

**FINAL DECISION AND
RESPONSE TO COMMENTS**

for

**Ansul Fire and Safety, Inc.
Marinette, Wisconsin**

EPA I.D. No. WID 006 125 215



FINAL DECISION

Ansul Fire and Safety, Inc.
Marinette, Wisconsin
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Introduction

This Final Decision and Response to Comments document is presented by the United States Environmental Protection Agency (EPA) for the Ansul Fire and Safety (Ansul) facility located in Marinette, Wisconsin. This document consists of the Final Decision, EPA's Response to Comments (Attachment I), updated Index to the Administrative Record (Attachment II), and previously issued *Statement of Basis* (Attachment III).

This Final Decision selects the remedy to be implemented at the Ansul facility, based on the Administrative Record and public comments. The *Statement of Basis* provided the proposed remedy and was available for public review and comment, from September 12, 2007 through October 29, 2007. A public meeting was held on September 20, 2007. The Response to Comments addresses public concerns raised at the public meeting and during the 45-day public comment period.

Assessment of the Facility

The response action documented in this Final Decision is necessary to protect human health and the environment.

Selected Remedy

EPA has selected the following remedial components as the final remedy to address contaminated groundwater, soil, and sediment at the Ansul facility:

- Construct and maintain a below-ground barrier wall to contain on-site groundwater contaminated with arsenic, to the maximum extent practicable. The barrier wall will be constructed of impermeable materials and generally will follow the site perimeter including an additional portion of the wetlands to the east (see Figure 2 of the *Statement of Basis*). The containment barrier will be driven into either the glacial clay geologic layer existing on top of the limestone bedrock or into the bedrock itself if no substantial till (clay) layer exists. Ansul will maintain the barrier system in accordance with an approved operation and maintenance plan.

- Construct, operate and maintain a shallow ground-water collection system on-site in addition to providing a treatment technology, reverse osmosis, to remediate the arsenic (and other contaminants). Ansul will operate the groundwater system in an effort to keep groundwater located on-site within the containment area at a constant elevation and to keep groundwater from mounding. Collected groundwater will be treated to meet allowable disposal levels. The treatment system will remove arsenic, as well as other contaminants identified at the site and in the groundwater. Waste generated during the treatment process will be sampled, handled, transported and disposed of appropriately at an off-site location.
- Cap on-site surface soils at locations equal to or exceeding 32 ppm arsenic. The cap shall be designed and maintained in order to prevent human and ecological exposure to soil with an arsenic concentration of greater than or equal to 32 parts per million (ppm). Ansul will perform an annual inspection and repair of the caps per an approved operation and maintenance plan. Figure 1 shows the areas on-site where it is anticipated cap(s) will be installed.
- Where possible, plant hybrid poplar trees to augment the shallow ground-water collection system through using the tree root ground-water extraction capability. The extent of acreage planned to be planted with trees will be dependent upon further field testing and groundwater modeling. Ansul will ensure that leaves are properly collected and disposed when they fall to the ground. If tree planting is not implemented Ansul will provide an alternate mechanical pumping system which will augment the shallow groundwater collection system.
- Remove surface-soils at arsenic concentrations equal to or greater than 16 ppm located near the railroad off-site (see Figure 1).
- Remove and properly dispose of all Menominee River sediments at arsenic concentrations equal to or greater than 50 ppm using mechanical dredging techniques (see Figure 3). Ansul will de-water and dispose of sediments appropriately off-site. Sediment removal activities will be conducted in accordance with all applicable laws so as to minimize reentrainment of contaminants in the water. It is anticipated that dredging will begin after Ansul installs the groundwater barrier wall described above.
- Implement Monitored Natural Recovery using a comprehensive monitoring program to ensure the target cleanup arsenic value of 20 ppm for river sediments is achieved within 10 years of the completion of dredging and to ensure the long-term integrity of the remedy and protection of human health and the environment. During the MNR phase, institutional controls will be in place to prevent digging or trenching in the affected area in addition to a “no anchoring” zone being established.

Ansul will prepare a MNR Plan to demonstrate the natural recovery is successfully occurring and to predict when arsenic levels will reach the target clean-up concentration of 20 ppm (see Section 4.3 of the Statement of Basis for a discussion of the risk analysis and target concentration). The predicted rate of natural recovery will be evaluated by taking samples of sediment at specified intervals to see if the arsenic in the sediment is decreasing at the expected rate. If the sediment levels are not decreasing at the expected rate, the EPA will require a back-up measure, such as additional dredging.

- At least once every 5 years Ansul will conduct a technical review of the state of the science regarding advances in treating high contamination levels of arsenic in groundwater. Included in this review will be 1) a discussion of how the existing clean-up system is performing; 2) a discussion of any proposed modifications to the existing remedy and a schedule for implementation; 3) a discussion of the current scientific and engineering knowledge useful to protect human health and the environment at the site; and 4) results of a literature search on arsenic treatment technologies and assessment of the new technology's potential for application to arsenic contamination at Ansul. If EPA determines environmental technology advances to a point where treating the more highly concentrated arsenic groundwater becomes practicable, Ansul will provide to EPA for review and approval modifications in the existing system needed to implement the new technology.
- Implement Institutional Controls for both the land and river portions of the facility that are the subject of this decision document. For the land portion of the remedy the goal of the institutional control that is used is to ensure that the Ansul property use remains industrial, the cover on the Ansul property is not disturbed and is inspected and maintained; the groundwater barrier system wall is not disturbed and is maintained; and the groundwater is maintained at a prescribed depth and is not used for potable purposes. For the river portion of the remedy, the goal of the institutional controls is to ensure that there is no anchoring, digging, dredging or trenching in the contaminated river sediments area prior to and during the period that MNR is occurring.
- Maintenance of site access controls such as fencing, and health and safety plans at the facility, as necessary, to minimize unacceptable risk associated with human exposure to site contaminants.

No significant or substantial changes have been made in the *Statement of Basis*. The attached Response to Comments does, however, contain modifications that are acceptable to EPA that originated from public comments the EPA received during the public comment period.

The final remedy provides the best balance among the alternatives with respect to the evaluation criteria described in the *Statement of Basis*, including: 1) technical (performance, reliability, implementability and safety); 2) overall protection of human health; 3) overall protection of the

environment; and 4) institutional controls. Alternatives considered and rejected for the on-site remedy are either not technologically proven to work in practice, given the high arsenic concentrations at the site, or would be very difficult to implement, such as in situ stabilization. Alternatives considered and rejected for the off-site remedy included sediment caps and different variations of dredging techniques. Sand caps were rejected due to the very soluble nature of the arsenic contamination and hydraulic conditions causing discharge of arsenic contaminated groundwater to the river sediments. Additional significant shortcomings of the cap are long term integrity and maintenance. Cost and ability to implement the remedy were principal factors in choosing mechanical over hydraulic dredging.

Public Participation Activities and Comments

On September 20, 2007 a public meeting was held at the Marinette City Hall located at 1905 Hall Avenue, in Marinette, Wisconsin, to present the *Statement of Basis* and accept oral comments. Eleven separate oral comments were made during the public meeting. These comments are presented and responded to in Attachment I.

A 45 day public comment period was held from September 10, 2007 through October 29, 2007. Nine oral comments were received during the meeting while twenty-nine written comments from Ansul were received shortly thereafter. These comments and questions are presented and responded to in Attachment I.

Administrative Record

The Administrative Record supporting the selected final remedy is available at the Marinette Community Library, and the 7th Floor Records Center at the EPA, Region 5 office. Attachment II identifies all documents contained within the Administrative Record.

Declarations

Based on the Administrative Record compiled for this corrective action, EPA has determined that the selected remedy for the Ansul facility is appropriate and protective of human health and the environment.

Margaret M. Guerriero, Director
Land and Chemicals Division
EPA, Region 5

Date

Attachments (3)

In the Matter of:

Ansul Fire and Safety, Inc.
Marinette, Wisconsin
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