

Site Review And Update

CALDWELL TRUCKING COMPANY

FAIRFIELD TOWNSHIP, ESSEX COUNTY, NEW JERSEY

CERCLIS NO. NJD048798953

AUGUST 30, 1994

REVISED

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

REVISED SITE REVIEW AND UPDATE

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Prepared By:

The New Jersey Department of Health
Environmental Health Service
Under A Cooperative Agreement With
The Agency For Toxic Substances And Disease Registry

Summary Of Background And History

The Caldwell Trucking Company (CTC) site is located at 222 Passaic Avenue in Fairfield Township, Essex County, New Jersey (Figure 1). The CTC site occupies approximately 12 acres located between O'Conner Drive and Sherwood Lane (lot 17/block 2201, and lots 18 and 20/block 2302 [coordinates 40° 53'23" N, 74° 16' 16" W]).

Land use in the vicinity of the CTC site is a mixture of industrial (to the north, west, and southwest) and residential (approximately 1,000 feet northeast). The site is located directly across from the Essex County Airport. The site is located on a floodplain of the Passaic River and contains swampy or wetlands areas. Major surface water features associated with the CTC site include the Passaic River (4000 feet northeast) and Deepaval Brook which flows northeast to the Passaic River. Groundwater flow in the site study area is to the northeast.

The Essex Regional High School is located approximately 200 feet to the east of the CTC site at an elevation of approximately 50 feet. This school contains approximately 1800 students and serves Fairfield, N. Caldwell, Roseland, and Essex Fells. The school is supplied with municipal water from an upgradient source.

The Caldwell Trucking Company collected septic (and allegedly chemical) waste from residential, commercial, and industrial customers between 1933 and 1973. Beginning in 1953, wastes were deposited in unlined settling lagoons and chlorinated. Groundwater in the study area of the site is heavily contaminated with chlorinated hydrocarbons (maximum concentrations > 20,000 ppb total volatile organic compounds). Extensive sampling of groundwater by the USEPA and the NJDEP has confirmed a plume of contamination extending 4,000 feet to the northeast toward the Passaic River. Two municipal wells (MW#7, MW#3) were found to be contaminated and removed from service in 1981. Although municipal water was made available to residents down-gradient of the CTC site in 1989, utilization was not mandatory. Potable wells were sampled in 1986-1988 exhibited contamination (up to 16 ppb TCE). Currently, active potable wells exist at the edge of the groundwater plume. Four of the wells were sampled by the USEPA in October 1994, and they exhibited no contamination above the limit of detection (10 ppb for TCE). Other potential sources of groundwater contamination exist in the site study area, and are likely contributing to the overall groundwater contamination problem.

Contaminated sludges, surface and subsurface soils remain on-site. VOC's, PCB's and heavy metals are present at levels of public health concern (lead; up to 540,000 mg/kg, arsenic up to 3,905 mg/kg). USEPA has acted to limit access to the site and performed interim measures to limit contact with areas of high lead and other surface soil contaminants.

USEPA has conducted two remedial investigations of the CTC site. The first in 1986 addressed on site contamination, with a Record Of Decision (ROD) signed in September 1986 in which the selected remedy included: restoration of one of the contaminated municipal supply wells, provision of an alternate water supply for down-gradient residences, and the excavation,

treatment, and disposition of on-site soils. In 1989, an off-site remedial investigation was completed which addressed groundwater contamination. A ROD was signed in September 1989, in which the selected remedy included reduction of the off-site groundwater plume, remediation of a tributary of Deepaval Brook, additional monitoring wells to protect two municipal supply wells. The USEPA is currently pumping and treating the groundwater plume as specified in the ROD.

ATSDR conducted a health assessment of the CTC site in October 1988. Potential human exposure pathways cited in the health assessment included consumption of contaminated groundwater (containing volatile organic compounds), and ingestion and/or dermal exposure to on-site contaminated dusts (containing metals, VOC's and PCB's). Other pathways cited in the health assessment included consumption of contaminated biota and dermal absorption of contaminants from soil, sediments, surface water, and groundwater. Current site data and information support the potential pathways associated with the domestic use of contaminated groundwater (ingestion, inhalation, dermal contact), and contact with on-site soils (ingestion, inhalation of dusts/vapors). However fencing of the CTC property subsequent to the health assessment makes contact with on-site soils unlikely. Other pathways associated with surface water, sediments, and biota are not valid under current site conditions or in light of current information. Community concerns were not identified in the October 1988 health assessment. The health assessment characterized the CTC site as a potential public health concern. Recommendations included implementation of control measures to limit migration of fugitive dusts and vapors during site remediation. Additionally, the health assessment recommended a well survey to confirm affected residences have abandoned private potable wells, and have connected to municipal water supplies. Other recommendations included identification of a need for additional site (off-site) characterization, which was subsequently satisfied by the 1989 RI/FS.

In September 1990, in response to a request from USEPA, ATSDR conducted an addendum (consultation) for the CTC site with regard to metals (lead, arsenic) contamination of on-site soils. At the time the CTC site property was utilized for recreational purposes (motorcycles) and was frequently used as a thoroughfare by students from the high school located immediately adjacent to the site. The consultation concluded that soil contaminants were present at levels of public health concern, and recommended measures to limit site accessibility. The consultation did not assign a conclusion category.

Public Health Implications

The Caldwell Trucking Company began depositing wastes in unlined lagoons in 1953. Residents living near (down-gradient) of the CTC site may have been exposed to volatile organic contaminants in their drinking water for a maximum of approximately 42 years. This section will evaluate the public health significance of past exposure to trichloroethylene in private wells which has been historically documented to have concentrations of up to 16 ppb. In October 1994, USEPA collected and analyzed 4 residential well samples for VOC's which were located

side gradient of the groundwater plume (Figure 1). The sampling results indicated that no TCE was present down to the limit of detection (10 ppb). These private wells are still in use for potable purposes.

To evaluate health effects, ATSDR has developed a Minimal Risk Level (MRL) for contaminants commonly found at hazardous waste sites. The MRL is an estimate of daily human exposure to a contaminant below which non-cancer, adverse health effects are unlikely to occur. MRLs are developed for each route of exposure (such as ingestion and inhalation), and for the length of exposure, such as acute (less than 14 days), intermediate (15 to 364 days), and chronic (greater than 365 days). ATSDR presents these MRLs in the Toxicological Profiles. These chemical-specific profiles provide information on health effects, environmental transport, human exposure, and regulatory status. In the following discussion, NJDOH used ATSDR Toxicological Profiles for the contaminants of concern at the site. The NJDOH will use a USEPA Reference Dose (RfD) as a health guideline, when a MRL is not available. The RfD is an estimate of daily human exposure of a contaminant for a lifetime below which (non-cancer) health effects are unlikely to occur.

The toxicological evaluation of the completed human exposure pathway at the CTC site is based upon chronic oral ingestion of contaminants in potable well water. The toxicological effects of the contaminants detected in private potable wells in the vicinity of the CTC site have been considered singly. The cumulative or synergistic effects of possible mixture of contaminants may serve to enhance their public health significance. Additionally, individual or mixtures of contaminants may have the ability to produce greater adverse health effects in children as compared to adult. Non-potable domestic usage of contaminated water (showers) may be associated with significant exposure through the inhalation and dermal contact routes. Current literature suggests exposure doses from these routes may approach those associated with direct ingestion. There is no data available to estimate the exposure doses to these secondary routes of exposure at the CTC site. This toxicological discussion recognizes their potential contribution to exposure dose estimates and consequent public health implications. Non-carcinogenic and carcinogenic evaluations are based on an intake of 2 liters of water per day for a 70 kilogram adult for 42 years, and 1 liter of water per day for a 20 kg child for a period of ten years. Toxicological evaluation was completed for those compounds detected in excess of ATSDR comparison values and were based upon the maximum concentrations detected.

Trichloroethene (TCE)

A 42 year exposure duration was assumed for this compound. No chronic oral MRL or RfD is available for trichloroethene to evaluate the potential for non-carcinogenic health effects. However, estimated exposure doses calculated from the maximum reported concentration of trichloroethene (16.0 ppb) were below the No Observed Adverse Effects Level (NOAEL) for animal studies presented in the ATSDR Toxicological Profile for this chemical. At such concentrations, it is unlikely that non-carcinogenic adverse health effects would occur for adults or children. Currently there is scientific debate regarding the carcinogenicity of TCE in humans. However, animal studies have shown that tumors can result from oral exposure to TCE. TCE

is under consideration for placement into either probable human carcinogen or possible human carcinogen by the USEPA. The NJDOH concurs with USEPA regarding TCE's potential carcinogenicity in humans. Based upon calculated exposure doses for chronic oral exposure to TCE at maximum concentrations detected in potable wells, there would be an insignificant or no increased risk of cancer.

Current Conditions Of Site

A site visit was not performed for the Health Assessment of 1988. NJDOH staff (James Pasqualo) performed a site visit in conjunction with ATSDR Regional personnel (Steve Jones) on March 17, 1994.

Since the 1988 health assessment and the 1990 consultation, the USEPA has conducted an interim remedial measure to reduce the likelihood of contact with the areas of high lead concentration used by motorcyclists by covering the area with an impermeable membrane and crushed stone. Additionally, the USEPA has acted to restrict access to the CTC site through the installation of a chainlink fence around the site perimeter. This action has effectively prevented the site property from being used as a thoroughfare by students from the high school.

The 1988 Health Assessment stated that all affected residences (with potable wells) would be converted to municipal water in November 1988. While municipal water was made available in 1989, not all residents elected to utilize the public water supply. Data obtained from the Fairfield Township municipal offices (water records, tax maps) indicate that at least 13 potable wells may still be in use in and adjacent to the area of residences previously sampled (Carlos Dr., Colt St., Van Ness Ave., Glenn Ave.). Of these 13 wells, three that were sampled in 1986-1988, which exhibited TCE contamination of approximately 3.0 ppb, remain in use. USEPA sampled 4 potable wells on Carlos Drive in October 1994. As water records were requested for only four streets thought to be on the edge of the groundwater plume, it is possible that additional potable wells exist in the area.

Current Issues

The primary public health issue associated with the CTC site pertains to the potential impact of the groundwater contamination plume on existing potable wells. Potable well sampling data from 1985-1988 indicated TCE present at concentrations up to 16 ppb. Four "representative" wells remaining in service since that time have been resampled by USEPA and found to be not contaminated to the limit of detection.

Additional potable wells may exist beyond those indicated in the Township water records reviewed for this SRU. Because of the significant groundwater plume associated with the CTC site and the proximity of the estimated edge of contamination to potable wells, identification of all potentially affected wells and confirmation of their quality is a public health concern.

The 1986 Remedial Investigation indicated two residential wells, which were located within the groundwater plume, exhibiting total VOC's > 20,000 ppb. These residences were subsequently connected to municipal water supplies. Based upon information supplied by USEPA, these wells were used for non-potable purposes, and there were no completed human exposure pathways associated with either of these wells.

The NJDOH and ATSDR regional representatives attended a Council meeting on March 21 1994, for the Borough of Fairfield where concerns regarding groundwater contamination were expressed by the Fairfield Health Officer and various other elected officials.

A secondary concern was associated with the former use of the site by students from the high school as a thoroughfare. However, as the site has been recently fenced by the USEPA this issue has been resolved. There are insufficient data and information describing past exposure to trespassers to evaluate the toxicological significance of this potential exposure pathway.

Conclusions

The ATSDR and the NJDOH consider the CTC site to presently constitute no apparent public health hazard. This evaluation is based upon the data indicating no current potable well contamination down-gradient of the site. However, this evaluation may be revised depending upon further identification and sampling of potable wells in the site study area.

Groundwater

- 1) Monitoring well data indicate the presence of a plume of groundwater contamination with concentrations of total VOC's >20,000 ppb moving on a northeastern direction toward the Passaic river.
- 2) Residential well data from 1986-1988 indicated possible site related contamination. Potable well data since that time do not indicate a significant (if any) impact of the plume on residential wells.
- 3) According to Fairfield Township utility records, additional potable wells exist which have never been sampled. The possibility of a change in the extent and/or movement of the groundwater plume and its effect on potable wells is a potential public health concern.

On-Site Remediation

On-site remedial activities have been sufficient to address public health concerns documented in the health assessment of 1988 and the health consultation of 1990. The remedial plan proposed in the 1986 Record of Decision (on-site soils, etc.) and the 1989 record of decision (off-site) areas are consistent with protection of the public health and address ATSDR and NJDOH health concerns.

Need for Further Evaluation and/or Action at the CTC Site

No further actions by the ATSDR and the NJDOH are indicated at this time for the CTC site. A periodic review of the progress of the groundwater remediation is indicated.

General

Identification in the 1988 health assessment of potential exposure pathways associated with biota are not accurate in the context of current site conditions and available information. There are no identifiable biota in the environs of the site which are/may be accumulating site related contaminants and are likely to enter the human food chain.

Past exposures to on-site contaminants have been addressed by the ATSDR consultation of 1990, and subsequent site control measures implemented by USEPA. Presently, it is unlikely that exposure to on-site contaminants is occurring.

Recommendations

Generally the "cease/reduce exposure" recommendations of the 1988 health assessment and the 1990 consultation have been satisfied by remedial progress at the CTC site.

Groundwater

- 1) A comprehensive review of Municipal water records should be conducted to indicate the presence of potable wells which may exist in areas other than the four streets reviewed for this SRU. All wells thus identified down and side-gradient of the site which are used for potable or domestic purposes should be considered for sampling by the USEPA, the local or county Health Department, or the homeowner to ensure water quality.

Health Activities Recommendation Panel Statement

The data and information developed in this SRU have been evaluated to determine whether HARP follow-up actions may be indicated. No HARP evaluation is indicated at this time.

Public Health Actions

The Public Health Action Plan (PHAP) for the Caldwell Trucking Company site contains a description of the actions to be taken by ATSDR and/or NJDOH at or in the vicinity of the site subsequent to the completion of this Site Review and Update. The purpose of the PHAP is to ensure that this SRU not only identifies public health hazards, but provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment. Included, is a commitment on the part of

ATSDR/NJDOH to follow up on this plan to ensure that it is implemented. The public health actions to be taken or implemented by ATSDR/NJDOH are as follows:

Public Health Actions Taken:

- 1) Environmental data and proposed remedial activities have been evaluated within the context of human exposure pathways and relevant public health issues.
- 2) Water Utility records have been cross checked with Municipal tax records to determine which homes in the area of the residential wells, sampled between 1986-1988, remain on potable wells.

Public Health Actions Planned

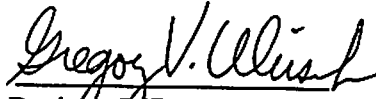
- 1) The ATSDR and the NJDOH will provide a copy of this SRU to the Fairfield Township Health Department and Town Council with a written evaluation of the conditions found at the site and the potential public health concerns.
- 2) Should additional potable well data become available, the NJDOH, will perform a Health Consultation to evaluate the public health significance of the data.

ATSDR will provide an annual follow up to this PHAP, outlining the actions completed and those in progress. This report will be placed in repositories that contain copies of this health assessment, and will be provided to persons who request it.

ATSDR will reevaluate and expand the Public Health Action Plan (PHAP) when needed. New environmental, toxicological, health outcome data, or the results of implementing the above proposed actions may determine the need for additional actions at this site.

CERTIFICATION

The Site Review and Update for the Caldwell Trucking Company site was prepared by the New Jersey Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the Site Review and Update was initiated.



Technical Project Officer, SPS, RPB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this Site Review and Update and concurs with its findings.



Division Director, DHAC, ATSDR

Documents Reviewed

- 1) Remedial Investigation Report; Caldwell Trucking Company Site, Township of Fairfield, New Jersey. NUS Corporation; June 1986.
- 2) Offsite Remedial Investigation Report; Caldwell Trucking Company Site, Fairfield Township, Essex County, New Jersey. Ebasco Services Incorporated; July 1989.
- 3) Record of Decision (for) Caldwell Trucking Company Site. USEPA; September 1986.
- 4) Record of Decision (for) Caldwell Trucking Company Site (off-Site Areas). USEPA; September, 1989.
- 5) Public health Assessment; Caldwell Trucking Company, Fairfield, New Jersey. ATSDR; October, 1988.
- 6) Addendum to Health Assessment Caldwell Trucking Company. ATSDR; September 4, 1990.
- 7) Agency for Toxic Substances and Disease Registry, Toxicological Profile for Trichloroethylene. Atlanta Georgia: ATSDR, April 1993.

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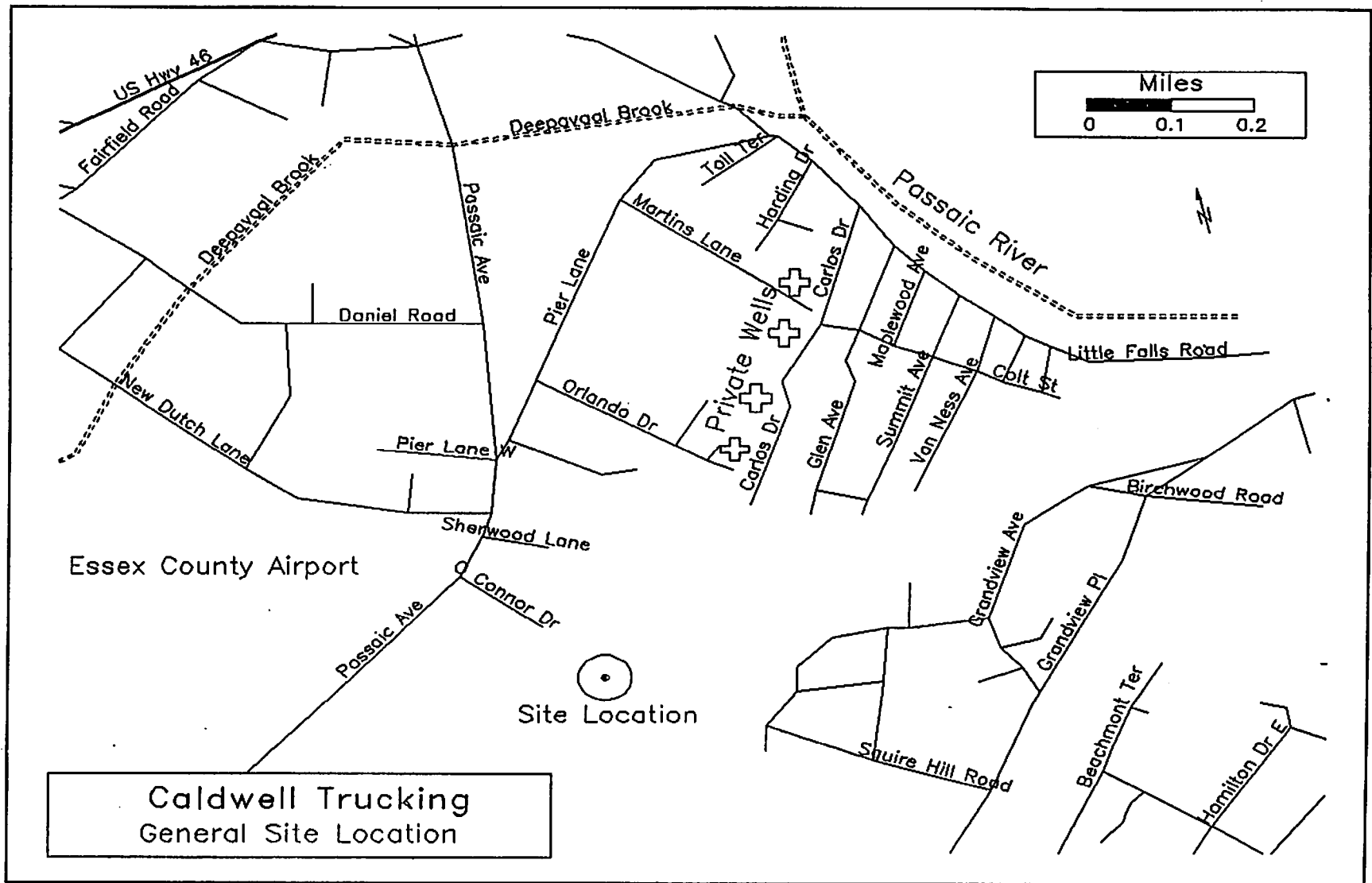


Figure 1