

United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Thursday, March 31, 2005

From: Ralph Dollhopf

To: Ralph Dollhopf, U.S. EPA

Scott Kendzierski, NWMCHA

Subject: Initiation of Action

Bay Harbor CKD Leachate Site

4000 Main Street, Petoskey, Resort Township, MI

POLREP No.: 1

Site #: 1119

Reporting Period: 9/30/2004 through 3/31/2005

D.O. #:

Start Date:

Response Authority: CERCLA

Mob Date:

Response Type: Time-Critical

Demob Date:

NPL Status: Non NPL

Completion Date:

Incident Category: Removal Action

CERCLIS ID #:

Contract #

RCRIS ID #:

Site Description

The Little Traverse Bay Cement Kiln Dust (CKD) site is located along a 5-mile stretch of the Little Traverse Bay shoreline of Lake Michigan, in an area previously utilized for limestone mining and cement manufacturing operations. Historical records indicate that the Penn-Dixie Company conducted cement manufacturing at the site from approximately 1870 through 1980. CKD is a by-product of the cement manufacturing process, comprised of dehydrated clay, decarbonated limestone, ash, and clinker material (raw material that is ground with gypsum to make cement). CKD is a fine, dry alkaline dust that may contain metal concentrations above that of the area's native soil. Surface or groundwater contact with CKD can produce runoff with a pH that exceeds the federal standard for the corrosivity characteristic for hazardous waste (pH above 12.5 s.u.) and contains elevated levels of dissolved metals listed in 40 Code of Federal Regulations (CFR) Appendix VIII - Hazardous Constituents.

CKD material was consolidated on the site in large stockpiles from approximately 1921 through 1980. Cement manufacturing at the site ceased in 1980 when the Penn-Dixie Company filed for bankruptcy. The Dundee Cement Company, which later became part of Holnam Inc., purchased the site in 1981. These companies used the site as a docking and distribution facility and did not manufacture cement at the site. In 1989, portions of the site were sold to Bay Resorts Properties Limited Partnership (Bay Resorts). During the 1990s, the remaining parcels of land still owned by Holnam Inc. were sold to Bay Resorts.

Several large CKD piles were located across the site, as well as piles of mining overburden, unfilled quarries, and abandoned buildings. On July 11, 1994, an Administrative Agreement and Covenant Not to Sue (AACNS) was signed by Bay Resorts, its signatories (CMS Land Company, Boyne USA, Inc., JAKS, Inc., and CMS Capital Corp.) and the State of Michigan Department of Natural Resources (currently the Michigan Department of Environmental Quality [MDEQ]). The AACNS defined the closure activities that would be conducted, including contouring and capping of CKD piles, removal of debris, and engineering/stormwater controls to manage surface water and groundwater seeps.

In July of 1994, development activities were initiated for the multi-use development (including residential homes, commercial properties, and a 27 hole golf course) that currently occupies the site. During the construction activities, semi-annual progress reports were completed to document the contouring and consolidation of the CKD piles. Additionally, a hydrogeologic investigation was completed in 1995. Twenty-one test pits, eight soil borings, and five monitoring wells were installed as a part of this investigation. Groundwater sampling that was conducted as a part of this investigation identified a portion of the site with CKD-impacted groundwater. A 1,200-foot drain system was installed to intercept CKD-impacted groundwater as it traveled towards Lake Michigan. This system was installed in October of 1995 and was operated up to January 2004, when the City of Petoskey wastewater treatment plant stopped accepting the treated leachate from the site. In August of 2004, reddish-brown seeps were observed along the Little Traverse Bay shoreline, prompting the MDEQ to conduct investigations of the seeps.

MDEQ investigations in August and September of 2004 documented seep pools along the shoreline with pH readings above 12 s.u. Within the surface water of the Little Traverse Bay, pH readings consistently measured above the State of Michigan Water Quality Standard of 9.0 s.u. The Little Traverse Bay Bands of the Odawa Indians requested assistance from the U.S. EPA Emergency Response Branch. U.S. EPA conducted several site investigations in September and November of 2004 and March of 2005. Elevated pH levels (above 9.0 s.u.) were documented along the Little Traverse Bay shoreline, within Lake Michigan surface water, and within streams entering Lake Michigan. Analytical samples also indicated that metal concentrations in the seep pools were above the State of Michigan Water Quality Standards.

Currently, four CKD piles have been identified and targeted for further investigation. Three CKD piles, known as the West CKD Area and the Seep 1 and Seep 2 CKD Areas, are located within the golf course portion of the site. The fourth CKD pile, known as the East CKD Area, is located at the East Park. East Park was transferred from Bay Harbor Resorts to Emmet County in December of 1995 for development of parkland.

On February 22, 2005, CMS Land Company and CMS Capital, LLC collectively known as CMS) entered into an Administrative Order on Consent for Removal Action (Docket No. VW-050C-810) to carry out a time critical removal action to address the threats to human health and the environment. The Administrative Order (Order) requires CMS to conduct activities to recover high-pH leachate entering lakeshore areas and discharging into Lake Michigan, conduct investigative activities to fully identify areas that may be impacted by CKD leachate, and to design and construct long-term engineering controls to abate the threat of leachate releases to lakeshore areas and surface waters. Among other requirements, the Order states that CMS must provide security and restrict access to areas impacted by CKD leachate, continue interim recovery activities until a long-term engineering controls are in place and have been shown to be effective, and submit a work plan to the U.S. EPA detailing all work to be performed.

Current Activities

In September of 2004, the leachate collection system located along the shoreline of Lake Michigan was restarted. On September 30, 2004 U.S. EPA personnel and contractors conducted field pH monitoring in seep pools along the Little Traverse Bay shoreline, downgradient of the Seep 1 and Seep 2 CKD Areas. Additional monitoring and sampling activities were conducted in the area on November 4, 2004. Monitoring was conducted at 19 locations and three samples were collected along the Little Traverse Bay shoreline. In seep pools that exhibited visible discoloration (an indicator of leachate material), pH values ranged from 10.02 s.u. to 13.06 s.u. On November 22, 2004, U.S. EPA conducted an additional monitoring event, collecting pH readings from areas downgradient of the Seep 1 and Seep 2 CKD Areas and downgradient of the East CKD Area, which is located at the East Park property. Elevated pH readings (between 8.87 s.u. and 13.13 s.u.) were documented from nine monitoring locations downgradient of the Seep 1 and Seep 2 CKD Areas. Five seep monitoring points located along the shoreline of the East Park property exhibited pH values ranging from 8.67 s.u. to 10.43 s.u.

On March 11 and 15, 2005, U.S. EPA conducted a site investigation of Lake Michigan surface water, just off the shore, downgradient of the Seep 1 and Seep 2 CKD Areas and the East CKD Area/East Park. Monitoring and sampling was conducted at locations where the ice sheet thickness was either reduced or absent, indicating the location of a possible seep. The geographic coordinates of the elevated pH readings were collected using a global positioning system (GPS) unit so that the locations could be identified once the ice melts. Five monitoring and two sampling locations were off-shore of the East Park. Analysis of water samples collected at East Park indicated pH values ranging from 11.37 s.u. to 11.90 s.u. In addition, the site investigation identified impacted portions of Lake Michigan associated with the Seep 1 CKD Area further east than previously measured. Laboratory analysis of water samples indicated that the elevated pH plume extending from the Seep 1 CKD Area extends further down the Little Traverse Bay shoreline than previously measured.

CMS has submitted for U.S. EPA approval copies of the Removal Action Work Plan, Health and Safety Plan, Quality Assurance Project Plan (QAPP), and Access Control Plan. These reports are currently under review and must be approved prior to the initiation of any site work. Site work is expected to begin before the end of April 2005.

Planned Removal Actions

Leachate recovery along the Little Traverse Bay shoreline will begin within five days of U.S. EPA approval of CMS plans. Site investigation activities will also be completed to identify and assess the extent of CKD impacts across the site.

Leachate recovery will initially be completed using vacuum truck units stationed along the

shoreline. Investigative drilling and small-scale pilot studies will also be completed to develop an interim response for leachate recovery.

Next Steps

Upon approval of the CMS plans, U.S. EPA will mobilize personnel to oversee the investigative and leachate recovery activities completed by CMS.

CMS must complete site access control measures to eliminate public exposure to areas impacted by CKD material. Fences will be constructed around portions of the site impacted by CKD material and security personnel will be posted to control access to these areas. Access to these areas from the lake will also be controlled to eliminate possible exposure to the impacted areas by boaters or swimmers. Access controls will be expanded if any additional CKD-impacted areas are identified during site investigation activities.

CMS will provide written progress reports on a weekly basis for the first two months of the investigation and recovery operations. The first progress report is expected on April 4, 2005.

Key Issues

None at this time.

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