DOE/EA-1714

Environmental Assessment

for

Toda America, Incorporated

Electric Drive Vehicle Battery and Component Manufacturing Initiative Project Battle Creek, MI

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 Toda America, Incorporated (Toda) to partially fund the construction of a manufacturing plant to produce oxide materials for cathodes for lithium-ion batteries. The plant would be constructed within an existing industrial park in Battle Creek, Michigan. This plant would support the anticipated growth in the lithium-ion battery industry and, more specifically, the electric drive vehicle (EDV) industry and hybrid-electric vehicle (HEV) industry. 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:
The 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 Toda 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 Toda to construct a manufacturing plant to produce oxide materials for cathodes for lithium-ion batteries. The plant would be located within the Fort Custer Industrial Park in Battle Creek, Michigan. The project would help meet the growing needs of domestic and global lithium-ion battery cell producers. The total production volume at this facility would be sufficient to supply batteries for around 450,000 HEVs or 125,000 plug-in HEVs. Additionally, the project would create approximately 50 permanent jobs.

The environmental analysis identified that the most notable changes to result from the Toda's Proposed Project would occur in the following areas: land use, air quality and greenhouse, noise, geology and soils, surface water and groundwater, vegetation and wildlife, solid and hazardous wastes, utilities and energy use, transportation and traffic, and human health and safety. 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 January 31, 2010. 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 March 2, 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-1714.pdf.

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ACRONYMS

Acronym	Definition
µg	microgram
$Al(OH)_3$	aluminum hydroxide
APE	Area of Potential Effect
AQRV	air quality related values
BCU	Battle Creek Unlimited
BEA	Baseline Environmental Assessment
BMP	best management practices
CAA	Clean Air Act
CE	categorically excluded
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
DOE	U.S. Department of Energy
EA	Environmental Assessment
EDV	electric drive vehicle
EERE	Energy Efficiency and Renewable Energy
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Rate Insurance Map
FONSI	Finding of No Significant Impact
GHG	greenhouse gases
gpd	gallons per day
HAP	hazardous air pollutants
HEV	hybrid electric vehicles
I	Interstate
m	meter
M	Michigan
MDEQ	Michigan Department of Environmental Quality
mg	milligram
mgd	million gallons per day
mtpy	metric tons per year
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act

Acronym	Definition
NETL	National Energy Technology Laboratory
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NREPA	Natural Resources and Environmental Protection Act
NWI	National Wetlands Inventory
O_3	ozone
PCB	polychlorinated biphenyls
PM	particulate matter
PM_{10}	particulate matter 10 microns or less
$PM_{2.5}$	particulate matter 2.5 microns or less
ppm	parts per million
PSD	prevention of significant deterioration
RCRA	Resource Conservation and Recovery Act
Recovery Act	American Recovery and Reinvestment Act of 2009, Public Law 111-5
ROD	Record of Decision
SIP	State Implementation Plan
SME	Soil and Materials Engineers, Inc.
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
Toda	Toda America, Incorporated
tpy	tons per year
ug/kg	microgram per kilogram
ug/m^3	microgram per cubic meter
U.S.	United States
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
VOCs	volatile organic compounds
VT	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, Toda America, Incorporated (Toda), was one of the 30 projects that DOE selected for funding. DOE's Proposed Action is to provide $35 million in financial assistance in a cost-sharing arrangement with the project proponent, Toda. The total cost of the project is estimated at $70.1 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 would 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 Consultation

DOE initiated consultations with the U.S. Fish and Wildlife Service (USFWS), the Natural 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. 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 Toda to partially fund the construction of a manufacturing plant to produce oxide materials for cathodes that are put into lithium-ion batteries. The plant would be constructed within an existing industrial park in Battle Creek, Michigan. This plant would support the anticipated growth in the lithium-ion battery industry and, more specifically, the EVD industry and hybrid-electric vehicle (HEV) industry. If approved, DOE would provide approximately 50 percent of the funding for the project.

2.2 Toda's Proposed Project

Toda's Proposed Project is to construct a manufacturing plant to produce oxide materials (specifically oxides $LiNiCoAlO_2$ and $LiNiCoMnO_2$, production of other similar chemistries would be possible) for cathodes in lithium-ion batteries. In addition to the plant (80,000 square feet and approximately 2 stories with 3 mechanical platforms tall), the construction would include offices, storage (30,000 square feet), and a wastewater pre-treatment facility. The proposed final project would be conducted in two phases. Under Phase I, Toda would construct the building(s) and install two lines of processing equipment that are identical to the equipment currently used by Toda's Kitakyusyu manufacturing facility in Japan. The two production lines would use a dry calcination process to convert powder precursor materials (mostly metal hydroxides and/or carbonates) into one of two cathode materials. Precursors would be mixed with the lithium compound, and then passed through high-temperature electric kilns, pulverized (i.e., crushed), then sorted by particle size or otherwise treated or classified, blended, and packaged as end products. In Phase I, the plant's capacity would be determined by the two continuous flow kilns.

Several dust collectors, principally located at material handling points would be installed. Collected dust would be reused in the process to the extent possible. Because of the value of the materials used, waste materials would be recycled to the maximum degree practicable

Under Phase II, Toda would expand and improve their manufacturing capabilities by adding two additional production lines that would partly utilize next-generation processing equipment and process improvements (which are undetermined at this time).

When planning and designing the Phase II expansion, Toda would consider several approaches for processing materials and improving material properties (details are in development and are proprietary). For example,

> Wet-processing (surface treatment), which would involve water use and need for a wastewater pre-treatment plant. Sludge would either be sold for reuse (this is done at the Japan facility), or disposed of in accordance with the Resource Conservation and Recovery Act (RCRA).

When Phase II becomes operational, total production volume at this facility would be sufficient to supply batteries for around 450,000 HEVs or 125,000 plug-in HEVs. Cathode materials produced may be based on technology licensed from DOE. The specific process of manufacturing and the details of manufacturing are proprietary.

2.3 General Description and Location

The proposed project site would be located on a 17-acre parcel within the 3,000-acre Fort Custer Industrial Park in the City of Battle Creek, in Calhoun County, Michigan (see Figure 2.2.-1). The industrial park is owned by Battle Creek Tax Increment Finance Authority and managed by Battle Creek Unlimited (BCU), a non-profit organization. The property was originally used for agricultural purposes in the early 1900s until it was incorporated into the Fort Custer Military Reservation. The City of Battle Creek purchased the property in 1964, when it was declared as surplus property by the government and subsequently sold to Kellogg Company in 1980.

Figure 2.2-1. Regional Location Map

The Kellogg Company then sold the property to Prairie Farms who subsequently sold the property to Battle Creek Tax Increment Finance Authority in 2000. Historically, the site was used for military maintenance and repair facilities. The site is zoned I-2 Heavy Industrial by the City of Battle Creek (Toda, 2009b).

The site is bordered by West Dickman Road (Michigan [M] 96) to the south, by Brady Road to the west, Prairie Farm facilities to the north, and Hill Brady Road to the east (see Figure 2.2-2). The site primarily consists of open fields with scattered patches of trees. There are no structures on the site other than a chain link fence that extends in a northeast direction on the eastern portion of the site. There are several concrete foundations and roadway beds that are still present on the site. The site generally slopes from the southwest corner to the northeast corner; however, elevations begin increasing at the northern edge of the property extending up to the Prairie Farm facilities. A paved sidewalk path parallels West Dickman Road on the southern boundary of the site. Land in the vicinity of the site is a mix of light industrial and commercial uses.

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 the proposed projects. As a result, these projects 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 Toda

Initially, a site in Goose Creek, South Carolina was considered as it was in an established chemical industrial park suitable for Toda's production facility. However, while the site met the needs of the proposed project, access and logistics to Toda's suppliers and customers in Michigan and neighboring states (including Toda's precursor materials production facility in Ontario, Canada) was not as easily accessible from the South Carolina location.

Figure 2.2-2. Site Location Map

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**
Meteorology	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
Wetlands and Floodplains	Negligible	Negligible	Negligible	Negligible
Cultural Resources	Negligible	Negligible	Negligible	Negligible
Land Use	Negligible	Negligible	Minor	Negligible
Air Quality	Negligible	Negligible	Minor	Minor
Greenhouse Gases	Negligible	Negligible	Minor	Beneficial
Noise	Negligible	Negligible	Minor	Minor
Geology and Soils	Negligible	Negligible	Minor	Minor
Surface Water and Groundwater	Negligible	Negligible	Minor	Minor
Vegetation and Wildlife	Negligible	Negligible	Minor	Minor
Solid and Hazardous Wastes	Negligible	Negligible	Minor	Minor
Utilities and Energy Use	Negligible	Negligible	Minor	Minor
Transportation and Traffic	Negligible	Negligible	Minor	Minor
Human Health and Safety	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 Toda (Toda, 2009a and 2009b); review of documentation provided by Toda; searches of various environmental databases; agency consultation; and a site visit conducted on November 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 Toda's Proposed Project and do not require further evaluation. They include meteorology, socioeconomics, environmental justice, visual resources, wetlands, floodplains, and cultural resources; therefore, these resource areas are briefly discussed in this section of the EA and will not be evaluated further.

Meteorology: Battle Creek, Michigan is characterized by a cold temperate climate. Average annual temperature ranges from lows of about 38 degrees Fahrenheit (°F) to highs of approximately 58°F. Winter months (December through February) are the coolest with average monthly low temperatures ranging from 15° to 20°F and high temperatures range from 31° to 35°F. The warmest months are the summer months of June through August. During those months, average monthly low temperatures range from 55° to 59°F and high temperatures range from 79° to 82°F. The maximum average monthly precipitation, which is 3.90 inches, occurs in September (MRCC, 2009). For the period between 1980 and 2006, there have been 46 days of severe weather events (i.e., hail, wind, and tornados) (NOAA, 2009). The last Category 4 tornado (i.e., maximum wind speeds 207-260 miles per hour), which resulted in fatalities and costly damages, occurred on November 10, 2002. The Proposed Project would have no impact on climate, nor would climate have any impact on the action.

Socioeconomics: As a result of the Proposed Project, approximately 50 new permanent jobs are anticipated. 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. Negligible impacts to housing and population are anticipated.

Under Toda's Proposed Project, taxes would continue to be paid on the property and no adverse impacts would occur. Construction workers employed for the construction period (approximately 120 individuals at peak) are assumed to be currently employed, and residing and paying taxes in the Calhoun County, Michigan 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 beneficial impact on taxes and revenue.

Secondary jobs related to the increased economic activity stimulated by the Proposed Project may be created. 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, thus having a minor beneficial impact.

Construction of the Proposed Project would not result in direct impacts to community facilities, services, school systems or emergency services of Calhoun 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 Executive Order 12898 *Federal Actions Address Environmental Justice in Minority Populations and Low-Income Populations*. While there are minority and low-income populations in the study area, the Proposed Project would not have a disproportionately adverse impact on these groups.

Visual Resources: The site is bordered by West Dickman Road (M 96) to the south, Brady Road to the west, Prairie Farm facilities to the north, and Hill Brady Road to the east. The site primarily consists of open fields with scattered patches of trees. The site is zoned I-2 Heavy Industrial and the land in the vicinity of the site is a mix of light industrial and commercial uses. Surrounding industrial buildings act as a visual screen in all directions.

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.

Wetlands and Floodplains: National Wetlands Inventory (NWI) mapping does not indicate the presence of wetlands within or adjacent to the project site (EPA, 2009b). Furthermore, the November 30th site visit determined the entire site is previously disturbed with areas of impervious surface. No wetlands occur within the project site.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Map Number 2600510001B indicates the study area is within Flood Zone C of the Kalamazoo River (FEMA, 2009). This flood zone area is defined by FEMA as minimal flood risk hazard area determined to be above the 500-year flood level; therefore, no adverse impacts would be anticipated for floodplain resources from construction or operations of the Proposed Project.

Cultural Resources: The area of potential effect (APE) for historic structures has been determined to be limited to approximately 1/4 mile beyond the site boundaries. This is beyond the limits of surrounding industrial buildings that act as a visual screen in all directions. The APE for archeological resources corresponds to the limits of disturbance.

On November 30, 2009, a project site visit confirmed the proposed project is located within previously disturbed areas that contain old concrete foundations of previous structures and old roadway beds. Due to the past military maintenance and repair facilities that occurred at the project site, soil contamination does exist (see Section 3.2.7.1).

Identification efforts included a field survey to assess the potential for both archeological and above-ground historic properties. Michigan's "Historic Sites Online" GIS system was also consulted. There are no National Register Eligible structures or archeological sites within the respective APEs. Although Fort Custer was listed on the Michigan State Register on September 7, 1957, the military buildings in this area have been demolished and the area has been re-used for industrial and commercial purposes. The nearest National Register listed property to the project site is the Roosevelt Community House at 107 Evergreen Road, Springfield. This is approximately 1 mile southeast of the project site. There are no other recorded properties within 1 mile of the site.

Since there are no historic properties within the APE for either archeological or architectural resources, DOE has made a finding of No Historic Properties Affected for this undertaking. DOE received concurrence on this finding from the Michigan State Historic Preservation Office in a letter dated January 6, 2010 (see Appendix A).

3.2 Resource Areas Considered Further

Environmental resource areas carried through for further consideration of the potential impact of Toda's Proposed Project include land use, air quality and greenhouse gas, noise, geology and soils, surface water and groundwater, vegetation and wildlife, solid and hazardous wastes, utilities and energy use, transportation and traffic, and human health and safety.

3.2.1 Land Use

3.2.1.1 Affected Environment

The site consists of approximately 17 acres of land that fronts West Dickman Road, located to the west of the City of Battle Creek in Calhoun County, Michigan. The proposed site is located within the Fort Custer Industrial Park, a 3,000-acre international corporate and manufacturing business complex established in 1972. The site is bordered by West Dickman Road (M 96) to the south, Brady Road to the west, Prairie Farm facilities to the north, and Hill Brady Road to the east. The site primarily consists of open fields with scattered patches of trees. Properties in the vicinity of the site are a mix of light industrial and commercial uses.

The site is zoned I-2 Heavy Industrial by the City of Battle Creek (Toda, 2009b). Protective Covenants are in place for the Fort Custer Industrial Park, which are designed to permit major manufacturing operations throughout the industrial park. Improvement standards pertaining to building coverage; yards and open space; side and rear yards; building height; off-street parking; loading space; signs; landscaping; utility service; building construction; fences; outdoor storage; and railroad easements are included in these protective covenants (Fort Custer Industrial Park, 2009).

3.2.1.2 Environmental Consequences

3.2.1.2.1 No Action Alternative

Under the No Action Alternative, plant construction and operation would not occur, therefore, no impacts would occur to land use.

3.2.1.2.2 Proposed Project

Construction
Construction of the facility within the Fort Custer Industrial Park would result in a change in land use from an undeveloped field to a manufacturing facility. According to the City of Battle Creek, the site is zoned I-2 Heavy Industrial and is consistent with the planned land use for this site.

The Protective Covenant for building height states that, "No building shall exceed a height of 40 feet exclusive of such projections as flag poles, antennas, air conditions, elevator housings, chimneys, and mechanical appurtenances permitted by the BCU Development Review Board or the ordinances of the City" (Fort Custer Industrial Park, 2009). The planned building height is currently 75 feet. Although the use of the property is consistent with City of Battle Creek zoning, approval for a variance from the building height requirements would be required. According to Toda, BCU has indicated this would not be an issue as other facilities in the park have obtained this variance, including Prairie Farms, which is immediately to the north and higher in elevation. Therefore, a minor impact to land use and zoning would occur.

Operations
Operations of the Proposed Project would not have impacts to land use.

3.2.1.3 Cumulative Impacts

Other than the proposed Toda project, no other projects are planned. The construction of the project on the site, along with past, present, and future development in the area would continue to change land use to commercial and industrial uses and would add negligibly to long-term, cumulative impacts. These changes are in accordance with approved land use plans.

3.2.1.4 Proposed Mitigation Measures

No mitigation measures would be required for land use.

3.2.2 Air Quality and Greenhouse Gas

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 U.S. Environmental Protection Agency (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_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM) (particulate matter 10 microns or less [PM_{10}], particulate matter 2.5 microns or less [$PM_{2.5}$]), sulfur dioxide (SO_2), and lead (Pb). A state's air quality regulations may further regulate concentrations of the criteria pollutants. Table 3.2.2-1 lists the NAAQS and Michigan AAQS.

Table 3.2.2-1. National Ambient Air Quality Standards

Pollutant	Standard	Averaging Time	Standard Type
Carbon Monoxide	35 ppm (40 mg/m^3)	1-hour	None
	9 ppm (10 mg/m^3)	8-hour	
Lead	0.15 µg/m^3	Rolling 3-Month Average(1)	Primary and Secondary
	1.5 µg/m3	Quarterly Average	
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Primary and Secondary
PM_{10}	150 µg/m^3	24-hour	Primary and Secondary
$PM_{2.5}$	35 µg/m^3	24-hour	Primary and Secondary
	15.0 µg/m^3	Annual (Arithmetic Mean)	
Ozone	0.12 ppm	1-hour(2)	Primary and Secondary
	0.075 ppm (2008 std)	8-hour	
	0.08 ppm (1997 std)	8-hour(3)	
Sulfur Dioxide	0.5 ppm (1300 µg/m^3)	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_3 was revoked in all areas except 14 8-hour O_3 nonattainment Early Action Compact Areas. Calhoun County, Michigan 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. MDEQ made recommendation for nonattainment area designations to EPA in March 2009 for the 2008 standard.
µg/m^3 – microgram per cubic meter; ppm – parts per million; std – standard.
Source: EPA, 2009c

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, nitrogen oxides (NO_X), and volatile organic compounds (VOCs). NO_X and VOCs are precursors for O_3.

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_2, NO_2, and PM_{10} (Table 3.2.2-2).

Table 3.2.2-2. Allowable Prevention of Significant Deterioration Increments (µg/m^3)

Pollutant--Averaging Period	Class I Area	Class II Area
SO_2--3-Hour	25	512
--24-Hour	5	91
--Annual	2	20
NO_2--Annual	2.5	25
PM_{10}--24-Hour	8	30
--Annual	4	17

µg/m^3 – 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. 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_2), methane (CH_4), NO_X, O_3, 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_2 is the second-most abundant GHG and is typically produced from human-related activities. The largest source of CO_2 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_2 emissions. The manufacturing of lithium-ion battery cathode material could produce CO_2 emissions.

Although regulatory agencies are taking actions to address GHG effects, there are currently no state or Federal standards or regulations limiting CO_2 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 became effective on January 1, 2010. 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_2 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 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.

3.2.2.1 Affected Environment

Air Quality

The MDEQ operates the Michigan Air Quality Monitoring Program, which consists of monitoring air quality for each of the criteria pollutants and assessing compliance. MDEQ air pollution regulations are located in the MDEQ rule R 336.1101 to R 336.2910. In 2007, Calhoun County was redesignated as a maintenance area for the 1997 8-hour ozone standard (EPA, 2009d). Calhoun County is currently in attainment for all criteria air pollutants, including the new 8-hour ozone standard (EPA, 2009d).

Because Battle Creek is within the Calhoun County maintenance area, Federal actions within Battle Creek 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 Michigan, Federal actions covered under the General Conformity Rule, which are in 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 lead (25 tpy) (40CFR Part 6, 51, and 93). The following provides further discussions on the current and projected emissions from the Toda facility.

Current Air Emissions

There are currently no process operations conducted at the Battle Creek site by Toda; therefore, Toda does not have any sources that currently emit air pollutants and does not have an air quality permit.

3.2.2.2 Environmental Consequences

3.2.2.2.1 No Action Alternative

The No Action Alternative is treated in this EA as the "No-Build" Alternative. That is, under the No Action Alternative, Toda would not construct and operate the lithium-ion batteries cathode manufacturing plant at the Battle Creek site because of the absence of DOE funding assistance.

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 EDVs (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_2 concentrations in the Earth's atmosphere will continue, increasing the effect on climate change.

3.2.2.2.2 Proposed Project

Construction

Toda would lease an approximate 17-acre property of an existing industrial park. Although only 2 acres would be used for the proposed plant and related structures, Toda plans to develop the entire 17-acre property for potential future expansion (Toda, 2009b).

During construction at the site, the equipment used to construct the proposed facilities would intermittently emit quantities of five criteria air pollutants: CO, NO_X, SO_2, PM_{10}, and VOC. In addition to tailpipe emissions from heavy equipment, ground surface disturbances during excavation and grading activities could potentially generate fugitive dust, which may potentially contain low levels of HAPs since the parcel is a brownfield. 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 site would be short-term and minor.

Operations

Toda has several lithium-ion cathode material facilities currently operating in Japan. The proposed facility at the Battle Creek site would be almost identical to one of the operations in Japan and would be the first Toda plant in the United States (Toda, 2009b). Using sources of emissions such as the mixer, kiln, and pulverizer, Toda estimates that the proposed facility would emit approximately 2.7 tpy of HAPs (i.e., cobalt and nickel compounds) and 384 tpy of CO_2. The material handling process and equipment such as the kiln would potentially emit fugitive criteria pollutants. Based on these emissions estimates, the proposed Toda facility would not be a major source of air pollutants. A facility is a major source of air pollutants if it 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.

Toda has determined that it would be required to obtain a Permit to Install from MDEQ for the proposed facility in Battle Creek because the facility's initial risk screening level for nickel was 0.0042 µg/m3 MDEQ Rule R 336.1290(a) (ii) (D) requires a Permit to Install for any unit that emits a carcinogen (e.g., nickel), which is not listed in R336.1122 (f) (Toda, 2009b). A Permit to Install is a State license to construct a source of air contaminant emissions.

Based on the emissions estimates for the proposed facility, DOE does not expect that the proposed Toda facility would cause significant impacts to the air quality in the area. Potential emissions from the proposed project would be a result of fugitive dust from material handling and CO, NO_X, PM, and SO_2 from the kiln. For the proposed project, the plant plans to control emissions using dust collectors and scrubbers. The facility expects to comply with any permit conditions that are required, especially those in a potential Permit to Install. There would be no barriers to impede any future compliance.

There are two Federal mandatory Class I areas within Michigan and none in neighboring States of Wisconsin, Indiana, Illinois, and Ohio. There are no Class I areas 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 Michigan border would be considered Class II. Sensitive receptors near the Toda facility include residential properties approximately 0.8 miles to the east, a hospital approximately 1 mile to the northwest, four schools within a 3 mile radius, with the nearest two 1.5 miles to the east and 1.5 miles to the northeast, respectively. The border of Fort Custer National Cemetery is approximately 1.2 miles to the west, and Fort Custer Recreation Area (State Park) is approximately 2 miles to the west of the site. However, emissions from the manufacturing process at the facility would not result in impacts to these sensitive receptors. The facility would be enclosed and emissions would be controlled. According to MDEQ, as long as the facility complies with the conditions of the permit, public health and the environment are protected (MDEQ, 2005); therefore, the facility would demonstrate in its Permit to Install that dispersion of air pollutants would be limited and would not cause a deterioration of the surrounding air quality.

Overall, the impacts from the Proposed Project would be minor. The Proposed Project would result in a slight increase from current air emissions. Impacts may be measurable or noticeable but would be of minimal consequence because of equipment control devices and air permit conditions.

Carbon Footprint

According to 2005 estimates, Michigan emitted 248 million metric tons of carbon-equivalent GHG, an amount equal to about 3.5 percent of total United States gross GHG emissions (CCS, 2008). Michigan's gross GHG emissions, which exclude sinks, are rising slower than those of the nation as a whole. Michigan's gross GHG emissions increased by about 12 percent from 1990 to 2005, while national emissions rose by 16 percent from 1990 to 2005 (CCS, 2008). The growth in Michigan's emissions from 1990 to 2005 is primarily associated with electricity consumption and transportation sectors (CCS, 2008).

The majority of the proposed facility's CO_2 emissions would be from electricity consumption and not directly from the facility's processes. Direct CO_2 emissions from manufacturing processes associated with the proposed project are expected to be small. The proposed project would have no reporting requirements under the new Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010, because the Toda facility would not directly emit 25,000 mtpy of CO_2 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. EDVs 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.

3.2.2.3 Cumulative Impacts

Other than the proposed Toda project, 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 to air quality.

3.2.2.4 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 Best Management Practices (BMPs) would minimize any fugitive dust emissions, and therefore would reduce the adverse impacts from fugitive dust emissions.

During operations at the Toda facility, actions would be taken to ensure that the facility meets any air permit and air quality requirements. Because of the control devices used on the equipment and BMPs employed at the facility, actual emissions would be well below permitted limits.

3.2.3 Noise

3.2.3.1 Affected Environment

The proposed site in Fort Custer Industrial Park in Battle Creek is zoned I-2 Heavy Industrial by the City of Battle Creek. The site is located on West Dickman Road (M 96) between Hill Brady Road on the east and Brady Road on the west.

The nearest sensitive receptors to the site are the residential neighborhoods located to the north and east of the site, with the nearest homes being approximately 0.8 miles to the east on Ellis Road and 1 mile to the northeast on Feld Avenue. There is a hospital located approximately 1 mile to the northwest. There are four schools located within a 3 mile radius of the site, with the nearest two located about 1.5 miles to the east and 1.5 miles to the northeast. The border of Fort Custer National Cemetery is approximately 1.2 miles to the west, and Fort Custer Recreation Area (State Park) is approximately 2 miles to the west of the site (EPA, 2009b).

The site is located within the vicinity of various existing noise sources that contribute to the baseline noise level. W.K. Kellogg Airport is located 1.2 miles to the southeast. A railroad line runs along West River Road bordering the northern edge of the industrial park approximately 0.5 miles north of the site. The site is near major roadways that continuously generate traffic noise. The facility would be located adjacent to West Dickman Road, which is a five-lane State highway and a major corridor for passenger and commercial traffic traveling in and through Fort Custer Industrial Park. Interstate (I)-194/Highway 66 is about 5 miles to the east; and I-94 is about 4 miles to the south. Furthermore, the Fort Custer Industrial Park is populated with various other industrial facilities. Manufacturing buildings ranging in size from 30,000 square feet to 200,000 square feet are adjacent to or near the site on all four sides. All manufacturing operations are contained indoors; however, each facility emits normal noise related to truck and employee traffic, and building mechanical systems such as blowers, heating, ventilation, and air conditioning, etc. There are Protective Covenants for Fort Custer Industrial Park, which are designed to permit major manufacturing operations, and include noise guidelines for the owners or tenants within the industrial park. The Protective Covenants state, "No noise, as measured on a standard decibel meter perceptible above the general noise level at any property line of the immediate site shall be permitted" (Fort Custer Industrial Park, 2009).

3.2.3.2 Environmental Consequences

3.2.3.2.1 No Action Alternative

Under the No Action Alternative, plant construction and operation would not occur, therefore, no impacts would occur regarding noise levels.

3.2.3.2.2 Proposed Project

Construction

Short-term but measurable adverse minor impacts to noise levels are expected during the construction phase of the proposed facility. The Proposed Project includes construction of a factory building, offices, storage, and a wastewater treatment facility, as well as the installation of the necessary mechanical equipment for the manufacturing process. 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 be within the range of 75 to 90 decibels. Construction noise levels onsite would primarily be limited to the immediate vicinity of the project site and would be short-term and intermittent. The location is at a sufficient distance from the nearest sensitive receptors such that any noise impact should be minor. It is likely, however, that nearby office workers in the industrial park may be temporarily disturbed by the construction noise. The construction is expected to last for approximately 12 months.

Operations

The main sources of noise during operations would be from the new mechanical equipment and from the truck and employee-vehicle traffic accessing the facility. All equipment directly involved in product manufacturing would be located inside the factory buildings. Primary equipment not directly involved in production would generally be located outside, including utility storage tanks, waste gas treatment equipment, and cooling towers; however, these outdoor components do not generate loud noises, with the possible exception of heating, ventilation, and air conditioning units that may be located on the roof or directly outside the buildings.

The Proposed Project would generate a minor long-term increase in noise due to truck and personal-vehicle traffic into and out of the Fort Custer Industrial Park. The operations would be expected to require approximately ten truck trips per day for deliveries and shipments. Due to the hiring of 50 new fulltime employees at the facility, there is expected to be an addition of approximately 70 personal-vehicle trips per day (Toda, 2009b).

Because this facility would be located in an existing industrial park that currently contains numerous other industrial facilities with mechanical and traffic-related noises, any increase in ambient noise levels resulting from operations of the Proposed Project would be minor. Furthermore, there are other existing comparable and louder noise sources in the vicinity, including existing truck traffic, major highways, a railroad line, and an airport.

3.2.3.3 Cumulative Impacts

Other than the proposed Toda project, 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 to noise levels. Noise emissions could have a minor cumulative impact with other existing noises.

3.2.3.4 Proposed Mitigation Measures

No mitigation measures would be required for noise. The Proposed Project would abide by the noise guidelines documented in the Protective Covenants of Fort Custer Industrial Park (Fort Custer Industrial Park, 2009).

3.2.4 Geology and Soils

The predominant geologic landform within the project site is outwash plains. Outwash plains are characterized by an extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief (NRCS, 2009). The Calhoun County Soil Survey (NRCS, 2009) indicates the entire study area as Urban land-Oshtemo complex, with 0 to 6 percent slopes with no frequency of flooding. These soils are not rated for either hydric potential or for construction suitability.

Urban soils are those soils that have been previously disturbed and are characteristic of the built-up environment. In regards to the study area, this soil unit includes the location of the existing facility where the Proposed Project

would be located. The November 30, 2009 project site visit confirmed the proposed project is located within previously disturbed areas that contain old concrete foundations of previous structures and old roadway beds. Areas of grass-dominated open field have also become established within the project site as the project site has been relatively inactive since the mid-1960s. Due to the past military maintenance and repair facilities that occurred at the project site, soil contamination does exist (see Section 3.2.7, for compliance and remediation status).

3.2.4.1.1 No Action Alternative

Under the No Action Alternative, plant construction and operation would not occur, therefore, no impacts would occur to existing geology and soil resources.

3.2.4.1.2 Proposed Project

Construction
Under Toda's Proposed Project, construction of the proposed facility would occur on up to 17 acres within previously disturbed urban-mapped soils; therefore, no adverse impacts would occur to soils. BMPs such as sediment control devices and seeding or sodding of temporarily disturbed areas following construction would prevent the potential for adverse indirect impacts such as soil erosion. In addition, potential staging areas for construction equipment and materials would not likely cause adverse impacts to soils as the entire project site is characterized by urban/previously disturbed soils.

Operations
Operations of the Proposed Project would have no impacts to geology or soil resources.

3.2.4.2 Cumulative Impacts

Other than the proposed Toda project, 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 to geology and soils.

3.2.4.3 Proposed Mitigation Measures

No mitigation measures would be required for geology and soils.

3.2.5 Surface Water and Groundwater

3.2.5.1 Affected Environment

3.2.5.1.1 Surface Water

The closest surface water to the project site is the Kalamazoo River, approximately 4,000 feet to the north of the site. The project site is located within the middle segment of the Kalamazoo Watershed. The Kalamazoo River and its tributaries form a network draining approximately 2,020 square miles of southwest Michigan, making it the seventh largest watershed in the State. The Kalamazoo River mainstem is 175 miles long and there are 899 miles of tributaries. Major tributaries include Battle Creek, North Branch Kalamazoo, Gun, and Rabbit Rivers and Rice, Wabascon, Augusta, and Portage Creeks. There are 287 lakes greater than 10 acres within the basin. Gun Lake is the largest at 2,661 acres (Wesley, 2005). Battle Creek flows into the Kalamazoo approximately 3.5 miles upstream (east) of the closest point of the Kalamazoo to the site; Battle Creek is listed as an impaired waterbody for polychlorinated biphenyls (PCBs) (EPA, 2008).

The City of Battle Creek discharges its treated wastewater to the Kalamazoo River; water is treated to meet water quality criteria imposed by State and Federal regulations prior to discharge (City of Battle Creek, 2009).

3.2.5.1.2 Groundwater

As of 2005, in Calhoun County, approximately 36 percent of groundwater wells drew from glacial deposits and 58 percent were completed in bedrock units (MDEQ, 2006). Wells in both bedrock and glacial aquifers yield 100 to 500 gallons per minute in the area of the project site (Lusch, undated). The City of Battle Creek obtains the City's potable water from the Verona Well Field (City of Battle Creek, 2009). Glacial deposits in Calhoun County are up to 400 feet thick; the thickness of channel deposits in the Verona Well Field area ranges from 5 to 37 feet thick. Bedrock underlies the glacial deposits and wells in the Verona Well Field draw from both the upper and lower portions of the Marshall Sandstone aquifer, which varies in thickness from 0 to 200 feet in the area (MDEQ, 2006).

3.2.5.2 Environmental Consequences

3.2.5.2.1 No Action Alternative

Under the No Action Alternative, plant construction and operation would not occur, therefore, no impacts would occur to surface water or groundwater resources.

3.2.5.2.2 Proposed Project

Surface Water

Construction

Construction of the proposed facility would have minor temporary indirect impacts from runoff to surface waters. These impacts would be minimized through the implementation of a Stormwater Pollution Prevention Plan (SWPPP). Toda would apply for a National Pollutant Discharge Elimination System Permit from the MDEQ, which would require approval of Toda's SWPPP; thus, providing a regulatory mechanism to ensure adequate stormwater management would be performed during construction as well as operations.

Operation

Operation of the proposed facility would produce approximately 33,000 gallons per day (gpd) of wastewater (approximately 30,000 gpd of process wastewater and approximately 3,000 gpd of sanitary wastewater). Wastewater would be treated first in an onsite new wastewater treatment system that would be developed by Toda, and then would be sent to the City of Battle Creek wastewater treatment plant where it would be treated again before being discharged to the Kalamazoo River. This wastewater discharge would represent an approximately 0.3 percent increase from the current wastewater generation rate of the City (10 million gallons per day [mgd]) and less than 0.3 percent of the estimated remaining capacity of the City's wastewater treatment plant (23 mgd total capacity; 13 mgd is estimated as unused capacity). Considering the relatively small increase in generation, minor impacts to the Kalamazoo River would be expected from an increased rate of wastewater discharge. Ultimately, the effluent discharge from the City of Battle Creek's wastewater treatment plant would be required to meet water quality criteria for a variety of parameters included in the City's National Pollutant Discharge Elimination System permit (Michigan Department of Environmental Quality Permit Number MI0022276) (e.g., total phosphorous, total mercury, total suspended solids, etc.); therefore, no greater than minor impacts on water quality of the Kalamazoo would be expected.

No surface waters exist onsite or in the immediate vicinity of the site; therefore, no direct impacts to surface waters would be expected.

Groundwater

Construction

Toda would develop an erosion control plan and adopt BMPs to guide the avoidance, minimization, and response to spills that could affect groundwater during construction. Thus, a minor potential for groundwater contamination would be expected.

Operation
Operation of the proposed facility would require approximately 33,000 gpd of process water and water for employee use. Facility water would be supplied by the City of Battle Creek municipal water system, which obtains its water from the Verona Well Field. The City's water system has a peak capacity of 23 mgd and an average demand of 10 mgd; therefore, the requirements of the proposed facility would represent less than 0.3 percent of the remaining capacity (13 mgd). Considering the relatively small increase in demand and the abundance of groundwater resources in the region, minor impacts on the availability of groundwater resources would be expected and the existing City wells would be adequate to meet the increased demand. No onsite groundwater wells would be established.

3.2.5.3 Cumulative Impacts

Other than the proposed Toda project, 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 to surface water and groundwater.

3.2.5.4 Proposed Mitigation Measures

No mitigation measures would be required for surface water or groundwater.

3.2.6 Vegetation and Wildlife

3.2.6.1 Affected Environment

Vegetation
The November 30, 2009, project site visit verified the site contains disturbed land from past construction activities (i.e., old concrete foundations and roadway beds). Other areas within the project site contain periodically maintained meadow. Dominant vegetation composition is a combination of grasses along with other open meadow herbaceous species such as milkweed (*Asclepias sp.*). A few early successional tree species are also sparsely scattered throughout the project site. Tree species include American elm (*Ulmus Americana)*, boxelder (*Acer negundo*) and black locust (*Robinia pseudoacacia*).

Wildlife
No wildlife species were observed within the study area during the November 30th, 2009, site visit. Common wildlife species within the region that utilize the periodically maintained open meadow habitat within the project site include raccoons (*Procyon lotor*), cottontail rabbits (*Sylvilagus floridanus)*, squirrels (*Sciurus niger*), and various other small mammal species such as white-footed mice (*Peromyscus Leucopus*) and shrews (*Sorex sp.)*.

3.2.6.2 Environmental Consequences

3.2.6.2.1 No Action Alternative

Under the No Action Alternative, plant construction and operation would not occur, therefore, no impacts would occur to vegetation or wildlife resources.

3.2.6.2.2 Proposed Project

Informal coordination letters were sent to both the USFWS and the Michigan Natural Heritage Program to verify the 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 an e-mail dated December 14, 2009, the USFWS stated their records do not indicate the presence of Federally-listed species or designated critical habitat within the project site. In a letter dated December 22, 2009, the Michigan Department of Natural Resources, Wildlife Division stated that the project should have no impact on rare or unique natural features at the location specified if it proceeds according to the plans provided (Appendix A).

Vegetation

Construction

Under Toda's Proposed Project, up to 17 acres of disturbance to open meadow would occur from the construction of the proposed facility. Grading and permanent removal of vegetation during construction would cause localized and permanent minor adverse impacts to vegetation. Potential staging areas for construction equipment and materials would utilize existing areas of impervious surface (i.e., concrete foundations and old roadbeds) that occur at the project site, minimizing adverse impacts to vegetation.

Operations

Operations of the Proposed Project are not anticipated to have impacts on vegetation.

Wildlife

Construction

As previously stated, up to 17 acres of vegetation could be lost due to construction of supporting structures. This impact would result in a direct, localized, and permanent adverse impact to open meadow habitat. Construction activities (i.e., site grading) could destroy small mammal burrows (if present) within the construction footprint. These animals would likely move to similar habitat adjacent to the project site. Noise from construction activities (see Section 3.2.3) would have the potential to disturb wildlife species within proximity to the project site. Overall adverse impacts, however, would be minor as the area already contains disturbance to habitat within the study area from periodic maintenance (mowing) and the site is adjacent to existing industries that generate human activity and existing associated disturbances.

Operations

Operations of the facility are not anticipated to create additional disturbance to wildlife.

3.2.6.3 Cumulative Impacts

Other than the proposed Toda project, 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 to vegetation and wildlife.

3.2.6.4 Proposed Mitigation Measures

No mitigation measures would be required for vegetation and wildlife.

3.2.7 Solid and Hazardous Wastes

3.2.7.1 Affected Environment

The site is currently undeveloped property. There are no hazardous wastes or solid wastes being generated at the site and there is no EPA Identification Number associated with this property. There are no Superfund sites within at least a 3-mile radius (EPA, 2009). There are no structures on the site other than a chain link fence that extends in a northeast direction on the eastern portion of the site and several concrete foundation and roadway beds that are present from structures formerly present on the site.

Historically, the site was part of the Fort Custer Military Base from at least 1917 until 1964, when the base was closed. During this time period, the southern portion of the property was developed with a fire station, two vehicle repair buildings, grease rack, oil house, and wash rack. The central and northern portions of the property were developed with a warehouse and multiple residences. Following closure of the base in 1964, the buildings were no longer used, and they were demolished by the early 1980s. The site has remained vacant since the early 1980s (Toda, 2009b).

A Brownfield Redevelopment Assessment (BFRA) Report for the Kellogg Property-Battle Creek (the Toda site) was prepared by MDEQ in 1999 (MDEQ, 1999). Based on soil sampling results, the presence of arsenic, lead and PCBs (Aroclor 1254) were detected at concentrations above the Residential Generic Direct Contact Cleanup Criteria of Part 201 of the Environmental Remediation of the Natural Resources and Environmental Protection Act, 1994, PA 451, as amended (Part 201). Detected concentrations of these contaminants were not greater than the Generic Industrial and Commercial Type I, II, III Cleanup Criteria of Part 201, nor the Particulate Inhalation of either the Residential or Industrial Criteria (MDEQ, 1999).

The City of Battle Creek Brownfield Redevelopment Authority and MDEQ both with assistance from Soil and Materials Engineers, Inc. (SME) conducted site assessments and collected soil samples from the site in 2009. Groundwater was not analyzed for the presence of contaminants because groundwater is located at a depth of over 35 feet below the ground surface and was unlikely to be impacted unless one or more significant source areas of soil contamination were identified; no such areas were detected (SME, 2009). Soil samples were analyzed for the presence of volatile organic compounds (VOCs), semi-volatile organic compounds, pesticides, polycyclic aromatic hydrocarbons, PCBs, and metals.

Based on the 2009 soil sampling results, two elements, arsenic and lead, were detected at concentrations that exceed the Part 201 Industrial Direct Contact Criterion. Arsenic was detected in a subsurface soil sample (2 to 3 feet below ground surface) at a concentration of 38,000 microgram per kilogram (µg/kg), which exceeds the Part 201 Industrial Direct Contact Criterion of 37,000 ug/kg. Lead was detected in a surface soil sample (1 to 4 feet) at a concentration of 1,410,000 µg/kg, which exceeds the Part 201 Industrial Direct Contact Criterion of 900,000 µg/kg for lead. No other compounds were detected in concentrations that exceed the Part 201 Industrial Direct Contact Criterion. Soil contaminated at levels above Part 201 Industrial Direct Contact Criterion as described above, would be excavated and properly disposed of in an offsite licensed landfill (SME, 2009).

Based on the 2009 sampling results, aluminum, antimony, arsenic, cadmium, chromium, cobalt, copper, cyanide, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, zinc, naphthalene, and PCBs were detected in soil samples at concentrations that exceed the Part 201 Residential and Commercial I Generic Cleanup Criteria (SME, 2009). In Michigan, a Baseline Environmental Assessment (BEA) can be performed that allows people to purchase or begin operating at a facility without being held liable for existing contamination. BEAs are used to gather enough information about the property being transferred so that existing contamination can be distinguished from any new releases that might occur after the new owner or operator takes over the property (MDEQ, 2009).

SME would continue characterizing select soil samples to identify those hazardous constituents planned to be used in Toda's operations at the site that are currently present on the property at levels applicable to the BEA process. SME would prepare a BEA report in accordance with Part 201 for securing protection from liability for cleanup of the existing contamination on the property (SME, 2009).

The site is not listed on the EPA's National Priority List, which designates high-priority cleanup sites under the Comprehensive Environmental Response Compensation and Liability Act, more commonly known as the Superfund Program. There are no National Priority List sites within at least a 3 mile radius of the site (EPA, 2009a).

3.2.7.2 Environmental Consequences

3.2.7.2.1 No Action Alternative

Under the No Action Alternative, the site would remain vacant or would be developed by another company for industrial use. If the site is developed by another industrial owner, construction would likely require the removal of several concrete foundations and roadway beds that are present on the site. Under the No Action Alternative, there is a potential to encounter contaminated soil and to disturb or remove some contaminated soil. Coordination

by the new property owner with MDEQ would be required to coordinate with and obtain approval from the MDEQ prior to construction to ensure adherence to any development restriction or requirements. If soil excavation and offsite disposal is required, the soil would be sampled and analyzed prior to offsite transport and would be managed appropriately. These materials could be landfilled offsite at a permitted solid waste landfill; therefore, no impact would occur.

There is a potential that the site could be developed by another owner; however, the potential impacts of raw material usage and wastes generated cannot be assessed because there is no known alternative industrial owner that would develop the site at this time.

3.2.7.2.2 Proposed Project

Construction

Under Toda's Proposed Project, a facility would be newly constructed and would require the removal of several concrete foundations and roadway beds that are present on the site. These materials could be landfilled offsite at a permitted solid waste landfill. No impact would be associated with the removal and offsite disposal of these materials. 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, and therefore, there would be no impact associated with the disposal of these materials. In addition, the facility would implement BMPs to minimize the quantity of non-hazardous solid waste generated, as appropriate, during construction and to ensure proper handling of all materials.

As described in Section 3.2.7.1, historical releases resulted in soil contamination at the site. Under the Proposed Project, there is a potential to encounter contaminated soil and to disturb or remove some contaminated soil. If soil excavation and offsite disposal is required, the soil would be sampled and analyzed prior to offsite transport and would be managed appropriately. Toda would have to coordinate with and obtain approval from the MDEQ prior to construction to ensure adherence to any development restriction or requirements.

Operations

The major raw materials that are expected to be used under the Proposal Action are listed in Table 3.2.7-1. These materials would be delivered and stored in dry supersacks.

Table 3.2.7-1. Major Raw Materials Used

Chemical	Maximum Quantity Onsite (tpy)
Nickel cobalt hydroxide ($NiCo(OH)_2$)	1,608
Nickel cobalt manganese hydroxide ($NiCoMn(OH)_2$))	1,608
Lithium carbonate (Li_2CO_3)	672
Lithium hydroxide (LiOH)	792
Aluminum hydroxide ($Al(OH)_3$)	72

Source: Toda, 2009b

No underground storage tanks are planned under the Proposed Project. Materials would be stored indoors except for a new liquid oxygen tank (15,000 gallons) that would be stored outdoors (Toda, 2009b).

Waste generated would include municipal solid waste, such as paper, plastic, etc. (6 tons per month), lithium ceramic tray adhesives (2 tons per month), polyethylene bag adhesive with $NiCoAl(OH)_2$ and $Mn(OH)_2$ (1 ton per month), and off-specification materials (quantity would vary) (Toda, 2009b). During Phase 2 of the Proposed

Project, a wet-process could be used that would generate approximately 4 tpy of sludge containing $LiNiCoAlO_2$ that would either be sold for reuse or disposed of in accordance with Federal and State regulations.

Arrangements are not yet made for the offsite transport and treatment or disposal of wastes generated; however, the facility plans to reuse materials as much as possible and would dispose of other materials in offsite landfills in accordance with applicable regulations. The materials to be produced by Toda contain valuable metals; therefore, the facility has a target of 100 percent utilization of these metals. Any material that cannot be used directly by Toda's customers for the desired battery application would be recycled or used in other applications (Toda, 2009b). RCRA waste would not be treated or disposed of onsite. The quantity of hazardous waste generated at the facility would determine its generator status and the applicable Federal and State regulations to which the facility must adhere. The Proposed Project would have a minor impact on the quantity of hazardous waste generated and the amount of waste that would require offsite treatment and disposal. Non-hazardous waste generated would be recycled or sent to an offsite landfill for disposal. This would have a minor impact based on the quantity of solid waste generated and landfilled offsite.

3.2.7.3 Cumulative Impacts

Other than the proposed project at the Toda site, 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 to solid and hazardous wastes.

3.2.7.4 Proposed Mitigation Measures

Construction and operational waste materials would be sent offsite for recycling, or treated and disposed of at a disposal facility or landfill. Coordination would be required with the MDEQ to address design features, avoidance measures, or other aspects of construction project siting to avoid or minimize disturbance of contaminated soil and prevent new releases. It is likely that onsite soil would be left in place during construction; however, if soil excavation and temporary onsite storage of soil is required, excavated soil would be contained and protected from precipitation to prevent soil erosion. 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

3.2.8 Utilities and Energy Use

3.2.8.1 Affected Environment

The proposed project is located within the service areas of both the municipal water system and municipal wastewater treatment system of the City of Battle Creek. The municipal water system provides potable water supplied by the Marshall Sandstone Aquifer. The water distribution system includes storage towers and approximately 300 miles of pipelines. The municipal wastewater treatment system discharges to the Kalamazoo River. According to the City of Battle Creek Public Works Department, the municipal water system has a peak capacity of 23 mgd and an average demand of 10 mgd. The municipal wastewater treatment system has a capacity comparable to the water system and can meet the average daily demands of all municipal customers.

The municipal wastewater treatment system has received discharge permit violations related to suspended solids; however, the Proposed Project would not contribute to these violations, because Toda America would be required to pre-treat wastewater from the proposed process before discharging it to the municipal wastewater system (Battle Creek Public Works Department, 2009).

The City of Battle Creek is located within the service area of Consumers Energy Company, which has over 65,606 miles of transmission lines. Consumers Energy Company owns and operates more than 20 power plants with a total electric generating capacity of approximately 6,536 megawatts (Consumers Energy Company, 2009). The supplier of natural gas to the region is SEMCO Energy Gas Company, which currently is operating at 57 percent of its capacity (Toda, 2009b).

3.2.8.2 Environmental Consequences

3.2.8.2.1 No Action Alternative

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

3.2.8.2.2 Proposed Project

Construction
During construction for the Proposed Project, utilities would be supplied by existing services, which would not be adversely impacted by the small increases in temporary demand.

Operations
The proposed process to be added by Toda America would increase process water demand by approximately 30,000 gpd and require approximately 3,000 gpd of potable water for use by employees. These demands can be readily accommodated by the available reserve capacity of the municipal water system. The resulting effluent discharge can also be accommodated by the available capacity of the municipal wastewater system. Therefore, potential impacts on municipal utility systems would be minor.

During Phase I of the project, the wastewater from the facility would be discharged to and treated by the City of Battle Creek wastewater treatment plant. A process water discharge permit would be required from the Battle Creek public works department prior to operations. During Phase 2 of the project a lithium polishing process would result in higher concentrations of lithium within the process water. Toda America plans to add an onsite pretreatment facility to remove lithium before discharging the process wastewater to the City of Battle Creek wastewater treatment plant (Toda, 2009b; Battle Creek Public Works Department, 2009).

The power requirements for the Toda facility would be 7200 kilowatts (7.2 megawatts converts to 8.5 megavolt ampere) (Toda, 2009b). This demand would represent a very small fraction of the generating capacity of Consumers Energy Company. Consumers Energy has capacity currently in place to meet the needs of the proposed Toda facility and has no concerns about serving the future load at this site based on the known details of the project; therefore, the impacts on electrical utilities would be minor (Consumers Energy, 2009).

SEMCO Energy Gas Company would supply the natural gas for the proposed project. The system is at 57 percent of capacity now and would be at 60 percent after the total added load of 32 million British thermal units for the new Toda facility. Toda states that as a result of the project, the pressure in the main would drop slightly (6 pounds per square inch). There would be no off-property upgrades required for this project. SEMCO Energy Gas Company has no concerns regarding the future demands in its service area; therefore, the impacts on natural gas utilities would be minor (Toda, 2009b).

3.2.8.3 Cumulative Impacts

Other than the proposed Toda project, 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 to utilities.

3.2.8.4 Proposed Mitigation Measures

No mitigation measures would be required for utilities.

3.2.9 Transportation and Traffic

3.2.9.1 Affected Environment

The proposed site located in the Fort Custer Industrial Park in Battle Creek, Michigan, is zoned I-2 Heavy Industrial by the City of Battle Creek. The site is bordered by West Dickman Road (M 96) to the south, Brady Road to the west, Prairie Farm facilities to the north, and Hill Brady Road to the east (see Figure 2.2-2). West Dickman Road is a five-lane State highway and a major corridor for passenger and commercial traffic traveling in and through Fort Custer Industrial Park. West Dickman Road directly merges with Business I-94 Business approximately 1.2 miles southeast of the site, near the location of the W.K. Kellogg Airport. Business I-94 travels east about 4 miles to merge with north-south oriented I-194/Highway 66; or travels southwest about 3.5 miles to intersect with east-west oriented I-94. The other major east-west oriented arterial is Highway 89 (West Michigan Avenue) located about 1.5 miles north of the site. Highway 89 can be accessed from the industrial park via Clark Road North / Custer Drive that intersects West Dickman Road approximately 0.7 miles west of the site; or via Helmer Road North / South Bedford Road that intersects West Dickman Road approximately 2.5 miles to the east. The minor east-west arterial West River Road runs alongside the railroad tracks on the north edge of the industrial park approximately 0.5 miles north of the site.

3.2.9.2 Environmental Consequences

3.2.9.2.1 No Action Alternative

Under the No Action Alternative, plant construction and operation would not occur, therefore, no impacts would occur to transportation and traffic.

3.2.9.2.2 Proposed Project

Construction
Short-term but measurable adverse minor impacts to traffic are expected during the construction phase of the proposed facility. The project includes construction of a factory building, offices, storage, and a wastewater treatment facility as well as the installation of the necessary mechanical equipment for the manufacturing process. Construction vehicles and construction workers' vehicles would add to existing local traffic and would potentially cause minor congestion, higher traffic noise, and increased vehicle emission levels along the routes. The roads most impacted would be West Dickman Road and I-94; however, these roads are designed for and adequately accommodate industrial truck traffic. The construction is expected to last for approximately 12 months (Toda, 2009b).

Operations
The Proposed Project would generate a minor long-term increase in truck and personal-vehicle traffic into and out of the Fort Custer Industrial Park. The operations would be expected to require approximately 10 truck trips per day for deliveries and shipments. The trucks would use the established road network accessing the industrial park, as these highways are designed for and currently accommodate industrial truck traffic. Due to the hiring of approximately 50 new fulltime employees at the facility, there is expected to be an influx of approximately 70 personal vehicles trips per day (Toda, 2009b). This increase in traffic would have only minor impacts to the surrounding community as the existing roadway and intersection network can easily accommodate this increase in traffic, and the facility site design would include adequate parking, loading, and maneuver space for these vehicles and trucks.

3.2.9.3 Cumulative Impacts

Other than the proposed Toda project, 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 to traffic and transportation.

3.2.9.4 Proposed Mitigation Measures

No mitigation measures would be required for transportation and traffic.

3.2.10 Human Health and Safety

3.2.10.1 Affected Environment

The site is currently undeveloped property. As described in Section 3.2.7.1, historical releases resulted in soil contamination at the site. Based on sampling results performed in 2009, two compounds, arsenic and lead, were detected at concentrations that exceed Michigan's Part 201 Industrial Direct Contact Criterion. No other compounds were detected in concentrations that exceed the Part 201 Industrial Direct Contact Criterion.

3.2.10.2 Environmental Consequences

3.2.10.2.1 No Action Alternative

Under the No Action Alternative, Toda would not construct a plant or conduct operations at the site. If the site were developed by another industrial owner, under existing conditions (i.e., no soil remediation), there would be a potential for exposure to lead and arsenic by employees and visitors to the site in portions of the property where the levels of the compounds exceed the Part 201 Industrial Direct Contact Criterion. If, however, soil remediation was performed prior to development of the site by another industrial owner, there is little potential for exposure of employees and visitors to onsite contaminants.

3.2.10.2.2 Proposed Project

Construction
Under Toda's Proposed Project, there is a potential to encounter contaminated soil and to disturb or remove some contaminated soil during construction. Based on the 2009 soil sampling results, two compounds, arsenic and lead, were detected at concentrations that exceed Michigan's Part 201 Industrial Direct Contact Criterion, and several other compounds (metals, PCBs, and VOCs) are present in soil above Part 201 Residential and Commercial I Generic Cleanup Criteria. Under existing conditions (i.e., no soil remediation), exposure to contaminated soil during construction through inhalation or direct contact could affect construction workers.

Operations
Phase I of the project consists of construction of the first two lines of processing equipment, which are similar to lines operating in Toda Kogyo's plant in Kitakyushu, Japan. Under Phase 2, Toda would expand and improve their manufacturing capabilities by adding next-generation processing equipment and process improvements (which are undetermined at this time). This capacity of the expansion would be determined by the number of additional kilns.

For Phase I, the facility would develop a worker safety program to meet applicable Federal and State rules, regulations and standards and would update the plan for Phase 2. The program components would include (Toda, 2009b):

- Safe Work Practices: Safe work permitting, hot work safety, confined space entry, lockout tagout, high work safety, line operation, employee training, management of change, general safety rules/practices, contractor safety management, and vehicle safety.

- Industrial Hygiene: Hazard communication, exposure assessment, hearing conservation, ergonomics, heat stress management, personal protective equipment, respiratory protection, laboratory safety, and protection from bloodborne pathogens.
- Maintenance of Safe Facilities: Cranes/hoists/lift devices, safety equipment inspections, safety and housekeeping audits, mechanical integrity, process safety/risk management, project pre-startup safety reviews, powered industrial trucks, signs/tags/color codes, static electricity, compressed gas cylinders management, general security.
- Environmental compliance: Air emission control and compliance, solid/hazardous waste reduction and management, wastewater reduction and management, stormwater control, groundwater protection, compliance permitting and reporting, and spill release reporting.
- Emergency Preparedness: Emergency plans, emergency response and operations, fire prevention and protection, natural disasters, bomb threats, spill/release response and mitigation, first aid, and medical management.

Safety issues would be addressed in the Safety Plan and in a Hazard Assessment to ensure that appropriate procedures and equipment would be provided to protect workers.

Materials to be used and stored at the facility, as described in the Section 3.2.7.2.2, would include simple compounds in powder form of lithium, nickel, manganese, and cobalt, along with aluminum. Personal protective equipment would be required by employees when handling these materials. Because these materials and resulting wastes would be stored onsite, the potential risk of exposure would be greatest for Toda employees, who would be trained in proper safety procedures. The risk of exposure to the general population would be minor, although greater than what currently exists at the vacant property. The health and safety risks associated with these processes would be addressed in procedures developed to guide the safe use of specific equipment. The principal hazards associated with plant operations (exposure to dust from chemical handling and equipment operation) would be contained within buildings and secure areas of the property. The facility is located in an industrial area separated from residential communities located approximately 0.8 miles from the site.

Because critical hourly or daily functions of strategic importance to the national economy are not reliant on plant operations, the Toda facility is not considered a potential target for intentional destructive acts. Although the supply of compounds could be interrupted temporarily by a destructive act, the interruption would be relatively brief and would not be expected to have lasting effects on the economy. The plant would be secured against public access and buffered by distance from residential areas. The potential for impacts of an intentional destructive act on human health and safety would be reduced through implementation of procedures in the Safety Plan.

3.2.10.3 Cumulative Impacts

Other than the proposed Toda project, 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 to human health and safety.

3.2.10.4 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 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.

In addition, personal protective equipment would likely be used during construction to protect workers from exposure to onsite contaminants in soil. It is likely that onsite soil would be left in place during construction; however, if soil excavation and temporary onsite storage of soil is required, excavated soil would be contained and protected from precipitation to prevent soil erosion. During construction, safety measures such as providing fencing around the construction site, establishing contained storage areas, and controlling the movement of construction equipment and personnel would reduce the potential for an accident to occur.

During operations at the Toda facility, actions would be taken to ensure that the facility meets the requirements of applicable air operating permits. The use of control devices on equipment and implementation of BMPs should ensure emissions are maintained within permittable limits.

Waste materials would be sent offsite to a permitted treatment, storage, disposal facility or recycled. The company has a Work Safety/Health Management System in place at its other operating facilities and would adopt this management plan to operations at the Toda facility in Michigan. The facility would develop an Emergency and Safety Response Plan that would be implemented in the event of an emergency, including a release of materials to the environment.

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2651 Coolidge Road
East Lansing, MI 48823

Mr. Karl Dehn
CEO
Battle Creek Unlimited & BCTIFA
P.O Box 1438
Battle Creek, MI 49016

Ms. Cindy Fairbanks
Environmental Response Division, MDEQ
Superfund Section
P.O. Box 30426
Lansing, MI 48909

Honorable Jennifer M. Granholm
Governor of Michigan
P.O. Box 30013
Lansing, MI 48909

Mr. Ken Kohs
Environmental Services Administrator
Public Works Deparment
150 S. Kendall Street
Battle Creek, MI 49015

Ms. Martha McFarlane Faes
Cultural Resources Protection Manager
State Historic Preservation Office
Environmental Review Office
702 West Kalamazoo Street
P.O. Box 30740
Lansing, MI 48909-8240

Mr. David O'Donnell
District Supervisor
Department of Natural Resources & Environment
Remediation and Redevelopment Division
Kalamazoo District Office
7953 Adobe Road
Kalamazoo, MI 49009-5025

Mr. William Parkus
Coordinator, Regional Review Office
Southeast Michigan Council of Governments
535 Griswold, Suite 300
Detroit, MI 48226

Mr. William Presson
Permit Section Supervisor
Air Quality Division, MDEQ
P.O. Box 30260
Lansing, MI 48909

Ms. Lori G. Sargent
Wildlife Division
Endangered Species Specialist
P.O. Box 30444
Lansing, MI 48909

Staff Administrator
Battle Creek Brownfield Redevelopment Authority
10 North Division
Battle Creek, MI 49037

Mr. Mark Storzer
Field Manager
Bureau of Land Management
626 E. Wisconsin Avenue, Suite 200
Milwaukee, WI 53202-4617

Mr. Ken Tsuchiyama
City Manager
City of Battle Creek
P.O. Box 1717
Battle Creek, MI 49016

Mr. Kenneth Westlake
NEPA Implementation Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency Region 5
77 West Jackson Blvd., Mail Code E-19J
Chicago, IL 60604-3590

Willard Public Library
7 W. Van Buren Street
Battle Creek, MI 49017

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Appendix A

Agency Consultation

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Appendix B

Public Comments on the Draft Environmental Assessment and Responses from the Department of Energy and Toda America, Incorporated

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Robert Naumann

From: Robin Griffin
Sent: Monday, December 14, 2009 11:48 AM
To: Robert Naumann; Debra Walker
Subject: FW: Endangered Species Act Section 7 Consultation - Electric Drive Vehicle Battery and Component Manufacturing Facility, Battle Creek, Michigan

FYI...

-----Original Message-----
From: Tameka_Dandridge@fws.gov [mailto:Tameka_Dandridge@fws.gov]
Sent: Monday, December 14, 2009 11:22 AM
To: Robin Griffin
Cc: william.gwilliam@netl.doe.gov
Subject: Endangered Species Act Section 7 Consultation - Electric Drive Vehicle Battery and Component Manufacturing Facility, Battle Creek, Michigan

Ms. Robin Griffin
Potomac-Hudson Engineering

Re: Endangered Species Act Section 7 Consultation, Department of Energy's National Energy Technology Laboratory, Proposed Construction and Operation of an Electric Drive Vehicle Battery and Component Manufacturing Facility, Battle Creek, Calhoun County, Michigan

Dear Ms. Griffin:

Our records do not indicate the presence of federally listed species or designated critical habitat in your project area. This precludes the need for further action on this project as required by the Endangered Species Act of 1973, as amended. If, however, more than six months pass, project plans change, or new information becomes available that indicates listed or proposed species may be affected, you should conduct further consultation with this office. For future endangered and threatened species list requests and consultations with the U.S. Fish and Wildlife Service, use our regional endangered species and technical assistance website, located at http://www.fws.gov/midwest/endangered/section7/s7process/index.htm. In some cases, you may be able to conclude the Endangered Species Act review process without contacting this office.

In addition, refer to the Michigan Department of Natural Resources Endangered Species Assessment website, www.mcgi.state.mi.us/esa and contact Ms. Lori Sargent at SargentL@michigan.gov for information regarding the protection of threatened and endangered species under state law. State law may require a permit in advance of any work that could potentially damage, destroy or displace state-listed species.

We appreciate your concern for endangered and threatened species. If you have additional questions or concerns, contact Tameka Dandridge at the below address or email.

Sincerely,
Tameka Dandridge

****
Tameka Dandridge
U.S. Fish & Wildlife Service
East Lansing Field Office
2651 Coolidge Rd., Suite 101
East Lansing, MI 48823
517-351-8315
tameka_dandridge@fws.gov

JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

REBECCA A. HUMPHRIES
DIRECTOR

December 22, 2009

Mr. William Griffin
Potomac-Hudson Engineering
7830 Old Georgetown Road, Suite 220
Bethesda, MD 20814

RE: **Proposed construction and operation of an Electric Drive Vehicle Battery and Component Manufacturing Facility**

Dear Mr. Griffin:

The location of the proposed project was checked against known localities for rare species and unique natural features, which are recorded in a statewide database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features at a site. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, ...fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Department of Natural Resources, Wildlife Division. The presence of threatened or endangered species does not preclude activities or development, but may require alterations in the project plan. *Species may be present that have not been recorded in the database.*

The following is a summary of the results of the review in Calhoun County, Section 32, T1S R8W:

> The project should have no impact on rare or unique natural features at the locations specified above if it proceeds according to the plans provided. Please contact me for an evaluation if the project plans are changed.

Thank you in for your coordination in addressing the protection of Michigan's natural resource heritage. Responses and correspondence can be sent to: Michigan Department of Natural Resources, Wildlife Division – Natural Heritage Program, PO Box 30180, Lansing, MI 48909. If you have further questions, please call me at 517-373-1263 or e-mail at SargentL@michigan.gov .

Sincerely,

Lori G. Sargent
Endangered Species Specialist
Wildlife Division

cc: William Gwilliam, US Department of Energy

JENNIFER GRANHOLM
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
LANSING

KEITH MOLIN
EXECUTIVE DIRECTOR

January 6, 2010

WILLIAM J GWILLIAM
DEPARTMENT OF ENERGY
3610 COLLINS FERRY ROAD
P.O. BOX 880
MORGANTOWN WV 26507-0880

RE: ER10-171 Toda America Advanced Battery Supplier Manufacturing Facility, Section 32, T1S, R8W, Battle Creek, Calhoun County (DOE)

Dear Mr. Gwilliam:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. **In all cases**, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences the DOE's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of the DOE's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected".

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Cultural Resource Protection Specialist, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Martha MacFarlane Faes
Cultural Resources Protection Manager

for Brian D. Conway
State Historic Preservation Officer

MMF:JRH:BGG

Copy: Robin Griffin, Potomac-Hudson Engineering, Inc.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 02 2010

REPLY TO THE ATTENTION OF:

E-19J

William J. Gwilliam
Department of Energy NEPA Document Manager
Department of Energy, National Energy Technology Laboratory
3610 Collins Ferry Road, P.O. Box 880
Morgantown, West Virginia 26507

RE: **Comments on the Draft Environmental Assessment for Toda America, Incorporated Electric Drive Vehicle Battery and Component to Manufacturing Initiative Project in Battle Creek, Michigan**

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 Battle Creek, Michigan. 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 below address possible direct, indirect, and cumulative impacts of the proposal to soil, air, and surface waters.

This EA acknowledges natural resource impacts have already occurred as the result of previous industrial activities on the proposed site and neighboring sites. This site appears to have been enrolled at some point in time in the State of Michigan Brownfields Program. A site report was prepared by the Michigan Department of Environmental Quality (MDEQ), now the Michigan

Department of Natural Resources and Environment (MDNRE), in 1999. Further study of the site in 2009, again apparently under the auspices of MDEQ, identified additional pollutants in the soil. Contaminants detected in soil samples from the proposed site included metals (aluminum, antimony, arsenic, cadmium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc), cyanide, naphthalene, and PCBs (Aroclor). The EA describes these as being in concentrations above Michigan's Residential Cleanup Criteria for environmental remediation under Part 201 of the Michigan Natural Resources and Environmental Protection Act of 1994 (Act 451), but below levels established by MDEQ for commercial/industrial properties. Purchasers of such sites in the Michigan Brownfields Program can conduct a Baseline Environmental Assessment (BEA); the EA proposes that such a report would be developed and submitted to the State.

Soil and Air Impacts

Surface soil samples were tested. Section 3.2.7.1 describes the results from samples taken from the project site. Based upon the information provided, the described project does not appear to pose an unacceptable on-site risk from exposure to soils. In addition, this project could reduce the potential for future exposure to contaminated soils from this site after construction has been completed.

We note that Section 3.2.2.2.2 identifies several sensitive receptors near the proposed Toda site. These would be land uses outside of the typical commercial/industrial exposure levels scenario, including residences, hospitals and schools. Due to the nature of the soil's multiple contaminants, and because all construction activities on a site such as this must follow the specifications of state and local permits, we recommend that the construction permit(s) specify precautions be taken to protect these receptor facilities. These might include: 1) notifying these sensitive neighboring facilities of construction activities and potential exposures, 2) managing fugitive dust more rigorously than would occur during routine best management practices (BMP) when winds or construction activity may expose these facilities, and 3) providing temporary enhanced air filtration within these neighboring facilities during warranted construction period(s).

We strongly recommend that the party planning to take possession of this property perform the appropriate due diligence. For the purposes of federal liability, if the transaction has not yet occurred, the prospective buyer should proceed with All Appropriate Inquiry.

We also strongly recommend that this party continue to work closely and coordinate with the MDNRE Brownfields Program staff, the City of Battle Creek, and the Battle Creek Redevelopment Authority (BCRA). Our office has an existing Brownfields grant in Battle Creek, dealing with projects other than this one; our point of contact at BCRA is Mr. Ken Kohs at (269)-966-3378.

Special attention should be paid to the matter of Institutional Controls. Because of the presence of contaminants on the property that exceed MDNRE residential standards, it is likely that the State would require institutional controls and/or deed restrictions on the property. These restrictions would likely identify what the State would require with respect to any disturbance,

excavation and/or disposal of these soils on the property. Special care should be taken to comply with these restrictions; close coordination of site activities with MDNRE is strongly suggested.

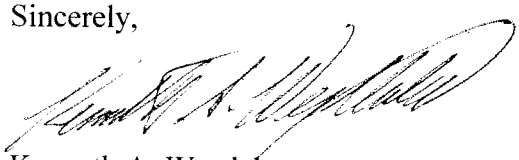
Ground and Surface Waters Direct, Indirect and Cumulative Impacts

The EA notes that groundwater is at least 35 feet below the surface and is therefore assumed to not be impacted by this project. However, the depth of excavation that might be necessary for the proposed site development is not yet determined. We recommend evaluating stormwater runoff from the site, stormwater collection in excavation low points, and creation of stormwater retention ponds on the site to control runoff of contaminants in the future. These elements could create direct, indirect or cumulative surface or groundwater impacts.

We also recommend site development planning utilize sustainable and green design criteria to enhance conservation of energy and reduce environmental impacts, such as stormwater management.

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

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Environmental
Resources
Management

3352 128th Avenue
Holland, MI 49424-9263
(616) 399-3500
(616) 399-3777 (fax)
http://www.erm.com

Privileged and Confidential

9 March 2010

Mr. William Gwilliam
Department of Energy NEPA Document Manager
Department of Energy, National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown, West Virginia 26507

Re: Response to U.S. Environmental Protection Agency Comments on Draft Environmental Assessment for Toda America, Incorporated, Electric Drive Vehicle Battery and Component Manufacturing Initiative Project, Battle Creek, Michigan

Dear Mr. Gwilliam:

On behalf of Toda America, Inc., ("Toda"), Environmental Resources Management, Inc. (ERM) is pleased to provide this response to the comments received from Kenneth A. Westlake, Chief, NEPA Implementation Section, Office of Enforcement and Compliance Assurance, dated 2 March 2010. The comments relate to possible direct, indirect, and cumulative impacts of the proposal to soil, air, and surface waters as documented in the January 2010 Draft Environmental Assessment (EA) prepared for the Department of Energy, National Energy Technology Laboratory.

Baseline Environmental Assessment, All Appropriate Inquiry Compliance and Institutional Controls

The Draft EA proposes that a Baseline Environmental Assessment ("BEA") be prepared and submitted to the Michigan Department of Natural Resources and Environment (MDNRE) as a means for Toda to distinguish potential new impacts from existing contamination and to assert certain defenses to cleanup liability for the existing contamination under Part 201 of the Michigan Natural Resources and Environmental Protection Act 451 of 1994, as amended. A BEA was prepared by Soils and Materials Engineers, Inc. (SME) and submitted to MDNRE for a determination of adequacy. The BEA incorporates documentation of existing contamination, the use of engineering controls (i.e., concrete floor

of new building and exterior pavement), and construction of a clean soil isolation zone as the means to distinguish potential new impacts from existing contamination. A copy of the BEA is provided in Attachment A along with the affirmation/approval letter from the MDNRE.

Appended to the BEA is the Phase I Environmental Site Assessment (ESA) that was prepared by SME for Toda America, Inc. The ESA was prepared in conformance with the scope and limitations of ASTM Practice E 1527-05 and the requirements under 40 CFR Part 312 ("All Appropriate Inquiry" Final Rule).

As a "bona fide prospective purchaser" under CERCLA, Toda will meet certain on-going obligations to protect human health, safety, and the environment. These "continuing obligations" are generally consistent with the Michigan Part 201 "Due Care" statutory obligations to assure site workers are protected from unacceptable contaminant exposures, to avoid exacerbation of the existing contamination, and to address detrimental third party actions. Furthermore, Part 201 has specific limitations on the movement of contaminated soil on a property or to off-site locations. Compliance with the continuing obligations is being addressed through excavation and off-site management of soils with contaminant concentrations exceeding Part 201 Industrial Cleanup Criteria and installation of a clean soil exposure barrier/isolation zone. Toda will be preparing a Due Care Plan that will document these continuing obligations and Due Care provisions.

With respect to Institutional Controls, such as deed restrictions, the Michigan Part 201 clean-up program does not require these of non-responsible parties like Toda. However, as part of their Due Care Plan, future owners and occupants of the property, including Toda, will assure persons at the property are protected from unacceptable contamination exposures. Moreover, the property is currently zoned industrial and there is a Part 201 statutory requirement to notify subsequent owners/operators of the presence of contamination. Both of these factors will ensure that land use is compatible with pre-existing conditions at the property.

Soil and Air Impacts

Section 3.2.2.2.2 of the Draft EA identifies certain sensitive receptor populations in the vicinity of the project site. It should be noted that the Michigan Part 201 cleanup program has ambient air quality criteria, both volatile and particulate, for most of the contaminants identified on the

property. None of the known contaminants have concentrations exceeding these criteria which indicates the site contamination does not pose unacceptable ambient air quality risks during facility operation. With respect to ambient air quality risks during federally-funded construction, it should be noted that immediately surrounding land use is industrial, and fugitive emission mitigation practices will be incorporated into the Due Care Plan and implemented. Such measures include dust suppression and track-out controls.

Coordination with Environmental Agencies

Toda will continue to work cooperatively with the MDNRE, the City of Battle Creek, and the Battle Creek Brownfield Redevelopment Authority (BCBRA). A Brownfield Plan was prepared by SME and approved by the BCBRA to enable Toda to be reimbursed for eligible environmental and non-environmental response actions required for the project, and for Toda to seek Michigan Business Tax Brownfield Redevelopment Credits. A copy of the Brownfield Plan is included in Attachment B. Toda met with MDNRE staff on 25 February 2010 to discuss the BEA and to provide an update on the project. MDNRE is very supportive of the project. Toda will continue to work with the City of Battle Creek as it prepares the site for redevelopment and will be working with the City on site planning, permitting, etc., as the project moves forward.

Ground and Surface Waters Direct, Indirect, and Cumulative Impacts

Since municipal utilities such as sanitary sewer, storm sewer, water services, etc., are available at the site, and no deep excavations are planned for Toda processes, excavations extending to the water table (estimated at 35 feet below site grade) will not be required for the project. As indicated in the Draft EA, potential stormwater impacts will be controlled during construction as well as during future Toda manufacturing operations through compliance with applicable stormwater regulatory requirements. The current site design plans include drainage of stormwater to low areas and to a stormwater detention basin on the east side of the property. The stormwater pollution prevention plan, if required based on National Pollution Discharge Elimination System (NPDES) permitting regulations, would mitigate potential impacts to stormwater from facility operations.

With respect to incorporating sustainable and green design practices into the site development planning, the current plans include a number of

energy efficiency measures, including automatic lighting controls that shut off power to unoccupied areas. Other energy efficiency measures will be implemented as part of compliance with the electric code. The stormwater potentially exiting the property will be controlled by the detention basin which will reduce the impacts on the local stormwater sewer system during storm events.

If you have any questions or require additional information, please feel free to contact David Han, Toda representative at (734) 205-5850, or Tom O'Connell at (616) 738-7340.

Sincerely,

Thomas P. O'Connell, P.E.
Partner-in-Charge

TPO:lc/TAM
Attachments (2)
cc: Mark McCoy, NETL/DOE
Junichi Nakano, Toda America Inc.
David Han, Turtlerock Greentech LLC
File

DOE Response to USEPA Comments on Draft Environmental Assessment for Toda America, Inc.

Comment Number	USEPA Comment on Toda America, Inc. EA	DOE Response (March 17, 2010)
1	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 Battle Creek, Michigan. 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 below address possible direct, indirect, and cumulative impacts of the proposal to soil, air, and surface waters. This EA acknowledges natural resource impacts have already occurred as the result of previous industrial activities on the proposed site and neighboring sites. This site appears to have been enrolled at some point in time in the State of Michigan Brownfields Program. A site report was prepared by the Michigan Department of Environmental Quality (MDEQ), now the Michigan Department of Natural Resources and Environment (MDNRE), in 1999. Further study of the site in 2009, again apparently under the auspices of MDEQ, identified additional pollutants in the soil. Contaminants detected in soil samples from the proposed site included metals (aluminum, antimony, arsenic, cadmium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc), cyanide, naphthalene, and PCBs (Aroclor). The EA describes these as being in concentrations above Michigan's Residential Cleanup Criteria for environmental remediation under Part 201 of the Michigan Natural Resources and Environmental Protection Act of 1994 (Act 451), but below levels established by MDEQ for commercial/industrial properties. Purchasers of such sites in the Michigan Brownfields Program can conduct a Baseline Environmental Assessment (BEA); the EA proposes that such a report would be developed and submitted to the State.	Toda, in consultation with MDNRE's Brownfields Program staff, the City of Battle Creek, and the Battle Creek Brownfield Redevelopment Authority (BCBRA), have commissioned a Baseline Environmental Assessment (BEA) for the proposed project site. This document along with a petition for a determination was submitted to MDNRE on February 8, 2010. Following MDNRE's requests for revisions, revised documents were submitted to MDNRE on March 5, 2010 and were affirmed by MDNRE on March 8, 2010 as being acceptable for purposes of obtaining a liability exemption for past contamination existing on the property.

DOE Response to USEPA Comments on Draft Environmental Assessment for Toda America, Inc.

Comment Number	USEPA Comment on Toda America, Inc. EA	DOE Response (March 17, 2010)
2	**Soil and Air Impacts** Surface soil samples were tested. Section 3.2.7.1 describes the results from samples taken from the project site. Based upon the information provided, the described project does not appear to pose an unacceptable on-site risk from exposure to soils. In addition, this project could reduce the potential for future exposure to contaminated soils from this site after construction has been completed. We note that Section 3.2.2.2.2 identifies several sensitive receptors near the proposed Toda site. These would be land uses outside of the typical commercial/industrial exposure levels scenario, including residences, hospitals and schools. Due to the nature of the soil's multiple contaminants, and because all construction activities on a site such as this must follow the specifications of state and local permits, we recommend that the construction permit(s) specify precautions be taken to protect these receptor facilities. These might include: I) notifying these sensitive neighboring facilities of construction activities and potential exposures, 2) managing fugitive dust more rigorously than would occur during routine best management practices (BMP) when winds or construction activity may expose these facilities, and 3) providing temporary enhanced air filtration within these neighboring facilities during warranted construction period(s).	The EA notes that sensitive receptors near the Toda site include residential properties approximately 0.8 miles to the east, a hospital approximately 1 mile to the northwest, four schools within a 3 mile radius, with the nearest two 1.5 miles to the east and 1.5 miles to the northeast, respectively. The immediately surrounding land is all industrial. Toda has affirmatively indicated in a Consultant's letter to DOE (Appendix B) that it is developing a "Due Care Plan" that will specify construction-related dust suppression requirements and track-out control. EPA's recommendation for addressing construction-related air emissions will be noted in DOE's FONSI. However, (1) DOE believes that Toda's plans, when implemented, will provide sufficient safeguards, and (2) oversight of these responsibilities is best handled by the State of Michigan and local agencies through their normal permitting and compliance enforcement processes.
3	We strongly recommend that the party planning to take possession of this property perform the appropriate due diligence. For the purposes of federal liability, if the transaction has not yet occurred, the prospective buyer should proceed with All Appropriate Inquiry.	Toda has informed DOE that it is undertaking appropriate due diligence prior to leasing the property, and Toda is proceeding with "All Appropriate Inquiry" as evidenced by a Phase I Environmental Site Assessment completed by a consultant on February 8, 2010. See letter from Toda's consultant in Appendix B.

DOE Response to USEPA Comments on Draft Environmental Assessment for Toda America, Inc.

Comment Number	USEPA Comment on Toda America, Inc. EA	DOE Response (March 17, 2010)
4	We also strongly recommend that this party continue to work closely and coordinate with the MDNRE Brownfields Program staff, the City of Battle Creek, and the Battle Creek Redevelopment Authority (BCRA). Our office has an existing Brownfields grant in Battle Creek, dealing with projects other than this one; our point of contact at BCRA is Mr. Ken Kohs at (269)-966-3378.	As indicated in a Consultant's letter to DOE on behalf of Toda (Appendix B), Toda is working closely with MDNRE's Brownfields Program staff, the City of Battle Creek, and the Battle Creek Brownfield Redevelopment Authority (BCBRA). A Brownfield Plan has been developed for and approved by BCBRA (December 1, 2009) for this parcel of land, meaning that Toda can be reimbursed for certain environmental and non-environmental response actions that would be required for this project and that Toda would be eligible for certain tax credits as a result of its redevelopment of this land parcel.
5	Special attention should be paid to the matter of Institutional Controls. Because of the presence of contaminants on the property that exceed MDNRE residential standards, it is likely that the State would require institutional controls and/or deed restrictions on the property. These restrictions would likely identify what the State would require with respect to any disturbance, excavation and/or disposal of these soils on the property. Special care should be taken to comply with these restrictions; close coordination of site activities with MDNRE is strongly suggested.	Toda would comply with the "continuing obligations" that arise under CERCLA for a "bona fide prospective purchaser" and would also comply with Michigan's Part 201 "Due Care" standard to protect site workers and others. (Reference: Natural Resources and Environmental Protection Act, 1994 PA 451, Part 201, as amended) Accordingly, Toda expects to prepare a "Due Care Plan" to address these Michigan and CERCLA requirements. Regarding "Institutional Controls," notification to subsequent owners of the contamination is a requirement for this property under Michigan's Part 201 statutory language, and plans for notification would also be addressed in Toda's "Due Care Plan." As evidenced in the Consultant's report (Appendix B), Toda is working closely with MDNRE and local agencies to comply with the Brownfields Program's restrictions and requirements.

DOE Response to USEPA Comments on Draft Environmental Assessment for Toda America, Inc.

Comment Number	USEPA Comment on Toda America, Inc. EA	DOE Response (March 17, 2010)
6	**Ground and Surface Waters Direct, Indirect and Cumulative Impacts** The EA notes that groundwater is at least 35 feet below the surface and is therefore assumed to not be impacted by this project. However, the depth of excavation that might be necessary for the proposed site development is not yet determined. We recommend evaluating stormwater runoff from the site, storm water collection in excavation low points, and creation of stormwater retention ponds on the site to control runoff of contaminants in the future. These elements could create direct, indirect or cumulative surface or groundwater impacts.	Toda's conceptual site development plans, as presented in the Baseline Environmental Assessment (BEA), are consistent with U.S. EPA's recommendations for stormwater management and groundwater protection. As part of the Baseline Environmental Assessment, Toda has developed and obtained MDNRE approval of a conceptual plan for an isolation zone (i.e., a layer or cap of compacted clean soil spread over the entire land parcel) and engineering controls (e.g., slab-on-grade construction with a monolithic slab and relatively impermeable asphalt covering all material handling and transport areas) for dealing with the pre-existing contaminants on the property.
7	We also recommend site development planning utilize sustainable and green design criteria to enhance conservation of energy and reduce environmental impacts, such as stormwater management.	Toda's conceptual site development plan includes energy-saving elements (e.g., automatic lighting controls) and stormwater management techniques (e.g., a stormwater detention basin to be constructed on the east side of the property). As the plan progresses, sustainable and green design options would be considered at each appropriate step.