visited in person as part of the five-year review:

- Rita Pinette, Resident Abutting Site (interviewed 8/16/00) and
- Cynthia and Roger Pinette, Site Property Owners (interviewed 8/17/00).

Rita Pinette stated that she was unaware of any issues related to the site. She continues to be the only occupant of the residence northeast of the site.

Roger and Cynthia Pinette continue to be the sole occupants of the residence north of the site. Mr. Pinette continues to use the site as an automobile salvage yard and small garage. Mr. Pinette stated that he has pulled out several well risers and attempted to remove several of the remaining monitoring wells. In addition, the MW-3 cluster southeast of Gardner Creek Road was destroyed by a snow plow. Mr. Pinette expressed a strong desire to have the remaining monitoring wells on his property abandoned as soon as possible. He was particularly interested in having the MW-8 cluster removed. He stated that the on-site monitoring wells impact his snow removal and automobile storage activities and that he was assured "some time ago" that they would be removed. Mr. Pinette does not close or lock the site gate on Gardner Creek Road.

B. Site Inspection

A staff member (Mr. John Ehret) from EPA's technical consultant (the M&E RAC Team) conducted a site inspection on August 16-17, 2000. During the inspection, the overall condition of the site was observed. In addition, particular attention was directed toward the condition of the monitoring wells and site fence. A summary of the inspection findings is presented below. Refer to Attachment 4 and Attachment 5 for the site inspection checklist and photographic record, respectively.

Weather conditions during the inspection included rain with temperatures in the 60s. Upon arrival, the site gate was open. The concrete pad was in good condition. Site vegetation was unmowed and two to three feet high. Approximately 23 cars, as well as several motorcycles, were parked within the fenced area. This is consistent with historical uses. Along the northern perimeter, the fence has been removed in two locations.

All site monitoring wells were visually inspected. The MW-3 and MW-4 well clusters have been destroyed. The protective risers of the MW-9 cluster have been removed and the integrity of this cluster has likely been compromised. Well SMW-7A has a loose surface seal and may also be compromised. All other site monitoring wells appear to be in good condition. Overall deficiencies are summarized in Section VIII.

C. Risk Information Review

C.1 ARAR Review

The ARARs in the 1989 ROD and in the 1996 ESD for groundwater have been reviewed. Also, a review was performed of the Federal, State and local regulations and standards related to public health and the environment for groundwater that have been promulgated since the ROD and ESD. A comparison was made to determine whether there have been changes in the standards that may impact public health or the environment as related to groundwater.

The ROD for the Pinette's Site identified Federal environmental laws which were applicable or relevant and appropriate to the selected remedial action at the site and include:

- Resource Conservation and Recovery Act (RCRA),
- Toxic Substances Control Act (TSCA),
- Clean Water Act (CWA),
- Safe Drinking Water Act (SDWA),
- Clean Air Act (CAA), and
- Occupational Safety and Health Act (OSHA).

The ROD indicated that the MOM remedy would meet or attain all applicable or relevant and appropriate Federal and state requirements (see the ROD for detailed ARAR listings) that applied to the site, with the possible exception of the state limitation on PCB levels in drinking water (the Maine MEG). Since no technology existed which could ensure collection of the particulate-bound PCBs in order to meet the Maine MEG, EPA invoked a waiver of this ARAR, in the ROD, on the ground that its attainment was technically impracticable from an engineering standpoint. However, the groundwater at the site was to be treated for target organic contaminants of concern, including PCBs to the degree that was technically practicable.

<u>Standards Related to Groundwater - Changed Since the ROD & ESD</u>

Most of the standards related to the groundwater cleanup levels established by the ROD and the ESD have remained the same. A few minor changes have occurred. With respect to PCBs, the ROD adopted a cleanup level of 0.5 ppb for PCBs, which is the current Federal MCL. Therefore the remedy remains protective.

The standard used to develop groundwater cleanup level for 1,2,4-trichlorobenzene (i.e., reference dose) was reviewed based on the current standards. The current standard for 1,2,4-trichlorobenzene has changed since the ROD was issued, as noted below.

Contaminant	Standard (1989 ROD)	Standard (Current)
1,2,4 Trichlorobenzene	Reference dose: 2×10^{-2}	Reference dose: 1×10^{-2}

Although 1,2,4-trichlorobenzene was not detected in the most recent groundwater sampling rounds in 1999, the change to the respective standard should be noted for future reference in the event that this contaminant is detected in future groundwater sampling events. This change does not affect the protectiveness of the remedy.

C.2 Detailed Risk Review

This aspect of the five-year review addresses the human health protectiveness of the ROD MOM Cleanup Levels for groundwater in the event of groundwater ingestion. A summary of the 1989 ROD MOM Cleanup Levels for groundwater is presented in Table 2. Each of these ROD Groundwater Cleanup Levels is evaluated below on a chemical-by-chemical basis relative to potential drinking water exposures.

PCBs

- There has been no change in the federal MCL.
- An analysis of the most recent groundwater sampling data from June and September 1999 (Ann Marie Burke, internal EPA memorandum) shows the average groundwater PCB concentration to be 0.546 ppb across 5 wells at the site, with a maximum observed concentration of 2 ppb.
- Current groundwater concentrations of PCBs still slightly exceed the ROD Cleanup Level.

⇒ However, no change in the ROD Cleanup Level is warranted to ensure protectiveness as the current ROD Cleanup Level is the MCL and this concentration is consistent with the U.S. EPA target risk range of $1x10^{-4}$ to $1x10^{-6}$.

Benzene

- There has been no change in the federal MCL.
- The most recent groundwater sampling results (from September 1999) for benzene were non-detect for all wells.
- Previous sampling up through 1995 had shown benzene concentrations in groundwater at estimated concentrations < 5 ppb or non-detect at sample quantitation limits of 5 ppb.

⇒ Consequently, no change in the ROD Cleanup Level is warranted to ensure protectiveness, as the current ROD Cleanup Level is the MCL.

1,4-Dichlorobenzene

- The ROD Cleanup Level is more stringent than the current MCL/MCLG.
- Previous groundwater sampling results for a number of years for 1,4-dichlorobenzene for all wells did not exceed the ROD Cleanup Level.

⇒ Consequently, no change in the ROD Cleanup Level is warranted to ensure protectiveness.

Chlorobenzene

- The ROD Target Cleanup Level is more stringent than the current MCL/MCLG, the U.S. EPA Health Advisory.
- The most recent groundwater sampling results (from September 1999) for chlorobenzene were non-detect for all wells (except for an estimated 5 ppb in two different wells) at detection limits that do not exceed the ROD Cleanup Level.
- The results of previous sampling had indicated that the ROD Cleanup Levels for chlorobenzene had not been exceeded for a number of years.

⇒ Consequently, no change in the ROD Cleanup Level is warranted to ensure protectiveness.

1,2,4-Trichlorobenzene

- The ROD Cleanup Level is less stringent than the current MCL/MCLG.
- The results of previous sampling indicated that the ROD Cleanup Level for 1,2,4-trichlorobenzene had not been exceeded for a number of years and that concentrations were typically at least an order of magnitude or more lower than the ROD Cleanup Level.

⇒ Consequently, no change in the ROD Cleanup Level is warranted to ensure protectiveness.

Chloromethane

- The most recent groundwater sampling results (from September 1999) for chloromethane were non-detect for all wells at detection limits that do not exceed the ROD Cleanup Level.

⇒ Consequently, no change in the ROD Cleanup Level is warranted to ensure protectiveness.

Lead

- The ESD Cleanup Level is equal to the current Action Level, which is 15 ppb. Currently there is no promulgated MCL for lead.

- The recent groundwater sampling results (from June 1999) for lead were non-detect for all wells at detection limits [i.e., 2 ppb] that do not exceed the ESD Cleanup Level.

⇒ Consequently, no change in the ESD Cleanup Level is warranted to ensure protectiveness.

Other Constituents

A few other volatile organic constituents were detected at low concentrations in samples taken during the most recent groundwater sampling. The detection of these volatiles does not affect the protectiveness of the remedy.

D. Data Review

Data from two 1999 sampling events (June and September) were reviewed and compared with previous data (see Management of Migration Summary of Environmental Data and Evaluation Report, Foster Wheeler, June 1996). During the two 1999 sampling events, samples were collected from nine groundwater monitoring wells, one residential well and from surface water from the culvert located to the northeast of the site. Results for ROD contaminants of concern are summarized in Table 3. The results are discussed in more detail below.

Table 2. Summary of the 1989 ROD Target Management of Migration Cleanup Levels for Groundwater at the Pinette's Salvage Yard Superfund Site

Chemical of Concern	Date of Cleanup Target	ROD Target MOM Cleanup Levels in Groundwater (ppb)	Basis for Cleanup Level Stated in the ROD	Notes [1,2,3]
PCBs	1989	0.5	MCL/MEG	• Current MCL is still 0.5 ppb [MCLG = 0]
Benzene	1989	5	MCL/MEG	• Current MCL is still 5 ppb [MCLG = 0]
1,4-Dichlorobenzene or p-Dichlorobenzene	1989	27	MCL/MEG	• Current MCL is 75 ppb [MCLG = 75] • The USEPA Health Advisory is 75 ppb
Chlorobenzene or Monochlorobenzene	1989	47	MCL/MEG	• Current MCL is 100 ppb [MCLG = 100] • The USEPA Health Advisory is 100 ppb
1,2,4-Trichlorobenzene	1989	680	Based on RfD of 2x10-2 mg/kg-day	• Current MCL is 70 ppb [MCLG = 70] • The USEPA Health Advisory is 70 ppb • Current oral RfD is 1x10-2 mg/kg-day [Last modified on 5/1/92]
Chloromethane	1989	10	Analytical Detection Limit	• The USEPA Health Advisory is 3 ppb • Current CLP is still 10 ppb • Typical quantitation limit is 1 to 5 ppb
Lead	1989	5	Proposed MCL	• Original ROD groundwater cleanup level .
Lead	1996	15	National MCL	• Changed through an Explanation of Significant Differences Report • Current Action Level is 15 ppb [MCLG = 0]

NOTES

1. MEG = Maine Maximum Exposure Guidelines
2. National Primary Drinking Water Regulations referenced were accessed online at **http://www.epa.gov/safewater/mcl.html** as published by the U.S. EPA, Office of Water, Office of Ground Water and Drinking Water on August 11, 2000
3. RfD value downloaded from the U.S. EPA Integrated Risk Information System (IRIS) at **http://oaspub.epa.gov/iris/subst/0119.htm** on August 4, 2000

Table 3
Summary of Initial and Current Groundwater Concentrations for ROD Contaminants of Concern

Contaminant	Cleanup Level (ppb)	Well[1]	Highest Concentration pre-Remedial Action (RA)	Highest Concentration following completion of RA	Highest Concentration post-RA and using low flow sampling	Highest Concentration (1999)[2]
Benzene	5	BMW-5	270	8	1	10 U
Chloromethane	10	BMW-5	180	12 U	10 U	10 U
Chlorobenzene	47	SMW-5/5A	64	42	12	8
PCBs[3]	0.5	DMW-5	150[4]	65	8.5	2.2
		BMW-5	48	2.3	< AL	0.86
Lead	5	DMW-8	128	316 (SMW-9/9A)	14.5 (SMW-5/5A)	< AL

Concentrations are in units of ppb (ug/L)
U – compound was not detected above given reporting limit.
< AL – Contaminant was not detected at a reporting limit less than the cleanup level.
[1] – Highest concentration was reported for the same well(s) for each time period with the exception of lead.
[2] – Value reported is the Estimated Maximum Possible Concentration (EMPC). For these samples, the EMPCs were only slightly higher (< 0.02ppb) than accurate quantitation.
[3] – PCBs reported as Aroclor 1260 for earlier sampling rounds and as total homologue groups (mono through deca) for 1999.
[4] – A concentration of 2,800 ppb was the highest concentration reported for this well and appeared to be anomalous based on other available data. The 150 ppb is consistent with results from several pre-RA sampling events.

Beginning in April 1995, samples were collected using EPA Region I's low flow groundwater sampling procedure as this sampling method provides samples that are most representative of the mobility of contaminants in groundwater. Since sampling began using the low flow procedure, PCBs and lead were the only contaminants of concern detected above ROD Cleanup Levels.

Historically, samples were analyzed for PCBs as Aroclors using conventional gas chromatography/ electron capture (GC/ECD) methodology. This methodology typically achieves reporting limits that range from 0.067 to 1 ppb and was modified to report data to the ROD Cleanup Level of 0.5 ppb. Although, the laboratories were able to report to the ROD Cleanup Level, it was the lower end of the sensitivity range and concentrations less than 0.5 ppb may not have been detected using the GC/ECD method. Samples collected during two sampling rounds conducted in 1999 were analyzed for specific PCB congeners and for total mono through deca homologue groups using high-resolution gas chromatography/ high-resolution

mass spectrometry (HRGC/HRMS). This method identifies and quantifies individual PCBs based on their molecular weight rather than based on Aroclor pattern recognition and is sensitive to concentrations in the parts per trillion (ng/L) range rather than the ppb range reported for the Aroclor method.

The HRGC/HRMS method uses mass ratios in addition to retention times and other QC measures to positively identify and quantify target analytes (PCBs). In cases where the QC criteria are not met, the laboratory may report two values for each target analyte. The first value is the minimum concentration calculated based on the instrument results that meet all QC criteria for identification and quantitation. The second value is called an Estimated Maximum Possible Concentration (EMPC) value, where the deviations from QC acceptance criteria are attributed to interferences and the value reported is the highest possible based on instrument response. For the 1999 results, the EMPC values were only slightly higher (within 0.02 ppb) than the positive identifications and the EMPC values were used as the more conservative value.

Following completion of the Source Control Remedial Action, PCBs were detected above the ROD Cleanup Level in only the 5-series cluster (DMW-5 and BMW-5) and on a single occurrence in well SMW-2. After implementation of the low flow sampling procedure in 1995, concentrations exceeded the ROD Cleanup Level for PCBs only in well DMW-5. PCBs were detected at concentrations less than the ROD Cleanup Level in well BMW-5. Results from the two limited 1999 sampling rounds indicate that concentrations of PCBs have decreased slightly in well DMW-5 from concentrations ranging from 3 to 9 ppb in 1995 to an average of 2 ppb in 1999. Concentrations of PCBs in well BMW-5 have increased slightly from less than 0.5 ppb in 1995 to an average of 0.7 ppb in 1999, possibly suggesting some downward migration of PCBs into the bedrock aquifer. PCBs were detected at low concentrations (0.001 to 0.006 ppb) in other wells (SMW-2, SMW-5/5A, and DMW-4) sampled in 1999. The detection of these low concentrations is likely due to the greater sensitivity of the HRMS analytical method and, based on the available data, should not be attributed to lateral migration at this time.

Historically, the concentrations of lead were variable in both upgradient and downgradient wells and did not appear to be associated with a specific source area. No lead was detected in samples collected during the two 1999 sampling events (reporting limits ranged from 1.7 to 2 ppb).

Compounds benzene, chlorobenzene and chloromethane were not detected above cleanup goals of 5, 47, and 10 ppb respectively, in samples collected in 1995. Chlorobenzene and chloromethane were not detected above ROD Cleanup Levels in 1999, nor was benzene detected in the wells sampled in 1999.

Compounds 1,4-dichlorobenzene and 1,2,4-trichlorobenzene were not detected above ROD Cleanup Levels (27 ppb and 680 pbb, respectively) following completion of the Source Control RA.

In summary, the results from the 1999 sampling rounds indicate that PCBs are the only contaminant of concern present at concentrations above ROD Cleanup Levels. PCB concentrations exceed cleanup

levels in the 5-series deep and bedrock wells (DMW-5 and BMW-5) located near the original source of contamination. Data from other wells located around the perimeter of the former source area show very low levels (parts per trillion - ppt) of PCB contamination. These low concentrations may have been present during earlier sampling rounds and not detected because of limitations to the earlier analytical methods. Concentrations of PCBs in deep well DMW-5 have decreased slightly while those in bedrock well BMW-5 have increased slightly since 1995, possibly due to downward migration. Concentrations in perimeter wells do not indicate significant lateral migration of PCBs at this time. Future sampling might be conducted to confirm that the PCB contamination remains primarily near the former spill site in the vicinity of the 5-series cluster and that lateral migration, especially in the bedrock aquifer is not a concern. If any future sampling and analysis for VOCs, 1,4-dichlorobenzene and/or 1,2,4-trichlorobenzene is performed, the analytical methodologies should achieve reporting limits at or below ROD Cleanup Levels.

Surface Water

Surface water samples were collected from the culvert outfall northeast of the site during both 1999 sampling events and were analyzed for lead. Lead was not detected in these samples with reporting limits less than the ESD Cleanup Level of 15 ppb.

VII. Assessment

The following conclusions support the determination that the remedy at the Pinette's Salvage Yard Superfund Site is protective of human health and the environment, provided institutional controls are implemented such as deed restrictions and/or easements.

Question A: Is the remedy functioning as intended by the decision documents?

- *Implementation of Institutional Controls and Other Measures:* Institutional controls to prevent the installation of on-site drinking water wells are in the process of being implemented. There are no current or planned changes in land use at the site that would suggest that they will not be effective.

  The need for continued or additional fencing on-site is being evaluated. In addition, several site monitoring wells have been damaged or destroyed and well repair and/or abandonment is being evaluated.

- *Remedial Action Performance:* Recent groundwater data from site monitoring wells indicates that the concentrations of most contaminants of concern remain below ROD Cleanup Levels. Concentrations of PCBs remain slightly above the ROD Cleanup Level

only in the center of the site. This indicates that the source control remedy to remove contaminated soil was effective and that minimal contamination is migrating into the groundwater from site soils. In addition, groundwater at the site is migrating away from domestic wells in the area.

- *Cost of System Operations/O&M*. Costs for site O&M are currently low and limited to implementing institutional controls, such as deed restrictions and/or easements.

- *Early Indicators of Potential Remedy Failure*: Evaluation of recent groundwater target contaminant data, including trend analyses, does not indicate any contaminant concentration changes which appear to be a cause for future concern.

Question B: Are the assumptions used at the time of remedy selection still valid?

- *Changes in Standards and to be Considered*: This five-year review did not identify any significant changes in the current regulations related to groundwater cleanup levels as compared to the ROD and the ESD. Therefore, the remedy remains protective since the issuance of the ROD and the ESD.

- *Changes in Exposure Pathways:* No changes in the site conditions that affect exposure pathways were identified as part of the five-year review. First, there are no current or planned changes in land use. Second, no new sources, or routes of exposure were identified as part of this five-year review. Finally, there is no indication that hydrologic/hydrogeologic conditions are not adequately characterized. The slow rate of decrease of PCB levels in groundwater is consistent with expectations at the time of the ROD. The groundwater plume is relatively localized on-site, and does not pose a concern to off-site domestic wells.

- *Changes in Toxicity and Other Contaminant Characteristics:* Some minor toxicity assumptions for some contaminants of concern have changed since the ROD (see Section C.2). However, these changes do not affect the protectiveness of the remedy.

- *Changes in Risk Assessment Methodologies*: Some minor changes in risk assessment assumptions have occurred since the ROD. However, these do not affect the protectiveness of the remedy.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has been identified that would call into question the protectiveness of the remedy.

VIII. Deficiencies

A small number of deficiencies were discovered during the five-year review and are noted in Table 4. None of these are sufficient to warrant a finding of not protective as long as corrective actions are taken.

Site access has not been adequately controlled, allowing trespass on the site. Site inspection revealed that portions of the fence that enclose some of the site had been removed and the fence gate was open. Other deficiencies include the destruction of several monitoring wells.

The 1999 sampling rounds were focused on a limited number of site wells. Future sampling might include certain additional wells.

Table 4
Identified Deficiencies

Deficiencies	Currently Affects Protectiveness (Y/N)
Evidence of Site Trespassing	
Trespass has occurred in the fenced portion of the site.	N
Monitoring wells require maintenance	N
Monitoring wells destroyed.	N
Monitoring well with cracked cover.	N
Security Measures Required	
Site gate open/unlocked	N
Sampling Program	
Sampling program should include a few additional wells	N

IX. Recommendations and Follow-up Actions

Based upon the results of the site inspection, EPA is evaluating the need to repair and/or upgrade site fencing to minimize trespassing. EPA is also evaluating measures to repair certain site monitoring wells and possible abandonment of damaged wells. It is not anticipated that all wells will be repaired since the site inspection indicated that some of the principal monitoring wells needed to monitor groundwater contamination remain intact. Finally, EPA recognizes the need for institutional controls through deed restrictions and/or easements prohibiting the construction of domestic wells on-site and is in the process of putting these controls in place. The recommendations and follow-up actions are as outlined in Table 5.

Table 5
Recommendations and Follow-up Actions

Deficiencies	Recommendations/ Follow-up Actions	Party Responsibility	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)
Evidence of site trespassing	Address site access by repairing the site fence	EPA	12/31/00	N
Monitoring wells require maintenance	Repair and lock monitoring wells and consider abandoning unneeded wells	EPA	12/31/00	N
Institutional controls on domestic wells not yet in place	Continue process of implementation of controls	EPA	6/30/01	N
Future sampling should monitor a few additional wells	Increase future sampling slightly	EPA	5/31/01	N

N/A - Not Applicable

X. Protectiveness Statements

The remedy for groundwater at the Pinette's Site is protective of human health and the environment. This section discusses the protectiveness of the remedy based upon its current status.

The 1989 ROD states that unacceptable public health risks are due to the potential for ingestion of untreated groundwater from the site. The 1989 ROD did not directly identify environmental risks from contaminated groundwater although it does state that unacceptable environmental risks could occur from exposure to contaminated soils. The source control remedial action work at the site was completed in 1993, and grading and revegetation of the site were completed in 1994, thereby addressing environmental risks. Recent 1999 monitoring data has confirmed that lead was not detected in surface waters.

The 1996 Explanation of Significant Differences (ESD) determined that, based upon groundwater monitoring data, active groundwater treatment was not warranted. The ESD also indicated that low flow groundwater sample results, initiated in 1995, showed the levels of certain target contaminants, PCBs, continued to pose unacceptable health risks. Recent 1999 monitoring results continue to indicate the presence of PCBs in groundwater in a few wells, at levels slightly above the ROD Cleanup Level. However, groundwater on-site is not being used for domestic consumption. In addition, institutional controls are being implemented, restricting future construction of domestic wells on-site.

With respect to off-site wells, as indicated in the ESD, groundwater flow direction is to the southeast. All of the residential wells are located to the northeast and southwest of the site. Therefore, any migration of groundwater contaminants from the site does not pose a risk to residential wells. In addition, institutional controls prohibiting the installation of drinking water wells will be implemented. The exact location and extent of such institutional controls is currently being evaluated by EPA. Again, risks to off-site wells have been mitigated.

XI. Next Review

This is a statutory site that requires ongoing five-year reviews. The next review will be conducted within five years of the completion of this five-year review report. The completion date is the date of the signature shown on the signature cover attached to the front of the report.

XII. Other Comments

In light of the demonstrated protectiveness of the groundwater remedy, EPA is considering delisting the site from the NPL late in the year 2001. Institutional controls restricting the future construction of domestic wells on the site and adjacent property would be implemented prior to delisting the site.

Attachment 1

Documents Reviewed

Documents Reviewed

Final Supplemental Remedial Investigation and Public Health Evaluation Report for the Pinette's Salvage Yard Superfund Site, prepared for U.S. EPA Region I by Ebasco, Inc., March 1989.

Draft Final Feasibility Study Report for the Pinette's Salvage Yard Superfund Site, prepared for U.S. EPA Region I by Ebasco, Inc., March 1989.

CERCLA Record of Decision for Pinette's Salvage Yard Superfund Site, Washburn, Aroostook County, Maine, May 30, 1989.

CERCLA Record of Decision Amendment for Pinette's Salvage Yard Superfund Site, Washburn, Aroostook County, Maine, June 2, 1993.

Declaration for the Explanation of Significant Differences for Pinette's Salvage Yard Superfund Site, Washburn, Aroostook County, Maine, U.S. EPA Region I, June 20, 1996.

Comprehensive Five-Year Review Guidance, EPA Report 540R-98-050, U.S. EPA, Washington, DC, Draft October 2000.

Summary of Environmental Data and Evaluation Report, Pinette's Salvage Yard Superfund Site, prepared for EPA by Foster Wheeler Environmental Corporation, Boston, MA, June 1996.

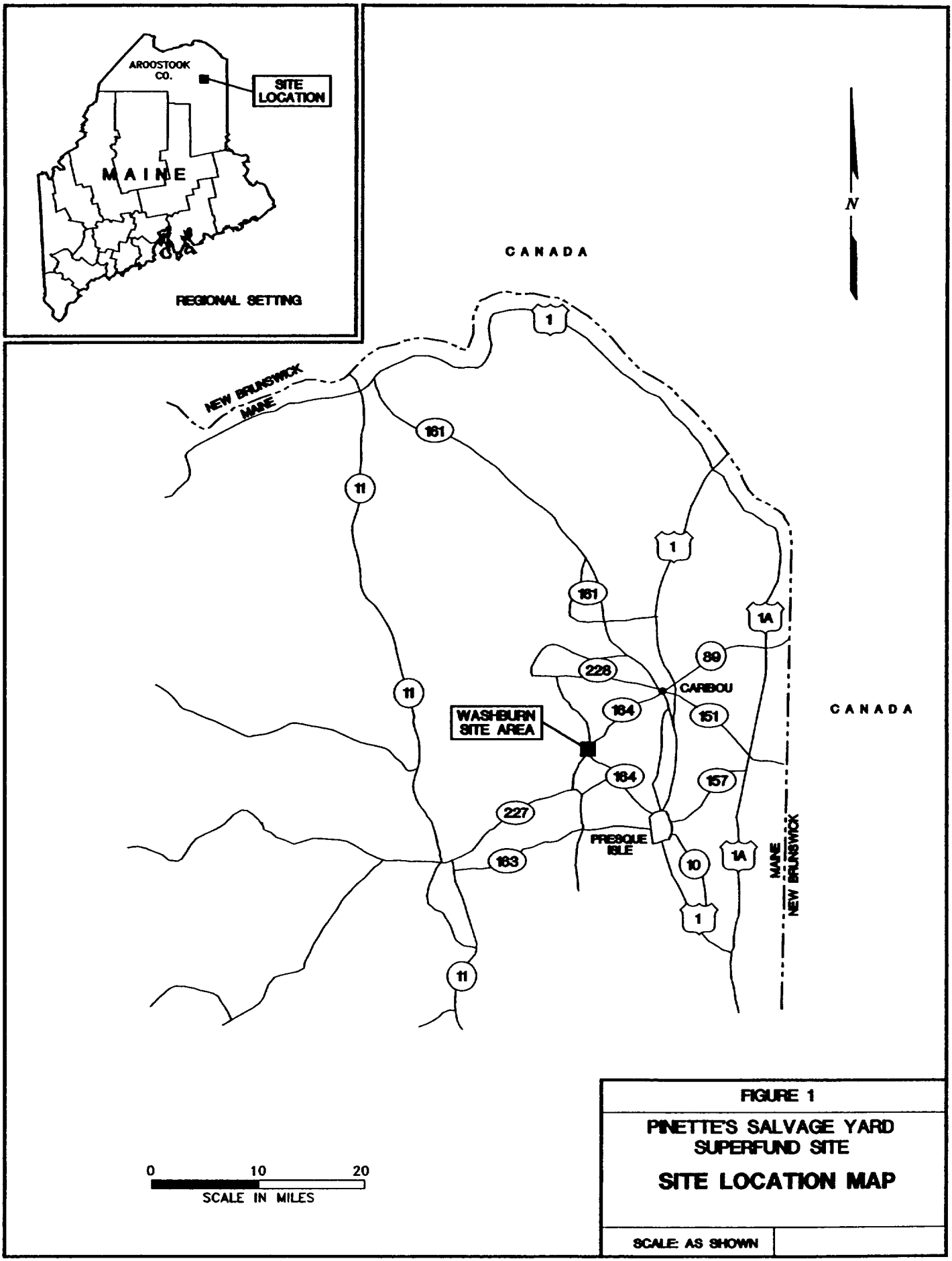
Internal EPA Memorandum from Richard Willey, EPA Hydrogeologist, to Almerinda Silva, Remedial Project Manager, re: Current Groundwater Concerns at the Pinette's Salvage Yard Superfund Site (March 13, 2000).

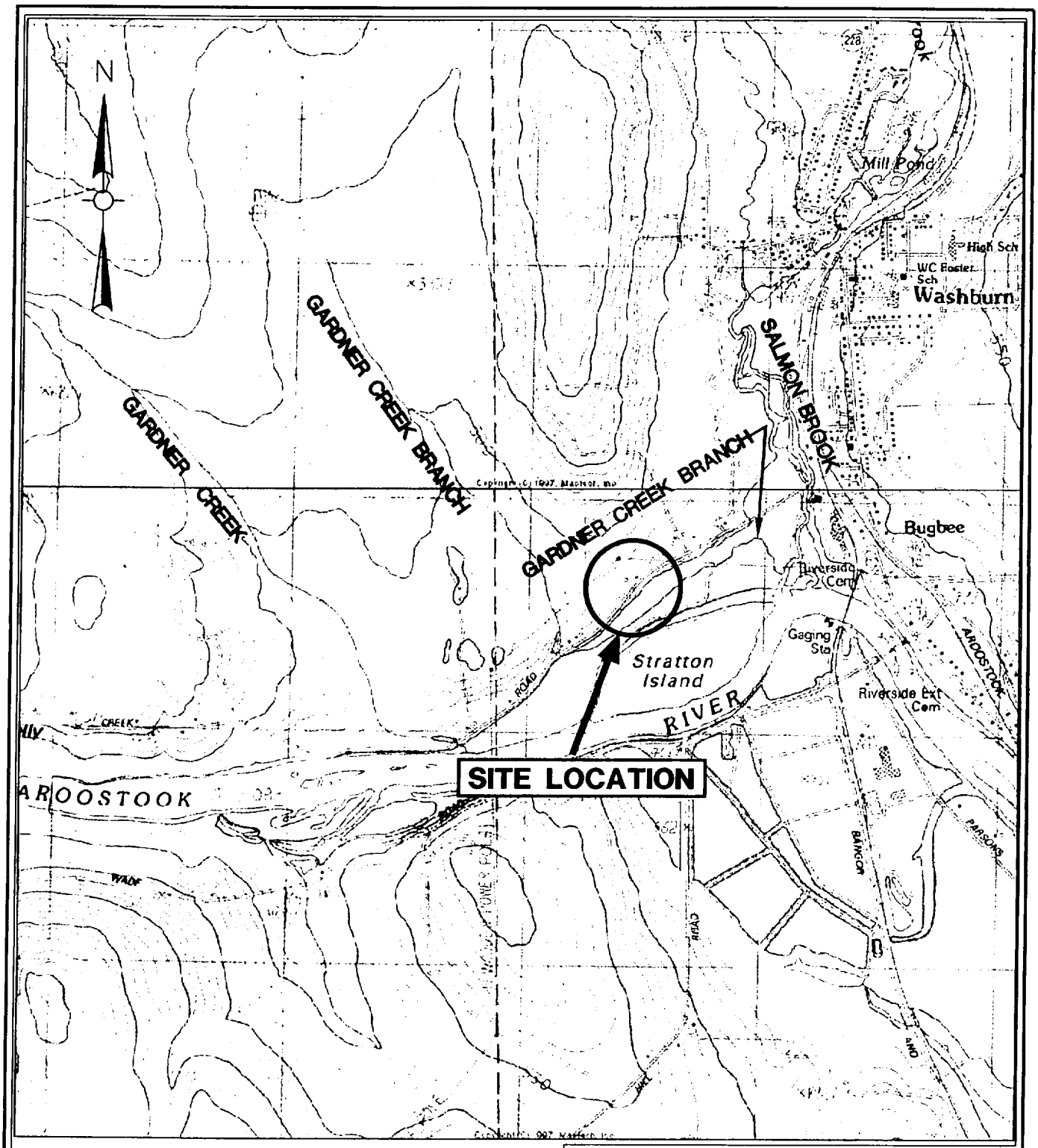
Internal EPA Memorandum entitled "Review of Validated Data for Groundwater Sampling Conducted in June 1999 for Pinette's Salvage Yard Superfund Site" from Ann Marie Burke, EPA Toxicologist, to Almerinda Silva, Remedial Project Manager (October 6, 1999).

Internal EPA Memorandum entitled "Human Health Risk Screen for Groundwater Data Collected on June 1999 and September 1999 for the Pinette's Salvage Yard Superfund Site" from Ann Marie Burke, EPA Toxicologist, to Almerinda Silva, Remedial Project Manager (February 3, 2000).

Attachment 2

Site Maps


AROOSTOOK CO.
SITE LOCATION
MAINE
REGIONAL SETTING
N
CANADA
NEW BRUNSWICK
MAINE
1
161
11
1
161
1A
89
228
CARIBOU
11
WASHBURN SITE AREA
164
151
CANADA
164
157
227
PRESQUE ISLE
163
10
1A
1
MAINE
NEW BRUNSWICK
11
0
10
20
SCALE IN MILES
FIGURE 1
PINETTE'S SALVAGE YARD SUPERFUND SITE
SITE LOCATION MAP
SCALE: AS SHOWN
CADDFILE: LOCUS1a.DWG



Source: USGS Topographic Quardrangle; Washburn, ME 1984.
Digital base courtesy of Maptech, Inc, Greenland, Maine.

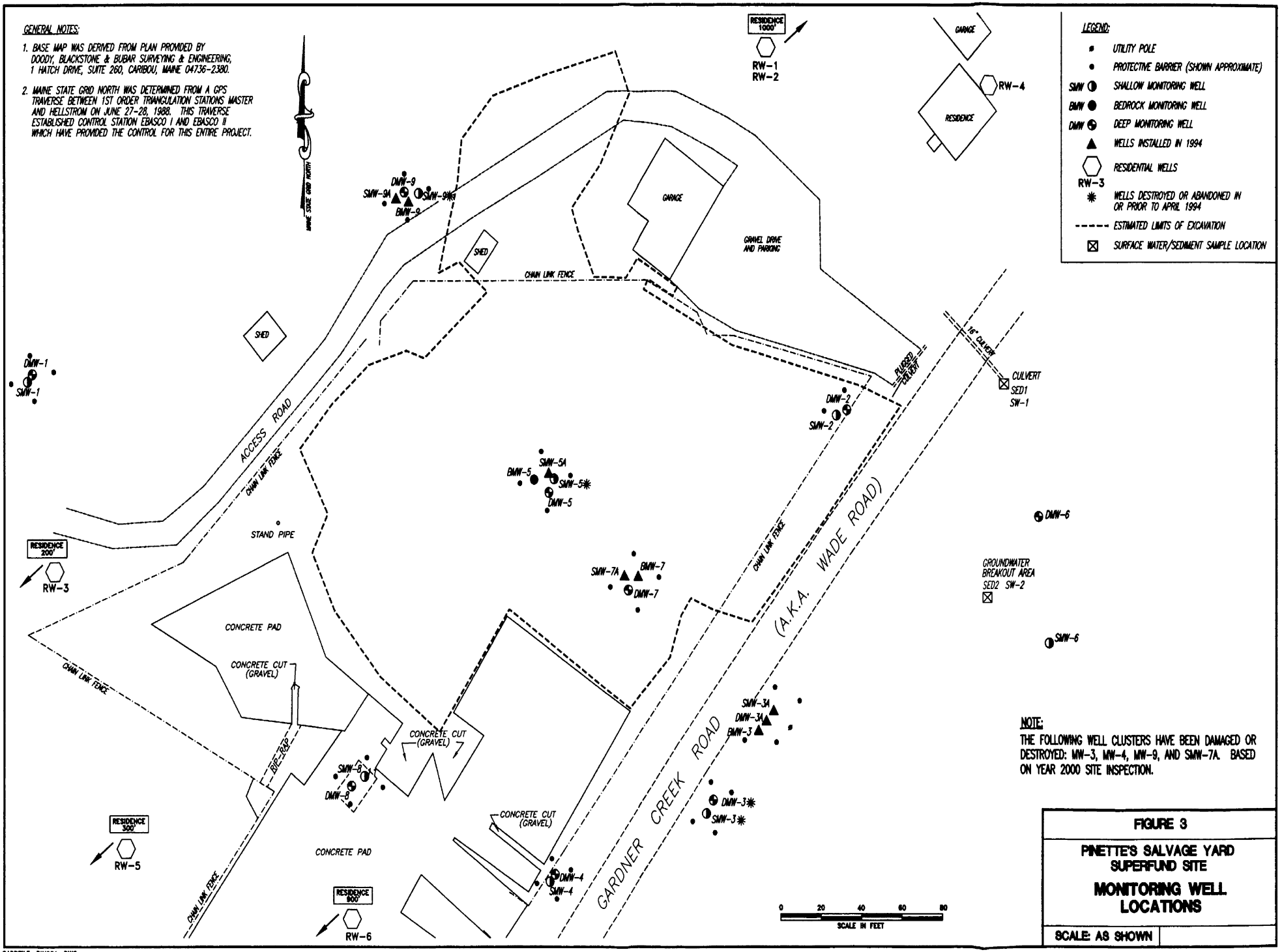
FIGURE 2

PINETTE'S SALVAGE YARD
SUPERFUND SITE

SITE VICINITY MAP

SCALE: AS SHOWN

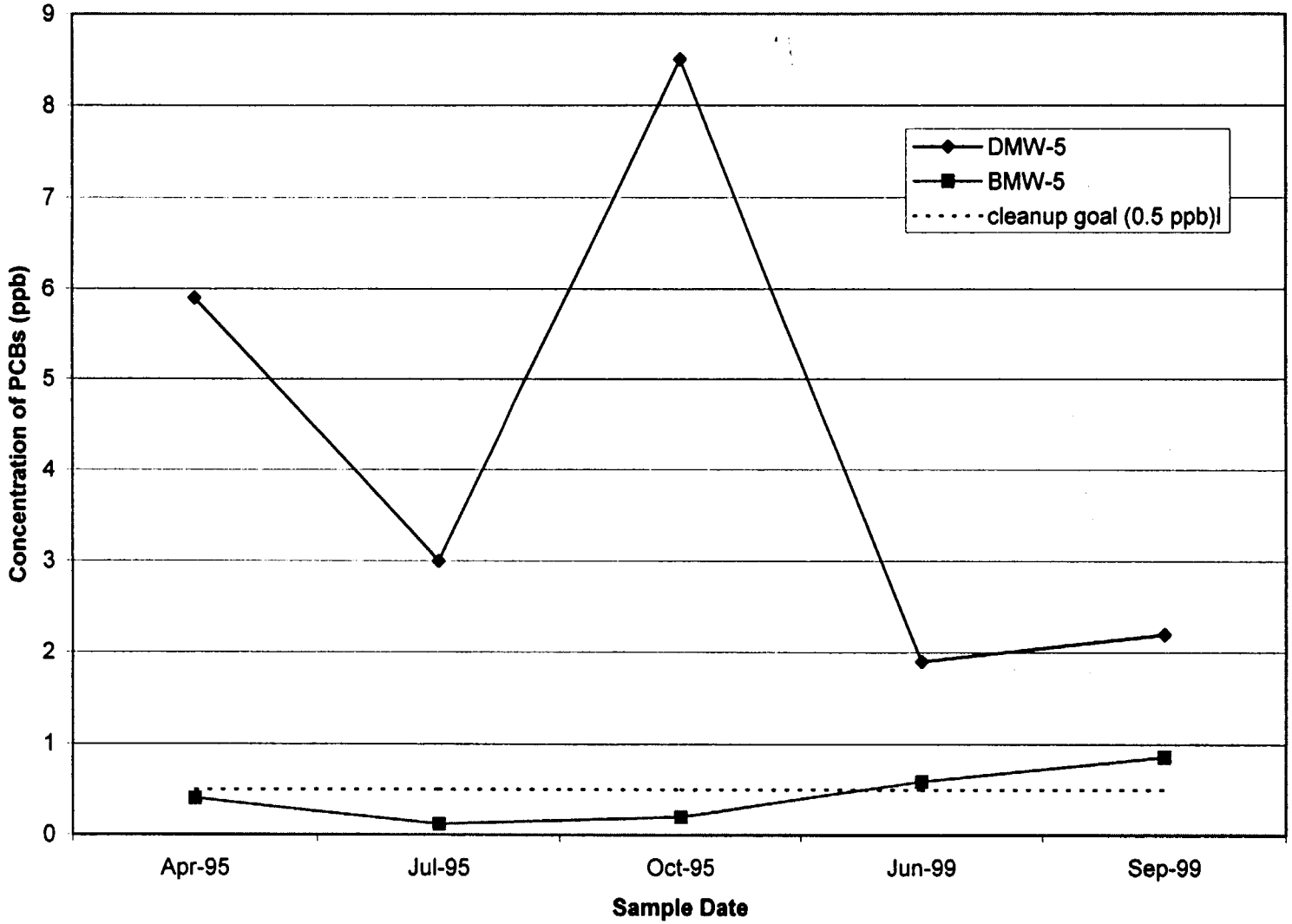
CADDFILE: PINLOCUS.DWG


GENERAL NOTES:
1. BASE MAP WAS DERIVED FROM PLAN PROVIDED BY DOODY, BLACKSTONE & BUBAR SURVEYING & ENGINEERING, 1 HATCH DRIVE, SUITE 260, CARIBOU, MAINE 04736-2380.
2. MAINE STATE GRID NORTH WAS DETERMINED FROM A GPS TRAVERSE BETWEEN 1ST ORDER TRIANGULATION STATIONS MASTER AND HELLSTROM ON JUNE 27-28, 1988. THIS TRAVERSE ESTABLISHED CONTROL STATION EBASCO I AND EBASCO II WHICH HAVE PROVIDED THE CONTROL FOR THIS ENTIRE PROJECT.
MAINE STATE GRID NORTH
LEGEND:
UTILITY POLE
PROTECTIVE BARRIER (SHOWN APPROXIMATE)
SMW SHALLOW MONITORING WELL
BMW BEDROCK MONITORING WELL
DMW DEEP MONITORING WELL
WELLS INSTALLED IN 1994
RESIDENTIAL WELLS
RW-3
WELLS DESTROYED OR ABANDONED IN OR PRIOR TO APRIL 1994
ESTIMATED LIMITS OF EXCAVATION
SURFACE WATER/SEDIMENT SAMPLE LOCATION
RESIDENCE 1000'
RW-1
RW-2
GARAGE
RW-4
RESIDENCE
DMW-9
SMW-9A
SMW-9*
BMW-9
GARAGE
GRAVEL DRIVE AND PARKING
SHED
CHAIN LINK FENCE
SHED
16" CULVERT
PLUGGED CULVERT
CULVERT SED1 SW-1
DMW-1
SMW-1
ACCESS ROAD
CHAIN LINK FENCE
DMW-2
SMW-2
SMW-5A
BMW-5
SMW-5*
DMW-5
STAND PIPE
RESIDENCE 200'
RW-3
SMW-7A
BMW-7
DMW-7
CHAIN LINK FENCE
DMW-6
GROUNDWATER BREAKOUT AREA SED2 SW-2
(A.K.A. WADE ROAD)
CONCRETE PAD
CONCRETE CUT (GRAVEL)
CHAIN LINK FENCE
SMW-6
SMW-3A
DMW-3A
BMW-3
RIP-RAP
SMW-8
DMW-8
CONCRETE CUT (GRAVEL)
GARDNER CREEK ROAD
DMW-3*
SMW-3*
RESIDENCE 300'
RW-5
CONCRETE CUT (GRAVEL)
CONCRETE PAD
DMW-4
SMW-4
CHAIN LINK FENCE
RESIDENCE 900'
RW-6
0 20 40 60 80
SCALE IN FEET
NOTE:
THE FOLLOWING WELL CLUSTERS HAVE BEEN DAMAGED OR DESTROYED: MW-3, MW-4, MW-9, AND SMW-7A. BASED ON YEAR 2000 SITE INSPECTION.
FIGURE 3
PINETTE'S SALVAGE YARD SUPERFUND SITE
MONITORING WELL LOCATIONS
SCALE: AS SHOWN
CADDFILE: PIN001a.DWG

Attachment 3

Graphic: Sampling Data Results

Concentration of PCBs Since 1995



Attachment 4

Site Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the five-year review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION	
Site name: Pinette's Salvage Yard	**Date of inspection:** 8/16-8/17/00
Location and Region: Region I	**EPA ID:** MED 980732291
Agency, office, or company leading the five-year review: Foster Wheeler Env.	**Weather/temperature:** rain / 60s

Remedy Includes: (Check all that apply)
- ☐ Landfill cover/containment
- ☑ Access controls
- ☐ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☑ Other no further action

Attachments: ☐ Inspection team roster attached ☐ Site map attached (included in report)

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** N/A _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** N/A _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency N/A
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☑ Report attached. (included in report)

Rita Pinette

Cynthia & Roger Pinette

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - ☐ O&M manual — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ As-built drawings — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Maintenance logs — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

2. **Site-Specific Health and Safety Plan** — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Contingency plan/emergency response plan — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks Site specific HASP prepared for 5 yr review 8/3/00

3. **O&M and OSHA Training Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Effluent discharge — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Other permits _____ — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

7. **Groundwater Monitoring Records** — ☑ Readily available — ☐ Up to date — ☑ N/A

   Remarks evaluated in 5 year review report for groundwater wells

8. **Leachate Extraction Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

9. **Discharge Compliance Records**
   - ☐ Air — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Water (effluent) — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks _____

10. **Daily Access/Security Logs** — ☐ Readily available — ☐ Up to date — ☑ N/A

    Remarks _____

IV. O&M COSTS N/A

1. **O&M Organization**
   - ☐ State in-house ☐ Contractor for State
   - ☐ PRP in-house ☐ Contractor for PRP
   - ☐ Other _____

2. **O&M Cost Records**
   - ☐ Readily available ☐ Up to date
   - ☐ Funding mechanism/agreement in place
   - Original O&M cost estimate _____ ☐ Breakdown attached

   Total annual cost by year for review period if available

   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS ☑ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☐ N/A
   Remarks 2 breaks in fence along N. perimeter

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☑ N/A
   Remarks _____

C. Institutional Controls

1. **Implementation and enforcement**
   Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☐ N/A
   Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☐ N/A

   Type of monitoring (e.g., self-reporting, drive by) none
   Frequency _____
   Responsible party/agency _____
   Contact _____ _____ _____ _____
   Name Title Date Phone no.

   Reporting is up-to-date ☐ Yes ☐ No ☑ N/A
   Reports are verified by the lead agency ☐ Yes ☐ No ☑ N/A

   Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☑ N/A
   Violations have been reported ☐ Yes ☐ No ☑ N/A
   Other problems or suggestions: ☐ Report attached
   Institutional controls are currently in the process of being established by EPA

2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☐ N/A
   Remarks _____

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☑ No vandalism evident
   Remarks The landowner has removed some sections of site fencing

2. **Land use changes onsite** ☐ N/A
   Remarks none

3. **Land use changes offsite** ☐ N/A
   Remarks none

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☑ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A
   Remarks_____

B. Other Site Conditions

Remarks_____

VII. LANDFILL COVERS ☐ Applicable ☑ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Holes** ☐ Location shown on site map ☐ Holes not evident
   Areal extent_____ Depth_____
   Remarks_____

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks_____

7. **Bulges** ☐ Location shown on site map ☐ Bulges not evident
Areal extent_____ Height_____
Remarks_____

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident
☐ Wet areas ☐ Location shown on site map Areal extent_____
☐ Ponding ☐ Location shown on site map Areal extent_____
☐ Seeps ☐ Location shown on site map Areal extent_____
☐ Soft subgrade ☐ Location shown on site map Areal extent_____
Remarks_____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability
Areal extent_____
Remarks_____

B. Benches ☐ Applicable ☐ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

C. Letdown Channels ☐ Applicable ☐ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs O&M ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☑ N/A
Remarks_____

E. Gas Collection and Treatment ☐ Applicable ☑ N/A

1. **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs O&M
Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
☐ Good condition ☐ Needs O&M
Remarks_____

3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs O&M ☐ N/A
Remarks_____

F. Cover Drainage Layer ☐ Applicable ☑ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
Remarks_____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
Remarks_____

G. Detention/Sedimentation Ponds ☐ Applicable ☑ N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
☐ Siltation not evident
Remarks_____

2. **Erosion** Areal extent_____ Depth_____
☐ Erosion not evident
Remarks_____

3. **Outlet Works** ☐ Functioning ☐ N/A
Remarks_____

4. **Dam** ☐ Functioning ☐ N/A
Remarks_____

H. Retaining Walls ☐ Applicable ☑ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☑ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☐ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** ☐ Functioning ☐ N/A
   Remarks_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☑ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____ ☐ Evidence of breaching
   Head differential_____
   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☑ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☑ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☐ Good condition ☐ All required wells located ☐ Needs O&M ☑ N/A
   Remarks

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs O&M
   Remarks N/A

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks N/A

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☑ N/A

1. **Collection Structures, Pumps, and Electrical**
   ☐ Good condition ☐ Needs O&M
   Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs O&M
   Remarks

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks N/A

C. Treatment System ☐ Applicable ☑ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters
☐ Additive (e.g., chelation agent, flocculent)
☐ Others
☐ Good condition ☐ Needs O&M
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually
☐ Quantity of surface water treated annually
Remarks

2. **Electrical Enclosures and Panels** (properly rated and functional)
☑ N/A ☐ Good condition ☐ Needs O&M
Remarks

3. **Tanks, Vaults, Storage Vessels**
☑ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs O&M
Remarks

4. **Discharge Structure and Appurtenances**
☑ N/A ☐ Good condition ☐ Needs O&M
Remarks

5. **Treatment Building(s)**
☑ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs O&M ☑ N/A
Remarks

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs O&M ☐ N/A
Remarks MW 3, MW 4 clusters destroyed, MW 9 cluster no protective risers/PVC broken @ grade, SMW7A surface seal loose

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

see report text

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

certain groundwater monitoring wells have been damaged or destroyed

some sections of site fencing have been removed

C.	**Early Indicators of Potential Remedy Failure**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Attachment 5

Photographic Log