DESIGNATION
OF
CORRECTIVE ACTION MANAGEMENT UNIT
AND
RESPONSE TO COMMENTS

USX CORPORATION - GARY WORKS
GARY, INDIANA
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February, 1999

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Introduction

Pursuant to 40 CFR § 264.552 et. seq., U.S. Environmental Protection Agency (U.S. EPA) hereby designates the area of the USX Gary Works facility more fully described herein as a Corrective Action Management Unit (CAMU). In support of this determination, U.S. EPA hereby incorporates the following documents by reference: RCRA Corrective Action Order entered into between U.S. EPA and USX Corporation (USX) pursuant to Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901-6991i (Attachment I) and the Statement of Basis (Attachment II). This CAMU designation is also based upon the documents set forth in the Administrative Record (Attachment III).

Description of the CAMU

The CAMU is located on property within the USX Corporation facility located in Gary, Indiana. It consists of approximately 40 acres of property located in the southwestern portion of USX's property between the former American Bridge facility and the former American Juice Company facility (see Exhibit A).

The CAMU will be used for the disposal of remediation waste consisting of contaminated sediment from the Grand Calumet River (River) conducted as part of an Interim Measure under the RCRA Corrective Action Order. It may be used for disposal of other remediation waste subject to approval by U.S. EPA pursuant to the RCRA Corrective Action Order.

The CAMU will be constructed in accordance with the Scope of Work which is Attachment I of the RCRA Corrective Action Order. The CAMU will be designed to meet the requirements of a hazardous waste landfill under 40 CFR 264, Subpart N including the following.

- The liner and leachate collection system of the CAMU will meet or exceed RCRA's Minimum Technology Requirements for a hazardous waste landfill.

- The final cover of the CAMU will meet or exceed RCRA's Minimum Technology Requirements for a hazardous waste landfill.

Rationale for Designating a CAMU

Pursuant to 40 CFR §264.552(e), U.S. EPA has set forth as part of the RCRA Corrective Action Order, the following: (1) the areal configuration of the CAMU; (2) the requirements for remediation waste management; (3) requirements for ground water monitoring; and (4)closure and post-closure requirements.

Pursuant to 40 CFR §264.552(f), the rationale for designating the CAMU is set forth in the Statement of Basis which is hereby incorporated by reference. The Statement of Basis has been and will be made available to the public.

Specific decision criteria in 40 CFR §264.552(c)(1) through (7) are addressed below and serve as the basis for designating an area at the USX - Gary Works facility as a CAMU.

1. The CAMU shall facilitate the implementation of a reliable, effective, protective, and cost-effective remedies (40 CFR, Part 264.552(c)(1)). The feasibility of removing the River sediment adjacent to the Gary Works facility is dependent on the ability to resolve numerous technical, practical, logistical, and regulatory challenges. Since the submittal of the initial Sediment Remediation Program in September 1993, USX has reviewed many remedial technologies, conducted engineering evaluations, and initiated design activities to identify and resolve such challenges. Designation of a portion of the facility as a CAMU facilitates the most reliable, effective, protective and cost-effective approach for corrective action for the dredged sediment being remediated.

   USX will comply with RCRA Subtitle C minimum technology requirements (MTRs) though this is not required under the provisions of the CAMU rule. The use of liners and a leachate collection system will ensure the long term effectiveness of the CAMU after the sediments are dewatered.

   Upon designation of the CAMU as proposed, USX is committed to removing non-native sediment (approximately 687,000 cu. yds.) from the River and disposing of the sediment in an engineered structure with routine monitoring and maintenance. Removing non-native sediment is a more reliable and effective remedy with respect to minimizing

future releases and exposure potential from contaminated sediment than containing or leaving the River sediment in place. Once the sediment is removed, there are no ongoing channel operation and maintenance needs, and no potential for future releases associated with waste that is no longer present in the environment. Dredging of this segment of the river will enhance the aquatic ecosystem, create a better quality habitat, and minimize the migration of in-place pollutants to Indiana Harbor and Lake Michigan.

The proposed CAMU offers implementation-related benefits. For instance, allowing management of sediment via a slurry pipeline and dewatering at the CAMU will simplify the handling of water and significantly reduce potential for physical contact and accidental spills. In addition, secondary containment piping will be used to transport sediment from Transects 1 through 11 and Transect 17, Horizon 1 to the CAMU. This will significantly reduce potential health risks in the unlikely event of a breach in the slurry pipeline. USX plans to take extra precautions (i.e., river isolation cells for Transects 1 through 11) when dredging the PCB-contaminated transects to minimize migration of contaminated sediment.

Allowing passive dewatering to occur at the CAMU eliminates the need for a staging area and double handling of the remediation wastes in and out of a separate mechanical dewatering process unit. This shortens the duration of the sediment removal from six years to as few as two years, and minimizes risks by limiting exposure to wastes. All wastes placed in the CAMU will be compatible with the CAMU systems (i.e., liner, etc.) constructed.

This design reflects the technical and practical realities of a large sediment dredging project. This proposed approach does not involve offsite management of wastes, thereby eliminating risks created by truck traffic, logistical challenges between trucks and earthmoving equipment competing for space and access. The approach also reduces delays in implementation due to complicated scheduling of waste handling activities. It avoids undue and increased risks from treatment of high-volume wastes such as sediment.

2. Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents (40 CFR, Part 264.552(c)(2)). U.S.

EPA intended this criteria to ensure that risks are controlled during remediation to protect human health and the environment. (58 FR 8668, February 16, 1993). Several design features are intended to reduce the risks during construction. As noted, conveying the dredged sediments into the CAMU via a pipeline provides the following benefits: (1) eliminates the need for mechanical dewatering; (2) eliminates need for truck transport of sediments; (3) reduces air emissions that would otherwise exist in mechanical dredging and associated truck transport; and (4) reduces downstream migration of suspended sediment that would occur during mechanical dredging operations (e.g., clam-shell dredge). The CAMU as proposed allows for an expedited dredging operation, which also minimizes the potential exposure to contaminated sediment.

Any wetland impact will be minimized, with the recognition that the benefits to human health and the environment associated with removing contaminated sediments from the River conceivably outweigh the short term adverse environmental impacts resulting from dredging operations. In addition, USX will implement a Compensatory Wetland Mitigation Plan to compensate for unavoidable impacts during construction of the CAMU and during dredging activities.

The health and safety of site workers will be an important aspect in implementing the Sediment Remediation Program. A health and safety plan will be prepared in accordance with the OSHA regulations of 29 CFR 1910.120 for construction and dredging activities. In addition, fencing will surround the CAMU to control access.

The potential for exposure from the time of initial placement of sediment until final closure of the CAMU will be minimized through several design features or engineering controls. During initial placement of sediment, the surrounding berms will serve as a physical barrier that combined with the moisture content of the sediment slurry, will contain or minimize windblown transport of particulates. Additionally, the CAMU design includes the use of a protective water seal over the sediment, reducing the impact of air emissions. Pilot testing to measure volatile emissions from the water seal will be conducted to evaluate whether additional monitoring, treatment, or controls are warranted prior to placing sediment in the CAMU. An air monitoring plan will be approved before sediments are placed in the CAMU. Transporting the sediment via an enclosed pipeline as opposed to an open conduit or

dump trucks also reduces potential exposure and fugitive emissions. Use of an isolated cell within the CAMU reduces exposure potential by isolating the PCB-contaminated sediment. At the conclusion of the sediment dewatering, a temporary vegetative cover will be maintained to control erosion, prevent direct contact, and reduce particulate emissions until closure or subsequent remediation wastes are placed in the CAMU. USX will evaluate additional strategies to minimize exposure, as necessary, during the placement of remediation wastes in the CAMU.

3. The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility (40 CFR, Part 264.552(c)(3)). This criterion states that a CAMU can only include uncontaminated areas of the facility under certain circumstances. The need to address such circumstances is not necessary since the USX Gary Works facility intends to construct the CAMU on property that was previously contaminated by former river dredging operations. Findings from a recent geotechnical investigation confirm the presence of dredged spoils, up to 4 feet thick, from past dredging operations. Past disposal of dredged sediment at this location was ceased in the late 1960s. The extent of the area used for the former dredging operation is encompassed by a berm constructed to contain dredged sediment. The CAMU will be constructed in this disturbed area.

4. Areas within the proposed CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable (40 CFR, Part 264.552(c)(4)). As mentioned, the proposed CAMU is designed to meet the MTR for RCRA Subtitle C landfills, which provides a greater degree of long-term effectiveness than what is required by the CAMU Rule.

   The final cover to be installed at the time of CAMU closure will meet Subtitle C closure requirements for landfills. Detailed descriptions and specifications of the final cover will be contained in a closure/post-closure plan submitted by USX for U.S. EPA approval. USX intends to leave the CAMU operational until all sediment dredging activities and consolidation of any other U.S. EPA approved remediation waste from RCRA Corrective Action activities at the Gary Works facility are completed. Upon completion of such activities, USX will install a cover that is compatible with

the wastes within the CAMU, the predicted settling from wastes within the CAMU, and the CAMU construction (liner/leachate collection system) so that the cover meets the permeability requirements appropriate for this type of construction. The final cover will be subject to review and approval by the U.S. EPA.

After closure, the CAMU will be inspected routinely to monitor final cover conditions. Signs of erosion or settlement will be addressed. For a minimum of 30 years after closure of the CAMU, USX will monitor groundwater quality in the vicinity of the CAMU to ensure that any releases of hazardous wastes or hazardous constituents from the CAMU are detected. At the end of the 30 year post - closure monitoring period, U.S. EPA and IDEM will evaluate the monitoring program and determine if monitoring may be discontinued, decreased, or otherwise modified.

5. The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable (40 CFR, Part 264.552(c)(5)). As discussed previously, using the CAMU as proposed expedites the timing of sediment remediation by allowing direct delivery of dredged sediment to the CAMU. Using the CAMU, condensing the schedule for completion of the dredging activities from six years to as few as two years is possible. Consequently, potential threats to human health and the environment from exposure to contaminated sediment and ecological disturbances are reduced by an expedited dredging schedule.

   As noted, the CAMU is being designed not only to contain River sediment, but also to provide additional capacity to accommodate as much as 1,250,000 cu. yds. of potential remediation wastes from remedial activities under the RCRA Corrective Action Order. This is based on a 5 percent final grade and the CAMU dimensions. The Indiana solid waste regulations allow final grades up to 33 percent, providing for an even greater capacity. Having this capacity available onsite may expedite interim measures or final remedies for corrective action remediation wastes, as appropriate.

6. The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU (40 CFR, Part 264.552(c)(6)). The CAMU will be engineered using the most

protective designs for hazardous waste landfills, and will eliminate the toxicity and mobility concerns that currently exist with the river sediments.

The CAMU Rule states that this criterion "*was not intended to preclude remedial alternatives that did not employ treatment, so long as such options could ensure long-term effectiveness of the remedy (58 FR 8670).*" The CAMU is designed to meet MTR requirements for Subtitle C (hazardous waste) landfills though such a design is not required under CAMU provisions. This design, beyond what is required, enhances the long-term protectiveness of the CAMU. In addition, the CAMU system uses a cell approach to separate PCB-contaminated sediment regulated under TSCA from other contaminated sediment. This cell approach enhances the long-term effectiveness of the CAMU system by allowing controlled management of different transects of river sediments.

Wastewaters from the dredged sediments will be collected from the CAMU and conveyed to the project-specific wastewater treatment plant or the secondary treatment system. This will reduce the toxicity and mobility of contaminants found in the liquid phase of the remediation waste. Leachate from the CAMU will also be collected and treated at the project-specific wastewater treatment plant.

The CAMU is also designed to contain compatible remediation wastes from the RCRA Corrective Action Program if approved by U.S. EPA under the RCRA Corrective Action Order. The available capacity in the CAMU enables expedited interim measures or corrective measures to be implemented. Without the CAMU, the implementation of these measures would be delayed during the design and construction of a separate regulated unit onsite for remediation waste. The physical and chemical composition of remediation waste is expected to be compatible with the River sediment for disposal. The need to isolate remediation wastes from sediment will depend on: 1) the timing of waste placement, 2) the compatibility of waste types, and 3) the potential leachate treatment requirements. If the placement of remediation waste occurs after sediment placement and dewatering, then a temporary vegetative cover will be used to control erosion. An evaluation whether commingling or isolating remediation waste from sediment is warranted, and the corresponding review of the wastewater treatment system effectiveness, will be presented in the request for U.S. EPA approval of such actions.

Without the CAMU as proposed, the Sediment Remediation Program becomes unnecessarily restrictive. Shipping sediment offsite for disposal is more costly and available capacity for such wastes is limited. Offsite disposal poses greater potential health risks and scheduling delays, from materials handling activities (staging, dewatering, segregation, loading), and transport on public roadways. Similarly, disposal of the sediment onsite in an existing unit requires double handling, is limited by available capacity.

7. The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU (40 CFR, Part 264.552(c)(7)). U.S. EPA intended the CAMU to *"promote consolidation of remediation wastes into smaller, discrete areas of the facility, that are suitable as long-term repositories for the wastes, and which can be effectively managed and monitored over the long term"* (58 FR 8671). The proposed CAMU minimizes the land area of the facility upon which contaminated materials will remain in place after closure. This is accomplished by consolidating contaminated sediment dredged from approximately 5 miles of the Grand Calumet River and remediation waste from RCRA Corrective Action activities at the facility into a single CAMU.

Community Involvement Activities

The public has been given notice of the proposed CAMU designation and provided an opportunity to comment as follows:

- On June 7, 1996, U.S. EPA mailed fact sheets to over 500 community/environmental groups and residents living adjacent to the river where the CAMU and dredging project is proposed.

- On June 10, 1996, the Statement of Basis for the proposed Corrective Action Management Unit and was made available for public review and comment.

- On June 18, 1996, U.S. EPA held a public meeting at the Gary Public Library to discuss the project, answer questions and solicit formal public comment.

- On July 9, 1996, U.S. EPA held a public meeting in Gary, Indiana, to plan future community involvement activities.

- On July 25, 1996, U.S. EPA extended the public comment period by 45-days to allow for additional community involvement activities.

- On August 16, 1996, U.S. EPA mailed a new fact sheet to over 500 community/environmental groups and residents living adjacent to the river where the CAMU and dredging project is proposed.

- On August 21, 1996, U.S. EPA met with community leaders at S.S. Monica and Lukes Parish in Gary to discuss the proposed project and solicit their input. In the evening, U.S. EPA held a second public meeting at the Genesis Center in Gary to discuss the project, answer questions and solicit additional formal public comment.

- In March, 1998, U.S. EPA mailed a new fact sheet to community/environmental groups and residents living adjacent to the river where the CAMU and dredging project is proposed.

- On March 14, 1998, U.S. EPA held a public meeting at the NW Library Conference Center at Indiana University to discuss the proposed project.

- On August 4, 1998, U.S. EPA participated in a public meeting held by IDEM at the Gary Public Library. U.S. EPA was present to answer questions regarding the CAMU and the Sediment Remediation Project.

- In August, 1998, U.S. EPA mailed a new fact sheet to community/environmental groups and residents living adjacent to the river where the CAMU and dredging project is proposed.

- On September 9, 1998, U.S. EPA held a public meeting at the NW Library Conference Center at Indiana University to discuss the project, answer questions and solicit formal public comment.

- On October 17, 1998, U.S. EPA and USX sponsored a boat trip for members of the Concerned Citizens of Horace Mann to tour the area of the River from which contaminated sediments will be dredged and placed in the CAMU.

Comments Raised and U.S. EPA's Responses

Many comment letters contained questions instead of comments. Many of the questions and comments are not specifically related to the U.S. EPA's authorization of the Corrective Action Management Unit (CAMU) under the Resource Conservation and Recovery Act (RCRA) or approval of the unit under the Toxic Substances Control Act (TSCA). Questions and comments pertaining to the Clean Water Act Decree were forwarded to the Department of Justice. Information regarding questions related to U.S. EPA's authorization of the CAMU is presented previously and may also be found in the information repositories at the Gary Public Library, Indiana University NW library, and the RCRA Records Center at U.S. EPA Region 5.

The following narrative summarizes specific comments received and provides the U.S. EPA response. Commentors included the following groups:

- Grand Cal Task Force
- Save the Dunes Council
- Concerned Citizens of Horace Mann
- Select-Canfield Enterprises, L.L.C.
- Indiana Industrial Investments, I.I.I
- Citizens of Northwest Indiana

Key areas of community concern are summarized in the following comments along with U.S. EPA responses.

1. More Community Involvement Activities Are Needed

U.S. EPA recognizes the importance of active public participation in all of our activities. The need for public participation applies not only to the approval of the CAMU, but to ongoing activities during implementation of the work required by the Consent Decree and the RCRA Corrective Action Order.

As far as public participation regarding the CAMU is concerned, U.S. EPA has undertaken the following public outreach activities:

- On June 10, 1996, U.S. EPA provided public notice and asked for comment on the proposed CAMU. A forty-five day public comment period was initially established.

- Fact sheets were provided to the public and an information repository was established at the Gary Public Library containing documents related to the CAMU.

- A public information meeting on the proposed CAMU was held at the Gary Public Library on June 18, 1996. An opportunity for formal public comment was provided during the meeting. Thereafter, an informal meeting was held with members of the public at the Gary Public Library on July 9, 1996 to explore the need for additional public outreach.

- At the request of some members of the public, the public comment period was extended to September 9, 1996 in order to provide an opportunity for additional public outreach.

- On August 21, 1996, informal meetings were held with invited community leaders at S.S. Monica and Lukes Parish in Gary to explain the CAMU and a public meeting was held at the Genesis Center in Gary. An opportunity for formal public comment was provided at that meeting.

- At the request of some members of the public, on March 14, 1998, a public meeting was held with invited community members at Indiana University in Gary to discuss the CAMU and sediment remediation project.

- A public information meeting on the proposed CAMU was held at the Indiana University Library Conference Center on September 9, 1998. An opportunity for formal public comment was provided during the meeting.

- At the request of the Concerned Citizens of Horace Mann, a boat trip was held on October 17, 1998, to tour the area of the River to be dredged and discuss the sediment remediation project and proposed CAMU.

Based upon these activities, EPA has met its legal and policy requirements for public involvement in the CAMU process.

U.S. EPA also takes seriously its responsibility to ensure community involvement in future activities in the corrective action process. The proposed RCRA Corrective Action Order will require USX to develop and implement a Community Involvement Plan subject to review and approval by U.S. EPA. In addition, U.S. EPA will meet further with interested community members to develop additional means for community outreach during the corrective action process.

2. Dredged Sediments Previously Deposited At The CAMU Location Should Be Characterized and Properly Contained

U.S. EPA agrees with this comment. As more fully discussed below, the property on which the CAMU will be located has previously been used for the deposit of dredged material. Based upon this comment, U.S. EPA has modified the Scope of Work (Administrative Record Document No. 000009) to make clear the need to characterize this material to ensure that it is properly handled. Section 3.5 of the Scope of Work requires testing of in situ soils at the CAMU location. USX will determine the nature and extent of releases of hazardous constituents in this area as part of the required testing. Under the SOW, USX is required to submit a report of this characterization to U.S. EPA for approval as part of its engineering design report. The preliminary report of the characterization is contained in Section 4.4 of Volume I of the Permit Level Design Report. A copy of this report has been placed in the information repositories at the Gary Public Library, the library at Indiana University, NW, and in the RCRA Records Center in U.S. EPA Region 5. If approved by U.S. EPA, suitable on-site material may be used for berm construction. The Scope of Work requires that unsuitable materials will be removed and managed appropriately.

3. If Possible, The CAMU Should Be Located Further From Residences And Businesses

USX has evaluated alternative locations on the facility for the CAMU. The evaluation criterion used to select the location of the CAMU included distance from the river, location of utility lines, sewer lines, roads, and railroad tracks, current and future plant operations, and the limited capacity of existing units. In particular, U.S. EPA and USX considered using an existing hazardous waste landfill (HWT-2) for disposal of the sediments. This was ultimately rejected because of concerns about limited capacity. The proposed location was found to have the best balance of these evaluation criteria.

U.S. EPA understands that the location of the CAMU should ensure that there is no threat to human health and the environment. We do not believe that there is any threat to residences or businesses or the environment from the CAMU. The CAMU's design and construction will be according to strict regulatory requirements and will be submitted to EPA for approval. In addition, there will be strict monitoring requirements to ensure that there is no potential impact on human health or the environment from operations at the CAMU.

U.S. EPA is also sensitive to the concerns about the aesthetic impact of the CAMU. The Scope of Work (Administrative Record Document No. 000009) requires USX to minimize odors from dredging activities and the CAMU to the maximum extent practicable. Exterior slopes of the CAMU will be hydro-seeded with a grass seed mixture. During the design phase of the CAMU, U.S. EPA will seek additional ways to minimize the visual impacts to the surrounding community.

4. Use Of The CAMU Should Be Limited To Remediation Wastes Generated From The Clean Up Of The River Until The Public Has Further Opportunity To Comment

The Statement of Basis (Administrative Document No. 000010) documents U.S. EPA's rationale for designating a CAMU at the USX facility. The Statement of Basis was made available for public review and comment on June 10, 1996. In that document, U.S. EPA stated that the CAMU is designed for the disposal of remediation wastes generated from the implementation of the RCRA Corrective Action Order including sediments removed from the Grand Calumet River. Public comment on the CAMU was held from June 11, 1996, to September 9, 1996, and from August 17, 1998 to September 21, 1998.

Use of the CAMU for disposal of remediation wastes is subject to U.S. EPA approval pursuant to the RCRA Corrective Action Order. At this time, USX may only dispose of contaminated sediment from the River. USX may request U.S. EPA for approval to use the CAMU for disposal of corrective action remediation wastes as part of the remedy selection for the facility or through implementation of an interim measure. U.S. EPA is committed to ensuring community involvement in future activities in the corrective action process. Therefore, Section 6.6 of the Scope of Work (Administrative Record Document No. 000009) has been modified to state that public comment will be received prior to disposal of remediation wastes into the CAMU in accordance with the RCRA Corrective Action Order, with respect to the selection of corrective measures, or as otherwise provided by U.S. EPA, with respect to any interim stabilization measure.

5. Access To The CAMU By Wildlife Should Be Prevented

Section 3.1 of the Scope of Work (Administrative Record Document No. 000009) has been revised to include access control measures to prevent the CAMU and the dredging site from becoming an attractive hazard for wildlife as well as humans.

6. Some Of The Trees That Exist At The CAMU Location Should Be Maintained As A Barrier

EPA understands the importance of aesthetic considerations in the construction of the CAMU. However, maintenance of a tree barrier between the CAMU and the perimeter road would hinder construction of the CAMU. If a tree barrier were maintained, construction of the CAMU and dredging of the river would be delayed. Another concern is the potential for the root systems of a tree barrier to compromise the integrity of the CAMU's cap and liner system. Damage to the cap or liner system would increase the potential for the unit to release hazardous constituents. It is unlikely that much of the CAMU will be visible to the residents on the other side of the tollway due to the elevation of the tollway. The Scope of Work has been modified to make clear that the final cover will be appropriately vegetated.

7. Other Remediation Wastes Should Not Be Placed In The CAMU As It Would Hinder Mass Treatment Of The Sediments In The Future

This comment is based upon the hope that a mass treatment technology will be developed in the future and applied to the sediments contained in the CAMU. U.S. EPA shares the commentor's desire for such treatment technology to be developed. The CAMU does not preclude the use of treatment technologies in the future. However, the decision to allow additional remediation waste to be placed in the CAMU must be based upon currently available information. At this time, only dredged material from the Grand Calumet River will be authorized for disposal in the CAMU. The RCRA Corrective Action Order would allow USX to propose using the CAMU for other remediation waste from corrective action activities at its facility subject to compatibility testing and Agency approval. Section 6.6 of the Scope of Work (Administrative Record Document No. 000009) discusses the use of the CAMU for remediation waste during the RCRA corrective action process. Any decision regarding the placement of additional remediation waste in the future will be made with due regard for treatment technologies available at the time.

8. PCB Contaminated Materials Should Be Treated

Treatment of the PCB contaminated sediments from the River is not feasible. Bioremediation, mentioned in two comments, has not been proven to be an effective treatment method for PCBs contained in sediments with high oil and water content as are expected to be dredged from the Grand Calumet River. Due to the threat posed by the uncontrolled sediments in the river and the

delays inherent in exploring experimental treatment technologies, U.S. EPA will not require USX to actively treat the PCB materials prior to disposal in the CAMU. After dredging, oils will be skimmed from the CAMU and sediments dewatered. The PCB-bearing oil will be disposed of by incineration in accordance with TSCA. U.S. EPA believes that PCB confinement in an isolated cell within the CAMU will protect human health and the environment. U.S. EPA is not aware of the unnamed portable technology referred to in the comment.

9. The Dredged Sediment Cannot Be Placed In The CAMU As The Grand Calumet River Is Not Part Of The Facility

One commentor states that a CAMU may be used only for disposing of "remediation waste" as part of implementing corrective action "at a facility." 40 C.F.R. 260.10. The commentor argues basically that the sediments from the Grand Calumet River would not be considered "remediation waste." The commentor acknowledges that the definition of "remediation waste" states that "[f]or a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA Sections 3004(v) or 3008(h) for releases beyond the facility boundary." 40 C.F.R 260.10. However, the commentor believes that the contaminated sediments cannot properly be subject to remediation under RCRA Section 3008(h). The commentor notes that Section 3008(h) authorizes corrective action for releases of hazardous waste. A "hazardous waste" is defined to be a "solid waste" which meets certain statutory criteria (Section 1004(5)). The term "solid waste" in turn, excludes industrial discharges which are point sources subject to permits under section 1342 of Title 33." (Section 1004(27)). The commentor seems to believe that the contamination of sediments within the Grand Calumet River is solely due to water discharges from the Gary Works subject to the Clean Water Act. The commentor argues that there is therefore no statutory authority to conduct a cleanup of the Grand Calumet River sediments, hence approval of the CAMU is inappropriate.

The commentor's argument is incorrect for both legal and factual reasons:

1. For the reasons discussed below, the contamination of Grand Calumet River sediments is a result of various releases from USX's facility, not all of which are related to industrial discharges subject to the Clean Water Act. First, however, as a legal matter, the commentor's argument is flawed. EPA recognizes that the statutory definition of "hazardous waste" does not include industrial discharges which are subject to a NPDES permit

because such discharges are exempt from the definition of "solid waste" (Section 1004(27). However, the Agency interprets its authority under RCRA Section 3008(h) to be at least equivalent to its authority under RCRA Section 3004(u). See Memorandum from J. Winston Porter, Assistant Administrator, Office of Solid Waste and Emergency Response, dated December 16, 1985, entitled "Interpretation of Section 3008(h) of the Solid Waste Disposal Act," p.8; 50 FR 28702, 28716, (July 15, 1985); 52 FR 45795 (December 1, 1987)("Section 3008(h) is substantially identical to Section 3004(u) in terms of the type and scope of cleanup actions which can be required of the facility owner/operators"). U.S. EPA's jurisdiction to compel corrective action under 3004(u) extends not only to releases of hazardous waste, but to "constituents from any solid waste management unit." RCRA 3004(u); S.D. Warren, RCRA Appeal No. 89-35 (November 29, 1991). Because, in this case, the outfalls in question would be considered solid waste management units (55 FR 30,809) and the dredged sediments contain hazardous constituents released from those outfalls, the dredged sediments are therefore addressable under RCRA 3008(h).

2. The commentor has also assumed an incorrect factual scenario. Contrary to the commentor's assumption, there is ample evidence that the contamination of Grand Calumet River sediments was the result not only of permitted discharges, but a number of other releases. This would indicate clearly that the sediments are contaminated as a result of a release from the facility which is not subject to limitation relating to industrial discharges discussed above. These include:

a) RCRA groundwater monitoring reports and groundwater study conducted pursuant to an administrative order with the Indiana Department of Environmental Management (IDEM) show that the groundwater beneath the facility is contaminated. It also shows that groundwater on the eastern portion of the facility, flows to the Grand Calumet River. Thus, contamination of sediments in the Grand Calumet River can be traced to releases from groundwater as well as from industrial discharges.

b) The Preliminary Review/Visual Site Inspection (PR/VSI) Report, dated June 30, 1987, prepared by A.T. Kearney, Inc. cites other releases to surface water and sediments that have occurred from the following sources:

- Storm water runoff and sewer outfalls from the coke plant
- Contaminated groundwater discharges from sources near the River
- Landfills along the headwaters lagoons of the River

- Discharges from the coal handling area

10. The Dredged Sediment May Not Be Placed In The CAMU As Some Of The Sediments May Not Be Hazardous Wastes

Corrective Action under Section 3008(h) of RCRA is not limited to addressing releases of wastes which meet the regulatory definition of "hazardous waste." U.S. EPA has interpreted the term "hazardous waste" in Section 3008(h) to refer to the broad statutory definition of that term, rather than the narrower regulatory definition of hazardous waste. As the Agency stated in a guidance document, dated December 16, 1985 entitled "Interpretation of Section 3008(h) of the Solid Waste Disposal Act":

> In contrast to many Subtitle C provisions, the language of Section 3008(h) refers to "hazardous waste rather than "hazardous waste identified or listed under Subtitle C". The Agency believes that the omission ...was deliberate, and Congress did not intend to limit Section 3008(h) only to materials meeting the regulatory definition of hazardous waste.... Therefore, Section 3008(h) may also be used to compel response measures for releases of hazardous constituents from hazardous or solid waste."

Accordingly, the U.S. EPA may impose corrective action requirements to address releases of any hazardous constituents at or from a facility pursuant to its authority under Section 3008(h).

11. The CAMU May Not Be Designated Without A Pre-Existing RCRA Corrective Action Order

U.S. EPA agrees that a CAMU may be designated only for the purpose of implementing remedies under Section 3008(h) (or under Section 3004(u) and (v) in the case of corrective action imposed by a permit). U.S. EPA also agrees that only waste which is generated from corrective action activities under RCRA may be disposed of within the CAMU. The commentor's point seems directed at the timing of the designation of a CAMU. There is no limitation in the regulations regarding when the CAMU may be designated. In any event, the Section 3008(h) Corrective Action Order between U.S. EPA and USX became effective on October 23, 1998.

The commentor also expressed concern that the CAMU may receive additional corrective action waste at some point in the future.

The cleanup of the Grand Calumet River will be only one part of a comprehensive corrective action program at the USX facility. Under the proposed corrective action order, the remainder of the site will be investigated and appropriate corrective measures will be selected by EPA after public comment. It is possible that future corrective action waste may be disposed of in the CAMU. Any such decision in the future is subject to EPA approval. Before any such decision is made, any additional remediation waste will be characterized and must be determined to be compatible.

12. There Is Insufficient Information From Which To Determine Comparative Risks To human Health And The Environment

The river sediments have been characterized and the results presented in the Sediment Characterization Study (Administrative Record Document Nos. 000002 and 000003). Exposure to the hazardous constituents may pose a threat to human health and the environment. The threats posed by the hazardous constituents found in the sediments are well known. Based upon the extensive characterization of the sediments which has been done, EPA has determined that the contaminated sediments pose a threat to human health and the environment. There is no requirement to do a formal risk assessment or comparative risk assessment under these circumstances. Instead, EPA has determined that the CAMU will be protective of human health and the environment and meets the necessary criteria for designation. Other sites on USX's facility were considered for the disposal of corrective action waste, but determined to lack sufficient capacity for disposal of contaminated sediments.

13. The Designation Of A CAMU Is Not Appropriate In The Absence Of Any Data On The Proposed CAMU's Potential Air Emissions And Odors

EPA agrees that operation of the CAMU must occur in a way which ensures protects human health and the environment from unacceptable risks from air emissions. Similarly, while not a health threat, U.S. EPA also believes that the CAMU should be operated so as to minimize odors. U.S. EPA has reviewed data from other sites involving contaminated sediments and has determined that such operations can be conducted in a way which protects human health and the environment.

In order to ensure that operation of the CAMU is both protective and minimizes odors, U.S. EPA has provided in the SOW Section 3.4 that USX investigate and evaluate potential air emissions and submit for EPA approval a report. Based upon this information,

USX will submit for EPA approval a comprehensive air monitoring and operations plan. This plan will be designed to address any concerns regarding air emissions and odors. The air emissions studies are discussed in Sections 2.4, 2.41, 2.4.2 of the Scope of Work (Administrative Record Document No. 000009).

The key elements of the plan, which is subject to U.S. EPA approval, include the following:

- Description of ambient air monitoring program, including, but not limited to provisions, at a minimum, for air monitoring sufficient to ensure that there is no threat to the human health or the environment from potential releases. The locations of air monitoring devices shall be based upon dispersion modeling.

- Operating procedures to minimize, to the maximum extent practicable, air emissions from dredging activities and CAMU operations.

- Provisions to minimize odors from dredging activities and the CAMU to the maximum extent practicable.

- Proposed action levels, the exceedence of which will trigger the activities described in the Air Contingency Plan. Such action levels shall be established so as to protect human health or the environment and allow for an adequate margin of safety.

- A contingency plan which shall be triggered upon exceedence of any action level in the approved Air Monitoring and Operations Plan. The Contingency plan shall include a detailed procedure for responding to any exceedence.

14. Groundwater Fluctuations At The Site May Compromise The Integrity Of The CAMU

U.S. EPA does not consider groundwater fluctuations to be a concern, as an underdrain system capable of collecting groundwater and thereby lowering the water table is part of the preliminary designs for the CAMU. U.S. EPA will require USX to consider groundwater fluctuation in the design of the underdrain system. The operation of the underdrain system is discussed in Section 3.3 of the Scope of Work (Administrative Record Document No. 000009).

15. The CAMU May Not Meet Three Of The Necessary Criteria

a. A commentor questioned whether the proposed CAMU facilitates a "reliable, effective, protective and cost effective remedy" as required by 40 CFR 264.552(c)(1). While other remedies were explored, there is no requirement to solicit public comment on every option that has been evaluated.

The proposed CAMU does in fact meet the criteria in the regulations regarding reliability, effectiveness, protectiveness and cost effectiveness. The CAMU will be designed to meet the requirements for hazardous waste disposal facilities as set forth in 40 CFR Subpart N. These design requirements have been used at new hazardous waste disposal facilities for several years. The reliability, effectiveness, and protectiveness of such requirements has been demonstrated. Air and groundwater monitoring will be conducted during the operation and maintenance periods for the CAMU. The CAMU also provides for on-site disposal which is more cost effective in this case than off-site disposal. Off-site disposal was determined to be prohibitively expensive. Off-site disposal for the of PCB contaminated sediments would add between $68,000,000 to $287,000,000 to the cost of the project. It is important to note that the PCB contaminated sediments are a small component (125,000 cubic yards) of the total volume (687,000 cubic yards) of sediment to be dredged. This criteria is discussed on page 16 of the Statement of Basis (Administrative Record Document No. 000010) and is included in the Scope of Work.

b. A commentor questioned whether the proposed CAMU is protective of human health and the environment as required by 40 CFR 264.552(c)(2). As stated above, the CAMU will be designed to be protective and monitoring will be required to ensure the protectiveness is maintained. This criterion is discussed on page 17 of the Statement of Basis (Administrative Record Document No. 000010). This comment suggests that protectiveness requires that a risk assessment be conducted. As mentioned above, there is no requirement that a risk assessment be conducted before a CAMU may be designated. Instead, EPA has based its determination on the proven capabilities of the design of the CAMU and the development of the operating plans which require EPA approval. The design and operations of the proposed CAMU are fully set forth in the Scope of Work which is part of the administrative record.

c. A commentor questioned whether the proposed CAMU limits the inclusion of uncontaminated areas of the facility as part of the CAMU as required by 40 CFR 264.552(c)(3). The location of the proposed CAMU is an area where dredge spoils were previously

disposed of. There is no reason to believe that materials dredged from the river in the 1960s and earlier were less contaminated than the sludges that are now in the river. To the contrary, as environmental regulation of discharges into the river were implemented the concentrations of hazardous constituents discharged into the river has greatly decreased. While there is no requirement for analytical samples to prove that this is the case, such samples will be collected when this area is characterized. This criteria is discussed on pages 17 and 18 of the Statement of Basis (Administrative Record Document No. 000010). The historical use of the land was also documented by USX in the Historic Use of the Corrective Action Management Unit Site (Administrative Record Document No. 000008).

16. Additional Opportunity to Comment on TSCA Alternative Disposal Method Approval

A commentor stated that they assumed that they would have additional opportunity to comment on the TSCA Alternative Disposal Method approval. However, since June 1996, U.S. EPA has solicited public comments on the approval of an Alternative Disposal Method for PCB-contaminated waste. Since that time, a representative of the TSCA program has discussed the proposed alternative disposal method and has been available for questions at public meetings. An additional formal public comment period was held from August 17, 1998, to September 21, 1998. Thus, U.S. EPA believes that there has been sufficient opportunity for public comment on this matter and that no additional time is required.

17. Corrective Actions Should Be Conducted For Releases From the CAMU

U.S. EPA agrees with this comment. Although the potential for releases from the CAMU is minimized through several design features, USX will be required to undertake corrective actions for any releases of hazardous wastes or hazardous constituents that threaten human health or the environment.

18. The Sediment Remediation Program For The Grand Calumet River Should Include The Lagoons That Form The Headwaters Of The River

Releases of hazardous constituents from USX that have contaminated the lagoons will be addressed as part of the facility-wide corrective action program conducted pursuant to the RCRA Corrective Action Order. Under the Order, the Facility has been divided into Solid Waste Management Areas. The risk that each area poses to human health and the environment will be

determined, and the corrective action program will address first those areas that pose the most risk. While this ranking process is not completed, U.S. EPA anticipates that the area in which the lagoons are located will be a priority of the corrective action program.

If U.S. EPA determines that sediments in the lagoons must be removed to be protective of human health and the environment, USX may propose to utilize the additional capacity of the CAMU to dispose the sediments as part of the remedy selection for the facility or through implementation of an interim measure. If clean up the lagoons occurs after remediation of the River, U.S. EPA may require that USX take additional measures to avoid migration of contaminants from the lagoons to the river, if necessary. Disposal of the remediation waste in the CAMU could only occur if approval is granted by U.S. EPA. Public comment will be received prior to disposal of remediation wastes into the CAMU in accordance with the RCRA Corrective Action Order, with respect to the selection of corrective measures, or as otherwise provided by U.S. EPA, with respect to an interim stabilization measure.

Administrative Record

The Administrative Record upon which the final remedy was selected is available at the Gary Public Library, Indiana University Library, and the Waste, Pesticides and Toxics Division Records Center of the U.S. EPA, Region 5 offices.

Declarations

U.S. EPA has documented the rationale for designating part of the USX - Gary Works facility as a CAMU and has made such documentation available to the public. Based upon the foregoing, U.S. EPA has determined that the designation of part of the USX - Gary Works facility as described more fully herein as a CAMU is appropriate and is protective of human health and the environment.

David A. Ullrich — February 17, 1999

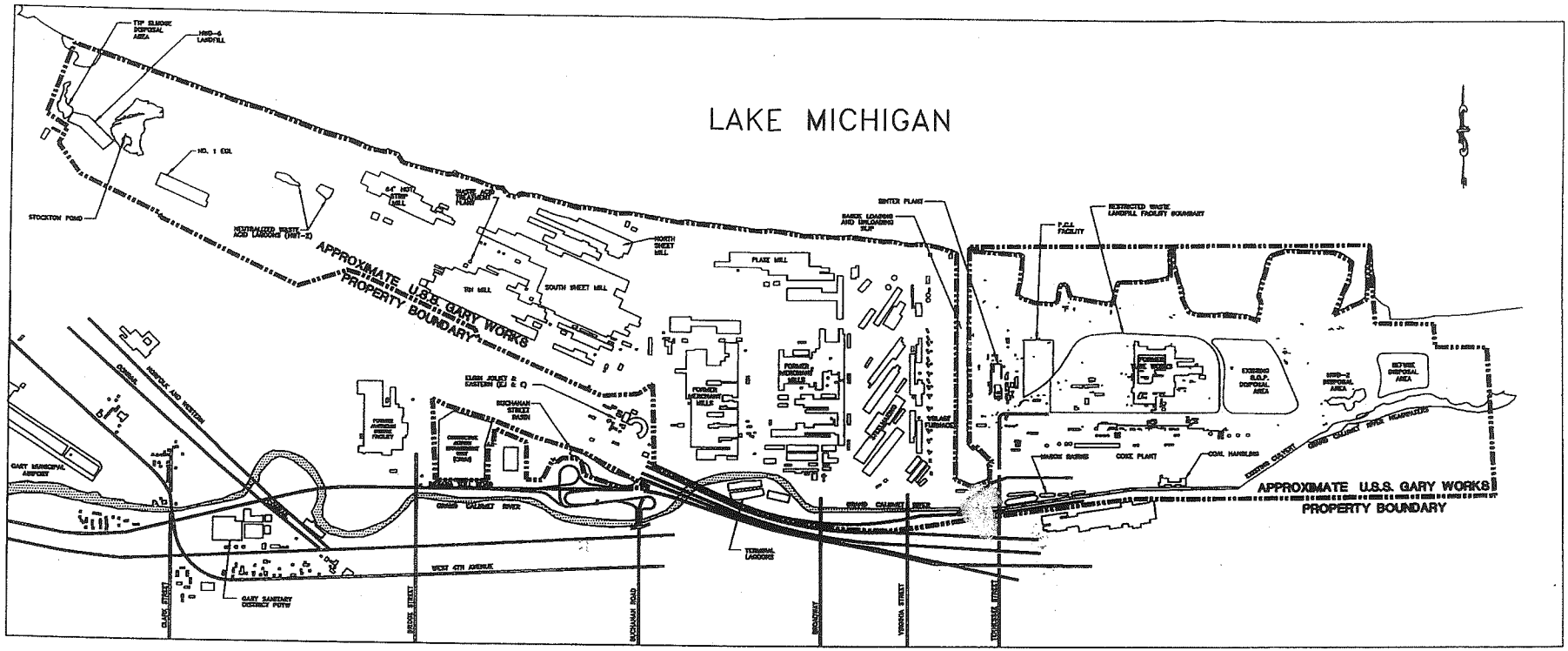
DAVID A. ULLRICH
ACTING REGIONAL ADMINISTRATOR
U.S. EPA, REGION 5

DATE

Attachments

IN THE MATTER OF:

USX Corporation
Gary, Indiana
U.S. EPA I.D. # IND 005 444 062



FACILITY BOUNDARY

CAD FILE: 21397L18

MARK	REV'D	DESCRIPTION	MATERIAL	REMARKS

REV	DESCRIPTION	BASE	BY	CHK'D	JOB NO.
7					
6					
5					
4					
3					
2					
1					

Baker
Baker Environmental, Inc.

United States Steel Corporation
Gary Works

PREPARED BY	BASE	CHECKED BY	BASE	SCALE
DAS	10/99	JSH	10-15-99	1" = 2500'

PROJECT NO. 21397 DWG. NO. EXHIBIT A

ATTACHMENT II

STATEMENT OF BASIS

DESIGNATION
OF
CORRECTIVE ACTION MANAGEMENT UNIT

PURSUANT TO 40 CFR 264.552

U.S. STEEL GARY WORKS

IND 005 444 062

TABLE OF CONTENTS

ABBREVIATIONS

CAMU - Corrective Action Management Unit

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CFR - Code of Federal Regulations

CWA - Clean Water Act

FR - Federal Register

GCR - Grand Calumet River

IDEM - Indiana Department of Environmental Management

IDNR - Indiana Department of Natural Resources

LDR - Land Disposal Restrictions

MTR - Minimum Technology Requirements

NPDES - National Pollutant Discharge Elimination System

PCB - Polychlorinated Biphenyls

QAPP - Quality Assurance Project Plan

RCRA - Resource Conservation and Recovery Act

SB - Statement of Basis

TSCA - Toxic Substances Control Act

WWTP - Wastewater Treatment Plant

U.S. EPA - United States Environmental Protection Agency

USX - USX Corporation

INTRODUCTION

This Statement of Basis (SB) documents the rationale of the United States Environmental Protection Agency (U.S. EPA), Region 5 for designating a Corrective Action Management Unit (CAMU) at the USX Corporation (USX) Gary Works facility. A CAMU is an area within a facility designated by the Regional Administrator under Title 40 of the Code of Federal Regulations (CFR) Part 264, Subpart S. A CAMU may only be used for implementing corrective action requirements under 40 CFR 264.101 and Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6928(h). The CAMU discussed in this SB is a unit designed for the disposal of remediation wastes generated from the implementation of a proposed RCRA Corrective Action Order including sediments removed from the Grand Calumet River (GCR). This SB also discusses the Sediment Remediation Program for part of the GCR and applicable U.S. EPA regulations as they relate to the CAMU.

USX, acting through U.S. Steel group, has agreed to enter into an Administrative Order on Consent pursuant to Section 3008(h) of RCRA (the "proposed RCRA Corrective Action Order") with U.S. EPA with respect to USX's Gary Works facility. The proposed RCRA Corrective Action Order will require USX (1) to conduct a RCRA Facility Investigation to determine the nature and extent of releases of hazardous waste and hazardous constituents at or from the entire Gary Works facility; (2) to perform a Corrective Measures Study to study the appropriate corrective measures in response to any contamination that is found; and, (3) after public review and comment, to implement the Corrective Measure(s) which are selected by U.S. EPA.

The proposed RCRA Corrective Action Order provides a procedure by which USX may conduct Interim Stabilization Measures approved by U.S. EPA. Interim Stabilization Measures are activities necessary to abate an imminent or potential threat taken in advance of the final Corrective Measure(s). U.S. EPA and USX have agreed that contaminated sediments in the GCR present an environmental threat that requires immediate action. A Sediment Remediation Program has been negotiated for the section of the GCR that stretches from the headwaters' culvert near the eastern property boundary of the Gary Works facility to a point approximately 500 feet upstream from the Gary Sanitary District Outfall. [1] If the proposed RCRA Corrective Action Order is entered into by U.S. EPA and USX, the Sediment Remediation Program, as set forth in the detailed Scope of Work (Administrative Record Document No. USX-001), will become an enforceable obligation under the terms of the RCRA Corrective Action Order.

The Sediment Remediation Program involves dredging of the GCR and disposal of dredged sediment in the CAMU. The proposed location for the CAMU is in the southwestern portion of USX's property between the former American Bridge facility and the American Juice Company facility (see Figure 2). Previous investigation has shown that part of the dredged sediment is likely to exhibit high levels of

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[1]U.S. EPA also intends to modify the current consent decree entered into in an action entitled United States vs. USX Corporation, Civil Action No. H88-558 (N.D. Ind). The existing consent decree that was entered into under the provisions of the Clean Water Act in 1990 and provides for limited remediation of the Grand Calumet River. Because the proposed sediment remediation program is greatly expanded, a modification of the existing decree is required.

benzene. Such sediments, which would ordinarily require disposal in a permitted hazardous waste disposal facility may be placed in a CAMU if designated by the Regional Administrator.

FACILITY BACKGROUND

The USX Gary Works facility is one of the world's largest steel-making plants. The facility is found at One North Broadway in the north end of the city of Gary, Indiana in Lake County (see Figure 1). This location is approximately 25 miles southeast of downtown Chicago. The facility extends for approximately 7 miles along Lake Michigan and ranges up to 1 mile or more in width.

The Gary Works facility is a fully integrated steel-making operation. Construction of the plant was begun in 1906, and steel production commenced in 1909. Currently, the Gary Works facility has 57 production units situated on nearly 4,000 acres of land, and employs more than 7,000 people.

In 1990, USX entered into a consent decree with the United States concerning wastewater discharges from the Gary Works facility. The consent decree required USX to spend up to $2.5 million to characterize sediments in the GCR, and to spend up to $5 million remediating any contaminated sediments that might be identified.

The characterization study was submitted to the U.S. EPA in January 1993. Upon review of the study, U.S. EPA determined that the GCR would require a Sediment Remediation Program beyond the program envisioned in the 1990 consent decree. U.S. EPA and USX agreed to negotiate a RCRA Corrective Action Order that would subject the entire Gary Works facility and part of the Grand Calumet River to a comprehensive RCRA corrective action program.

Sediment Characterization Study Summary

USX completed a sediment characterization of 13 miles of the GCR and the Indiana Harbor Canal, in January 1993. A report on the study was issued on January 22, 1993, and is entitled Sediment Characterization Study, U.S. Steel, Gary, Indiana, by Floyd Browne Associates, Inc. The report is in two volumes, with Volume Ia containing Text and Tables, and Volume Ib, Figures. The purpose of the study was to identify the nature and extent of pollution in the GCR's East Branch and part of the West Branch, and in the Indiana Harbor Canal as far north as Columbus Drive. The results of the study were intended to aid USX in developing a sediment remediation plan for the upper 5 miles of the East Branch. A quality assurance project plan (QAPP) was developed by Floyd Browne, and approved by U.S. EPA before conducting the work.

In all, core samples were obtained and analyzed for 59 locations within the river system, using vibracore techniques. The number and spacing of cores were based on river width at each profile, and the number of analyses was based on the depth of sediments at each location, both consistent with the approved QAPP. A draft of the study was reviewed in 1992 by U.S. EPA before its finalization in January 1993. Any data that did not meet the data quality objectives as stated in the approved QAPP was excluded from the final report. A press release regarding availability of the final Sediment Characterization Study was issued in 1993, indicating that the report had been completed and was available for public review. A copy of the report was made available for public scrutiny at U.S. EPA,

Region 5 offices, Indiana Department of Environmental Management (IDEM) offices in Gary, Indiana, and the Gary Public Library. Copies of one or both volumes of the report were made available to various corporations and public interest groups under the Freedom of Information Act following the press release.

Estimates of the volumes of sediment in each reach of the river were also made as part of the study, based on field observations of sediment thickness profiles at each cross section. Sediment thickness ranged from less than 2.5 feet to a maximum of 19.2 feet, with an average thickness of 10.1 feet. The total volume of polluted sediment in the 5-mile project area of the East Branch was estimated at approximately 415,000 cubic yards, plus or minus 19%. The current project estimate (687,000 cubic yards) is based on a more detailed survey done subsequently by USX, and includes sloughage from the sides of the channel, and an allowance for overdredging, to ensure all polluted sediment is removed.

The results of the analyses for the various constituents are included in tables in Volume Ia of the subject report. The river sediments contain high levels of metals within the project area, particularly for copper, iron, chromium, lead and zinc. Oil and grease was very high throughout the study area, but particularly in the project area. Benzene, toluene, ethyl benzene and xylenes were high in the project between profiles 2 and 11, and at or below detection throughout the remainder of the river. Polyaromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) were also high between profiles 2 and 11, with an elevated PCB level at transect 17. Four samples, all between profiles 2 and 11, were above regulatory levels for benzene, and upon removal would be characteristic hazardous waste under RCRA.

Sediment Remediation Program Summary

The proposed Sediment Remediation Program requires the removal of all non-native sediments throughout the 5-mile stretch of river. The key aspects of this program are as follows:

- The proposed Sediment Remediation Program will encompass a 5-mile stretch of the GCR from the headwaters' culvert to a point 500 feet upstream of the Gary Sanitary District outfall. All non-native sediment will be removed from the river channel, with allowances for incidental sloughing from "soft-side" areas and overdredging. The estimated total quantity of sediment to be dredged from Transects 1 through 36 is approximately 687,000 cubic yards (cu.yds.), of which 125,000 cu. yds. are contaminated with PCBs.

- The CAMU will be designed to contain the dredged sediments and prevent future releases of hazardous constituents from the unit.

- Sediment removed from Transects 1 through 11 will be dredged from within river isolation cells formed by the installation of upstream and downstream bulkheads. The dredged sediment slurry will be delivered via a pipeline to the CAMU for disposal in an isolated cell. Flow from upstream of the river isolation cell will be impounded or diverted around the cell being dredged.

- Upon completion of dredging in Transects 1 through 11, Transects 12 through 36 will be hydraulically dredged during open-channel flow conditions except Transect 17, Horizon 1. Transect 17, Horizon 1 will be dredged along with Transects 1 through 11 because the presence of PCBs in this transect will require special handling and disposal in an isolated cell within the CAMU. A slurry pipeline (with booster stations added as necessary) will be used to transport the sediment slurry directly from the hydraulic dredge to the CAMU.

- Debris booms will be used to collect floating materials during dredging. In addition, oil booms, pumps, or skimmers will be used during dredging, as necessary, to collect oils and greases. The recovered oils will be tested to determine the appropriate recycling or disposal options.

- Water from transects 1 through 11, and transect 17, horizon 1, will be processed through a project-specific wastewater treatment plant, monitored, and then conveyed to the Terminal Lagoons for additional treatment before discharge to the GCR. Dredge waters from transects 12 through 36 will be treated, monitored, and then conveyed to the Terminal Lagoons for additional treatment before discharge to the GCR. USX will apply for a modification to its existing NPDES permit to accommodate this discharge. A summary of proposed treatment for the various waters generated under the project is shown in Table 1. This is subject to change as determined by IDEM as part of the NPDES permit process.

TABLE 1

Source	Proposed Treatment	Discharge
First pass dredge waters from T 1-11, and T 17, H 1	Recirculated via a closed loop with provision for oil and grease removal	Return to active isolation cell within the GCR
Second (cleanup) pass dredge waters from T 1-11	Recirculated via a closed loop with provisions for oil and grease and TSS removal	Return to an active isolation cell within the GCR
Dredge waters from T 12-36	Oil and grease and TSS removal via clarifier	Terminal lagoons, Outfall 030/028
GCR isolation cell water, T 1-11	Project-specific WWTP	Terminal lagoons, Outfall 030/028
CAMU - Groundwater underdrain system	None	Terminal lagoons, Outfall 030/028
CAMU - leachate collection system	Project-specific treatment plant	Terminal lagoons, Outfall 030/028
CAMU - supernatant from T 1-11 and T 17, H 1	Project-specific treatment plant	Terminal lagoons, Outfall 030/028
CAMU - supernatant from T 12-36	Oil and grease and TSS removal	Terminal lagoons, Outfall 030/028
CAMU - post dredge storm water	Project-specific treatment plant	Terminal lagoons, Outfall 030/028
CAMU - post dredge non-contact storm water	None	Terminal lagoons, Outfall 030/028

Key to Table: T = Transect H = Horizon
GCR = Grand Calumet River
TSS = total suspended solids
WWTP = wastewater treatment plant
CAMU = Corrective Action Management Unit

- Performance of these activities will require approximately five years from the effective date of the RCRA Corrective Action Order. Two years are required for performance of engineering studies, design activities, and preparation of permit applications. Three additional years are required to implement the remediation, with approximately one year devoted to construction of facilities and two years allotted for sediment removal and disposal in the CAMU. Since part of the work is seasonal, some adjustments in this schedule may be necessary.

Future Studies and Submittals

The RCRA Corrective Action Order will require USX to obtain several permits. It will also require USX to conduct studies and submit design documents and plans for approval by U.S. EPA. The Scope of Work for the Sediment Remediation Program contained in the Administrative Record provides a complete list of the permits and plans and investigations that must be completed and approved by U.S. EPA. A summary of these is as follows:

Permits and Approvals

- Rivers and Harbors Act Section 10 Dredge Permit from the U.S. Army Corps of Engineers.
- Indiana Department of Natural Resources (IDNR) Permit to Construct in Floodway
- NPDES Permit Modification Application from IDEM
- NPDES Permit Variance (if required) from IDEM
- Construction Permit for Project Specific Treatment Plant from IDEM
- Approval from the IDEM Commissioner for an Alternate Disposal Method under the PCB Waste Management Rules 329 IAC 4-1-5(7) as authorized by IC 13-7-16.5.
- Approval from the U.S. EPA Regional Administrator for Alternate Disposal Method under the Toxic Substances Control Act(TSCA), 40 CFR 760.60(a)(5)(iii).

Treatability/Technical Studies and Investigations

- Topographical mapping of the GCR and surrounding area to support design activities.

- Identification of critical river structures or facilities such as outfalls, utilities, and foundations.

- Develop specifications detailing relocation, temporary diversion, or replacement of critical river structures.

- Hydrologic and hydraulic analysis of channel flow parameters.

- Survey and estimate the quantity of debris in the river channel to be collected, processed, and disposed of or recycled.

- Evaluate air emissions and controls necessary for dredging activities.

- Select decontamination sites and develop protocols.

- Evaluate earthwork requirements and structural needs for dredging structures.

CAMU Predesign Studies and Testing

- Characterization of the hydrogeologic conditions adjacent to the CAMU to develop the groundwater monitoring plan.

- Geotechnical investigations of subsurface conditions for construction of the CAMU.

- Testing of soil in place to locate possible sources of borrow.

- Engineering study of offsite borrow and soil properties if there is a shortfall of suitable onsite material.

- Evaluate secondary dewatering alternatives (e.g., subdrain system design, spacing of wick drains).

- Conduct rate and consolidation testing of sediments and evaluate need for polymer bulking agents.

- Evaluate air emissions from operation of the CAMU and prepare a plan to minimize the same.

Engineering and Design Plans

- CAMU Design for Construction and Operation

- Project Specific Water Treatment Plant Design

- Design of Dredge, Piping Systems and Ancillary Equipment
- Design of River Isolation Cells and Diversion/Bypass Systems

Work Plans and Other Plans

- Health and Safety/Air Quality Monitoring Plans
- CAMU Operation and Maintenance Plan
- CAMU Groundwater Monitoring Plan
- CAMU Closure and Post-Closure Plan
- Spill Prevention Control and Countermeasures Plan
- Post-Remediation Monitoring Plan
- Wetlands Mitigation Plan

CAMU DESIGNATION REQUIREMENTS

An overview of Regulatory Provisions

Regulations that govern the approval of a CAMU became effective on April 19, 1993 and are set forth at 40 CFR § 264.552 (the "CAMU Rule"). The CAMU Rule allows the Regional Administrator to designate a CAMU for the disposal of remediation waste where the criteria for CAMUs are met. Because the State of Indiana has not yet been authorized for the Corrective Action program under RCRA, these rules are currently effective within the State.

As the U.S. EPA discusses in the preamble to the CAMU rules, the purpose of a CAMU is to manage remediation wastes generated from implementation of RCRA corrective measures at a facility implementing RCRA Corrective Action. The CAMU rule is intended to balance the need to remediate sites as expeditiously as possible with the need to ensure that remediation waste is appropriately disposed of and managed. In a RCRA Corrective Action Order, U.S. EPA retains enforceable controls over the management of this waste to ensure that human health and the environment are adequately protected.

Where U.S. EPA can ensure that remediation waste is appropriately managed, the regulations exempt remediation waste from certain regulations that might otherwise apply outside the remediation context. In particular, 40 CFR 264.552(a) specifies that:

(1) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes subject to the Land Disposal Restrictions (LDRs).

(2) Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements (MTRs).

The LDRs prohibit the land disposal of certain hazardous wastes unless these wastes are treated to meet specific concentration levels or by specific treatment methods, both of which are called "treatment standards." Such treatment diminishes the toxicity of wastes or reduces the likelihood that hazardous constituents from the wastes will migrate from the disposal site.

The sediments removed from the GCR will be dewatered after placement in the CAMU. Some of the more mobile constituents in the sediments may become suspended or dissolved in the wastewater in the CAMU during the placement process. Such constituents will be treated as the wastewater from the CAMU is sent to the wastewater treatment plant. To ensure that the disposal of the GCR sediments is protective of human health and the environment, the CAMU will be designed to meet the minimum technology requirements (MTRs). The MTRs include double-liners and a leachate collection system at the base of the disposal unit.

A more specific description of the Sediment Remediation Plan, including provisions for the design, construction and operation of the CAMU is set forth in the Statement of Work for the GCR Sediment Remediation Plan submitted to the U.S. EPA. The proposed Statement of Work is included in the Administrative Record.

Requirements of CAMU Rule

The CAMU Rule requires at 40 CFR 264.552(e) that the Regional Administrator specify in the permit or, as here, the RCRA Corrective Action Order, the following:

- The areal configuration of the CAMU.
- The requirements for management of remediation waste.
- Provisions for ground water monitoring that are sufficient to meet specified requirements set forth in the CAMU Rule.
- Provisions for closure and post-closure that are sufficient to meet specified requirements set forth in the CAMU Rule.

The RCRA Corrective Action Order for the Gary Works facility includes provisions relating to each of these requirements. These are summarized below:

Configuration of the CAMU

Dredged sediment will be disposed of at the Gary Works facility in the CAMU designed in accordance with RCRA Subtitle C (hazardous waste) landfill requirements. This CAMU site (Figure 2) was selected for two primary reasons: 1) its physical proximity near the GCR minimizes sediment transport distances and 2) historical records indicate that this location was formerly used as a disposal area for dredged river sediment. The historical use of the property is set forth in the Administrative Record.

The CAMU is approximately 40 acres in size.

Remediation Waste Management

The proposed RCRA Corrective Action Order requires that the CAMU meet the standards of a hazardous waste landfill as set forth in 40 CFR 264, Subpart N. The CAMU Rule, itself, does not require construction to such stringent standards. U.S. EPA has determined that the CAMU can be designed and constructed to provide adequate protection. Detailed design documents will be submitted to U.S. EPA for review. Construction will not begin before U.S. EPA approvals of the design documents.

The Scope of Work, which will direct the basic approach to CAMU design, specifies that the CAMU will be constructed by using engineered containment berms that incorporate material acquired from a 8- to 10-foot deep excavation at the site. An interior berm will bisect the structure to form an isolated cell within the CAMU for PCB-contaminated sediment from Transects 1 through 11 and Transect 17, Horizon 1. The perimeter berm will be sized to contain a 23-foot thick saturated sediment column, 4 feet of ponded water, and 2 feet of freeboard. Based on the preliminary design, the berm height will be 22 feet above grade with an 8-to 10-foot deep excavation. The berm will generally be 12 to 15 feet wide at the crest with 3:1 exterior side slopes and 2:1 interior slopes. The final elevation and slope of material placed in the CAMU will be established during design. A fence with posted warning signs will be constructed around the CAMU. A restrictive covenant and deed restrictions will be executed with the Lake County Recorder, Lake County, Indiana.

In addition, a permanent underdrain system consisting of horizontal perforated drainage piping will be installed in trenches beneath the perimeter berms and liner system. The underdrain collection header will be connected to a discharge line routed to the Terminal Lagoons that are located on the Gary Works facility. This underdrain system will be used during construction and CAMU operation for lowering the water table. Lowering the water table elevation during construction and initial placement of sediment in the CAMU is a precautionary measure to minimize potential buoyancy forces acting on the liner and leachate collection system. USX may be allowed to terminate pumpage from the underdrain system after the CAMU is operational. Prior to termination, USX must demonstrate to the satisfaction of the U.S. EPA through engineering analysis that the integrity of the liner and leachate collection system will be maintained without groundwater collection.

The CAMU liner configuration will be required to meet the minimum technology requirements for a RCRA Subtitle C landfill. It consists of the following components in ascending order:

- A geosynthetic clay liner (bentonite mat);
- A 60-mil, high-density polyethylene (HDPE); geomembrane or equivalent;
- A geosynthetic secondary drainage layer (i.e., Geonet™ or equivalent);
- A 60-mil HDPE geomembrane or equivalent;

- A geosynthetic primary drainage layer (i.e., Geonet™ or equivalent);
- A geotextile filter.

The CAMU will be designed with separate leachate collection systems for the two distinct sediment disposal cells within the CAMU. A system of equidistantly spaced perforated collection pipes will be incorporated into the primary and secondary drainage layers. These collection pipes route to sideslope risers that connect to a perimeter collection header in the crest of the exterior berm. The collection header for the cell containing sediments from Transects 1 through 11 will convey water to a wet well. From the wet well, water can be piped back to the active dredging operations at Transects 1 through 11 as needed, or to a project-specific wastewater treatment plant. Water from the leachate collection header for the cell containing sediments from Transects 12 through 36 will also be conveyed to the project-specific wastewater treatment plant.

Treatability testing will be performed to support the equipment selection and final design. In general, the treatment system will consist of the following operable units: grit chamber and surge tank; flocculation; clarification; carbon adsorption.

Initially, the treatment plant will be sized to handle 600 to 800 gallons per minute. After completion of the dredging and initial CAMU dewatering, the treatment plant will be downsized and reconfigured for treatment of the CAMU leachate.

A secondary water treatment system designed to handle wastewaters in contact with sediment from Transects 12 through 36 (except the CAMU cell leachate) will be located adjacent to the CAMU. It will consist of a clarifying unit to remove suspended solids and will have oil and grease removal capabilities.

Following treatment, the effluent from both wastewater treatment systems will be analyzed for certain constituents. Effluent from both systems will then be conveyed separately to the Terminal Lagoons for discharge to the GCR through NPDES permitted Outfall 030 and/or Outfall 028. Effluent levels of certain constituents will be established through a modification (after public notice) of the existing NPDES permit issued by the State of Indiana.

The dredged sediment will be conveyed by slurry pipeline and discharged to the CAMU via a submerged outlet with a diffuser. The outlet will be on a platform that can be repositioned as necessary. About 4 feet of water will be maintained in the active disposal cell. This "water seal" will enable floating oils and grease to be skimmed, control air emissions, and facilitate solids settling. At the completion of filling the disposal cell with sediment, the water seal from the cell containing sediment from Transects 1 through 11 will be decanted and drained and sent to the project-specific wastewater treatment plant. The water seal from the cell containing sediments from Transects 12 through 36 will be decanted and sent to the secondary water treatment system.

After placement of all the sediment within the CAMU, the pore water will be allowed to gravity drain from the sediment column. Vertical wick drains may be installed in the CAMU at this point to

accelerate dewatering and associated consolidation of the solids. The wastewater from this dewatering process will be collected and treated in the project-specific wastewater treatment plant.

Upon completion of the dewatering, USX will install a temporary vegetative cover over the CAMU. The temporary vegetative cover will control fugitive dust emissions, minimize erosion, and aid sediment dewatering through transpiration.

The CAMU is designed to contain more than twice the estimated volume of GCR sediment. The excess capacity may be available during the term of the RCRA Corrective Action Order if interim measures or corrective measures require the disposal of additional remediation wastes. This would happen only if U.S. EPA approved of such disposal as part of an Interim Stabilization Measure or a Corrective Measure under the RCRA Corrective Action Order. Any such determination would only be made if the physical and chemical composition of the wastes is compatible with the disposed sediment, the CAMU liner, the leachate collection systems, and the wastewater treatment systems. By existing law, only remediation waste generated as part of implementing the RCRA Corrective Action Order may be disposed in the CAMU.

Groundwater Monitoring

During the design phase, as required by the RCRA Corrective Action Order, USX will prepare a groundwater monitoring plan that complies with the groundwater monitoring requirements for regulated units, specified in 40 CFR 264, Subpart F and 329 IAC 2-16. At a minimum, the monitoring plan will establish the analytical protocols, frequency of sampling, data evaluation procedures, reporting format, and performance measures. The groundwater monitoring plan will be submitted to the U.S. EPA for approval. Monitoring will be implemented during construction of the CAMU. The monitoring plan may be updated or subsequently modified, as necessary, when additional information on hydrogeologic conditions is obtained.

Closure and Post-Closure

The RCRA Correction Order requires that the CAMU be closed in accordance with the requirements of 40 CFR 264.552(e)(4). USX is required to submit a closure plan for U.S. EPA review and approval. This Closure Plan will include a description of the final cover designed and constructed in accordance with the U.S. EPA guidance document titled "Design and Construction of RCRA/CERCLA Final Covers" (EPA/625/4-91/025). The Closure Plan must meet the following objectives:

- Provide long-term minimization of liquid migration;
- Function with minimum maintenance;
- Promote drainage and minimize erosion;
- Accommodate settling and subsidence;
- Provide for a final cover that has a hydraulic conductivity less than or equal to the bottom liner system.

The specific design of the final cover depends on the characteristics and stability of the sediment and any other remediation wastes, the availability of materials, and the quantity of leachate generated. Settlement and subsidence, freeze/thaw conditions, and erosion controls will be evaluated and included in the final cover design. The surface slope of the cover will be uniform and at least 3 percent, but less than 33 percent in accordance with Indiana regulations (329 IAC 2-14-19).

After closure, USX will inspect the CAMU routinely to monitor and maintain the cover conditions. Leachate accumulation in the collection system will be removed and treated in the project-specific wastewater treatment plant.

CAMU DESIGNATION CRITERIA

U.S. EPA has established criteria for determining whether a CAMU is appropriate for use in implementing corrective measures. These criteria were promulgated as part of the CAMU rule and are prescribed in 40 CFR 264.552(c)(1) through (7). The specific criteria to be met are:

1. The CAMU facilitates the implementation of a reliable, effective, protective, and cost-effective remedy (40 CFR, Part 264.552(c)(1)).

2. Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents (40 CFR, Part 264.552(c)(2)).

3. The proposed CAMU includes uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective of human health and the environment than management of such wastes at contaminated areas of the facility (40 CFR, Part 264.552(c)(3)).

4. Areas within the proposed CAMU, where remediation wastes and residuals remain in place after closure of the CAMU, will be managed and contained to minimize future releases, to the extent practicable (40 CFR, Part 264.552(c)(4)).

5. The proposed CAMU expedites the timing of remedial activity implementation, when appropriate and practicable (40 CFR, Part 264.552(c)(5)).

6. The proposed CAMU enables the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, and volume of wastes that will remain in place after closure of the CAMU (40 CFR, Part 264.552(c)(6)).

7. The proposed CAMU, to the extent practicable, minimizes the land area of the facility upon which wastes will remain in place after closure of the CAMU (40 CFR, Part 264.552(c)(7)).

U.S. EPA believes that the CAMU meets each of these criteria. The following explains how the criteria are met.

1. Reliable, Effective, Protective, and Cost-Effective Remedy

The feasibility of removing the GCR sediment adjacent to the Gary Works facility is dependent on the ability to resolve numerous technical, practical, logistical, and regulatory challenges. Since the submittal of the initial Sediment Remediation Program in September 1993, USX has reviewed many remedial technologies, conducted engineering evaluations, and initiated design activities to identify and resolve such challenges. Designation of a portion of the facility as a CAMU facilitates the most reliable, effective, protective and cost-effective approach for corrective action for the dredged sediment being remediated.

USX will comply with RCRA Subtitle C minimum technology requirements (MTRs) though this is not required under the provisions of the CAMU rule. The use of liners and a leachate collection system will ensure the long term effectiveness of the CAMU after the sediments are dewatered.

Upon designation of the CAMU as proposed, USX is committed to removing non-native sediment (approximately 687,000 cu. yds.) from the GCR and disposing of the sediment in an engineered structure with routine monitoring and maintenance. Removing non-native sediment is a more reliable and effective remedy with respect to minimizing future releases and exposure potential from contaminated sediment than containing or leaving the GCR sediment in place. Once the sediment is removed, there are no ongoing channel operation and maintenance needs, and no potential for future releases associated with waste that is no longer present in the environment. Dredging of this segment of the river will enhance the aquatic ecosystem, create a better quality habitat, and minimize the migration of in-place pollutants to Indiana Harbor and Lake Michigan.

The proposed CAMU offers implementation-related benefits. For instance, allowing management of sediment via a slurry pipeline and dewatering at the CAMU will simplify the handling of water and significantly reduce potential for physical contact and accidental spills. In addition, secondary containment piping will be used to transport sediment from Transects 1 through 11 and Transect 17, Horizon 1 to the CAMU. This will significantly reduce potential health risks in the unlikely event of a breach in the slurry pipeline. USX plans to take extra precautions (i.e., river isolation cells) when dredging the PCB-contaminated transects to minimize migration of contaminated sediment.

Allowing passive dewatering to occur at the CAMU eliminates the need for a staging area and double handling of the remediation wastes in and out of a separate mechanical dewatering process unit. This shortens the duration of the sediment removal from six years to as few as two years, and minimizes risks by limiting exposure to wastes. All wastes placed in the CAMU will be compatible with the CAMU systems (i.e., liner, etc.) constructed.

This design reflects the technical and practical realities of a large sediment dredging project. This proposed approach does not involve offsite management of wastes, thereby eliminating risks created by truck traffic, logistical challenges between trucks and earthmoving equipment competing for space and

access. The approach also reduces delays in implementation due to complicated scheduling of waste handling activities. It avoids undue and increased risks from treatment of high-volume wastes such as sediment.

2. Protective of Human Health and the Environment

U.S. EPA intended this criteria to ensure that risks are controlled during remediation to protect human health and the environment. (58 FR 8668). Several design features are intended to reduce the risks during construction. As noted, conveying the dredged sediments into the CAMU via a pipeline provides the following benefits: (1) eliminates the need for mechanical dewatering; (2) eliminates need for truck transport of sediments; (3) reduces air emissions that would otherwise exist in mechanical dredging and associated truck transport; and (4) reduces downstream migration of suspended sediment that would occur during mechanical dredging operations (e.g., clam-shell dredge). The CAMU as proposed allows for an expedited dredging operation, which also minimizes the potential exposure to contaminated sediment.

Any wetland impact will be minimized, with the recognition that the benefits to human health and the environment associated with removing contaminated sediments from the GCR conceivably outweigh the short term adverse environmental impacts resulting from dredging operations. In addition, USX will implement a Compensatory Wetland Mitigation Plan to compensate for unavoidable impacts during construction of the CAMU and during dredging activities.

The health and safety of site workers will be an important aspect in implementing the Sediment Remediation Program. A health and safety plan will be prepared in accordance with the OSHA regulations of 29 CFR 1910.120 for construction and dredging activities. In addition, fencing will surround the CAMU to control access.

The potential for exposure from the time of initial placement of sediment until final closure of the CAMU will be minimized through several design features or engineering controls. During initial placement of sediment, the surrounding berms will serve as a physical barrier that combined with the moisture content of the sediment slurry, will contain or minimize windblown transport of particulates. Additionally, the CAMU design includes the use of a protective water seal over the sediment, reducing the impact of air emissions. Pilot testing to measure volatile emissions from the water seal will be conducted to evaluate whether additional monitoring, treatment, or controls are warranted prior to placing sediment in the CAMU. Transporting the sediment via an enclosed pipeline as opposed to an open conduit or dump trucks also reduces potential exposure and fugitive emissions. Use of an isolated cell within the CAMU reduces exposure potential by isolating the PCB-contaminated sediment. At the conclusion of the sediment dewatering, a temporary vegetative cover will be maintained to control erosion, prevent direct contact, and reduce particulate emissions until closure or subsequent remediation wastes are placed in the CAMU. USX will evaluate additional strategies to minimize exposure, as necessary, during the placement of remediation wastes in the CAMU.

3. Limited Inclusion of Uncontaminated Areas as Part of CAMU

This criterion states that a CAMU can only include uncontaminated areas of the facility under certain circumstances. The need to address such circumstances is not warranted since the USX Gary Works

facility intends to construct the CAMU on property that was previously contaminated by former river dredging operations. Findings from a recent geotechnical investigation confirm the presence of dredged spoils, up to 4 feet thick, from past dredging operations. Past disposal of dredged sediment at this location was ceased in the late 1960s. The extent of the area used for the former dredging operation is encompassed by a berm constructed to contain dredged sediment. The CAMU will be constructed over this disturbed area.

4. Remediation Waste Management after CAMU Closure

As mentioned, the proposed CAMU is designed to meet the MTR for RCRA Subtitle C landfills, which provides a greater degree of long-term effectiveness than what is required by the CAMU Rule.

The final cover to be installed at the time of CAMU closure will meet Subtitle C closure requirements for landfills. USX intends to leave the CAMU operational until all sediment dredging activities and consolidation of remediation waste from RCRA Corrective Action activities at the Gary Works facility are completed. Upon completion of such activities, USX will install a cover that is compatible with the wastes within the CAMU, the predicted settling from wastes within the CAMU, and the CAMU construction (liner/leachate collection system) so that the cover meets the permeability requirements appropriate for this type of construction. The final cover will be subject to review and approval by the U.S. EPA.

After closure, the CAMU will be inspected routinely to monitor final cover conditions. Signs of erosion or settlement will be addressed. USX will monitor groundwater quality in the vicinity of the CAMU to ensure that any releases of hazardous wastes or hazardous constituents from the CAMU are detected.

5. CAMU Expedites Remediation Implementation

As discussed previously, using the CAMU as proposed expedites the timing of sediment remediation by allowing direct delivery of dredged sediment to the CAMU. Using the CAMU, condensing the schedule for completion of the dredging activities from six years to as few as two years is possible. Consequently, potential threats to human health and the environment from exposure to contaminated sediment and ecological disturbances are reduced by an expedited dredging schedule.

As noted, the CAMU is being designed not only to contain GCR sediment, but also to provide additional capacity to accommodate as much as 1,250,000 cu. yds. of potential remediation wastes from remedial activities under the proposed RCRA Corrective Action Order. This is based on a 5 percent final grade and the CAMU dimensions. The Indiana solid waste regulations allow final grades up to 33 percent, providing for an even greater capacity. Having this capacity available onsite may expedite interim measures or final remedies for corrective action remediation wastes, as appropriate.

6. CAMU Enhances Long-Term Effectiveness of Remediation

Removal of the contaminated sediment from the GCR area of concern using the CAMU will eliminate the toxicity and mobility concerns that currently exist with the river sediments. The dredging project is expected to eliminate the volume of contaminated sediment from the waterway and place it into the CAMU for controlled management.

The CAMU rule states that this criterion "*was not intended to preclude remedial alternatives that did not employ treatment, so long as such options could ensure long-term effectiveness of the remedy (58 FR 8670).*" The CAMU is designed to meet MTR requirements for Subtitle C (hazardous waste) landfills though such a design is not required under CAMU provisions. This design, beyond what is required, enhances the long-term protectiveness of the CAMU. In addition, the CAMU system uses a cell approach to separate PCB-contaminated sediment regulated under TSCA from other contaminated sediment. This cell approach enhances the long-term effectiveness of the CAMU system by allowing controlled management of different transects of river sediments.

Wastewaters from the dredged sediments will be collected from the CAMU and conveyed to the project-specific wastewater treatment plant or the secondary treatment system. This will reduce the toxicity and mobility of contaminants found in the liquid phase of the remediation waste. Leachate from the CAMU will also be collected and treated at the project-specific wastewater treatment plant. The CAMU is also designed to contain compatible remediation wastes from the RCRA Corrective Action Program. The available capacity in the CAMU enables expedited interim measures or corrective measures to be implemented. Without the CAMU, the implementation of these measures would be delayed during the design and construction of a separate regulated unit onsite for remediation waste. The physical and chemical composition of remediation waste is expected to be compatible with the GCR sediment for disposal. The need to isolate remediation wastes from sediment will depend on: 1) the timing of waste placement, 2) the compatibility of waste types, and 3) the potential leachate treatment requirements. If the placement of remediation waste occurs after sediment placement and dewatering, then a temporary vegetative cover will be used to control erosion. If incidental volumes of remediation waste are to be placed in the CAMU concurrent with sediment disposition, then a review of the leachate characteristics will be conducted to evaluate the potential need to upgrade the wastewater treatment system. An evaluation whether commingling or isolating remediation waste from sediment is warranted, and the corresponding review of the wastewater treatment system effectiveness, will be presented in the request for U.S. EPA approval of such actions.

Without the CAMU as proposed, the Sediment Remediation Program becomes unnecessarily restrictive. Shipping sediment offsite for disposal is more costly and available capacity for such wastes is limited. Offsite disposal poses greater potential health risks and scheduling delays, from materials handling activities (staging, dewatering, segregation, loading), and transport on public roadways. Similarly, disposal of the sediment onsite in an existing unit requires double handling, is limited by available capacity.

7. Minimization of Land Area for Remediation Wastes

U.S. EPA intended the CAMU to *"promote consolidation of remediation wastes into smaller, discrete areas of the facility, that are suitable as long-term repositories for the wastes, and which can be effectively managed and monitored over the long term"* (58 FR 8671).

The proposed CAMU minimizes the land area of the facility upon which contaminated materials will remain in place after closure. This is accomplished by consolidating contaminated sediment from river

dredging operations and remediation waste from RCRA Corrective Action remediation activities into a single CAMU.

COMMUNITY INVOLVEMENT

U.S. EPA is seeking input from the community on the proposed designation of part of the U.S. Steel Gary Works facility as a CAMU. U.S. EPA has set a public comment period of forty-five (45) days starting on June 11, 1996, and running through July 25, 1996, to encourage public participation in the designation process. U.S. EPA will hold a public meeting on June 18, 1996,from 5pm to 7pm at the Gary Public Library. Representatives of U.S. EPA, the Indiana Department of Environmental Management, and U.S. Steel will be available to discuss the proposed project.

The Administrative Record containing relevant documents is available at the following locations:

Gary Public Library
220 West 5th Avenue
Gary, Indiana 46402
(219) 886-2484

and

U.S. EPA, Region 5
Waste, Pesticides, and Toxics Division
RCRA Records Center
77 West Jackson Boulevard, 7th Floor
Chicago, Illinois 60604

After consideration of the comments received, U.S. EPA will determine whether to proceed with the designation of the CAMU and document the decision in the Response to Comments (RTC). In addition, comments will be summarized and responses provided in the RTC. The RTC will be drafted at the conclusion of the public comment period and incorporated into the Administrative Record. To obtain further information, please contact the following U.S. EPA representative:

Bevin Horn
Community Involvement Coordinator
United States Environmental Protection Agency
77 West Jackson Boulevard, P-19J
Chicago, IL 60604
Telephone No.: (312) 886-6253 or 1-800-621-8431
Fax No.: (312) 353-1155
Internet Address: HORN.BEVIN@EPAMAIL.EPA.GOV

Written comments should be sent to the following U.S. EPA representative:

Matthew Ohl
Project Coordinator
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77 West Jackson Boulevard, DRE-8J
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Mailed comments must be postmarked by July 25, 1996.