

**Environmental Assessment  
for BASF Catalysts LLC  
Electric Drive Vehicle Battery  
and Component Manufacturing Initiative Project  
Elyria, OH**

March 2010



**Prepared for:**  
Department of Energy  
National Energy Technology Laboratory



**National Environmental Policy Act (NEPA) Compliance  
Cover Sheet**

**Proposed Action:**

The U.S. Department of Energy (DOE) proposes, through a cooperative agreement with BASF Catalysts LLC (BASF), to partially fund the construction of a commercial-size manufacturing plant that would produce cathode materials needed for the production of lithium-ion batteries. The plant would be constructed within an existing BASF-owned industrial area located in Elyria, Ohio. This plant would support the anticipated growth in the lithium-ion battery industry and, more specifically, the electric drive vehicle (EDV) and hybrid-electric vehicle industry (HEV). If approved, DOE would provide approximately 50 percent of the funding for the project.

**Type of Statement:** Final Environmental Assessment

**Lead Agency:** U.S. Department of Energy; National Energy Technology Laboratory

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**Abstract:**

DOE prepared this Environmental Assessment (EA) to assess the potential for impacts to the human and natural environment of its Proposed Action-providing financial assistance to BASF under a cooperative agreement. DOE's objective is to support the development of the EDV industry in an effort to substantially reduce the United States' consumption of petroleum, in addition to stimulating the United States' economy. More specifically, DOE's objective is to accelerate the development and production of various EDV systems by building or increasing domestic manufacturing capacity for advanced automotive batteries, their components, recycling facilities, and EDV components. This work will enable market introduction of various electric vehicle technologies by lowering the cost of battery packs, batteries, and electric propulsion systems for EDVs through high-volume manufacturing.

Under the terms of the cooperative agreement, DOE would provide approximately 50 percent of the funding for BASF to construct a commercial-size manufacturing plant for cathode material. The plant would be constructed on existing BASF property located in Elyria, Ohio, and it would help meet the growing needs of domestic and global lithium-ion battery cell producers. The cathode materials to be produced are based on technology licensed from DOE. The plant can produce enough material to supply a battery manufacturer making from 20,000 to 100,000 plug-in HEV batteries and/or their cells per year or equivalent volumes of other EDV batteries. For purposes of production volume estimation, each plug-in HEV is assumed to be capable of delivering at least 5 kilowatt hours of available energy. Additionally, the project would create a number of permanent jobs.

The environmental analysis identified that the most notable changes, although minor, to result from BASF's Proposed Project would occur in the following areas, although minor: air quality, noise, and solid and hazardous wastes. No significant environmental effects were identified in analyzing the potential consequences of these changes.

**Public Participation:**

DOE encourages public participation in the NEPA process. The Draft EA was released for public review and comment on December 27, 2009. The public was invited to provide oral, written, or e-mail comments on the Draft EA to DOE by the close of the comment period on January 28, 2010. Copies of the Draft EA were also distributed to cognizant Federal and State agencies. Comments received by the close of the comment period were considered in preparing this Final EA for the proposed DOE action. This EA is available on the DOE website at <http://www.netl.doe.gov/nepa/EA-1717.pdf>.

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## ACRONYMS

<b>Acronym</b>	<b>Definition</b>
<b>µg</b>	Microgram
<b>APE</b>	area of potential effect
<b>AQRV</b>	air quality related values
<b>AST</b>	aboveground storage tank
<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry
<b>BASF</b>	BASF Catalysts LLC
<b>BMP</b>	best management practice
<b>CAA</b>	Clean Air Act
<b>CE</b>	Categorical Exclusion
<b>CEQ</b>	Council on Environmental Quality
<b>CERCLA</b>	Comprehensive Environmental Response Compensation and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CH<sub>4</sub></b>	Methane
<b>CO</b>	carbon monoxide
<b>CO<sub>2</sub></b>	carbon dioxide
<b>CoSO<sub>4</sub></b>	cobalt sulfate
<b>CRS</b>	chemical recovery systems
<b>dB</b>	Decibel
<b>DOE</b>	Department of Energy
<b>EA</b>	Environmental Assessment
<b>EDV</b>	electric drive vehicle
<b>EERE</b>	Office of Energy Efficiency and Renewable Energy
<b>EIS</b>	Environmental Impact Statement
<b>EPA</b>	United States Environmental Protection Agency
<b>F</b>	Fahrenheit
<b>FEMA</b>	Federal Emergency Management Agency
<b>FIRM</b>	Flood Insurance Rate Map
<b>FONSI</b>	Finding of No Significant Impact
<b>GHG</b>	greenhouse gases
<b>gpd</b>	gallons per day
<b>H<sub>2</sub>SO<sub>4</sub></b>	sulfuric acid
<b>HAP</b>	hazardous air pollutants
<b>HEV</b>	hybrid-electric vehicle
<b>JuA</b>	Jimtown urban land complex
<b>LiOH</b>	lithium hydroxide
<b>mg/m<sup>3</sup></b>	Milligram/per cubic meter
<b>mgd</b>	million gallons per day

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<b>Acronym</b>	<b>Definition</b>
<b>MMBTU</b>	million British thermal units
<b>MMTCE</b>	million metric tons of carbon equivalent
<b>MnSO<sub>4</sub></b>	manganese sulfate
<b>mtpy</b>	metric tons per year
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NaOH</b>	sodium hydroxide
<b>NEPA</b>	National Environmental Policy Act
<b>NETL</b>	National Energy Technology Laboratory
<b>NiSO<sub>4</sub></b>	nickel sulfate
<b>NNSR</b>	Nonattainment New Source Review
<b>NO<sub>2</sub></b>	nitrogen dioxide
<b>NO<sub>x</sub></b>	nitrogen oxides
<b>NPL</b>	National Priorities List
<b>NSR</b>	New Source Review
<b>NWI</b>	National Wetlands Inventory
<b>O<sub>3</sub></b>	Ozone
<b>OAC</b>	Ohio Administrative Code
<b>Pb</b>	Lead
<b>PM</b>	particulate matter
<b>PM<sub>10</sub></b>	particulate matter 10 microns
<b>PM<sub>2.5</sub></b>	particulate matter 2.5 microns
<b>ppm</b>	parts per million
<b>PSD</b>	prevention of significant deterioration
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>Recovery Act</b>	American Recovery and Reinvestment Act of 2009
<b>RFA</b>	RCRA Facility Assessment
<b>RFI</b>	RCRA Facility Investigation
<b>ROD</b>	Record of Decision
<b>SIP</b>	State Implementation Plan
<b>SO<sub>2</sub></b>	sulfur dioxide
<b>std</b>	Standard
<b>SWMU</b>	solid waste management units
<b>tpy</b>	tons per year
<b>TSD</b>	treatment, storage and disposal
<b>USFWS</b>	United States Fish and Wildlife Service
<b>US</b>	United States
<b>UST</b>	underground storage tank
<b>VOCs</b>	volatile organic compounds
<b>VT</b>	Vehicle Technologies

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## **1.0 PURPOSE AND NEED**

### **1.1 Background**

The Department of Energy's (DOE's) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy (EERE). A key objective of the VT program is accelerating the development and production of electric drive vehicle (EDV) systems to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically to increase the use of EDVs.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. DOE solicited applications for this funding by issuing a competitive Funding Opportunity Announcement (DE-FOA-0000026), Recovery Act - Electric Drive Vehicle Battery and Component Manufacturing Initiative, on March 19, 2009. The announcement invited applications in seven areas of interest:

- Area of Interest 1 – Projects that would build or increase production capacity and validate production capability of advanced automotive battery manufacturing plants in the United States.
- Area of Interest 2 – Projects that would build or increase production capacity and validate production capability of anode and cathode active materials, components (e.g. separator, packaging material, electrolytes and salts), and processing equipment in domestic manufacturing plants.
- Area of Interest 3 – Projects that combine aspects of Areas of Interest 1 and 2.
- Area of Interest 4 – Projects that would build or increase production capacity and validate capability of domestic recycling or refurbishment plants for lithium-ion batteries.
- Area of Interest 5 – Projects that would build or increase production capacity and validate production capability of advanced automotive electric drive components in domestic manufacturing plants.
- Area of Interest 6 – Projects that would build or increase production capacity and validate production capability of electric drive subcomponent suppliers in domestic manufacturing plants.
- Area of Interest 7 – Projects that combine aspects of Areas of Interest 5 and 6.

The application period closed on May 19, 2009, and DOE received 119 proposals across the seven areas of interest. DOE selected 30 projects based on the evaluation criteria set forth in the funding opportunity announcement; special consideration was given to projects that promoted the objectives of the Recovery Act – job preservation or creation and economic recovery – in an expeditious manner.

This project, BASF Catalysts LLC (BASF), was one of the 30 projects that DOE selected for funding. DOE's Proposed Action is to provide \$24.6 million in financial assistance in a cost-sharing arrangement with the project proponent, BASF. The total cost of the project is estimated at \$49.2 million.

### **1.2 Purpose and Need for Department of Energy Action**

The overall purpose and need for DOE action pursuant to the VT program and the funding opportunity under the Recovery Act is to accelerate the development and production of various EDV systems by building or increasing domestic manufacturing capacity for advanced automotive batteries, recycling facilities, and EDV components, in addition to stimulating the United States' economy. This work will enable market introduction of various electric vehicle technologies by lowering the cost of battery packs, batteries, and electric propulsion systems for EDVs through high-volume manufacturing. DOE intends to further this purpose and satisfy this need by providing financial assistance under cost-sharing arrangements to this and the other 29 projects selected under this funding opportunity announcement.

This and the other selected projects are needed to reduce the United States' petroleum consumption by investing in alternative VTs. Successful commercialization of EDVs would support the DOE's Energy Strategic Goal of "protect[ing] our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy." This project will also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the Recovery Act.

### **1.3 National Environmental Policy Act and Related Procedures**

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA), as amended (42 U.S.C 4321), the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021). This statute and the implementing regulations require that DOE, as a Federal agency:

- Assess the environmental impacts of any Proposed Action;
- Identify adverse environmental effects that cannot be avoided, should the Proposed Action be implemented;
- Evaluate alternatives to the Proposed Action, including a No Action Alternative; and
- Describe the cumulative impacts of the Proposed Action together with other past, present, and reasonably foreseeable future actions.

These provisions must be addressed before a final decision is made to proceed with any proposed Federal action that has the potential to cause impacts to the human environment, including providing Federal funding to a project. This EA evaluates the potential individual and cumulative effects of the Proposed Project and the No Action Alternative on the physical, human, and natural environment. The EA is intended to meet DOE's regulatory requirements under NEPA and provide DOE with the information needed to make an informed decision about providing financial assistance.

NEPA requires Federal agencies to take into account the potential consequences of their actions on both the natural and human environments as part of their planning and decision-making processes. To facilitate these considerations, a number of typical actions that have been determined to have little or no potential for adverse impacts are "categorically excluded" (CE) from the detailed NEPA assessment process. Thus, the first step in determining if an action would have an adverse effect on the environment is to assess whether it fits into a defined category for which a CE is applicable. If a CE is applied, the agency prepares a Record of Categorical Exclusion to document the decision and proceeds with the action.

For actions that are not subject to a CE, the agency prepares an EA to determine the potential for significant impacts. If through the evaluation and analysis conducted for the EA process, it is determined that no significant impacts would occur as a result of the action, then the determination would result in a Finding of No Significant Impact (FONSI). The Federal agency would then publish an EA and the FONSI. The NEPA process is complete when the FONSI is executed.

If significant adverse impacts to the natural or human environment are indicated or other intervening circumstances either exist at the onset of a project or are determined through the EA process, an Environmental Impact Statement (EIS) may be prepared. An EIS is a more intensive study of the effects of the Proposed Action, and requires more rigorous public involvement. The agency formalizes its decisions relating to an action for which an EIS is prepared in a Record of Decision (ROD). Following a 30-day waiting period after publication of the Final EIS, the Agency may issue a ROD and then the NEPA process is complete.

#### **1.4 Agency Coordination**

DOE initiated consultations with the U.S. Fish and Wildlife Service (USFWS), the National Heritage Program, and the State Historic Preservation Office per requirements of Section 7 of the Endangered Species Act, and Section 106 of the National Historic Preservation Act. Copies of the agency response letters are included in Appendix A of this EA.

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## **2.0 PROPOSED ACTION AND ALTERNATIVES**

### **2.1 Department of Energy's Proposed Action**

DOE proposes, through a cooperative agreement with BASF to partially fund the construction of a commercial-size manufacturing plant that would produce cathode materials needed for the manufacturing of lithium-ion batteries. The plant would be constructed within an existing BASF-owned facility located in Elyria, Ohio. This plant would support the anticipated growth in the lithium-ion battery industry and, more specifically, the EDV industry and hybrid-electric vehicle (HEV) industry. If approved, DOE would provide approximately 50 percent of the funding for the project.

### **2.2 BASF's Proposed Project**

BASF proposes the construction of a lithium-ion battery cathode production plant in a dedicated new building (at least 40,000 square feet and up to 5 stories in height). The existing BASF Elyria facility currently has space for the new building, has experience with the cathode production processes, and already produces several base metals products. As part of the construction, a paved parking lot would be demolished. One older house may be demolished as well. The Proposed Project would involve two phases. In Phase I, a cathode production plant would be constructed and would undergo initial testing and startup. Materials produced during this phase would undergo final qualification at several battery manufacturers. In Phase II, BASF would continue to produce cathode products by the same methods employed during Phase I, but BASF would manufacture some of the raw material required for cathode production. The cathode materials to be produced are based on technology licensed from DOE. The production capacity will be sufficient to meet the DOE requirements of producing enough cathode material for 20,000 to 100,000 plug-in hybrid electric cars called for in the DOE solicitation.

The new plant would produce cathode materials (specifically LiNiMnCoO layered oxides) that would be used by lithium-ion cell manufactures to produce lithium-ion batteries. The raw materials for manufacturing are metal salts, metal powders, hydroxides, acids and other materials, plus water. The raw materials are thoroughly mixed, chemically converted and heat-treated. The resulting product would then be desagglomerated and classified to fulfill the final product specifications. The final powdered cathode material would be packaged for shipping. The specific process of manufacturing is proprietary.

### **2.3 General Description and Location**

The project would be located at the BASF's 22 acre facility in Lorain County, Ohio; approximately 30 miles west of Cleveland, Ohio (see Figure 2.2-1). This facility operates 24 hours a day, seven days a week, and produces intermediates and finished goods including base metal catalysts, and includes industrial infrastructure such as an industrial wastewater treatment plant, electrical interconnects, and material and waste management facilities to support the Proposed Project. The facility is located to the north and east of the town of Elyria and is situated on a peninsula that is bounded by the East Branch Black River to the west, north, and east. The southern boundary of the facility consists of several elevated rail lines that separate the peninsula from the downtown area. Locust Street forms the western boundary of the facility, with several abandoned industrial properties lying between Locust Street and the Black River. The banks of the Black River are wooded near the facility; however, residential areas are present to the west, north, and east of the river.

The impacted area for the Proposed Project at the Elyria facility is situated between Locust Street and Center Street, just south of an existing BASF building. The primary portion of the impacted area, which would be used under Phase I of the project, is within the BASF facility fence line and is currently paved (see Figure 2.2-2). The impacted area is equipped with stormwater drains that run through a sluice valve before discharging to the Black River. Historically, this area was used for drum storage; however, it is currently vacant with the exception of several truck trailers. The exact location and building foot print has not been finalized. An additional area, which is immediately south of the currently proposed Phase I impacted area, may be required in Phase I and/or Phase II.

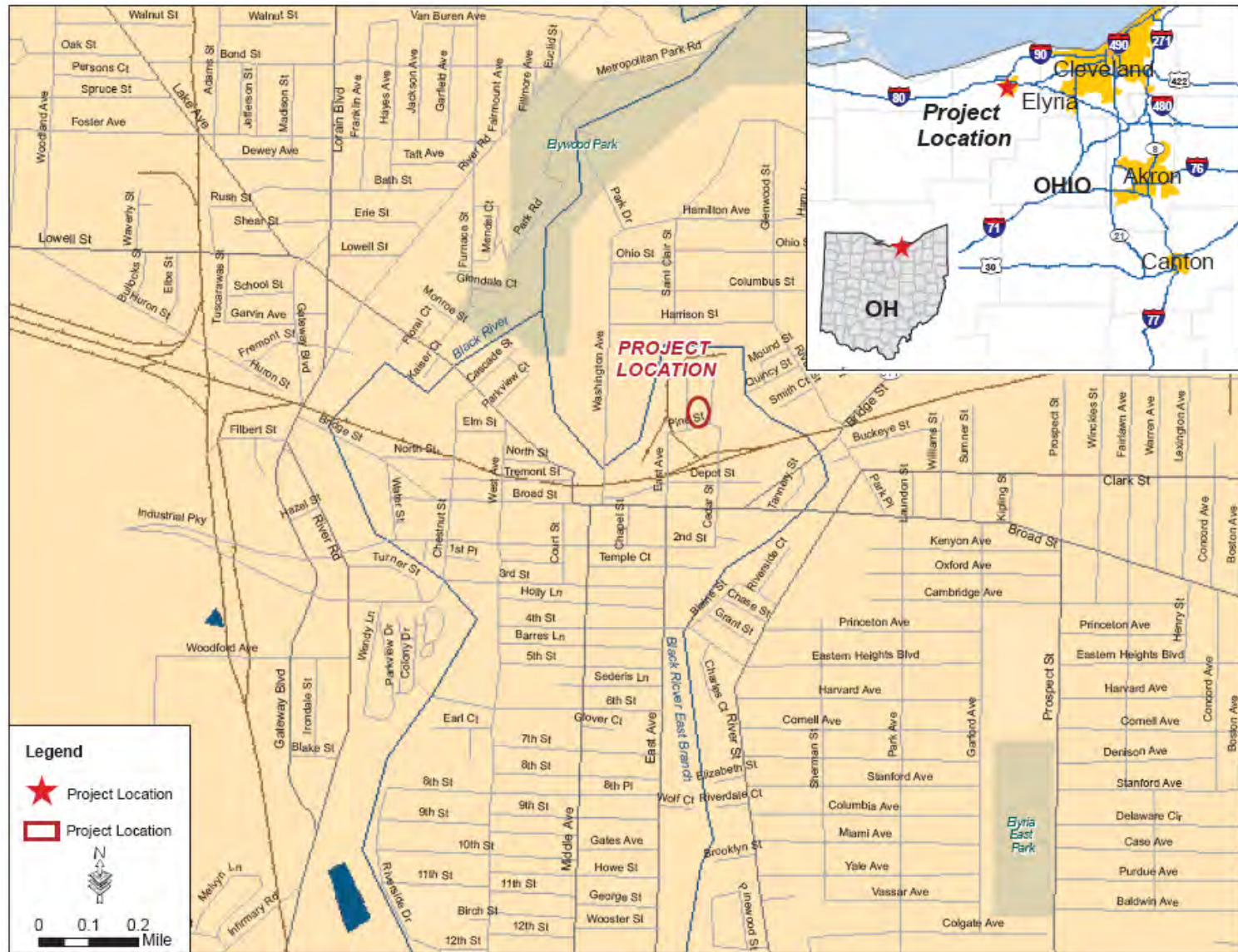


Figure 2.2-1 Regional Location Map





**Figure 2.2-2 Site Location Map**

This property includes a small house (referred to as Union House) that fronts Center Street and is owned and used by the International Chemical Workers Union. A hard packed gravel parking lot is situated between the back of the Union House and Locust Street.

## **2.4 Alternatives**

DOE's alternatives to this project consist of the 45 technically acceptable applications received in response to the Funding Opportunity Announcement, Recovery Act - Electric Drive Vehicle Battery and Component Manufacturing Initiative. Prior to selection, DOE made preliminary determinations regarding the level of review required by NEPA based on potentially significant impacts identified in reviews of acceptable applications. A variance to certain requirements in 10 CFR 1021.216 was granted by the DOE's General Counsel. These preliminary NEPA determinations and reviews were provided to the selecting official, who considered them during the selection process.

Because DOE's Proposed Action is limited to providing financial assistance in cost-sharing arrangements to projects submitted by applicants in response to a competitive funding opportunity, DOE's decision is limited to either accepting or rejecting the project as proposed by the proponent, including its proposed technology and selected sites. DOE's consideration of reasonable alternatives is therefore limited to the technically acceptable applications and a no-action alternative for each selected project.

## **2.5 No Action Alternative**

Under the No-Action Alternative, DOE would not provide funds to this Proposed Project. As a result, this project would be delayed while the applicant seeks other funding sources. Alternatively, the applicant would abandon this project if other funding sources are not obtained. Furthermore, acceleration of the development and production of various EDV systems would not occur or would be delayed. DOE's ability to achieve its objectives under the VT program and the Recovery Act would be reduced.

Although this and other selected projects might proceed if DOE decided not to provide financial assistance, DOE assumes for purposes of this environmental analysis that the project would not proceed without DOE assistance. If projects did proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative (i.e., providing financial assistance that allows the project to proceed). In order to allow a comparison between the potential impacts of a project as implemented and the impacts of not proceeding with a project, DOE assumes that if it were to decide to withhold assistance from a project, the project would not proceed.

## **2.6 Alternatives Considered by BASF**

BASF considered three alternate locations, in addition to the Proposed Project, at the BASF Elyria facility for the new lithium-ion battery cathode plant. The criteria for the site evaluation included:

- Use of existing property.
- Minimal impact to existing operations and neighboring properties.
- Minimal demolition and/or relocation of existing structures and equipment.
- Location within the existing fenceline and utilizing existing site security features.
- Ease of access during construction and operation for trucks and personnel.
- Sufficient space to allow for future expansion in an adjacent area.

The three alternatives were:

**Alternative A:** A location west of Locust Street may have offered sufficient space, however it lies outside of the main security fence, and across a public street from this fence. Therefore, an additional access point would need



to be maintained and monitored. This location is also smaller than the selected site and borders on the river, roads and property not held by BASF, making expansion difficult.

**Alternative B:** The location at the southeast corner of Pine Street and East Avenue is currently a visitor’s parking lot. This site would likely have offered sufficient space and it would be possible to construct a replacement visitor’s lot on other available land; however, like Alternative A, this location site falls outside of the main security gate and access. The location, abutting city streets and railroad tracks to the south, would force any expansion to affect the existing warehouse and office building to the east, which would likely require costly construction and relocation, with no obvious area available to compensate for lost warehouse space.

**Alternative C:** This location would occupy available space within the existing perimeter fence. Space would be tight for initial construction and the river would complicate future expansion. Expansion or possibly initial construction could require additional demolition work on existing structures. Some on-site fork truck and inter-site logistics would probably be affected by this location.

These alternatives were dismissed from further consideration as they were not able to meet the all the criteria for BASF’s Proposed Project.

## 2.7 Summary of Environmental Consequences

Table 2.6-1 provides a summary of the environmental, cultural, and socioeconomic impacts of the No Action Alternative and the Proposed Project.

**Table 2.6-1 Summary of Environmental, Cultural, and Socioeconomic Impacts**

Impact Area	No Action Alternative		Proposed Project	
	Construction	Operations	Construction	Operations
Land Use	Negligible	Negligible	Negligible	Negligible
Meteorology	Negligible	Negligible	Negligible	Negligible
Geology and Soils	Negligible	Negligible	Negligible	Negligible
Socioeconomics (Population and Housing)	Negligible	Negligible	Negligible	Negligible
Socioeconomics (Taxes, Revenue, Economy, Employment)	Negligible	Negligible	Minor Beneficial	Minor Beneficial
Environmental Justice	Negligible	Negligible	Negligible	Negligible
Visual Resources	Negligible	Negligible	Negligible	Negligible
Surface Water and Groundwater	Negligible	Negligible	Negligible	Negligible
Wetlands and Floodplains	Negligible	Negligible	Negligible	Negligible
Vegetation and Wildlife	Negligible	Negligible	Negligible	Negligible
Cultural Resources	Negligible	Negligible	Negligible	Negligible
Utilities and Energy Use	Negligible	Negligible	Negligible	Negligible
Traffic and Transportation	Negligible	Negligible	Minor	Negligible
Human Health and Safety	Negligible	Negligible	Negligible	Negligible
Air Quality	Negligible	Negligible	Minor	Minor
Greenhouse Gases	Negligible	Moderate	Minor	Beneficial
Noise	Negligible	Negligible	Minor	Minor
Solid and Hazardous Wastes	Negligible	Negligible	Minor	Minor

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### 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 provides a description of the affected environment (existing conditions) at the Project Site and a discussion of the environmental consequences of the No Action Alternative and the Proposed Project. Additionally, cumulative impacts and mitigation measures are discussed where appropriate. The methodology used to identify existing conditions and to evaluate potential impacts on the physical and human environment involved the following: review of the Environmental Questionnaire and the Project Narrative prepared by BASF; review of other documentation provided by BASF; searches of various environmental databases; agency consultations; and a site visit conducted on October 30, 2009.

#### 3.1 Resource Areas Dismissed from Further Consideration

DOE has determined that various resources would either not be affected or would sustain negligible impacts from BASF's Proposed Project and do not require further evaluation. They include land use, meteorology, geology and soils, socioeconomics, environmental justice, visual resources, surface water, groundwater, wetlands and floodplains, vegetation and wildlife, cultural resources, utilities and energy use, transportation and traffic, and human health and safety; therefore, these resource areas are briefly discussed in this section of the EA and will not be evaluated further.

**Land Use:** The Proposed Project would not result in direct impacts to land use planning and zoning. The existing land classification at the site is 300 – Industrial, Vacant Land and is surrounded by parcels classified as 330 – Manufacturing and Assembly, Medium (Lorain County, 2009). Although the land would no longer be vacant, the use would be consistent with the surrounding property.

**Meteorology:** Lorain County is characterized by a cold to mild temperate climate. Average annual temperature ranges from lows of about 27 degrees Fahrenheit (°F) to highs of approximately 74°F. Winter months (December through February) are the coolest with average monthly low temperatures ranging from 19° to 25°F and high temperatures range from 35° to 40°F. The warmest months are the summer months of June through August. During those months, average monthly low temperatures range from 58° to 63°F and high temperatures range from 81° to 85°F. The maximum average precipitation, which is 4.07 inches, occurs in June (Weather.com, 2009). Elyria area historical tornado activity is slightly above the Ohio state average and 52 percent greater than the overall United States (City-Data.com, 2009). The last Category 4 tornado (i.e., maximum wind speeds 207-260 mph), which resulted in fatalities and costly damages, occurred on April 11, 1965. The Proposed Project would have no impact on climate, nor would climate have any impact on the action.

**Geology and Soils:** The predominant geologic landform within the project site is a terrace, characterized by a step-like surface bordering a valley floor (NRCS, 2009). The Lorain County Soil Survey (NRCS, 2009) indicates the entire project site as Jimtown urban land complex (JuA) with 0-2 percent slopes with no frequency of flooding. The soils are partially hydric and are very limited for commercial buildings, primarily due to depth to the saturated zone.

Urban soils are those soils that have been previously disturbed and are characteristic of the built-up environment. Concerning the project site, this soil unit covers the location of the existing facility where the Proposed Project would be located.

A "partially hydric" rating indicates that at least one component of the map unit is rated as hydric, and at least one component is rated as not hydric. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part; and under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

Hydric soils can pose limitations to construction; however, they can also be indicative of wetlands. “Very limited” soils for commercial building construction indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

The October 30<sup>th</sup> site visit confirmed the project impacted area is located within previously disturbed areas that contain impervious surface. Due to the past industrial use of the site, soil contamination does exist within the project site (see Section 3.2.3, Solid and Hazardous Waste) and NEPA compliant remediation actions have been completed. Under BASF’s Proposed Project, construction of the proposed facility would occur within an existing disturbed and impervious site; therefore, no adverse impacts would occur to geology or soils. Potential staging areas for construction equipment and materials would not likely cause adverse impacts to soils as the entire area is characterized by urban/previously disturbed soils. Operations of the Proposed Project would have no impacts to geology or soil resources.

**Socioeconomics:** The Proposed would result in the hiring for approximately 20 permanent jobs when the plant is fully operational. It is assumed that the majority of the workforce would be drawn from local candidates; therefore, no increase in population or need for housing is anticipated.

Under BASF’s Proposed Project, taxes would continue to be paid on the property. Construction workers employed for the construction period are assumed to be currently employed, and residing and paying taxes in the Lorain County area. Increased sales transactions for the purchase of materials and supplies would generate some additional revenues for local and state governments, which would have a minor positive impact on taxes and revenue.

Secondary jobs may result from the increased economic activity stimulated by the Proposed Project. Additional retail services and business employment may result from the Proposed Project through a multiplier effect, yielding additional sales and income tax revenues for local and state governments. Secondary jobs would have a minor beneficial impact.

The Proposed Project would not result in direct impacts to community facilities, services, school systems, or emergency services of Lorain County because significant numbers of employees are not anticipated to relocate as a result of the Proposed Project.

**Environmental Justice:** The Proposed Project was evaluated in accordance with *EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. While there are minority and low-income populations in the area, the Proposed Project would not have a disproportionately adverse impact on these groups.

**Visual Resources:** The facility is located to the north and east of the town of Elyria and situated on a peninsula that is bounded by the Black River to the west, north, and east. The southern boundary of the facility consists of several elevated rail lines that separate the peninsula from the downtown area. Locust Street forms the western boundary of the facility, with several abandoned industrial properties lying between Locust Street and the Black River. The banks of the Black River are wooded near the facility; however, residential areas are present to the west, north, and east of the river. The building would be up to five stories and surrounded by existing facility structures and vegetation.

Impacts to identified views and vistas were determined based on an analysis of the existing quality of the landscape views, the sensitivity of the view, and the anticipated relationship of the scale and massing of the proposed buildings to the existing visual environment. Although the new construction would be noticeable, the scale and massing of the building would be consistent with the buildings in the surrounding industrial area and no adverse impacts would occur.

**Surface Water:** The BASF facility is bounded to the east, north, and west by the East Branch Black River, which joins the West Branch Black River downstream of the facility. These rivers converge to form the Black River, which flows north to Lake Erie. The entire Black River watershed has been designated an Area of Concern by Ohio Environmental Protection Agency (EPA) and is the subject of the Black River Remedial Action Plan, which is a community-based public/private initiative. The Black River Remedial Action Plan seeks to combat nonpoint source impacts through precision farming techniques, the utilization of best management practices (BMPs) during construction, and the restoration, enhancement, and protection of the Black River riparian corridor (Ohio EPA, 2009).

The facility is subject to an industrial stormwater General Permit OHR000004 issued by the Ohio EPA effective June 1, 2006 through May 31, 2011 (Ohio EPA, 2006). The permit outlines requirements and limitations applicable to stormwater discharged by the facility, including the requirement for a Storm Water Pollution Prevention Plan. BASF maintains an Elyria facility Storm Water Pollution Prevention Plan, which provides information about materials stored on site, spill prevention and response, monitoring, and other information to comply with the permit requirements (BASF, 2008a). BASF also maintains a Spill Prevention, Control and Countermeasure Plan (BASF, 2008b) for avoidance, minimization, and response to pollutant spills that could reach surface waters.

The BASF facility does not withdraw from or discharge process waters to the East Branch Black River or other surface waters. Stormwater discharges are regulated under the existing general permit, and impacts are avoided and minimized through the implementation of the Storm Water Pollution Prevention Plan. These conditions would continue in the absence of the Proposed Project.

Because the location proposed for new structures is currently paved, the Proposed Project would not increase the impervious surface areas at the BASF facility. However, BASF would update the Storm Water Pollution Prevention Plan and the Spill Prevention, Control and Countermeasure Plan to address new materials and processes associated with the proposed facility. Additionally, during construction of facilities for the Proposed Project, the implementation of erosion and sedimentation control measures would ensure that temporary impacts on surface waters would be negligible.

**Groundwater:** The principal aquifer in the area is the Berea Sandstone formation. The formation ranges in thickness from 30 to 60 feet at the BASF facility and overlies an impermeable shale formation. Groundwater flow beneath the facility radiates in the direction of the East Branch Black River. There are no private or commercial wells in proximity to the BASF facility and no current usage of groundwater. Within a 1-mile radius, a single well located approximately 0.6 mile south of the facility was installed to a depth of 45 feet in 1948 (Environmental Resources Management, Inc., 1996).

Groundwater sample results described in Resource Conservation and Recovery Act (RCRA) Facility Investigation Reports in 1992 and 1994 indicated volatile organic compounds (VOCs) from former Chemical Recovery Systems, Inc. properties north and south of the facility have migrated into the groundwater beneath the BASF property (Environmental Resources Management, Inc., 1996). The BASF Spill Prevention, Control and Countermeasure Plan (BASF, 2008b) addresses the avoidance, minimization, and response to pollutant spills that could affect groundwater.

The existing BASF facility does not withdraw from or discharge process waters to an aquifer, and the Proposed Project would not change this situation. As specified in the existing Spill Prevention, Control and Countermeasure Plan, the existing facility avoids, minimizes, and responds appropriately to pollutant spills that could affect groundwater. These practices would continue with or without the Proposed Project. More importantly, the proposed manufacturing process, the types of materials used, and the relatively small quantities of these materials would present a relatively low risk of groundwater contamination by the Proposed Project. BASF would update the Storm Water Pollution Prevention Plan and the Spill Prevention, Control and

Countermeasure Plan to address new processes, materials and containers associated with the proposed facility. Additionally, spill prevention, control and countermeasures would be employed during construction of facilities to minimize the potential for contamination of groundwater during these activities.

**Wetlands and Floodplains:** National Wetland Inventory (NWI) mapping does not indicate the presence of wetlands within or adjacent to the project site (EPA, 2009a). Furthermore, during the October 30<sup>th</sup> site visit, it was determined that the entire area is disturbed and overlain with impervious surface. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Map Number 39093C226D does not indicate the presence of floodplain within the project site (FEMA, 2009).

**Vegetation and Wildlife:** During the October 30<sup>th</sup> site visit, it was confirmed that the site is located within previously disturbed areas that contain impervious surfaces. No vegetative resources or wildlife habitat occurs within the project site.

Informal coordination letters have been sent to both USFWS and the Ohio Department of Natural Resources to verify the Proposed Project would have no impact on any Federally or state-listed threatened, endangered, or candidate species, or critical habitat within the vicinity of the Proposed Project. In a letter dated November 10<sup>th</sup>, 2009, the USFWS responded that due to the Proposed Project type, size, and location, they do not anticipate any impact on Federally listed endangered, threatened, or candidate species, or their habitats. The Ohio Department of Natural Resources indicated that one potentially-threatened state plant species, the round-leaved dogwood (*Cornus rugosa*), has been recorded approximately 0.5 miles to the west of the project site in Elywood Park (see letter dated November 17<sup>th</sup>, 2009, Appendix A). The Ohio Department of Natural Resources letter verified that no known Federal or state protected species occur at the project location.

**Cultural Resources:** The Proposed Project site at the Elyria facility is situated between Locust Street and Center Street, just south of an existing BASF building. The primary location that would be used under Phase I of the project is within the BASF facility fence line and is currently paved. Historically this area was used for drum storage, but is currently vacant with the exception of several truck trailers. One structure is located within the footprint of the impacted area. This small house (Union House) fronts Center Street and is owned and used by the local chemical workers union. A parking lot is situated between the back of the house and Locust Street. Ground disturbance would be limited to the construction of a new facility in an existing industrial area with 30 extant buildings. The building height has not been finalized; however, it is likely to be as high as 5 stories (approximately 100 feet).

The Area of Potential Effect (APE) for historic resources is defined as 300 feet beyond the limits of work for the project. The facility is located to the north and east of the town and situated on a peninsula that is bounded by the Black River to the west, north, and east. The southern boundary of the facility consists of several elevated rail lines that separate the peninsula from the downtown area. Locust Street forms the western boundary of the facility, with several abandoned industrial properties lying between Locust Street and the Black River. The banks of the Black River are wooded near the facility. The new construction would be consistent with the scale and massing of buildings in the surrounding industrial area and would therefore have limited impact to the surrounding area.

Due to extensive past ground disturbance at the proposed construction site, no intact archeological resources are anticipated. Our investigations have discovered one building over 50 years of age within the APE for the Proposed Project. This is the International Chemical Workers Union building at 122 Center Street. Analysis of this building has led DOE to conclude that the building is not eligible for the National Register.

Since there are no historic resources within the APE for either archeological or architectural resources, DOE has made a finding of No Historic Properties Affected for this undertaking. According to a December 18, 2009 letter, the Ohio State Historic Preservation Office concurs with DOE's findings (see Appendix A).

**Utilities and Energy Use:** The BASF facility receives potable water for process use, other uses, and general consumption from the City of Elyria Water Works. The facility used approximately 42 million gallons in 2008 with an average use of approximately 115,000 gallons per day (gpd) (BASF, 2009b). The Elyria Water Works withdraws and treats water from Lake Erie for distribution to residential, commercial, and industrial customers in the city and surrounding communities. The Elyria Water Works has a capacity of 22 million gallons per day (mgd). The current average demand is approximately 9.5 mgd (Elyria Public Works, 2009), of which the BASF facility accounts for approximately 1.2 percent.

Process wastewater is pre-treated and discharged to the Elyria sanitary sewer system in accordance with Wastewater Discharge Permit 171 (EWPC, 2009). The permit limits BASF discharges to 190,000 gpd, and the facility currently discharges on average less than 100,000 gpd. The permit also specifies limitations on pollutant concentrations in the BASF plant effluent as well as sampling and monitoring requirements to ensure compliance. The Elyria Wastewater Pollution Control Plant has a capacity to treat 13 mgd, of which the BASF facility effluent represents less than 1 percent. The Elyria Wastewater Pollution Control Plant discharges treated effluent to the Black River approximately 8 miles upstream of its mouth on Lake Erie and is regulated under a National Pollutant Discharge Elimination System permit (Elyria Public Works, 2009).

Electric power is supplied to the facility by Ohio Edison. The BASF facility used approximately 14,000 megawatt hours in 2007 with an average use of 38 megawatts per hour per day and an average demand of 1.6 megawatts (BASF, 2009b). Ohio Edison is a subsidiary of FirstEnergy Corporation, which has a generating capacity of 14,200 megawatts (FirstEnergy, 2009). The BASF facility represents a very small demand on this capacity.

The facility receives natural gas from Columbia Gas of Ohio and used approximately 269,000 million British thermal units (MMBTU) in 2007. The average daily use was approximately 737 MMBTU (BASF, 2009b).

During construction for the Proposed Project, utilities would be supplied by existing services at the BASF facility, which would not be adversely impacted by the small increase in temporary demand.

BASF has estimated the operational demands on utility systems associated with the additional facilities for the Proposed Project (BASF, 2009b). The additional processes would increase BASF water use by no more than approximately 3,300 gpd in Phase I and another 49,500 gpd in Phase II. Although the combined water use for the new processes would represent a 46 percent increase over current use, it would utilize less than 0.5 percent of the reserve capacity of the Elyria Water Works and would have a negligible impact on the utility. The corresponding wastewater discharge to the Elyria Wastewater Pollution Control Plant would remain below the current limit in Wastewater Discharge Permit 171 of 190,000 gpd, and the total discharge would constitute approximately 1.3 percent of the Elyria plant capacity, and likely would not be a significant impact on the utility. BASF would take all necessary steps to avoid noncompliance with its discharge permit.

The Proposed Project would increase the BASF electrical demand by approximately 50 megawatt hours per day in Phase I and another 10 megawatt hours per day in Phase II. The combined electricity consumption for the new processes would represent a 167 percent increase over recent use. Because the total electricity demand by BASF, approximately 4.2 megawatts with the Proposed Project, would represent a very small percentage of the generating capacity of FirstEnergy, the Proposed Project would have a negligible impact on the utility. The two main 69KV transformers on the BASF property are each currently loaded at 50 percent of capacity and could potentially accommodate the additional load. However, potential upgrades to these transformers would be addressed in conjunction with the Proposed Project, although upgrades to offsite power transmission lines and transformers are not anticipated. The Proposed Project would have a very small incremental increase in natural gas use, which would not affect the capacity of the utility (BASF, 2009b).

**Transportation and Traffic:** The project would be located on a small peninsula bordered by the East Branch Black River on the north, east and west sides, and bordered by railroad tracks on the south. The new building would be located in the center of the existing BASF campus of over 30 buildings. The property is located in an industrial area, with residential areas located across the river to the north and east. The Ohio Turnpike (Interstate 80), Highway 2, and Highway 20 are the major east-west arterials near the facility. Highways 58, 301, and 83 are the major north-south arterials near the facility. John F. Kennedy Memorial Parkway traverses from a proximity of 0.7 miles to the north of the facility to 1.2 miles to the east where it changes names to the South East Bypass. The only access road to the property is the north-south oriented East Avenue that passes under the railroad tracks bordering the southern edge of the property and extends south to the town of Elyria. This is the major access route for trucks accessing the facility.

During the construction phase, approximately six to eight trucks per day would access the facility. Impacts from these truck trips during construction would be short-term and minor.

The facility currently experiences a low volume of truck traffic related to deliveries and shipments (estimated at two to three trucks per day) and the local roadway network can easily accommodate this volume. The Proposed Project would be expected to result in additional deliveries of less than four to five per week and would use established truck routes currently in place by BASF. The additional truck trips to the facility would be negligible and easily accommodated within existing roadway and intersection capacity.

The Proposed Project would generate a minor long-term increase in personal vehicle traffic due to the hiring of approximately 20 permanent employees (when the plant is fully operational). However, the number of personal vehicles accessing the facility during any one period would be reduced as these employees would likely be employed on shift rotations. Because this Proposed Project is an addition to an existing industrial facility that currently operates production equipment and has existing truck and personal-vehicle traffic, this small increase in vehicle traffic would have only a minor impact to the surrounding community.

The Proposed Project would result in only minor impacts regarding traffic. Short-term but measurable adverse impacts are expected during construction. Any long-term increases in traffic conditions during operations would be negligible.

**Human Health and Safety:** BASF maintains an extensive library of procedures governing health and safety throughout its facilities worldwide. Because the Elyria facility utilizes hazardous materials in its processes, the facility maintains 250 procedures addressing the safe handling of acids and other hazardous chemicals, confined space entry, personal protective equipment, leak detection, response to spills, hazard communication, responding to natural disasters, and numerous others. The principal hazards associated with plant operations are contained within buildings and secure areas of the property. The property is secured by a perimeter fence with controlled electronic access at gates and security cameras (BASF, 2009b). Plant emissions to the air and utility systems are regulated as described under other resources to ensure the health and safety of the local population.

The Proposed Project would introduce additional processes at the BASF facility that would be comparable to existing processes in their potential for hazards. Materials to be used and stored at the facility, as described further in the Solid and Hazardous Waste section, would include simple compounds (and elemental forms) of lithium, nickel, manganese, and cobalt, along with sodium hydroxide, ammonium hydroxide, and common acid solutions. Because these materials and resulting wastes would be stored on site, the potential risk of exposure would be greatest for BASF employees, who are trained in proper safety procedures. The risk of exposure by the general population would be minor and comparable to the existing conditions at the facility. The health and safety risks associated with these processes would be addressed in existing procedures and, where appropriate, new procedures would be developed to guide the safe use of specific equipment. The Elyria facility has 160 specific procedures already in place that direct the safe use of existing processes and equipment.



The BASF facility undertook a Department of Homeland Security assessment, and no materials on site were identified as meeting the “Top Screen” threshold. The Proposed Project would not add any materials that would affect this assessment. No intentionally destructive act has ever occurred at the BASF facility, which is not considered a target for terrorist activity. In the unlikely event of such an act, the facility would respond in accordance with existing procedures, including BASF Corporate Procedures BC032.010 “Incident Notification and Reporting” and BC009.035 “Multiple Casualty Incident,” as well as Elyria facility procedures “Emergency Coordinator Roles, Duties and Responsibilities”, “Response to Emergency and Non Emergency Plant Situations”, “Emergency Coordinators Responsibilities During a Safety Incident or Injury”, “Tornado Plan” “Gate Procedures for Emergency Vehicles,” and “Release Notification or Wastewater Treatment Plant Discharge Upset.”

### 3.2 Resource Areas Considered Further

Environmental resource areas carried through for further consideration of the potential impact of the BASF’s Proposed Project include air quality, noise, and solid and hazardous wastes.

#### 3.2.1 Air Quality

##### *Air Quality Management*

The purpose of the air quality analysis is to determine whether emissions from a proposed new or modified source of air pollution, in conjunction with emissions from existing sources, would not cause or contribute to the deterioration of the air quality in the area. The Clean Air Act (CAA) requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS include two types of air quality standards (40 CFR 50.1(e)). Primary standards protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. EPA has established NAAQS for six principal pollutants, which are called “criteria pollutants”: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM) (particulate matter 10 microns or less [PM<sub>10</sub>], particulate matter 2.5 microns or less [PM<sub>2.5</sub>], sulfur dioxide (SO<sub>2</sub>), and lead (Pb). A state’s air quality regulations may further regulate concentrations of the criteria pollutants. Table 3.2.1-1 lists the NAAQS. The Ohio EPA adopts the national standards.

**Table 3.2.1-1. National Ambient Air Quality Standards**

Pollutant	Standard	Averaging Time	Standard Type
Carbon Monoxide	35 ppm (40 mg/m <sup>3</sup> )	1-hour	Primary
	9 ppm (10 mg/m <sup>3</sup> )	8-hour	
Lead	0.15 µg/m <sup>3</sup>	Rolling 3-Month Average <sup>(1)</sup>	Primary and Secondary
	1.5 µg/m <sup>3</sup>	Quarterly Average	
Nitrogen Dioxide	0.053 ppm (100 µg/m <sup>3</sup> )	Annual (Arithmetic Mean)	Primary and Secondary
PM <sub>10</sub>	150 µg/m <sup>3</sup>	24-hour	Primary and Secondary
PM <sub>2.5</sub>	35 µg/m <sup>3</sup>	24-hour	Primary and Secondary
	15.0 µg/m <sup>3</sup>	Annual (Arithmetic Mean)	
Ozone	0.12 ppm	1-hour <sup>(2)</sup>	Primary and Secondary
	0.075 ppm (2008 std)	8-hour	
	0.08 ppm (1997 std)	8-hour <sup>(3)</sup>	
Sulfur Dioxide	0.5 ppm (1300 µg/m <sup>3</sup> )	3-hour	Secondary
	0.14 ppm	24-hour	Primary
	0.03 ppm	Annual (Arithmetic Mean)	

(1) Final rule signed October 15, 2008.

(2) As of June 15, 2005. 1-hour O<sub>3</sub> was revoked in all areas except 14 8-hour O<sub>3</sub> nonattainment Early Action Compact Areas. Lorain County, Ohio is not an Early Action Compact Area.

(3) The 1997 standard and its implementation rules would remain in place as EPA undertakes rulemaking to address the transition to the 2008 standard. Ohio EPA made recommendation for nonattainment area designations to EPA in March 2009 for the 2008 standard.

µg/m<sup>3</sup> – microgram/per cubic meter; ppm – parts per million; std – standard.

Source: EPA, 2009b

To determine compliance with the NAAQS, emissions of criteria pollutants from a new or modified source(s) are modeled to determine their air dispersion concentrations. In addition to the six criteria pollutants outlined in the CAA, several other substances raise concerns with regard to air quality and are regulated through the CAA Amendments of 1990. These substances include hazardous air pollutants (HAPs), and toxic air pollutants such as metals, NO<sub>x</sub>, and VOCs. NO<sub>x</sub> and VOCs are precursors for O<sub>3</sub>.

Areas that meet the air quality standard for the criteria pollutants are designated as being in attainment. Areas that do not meet the air quality standard for one or more of the criteria pollutants are designated as being in nonattainment for that standard. The CAA requires nonattainment states to submit to the EPA a State Implementation Plan (SIP) for attainment of the NAAQS (40 CFR 51.166, 40 CFR 93). Maintenance areas are those that at one point had not met the NAAQS but are currently maintaining the standards through the requirements in the SIP.

The 1990 Amendments to the CAA require Federal actions to show conformance with the SIP. Federal actions are those projects that are funded by Federal agencies and include the review and approval of a Proposed Action through the NEPA process. Conformance with the SIP means conformity to the approved SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS, and achieving expeditious attainment of such standards (40 CFR, 51 and 93). The need to demonstrate conformity is applicable only to nonattainment and maintenance areas.

**Class I Areas and Sensitive Receptors**

For areas that are already in compliance with the NAAQS, the Prevention of Significant Deterioration (PSD) requirements provide maximum allowable increases in concentrations of pollutants, which are expressed as increments (40 CFR 52.21). Allowable PSD increments currently exist for three pollutants: SO<sub>2</sub>, NO<sub>2</sub>, and PM<sub>10</sub> (Table 3.2.1-2).

**Table 3.2.1-2. Allowable Prevention of Significant Deterioration Increments (µg/m<sup>3</sup>)**

Pollutant--Averaging Period	Class I Area	Class II Area
SO <sub>2</sub> --3-Hour	25	512
--24-Hour	5	91
--Annual	2	20
NO <sub>2</sub> --Annual	2.5	25
PM <sub>10</sub> --24-Hour	8	30
--Annual	4	17

µg/m<sup>3</sup> – microgram/per cubic meter.  
 Source: 40 CFR 52.21(c)

One set of allowable increments exists for Class II areas, which covers most of the United States and another set of more stringent allowable increments exists for Class I areas. Because of their pristine environment, Class I areas require more rigorous safeguards to prevent deterioration of their air quality. For the purposes of PSD review, the Federal government has identified mandatory Class I areas, which as defined in the CAA, are the following that were in existence as of August 7, 1977: national parks over 6,000 acres, national wilderness areas and national memorial parks over 5,000 acres, and international parks (NPS, 2009a). In general, proposed projects that are within 62 miles (100 kilometers) of Class I areas must evaluate impacts of the project on air quality related values (AQRVs) such as visibility, flora/fauna, water quality, soils, odor, and any other resources specified by the Federal Land Manager (NPS, 2009b).

Areas that are not in attainment with the NAAQS are subject to the Nonattainment New Source Review (NNSR). Overall, for the purposes of air quality analysis, any area to which the general public has access is considered a

sensitive receptor site, and includes residences, day care centers, educational and health facilities, places of worship, parks, and playgrounds.

### ***Greenhouse Gases***

Greenhouse gases (GHGs) are pollutants of concern for air quality and climate change. GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), NO<sub>x</sub>, O<sub>3</sub>, and several chlorofluorocarbons. Water vapor is a naturally occurring GHG and accounts for the largest percentage of the greenhouse effect. Next to water vapor, CO<sub>2</sub> is the second-most abundant GHG and is typically produced from human-related activities. The largest source of CO<sub>2</sub> emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities and other sources. Additionally, a number of specialized industrial production processes and product uses such as mineral production, metal production and the use of petroleum-based products can also lead to CO<sub>2</sub> emissions. The manufacturing of lithium-ion battery separator material could produce CO<sub>2</sub> emissions.

Although regulatory agencies are taking actions to address GHG effects, there are currently no state or Federal standards or regulations limiting CO<sub>2</sub> emissions and concentrations in the ambient air. In response to the *FY2008 Consolidated Appropriations Act* (H.R. 2764; Public Law 110–161), EPA issued the *Final Mandatory Reporting of Greenhouse Gases Rule* (GHG Reporting Rule), which becomes effective on December 29, 2009. The GHG Reporting Rule requires annual reporting of GHG emissions to EPA from large sources and suppliers in the United States, including suppliers of fossil fuels or industrial GHGs; manufacturers of vehicles and engines; and facilities that emit greater than 25,000 metric tons per year (mtpy) (27,558 tons per year [tpy]) each of CO<sub>2</sub> and other GHGs. The intent of the rule is to collect accurate and timely emissions data to inform future policy decisions and programs to reduce emissions, as well as fight against the effects of climate change.

Additionally, on September 30, 2009, EPA proposed, under the CAA New Source Review (NSR) and Title V operating permit programs, new GHG thresholds that would trigger review and permitting. This proposed requirement would cover nearly 70 percent of the nation's largest stationary source GHG emitters (including power plants, refineries, and cement production facilities), while shielding small businesses and farms from permitting requirements. The proposed thresholds and requirements are currently being reviewed by Congress.

### **3.2.1.1 Affected Environment**

#### ***Air Quality***

The Ohio EPA, Division of Air Pollution Control is responsible for monitoring air quality for each of the criteria pollutants and assessing compliance. Ohio EPA air pollution regulations are located in the Ohio Administrative Code (OAC) in chapters 3745-14 to 3745-26, 3745-31, 3745-71 to 3745-80, 3745-100 to 3745-105, 3745-108, 3745-109, and 3745-112 to 3745-114. Lorain County is part of the Cleveland-Akron-Lorain nonattainment area for PM<sub>2.5</sub> and moderate nonattainment for the 1997 8-hour O<sub>3</sub> standard. The Ohio EPA has also recommended that Lorain County be designated nonattainment for the 2008 8-hour O<sub>3</sub> standard. The county had previously been in moderate non-attainment for the 1-hour O<sub>3</sub>. In 2000, Lorain County was redesignated as a maintenance area for the primary SO<sub>2</sub> standard (EPA, 2009c).

Because Elyria, Ohio is within the Lorain County nonattainment and maintenance areas, Federal actions within Elyria, Ohio must show conformity with the SIP, and the Proposed Project would fall under the General Conformity Rule; however, for this EA, DOE would not need to demonstrate SIP conformity because in Ohio, Federal actions covered under the General Conformity Rule, which are in moderate nonattainment or maintenance areas, do not have to demonstrate conformity if their total direct and indirect emissions would be less than 100 tpy for all criteria pollutants, except VOC (50 tpy) and Pb (25 tpy) (OAC 3745-102, 2009). The section below provides further discussions on the current and projected emissions from the BASF facility.

### Current Air Emissions

The BASF facility operates via a Title V Major Source Permit issued by the Ohio EPA Division of Air Pollution Control: Permit No. P0085293. This permit applies to most of the equipment used and material handling process activities in the facility’s manufacturing process. A Title V Major Source Permit is granted to a facility that has the potential to emit more than 100 tpy of any of the six criteria pollutants, or more than 10 tpy of any single HAP or more than 25 tpy of any combination of HAPs. The BASF facility is a Title V facility because of its potential emissions of NO<sub>x</sub>. NO<sub>x</sub> is one of the precursors of O<sub>3</sub>. The facility has conducted an air modeling demonstration for NO<sub>x</sub> and has accepted Federally enforceable limits for its NO<sub>x</sub> emissions (below 100 tpy), in order to meet the requirements of the SIP and not cause the continued deterioration to the air quality in the region. These Federally enforceable limits are set in the facility’s operation air permit. Other criteria air pollutants and HAPs from the facility are well below major source emissions rates. In accordance with its air operating permit, the facility’s operations meet all ambient air quality standards. Table 3.2.1-3 below provides the air emissions from the current operations at the BASF facility.

**Table 3.2.1-3. Current Emissions <sup>(1)</sup> from BASF Elyria**

Pollutant	Emissions (tpy) from Current Operations
CO	8.02
NO <sub>x</sub>	16.0
SO <sub>2</sub>	0.06
VOC	0.474
PM <sub>2.5</sub>	0.18
PM <sub>10</sub>	0.18
PM	0.54
Pb	4.78E-5
Organic Compounds	1.06
Ammonia	0.31

(1) Current emissions are based on 2008 emissions from the BASF Elyria facility.  
 Source: BASF, 2009a

### 3.2.1.2 Environmental Consequences

#### 3.2.1.2.1 No Action Alternative

The No Action Alternative is treated in this EA as the “No-Build” Alternative. That is, under the No-Action Alternative, BASF would not construct and operate the lithium-ion batteries cathode manufacturing facility at the Elyria facility because of the absence of DOE funding assistance. The facility would continue to emit air pollutants as described in Section 3.2.1.1.

With the No Action Alternative, DOE would not fully meet its goal for supporting United States based manufacturing to produce advanced EDV batteries and components. With reduced DOE funding, industries may be less willing to invest in the advanced technology that would help increase production of these batteries, especially the lithium-ion batteries and their components. Because of the greater energy density and lighter weight than other batteries, lithium batteries are proving to be most promising for the commercial viability of electric vehicles (DOE, 2001). Without alternative fuel sources for automobiles, the United States will continue its dependence on and consumption of petroleum and other fossil fuels, consequentially, the current trends of increased CO<sub>2</sub> concentrations in the Earth’s atmosphere will continue, increasing the effect on climate change.

### **3.2.1.2.2 Proposed Project**

#### ***Construction***

The entire BASF facility in Elyria is 22 acres and the new construction is expected to occupy approximately 0.8 acres (approximately 40,000 square feet). Construction for both phases of the project would occur on a currently developed area of the property: Phase I and/or Phase II would be constructed primarily on a paved site currently used for drum storage; some portions of this project would be constructed a gravel parking lot. Construction activities would be limited to minor demolition activities and no new disturbance of land would occur.

During the actual construction process, the equipment used to construct the proposed facilities would intermittently emit quantities of five criteria air pollutants: CO, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and VOC. In addition to tailpipe emissions from heavy equipment, ground surface disturbances during excavation and grading activities could potentially generate fugitive dust. Fugitive dust, such as dirt stirred up from construction sites, can affect both environmental and public health. The type and severity of the effects depend in large part on the size and nature of the dust particles. The types of effects that can occur to humans include inhalation of fine particles that can then accumulate in the respiratory system causing various respiratory problems including persistent coughs, wheezing, eye irritations, and physical discomfort. DOE expects the overall impacts from fugitive dust emissions would be temporary in duration and of minor intensity.

Exhaust emissions from equipment used in construction, coupled with likely fugitive dust emissions, could cause minor, short-term degradation of local air quality. DOE expects the overall impacts to air quality from the construction of the proposed facility at Elyria, Ohio would be short-term and minor.

#### ***Operations***

Because the plant design for the Proposed Project is in the initial stages, the actual emissions are currently unknown. However, based on general knowledge and the type of technology that is being proposed for use in the Proposed Project, DOE does not expect that the emissions would increase significantly beyond the current emissions rates. Potential emissions from the Proposed Project would be a result of fugitive dust from material handling and CO, NO<sub>x</sub>, PM, and SO<sub>2</sub> from the kiln from the dehydration process. For the Proposed Project, the plant plans to control emissions using dust collectors and scrubbers, which have similar efficiencies to existing units. The proposed addition of the new manufacturing plant at the BASF Elyria facility would require a modification to its current Title V Permit. DOE expects that the facility would continue to operate within the Federally enforceable limits. The facility has always complied with its air operating permit, and there are no barriers to impede future compliance.

There are no Federal mandatory Class I areas within Ohio and none within 62 miles (100 kilometers) of the Proposed Project location. Therefore, because there are no Class I areas nearby and because the facility would emit less than 100 tpy, a PSD increment and AQRV analysis for Class I area would not be required. All other areas within the Ohio border would be considered Class II. Sensitive receptors within 1 mile of the BASF facility include nine churches, two hospitals, and three schools; however, the manufacturing process at the facility would be enclosed and emissions would be controlled. The facility has demonstrated in its air operating permits that dispersion of air pollutants would be limited and would not cause a deterioration of the surrounding air quality. Because of their geographical location, severe weather events that would stop the facility operations are not likely to occur.

Overall, no measureable adverse impacts to air quality are expected to occur at the BASF facility as a result of the Proposed Project.

#### ***Carbon Footprint***

According to 1990 estimates, Ohio emitted 88.9 million metric tons of carbon-equivalent (MMTCE) GHG (EPA, 2009a). The principal GHG was CO<sub>2</sub>, comprising 75.0 MMTCE, approximately 84 percent. The major source of CO<sub>2</sub> emissions was fossil fuel combustion (99 percent), with minor emissions from cement production, lime

manufacture, and waste combustion. CO<sub>2</sub> sinks, including an increase in forest carbon storage, offset about 2 percent of the total CO<sub>2</sub> emissions.

The majority of the facility's CO<sub>2</sub> emissions is from electricity and fuel consumption from construction based on a consumption of 13.3 million kilowatt-hours of electricity and 268,000 MMBTU of gas from July 2007 to June 2008, the annual CO<sub>2</sub> indirect emissions rates from the Elyria facility would be approximately 29,000 metric tons. Direct CO<sub>2</sub> emissions from manufacturing processes associated with the Proposed Project are expected to be small.

Although the facility would be responsible for CO<sub>2</sub> emissions, this is due to energy consumption and not production directly from the facility's processes. The Elyria facility would have no reporting requirements under the new *Final Mandatory Reporting of Greenhouse Gases Rule*, which would become effective in December 2009, because the BASF facility would not directly emit 25,000 mtpy of CO<sub>2</sub> from its processes. Implementation of the Proposed Project would not raise the facility above this threshold and would not impact the facility's compliance with this rule.

The manufacture of EDV batteries and components would increase production of EDVs in the United States. Electric vehicles emit no tailpipe pollutants. Therefore, they can provide significant air-quality benefits to targeted regions (DOE, 1999). Overall, there would be beneficial impacts on climate change, as the Proposed Project would help the viability of the commercial market for EDVs, thereby reducing the carbon footprint of the transportation sector.

### **3.2.1.3 Cumulative Impacts**

Other than the Proposed Project at the BASF facility, no other projects are planned. No reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse impacts.

### **3.2.1.4 Proposed Mitigation Measures**

During construction, typical mitigation measures to minimize air quality issues caused by fugitive dust and tailpipe emissions would include the following:

- Require all construction crews and contractors to comply with the state regulations for fugitive dust control during construction.
- Maintain the engines of construction equipment according to manufacturers' specifications.
- Minimize the idling of equipment while the equipment is not in use.
- Implement reasonable measures, such as applying water to exposed surfaces or stockpiles of dirt, when windy or dry conditions promote problematic fugitive dust emissions. Adhering to these BMPs would minimize any fugitive dust emissions. Adhering to mitigation measures and BMPs would reduce the adverse impacts from fugitive dust emissions.

During operations at the BASF facility, actions would be taken to ensure that the facility continues to meet the requirements of its air operating permit. Because of the control devices used on the equipment and BMPs employed at the facility, historical data of actual emissions are well below permitted limits.

### **3.2.2 Noise**

The Proposed Project would result in only minor impacts regarding noise levels. Short-term but measurable adverse impacts are expected during construction. Any long-term increases in ambient noise levels during operations would be minimal. Because preliminary analysis indicates the impact to noise would be minor, the following analysis presents only brief summaries of the noise receptors and impacts, and noise is dismissed from further analysis.

### **3.2.2.1 Affected Environment**

The existing campus of over 30 buildings on the property is bordered by East Branch Black River on the north, east and west sides, and bordered by the railroad tracks on the south. The new building would be located in the center of the existing BASF property where there currently exists an outdoor parking and storage area. The city of Elyria is located due south of the facility. The nearest residences are located across the river, approximately 170 yards to the east and north of the new construction area (and approximately 70 yards to the nearest BASF building). The nearest two churches are approximately 190 and 330 yards to the west of the proposed construction area. There are an additional seven churches, two hospitals, and three schools within 700 yards of the facility. The surrounding properties are populated by 1000 – 7500 persons per square mile, with some pockets over 7,500 persons.

The property is located in an industrial area, with various existing noise sources that contribute to the baseline noise level. The property is bordered by a railroad line located adjacent to the property on the south border, and the Ohio Turnpike is located approximately 0.7 miles to the north of the facility, and John F. Kennedy Memorial Parkway traverses from a proximity of 1.2 miles to the east to 0.7 miles to the north of the facility.

In 1999, a Community Noise Survey was conducted in response to complaints from neighboring residents (BASF, 1999). Following the noise study, various noise reduction measures (e.g. enclosures) were implemented, and since then, the facility has received no significant complaints. Current noise issues principally involve the occasional back-up and other plant alarms at the facility.

### **3.2.2.2 Environmental Consequences**

#### **3.2.2.2.1 No Action Alternative**

Under the No Action Alternative, plant construction and operations would not occur, therefore, no impacts would occur to noise.

#### **3.2.2.2.2 Proposed Project**

##### ***Construction***

The construction phase would involve minor demolition activity (removing current paved outdoor parking and storage area, and possible demolition of the Union House), construction of a new 40,000 square foot building to house the new lithium-ion battery cathode production plant, and installation of the new production equipment inside the building.

During the construction phase, noise levels would be localized, intermittent, and temporary. Increases in noise levels during construction would mainly result from the use of heavy construction equipment and delivery trucks. The typical noise levels from any construction site would be expected to remain within the range of 75 to 90 decibels (dBA). Construction noise levels on-site would primarily be generated within the immediate vicinity of the project site.

##### ***Operations***

The main sources of noise during operations would be from the new mechanical equipment, which would be primarily located indoors, and from increases in truck and employee-vehicle traffic. The new primary noise generating equipment would be dust collectors that may be located outdoors; however, all new dust collectors on the site would use low-speed fans. This should generate no significant change to existing noise levels since various dust collectors are already in use at the facility, and all changes due to this project would be evaluated to ensure no negative impact to community noise levels.

Because BASF's Proposed Project is an addition to an existing industrial facility that currently operates production equipment and has truck and personal-vehicle traffic, increases in noise levels resulting from

operations of the Proposed Project would be minor from the perspective of any sensitive receptors in the surrounding community. For green seasons of the year, the site noise emissions would be partially attenuated by the tree foliage between the facility and the homes across the river. In the spring and fall when windows are open and foliage is not mature, the noise may be more noticeable, but the noise reduction measures implemented in response to the 1999 Community Noise Survey would continue to be operational. Also, the new operations would be located near the center of the property, with existing structures located between them and the surrounding properties, serving to mitigate some of the generated noise. Furthermore, there are other existing comparable noise sources in the vicinity as discussed above (e.g., turnpike and parkway, railroad, and industries).

### 3.2.2.3 Cumulative Impacts

Other than the Proposed Project at the BASF facility, no other projects are planned. Therefore, no reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse impacts. Noise emissions could have a minor cumulative impact with other existing noises.

### 3.2.2.4 Proposed Mitigation Measures

Potential noise emissions would be addressed during the detailed design stage. Enclosures or other devices could be installed, if there is found to be a need for such measures.

### 3.2.3 Solid and Hazardous Wastes

The Ohio Division of Hazardous Waste Management, implements Ohio's hazardous waste management and solid waste programs and enforces the hazardous and non-hazardous waste management rules. Hazardous waste activities must comply with OAC Chapter 3745 administered by the Ohio EPA, as well as all applicable Federal regulations under 40 CFR 260-268, 273, and 279 and 29 CFR 1910.

#### 3.2.3.1 Affected Environment

The major raw materials used at the BASF Elyria facility include various metals, alumina (aluminum oxide), chromites, and metal oxides (Table 3.2.3-1) (BASF, 2009b).

**Table 3.2.3-1. Major Raw Materials Used (Reporting Year 2005)**

Chemical	Quantity (pounds) (per chemical listed)
Chromium compounds (except chromite ore mined in the Transvaal region), copper compounds	1,000,000 – 9,999,999
Ammonia, antimony compounds, barium compounds, manganese compounds, molybdenum trioxide, nickel compounds, zinc compounds	100,000 – 999,999
Cobalt compounds, nitric acid	10,000 – 99,999

Source: Toxic Release Inventory Data for BASF Catalyst LLC., 2005. Accessed 11/9/2009 at <http://data.rtknet.org/tri>

The Emergency Planning and Community Right-To-Know Act, also known as SARA Title III Toxic Chemical Release Inventory Reporting, Section 313 requires manufacturing facilities included in SIC codes 20 through 39 to submit an annual toxic chemical release report if they manufacture, process, or use specified chemicals in amounts greater than threshold quantities. This report, commonly known as Form R, covers releases and transfers of toxic chemicals to various facilities and environmental media, and allows EPA to compile the national Toxic Release Inventory database.

The facility is located in EPA Region V and operates as a large-quantity generator of hazardous waste (EPA Identification number OHD004203519), which means the facility generates more than 2,200 pounds (1,000 kilograms) or more of hazardous waste or more than 2.2 pounds (1 kilogram) of acute hazardous waste per



calendar month. Table 3.2.3-2 lists hazardous waste currently generated at the facility. Wastes are collected and hauled off site by licensed contractors for treatment, disposal, or recycling.

**Table 3.2.3-2. Hazardous Waste and Non-Hazardous Waste**

Waste	Process Generating Waste	Quantity	Disposal Method	Comments
Hazardous Waste <sup>1,2</sup>				
Miscellaneous. Dry Waste (D005, D006, D007, and D008)	Off-spec product, dust collector residues, sweepings, trench cleanings and contaminated containers	50.3 tpy <sup>3</sup>	Off-site treatment/disposal (not otherwise specified)	TSD – EQ Company, Belleville, Michigan
Sump cleaning sludge with lead (D005, D006, D007, and D008)	Sump/trench cleanout material	23.9 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – Envirite of Ohio, Canton, Ohio
Sump cleaning sludge, general (D005, D006, D007, and D008)	Sludge from treatment of various waste streams.	29.1 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – Envirite of Ohio, Canton, Ohio
Wastewater treatment sludge, copper catalyst (D005, D006, D007, and D008)	Sludge from treatment of wastewater for a catalyst manufacturing process.	65.1 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – Envirite of Ohio, Canton, Ohio
Water and Sump Sludge (D005, D006, D007, and D008)	Material from cleaning various sumps/trenches.	5.8 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – Envirite of Ohio, Canton, Ohio
Waste Chromic Liquid (D002, D007, D008)	Waste chromic liquid with chromic acid and lead.	0.3 tpy <sup>3</sup>	Off-site treatment/disposal (not otherwise specified)	TSD – Envirite of Ohio, Canton, Ohio
Chromium wastewater (D005, D006, D007, and D008)		7.9 tpy <sup>3</sup>	Off-site treatment/disposal (not otherwise specified)	TSD – Envirite of Ohio, Canton, Ohio
Potassium Nitrate (D005, D006, D007, and D008)	Discarded material.	0.4 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – Envirite of Ohio, Canton, Ohio
Lead, Naphthalate, xylene residue (D001, D008)	Equipment cleanout residue.	0.3 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – EQ Company, Belleville, Michigan

**Table 3.2.3-2. Hazardous Waste and Non-Hazardous Waste (continued)**

Waste	Process Generating Waste	Quantity	Disposal Method	Comments
Hazardous Waste <sup>1</sup> (continued)				
Magnesium nitrate (D005, D006, D007, and D008)	Off-spec product/intermediate	1.1 tpy <sup>3</sup>	Off-site treatment/disposal (not otherwise specified)	TSD – Von Roll America, East Liverpool, Ohio
Paint and resin		0.1 tpy <sup>3</sup>	Off-site treatment – chemical stabilization of metal-bearing wastes	TSD – EQ Company, Belleville, Michigan
Waste Metal catalyst (D001, D003, D006, D007)	Off-spec product	0.5 tpy <sup>3</sup>	Off-site treatment/disposal (not otherwise specified)	
Universal Waste				
No records available				
Non-Hazardous Waste				
Misc trash (not otherwise defined)		Less than 1,000 lbs/yr		

Sources:

1. BASF, 2008c

2. BASF, 2009b

3. Rounded to the nearest tenth place

TSD – treatment, storage and disposal; EQ – Environmental Questionnaire; tpy-tons per year.

There are currently no underground storage tanks located at the facility. The facility has several aboveground storage tanks that store raw materials indoors at the facility.

Historical operations on land occupied by the BASF Elyria facility resulted in contamination of soil and groundwater at the facility. A RCRA Facility Assessment (RFA) was conducted at the facility in the 1990s and RCRA Facility Investigation (RFI) reports were prepared in 1992 and 1994 to assess the extent of site contamination. The RFIs identified 58 solid waste management units (SWMUs) and one Area of Concern at the facility. Contaminants detected in surface and subsurface soil (up to 10 feet below ground surface) samples collected in 1990 and 1991, included metals (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, and silver) and VOCs (ethylbenzene, toluene and total xylene) (DEID, 1999; ERM, 1996). In addition, metals and VOCs were detected in groundwater sampled from on-site monitoring wells (DEID, 1999; ERM, 1996). A RFI, Risk Assessment Report was prepared in July 1995 and revised in January 1996. The 1996 Risk Assessment concluded that based on current conditions (pre-remediation) and land use, workers at the facility may be affected by soils through ingestion or dermal contact with the soil and may be exposed through inhalation of vapor or particulates at the facility through dispersion of vapors/particulates. If the site should be developed for residential use in the future, exposure could occur through ingestion or dermal contact with the soil or through inhalation of vapor or particulates at the facility through dispersion of vapors/particulates. Exposure to workers or potential future residential receptors from ingestion or dermal contact with groundwater would not occur because there is no available source of groundwater at the facility (ERM, 1996).

Site cleanup was completed in 1998 (NEPAssist Facility Detail Report). Remediation at the facility included: capping of the entire industrial site by covering it with a paved parking lot and drum storage area to prevent contact with soil and eliminate transportation by precipitation and wind; installation of curbs along the edge of the

cap to eliminate sheet flow or runoff; maintenance of the integrity of the cap and the curbs along the edge of the cap; modification of the facility's stormwater collection, piping and outfall to accommodate runoff from the capped areas; and impose institutional controls that restrict the use of the property to industrial or commercial use.

The facility has an Ohio Hazardous Waste Facility Installation and Operation Permit issued by the Ohio EPA. A Final Renewal Permit was issued and became effective on December 31, 2008, that requires BASF to perform investigation and cleanup of past waste areas at the facility. In accordance with the permit, the facility must annually inspect the cap (paved parking lot and drum storage area) and maintain records of inspections for visible signs of deterioration or cracks. Furthermore, the facility must completely reseal the cap at approximately 5-year intervals. Groundwater extraction is prohibited for potable use (Carroll, 2008). The site is not listed on the EPA's National Priority List (NPL), which designates high-priority cleanup sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), more commonly known as the Superfund Program.

A site identified as a Superfund Alternative Site (which means the site could be proposed for inclusion on the NPL under Section 105 of CERCLA, 42 U.S.C. 9605) is located adjacent to the BASF property. The Chemical Recovery Systems (CRS) (Orbitts Chemical) site, located at 142 Locust Street, is approximately 2.5 acres and is bordered on the west by the East Branch Black River, to the north and east by BASF, and to the south by M&M Aluminum Siding Company. The CRS site is currently leased to M&M Aluminum. M&M Aluminum uses the property for storage. Two buildings are currently on the CRS site: a former warehouse and office building and the masonry shell of a building that housed a Rodney Hunt still. On July 2, 1999, the Agency for Toxic Substances and Disease Registry (ATSDR) with the support of the City of Elyria Health Department completed a Health Consultation, which concluded that the CRS site currently poses no apparent health hazard to area residents. ATSDR and the Elyria Health Department also concluded that the currently detected concentrations of chemicals in the surface soils at the CRS site pose a minimal health hazard to on-site workers. (TRI Data for BASF Catalyst LLC, 2005.)

One Superfund Site, Republic Steel Quarry is a 5-acre site located approximately 5 miles southwest of the BASF facility in Elyria, Ohio. From 1950 to 1975, the Republic Steel Corporation discharged about 200,000 gallons per day of waste pickle liquor and rinse water consisting of sulfuric acid and dissolved metal oxides into the quarry via a ditch. The site was remediated in the late 1990s and removed from the NPL in 2002; it is currently in the Operation and Maintenance phase, with 5-year reviews performed to assess potential for additional risks (TRI Data for BASF Catalyst LLC, 2005).

### **3.2.3.2 Environmental Consequences**

#### **3.2.3.2.1 No Action Alternative**

Under the No Action Alternative, the facility would continue its current operations and would generate the same types and quantities of hazardous and non-hazardous wastes. Wastes would continue to be collected and transported for off-site disposal or recycling in accordance with Federal, state and local regulations.

The existing cap (paved parking lot and empty drum storage area) would be left in place. In accordance with their existing Ohio Hazardous Waste Facility Installation and Operation Permit, the facility would continue to conduct annual inspections of the on-site cap and maintain records of inspections for visible signs of deterioration or cracks and reseal the cap at approximately 5-year intervals.

#### **3.2.3.2.2 Proposed Project**

##### ***Construction***

The proposed facility would be newly constructed and would require the removal of concrete and asphalt on the existing parking lot and drum storage area along with the possible demolition of the Union building. As described in Section 3.2.2.1, historical releases resulted in residual soil contamination at the facility. Under the Proposed

Project, there is a potential to encounter contaminated soil and to disturb or remove some contaminated soil. If soil excavation and off-site disposal is required, the soil would be sampled and analyzed for metals and VOCs prior to off-site transport and would be managed appropriately. A new facility constructed on top of contaminated soil would serve as a cap that reduces the potential for worker exposure and the potential for leaching of the contaminants. BASF would have to coordinate with and obtain approval from the Ohio EPA prior to construction to ensure adherence to all permit requirements.

Construction of the new building would generate solid waste from pavement and asphalt removal for the installation of the building. These materials could be land-filled off site at a permitted solid waste landfill. Demolition of the Union House, owned by the local Union, would generate waste concrete and other building materials associated with this structure (e.g., electrical wiring and piping). These materials could be landfilled offsite at a permitted solid waste landfill. The house is over 50 years old and therefore, asbestos containing material (ACM) or lead-based paint could be present. An assessment for these materials would have to be performed prior to demolition to determine if they are present. If present, there is a potential for workers to come into contact with asbestos containing material and lead-based paint; however, proper personal protective equipment and handling and management of these materials in accordance with Federal regulations would reduce the likelihood for exposure to workers. Solid waste and sanitary waste generated during construction activities would be limited to common construction-related waste streams. In-state or out-of-state landfills or recycling facilities would have the capability and capacity to accept these wastes. Construction of the stormwater retention pond would require soil removal and either offsite disposal of the soil at a landfill or replacement of the soil onsite.

As proposed, construction of the new facility would not require demolition of existing facility buildings; however, if renovations of the existing building or demolition should be required, there is a potential for workers to be exposed to ACM and lead-based paint, if present. Solid waste (other than contaminated soil) and sanitary waste generated during construction would be limited to common construction-related waste streams. In state or out-of-state landfills or recycling facilities would have the capability and capacity to accept these wastes.

### ***Operations***

Proposed operations at the new facility would require additional raw materials relative to what the facility is currently using. During Phase I, lithium containing compounds (e.g., hydroxide, carbonate) and “NMC Precursor” (a nickel, manganese, cobalt hydroxide mixture) would be used. Raw materials introduced during Phase II would include alternate raw material sources of manganese, nickel, cobalt, and sodium hydroxide/ammonium hydroxide. The solids and powders would be supplied in super sacks and stored indoors. Bulk liquids would be stored in above-ground storage tanks (ASTs) located outdoors. During Phase II, five, 3,000- to 4,200-gallon ASTs would be installed indoors to store metal, acid and base solutions (BASF, 2009b). Underground storage tanks (USTs) would not be constructed for either Phase I or Phase II. Under Phase II, there is the possibility that ammonia may be used in small quantities.

The quantity of hazardous waste generated would increase as the operations increase. Newly generated hazardous waste includes lithiated transition metal oxide powders (off-spec cathode product) (less than 1,000 pounds per year) that would either be reclaimed/recycled off site or treated and disposed of at a permitted landfill (BASF, 2009b). The wastes generated are common industrial wastes; therefore, the hazardous waste would be accepted by treatment, storage and disposal facilities. Although specific hazardous waste disposal or treatment facilities have not been identified, it is likely that BASF would use treatment, storage and disposal (TSD) vendors currently accepting waste from the facility. RCRA waste would not be treated or disposed of on site. The facility currently operates as a large quantity generator of hazardous waste regulated by Federal and state regulations; therefore, an increase of hazardous waste generated could be accommodated through adequate management, accumulation area(s), and collection for off-site TSD.

Non-hazardous waste would be generated in quantities above what are currently generated. BASF estimates that 150,000 pounds per year of non-hazardous mixed metal salts and powders would be generated under the Proposed Project (BASF, 2009b). These materials would be recycled for beneficial reuse, whenever possible. The handling and storage of non-hazardous waste would be similar to current operations, namely, the waste would be collected in containers, dumpsters, or large cloth bags for off-site disposal or for recycling.

Construction and operations would not be affected by the CRS (Orbitts Chemical) site located adjacent to the BASF property. Workers, both during construction and operation of the proposed facility, would not be expected to come in contact with contaminants at the CRS site (if still present); therefore, no impact would occur. The Republic Steel Quarry Superfund Site is approximately 5 miles from the BASF property and therefore, would not affect on-site construction or operations.

### **3.2.3.3 Cumulative Impacts**

Other than the Proposed Project at the BASF facility, no other projects are planned. Therefore, no reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse impacts.

### **3.2.3.4 Proposed Mitigation Measures**

Waste materials would be sent off site for recycling, or treated and disposed of at a hazardous waste disposal facility or landfill. As a large-quantity generator of hazardous waste, the facility is required to have a Preparedness and Prevention Program and a RCRA Contingency Plan in accordance with 40 CFR 262.34(a)(4) and to train its employees on the safe and proper handling of hazardous waste. Existing BASF plans and training could be expanded to include the new facility. The plans would include an evaluation of alternatives to eliminate, reduce, or minimize the amounts of hazardous materials used and hazardous wastes generated and procedures to take in the event of a release.

Coordination would be required with the Ohio EPA to address design features, avoidance measures, or other aspects of construction project siting to avoid or minimize disturbance of residual contaminated soil and prevent new releases. It is likely that on-site soil would be left in place during construction; however, if soil excavation and temporary on-site storage of soil is required, excavated soil would be contained and protected from precipitation to prevent soil runoff. If soil needs to be removed from the site, it would be sampled, analyzed, and disposed of in accordance with Federal and state regulations.

During construction, preventative measures such as providing fencing around the construction site, establishing contained storage areas, and controlling the flow of construction equipment and personnel would reduce the potential for a release to occur. In the event that a release occurs, immediate action would be taken to contain and clean up the released material in accordance with Federal, state, and local regulations.

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-

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William Gwilliam	NEPA Document Manager	
<b>BASF Catalysts LLC</b>		
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Zachary Weyand	Project Engineer	
<b>PHE</b>		
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David Berg	Historic Preservation Specialist	M.A., United States History M.A.C., Historic Preservation 20 years experience, 14 years NEPA experience
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Angela Drum	Senior Word Processor	10 years experience, 5 years NEPA experience
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Debra Walker	Project Manager	B.S., Biology 33 years experience, 20 years NEPA experience
Andrea Wilkes	Technical Writer: Noise, Transportation and Traffic	M.A., Science Writing B.S., Civil and Environmental Engineering B.S., English Literature 24 years experience, 2 years NEPA experience

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## **6.0 DISTRIBUTION LIST**

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Mr. Tom Winston  
Chief, Office of Federal Facility Oversight  
Ohio Environmental Protection Agency  
401 East Fifth Street  
Dayton, OH 45402-2911

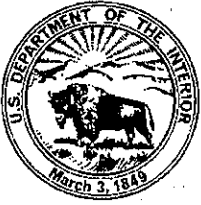
Mr. Wade Balser  
Ohio Environmental Protection Agency  
Division of Hazardous Waste  
2110 East Aurora Road  
Twinsburg, OH 44087

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## **Appendix A**

### **Agency Consultation**

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# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614) 416-8993 / FAX (614) 416-8994

November 10, 2009

Pierina N. Fayish, DOE Project Manager  
U.S. Department of Energy  
National Energy Technology Laboratory  
P.O. Box 10940  
Mailstop B922/M218  
Pittsburg, PA 15236

Tails: 31420-2010-TA-0115  
31420-2010-CPA-0037

Re: Response to Request for Informal Consultation under Section 7 of the Endangered Species Act

Dear Ms. Fayish:

We have received your recent correspondence requesting information about the subject proposal. There are no Federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. Based on the information you have provided, at this time we have no objection to the proposed project.

**ENDANGERED SPECIES COMMENTS:** Due to the project type, size, and location, we do not anticipate any impact on federally listed endangered, threatened, or candidate species, or their habitats. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

If you have additional questions or require further assistance with your project proposal, please contact me at the following number (614) 416-8993 x12. I would be happy to discuss the project in further detail with you and provide additional assistance if necessary. In addition, you can find more information on natural resources in Ohio by visiting our homepage at: <http://www.fws.gov/midwest/ohio>.

Sincerely,

for Mary Knapp, Ph.D.  
Field Supervisor



# Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

**Division of Natural Areas and Preserves**  
*Anthony J. Celebreeze, III, Acting Chief*  
2045 Morse Rd., Bldg. F-1  
Columbus, OH 43229-6693  
Phone: (614) 265-6453; Fax: (614) 267-3096

November 17, 2009

Robin Griffin  
Potomac-Hudson Engineering, Inc.  
7830 Old Georgetown Rd., Suite 220  
Bethesda, MD 20814

Ms. Griffin:

I have reviewed our Natural Heritage maps and files for the Electric Drive Vehicle Battery & Component Manufacturing project area, including a one mile radius, at 120 Pine St. in Elyria, Lorain County, Ohio, and on the Grafton Quad. The numbers/letters on the list below correspond to the areas marked on the accompanying map. Common name, scientific name and status are given for each species.

#### **Lorain/Grafton Quads**

##### **A. Cascade-Elywood Park - City of Elyria**

1. *Cornus rugosa* - Round-leaved Dogwood, potentially threatened  
Cave or Cavern
2. *Cornus rugosa* - Round-leaved Dogwood, potentially threatened
3. Cave or Cavern

There are no dedicated state nature preserves or scenic rivers at the project site. We are also unaware of any animal assemblages, state parks, state forests or state wildlife areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

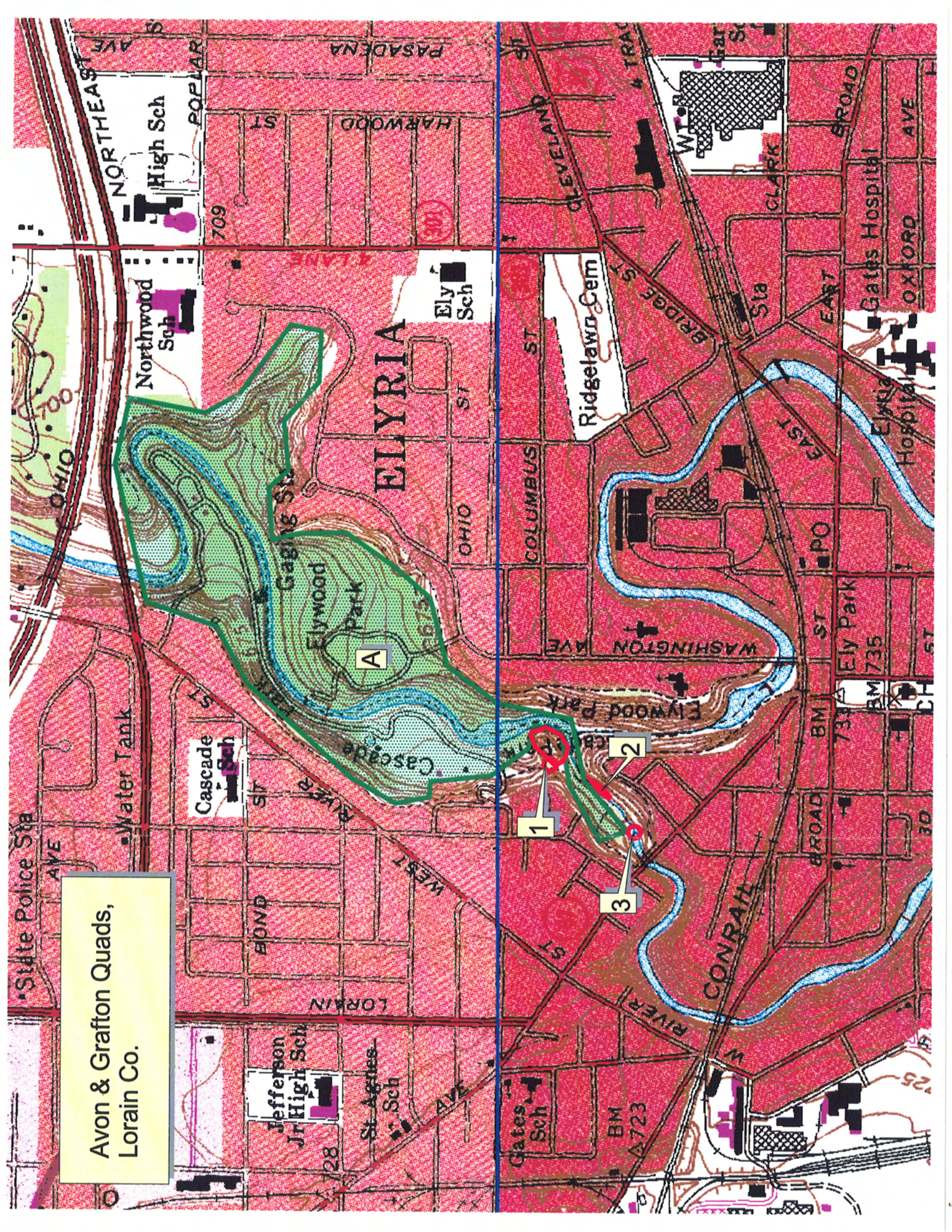
A handwritten signature in blue ink, appearing to read "Debbie Woischke".

Debbie Woischke, Ecological Analyst  
Natural Heritage Program





Avon & Grafton Quads,  
Lorain Co.







December 18, 2009

William J. Gwilliam  
Physical Scientist / NEPA Document Manager  
U.S. Department of Energy  
National Energy Technology Laboratory  
Post Office Box 880  
Morgantown, West Virginia 26507-0880

Dear Mr. Gwilliam:

Re: Electric Drive Vehicle Battery and Component Manufacturing Initiative, BASF Catalysts LLC,  
120 Pine Street, Elyria, Ohio

This is in response to correspondence dated November 12, 2009 (received on November 18, 2009) regarding the above referenced project. My comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated regulations at 36 CFR Part 800.

The Department of Energy (DOE) is providing funding under the American Reinvestment and Recovery Act for the construction of a manufacturing plant for advanced electric drive vehicle automotive batteries at the BASF Catalysts LLC property located at 120 Pine Street in Elyria, Ohio. The project will include the construction of a 10,000 square foot building that will be "minimal in height, and likely not more than two stories (thereby) conforming to the industrial complex's other buildings". The new building will be constructed in an area that has been used to store industrial drums and truck trailers. A subsequent phase of the project may require the demolition of the building at 122 Center Street immediately to the south.

I have reviewed the information submitted, including a completed Project Summary Form and associated documentation. It is my opinion that there are no properties within the Area of Potential Effects for this project that are eligible for listing in the National Register of Historic Places. Therefore, I concur with your finding that this project will not affect historic properties.

No further coordination with this office is necessary unless there is a change in the project. If you have any questions, please contact me by phone at (614) 298-2000 or by email at [jcook@ohiohistory.org](mailto:jcook@ohiohistory.org). Thank you for your cooperation.

Sincerely,

Justin M. Cook, History Reviews Manager  
Resource Protection and Review

Copy: Robin Griffin, Potomac-Hudson Engineering, 7830 Old Georgetown Road, Suite 330,  
Bethesda, Maryland 20814

OHPO Serial # 1029550

OHIO HISTORICAL SOCIETY

Ohio Historic Preservation Office

1982 Velma Avenue, Columbus, Ohio 43211-2497 ph: 614.298.2000 fx: 614.298.2037

[www.ohiohistory.org](http://www.ohiohistory.org)

## **Appendix B**

**Public Comments on the Draft Environmental Assessment and Responses from the  
Department of Energy and BASF Catalysts LLC**

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

JAN 29 2010

REPLY TO THE ATTENTION OF:

**E-19J**

William J. Gwilliam  
DOE NEPA Document Manager  
DOE National Energy Technology Laboratory  
3610 Collins Ferry Road, P.O. Box 880  
Morgantown, WV 26507

**RE: Comments on the Draft Environmental Assessment for a BASF Catalysts LLC,  
Electric Drive Vehicle Battery and Component Manufacturing Initiatives Project**

Dear Mr. Gwilliam:

Under the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and Section 309 of the Clean Air Act, U.S. Environmental Protection Agency (EPA) reviews and comments on major federal actions. Typically, these reviews focus on Environmental Impact Statements (EIS), but we also have the discretion to review and comment on other environmental documents prepared under NEPA if interest and resources permit. EPA has reviewed the Draft Environmental Assessment (EA) for the above project, proposed for Elyria, Ohio. This letter provides our comments on that document and possible impacts related to the proposed project.

The purpose and need for this American Reinvestment and Recovery Act (ARRA) project is to help create a national capacity of new electric energy power sources for automotive Electric Drive Vehicle (EDV) systems. Specifically, this proposed facility will manufacture lithium-ion battery cathode materials and contribute toward stimulating the nation's economy. A variance was granted by the Department of Energy (DOE) General Counsel regarding alternative requirements for NEPA in CFR 1021.216. DOE will either accept or reject each proposal application, so only the applicant proposal and a no action alternative are considered in this EA. Our comments address possible direct, indirect, and cumulative impacts of the proposal to soil, groundwater, surface water, and air.

This EA acknowledges some natural resource impacts have already occurred as the result of previous industrial activities on the proposed and neighboring sites. These include soil, groundwater, surface water, and air pollution. Contaminants detected in soil samples and groundwater from on-site monitoring wells included metals (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, and silver) and volatile organic compounds (VOCs) (ethylbenzene, toluene and total xylene). A RCRA Facility Assessment and RCRA Facility Investigation resulted in a Risk Assessment Report (revised 1996) and subsequent remediation of the immediate proposal site. Key remediation elements included: 1) a cap of the

entire site with an asphalt paved parking lot/drum storage area; 2) curbing around the cap's periphery to retain runoff; 3) modification of stormwater collection, piping and outfall to accommodate runoff from the capped area; and 4) institutional controls with ongoing monitoring by the Ohio Environmental Protection Agency (OEPA). A neighboring site contributes to soil and groundwater contaminations and is involved in ongoing remediation as a designated Superfund Alternative Site. This proposal is to remove some or all of the existing asphalt cap and construct a manufacturing facility, possibly up to 100 feet (five stories) high. That building would recap and seal the site again. There is the possibility that additional adjacent site(s) referred to as Phase II, would also be built upon now or in future expansions, and these are currently of undetermined status for soil contaminants.

### **Soil Impacts**

During the RCRA Facility Investigation, borings were made at locations around the proposed Phase I site and soil samples tested. The Risk Assessment Report (1996) concluded that the soil contaminants could put humans at risk by ingestion, dermal contact, or inhalation of vapors and particulates. Any construction activity on this site, and particularly any breach of the site cap, opens the possibility of risk to construction workers, BASF employees in nearby working environments and possibly others. Because opening the cap and removing all the contaminated soil offers the opportunity for site remediation, EPA commends the proponent's willingness to test any disturbed soils and appropriately remove them to licensed hazardous waste processing facilities. All construction activities on a site such as this must follow the specifications of a permit from OEPA.

We recommend that DOE stipulate in the Finding of No Significant Impact (FONSI) that the state construction permit specify the following:

- 1- A plan should be developed for OEPA approval for opening, removing and disposing of the existing cap materials;
- 2- A soil management plan should be created to include a general soil sampling/testing pattern that includes but is not limited to testing of the bottom and sidewalls of any on-site excavation. Should testing reveal "hot spots," these would be delineated by further testing and the contaminated soil appropriately managed;
- 3- Management of construction machinery and equipment should include where and how each piece would be cleaned before leaving the site;
- 4- To reduce windblown dust and contaminants and reduce infiltration and stormwater runoff, we recommend DOE require the site remain "capped" during construction by use of a tent, inflatable dome or similar type temporary structure (monitored regularly to assure functional integrity) when the soil would be openly exposed, from prior to opening the existing cap through reestablishment of a new cap;
- 5- An approved construction site visitor/worker protection plan should also be designated in the permit to include soil and groundwater contact protection and response, and procedures when leaving the site;
- 6- A plan should be developed for OEPA approval assuring the new construction will adequately re-cap and seal the site.

## **Ground and Surface Waters Direct, Indirect and Cumulative Impacts**

The subject site groundwater was tested and found to be contaminated. The nearby East Branch of the Black River is designated as an impaired stream due to pollutants, including some chemicals found in the site groundwater. However, there is no known established connection between this site and the Black River contamination. Certainly, there are many other past and present industries along the East Branch of the Black River that could be contributing to its present state. The Risk Assessment Report (1996) for the subject site concluded that capping was sufficient remediation without addressing the groundwater contamination, because site workers and drinking water sources did not have a direct access to that groundwater. Removing the asphalt cap and constructing on the site could modify groundwater flow and hydrology, mobilize site contaminants, open the site to storm events, and expose workers to the groundwater. The earlier stipulated temporary construction tent, inflatable dome or similar structure could help address the first three of these concerns.

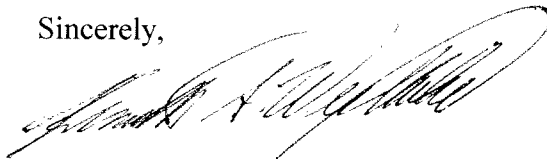
To practice due diligence and provide reference data, EPA recommends the DOE FONSI stipulate monitoring of on-site groundwater and the East Branch of the Black River, to be conducted for all relevant constituents before, during and after the subject site construction. Because many factors can contribute to pollutants found in the river, it would be more useful to monitor groundwater seeps along the river edge before the groundwater enters the river, if such exist. This monitoring plan should be OEPA approved.

## **Air Impacts**

The nature of manufacturing to be carried on at this site has a potential for significant pollution of the environment. Using safe manufacturing practices and emissions controls are essential to protecting workers and the surrounding communities. The EA indicates that proposed practices for manufacturing and emissions control will meet permit standards. We recommend the DOE FONSI specify that the new facility will operate within the federal and state permitted limits for emissions. Air pollution during construction of the new facility should be addressed under the construction permit from OEPA.

Thank you for the opportunity to comment on this EA document. We request that DOE provide us with all further NEPA documents for this project. If you have any questions on our comments, please contact me or Norm West of my staff, by phone at (312) 353-5692 or by e-mail at: west.norman@epa.gov.

Sincerely,



Kenneth A. Westlake  
Chief, NEPA Implementation Section  
Office of Enforcement and Compliance Assurance

Cc: Wade Balsler, Ohio EPA



The Chemical Company

March 15, 2010

**VIA ELECTRONIC MAIL ONLY**

Mark L. McKoy  
Environmental Manager  
U.S. Department of Energy  
National Energy Technology Laboratory  
3610 Collins Ferry Road  
P.O. Box 880  
Morgantown, WV 26505

**RE: BASF Catalysts LLC's Response to USEPA's Comments to the Draft Environmental Assessment for a BASF Catalysts LLC, Electric Drive Vehicle Battery and Component Manufacturing Initiatives Project**

Dear Mr. McKoy:

BASF Catalysts LLC ("BASF") submits this letter in response to USEPA's January 29, 2010 comments to DOE's Draft Environmental Assessment for a BASF Catalysts LLC Electric Drive Vehicle Battery and Component Manufacturing Initiatives Project ("Project"). BASF is aggressively developing plans for the Project, including compliance with the anticipated regulatory requirements and protection of human health and the environment. To this end, BASF has begun consultations with the Ohio Environmental Protection Agency ("OEPA") and expects to deliver to OEPA a permit modification request and supporting work plan as soon as possible.

For the reasons set forth below, BASF believes that there is an effective regulatory process and a robust planning mechanism for addressing any possible environmental impacts related to the proposed Project. BASF's current RCRA Corrective Action Permit, which is overseen by OEPA, will continue in effect with BASF fully complying with its terms and conditions. BASF is drafting a work plan that will be implemented under the Permit as a permit modification. Therefore, BASF believes that no additional mitigation measures from DOE would be required because the permitting process and the permit modification will be the best mechanism and place for specifying mitigation measures.

As stated, BASF's Elyria site operates under a RCRA Corrective Action Permit ("Permit") under the oversight of the OEPA. The purpose of the Permit is to manage past waste



areas and protect human health and the environment from releases of hazardous waste or hazardous constituents from on-site waste management areas. Among other items, the Permit requires the implementation of the following remedial controls:

- 1) Capping of the entire site to prevent contact with soil and eliminate transportation of contaminants by rainfall runoff and wind;
- 2) Installation of curbs along the edge of the cap to eliminate sheet flow or runoff down the banks;
- 3) Maintenance of the integrity of the cap and the curbs along the edge of the cap; and
- 4) Modification of the facility's storm water collection, piping, and outfall systems to accommodate any runoff from the capped area.

All of these remedial controls currently are in place and are maintained at the Elyria site. With more than a decade of experience in maintaining these controls, BASF has proven that it is a responsible steward of the environment. When BASF begins construction for the Project, BASF will maintain the effectiveness of the controls through implementation of well thought-out plans in accordance with the permit modification (to be obtained from OEPA).

BASF has already been in contact with OEPA concerning the Project and the steps BASF will take to comply with OEPA's requirements. OEPA has advised that it will require BASF to submit a work plan that is intended to minimize any potential harm to human health and the environment as a result of the Project. The required work plan will include:

- Description of cap removal and what will be done with the removed cap material;
- Description of soil removal activities, including staging areas, sampling and disposal information;
- Description of how water infiltration will be controlled;
- Description of how dust will be controlled;
- Description of new cap construction and composition;
- Health and Safety Plan; and
- Figures and drawings

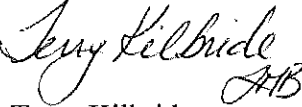
These requirements of OEPA sufficiently address any possible environmental concerns, whether they may be soil, ground or surface water, raised by USEPA in its comment letter.

Moreover, it is worth emphasizing that with respect to USEPA's comments concerning ground and surface waters, BASF's planned construction will be short in duration, will minimize rainfall infiltration, and will conclude with a timely re-establishment of the cap and controls. Furthermore, USEPA itself states in its comment letter that "there is no known established connection between the [Elyria] site and the Black River contamination." (emphasis added). Given the above, there is no rationale basis for requesting BASF to conduct any water sampling in the Black River. Nor is there a rationale basis for on-site sampling or sampling of seeps, if any, to the river, which has been suggested. Again, any concerns related to possible surface water run-off and ground water movement from the site would be addressed by the construction site controls, by the continued maintenance of remedial controls currently in place at the site (e.g., curbs along the edge of the cap and the facility's storm water collection, piping, and outfall systems designed to accommodate any runoff from the capped areas), and by any additional requirements that OEPA may impose in BASF's permit modification.

It should be added that BASF has retained an outside engineering firm that is currently performing an engineering assessment to evaluate environmental risks associated with removing an area of cap material during construction. This engineering assessment includes soil sampling and laboratory analysis. The laboratory analysis has not been completed; however, preliminary results of soil samples taken within the footprint of the proposed excavation show that none of the samples exceeded applicable OEPA cleanup criteria. The BASF Project team is also currently evaluating foundation designs aimed at minimizing the area of the cap affected by the foundation and the volume of soil that will be disturbed.

At BASF, the protection of health, safety and the environment is an important responsibility. BASF's recommends that any construction-related environmental concerns be managed by the existing environmental permitting and compliance process enforced by OEPA. OEPA already has oversight over the Elyria site and an established mechanism by way of the permit modification for addressing any possible environmental impacts. Any additional conditions over and above the conditions required by OEPA will not increase the protection to human health and the environment, but only add cost and delay to the Project. Consequently, BASF believes that no additional mitigation requirements are needed in DOE's FONSI.

Thank you for your consideration of the above.

Very truly yours,  
  
Terry Kilbride  
Project Manager

**DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC**

<b>Comment Number</b>	<b>USEPA Comment on BASF EA</b>	<b>DOE Response (March 4, 2010)</b>
1	<p><b>Introduction:</b> Under the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and Section 309 of the Clean Air Act, U.S. Environmental Protection Agency (EPA) reviews and comments on major federal actions. Typically, these reviews focus on Environmental Impact Statements (EIS), but we also have the discretion to review and comment on other environmental documents prepared under NEPA if interest and resources permit. EPA has reviewed the Draft Environmental Assessment (EA) for the above project, proposed for Elyria, Ohio. This letter provides our comments on that document and possible impacts related to the proposed project.</p> <p>The purpose and need for this American Reinvestment and Recovery Act (ARRA) project is to help create a national capacity of new electric energy power sources for automotive Electric Drive Vehicle (EDV) systems. Specifically, this proposed facility will manufacture lithium-ion battery cathode materials and contribute toward stimulating the nation's economy. A variance was granted by the Department of Energy (DOE) General Counsel regarding alternative requirements for NEPA in CFR 1021.216. DOE will either accept or reject each proposal application, so only the applicant proposal and a no action alternative are considered in this EA. Our comments address possible direct, indirect, and cumulative impacts of the proposal to soil, groundwater, surface water, and air.</p>	Introduction noted.

## DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC

Comment Number	USEPA Comment on BASF EA	DOE Response (March 4, 2010)
2	<p>This EA acknowledges some natural resource impacts have already occurred as the result of previous industrial activities on the proposed and neighboring sites. These include soil, groundwater, surface water, and air pollution. Contaminants detected in soil samples and groundwater from on-site monitoring wells included metals (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, and silver) and volatile organic compounds (VOCs) (ethylbenzene, toluene and total xylene). A RCRA Facility Assessment and RCRA Facility Investigation resulted in a Risk Assessment Report (revised 1996) and subsequent remediation of the immediate proposal site. Key remediation elements included: 1) a cap of the entire site with an asphalt paved parking lot/drum storage area; 2) curbing around the cap's periphery to retain runoff; 3) modification of stormwater collection, piping and outfall to accommodate runoff from the capped area; and 4) institutional controls with ongoing monitoring by the Ohio Environmental Protection Agency (OEPA). A neighboring site contributes to soil and groundwater contaminations and is involved in ongoing remediation as a designated Superfund Alternative Site. This proposal is to remove some or all of the existing asphalt cap and construct a manufacturing facility, possibly up to 100 feet (five stories) high. That building would recap and seal the site again. There is the possibility that additional adjacent site(s) referred to as Phase II, would also be built upon now or in future expansions, and these are currently of undetermined status for soil contaminants.</p>	<p>Introduction noted.</p>
3	<p><b>Soil Impacts</b>  <b>Comment:</b> During the RCRA Facility Investigation, borings were made at locations around the proposed Phase I site and soil samples tested. The Risk Assessment Report (1996) concluded that the soil contaminants could put humans at risk by ingestion, dermal contact, or inhalation of vapors and particulates. Any construction activity on this site, and particularly any breach of the site cap, opens the possibility of risk to construction workers, BASF employees in nearby working environments and possibly others. Because opening the cap and removing all the contaminated soil offers the opportunity for site remediation, EPA commends the proponent's willingness to test any disturbed soils and appropriately remove them to licensed hazardous waste processing facilities. All construction activities on a site such as this must follow the specifications of a permit from OEPA.</p>	<p>The U.S. EPA's RCRA Facility Investigation, Risk Assessment Report (ERM, 1996) says, "the estimated risk to on-site adult industrial workers was below acceptable risk levels for both carcinogenic and non-carcinogenic exposures" (p. 22). Absent a showing that the risk posed by leaving contaminated soil in place outweighs the risk posed by excavating and disposing of the soil, DOE does not believe that it would be prudent to excavate, transport and dispose of contaminated soils beyond that necessary for the planned construction of the project facilities. DOE does agree that construction activities on this site must comply with specifications of a construction permit or permit modification issued by OEPA and that the functions of the existing cap should be maintained to the extent practicable.</p>

## DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC

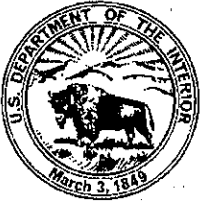
Comment Number	USEPA Comment on BASF EA	DOE Response (March 4, 2010)
4	<p><b>Soil Impacts</b>  <b>Comment:</b> We recommend that DOE stipulate in the Finding of No Significant Impact (FONSI) that the state construction permit specify the following:</p> <ol style="list-style-type: none"> <li>1- A plan should be developed for OEPA approval for opening, removing and disposing of the existing cap materials.</li> <li>2- A soil management plan should be created to include a general soil sampling/testing pattern that includes but is not limited to testing of the bottom and sidewalls of any on-site excavation. Should testing reveal "hot spots," these would be delineated by further testing and the contaminated soil appropriately managed.</li> <li>3- Management of construction machinery and equipment should include where and how each piece would be cleaned before leaving the site.</li> <li>4- To reduce windblown dust and contaminants and reduce infiltration and stormwater runoff, we recommend DOE require the site remain "capped" during construction by use of a tent, inflatable dome or similar type temporary structure (monitored regularly to assure functional integrity) when the soil would be openly exposed, from prior to opening the existing cap through reestablishment of a new cap.</li> </ol>	<p>U.S. EPA's RCRA Facility Investigation, Risk Assessment Report (ERM, 1996) identifies and describes soil and ground water contamination in the vicinity of the proposed project; therefore, health and environmental protection concerns should be dealt with appropriately. DOE will incorporate into the FONSI a modified version of EPA's recommendations, whereby flexibility is retained for OEPA to apply its regulatory expertise and for BASF to develop its plans and procedures in ways that are the most practicable.</p>
5	<ol style="list-style-type: none"> <li>5- An approved construction site visitor/worker protection plan should also be designated in the permit to include soil and groundwater contact protection and response, and procedures when leaving the site.</li> <li>6- A plan should be developed for OEPA approval assuring the new construction will adequately re-cap and seal the site.</li> </ol>	
6	<p><b>Ground and Surface Waters Direct, Indirect and Cumulative Impacts</b>  <b>Comment:</b> The subject site groundwater was tested and found to be contaminated. The nearby East Branch of the Black River is designated as an impaired stream due to pollutants, including some chemicals found in the site groundwater. However, there is no known established connection between this site and the Black River contamination. Certainly, there are many other past and present industries along the East Branch of the Black River that could be contributing to its present state.</p>	<p>DOE acknowledges the condition of the East Branch of the Black River, as indicated in a RCRA Facility Investigation, Risk Assessment Report (ERM, 1996; see e.g., p. 32).</p>

## DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC

Comment Number	USEPA Comment on BASF EA	DOE Response (March 4, 2010)
7	<p><b>Ground and Surface Waters Direct, Indirect and Cumulative Impacts</b>  <b>Comment:</b> The Risk Assessment Report (1996) for the subject site concluded that capping was sufficient remediation without addressing the groundwater contamination, because site workers and drinking water sources did not have a direct access to that groundwater. Removing the asphalt cap and constructing on the site could modify groundwater flow and hydrology, mobilize site contaminants, open the site to storm events, and expose workers to the groundwater. The earlier stipulated temporary construction tent, inflatable dome or similar structure could help address the first three of these concerns.</p>	<p>DOE acknowledges EPA’s concern that excavation and removal of cap material could expose contaminated soil to erosion and increase the rate of rainwater infiltration, with the consequence that contaminated soil particles could be washed into the on-site sewer system and adjoining river and that contaminants could be flushed through the surrounding soil and underlying bedrock to the river. The application of reasonable mitigation requirements, as outlined in the FONSI, along with due care in the normal permitting process, should reduce these concerns.</p>
8	<p><b>Ground and Surface Waters Direct, Indirect and Cumulative Impacts</b>  <b>Comment:</b> To practice due diligence and provide reference data, EPA recommends the DOE FONSI stipulate monitoring of on-site groundwater and the East Branch of the Black River, to be conducted for all relevant constituents before, during and after the subject site construction. Because many factors can contribute to pollutants found in the river, it would be more useful to monitor groundwater seeps along the river edge before the groundwater enters the river, if such exist. This monitoring plan should be OEPA approved.</p>	<p>DOE believes that OEPA should use its judgment and discretion in the permitting process regarding any need for on-site ground water monitoring. DOE is skeptical that monitoring of the river water would be worthwhile for this project because the influx of any contaminants from the proposed project would likely be too low for detection relative to the upstream sourced concentrations of contaminants and the volume of the river’s flow. Water table information in the RFI Risk Assessment (Figures 2-3 and 2-4) shows that the water table (piezometric surface) is <u>not</u> nearly flat across the site, meaning that permeability is relatively low in the bedrock. This suggests that flow into the river is relatively low, most likely at the seepage level. <u>If</u> monitoring of groundwater should be required as part of OEPA’s permit process, DOE believes that it may be more practical to monitor water in any existing down gradient wells (e.g., wells v-5, MW-15, MW-16) and perhaps in any down gradient seeps located along the escarpment leading down to the river.</p>

**DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC**

<b>Comment Number</b>	<b>USEPA Comment on BASF EA</b>	<b>DOE Response (March 4, 2010)</b>
9	<p><b>Air Impacts</b>  <b>Comment:</b> The nature of manufacturing to be carried on at this site has a potential for significant pollution of the environment. Using safe manufacturing practices and emissions controls are essential to protecting workers and the surrounding communities. The EA indicates that proposed practices for manufacturing and emissions control will meet permit standards. We recommend the DOE FONSI specify that the new facility will operate within the federal and state permitted limits for emissions. Air pollution during construction of the new facility should be addressed under the construction permit from OEPA.</p>	<p>EPA's recommendation for addressing construction-related air pollution under the construction permit from OEPA will be noted in DOE's FONSI for OEPA's consideration during the permitting process. DOE believes monitoring and enforcement of permit requirements are best handled by the State of Ohio through its normal permitting and compliance enforcement processes.</p>



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614) 416-8993 / FAX (614) 416-8994

November 10, 2009

Pierina N. Fayish, DOE Project Manager  
U.S. Department of Energy  
National Energy Technology Laboratory  
P.O. Box 10940  
Mailstop B922/M218  
Pittsburg, PA 15236

Tails: 31420-2010-TA-0115  
31420-2010-CPA-0037

Re: Response to Request for Informal Consultation under Section 7 of the Endangered Species Act

Dear Ms. Fayish:

We have received your recent correspondence requesting information about the subject proposal. There are no Federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. Based on the information you have provided, at this time we have no objection to the proposed project.

**ENDANGERED SPECIES COMMENTS:** Due to the project type, size, and location, we do not anticipate any impact on federally listed endangered, threatened, or candidate species, or their habitats. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

If you have additional questions or require further assistance with your project proposal, please contact me at the following number (614) 416-8993 x12. I would be happy to discuss the project in further detail with you and provide additional assistance if necessary. In addition, you can find more information on natural resources in Ohio by visiting our homepage at: <http://www.fws.gov/midwest/ohio>.

Sincerely,

for Mary Knapp, Ph.D.  
Field Supervisor





# Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

**Division of Natural Areas and Preserves**  
*Anthony J. Celebreeze, III, Acting Chief*  
2045 Morse Rd., Bldg. F-1  
Columbus, OH 43229-6693  
Phone: (614) 265-6453; Fax: (614) 267-3096

November 17, 2009

Robin Griffin  
Potomac-Hudson Engineering, Inc.  
7830 Old Georgetown Rd., Suite 220  
Bethesda, MD 20814

Ms. Griffin:

I have reviewed our Natural Heritage maps and files for the Electric Drive Vehicle Battery & Component Manufacturing project area, including a one mile radius, at 120 Pine St. in Elyria, Lorain County, Ohio, and on the Grafton Quad. The numbers/letters on the list below correspond to the areas marked on the accompanying map. Common name, scientific name and status are given for each species.

#### **Lorain/Grafton Quads**

##### **A. Cascade-Elywood Park - City of Elyria**

1. *Cornus rugosa* - Round-leaved Dogwood, potentially threatened  
Cave or Cavern
2. *Cornus rugosa* - Round-leaved Dogwood, potentially threatened
3. Cave or Cavern

There are no dedicated state nature preserves or scenic rivers at the project site. We are also unaware of any animal assemblages, state parks, state forests or state wildlife areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

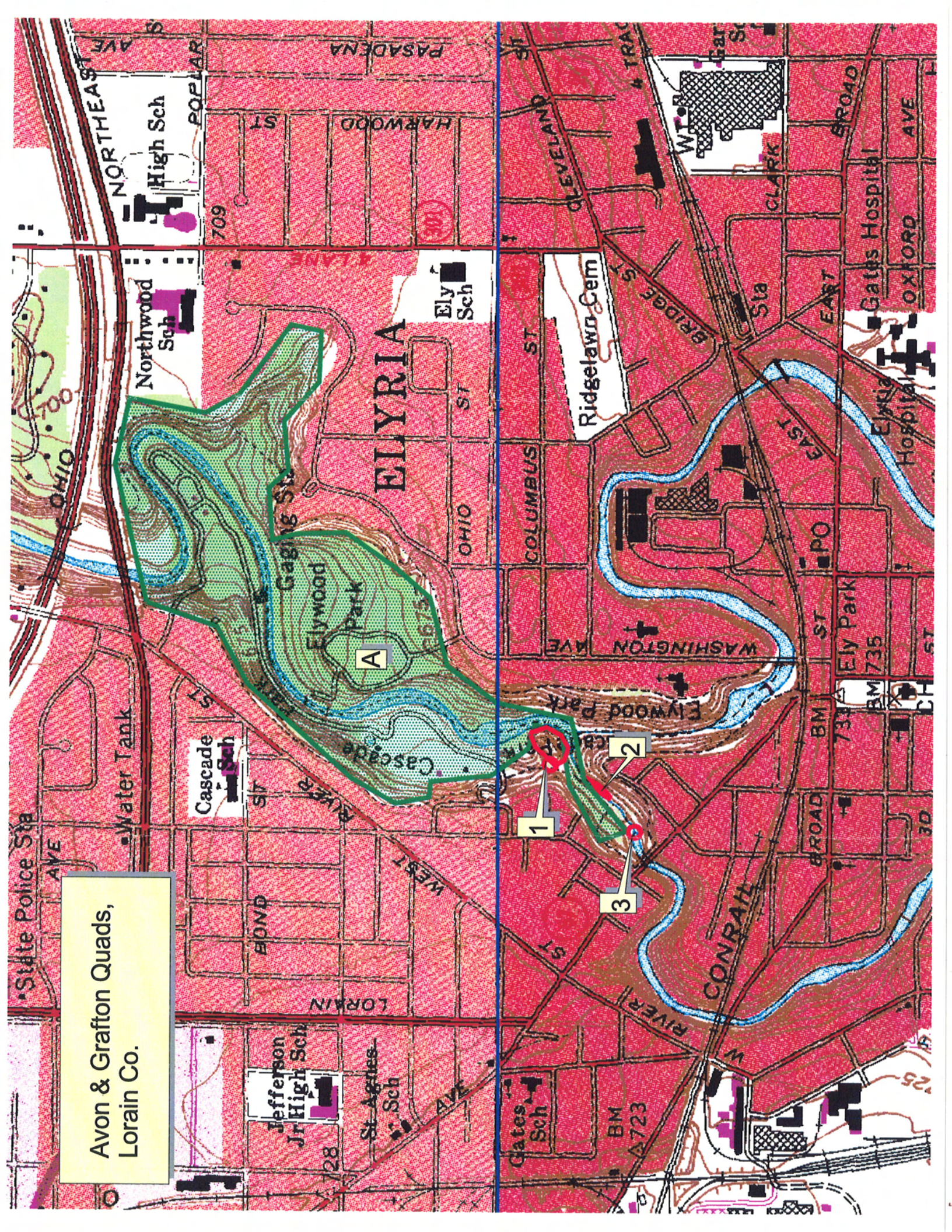
A handwritten signature in blue ink, appearing to read "Debbie Woischke".

Debbie Woischke, Ecological Analyst  
Natural Heritage Program





Avon & Grafton Quads,  
Lorain Co.







December 18, 2009

William J. Gwilliam  
Physical Scientist / NEPA Document Manager  
U.S. Department of Energy  
National Energy Technology Laboratory  
Post Office Box 880  
Morgantown, West Virginia 26507-0880

Dear Mr. Gwilliam:

Re: Electric Drive Vehicle Battery and Component Manufacturing Initiative, BASF Catalysts LLC,  
120 Pine Street, Elyria, Ohio

This is in response to correspondence dated November 12, 2009 (received on November 18, 2009) regarding the above referenced project. My comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated regulations at 36 CFR Part 800.

The Department of Energy (DOE) is providing funding under the American Reinvestment and Recovery Act for the construction of a manufacturing plant for advanced electric drive vehicle automotive batteries at the BASF Catalysts LLC property located at 120 Pine Street in Elyria, Ohio. The project will include the construction of a 10,000 square foot building that will be "minimal in height, and likely not more than two stories (thereby) conforming to the industrial complex's other buildings". The new building will be constructed in an area that has been used to store industrial drums and truck trailers. A subsequent phase of the project may require the demolition of the building at 122 Center Street immediately to the south.

I have reviewed the information submitted, including a completed Project Summary Form and associated documentation. It is my opinion that there are no properties within the Area of Potential Effects for this project that are eligible for listing in the National Register of Historic Places. Therefore, I concur with your finding that this project will not affect historic properties.

No further coordination with this office is necessary unless there is a change in the project. If you have any questions, please contact me by phone at (614) 298-2000 or by email at [jcook@ohiohistory.org](mailto:jcook@ohiohistory.org). Thank you for your cooperation.

Sincerely,

Justin M. Cook, History Reviews Manager  
Resource Protection and Review

Copy: Robin Griffin, Potomac-Hudson Engineering, 7830 Old Georgetown Road, Suite 330,  
Bethesda, Maryland 20814

OHPO Serial # 1029550

OHIO HISTORICAL SOCIETY

Ohio Historic Preservation Office

1982 Velma Avenue, Columbus, Ohio 43211-2497 ph: 614.298.2000 fx: 614.298.2037

[www.ohiohistory.org](http://www.ohiohistory.org)



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

JAN 29 2010

REPLY TO THE ATTENTION OF:

**E-19J**

William J. Gwilliam  
DOE NEPA Document Manager  
DOE National Energy Technology Laboratory  
3610 Collins Ferry Road, P.O. Box 880  
Morgantown, WV 26507

**RE: Comments on the Draft Environmental Assessment for a BASF Catalysts LLC,  
Electric Drive Vehicle Battery and Component Manufacturing Initiatives Project**

Dear Mr. Gwilliam:

Under the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and Section 309 of the Clean Air Act, U.S. Environmental Protection Agency (EPA) reviews and comments on major federal actions. Typically, these reviews focus on Environmental Impact Statements (EIS), but we also have the discretion to review and comment on other environmental documents prepared under NEPA if interest and resources permit. EPA has reviewed the Draft Environmental Assessment (EA) for the above project, proposed for Elyria, Ohio. This letter provides our comments on that document and possible impacts related to the proposed project.

The purpose and need for this American Reinvestment and Recovery Act (ARRA) project is to help create a national capacity of new electric energy power sources for automotive Electric Drive Vehicle (EDV) systems. Specifically, this proposed facility will manufacture lithium-ion battery cathode materials and contribute toward stimulating the nation's economy. A variance was granted by the Department of Energy (DOE) General Counsel regarding alternative requirements for NEPA in CFR 1021.216. DOE will either accept or reject each proposal application, so only the applicant proposal and a no action alternative are considered in this EA. Our comments address possible direct, indirect, and cumulative impacts of the proposal to soil, groundwater, surface water, and air.

This EA acknowledges some natural resource impacts have already occurred as the result of previous industrial activities on the proposed and neighboring sites. These include soil, groundwater, surface water, and air pollution. Contaminants detected in soil samples and groundwater from on-site monitoring wells included metals (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, and silver) and volatile organic compounds (VOCs) (ethylbenzene, toluene and total xylene). A RCRA Facility Assessment and RCRA Facility Investigation resulted in a Risk Assessment Report (revised 1996) and subsequent remediation of the immediate proposal site. Key remediation elements included: 1) a cap of the

entire site with an asphalt paved parking lot/drum storage area; 2) curbing around the cap's periphery to retain runoff; 3) modification of stormwater collection, piping and outfall to accommodate runoff from the capped area; and 4) institutional controls with ongoing monitoring by the Ohio Environmental Protection Agency (OEPA). A neighboring site contributes to soil and groundwater contaminations and is involved in ongoing remediation as a designated Superfund Alternative Site. This proposal is to remove some or all of the existing asphalt cap and construct a manufacturing facility, possibly up to 100 feet (five stories) high. That building would recap and seal the site again. There is the possibility that additional adjacent site(s) referred to as Phase II, would also be built upon now or in future expansions, and these are currently of undetermined status for soil contaminants.

### **Soil Impacts**

During the RCRA Facility Investigation, borings were made at locations around the proposed Phase I site and soil samples tested. The Risk Assessment Report (1996) concluded that the soil contaminants could put humans at risk by ingestion, dermal contact, or inhalation of vapors and particulates. Any construction activity on this site, and particularly any breach of the site cap, opens the possibility of risk to construction workers, BASF employees in nearby working environments and possibly others. Because opening the cap and removing all the contaminated soil offers the opportunity for site remediation, EPA commends the proponent's willingness to test any disturbed soils and appropriately remove them to licensed hazardous waste processing facilities. All construction activities on a site such as this must follow the specifications of a permit from OEPA.

We recommend that DOE stipulate in the Finding of No Significant Impact (FONSI) that the state construction permit specify the following:

- 1- A plan should be developed for OEPA approval for opening, removing and disposing of the existing cap materials;
- 2- A soil management plan should be created to include a general soil sampling/testing pattern that includes but is not limited to testing of the bottom and sidewalls of any on-site excavation. Should testing reveal "hot spots," these would be delineated by further testing and the contaminated soil appropriately managed;
- 3- Management of construction machinery and equipment should include where and how each piece would be cleaned before leaving the site;
- 4- To reduce windblown dust and contaminants and reduce infiltration and stormwater runoff, we recommend DOE require the site remain "capped" during construction by use of a tent, inflatable dome or similar type temporary structure (monitored regularly to assure functional integrity) when the soil would be openly exposed, from prior to opening the existing cap through reestablishment of a new cap;
- 5- An approved construction site visitor/worker protection plan should also be designated in the permit to include soil and groundwater contact protection and response, and procedures when leaving the site;
- 6- A plan should be developed for OEPA approval assuring the new construction will adequately re-cap and seal the site.

## **Ground and Surface Waters Direct, Indirect and Cumulative Impacts**

The subject site groundwater was tested and found to be contaminated. The nearby East Branch of the Black River is designated as an impaired stream due to pollutants, including some chemicals found in the site groundwater. However, there is no known established connection between this site and the Black River contamination. Certainly, there are many other past and present industries along the East Branch of the Black River that could be contributing to its present state. The Risk Assessment Report (1996) for the subject site concluded that capping was sufficient remediation without addressing the groundwater contamination, because site workers and drinking water sources did not have a direct access to that groundwater. Removing the asphalt cap and constructing on the site could modify groundwater flow and hydrology, mobilize site contaminants, open the site to storm events, and expose workers to the groundwater. The earlier stipulated temporary construction tent, inflatable dome or similar structure could help address the first three of these concerns.

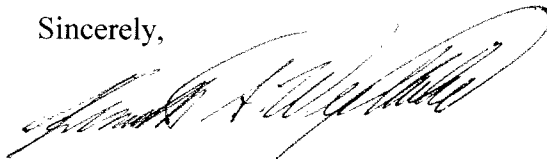
To practice due diligence and provide reference data, EPA recommends the DOE FONSI stipulate monitoring of on-site groundwater and the East Branch of the Black River, to be conducted for all relevant constituents before, during and after the subject site construction. Because many factors can contribute to pollutants found in the river, it would be more useful to monitor groundwater seeps along the river edge before the groundwater enters the river, if such exist. This monitoring plan should be OEPA approved.

## **Air Impacts**

The nature of manufacturing to be carried on at this site has a potential for significant pollution of the environment. Using safe manufacturing practices and emissions controls are essential to protecting workers and the surrounding communities. The EA indicates that proposed practices for manufacturing and emissions control will meet permit standards. We recommend the DOE FONSI specify that the new facility will operate within the federal and state permitted limits for emissions. Air pollution during construction of the new facility should be addressed under the construction permit from OEPA.

Thank you for the opportunity to comment on this EA document. We request that DOE provide us with all further NEPA documents for this project. If you have any questions on our comments, please contact me or Norm West of my staff, by phone at (312) 353-5692 or by e-mail at: west.norman@epa.gov.

Sincerely,



Kenneth A. Westlake  
Chief, NEPA Implementation Section  
Office of Enforcement and Compliance Assurance

Cc: Wade Balsler, Ohio EPA



The Chemical Company

March 15, 2010

**VIA ELECTRONIC MAIL ONLY**

Mark L. McKoy  
Environmental Manager  
U.S. Department of Energy  
National Energy Technology Laboratory  
3610 Collins Ferry Road  
P.O. Box 880  
Morgantown, WV 26505

**RE: BASF Catalysts LLC's Response to USEPA's Comments to the Draft Environmental Assessment for a BASF Catalysts LLC, Electric Drive Vehicle Battery and Component Manufacturing Initiatives Project**

Dear Mr. McKoy:

BASF Catalysts LLC ("BASF") submits this letter in response to USEPA's January 29, 2010 comments to DOE's Draft Environmental Assessment for a BASF Catalysts LLC Electric Drive Vehicle Battery and Component Manufacturing Initiatives Project ("Project"). BASF is aggressively developing plans for the Project, including compliance with the anticipated regulatory requirements and protection of human health and the environment. To this end, BASF has begun consultations with the Ohio Environmental Protection Agency ("OEPA") and expects to deliver to OEPA a permit modification request and supporting work plan as soon as possible.

For the reasons set forth below, BASF believes that there is an effective regulatory process and a robust planning mechanism for addressing any possible environmental impacts related to the proposed Project. BASF's current RCRA Corrective Action Permit, which is overseen by OEPA, will continue in effect with BASF fully complying with its terms and conditions. BASF is drafting a work plan that will be implemented under the Permit as a permit modification. Therefore, BASF believes that no additional mitigation measures from DOE would be required because the permitting process and the permit modification will be the best mechanism and place for specifying mitigation measures.

As stated, BASF's Elyria site operates under a RCRA Corrective Action Permit ("Permit") under the oversight of the OEPA. The purpose of the Permit is to manage past waste

areas and protect human health and the environment from releases of hazardous waste or hazardous constituents from on-site waste management areas. Among other items, the Permit requires the implementation of the following remedial controls:

- 1) Capping of the entire site to prevent contact with soil and eliminate transportation of contaminants by rainfall runoff and wind;
- 2) Installation of curbs along the edge of the cap to eliminate sheet flow or runoff down the banks;
- 3) Maintenance of the integrity of the cap and the curbs along the edge of the cap; and
- 4) Modification of the facility's storm water collection, piping, and outfall systems to accommodate any runoff from the capped area.

All of these remedial controls currently are in place and are maintained at the Elyria site. With more than a decade of experience in maintaining these controls, BASF has proven that it is a responsible steward of the environment. When BASF begins construction for the Project, BASF will maintain the effectiveness of the controls through implementation of well thought-out plans in accordance with the permit modification (to be obtained from OEPA).

BASF has already been in contact with OEPA concerning the Project and the steps BASF will take to comply with OEPA's requirements. OEPA has advised that it will require BASF to submit a work plan that is intended to minimize any potential harm to human health and the environment as a result of the Project. The required work plan will include:

- Description of cap removal and what will be done with the removed cap material;
- Description of soil removal activities, including staging areas, sampling and disposal information;
- Description of how water infiltration will be controlled;
- Description of how dust will be controlled;
- Description of new cap construction and composition;
- Health and Safety Plan; and
- Figures and drawings

These requirements of OEPA sufficiently address any possible environmental concerns, whether they may be soil, ground or surface water, raised by USEPA in its comment letter.

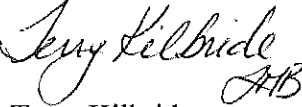


Moreover, it is worth emphasizing that with respect to USEPA's comments concerning ground and surface waters, BASF's planned construction will be short in duration, will minimize rainfall infiltration, and will conclude with a timely re-establishment of the cap and controls. Furthermore, USEPA itself states in its comment letter that "there is no known established connection between the [Elyria] site and the Black River contamination." (emphasis added). Given the above, there is no rationale basis for requesting BASF to conduct any water sampling in the Black River. Nor is there a rationale basis for on-site sampling or sampling of seeps, if any, to the river, which has been suggested. Again, any concerns related to possible surface water run-off and ground water movement from the site would be addressed by the construction site controls, by the continued maintenance of remedial controls currently in place at the site (e.g., curbs along the edge of the cap and the facility's storm water collection, piping, and outfall systems designed to accommodate any runoff from the capped areas), and by any additional requirements that OEPA may impose in BASF's permit modification.

It should be added that BASF has retained an outside engineering firm that is currently performing an engineering assessment to evaluate environmental risks associated with removing an area of cap material during construction. This engineering assessment includes soil sampling and laboratory analysis. The laboratory analysis has not been completed; however, preliminary results of soil samples taken within the footprint of the proposed excavation show that none of the samples exceeded applicable OEPA cleanup criteria. The BASF Project team is also currently evaluating foundation designs aimed at minimizing the area of the cap affected by the foundation and the volume of soil that will be disturbed.

At BASF, the protection of health, safety and the environment is an important responsibility. BASF's recommends that any construction-related environmental concerns be managed by the existing environmental permitting and compliance process enforced by OEPA. OEPA already has oversight over the Elyria site and an established mechanism by way of the permit modification for addressing any possible environmental impacts. Any additional conditions over and above the conditions required by OEPA will not increase the protection to human health and the environment, but only add cost and delay to the Project. Consequently, BASF believes that no additional mitigation requirements are needed in DOE's FONSI.

Thank you for your consideration of the above.

Very truly yours,  
  
Terry Kilbride  
Project Manager

**DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC**

<b>Comment Number</b>	<b>USEPA Comment on BASF EA</b>	<b>DOE Response (March 4, 2010)</b>
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2	<p>This EA acknowledges some natural resource impacts have already occurred as the result of previous industrial activities on the proposed and neighboring sites. These include soil, groundwater, surface water, and air pollution. Contaminants detected in soil samples and groundwater from on-site monitoring wells included metals (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, and silver) and volatile organic compounds (VOCs) (ethylbenzene, toluene and total xylene). A RCRA Facility Assessment and RCRA Facility Investigation resulted in a Risk Assessment Report (revised 1996) and subsequent remediation of the immediate proposal site. Key remediation elements included: 1) a cap of the entire site with an asphalt paved parking lot/drum storage area; 2) curbing around the cap's periphery to retain runoff; 3) modification of stormwater collection, piping and outfall to accommodate runoff from the capped area; and 4) institutional controls with ongoing monitoring by the Ohio Environmental Protection Agency (OEPA). A neighboring site contributes to soil and groundwater contaminations and is involved in ongoing remediation as a designated Superfund Alternative Site. This proposal is to remove some or all of the existing asphalt cap and construct a manufacturing facility, possibly up to 100 feet (five stories) high. That building would recap and seal the site again. There is the possibility that additional adjacent site(s) referred to as Phase II, would also be built upon now or in future expansions, and these are currently of undetermined status for soil contaminants.</p>	<p>Introduction noted.</p>
3	<p><b>Soil Impacts</b>  <b>Comment:</b> During the RCRA Facility Investigation, borings were made at locations around the proposed Phase I site and soil samples tested. The Risk Assessment Report (1996) concluded that the soil contaminants could put humans at risk by ingestion, dermal contact, or inhalation of vapors and particulates. Any construction activity on this site, and particularly any breach of the site cap, opens the possibility of risk to construction workers, BASF employees in nearby working environments and possibly others. Because opening the cap and removing all the contaminated soil offers the opportunity for site remediation, EPA commends the proponent's willingness to test any disturbed soils and appropriately remove them to licensed hazardous waste processing facilities. All construction activities on a site such as this must follow the specifications of a permit from OEPA.</p>	<p>The U.S. EPA's RCRA Facility Investigation, Risk Assessment Report (ERM, 1996) says, "the estimated risk to on-site adult industrial workers was below acceptable risk levels for both carcinogenic and non-carcinogenic exposures" (p. 22). Absent a showing that the risk posed by leaving contaminated soil in place outweighs the risk posed by excavating and disposing of the soil, DOE does not believe that it would be prudent to excavate, transport and dispose of contaminated soils beyond that necessary for the planned construction of the project facilities. DOE does agree that construction activities on this site must comply with specifications of a construction permit or permit modification issued by OEPA and that the functions of the existing cap should be maintained to the extent practicable.</p>

## DOE Response to USEPA Comments on Draft Environmental Assessment for BASF CATALYSTS LLC

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4	<p><b>Soil Impacts</b>  <b>Comment:</b> We recommend that DOE stipulate in the Finding of No Significant Impact (FONSI) that the state construction permit specify the following:</p> <ol style="list-style-type: none"> <li>1- A plan should be developed for OEPA approval for opening, removing and disposing of the existing cap materials.</li> <li>2- A soil management plan should be created to include a general soil sampling/testing pattern that includes but is not limited to testing of the bottom and sidewalls of any on-site excavation. Should testing reveal "hot spots," these would be delineated by further testing and the contaminated soil appropriately managed.</li> <li>3- Management of construction machinery and equipment should include where and how each piece would be cleaned before leaving the site.</li> <li>4- To reduce windblown dust and contaminants and reduce infiltration and stormwater runoff, we recommend DOE require the site remain "capped" during construction by use of a tent, inflatable dome or similar type temporary structure (monitored regularly to assure functional integrity) when the soil would be openly exposed, from prior to opening the existing cap through reestablishment of a new cap.</li> </ol>	<p>U.S. EPA's RCRA Facility Investigation, Risk Assessment Report (ERM, 1996) identifies and describes soil and ground water contamination in the vicinity of the proposed project; therefore, health and environmental protection concerns should be dealt with appropriately. DOE will incorporate into the FONSI a modified version of EPA's recommendations, whereby flexibility is retained for OEPA to apply its regulatory expertise and for BASF to develop its plans and procedures in ways that are the most practicable.</p>
5	<ol style="list-style-type: none"> <li>5- An approved construction site visitor/worker protection plan should also be designated in the permit to include soil and groundwater contact protection and response, and procedures when leaving the site.</li> <li>6- A plan should be developed for OEPA approval assuring the new construction will adequately re-cap and seal the site.</li> </ol>	
6	<p><b>Ground and Surface Waters Direct, Indirect and Cumulative Impacts</b>  <b>Comment:</b> The subject site groundwater was tested and found to be contaminated. The nearby East Branch of the Black River is designated as an impaired stream due to pollutants, including some chemicals found in the site groundwater. However, there is no known established connection between this site and the Black River contamination. Certainly, there are many other past and present industries along the East Branch of the Black River that could be contributing to its present state.</p>	<p>DOE acknowledges the condition of the East Branch of the Black River, as indicated in a RCRA Facility Investigation, Risk Assessment Report (ERM, 1996; see e.g., p. 32).</p>

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7	<p><b>Ground and Surface Waters Direct, Indirect and Cumulative Impacts</b>  <b>Comment:</b> The Risk Assessment Report (1996) for the subject site concluded that capping was sufficient remediation without addressing the groundwater contamination, because site workers and drinking water sources did not have a direct access to that groundwater. Removing the asphalt cap and constructing on the site could modify groundwater flow and hydrology, mobilize site contaminants, open the site to storm events, and expose workers to the groundwater. The earlier stipulated temporary construction tent, inflatable dome or similar structure could help address the first three of these concerns.</p>	<p>DOE acknowledges EPA’s concern that excavation and removal of cap material could expose contaminated soil to erosion and increase the rate of rainwater infiltration, with the consequence that contaminated soil particles could be washed into the on-site sewer system and adjoining river and that contaminants could be flushed through the surrounding soil and underlying bedrock to the river. The application of reasonable mitigation requirements, as outlined in the FONSI, along with due care in the normal permitting process, should reduce these concerns.</p>
8	<p><b>Ground and Surface Waters Direct, Indirect and Cumulative Impacts</b>  <b>Comment:</b> To practice due diligence and provide reference data, EPA recommends the DOE FONSI stipulate monitoring of on-site groundwater and the East Branch of the Black River, to be conducted for all relevant constituents before, during and after the subject site construction. Because many factors can contribute to pollutants found in the river, it would be more useful to monitor groundwater seeps along the river edge before the groundwater enters the river, if such exist. This monitoring plan should be OEPA approved.</p>	<p>DOE believes that OEPA should use its judgment and discretion in the permitting process regarding any need for on-site ground water monitoring. DOE is skeptical that monitoring of the river water would be worthwhile for this project because the influx of any contaminants from the proposed project would likely be too low for detection relative to the upstream sourced concentrations of contaminants and the volume of the river’s flow. Water table information in the RFI Risk Assessment (Figures 2-3 and 2-4) shows that the water table (piezometric surface) is <u>not</u> nearly flat across the site, meaning that permeability is relatively low in the bedrock. This suggests that flow into the river is relatively low, most likely at the seepage level. <u>If</u> monitoring of groundwater should be required as part of OEPA’s permit process, DOE believes that it may be more practical to monitor water in any existing down gradient wells (e.g., wells v-5, MW-15, MW-16) and perhaps in any down gradient seeps located along the escarpment leading down to the river.</p>

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9	<p><b>Air Impacts</b>  <b>Comment:</b> The nature of manufacturing to be carried on at this site has a potential for significant pollution of the environment. Using safe manufacturing practices and emissions controls are essential to protecting workers and the surrounding communities. The EA indicates that proposed practices for manufacturing and emissions control will meet permit standards. We recommend the DOE FONSI specify that the new facility will operate within the federal and state permitted limits for emissions. Air pollution during construction of the new facility should be addressed under the construction permit from OEPA.</p>	<p>EPA's recommendation for addressing construction-related air pollution under the construction permit from OEPA will be noted in DOE's FONSI for OEPA's consideration during the permitting process. DOE believes monitoring and enforcement of permit requirements are best handled by the State of Ohio through its normal permitting and compliance enforcement processes.</p>