STATEMENT OF BASIS

for

Dana Corporation
Antwerp, Ohio

EPA I.D. No. OHD 005 039 730

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List of Acronyms

AO	-	Administrative Order
AOC	-	Administrative Order on Consent
CMS	-	Corrective Measures Study
DCE	-	cis- and trans-1,2-dichloroethene
DNAPL	-	Dense non-aqueous phase liquid
HVAC	-	Heating, ventilation, and air conditioning
IM	-	Interim measure
ISCO	-	In-situ chemical oxidation
ISTD	-	In-situ thermal desorption
MCL	-	Maximum contaminant level
mg/kg	-	milligrams per kilogram or ppm
MNA	-	Monitored natural attenuation
O&M	-	Operation and maintenance
ppb	-	part per billion
ppm	-	part per million
RCRA	-	Resource Conservation and Recovery Act
RFI	-	RCRA Facility Investigation
SB	-	Statement of Basis
TCE	-	Trichloroethylene
TPH	-	Total petroleum hydrocarbons
VC	-	Vinyl chloride
VEP	-	Vacuum-enhanced pumping
VOC	-	Volatile organic compound
U.S. EPA	-	United States Environmental Protection Agency

Statement of Basis for Dana Corporation Located in Antwerp, Ohio

INTRODUCTION

This Statement of Basis (SB) presents the proposed remedy to address contaminated groundwater, soil, and indoor air at the Dana Corporation (Dana) facility located in Antwerp, Ohio. It includes summaries of potential remedy alternatives evaluated by Dana. The United States Environmental Protection Agency (U.S. EPA) will select a final remedy after a 30 day public comment period and consideration of substantive public comments.

This SB is being issued by U.S. EPA as part of its public participation responsibilities under the Resource Conservation and Recovery Act (RCRA). It summarizes information that can be found in greater detail in the RCRA Facility Investigation (RFI), Corrective Measures Study (CMS), and other pertinent documents contained in the Administrative Record. An Index to the Administrative Record is attached. U.S. EPA encourages the public to review these documents in order to gain a more comprehensive understanding of the RCRA corrective action activities conducted at the Dana facility.

U.S. EPA may modify the proposed remedy or select another remedy based on new information or public comments. Therefore, the public is encouraged to review and comment on the SB. All documents supporting this SB are contained in the Administrative Record located at the Antwerp Branch Library, 205 N. Madison Street, Antwerp, Ohio, and the U.S. EPA, Region 5 Record Center (7th Floor), 77 W. Jackson Boulevard, Chicago, Illinois.

PROPOSED REMEDY

U.S. EPA proposes the following remedy to address all contaminated groundwater, soil, and indoor air at Dana facility:

- Implementation of in-situ chemical oxidation (ISCO) to cleanup volatile organic compound (VOC) contamination in the surficial lacustrine clay (upper 15 feet of soil) and as necessary, at the Boiler Blowdown/Former Plating Area, Former TCE Degreaser #1, Former Clarifier Area, Former TCE Storage Area, Former Drum Storage Area, Oil Storage Tank Containment Area, and Empty Drum Storage Area. An ISCO field pilot test will first be conducted at the Oil Storage Tank

Containment Area to evaluate the effectiveness of ISCO to remediate VOCs in the lacustrine clay. If ISCO is found to be unsuccessful in effectively remediating the lacustrine clay, in-situ thermal desorption (ISTD) is the recommended alternative technology.

- Continued operation of the heating, ventilation, and air conditioning (HVAC) system in the on-site building as necessary to protect workers from unacceptable risk posed by the migration of soil vapor contaminated with VOCs to indoor air.

- Monitored natural attenuation (MNA) of bedrock groundwater contaminated with VOCs. If MNA is unsuccessful in remediating bedrock groundwater within a reasonable time-frame, enhanced anaerobic bioremediation is the recommended alternative technology.

- Implementation of a long-term groundwater, storm water, and indoor air monitoring program to ensure the integrity of the proposed remedy and protect human health and the environment.

- Conduct periodic technical reviews that evaluate current site conditions using available data from the long-term monitoring program. Assess whether alternative technologies are necessary and available to expedite groundwater cleanup in the bedrock aquifer.

- Initiate environmental covenants to restrict on-site groundwater use, limit site use to industrial/commercial activities, and impose controls on excavation procedures for construction workers and redevelopment workers at on-site areas posing an unacceptable risk.

FACILITY BACKGROUND

The Dana facility is located at 5278 U.S. 24 in Antwerp, Ohio. The facility is bound on the north by U.S. 24 and the Maumee Cemetery, on the east and west by industrial property, and on the south by railroad tracks and farmland. The Maumee River is located approximately 1,500 feet to the northwest (see Figures 1 and 2).

Land use surrounding the Dana facility is mixed agricultural, industrial, and residential. A residential area is located approximately 1,000 feet to the west along Harmann Street. The residential area uses private wells for its water supply. In the Village of Antwerp,

groundwater is used as a source of water. The Antwerp wellfield is located off Canal Street, approximately 4,000 feet southwest of the Dana facility.

The Dana facility began operations in 1951. Dana (Boston Weatherhead Division) fabricated metal hose ends and hydraulic fittings. As part of the manufacturing process, metal parts were machined, degreased using trichloroethylene (TCE), and plated. The Dana facility ceased operations on April 7, 2003.

On December 31, 2002, U.S. EPA issued a RCRA Initial Administrative Order (AO) for Corrective Action to Dana. The AO was withdrawn and an Administrative Order on Consent (AOC) became effective on May 1, 2003. The AOC requires Dana to implement interim measures (IMs) to address on-site TCE contamination, conduct a RCRA Facility Investigation (RFI) to determine the full nature and extent of contamination at or from the Dana facility, complete a Corrective Measure Study (CMS) to evaluate remedies to address site contamination, and implement the corrective measures chosen by U.S. EPA.

Interim Measure (IM) Results

The purpose of IMs are to control the release of hazardous wastes at the Dana facility prior to implementing the final corrective measures. Four IMs were performed at the Dana facility: 1) a field pilot test at the Empty Drum Storage Area to evaluate the effectiveness of vacuum enhanced pumping (VEP) to remove VOCs from the surficial lacustrine clay (approximately 15 feet deep); 2) a determination of the extent of VOC contamination in the bedrock aquifer; 3) a groundwater use survey and sampling of private wells in the area of the Dana facility; and 4) remediation of off-site sediment contamination in the Maumee Cemetery Ditch.

The field pilot test for the VEP treatment system operated for two years (March 2005 to April 2007). During that time period, Dana estimates 783 pounds of VOCs were removed from lacustrine clays in the treatment area, an average of approximately one pound per day. U.S. EPA estimates that 12,809 pounds of VOCs are present in the treatment area and that an additional 24,182 pounds of VOCs are present in lacustrine clays at the Former Plating Area. The VOC removal rate for VEP technology during the field pilot test appears to be insufficient to meet cleanup goals for soil at the Dana facility in a timely manner. Dana has proposed ISCO technology as a final corrective measure to remediate VOCs in soil. ISCO technology is expected to remediate contaminated soil more quickly.

IM investigations of the bedrock aquifer found vinyl chloride (VC) concentrations exceeding cleanup levels at the southern portion of the facility, extending slightly off-site,

beneath a farm field. This area of contamination is in the vicinity of the East Production Well, which has been abandoned. The concentrations of VC in the bedrock aquifer do not appear to be significant enough to migrate a great distance. Dana has proposed monitored natural attenuation (MNA) as a final corrective measure to address VC in bedrock groundwater.

Well users in the vicinity of the Dana facility were identified. Two private wells were identified as using water from the bedrock aquifer immediately downgradient of the Dana facility, approximately 1000 feet south on Paulding County Road 180. Both wells were sampled and analyzed for site contaminants. No site contaminants were found in either private well.

During site investigations, sediment in the Maumee Cemetery Ditch just northwest of the Dana facility was found to be contaminated with VOCs. The concentrations of VOCs exceeded screening levels designed to protect human health and the environment. The source of contamination in the Maumee Cemetery Ditch was from the storm water sewer system at the Dana facility which discharges to the ditch. Dana responded by removing over 1,000 tons of contaminated sediment and soil in July to November 2005. Cleanup goals were met and the ditch restored. In addition, 1,300 gallons of contaminated sediment and water were removed from on-site catch basins in June 2004.

RCRA Facility Investigation (RFI) Results

The purpose of the RFI is to fully characterize the nature and extent of contamination at the Dana facility. The RFI concluded that:

- There are areas beneath the building (at the Boiler Blowdown Sump/Former Plating Area and Former TCE Degreaser #1) and at the southern area of the facility (in the vicinity of the Former Clarifier Area, Oil Storage Tank Containment Area, and Empty Drum Storage Area) that have significant concentrations of VOCs in soil. The soil contamination is mainly confined to lacustrine clays within 15 feet of the surface. Residual trichloroethylene (TCE) waste, in the form of dense non-aqueous phase liquid (DNAPL), is likely present on-site in the lacustrine clays. The main VOC contaminants present in soil are TCE and its degradation products, cis- and trans-1,2-dichloroethene (DCE), and VC. Total petroleum hydrocarbons (TPH-diesel range) are also present at the Oil Storage Tank Containment Area.

- Contaminant concentrations in soil beneath the building are significant enough to volatilize and migrate to indoor air. VOC contaminants present in indoor air are

TCE, DCE, and VC. The main source of VOCs in indoor air is likely from the Boiler Blowdown Sump/Former Plating Area.

- Contaminants are present in groundwater in the lacustrine clays. The contaminated areas are similar to those identified with contaminated soil but more extensive. The main VOC contaminants present in lacustrine clay groundwater are TCE, DCE, and VC. Other VOCs detected in lacustrine clay groundwater include acetone, benzene, 1,1-dichloroethene (DCE), methylene chloride, and 1,1,2-trichloroethane (TCA).

- Contaminants were recently found in bedrock groundwater in the vicinity of the former East Production Well, at the south boundary of the facility (just west of the Oil Storage Tank Containment Area). The main VOC contaminants present in bedrock groundwater are TCE, DCE, and VC. Only VC exceeds its Federal maximum contaminant level (MCL) developed to protect human health. The VC plume extends slightly off-site to the south. The source of VC in the bedrock groundwater is believed to be associated with the abandonment of the East Production Well in August 2004.

- TCE is present in outwash groundwater just above the bedrock at the Empty Drum Storage Area and the Boiler Blowdown Sump/Former Plating Area. The source of TCE in outwash groundwater is believed to be carry down from the lacustrine clay when the outwash wells were installed.

- The source of contaminated soil and groundwater in the lacustrine clay is likely from surface spills/leaks from the historical usage and management of TCE as a degreaser. Most of the TCE contamination is limited to the upper 15 feet of soil. At some locations, TCE appears to have migrated along preferential pathways, such as well casings, and locally contaminated the outwash and bedrock groundwater. Five deep monitoring wells have been decommissioned and sealed to eliminate possible pathways contributing to contamination found in the outwash and bedrock aquifers.

SUMMARY OF FACILITY RISKS

Groundwater

Contaminated groundwater in the bedrock aquifer may pose an unacceptable risk to human health if it is consumed. In the local area, the bedrock aquifer is used as a source

of drinking water for private residences and the Village of Antwerp. Contaminated groundwater in the surficial lacustrine clay is not a potential drinking water source but poses a potentially unacceptable risk to human health if encountered by construction or redevelopment workers during subsurface activities.

The potential risk from contaminated groundwater at the Dana facility warrants corrective measures to protect human health in the event that groundwater is consumed or encountered. The goals of the proposed corrective measures are to: 1) treat contaminated groundwater in the lacustrine clay using ISCO technology to remove contaminants that may pose an unacceptable risk to industrial workers; 2) restrict excavation activities where contaminated groundwater in the lacustrine clay may be encountered; 3) eliminate the source areas and pathways contributing to bedrock groundwater contamination; 4) restrict bedrock groundwater use at the Dana facility; and 5) monitor the contaminant plumes and storm water to ensure that human health and the environment are protected.

Groundwater cleanup objectives for the Dana facility include three components: groundwater cleanup levels, point of compliance, and remediation time-frames. Groundwater cleanup levels represent the specific concentrations of chemicals designed to be protective of groundwater use and other possible routes of exposure, such as contact by construction and redevelopment workers. Point of compliance represents the locations where groundwater cleanup levels will be achieved. Remediation time-frames typically include both the time it would take to implement the remedy and the estimated time to achieve the groundwater cleanup levels at the point of compliance. Dana has estimated that groundwater cleanup levels in the bedrock aquifer will be achieved in less than 30 years.

The groundwater cleanup levels for bedrock at the Dana facility are derived from MCLs developed under the Safe Drinking Water Act. These are risk-based goals such that attaining the given cleanup levels will not result in adverse health effects or an excess cancer rate. The groundwater cleanup levels for the lacustrine clays are derived from site-specific calculations of the non-carcinogenic and carcinogenic risk posed to construction and redevelopment workers.

The point of compliance for groundwater represents where groundwater cleanup levels should be achieved within a contaminated aquifer. The groundwater point of compliance at the Dana facility is throughout the area where groundwater is contaminated above the cleanup levels. U.S. EPA typically refers to this point of compliance as the “throughout-the-plume” point of compliance.

The groundwater cleanup levels for groundwater contaminants identified in the table below would achieve U.S. EPA's ultimate goal of returning contaminated bedrock groundwater to its maximum beneficial use and minimize risks posed to workers from lacustrine clay groundwater. The cleanup levels are exceeded throughout-the-plume at the following locations:

- VC in bedrock in an oval-shaped area at least 250 x 300 feet at the south-central boundary, centered near the former East Production Well. Approximately one-half of the plume is located off-site beneath railroad tracks and a farm field.

- TCE, DCE, and VC in lacustrine clay beneath the building at the Boiler Blowdown Sump/Former Plating Area (southeast quadrant of the building).

- TCE, DCE, and VC in lacustrine clay in back of the southern-half of the building (Former TCE Storage Area, Former Drum Storage Area, Oil Storage Tank Containment Area, and Empty Drum Storage Area) and southeast of the building in the Former Clarifier Area.

- Benzene in lacustrine clay in back of the southern-half of the building (Oil Storage Tank Containment Area).

Groundwater Contaminant	Bedrock Groundwater Cleanup Level (ppb)	Lacustrine Clay Groundwater Cleanup Level (ppb)
Acetone	5,500	nd
Benzene	5	1,000
1,1-DCE	7	nd
cis-1,2-DCE	70	4,000
trans-1,2-DCE	100	8,100
Methylene chloride	5	nd
TCE	5	17,100
1,1,2-TCA	5	nd
VC	2	529

NOTE: nd = not determined

In addition, concentrations of four VOCs in lacustrine clay groundwater are significant (i.e., exceed bedrock groundwater cleanup levels) and could potentially impact the bedrock aquifer. They are:

- 1,1-DCE in lacustrine clay in back of the southern-half of the building (Former TCE Storage Area, Former Drum Storage Area, and Oil Storage Tank Containment Area) and southeast of the building in the Former Clarifier Area.

- 1,1,2-TCA in lacustrine clay in back of the southern-half of the building (Former TCE Storage Area and Former Drum Storage Area) and southeast of the building in the Former Clarifier Area.

- Methylene chloride in lacustrine clay southeast of the building in the Former Clarifier Area.

- Acetone in lacustrine clay in back of the southern-half of the building (Former TCE Storage Area and Former Drum Storage Area).

Soil/Indoor Air

Concentrations of TCE, DCE, and VC found in lacustrine clay in some areas at the Dana facility may pose an unacceptable risk to workers from incidental contact/inhalation and from soil vapor migration to indoor air within the building. The building is currently vacant but is being considered for industrial use. Only the western portion and front offices of the building will be occupied. The large open area of the building at the Boiler Blowdown Sump/Former Plating Area will remain unoccupied until remediation is complete and indoor air demonstrated to be safe. The HVAC system for the building is expected to provide adequate ventilation to minimize the potential risk to workers from soil vapor migration to indoor air. Indoor air monitoring would be performed to confirm safe working conditions.

TCE in soil at the Dana facility exceeds the calculated protective level for workers of 87 mg/kg (cancer risk of 1 in 100,000). TPH exceeds the direct contact concentration of 8,000 mg/kg which is based on the soil saturation limit for silty clay soil.

Concentrations of VOCs found in lacustrine clay exceed their soil saturation limits at the Boiler Blowdown Sump/Former Plating Area, Empty Drum Storage Area, and Former Clarifier Area. The VOCs can continue to migrate and potentially migrate downward to the bedrock aquifer. Long-term soil cleanup levels for VOCs in lacustrine clays to protect bedrock groundwater and expedite groundwater cleanup time-frames are:

Soil Contaminant	Soil Cleanup Level to Protect Bedrock Groundwater (ppm)
cis-1,2-DCE	1,573
trans-1,2-DCE	3,993
TCE	1,948
VC	26.8

SCOPE OF CORRECTIVE ACTION

Corrective measures are necessary to address contamination present in groundwater, soil, and indoor air at and in the vicinity of the Dana facility.

Contaminated groundwater is a threat because of the long-term potential for contact/inhalation by construction and redevelopment workers, and possible future public use. The immediate cleanup objectives are to remediate groundwater contamination in the lacustrine clay to protect indoor workers, and construction and redevelopment workers, and stabilize the plume in the bedrock aquifer. The long-term cleanup objective is to reduce the contaminant concentrations throughout-the-plume to achieve protective groundwater cleanup levels, MCLs, for the bedrock aquifer within a reasonable time-frame (i.e., less than 30 years).

Areas of contaminated soil pose a risk due to the long-term potential for contact/inhalation by workers and impacts on indoor air, and act as potential source areas for contaminants migrating to groundwater. The immediate cleanup objective is to remediate soil contaminant sources to protect indoor workers, and construction and redevelopment workers. This objective requires environmental covenants to manage site use. The long-term cleanup objectives are to reduce soil contaminant concentrations at the facility to eliminate migration to groundwater and to surface water via the storm sewer system, and to expedite the return of the bedrock aquifer to its maximum beneficial use.

SUMMARY OF POTENTIAL REMEDY ALTERNATIVES

The potential remedy alternatives evaluated by Dana to address groundwater and soil/indoor air contamination are presented below. These alternatives are discussed in detail in the CMS Report, Revision 1, dated April 4, 2007.

Groundwater

- **Dual Phase Vacuum Enhanced Pumping (VEP):** Groundwater in the lacustrine clay would be treated by applying a high vacuum to the soil and extracting water and vapor from wells. VOCs entrained in the water and vapor would be treated.

- **In Situ Thermal Desorption (ISTD):** Groundwater in the lacustrine clay would be treated by heating the subsurface through a series of thermal wells. VOCs would be volatilized and treated.

- **In Situ Chemical Oxidation (ISCO):** Groundwater in the lacustrine clay would be treated by injecting oxidants. The oxidants would react with and breakdown the VOCs.

- **In Situ Bioremediation/Enhanced Bioremediation:** Groundwater in the lacustrine clay and bedrock would be treated by naturally occurring microorganisms that can degrade VOCs. Nutrients could be added to enhance natural bioremediation.

- **Institutional Controls:** The Dana property deed would be modified to include a restriction on groundwater use, and impose controls on subsurface excavations where contaminated groundwater can be encountered.

- **Monitored Natural Attenuation (MNA):** Natural physical, chemical, and biological processes would be used to reduce the mass, toxicity, mobility, and concentrations of contaminants in groundwater. Monitor site-wide groundwater and storm water to ensure and track progress of natural attenuation.

Soil/Indoor Air

- **Dual Phase Vacuum Enhanced Pumping (VEP):** Soil in the lacustrine clay would be treated by applying a high vacuum to the soil and extracting water and vapor from wells. VOCs entrained in the water and vapor would be treated.

- **In Situ Thermal Desorption (ISTD):** Soil in the lacustrine clay would be treated by heating the subsurface through a series of thermal wells. VOCs would be volatilized and treated.

- **In Situ Chemical Oxidation (ISCO):** Soil in the lacustrine clay would be treated by injecting oxidants. The oxidants would react with and breakdown the VOCs.

- **Excavation and Disposal:** Soil would be removed and transported off-site to be disposed and/or treated at a permitted facility.

- **Institutional Controls:** The Dana property deed would be modified to limit future land use to industrial/commercial activities, and impose controls on subsurface excavations where contaminated soil can be encountered.

- **Monitoring:** If occupied, indoor air in the building would be monitored to ensure that VOCs infiltrating the building from contaminated soil do not pose an unacceptable risk to human health. Collect soil samples after remediation to confirm if soil cleanup levels have been achieved.

Dana estimates the capital cost, annual operation and maintenance (O&M) cost, and total estimated cost for each potential remedy alternative to address contaminated groundwater and soil in the lacustrine clay and monitor site-wide groundwater at:

Potential Remedy Alternative	Estimated Capital Cost	Annual O&M Cost [a]	Total Estimated Cost [b]
VEP	$ 2,119,111	$ 439,728	$ 8,622,933
ISTD	$ 3,905,580	$ 75,000	$ 5,174,359
ISCO	$ 2,722,380	$ 75,000	$ 4,071,159
Excavation/Disposal	$ 4,221,780	$ 75,000	$ 5,570,559

[a] O&M costs for site-wide groundwater monitoring are $75,000/year.
[b] O&M costs included in the total estimated cost are for 30 years.

The capital and O&M costs for implementation of institutional controls, indoor air monitoring, and enhanced bioremediation were not provided.

EVALUATION OF PROPOSED REMEDY

U.S. EPA's proposed remedy to address contaminated groundwater, soil, and indoor air at and from the Dana facility is:

- *Groundwater* - Removal of contaminants in source areas using ISCO, if feasible; MNA to reduce the concentration or mobility of contaminant migration; and monitoring. Periodic technical reviews will be conducted and possible contingent remedies (e.g., enhanced bioremediation) implemented if site conditions change or groundwater cleanup levels are not met in a reasonable time-frame.

- *Soil* - Contaminated soil will be remediated using ISCO, if feasible. In the alternative, ISTD technology will be used to remediate contaminated soil.

- *Indoor Air* - Operation of HVAC systems in on-site buildings and monitoring of indoor air to protect on-site workers.

- *Institutional Controls and Monitoring* - Deed restrictions on land and groundwater use; restrictions for on-site excavations to protect construction workers and future redevelopment workers; and long-term groundwater, storm water, and indoor air monitoring to assess the effectiveness of the remedy.

The total estimated cost of the proposed remedy is $4,071,159. Costs for institutional controls, indoor air monitoring, and enhanced bioremediation are not included. Dana is required to provide financial assurance to ensure that the proposed remedy can be implemented over its lifetime of approximately 30 years.

The following discussion profiles the performance of the proposed remedy against technical standards and other factors for evaluating a remedy.

1. **Protect Human Health and the Environment.** The overall protection of human health is addressed effectively for groundwater by source area removal in the lacustrine clay, monitoring, and institutional controls. Source removal of DNAPL and high contaminant concentrations in subsurface soil and the water table expedite groundwater cleanup; monitoring protects water well users in the area and assesses the effectiveness of natural attenuation; and institutional controls restrict groundwater usage and incidental contact throughout the contaminant plume. Monitoring wells within and at the perimeter of the groundwater contaminant plumes will be used to demonstrate that the plumes are not expanding, and that natural attenuation is effective. In the alternative, a contingent remedy such as enhanced bioremediation will be used to clean up bedrock groundwater if the proposed remedy does not result in the timely cleanup of groundwater.

Institutional controls to restrict land use are effective methods to protect human health when combined with the proposed treatment of soil and groundwater using ISCO technology. Long-term maintenance of the HVAC system and on-site excavation controls will protect human health by minimizing exposure to contaminants in indoor air, soil, and groundwater.

2. **Attain Media Cleanup Standards.** Source areas of contamination are addressed by the treatment of soil, DNAPL, and highly contaminated shallow groundwater by ISCO.

Treatment of the source areas, DNAPL, and contaminant mass using ISCO technology is a quick and effective corrective measure to expedite cleanup of soil and groundwater to protect workers and the bedrock aquifer.

Groundwater will be monitored to assess trends in groundwater contamination and ensure the attainment of groundwater cleanup goals within a reasonable time-frame.

3. **Control the Sources of Releases.** The treatment and reduction of DNAPL, contaminated soil, and contaminated groundwater provides an effective source control program to ensure the long-term effectiveness and protectiveness of the remedy.

4. **Comply with Any Applicable Standards for Management of Wastes.** Waste generated during implementation of the remedy (which is expected to be minimal) is properly characterized and treated/disposed in accordance with all applicable regulations and permits. Soil contaminated with TPH may be excavated and would be disposed off-site at a permitted facility.

5. **Long-term Reliability and Effectiveness.** Reliability of the proposed remedy is evaluated through O&M requirements, demonstrated effectiveness of MNA, and achievement of soil cleanup levels protective of workers and groundwater. ISCO is a proven technology and will be assessed in a field pilot test before full-scale implementation. ISCO oxidizes contaminants and breaks them down to harmless components. In the alternative, another proven technology such as ISTD, will be used. The groundwater remedy will be monitored to ensure reliability. In the alternative, if groundwater cleanup levels are not achieved within a reasonable time-frame, a contingent remedy proven to cleanup groundwater, such as enhanced bioremediation, will be used.

6. **Reduction in the Toxicity, Mobility, or Volume of Wastes.** Treatment of contaminant mass from on-site source areas will reduce the volume and prevent further migration of contaminants. Monitoring will assess the reduction in toxicity of contaminants in groundwater.

7. **Short-term Effectiveness.** Dana will develop an O&M program for ISCO to ensure the remedy is safe. Corrective measure activities proposed by Dana and associated with contaminated groundwater and soil include a health and safety plan to protect workers.

8. **Implementability.** If necessary, State permits will be obtained for ISCO. Institutional controls in the form of environmental covenants will be placed on the deed to restrict land use, groundwater use, and excavation activities. Use of the vacant building will be restricted to areas that will not impact implementation of the remedy.

9. **Cost.** The total estimated cost of the various remedial alternatives to address site contamination varies from $4,071,159 to $8,622,933. The total estimated cost of the proposed remedy is $4,071,159. This cost does not include a possible alternative remedy for groundwater if cleanup levels are not achieved within a reasonable time-frame, indoor air monitoring, and implementation of institutional controls. This less costly remedial alternative is expected to be as protective of human health and the environment as the more costly alternatives. The proposed remedy would be easier to implement and achieve cleanup goals more quickly provided the field pilot test demonstrates the effectiveness of ISCO in lacustrine clays.

Based on information currently available, the proposed remedy provides the best balance with respect to the standards described above. U.S. EPA believes that the proposed remedy is protective of human health and the environment, and will effectively control exposure to contaminants in groundwater, soil, and indoor air. In the alternative, a contingent remedy will be used if the long-term groundwater cleanup levels are not achieved in a reasonable time. All applicable standards regarding groundwater protection, worker protection, and on-site/off-site waste management will be addressed and complied with during implementation of the remedy.

PUBLIC PARTICIPATION

U.S. EPA seeks input from the local community on the proposed remedy to address contaminated groundwater, soil, and indoor air at the Dana facility. There will be a 30 day public comment period for the local community to participate in the final remedy selection.

The Administrative Record for the Dana facility is available at the following locations:

Antwerp Branch Library
205 N. Madison Street
Antwerp, Ohio 45813
(419) 258-2855

U.S. EPA, Region 5
RCRA Records Center
77 West Jackson Boulevard, 7th Floor
Chicago, Illinois 60604-3590
(312) 886-0902
Hours: Mon-Fri, 8:00 a.m. - 4:00 p.m.

After consideration of public comments on the proposed remedy, U.S. EPA will select a final remedy and document its selection in the Final Decision and Response to Comments. In addition, public comments will be summarized and responses provided. The Final Decision and Response to Comments will be drafted at the conclusion of the public comment period and incorporated into the Administrative Record.

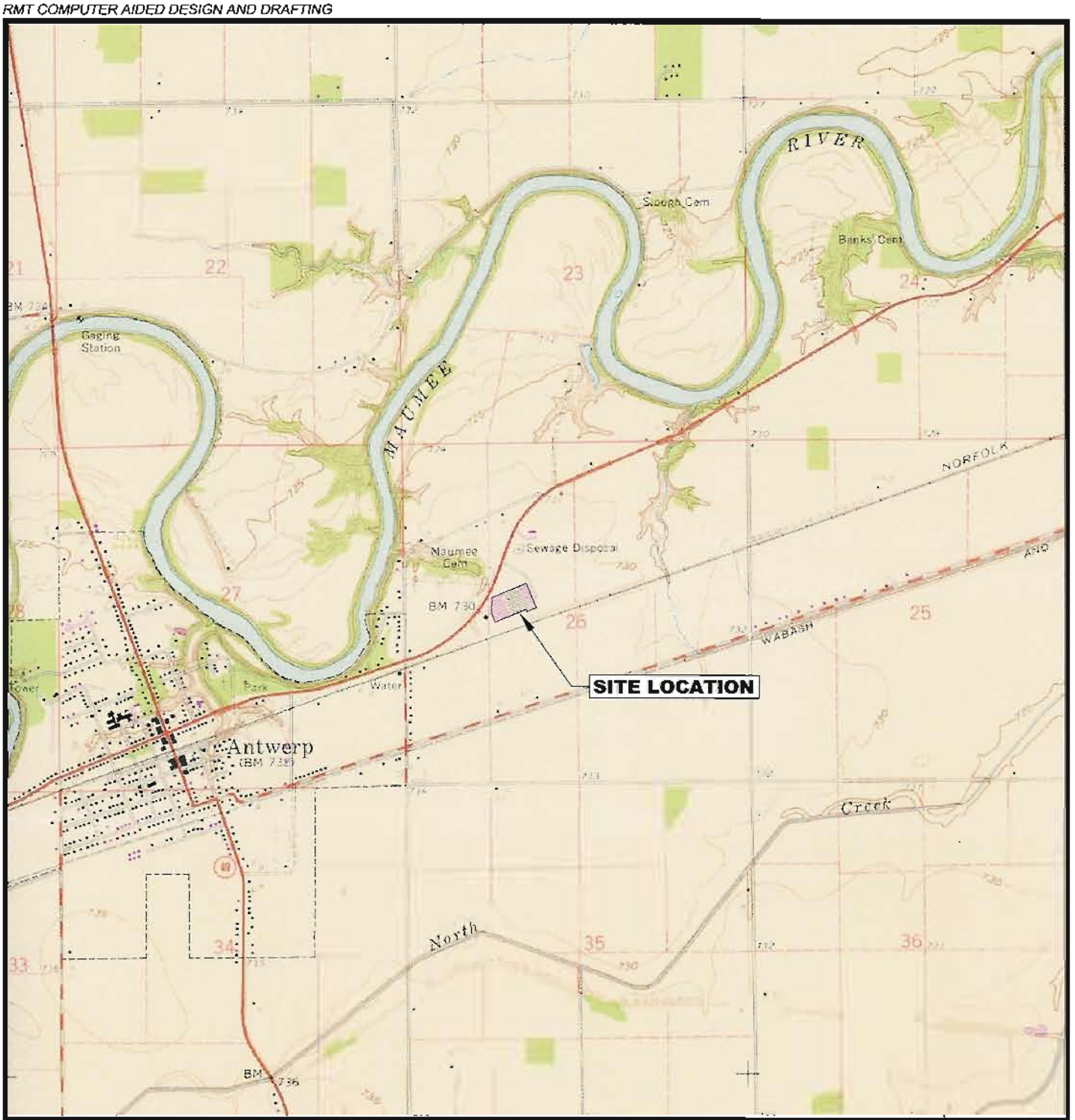
To send written comments or request technical information on the Dana facility, please contact:

Mr. Kenneth Bardo
EPA Project Coordinator
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Corrective Action Section, LU-9J
Chicago, Illinois 60604-3590
(312) 886-7566
E-mail: bardo.kenneth@epa.gov

To request information on the public comment period for the proposed remedy at the Dana facility, please contact:

Ms. Terri Rancher
Community Relations Coordinator
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Internal Sevices Section, LP-7J
Chicago, Illinois 60604-3590
(312) 886-4188

E-mail: rancher.terri@epa.gov



OHIO

QUADRANGLE LOCATION

N

0 2000' 4000'

APPROXIMATE SCALE IN FEET

SOURCE

1. BASE MAP DEVELOPED FROM THE ANTWERP, OHIO 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP.

RMT INC.®

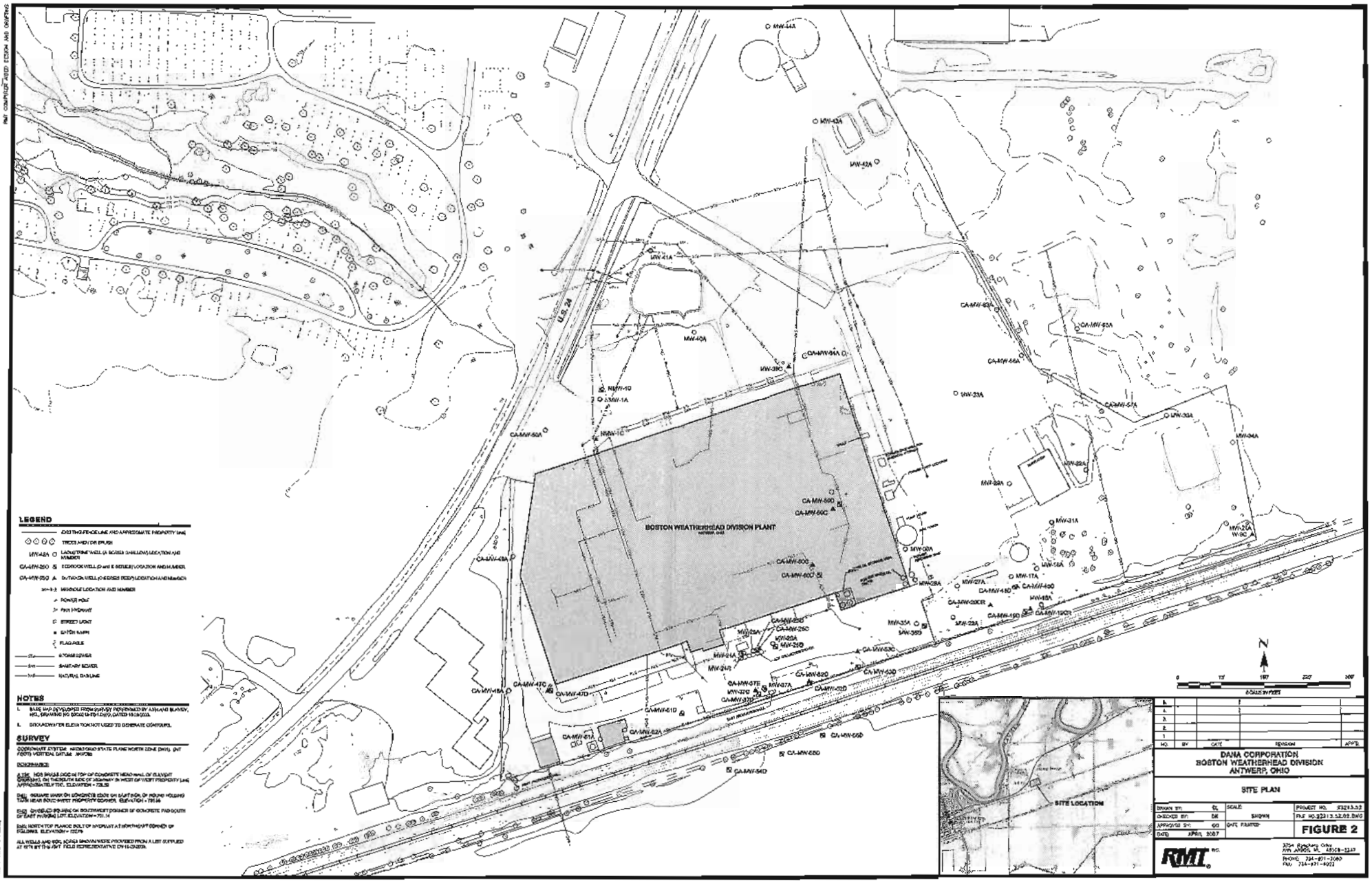
DANA CORPORATION
WEATHERHEAD DIVISION
ANTWERP, OHIO

SITE LOCATION MAP

DRAWN BY:	SL
APPROVED BY:	DK
PROJECT NUMBER:	22213.52
FILE NUMBER:	22213.52.01.DWG
DATE:	APRIL 2007

FIGURE 1

PLOT DATA
Drawing Name: 22213\52\22213.52.01.dwg
Operator Name: rmtemp
Scale: 1"=2000'
Dwg Size: 75377 Bytes
Plot Date: Tuesday, April 3,
Plot Time: 1:20.6360 PM
Attached Xrefs: No xrefs Attached.


BOSTON WEATHERHEAD DIVISION PLANT
U.S. 24
MW-44A
MW-43A
MW-42A
MW-41A
MW-40A
MW-39C
MW-1C
MW-1A
CA-MW-60A
CA-MW-64A
CA-MW-63A
CA-MW-62A
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MW-23A
MW-22A
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CA-MW-4A
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CA-MW-2A
CA-MW-1A
LEGEND
FOOTING/FENCE LINE AND APPROXIMATE PROPERTY LINE
TREES AND / OR BRUSH
MW-48A LANDFILL WELL (A SERIES SHALLOW) LOCATION AND NUMBER
CA-MW-260 S ECOLOGY WELL (D and E SERIES) LOCATION AND NUMBER
CA-MW-250 A DATAGEN WELL (D SERIES DEEP) LOCATION AND NUMBER
MANHOLE LOCATION AND NUMBER
POWER POLE
FIRE HYDRANT
STREET LIGHT
CATCH BASIN
FLAGPOLE
STORM SEWER
SANITARY SEWER
NATURAL GAS LINE
NOTES
1. BASE MAP DEVELOPED FROM SURVEY PERFORMED BY AMCAD SURVEY, INC., DRAWING NO. 02C02-18-FD-1.DWG, DATED 10-30-2002.
2. GROUNDWATER ELEVATION NOT USED TO GENERATE CONTOURS.
SURVEY
COORDINATE SYSTEM: NAD83 OHIO STATE PLANE NORTH ZONE (NAD) (INT FEET) VERTICAL DATUM: NAVD88
BENCHMARKS
A-1 HCP BRASS CAP ON TOP OF CONCRETE HEADWALL OF FLAYGHT DRAINAGE ON THE SOUTH SIDE OF ROADWAY 24 WEST OF WEST PROPERTY LINE APPROXIMATELY 150. ELEVATION = 728.58
B-1 SQUARE MARK ON CONCRETE EDGE ON EAST SIDE OF INGRID HOLDING TANK NEAR SOUTHWEST PROPERTY CORNER. ELEVATION = 731.46
B-2 CHISELED BENCH ON SOUTHWEST CORNER OF CONCRETE PAD SOUTH OF EAST INGRID LOT. ELEVATION = 731.14
B-3 NORTH TOP FLANGE BOLT OF HYDRANT AT NORTHEAST CORNER OF BUILDING. ELEVATION = 732.79
ALL WELLS AND SOIL BORING LOCATIONS WERE PROVIDED FROM A LIST SUPPLIED AT SITE BY THE RMT FIELD REPRESENTATIVE ON 10-24-2003.
SITE LOCATION
N
0 75 150 225 300
SCALE IN FEET
NO. BY DATE REVISION APV'D.
DANA CORPORATION
BOSTON WEATHERHEAD DIVISION
ANTWERP, OHIO
SITE PLAN
DRAWN BY: CL
CHECKED BY: DR
APPROVED BY: GG
DATE: APRIL 2007
SCALE: SHOWN
DATE PLOTTED:
PROJECT NO. 53213.53
FILE NO. 53213.53.02.02.DWG
FIGURE 2
RMT INC.
3754 Spaulding Drive
Fort Wayne, IN 46815-7337
PHONE: 734-971-2040
FAX: 734-971-9022