FINAL PLAN OF REMEDIAL ACTION

FOR THE

NEW MARKET VILLAGE TRAILER PARK SITE
ELLENDALE, DELAWARE

June 1998

DNREC PROJECT - DE 1075

Prepared by:

Delaware Department of Natural Resources and Environmental Control
Division of Air & Waste Management
Site Investigation & Restoration Branch

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1.0 INTRODUCTION

The Department of Natural Resources and Environmental Control ("DNREC") issues this Final Plan of Remedial Action under the provisions of the Delaware Hazardous Substance Cleanup Act ("HSCA") Del. C. Chapter 91 and the Delaware Regulations Governing Hazardous Substance Cleanup ("Regulation"). The Final Plan presents to the public the DNREC's final selection of remedial activities to occur at the New Market Village Trailer Park, which is owned by the Community Management, Inc. ("CMI").

The New Market Village Trailer Park is located in Sussex County, approximately 2 miles east of the town of Ellendale (Figure 1). In 1997, DNREC conducted a Facility Evaluation ("FE") at this trailer park under the authority of Hazardous Substance Cleanup Act ("HSCA"). This Final Plan of Remedial Action is based on the findings of the FE.

In accordance with the Regulation, DNREC set remedial action objectives for land use, resource use, and cleanup levels that are protective of human health and the environment for this park. The following remedial action objectives were determined to be appropriate for this trailer park:

- To prevent human contact with the contaminated groundwater;
- To continue the use of the property by CMI as a trailer park for mobile homes;
- To allow normal activities of the trailer park residents without any interruption or special chemical hazard protection;
- To continue the use of local groundwater as water supply for this trailer park.

These objectives are consistent with the value of the site in its current use, the surrounding land use, state regulations governing water supply, and resident health and safety.

2.0 BACKGROUND INFORMATION

2.1 Site Description

The trailer park has been in existence for 30 to 40 years. It occupies approximately 23 acres of land and has 107 spaces for mobile homes. Currently it accommodates approximately 70 trailers. Two public wells, which are located on the southwestern portion of the property, supply water for the residents of the trailer park. The primary well is screened from 165 feet to 175 feet below grade and draws water from a confined aquifer, the Manokin Aquifer. The second well, a backup well, is screened from 56 feet to 76 feet below grade and draws water from an unconfined aquifer, the Columbia Aquifer.

The last time the backup well was put on-line was May 20 to May 22, 1996, due to a pump malfunction in the primary well. During that time, the Division of Public Health ("DPH") collected water samples from the backup well and discovered elevated concentrations of Trichloroethylene ("TCE") in the water. Since then, the use of the backup well is restricted for water supply by the Division of Public Health ("DPH"). Consequently, the DNREC/SIRB decided to conduct the FE.

2.2 FE Findings

During the FE, 35 subsurface soil samples, 15 shallow groundwater and 4 deep (65 ft.) groundwater samples had been collected. Subsurface soil sampling did not reveal any contamination. Groundwater samples collected from the 15 shallow well points did not exhibit any suspected contaminants. However, three of the deep groundwater samples revealed low or elevated levels of TCE concentration. The primary well is free of contamination, because it is set into the Manokin Aquifer, which is presumed to be confined by a low permeable clay layer that overlies the Manokin Aquifer. The clay-layer of 16-foot thick prevents the contaminant from migrating into the Manokin Aquifer.

The contaminant source has not been identified yet, but it is most likely a localized source near the vicinity, i.e. within an estimated radius of 200 feet to the backup well, based upon groundwater samples tested. It is possible that the contamination was contributed by a number of negligent practices of TCE usage at this area. Since there is a vertical hydraulic gradient downward in the unconfined aquifer, the contaminant in the shallow portion of the Columbia Aquifer has migrated into the deep portion of the aquifer.

The dissolved TCE migrates with groundwater flow, which is towards the south and southeast. The lateral distribution of TCE on groundwater is indicated on Figure 2. The estimated lateral distribution of the TCE plume is approximately 400 feet by 1000 feet. It extends vertically to the depth of approximately 70 feet below grade.

3.0 PROPOSED PLAN AND PUBLIC PARTICIPATION

The Department drafted a Proposed Plan of Remedial Action for the site recommending further action limited to institutional controls. The notice of Proposed Plan was published on June 6, 1998, in the News Journal, Delaware State News and Sussex Post newspapers (Figure 3). During the public comment period, the Department received no objection or substantive comments to the Proposed Plan.

4.0 FURTHER ACTION

4.1 Toxicological Evaluation

The TCE concentration on the backup water well at the trailer park exceeds the MCL (5 ppb). The MCL refers to the maximum federally permissible level of a contaminant in water delivered to any user of a public water system. Therefore the backup well is unsafe for drinking water. Currently, this well is being used for monitoring purposes only. Thus, the human health risk posed by the back up well is prevented.

The trailer park has been in operation for more than 30 years, and the facility will continue to be used for residential purpose. Little adverse human health effects would be expected from ingestion and/or inhalation of on-site soils, if the park tenants dig the soil around the suspected source area (in the vicinity of the back up well).

The U.S. EPA Ecotox Thresholds for TCE in surface water and sediment are of 350 ppb and 1600 ppb, respectively. The TCE concentration in groundwater at this site (around 33 ppb) is much lower than those thresholds. Therefore, no ecological risk would be posed by the groundwater discharged from this site.

4.2 Proposed Remedial Action

The shallow groundwater appears to be the only contaminated media of concern for this site. The selected remedial action for this trailer park under the existing and future use scenarios is to implement the deed restrictions for groundwater usage in the shallow groundwater Columbia Aquifer system. Therefore, the following actions are required:

- Any potential future use of the Columbia Aquifer in the vicinity of this trailer park is prohibited because the groundwater of the Columbia Aquifer at this site is unsafe for drinking. A groundwater management zone is placed at or near the trailer park between Road 231 and the Sowbridge Brach as defined on the Figure 4. This restricts the installation of both domestic and public wells in the Columbia Aquifer.

- If a new water supply well is needed for this trailer park it should be placed into the confined aquifer. The screen of the new well should be set at least 160 feet below grade. Additionally, the new backup well should be placed upgradient from the existing backup well and outside of the TCE plume in order to avoid cross contamination during drilling.

- The backup well will be locked to ensure that this well is inaccessible for any usage except for sampling. A long-term monitoring program will be carried on. The monitoring wells include the backup well and the monitoring well points installed during the FE. Groundwater samples will be collected twice a year and analyzed for Volatile Organic Compounds (VOCs).

- The term of the monitoring program is expected to be two years. At the end of the two-year period the analytical results will be reviewed. Upon review of the data a decision will be made whether the monitoring program will be elongated or terminated; or further investigation or remedial action should be conducted.

5.0 DECLARATION

This Final Plan of Remedial Action for the New Market Trailer Park Site is protective of human health, welfare and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.

Nicholas A. Di Pasquale 7/2/98

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Division of Air & Waste Management

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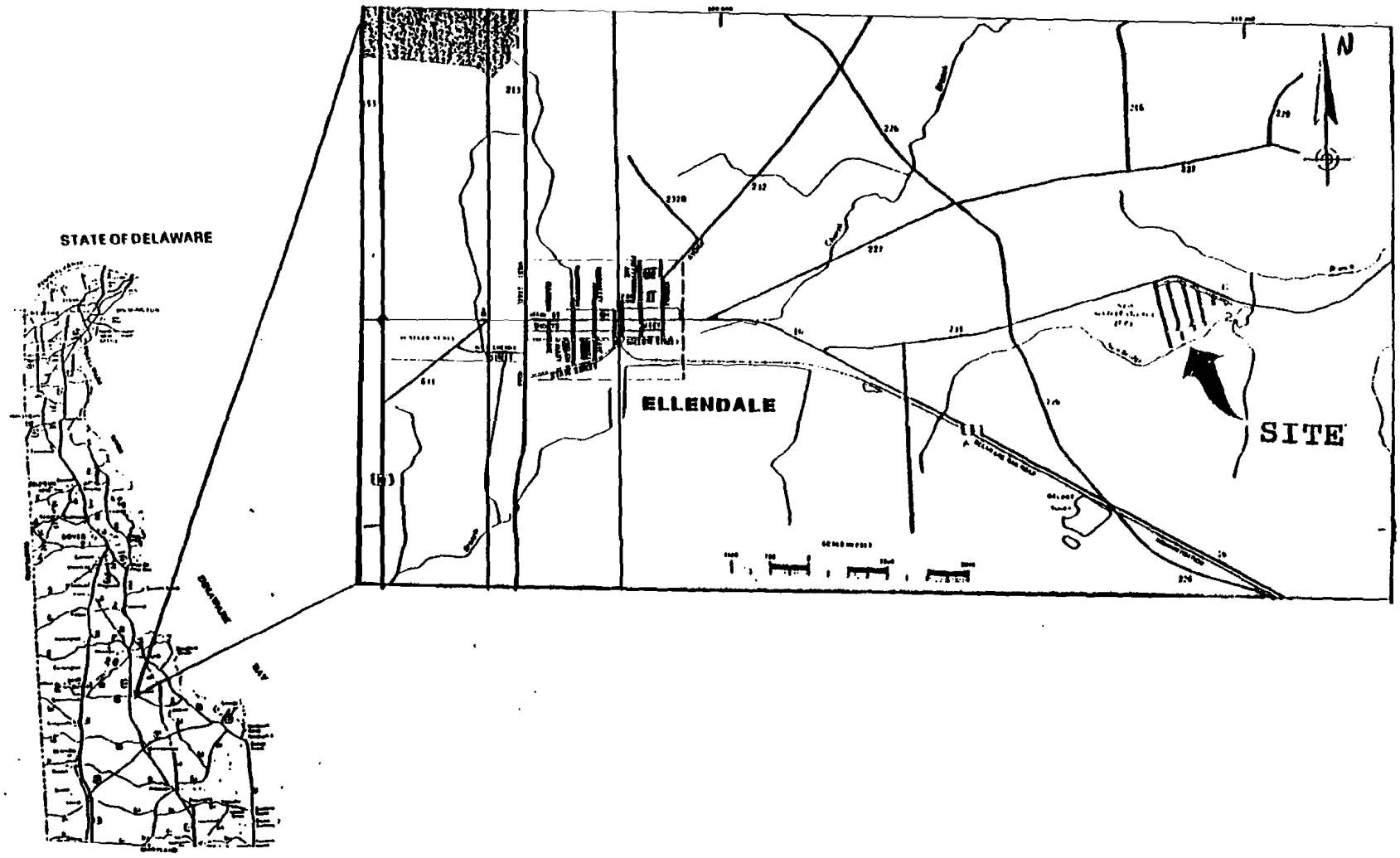

Figure 1. Location Map of New Market Village Trailer Park

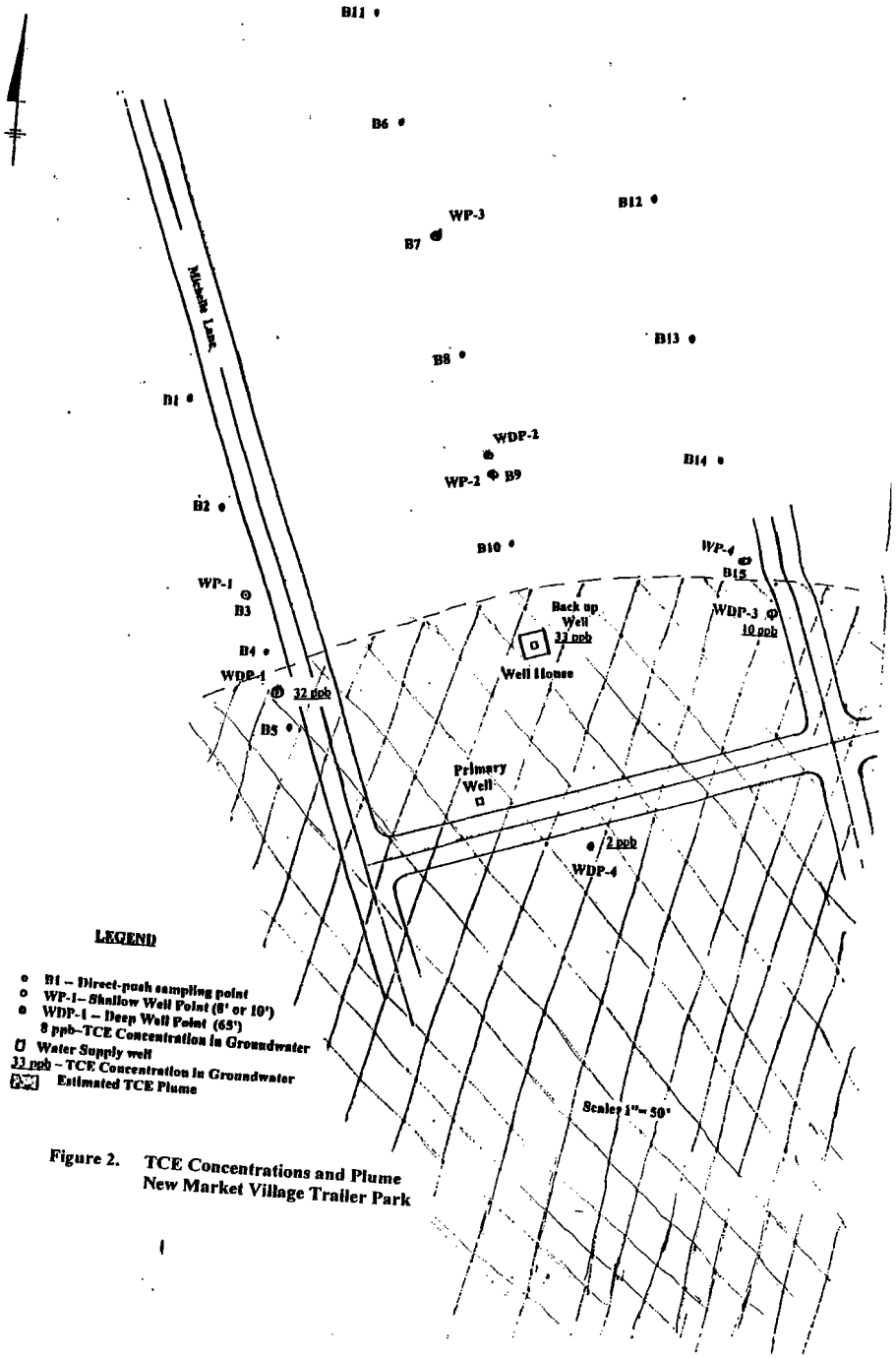

Figure 2. TCE Concentrations and Plume
New Market Village Trailer Park