

REVISED SITE REVIEW AND UPDATE

AMERICAN CYANAMID COMPANY

BOUND BROOK, SOMERSET COUNTY, NEW JERSEY

CERCLIS NO. NJD002173276

Prepared by:

**New Jersey Department of Health
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry**

SUMMARY OF BACKGROUND AND HISTORY

The American Cyanamid Company (Cyanamid) is the owner and operator of an active industrial facility in Bound Brook, New Jersey. The facility encompasses approximately 575 acres and is bounded by NJ Route 28 to the north, the Raritan River to the south and west, and Interstate 287 to the east. Chemical manufacturing on the site has been continuous since 1915, with Cyanamid's operations beginning in 1929. During approximately 64 years of operation, the company has produced over 800 chemicals. These include pharmaceutical, dyes and textile chemicals, organic pigments rubber compounds, and various intermediate chemicals. Currently, only pharmaceuticals are manufactured on site.

Throughout Cyanamid's operations at the site, and until 1981, unlined lagoons were utilized for waste storage. Approximately 800,000 tons of chemical waste were discharged to 27 on-site lagoons and containment areas. These lagoons generally contain either organic tars, lime or waste water treatment sludges, and are the source of severely contaminated groundwater under the site. In addition, the lagoons may be the source of the contamination (numerous organic chemicals and metals) detected in soil and surface water.

The groundwater contamination resulting from on-site lagoons and contaminated soils in production and west yard areas of the site is well documented, and the focus of extensive study and remedial efforts by American Cyanamid. Impoundment Characterization was completed in 1990. Site-wide soils Remedial Investigation (RI) was completed in 1992. Sixteen (16) on-site impoundments have been grouped into three groups. Group I includes impoundments 11, 13, 19 and 24. Group II includes impoundments 1, 2, 15, 16, 17, and 18. Lastly, Group III includes impoundments 3, 4, 5, 14, 20 and 26. The Corrective Measures Study/ Feasibility Study (CMS/FS) was completed for the Group I impoundments in 1992 and the final remedy is being selected. The CMS/FS for Group II impoundments will be completed in November 1993, while the CMS/FS for Group III impoundments will be completed in May 1995. After completion of the remediation of all impoundments, site-wide soils FS will be initiated, and following remediation of site-wide soils the final groundwater remediation will be addressed.

American Cyanamid was listed on the National Priorities List (NPL, a.k.a. Superfund) in September of 1983. The company has signed two Administrative Consent Orders (ACOs) with the New Jersey Department of Environmental Protection and Energy (NJDEPE). The first ACO, signed in December 1981, required Cyanamid to assess the contamination of the underlying groundwater from the on-site impoundments and to design and enforce a remedial plan. In addition, this ACO requires Cyanamid to pump and treat groundwater at the rate of 650,000 gallons per day. Water from these production wells is treated at the Somerset Raritan Sewerage Authority. A second ACO signed on May 25, 1988 assures approximately \$63 Million dollars for ongoing site remediation projects.

A Health Assessment for the Cyanamid Site was prepared for the Agency for Toxic Substances and Disease Registry (ATSDR), by the New Jersey Department of Health (NJDOH), on August 3, 1990. The Health Assessment noted that contaminated groundwater, soil, and surface water were the identifiable human exposure pathways associated with the site. It also concluded that potential human exposure to contaminated well water may have occurred for approximately 45 years before a groundwater control program was initiated in 1982. Contaminants of concern at the site consisted largely of volatile organic compounds and lesser amounts of semi-volatile organic and inorganic compounds. Long term effects on residents could not be evaluated since there was no data on well contaminants prior to 1981.

The Health Assessment noted that although monitoring wells indicated substantial groundwater contamination, off-site migration of contaminants had been minimized by pumping and treating 650,000 gallons per day drawn from perimeter production wells. This pumping has created a cone of depression, of sufficient size and magnitude to restrict off-site groundwater contamination. Site data reviewed indicated that any on-site groundwater contaminants that were not captured by the production wells were ultimately discharged into the Raritan River.

Past public health and community concern about the Cyanamid site have focused on the company's proposals to construct an on-site incinerator, rather than any concerns about past or present exposure to contaminated groundwater.

In its final conclusion, ATSDR categorized the American Cyanamid site to be of potential public health concern because human exposure to hazardous substances, at concentrations of concern, may occur and have probably occurred in the past. ATSDR recommended that more site data be collected and a reevaluation of off-site groundwater quality be conducted to ensure the effectiveness of the ongoing pumping program. The Health Assessment also recommended the need for better security in the area south of the railroad tracks.

CURRENT SITE CONDITIONS

On April 29, 1993 personnel from New Jersey Department of Health, Bridgewater Health Department, and the New Jersey Department of Environmental Protection and Energy (DEPE) toured the American Cyanamid site with Cyanamid personnel and their environmental consulting firm, Blasland, Bouck & Lee. The site visit included a formal presentation by Blasland, Bouck & Lee staff, and an on-site tour of the 575 acre facility. The following observations were made during the site visit:

- The site remains an active, but scaled down chemical manufacturing facility;
- Security in the main plant area, which includes the production area and west yard,

was very tight. This included perimeter fencing and security guards. Some of the other contaminated areas were accessible to trespassers;

- Demolition of on-site structures was in progress;
- Evidence of recent trespasser activity was noted in the impoundment areas south of the Port Reading railroad tracks. Specifically, fresh "All Terrain Vehicle" (ATV) tracks were observed on impoundment 16. Also in this area shot gun shells and beer cans were noted;
- The southern edge of impoundment 16 had been breached and lagoon contents had apparently migrated to a small pond nearby. The vegetation in the runoff area was stressed; and
- In the vicinity of lagoons 3, 4, and 5 a strong hydrocarbon odor was detected.

Conditions at the American Cyanamid site, since the 1990 Health Assessment, have changed physically, but the environmental conditions have remained constant. Physical changes noted include: the initiation of the contaminant solidification process in impoundment #8; more groundwater monitoring wells were added, there are now 501 monitoring wells on the site; security in the area south of the Port Reading railroad tracks has been increased with the addition of signs and a cable blocking the access road near the water plant; and there has been further demolition of some of the old buildings on the site.

In light of current site conditions, the former conclusion in the original public health assessment of a potential public health concern appear to have been partially addressed. As long as the site remains secure from site trespassers, no exposure, resulting in adverse health effects, is likely to occur. The dominant trespasser activity in the area south of the railroad tracks is ATV use. No direct access to this area by standard vehicles is possible. Trespassers are generally teenagers and adults, and it appears that the sites remoteness from population areas serves to keep young children from the area. Site trespassers could be exposed to site contaminants at levels of public health concern. Two of the four lagoons in the area (impoundments 17 and 18), while less contaminated than the Main Plant area, contain wastewater sludges that are contaminated with VOCs, SVOCs, and various metals. These two impoundments are heavily overgrown with a vegetative cover and are, therefore, unlikely to be used by trespassers. The other areas, which appear to be the most used areas by the site trespassers (impoundments 15 and 16), consist almost entirely of solid iron oxide waste. Iron oxide, in this form, is not considered to be intrinsically hazardous material.

It remains a fact that, although it maybe assumed that groundwater contamination existed prior to the groundwater control program, there is still no supporting data regarding groundwater contamination levels. Therefore, no further action regarding past exposures can be taken.

There has been a considerable amount of additional site data collected which has further characterized current contamination at the site. With the continuation of the groundwater pumping from the production wells, however, there is no complete exposure pathway.

CURRENT ISSUES

Currently, the American Cyanamid Company is preparing to initiate the remedial design for the Group I impoundments, the first of three such operable units. Once in place, the selected remedial alternative (solidification) will prevent any further potential exposure. There are no documented on-going exposures to site related contaminants.

There is public health concern involving the continued evidence of trespassing near and/or on the lagoons south of the Port Reading railroad tracks. Cyanamid has made some efforts to limit unauthorized access to this area, but their efforts have not been totally successful.

The main concern of local residents is that, while they want the site cleaned up, they oppose any remedy which would involve the use of an on-site incinerator. At this time, with the selection of solidification of site contaminants as a final remedy, the incinerator issue appears to be moot.

According to local health officials, contaminated groundwater does not appear to be a concern of area residents because they are not utilizing private residential wells. In addition, there are no known community concerns regarding past exposures to site related contaminants or any other concerns for adverse health effects.

CONCLUSIONS

Conclusions that were made in the 1990 ATSDR Health Assessment, regarding the site being of potential public health concern, would only be partially true. As long as the site remains secure from site trespassers, it is unlikely that exposure to contaminants, resulting in adverse health effects, would occur. Site trespassers could be exposed to site contaminants at levels of public health concern, but due to the nature of the contact with the site (ATV ridding) and type of contaminants (mostly iron oxide) they would be exposed to, adverse health effects seem unlikely. The iron oxide material did not appear to create dust, which further reduces its ability to cause exposure.

Currently, there are no completed exposure pathways associated with the American Cyanamid site as a result of the continued groundwater pumping from the production wells. The original determination that human exposure to hazardous substances probably occurred in the past remains valid. This conclusion was made because residents may have been exposed to contaminants in the past. However, there are no monitoring data or other information available to indicate if exposure

to site contaminants has occurred in the past.

Conclusions in the ATSDR Health Assessment regarding a lack of sufficient data to characterize the site contaminants on groundwater quality are unsupported in light of new data from the remedial investigations.

The concern involving the continued evidence of trespassing near the lagoons south of the Port Reading railroad tracks is still valid.

The final conclusion of the Health Assessment indicated that remedial actions taken at the American Cyanamid Site minimize most of the human exposure to contaminants from the site. This conclusion is still valid and will continue to be true until such time as site conditions or remedial activities change.

RECOMMENDATIONS

Recommendations made in the original health assessment concerning the need for better security near the lagoons south of the Port Reading railroad tracks are still valid.

The recommendations made that would call for a reevaluation of the site's public health impact following a change in environmental, toxicological, health outcome data, or changes in conditions of the site, are still legitimate. This would include any changes in remedial activity, in particular, if the concept of using on-site incineration as a remedy is reintroduced. Any changes in conditions at the site may determine the need for additional actions by the ATSDR and the NJDOH.

Remedial activities implemented at this site are sufficient to address concerns of the ATSDR, the NJDOH, and the community regarding the site. The remedial actions are consistent with protection of the public health.

After a review of the most recent documents and the current site conditions for the American Cyanamid site, the ATSDR and the NJDOH have determined that no further action is required at the site based on the following facts: (1) there are no known community health concerns about past exposure to contaminants; (2) there are no monitoring data available to investigate levels of past human exposure, if indeed it occurred; and (3) there are no current exposures at the site, including trespassers, that are likely to result in adverse health effects.

These data and information developed in the Site Review and Update have been evaluated to determine if follow-up actions may be indicated. No further public health actions are indicated at this time.

DOCUMENTS REVIEWED

1. Group 1 Impoundments Corrective Measures Study/Feasibility Study Report, American Cyanamid Company, Bound Brook, New Jersey, Blasland, Bouck & Lee, May 1992.
2. Health Assessment for American Cyanamid Company, Bridgewater Township, Somerset County, New Jersey, ATSDR, August 3, 1990.
3. Baseline Site-wide Endangerment Assessment, American Cyanamid Company, Bound Brook, New Jersey, Blasland, Bouck & Lee, December 1990, Amended March 1992.
4. Superfund Proposed Plan, American Cyanamid Company, Bridgewater Township, Somerset County, New Jersey, New Jersey Department of Environmental Protection and Energy, November 1992.

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