GZA GeoEnvironmental
of New York

*Engineers and
Scientists*

June 27, 2007
File No. 21.0056340.0

Mr. Rick Eisenman
Delphi Automotive
1000 Lexington Avenue
Rochester, New York

Re: Work Plan for Focused Environmental Assessment
Building 10
Delphi Thermal Facility
Lockport, New York

Dear Mr. Eisenman:

364 Nagel Drive
Buffalo
New York
14225
716-685-2300
Fax: 716-685-3629
www.gza.com

GZA GeoEnvironmental of New York (GZA) has prepared this work plan for Delphi Thermal (Delphi) for a Focused Environmental Assessment inside of Building 10 at the Lockport, New York Facility (see Figure 1). The scope of work was developed based on our meeting and walk through with you of Building 10 on June 21, 2007.

## BACKGROUND

In 2006, Delphi completed a site-wide Current Conditions Summary and Field Investigation Report (Study) in order to identify areas of soil and/or groundwater contamination. Elevated levels of chlorinated solvents (tetrachloroethene) was detected in soils at concentrations above New York State regulations, specifically, Part 375-6.8(b) restricted commercial soil cleanup objectives at two sample locations around a former sump in Building 10 (see Figure 2 for sump location). To accommodate potential future uses, Delphi has requested that an assessment of soil/groundwater contamination and vapor intrusion be performed.

## PURPOSE

The purpose of this Focused Environmental Assessment for Building 10 is to assess:

- The potential extent of chlorinated solvent contamination in soil and groundwater in the vicinity of a former sump within Building 10; and
- The interior of the Building 10 for vapor intrusion, due to the detections of chlorinated solvents in soil.

## SCOPE OF WORK

GZA proposes the following scope of work to assess the potential for soil and groundwater contamination and vapor intrusion within Building 10.

## PROJECT PREPARATION

GZA prepared a Site-specific health and safety plan (see Attachment 1) for protection of GZA workers and will coordinate with the analytical laboratories (Free-Col Laboratories, soil and groundwater; and Centek Laboratories, air samples) prior to the commencement of field activities.

## PRODUCT INVENTORY REVIEW

Delphi has informed GZA that a comprehensive list of chemicals and products stored and used within Building 10 has been compiled and would be provided for review. The purpose of the product inventory review will be to determine if compounds of concern (PCE, TCE, cis-DCE, trans DCE and VC) are present within products and chemicals currently used within Building 10 that have the potential to create interference or bias in the air sampling results. Prior to initiating the air sampling, GZA will review the product inventory list to determine if chemicals or products need to be removed from the sampling area at least 24 hours prior to the sampling event.

During the air sampling event, GZA will make observations of the chemicals and products in the area of the sampling to determine the completeness of the product list provided by Delphi Thermal. Additionally, a photoionization detector (PID), which can screen levels down to the part per billion (ppb) range, will be used to screen individual containers observed and determine background levels within the sampling area.

## VAPOR INTRUSION: INDOOR, SUB SLAB AND AMBIENT OUTDOOR AIR SAMPLING

GZA will complete the vapor intrusion sampling prior to completing the soil probes and monitoring well installation. Three types of air samples (sub-slab, ambient interior and ambient outdoor) will be collected as part of the vapor intrusion evaluation. The samples will be collected via methodologies identified in the New York State Department of Health, Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.

Two indoor air sample locations are proposed within Building 10; one sample will be collected from in the vicinity of the former sump and the other will be collected from an area in the northeastern portion of the building which Delphi is leasing to an outside supplier. The indoor air samples will be collected from the breathing zone or approximately 4 to 5 feet above the slab-on-grade floor. See Figure 2 for approximate locations of the air samples.

Two sub-slab air samples will be collected from under the slab-on-grade floor through an approximate 1/2-inch diameter hole drilled in a competent portion of the concrete floor away from cracks or drains. Clean, dedicated polyethylene tubing will be placed into the hole to a depth approximately 2-inches below the concrete slab and sealed at the floor surface with modeling clay. The sub-slab air samples will be collected from within 10 feet

of the indoor air sample locations (see Figure 2 for approximate locations).

One ambient outdoor air sample will be collected from the exterior upwind location of Building 10. The outdoor air sample will be collected from the breathing zone or approximately 4 to 5 feet above the ground surface. The outdoor sample location will be based on the wind direction the day of the sample.

Air sampling will be completed for an eight-hour duration (e.g., standard shift duration in a commercial/industrial facility) in general accordance with NYSDOH requirements. Air samples will be collected using a one-liter sampling canister and will be analyzed via USEPA Method TO-15 for the volatile organic compounds (VOCs).

## AIR ANALYTICAL TESTING

The five air samples collected will be submitted to Centek Laboratories, LLC for chemical analysis. Each sample will be tested for VOCs via analytical test method TO-15. The analytical methodologies to be used will result in reporting limits for TCE to 0.25 $ug/m^3$ and for PCE to 1 $ug/m^3$. GZA assumes a ten-business day turn around time for analytical test results.

## SOIL PROBE

Eight soil probe locations have been selected around the former sump location to assist in delineating potential chlorinated solvent contamination within the subsurface soils in that area. Soil probe locations tentatively identified as SP1 though SP4 on Figure 2 will be completed first. Based on field observations (visual and olfactory) and field screening results, a determination will be made which, if any, of soil probes SP5 through SP8 will be completed. If there is no evidence of impacted soil in soil probes SP1 through SP4, no additional soil probes will be completed in Building 10.

The soil probes will be advanced into overburden soils utilizing direct push technology via a hydraulic hammer mounted on a truck or track mounted rig equipped with 2-inch outer diameter by 48-inch long macrocore sampler. Soil probes will be advanced to refusal. Bedrock is reportedly located at approximately 8 to 9 feet bgs.

A field engineer/geologist will observe the completion of soil probes and will create a field log for each probe. Real time air monitoring will be conducted while soil probes are being completed using an organic vapor meter (OVM). Soil samples will be collected from the soil probes for classification, laboratory analysis and screening with our OVM for the presence of volatile organic vapors. Soil samples will be collected at two-foot intervals to the bottom of the probes. Samples collected for analytical testing will be based on visual, olfactory, field screening (i.e., OVM) and engineering judgment.

## MONITORING WELL INSTALLATION

One test boring will be advanced into bedrock using a track or truck mounted rotary drill rig and instrumented with a groundwater monitoring well. The location of the proposed monitoring well is the same location as SP1, which is in a presumed downgradient groundwater flow direction, based on previous investigations at the Delphi Lockport facility.

The overburden soils will be drilled using 6 ¼ - inch inside diameter hollow stem augers (HSA). Soil samples will not be collected because soil probe, SP1, will have been completed prior to the test boring being completed. Drilling fluids will not be used while advancing the HSA so overburden groundwater can be identified if encountered. Bedrock is expected to be encountered at approximately 8 to 9 feet bgs. Once bedrock is encountered, the upper 2 feet of bedrock will be drilled using a 5 7/8-inch roller bit to set a 4-inch diameter steel casing. The steel casing will be installed, grouted into place and allowed to set up for at least 12-hours. Once the grout around the casing has set up, a 3 7/8-inch roller bit will be used to complete the boring to the designated depth, assumed to be approximately 15 feet bgs.

After the designated depth has been reached, the completed test boring will be converted to a groundwater monitoring well. The well will be constructed of 2-inch inner diameter flush coupled PVC riser and screen. The screen will consist of an approximate 5-foot long section of machine slotted PVC. A sand filter will be placed in the boring around the annulus space of the well screen such that the sand extends a minimum of 1-foot above the top of the screen. An approximate 3-foot thick layer of bentonite will be placed above the sand filter to provide a seal from the overburden conditions above the screen. A mixture of cement/bentonite grout will extend from the bentonite seal to approximately 3-feet bgs. The monitoring well will be completed by placing a flush mounted road box over the riser. Concrete will be placed in the boring around the protective casing and will be flush with the concrete floor grade within the building.

The soil spoils generated from the test boring will be placed in 55-gallon drums for disposal by Delphi. The drums will be labeled with dated and location and staged in a secure area at the Site approved by Delphi.

The monitoring well will be developed to remove the fines and establish the filter pack. Hydraulic conductivity testing will be done to assess whether the monitoring well is functioning and provide hydrologic information that will aid in evaluating subsurface conditions. Water level measurements will be collected and, if allowable, will be used with other monitoring wells at the Site to interpret groundwater flow direction. The water generated during development and purging will also be drummed for disposal by Delphi.

## SOIL AND GROUNWATER ANALYTICAL TESTING

Soil and groundwater samples collected will be submitted to Free-Col Laboratories for chemical analysis and will be tested for VOCs via analytical test method EPS 8260. At a

minimum, one soil sample will be collected from each of the soil probes completed. GZA assumes a ten-business day turn around time for analytical test results.

## DATA ANALYSIS/REPORT PREPARATION

GZA will prepare a focused Environmental Assessment (FEA) report for Building 10 containing a comprehensive discussion of the FEA findings.

The FEA report will include:

- Introduction;
- Description of the site and setting;
- Description of the geology, hydrogeology and hydrology;
- Sampling and analysis investigation overview, including appropriate tables and figures;
- Laboratory results; and
- Conclusions and recommendations.

## SCHEDULE

It is our understanding that Delphi would like to complete the investigation for Building 10 during the facility's scheduled shut-down, which is the first two weeks of July. GZA proposes that the air sampling work to be completed during the first week of scheduled shut-down (tentatively, July 5$^{th}$ or 6$^{th}$). The building HVAC system will need to be left in operation similar to the operating conditions during regular business hours.

The soil probes and monitoring well installation would be completed the second week of scheduled shut-down (tentatively; July 10$^{th}$ through the 13$^{th}$). These field activities will be conducted during the requested time periods upon receiving an informal approval of this work plan from NYSDEC.

Please do not hesitate to contact the under signed if you have any questions or require any additional information.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Christopher Boron
Project Manager

Ernest R. Hanna, P.E.
Principal

Attachments:
Figure 1 – Delphi Lockport Site Plan
Figure 2 – Building 10 Interior Sampling Location Plan
Health and Safety Plan

CC: Mr. Richard Eisenman (Delphi, Rochester), electronic copy
Ms. Cathy Ver (Delphi, Lockport), electronic copy

**NOTES:**

1. BASE MAP ADAPTED FROM A 2005 AERIAL PHOTOGRAPH DOWNLOADED FROM http://www.nysgis.state.ny.us/gateway/mg/interactive_main.html AND SITE OBSERVATIONS.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

DRAWN BY: DEW

DATE: JUNE 2007

GZA GeoEnvironmental of New York

APPROXIMATE SCALE IN FEET

0 100 200 800

**DELPHI THERMAL AND INTERIOR SYSTEMS**

**DELPHI LOCKPORT FACILITY**

200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

**FOCUSED ENVIRONMENTAL ASSESSMENT**

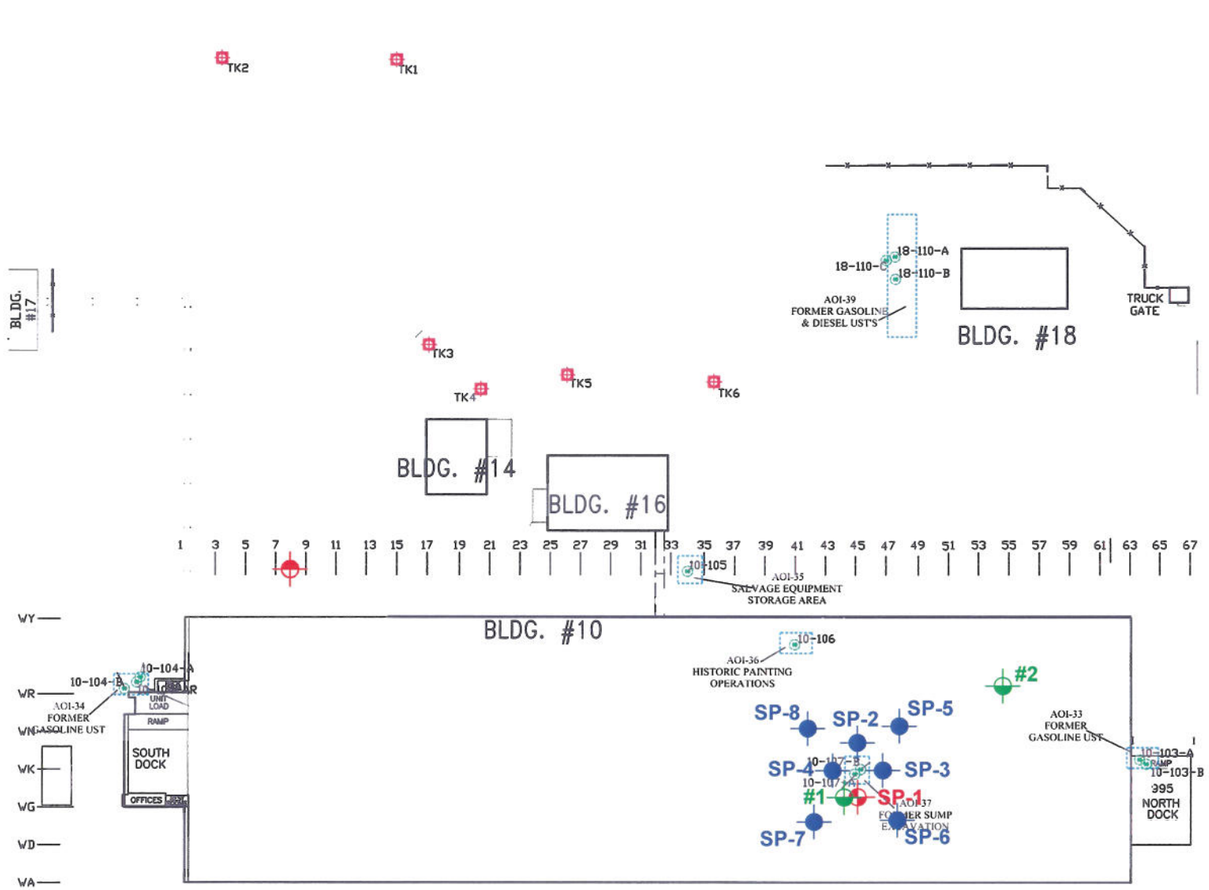
**BUILDING 10 SITE PLAN**

PROJECT No.

**21.0056340.00**

FIGURE No.

**1**




## LEGEND:

- APPROXIMATE LOCATION AND DESIGNATION OF TENTATIVE AMBIENT OUTDOOR AIR SAMPLE (1 LOCATION)
- SP-1 — APPROXIMATE LOCATION AND DESIGNATION OF PROPOSED MONITORING WELL (1 LOCATION)
- SP-4 — APPROXIMATE LOCATION OF AND DESIGNATION OF PROPOSED SOIL PROBE (7 LOCATIONS)
- #1 — APPROXIMATE LOCATION AND DESIGNATION OF PROPOSED INTERIOR AIR AND SUB-SLAB SAMPLE (2 LOCATIONS)
- TK5 — APPROXIMATE LOCATION AND DESIGNATION OF EXISTING TANK MONITORING WELL (6 LOCATIONS)

## NOTES:

1. BASE MAP ADAPTED FROM A SITE PLAN PROVIDED BY THE CLIENT.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

DRAWN BY: DEW

DATE: JUNE 2007

GZA GeoEnvironmental of New York

APPROXIMATE SCALE IN FEET

0 100 200 400

DELPHI THERMAL AND INTERIOR SYSTEMS

DELPHI LOCKPORT FACILITY

200 UPPER MOUNTAIN ROAD

LOCKPORT, NEW YORK

FOCUSED ENVIRONMENTAL ASSESSMENT

BUILDING 10 PLAN

PROJECT No.

21.0056340.00

FIGURE No.

2

# HEALTH AND SAFETY PLAN
# FOCUSED ENVIRONMENTAL ASSESSMENT
# DELPHI LOCKPORT FACILITY
# 200 UPPER MOUNTAIN ROAD
# LOCKPORT, NEW YORK

**PREPARED FOR:**
Delphi Automotive

**PREPARED BY:**
GZA GeoEnvironmental of New York
Buffalo, New York

June 2007
File No. 21.0056340.0

**DELPHI LOCKPORT FACILITY**
**HEALTH AND SAFETY PLAN**
**FOCUSED ENVIRONMENTAL ASSEESMENT**
**LOCKPORT, NEW YORK**

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# 1.0 INTRODUCTION

## 1.1 OVERVIEW

This Site-Specific Health and Safety Plan (HASP) has been developed by GZA GeoEnvironmental of New York (GZA) to establish the health and safety procedures required to protect on-site personnel from potential hazards associated with activities within the specified scope of work for the Focused Environmental Assessment (FEA) at the Delphi Lockport Facility (Delphi), located at 200 Upper Mountain Road in Lockport, New York. The work will be completed by GZA and its subcontractors.

The provisions of this plan apply to GZA personnel involved with the FEA activities that may be exposed to safety and/or health hazards related to activities described in Section 3.0 of this document. The procedures in this plan have been developed based on current knowledge regarding the hazards, which are known or anticipated for the operations to be conducted at this Site.

The following sections (1.1.1 to 1.2) present a brief summary of information from the body of this HASP. This information is intended as a guide to assist the reader and is not intended to be all-inclusive.

### 1.1.1 Project Scope

This project involves air sampling, test borings, monitoring well installation, monitoring well development, soil probes, subsurface soil and groundwater sample collection and surveying. The exclusion zones are expected to be variable and temporary in accordance with planned daily activities.

### 1.1.2 Site Hazards

The primary hazards anticipated at the Site are the physical hazards associated with operation of mechanical equipment (e.g., soil probes rig and drill rig), including noise exposure. GZA personnel will not be involved with the actual operation of large mechanical equipment (drill rigs) and potential exposure to these hazards can be controlled by keeping a safe distance from heavy equipment during operation.

Exposure hazards that may potentially result from the presence of potential contamination in the soil and groundwater will be minimized by wearing proper personnel protective equipment (PPE) while working with the various media and by conducting air monitoring (organic vapor) in the breathing zone of the work area.

### 1.1.3 Levels of Protection

Non-intrusive activities, investigation activities and environmental sampling described within the scope of this HASP will require Level D protection.

## 1.2 PROJECT TEAM

The personnel responsible for the completion of this project and monitoring compliance with this HASP are:

| Name | Project Title/Assigned Role | Office Phone Numbers | Cellular Phone Numbers |
|---|---|---|---|
| Richard Eisenman | Delphi – Sr. Environmental Engineer - Project Oversight | (585) 647-4766 | |
| Chris Boron | GZA - Project Manager (FEA Oversight, & Report Preparation) | (716) 685-2300 ext 3309 | (716) 570-5990 |

Activities covered in this HASP must be conducted in compliance with this HASP and with the applicable federal, state and local health and safety regulations, including 29 CFR 1910.120. Each employee must sign a copy of the HASP Orientation Verification Form (included in Attachment C-1 of this HASP) verifying that he or she has read it and understands its requirements. Personnel covered by this HASP who cannot or will not comply must be excluded from Site activities.

GZA subcontractors may use this HASP for informational purposes when developing their own HASP. However, subcontractors are responsible for determining their HASPs adequacy and applicability to their on-site and off-site activities. If required, subcontractors will be asked to deliver their HASP in clear written form to GZA prior to the initiation of on-site activities. GZA will not review or approve subcontractor HASPs.

## 2.0 BACKGROUND

In 2006, Delphi completed a site-wide Current Conditions Summary and Field Investigation Report (Study) in order to identify areas of soil and/or groundwater contamination at the Delphi Lockport Facility. The following area were identified as requiring additional investigation:

Building 7: Elevated levels of chlorinated solvent were identified in soils beneath several former degreaser areas in Building 7, as well as chlorinated solvents in groundwater immediately upgradient (west) of the building. Because of the potential for vapor intrusion, a preliminary vapor intrusion assessment was required.

Building 9: Polyaromatic hydrocarbons (PAHs), at concentrations that exceed the NYS Industrial Soil Cleanup Objectives, were detected in two isolated areas. A determination of the extent of contamination and an evaluation of the need for remediation is requested.

Building 10: Elevated levels of chlorinated solvents were identified in soils near a former sump area in Building 10. This area is currently unoccupied. To accommodate future uses, a determination of the extent of soil/groundwater contamination and an assessment of vapor intrusion is requested.

## 3.0 SCOPE OF WORK

Field activities during this FEA shall be comprised of intrusive activities and non-intrusive activities. Non-intrusive activities will consist of site meetings, utility location, and air monitoring and sampling and are not expected to result in significant exposure to contamination. Intrusive activities are those activities that will result in the handling of potentially subsurface soils (screening and sampling). The field activities planned are briefly described below.

### 3.1 NON-INTRUSIVE ACTIVITIES

#### 3.1.1 Site Meeting

A Site meeting will be held with the designated project team prior to the start of the project to familiarize the parties involved with the Site and various remedial investigation activities.

### 3.1.2 Air Monitoring

Air monitoring will be conducted to monitor for organic vapors in the work and breathing zones.

### 3.1.3 Utility Location

Utility clearance will be called into Dig Safely New York, at least three days prior to any intrusive activities to be conducted. Additionally, Delphi personnel shall be responsible to identify subsurface utilities in the various investigation areas and approve locations of the test borings and soils probes.

### 3.1.4 Survey

GZA will perform a relative elevation survey of the monitoring wells installed as part of the FEA. The horizontal locations of soil probes, test borings/monitoring wells, and air sample location will be measured by GZA from selected Site features.

## 3.2 Intrusive Activities

### 3.2.1 Soil Probes

The extent of potential subsurface soil contamination will be further assessed by completing soil probes. Soil probes will be advanced into the overburden and soil samples will be collected using a truck or track mounted soil probe unit equipped with a two-inch outer diameter (OD) by four foot long sampler. The probe unit will include a hydraulic push/hammer that will be used to advance the sampler. Soil probes will be advanced to approximately 7 to 10 feet bgs, to bedrock refusal.

The soil samples will be screened during sampling by GZA personnel with an OVM. GZA personnel will not be involved with the actual operation of soil probe equipment.

### 3.2.2 Test Borings and Monitoring Well Installation

Test borings will be advanced utilizing a rotary drill rig to drill through overburden soils and bedrock and install monitoring wells. Borings will be advanced using hollow stem augers and rotary drilling methods. The drill rig will be operated by a drilling subcontractor and GZA personnel will not be involved with the actual operation of drilling equipment.

GZA will log soil samples obtained and retain the samples in jars and/or baggies. GZA personnel will stand away from the drilling equipment and will only approach to receive the sample once

directed by the driller. The soil samples will be screened during sampling by GZA personnel with an OVM. Monitoring wells will be installed by a drilling subcontractor within the designated boreholes to permit the collection of groundwater samples, as directed by GZA personnel.

#### 3.2.3 Groundwater Sampling

GZA will collect groundwater samples from the newly installed monitoring wells and submit them to an analytical laboratory for testing. GZA will screen the well casing for the presence of VOCs using an OVM prior to sampling.

## 4.0 HAZARD ASSESSMENT

The following chemical, physical, and biological hazard assessment applies only to the activities within the specified scope of this HASP.

### 4.1 CHEMICAL HAZARDS

The potential chemical hazards at the Site are polychlorinated biphenyls, semi-volatile organic compounds and metal compounds based on previous investigation and sampling in the remedial area. The following discusses actual and potential hazards associated with the work to be conducted.

#### 4.1.1 Volatile Organic Compounds

Exposure to the vapors of many VOCs above their respective permissible exposure limits (PELs), as defined by the Occupational Safety and Health Administration (OSHA), may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behavior. Some VOCs are considered to be potential human carcinogens.

The vapor pressures of many of these compounds are high enough to generate significant quantities of airborne vapor. On sites where high concentrations of these compounds are present, this can result in a potential inhalation hazard to the field team during subsurface investigations. To reduce the potential for exposure to the vapors of organic compounds, respiratory protection may be required. Because this Site is open and the anticipated quantities of contamination are relatively small, the potential for overexposure is expected to be small.

#### *4.1.1.1 Chlorinated Organic Compounds*

Exposure to vapors of many chlorinated organic compounds such as vinyl chloride, tetrachloroethene, 1,1,1 trichloroethane, trichlorethene and 1,2 dichloroethene above their respective PELs will result in similar symptoms. Exposure to chlorinated compounds can cause symptoms such as irritation of the eyes, nose and throat. Over exposure may also result in symptoms such as drowsiness, dizziness, headache, etc. Skin contact with the liquid may cause dermatitis. If splashed in the eyes, the liquid may cause burning, irritation and damage. Vinyl chloride is a known carcinogen.

#### *4.1.1.2 Petroleum Hydrocarbons*

Petroleum hydrocarbons (PHCs) such as fuel oil are generally considered to be of low toxicity. Recommended airborne exposure limits have not been established for these vapors. However, inhalation of low concentrations of the vapor may cause mucous membrane irritation. Inhalation of high concentrations of the vapors may cause pulmonary edema. Repeated or prolonged direct skin contact with the oil may produce skin irritation as a result of defatting. Protective measures, such as wearing chemically resistant gloves, to minimize contact are addressed elsewhere in this plan. Because of relatively low vapor pressures associated with PHCs, an inhalation hazard in outdoor an environment is not likely.

### 4.1.2 Metal Compounds

Overexposure to metals has been associated with a variety of health hazards, both acute and chronic in nature, with chronic effects being most significant. Direct contact with dust of some metal compounds can result in contact or allergic dermatitis. The American Conference of Governmental Industrial Hygienists (ACGIH) has established inhalation exposure limits, expressed as Threshold Limit Values (TLVs), to which most workers can be exposed (on an 8-hour time-weighted average (TWA) basis) without adverse affect. To limit potential exposure visible clouds of dust should be controlled as required and workers and observers will remain upwind of intrusive activities.

Hexavalent chromium compounds, upon contact with the skin can cause ulceration and possibly an allergic reaction. Inhalation of hexavalent chromium dust is irritating and corrosive to the mucous membranes of the upper respiratory tract. Chrome ulcers and chrome dermatitis are common occupational health effects from prolonged and repeated exposure to hexavalent chromium compounds. Acute exposures to hexavalent chromium dusts may cause coughing or weezing, pain on deep inspiration, tearing, inflammation of the conjunctiva, nasal itch and soreness or ulceration of the nasal septum. Certain forms of hexavalent chromium have been found to cause increased respiratory cancer among workers. Inhalation of copper and zinc dusts above their established PEL's may result in flu-like

symptoms known as “metal fume fever”.

Similarly, ingestion of quantities likely to result in any harmful effects are unlikely to occur within the scope of activities covered in this HASP. Incidental ingestion of minor amounts through hand-to-mouth contact can be avoided with good personal hygiene habits.

The most significant route of exposure is likely to be skin contact with the contaminated soils. Protective measures, such as the wearing of chemically resistant gloves, to minimize contact are addressed in Section 6.0 of this plan.

4.1.3 Polychlorinated Biphenyls

Prolonged skin contact with PCBs may cause a condition known as chloracne. PCBs are considered to be suspect carcinogens and may also cause reproductive damage.

It should be noted that PCBs have extremely low vapor pressures. This makes it unlikely that any significant vapor concentration (i.e. exposures above the OSHA PEL) will be created in the ambient environment. This minimizes the potential for any health hazards to arise due to inhalation unless the source is heated or generates significant airborn particulate. Based on sample information from previous work done at the Site, hazardous levels of PCBs are potentially present in the areas of investigation.

4.1.4 Pesticides

Pesticides can be grouped into three major categories; organophosphates, carbamate and chlorinated hydrocarbons. The actual PEL as set by OSHA, vary depending on the specific compound. Organophosphates, including Diazinon, Malathion and Parathion, are quickly absorbed into the body by inhalation, ingestion and direct skin contact. The symptoms of exposure include headache, fatigue, dizziness, blurred vision, sweating, cramps, nausea and vomiting. More severe symptoms can include tightness of the chest, muscle spasms, seizures and unconsciousness. It should also be noted that the Malathion and Parathion PELs both carry the *Skin* notation, indicating that these compounds adversely effect or penetrate the skin. OSHA specifies that skin exposure to substances carrying this designation be prevented or reduced through the use of the appropriate personal protective equipment (PPE).

Chlorinated hydrocarbons such as Chlordane, DDT and Heptachlor can cause dizziness, nausea, abdominal pain and vomiting. The more severe symptoms include epileptic like seizures, rapid heart beat, coma and death. These compounds also carry the OSHA *Skin* notation.

The symptoms of exposure to carbamate such as Carbaryl (also known as Sevin), are similar to those described for the organophosphates.

#### 4.1.5 Methane

Methane is an odorless, colorless, tasteless gas, and is a significant fire and explosion hazard. It also acts primarily as a simple asphyxiate when present in high concentrations. Methane has a lower explosive limit (LEL) of 5% and an upper explosive limit of 15%.

#### 4.1.6 Hydrogen Sulfide

Hydrogen sulfide, characterized by its "rotten egg" odor, is produced by decomposition of organic matter. In many instances, hydrogen sulfide is found in the same area as methane gas. An important characteristic of hydrogen sulfide is its ability to cause a decrease in ones ability to detect its presence by smell. So although you may no longer smell it, it still may be present in harmful concentrations.

The symptoms of over exposure include headaches, dizziness, staggering and nausea. Severe over exposure can cause respiratory failure, coma and death. The OSHA PEL is 10 ppm.

#### 4.1.7 Chemicals Subject to OSHA Hazard Communication

Chemicals brought on-Site such as solvents, reagents, decontamination solutions, or other hazardous chemicals must be accompanied by the required labels, Material Safety Data Sheets (MSDS), and employee training documentation (OSHA 1910.120). GZA will maintain these documents on-Site. For additional information refer to the GZA Hazard Communication Program contained in GZA's Health and Safety Program Manual.

### 4.2 PHYSICAL HAZARDS

Personnel on-Site should be provided with the information and training necessary to avoid accidental injury. This includes assuring that the Site is maintained in such a way that slip, trip and fall hazards as well as cut, puncture and abrasion hazards such as nails, scrap metal, rusted containers and construction derbies are recognized and eliminated or controlled. Basic personal protective equipment (i.e, hard hat and safety glasses) is required by SMC prior to entering the facility.

#### 4.2.1 Construction Hazards, Construction Equipment and Excavators

The use of drill rigs and other heavy construction equipment represent potentially serious construction hazards. Whenever such equipment is used, personnel in the vicinity should be limited to those who must be there to complete their assigned duties. All personnel must avoid standing within the

turning radius of the equipment or below any suspended load. Job sites must be kept as clean, orderly and sanitary as possible. When water is used, care must be taken to avoid creating muddy or slippery conditions. If slippery conditions are unavoidable, barriers and warning signs must be used to warn of these dangers.

Procedures that will be implemented to limit physical hazard impacts include the following. Never turn your back to operating machinery when in the machine's operational area. Never wear loose clothing, jewelry, hair or other personal items around rotating equipment or other equipment that could catch or ensnare loose items. Always stand far enough away from operating machinery to prevent accidental contact which may result from mechanical or human error.

Additionally, the following basic personal protective measures must be observed: Hard Hats must be worn to protect against bumps or falling objects. Safety glasses must be worn by all workers in the vicinity of drill rigs or other sources of flying objects. Goggles, face shields or other forms of eye protection must be worn when necessary to protect against chemicals or other hazards. Steel toed safety shoes or boots are also required. The shoes must be chemically resistant or protected with appropriately selected boots/coverings where necessary. Unless otherwise specified, normal work clothes must be worn. Gloves are also required whenever necessary to protect against hazardous contact, cuts, abrasions or other possible skin hazards.

#### 4.2.2 Trenching and Excavation

OSHA requires that a competent person, who is trained to recognize the hazards associated with trenching and excavating activities and has authority to control these hazards within the limits established by OSHA Trenching and Excavation Standard (29 CFR 1926.650-652) be present at all times. Trenching and excavating will be done by Pinto Construction. Excavation work will be completed in accordance with OSHA regulations (29 CFR 1926 Subpart P).

#### 4.2.3 Fire and Explosion

The possibility of flammable materials being encountered during field activities must be recognized. Therefore, the appropriate steps necessary to minimize fire and explosion must be observed. This includes situations where excessive organic vapors or free product are encountered. When this occurs, monitoring with a combustible gas indicator (CGI) and OVM, is required.

Excessive organic vapors can cause an explosion hazard. Therefore, whenever excessive organic vapors are detected using an OVM, monitoring should be done for the presence of explosive gases.

Fire, explosion and hazardous chemical release should be regarded as one of, if not the, most significant hazard associated with drilling operations and other intrusive work conducted at sites where possible reactive and/or toxic waste may be encountered. Accordingly, all sources of ignition must be fully controlled. Failure to control ignition sources could result in fire, explosion and pose a serious threat to life and health. Fire extinguishers will be located near each intrusive activity.

#### 4.2.4 Noise

Noise exposure can be affected by many factors including the number and types of noise sources (continuous vs. intermittent or impact), and the proximity to noise intensifying structures such as walls or building which cause noise to bounce back or echo. The single most important factor affecting total noise exposure is distance from the source. The closer one is to the source the louder the noise. The operation of an excavator or other mechanical equipment can be sources of significant noise exposure. In order to reduce the exposure to this noise, personnel working in areas of excessive noise must use hearing protectors (ear plugs or ear muffs). If hearing protection is worn, hand signals will be implemented as needed.

#### 4.2.5 Heat and Cold Stress

Overexposure to temperature extremes can represent significant risks to personnel if simple precautions are not observed. Typical control measures designed to prevent heat stress include dressing properly, drinking plenty of the right fluids, and establishing an appropriate work/break regimen. Typical control measures designed to prevent cold stress also include dressing properly, and establishing an appropriate work/break regimen.

#### 4.2.6 Electrical

OSHA regulations require that employees who may be exposed to electrical equipment be trained to recognize the associated hazards and the appropriate control methods. All extension cords used for portable tools or other equipment must be designed for hard or extra usage and be (three wire) grounded. All 120 volt, single-phase 15 and 20 ampere receptacle outlets on construction sites and other locations where moisture/water contact may occur must be equipped with ground-fault circuit interrupters (GFCI) units. GFCI units must be attached directly to or as close as possible to the receptacle. GFCI units located away from the receptacle will not protect any wiring between the receptacle and the GFCI unit. Only the wiring plugged into the GFCI unit and outward will be protected by the GFCI. All (temporary lighting) lamps for general illumination must be protected from accidental breakage. Metal case sockets must be grounded. Portable lighting in wet or conductive locations should be 12 volt or less. GZA does not anticipate the need for temporary lighting for this project. GZA assumes that all the work will be completed during the daylight hours.

### 4.2.7 Moving Vehicles, Traffic Safety

Vehicular traffic routes which could impact worker safety shall be identified and communicated. When necessary, barriers or other methods must be established to prevent injury from moving vehicles. This is particularly important when field activities are conducted in parking lots, driveways, or roadways.

The uncontrolled presence of pedestrians during intrusive activities can be hazardous to both pedestrians and site workers. Prior to the initiation of Site activities, the Site should be surveyed to determine if, when and where pedestrians may gain access. This includes walkways, parking lots, gates and doorways. Barriers or caution tape should be used to exclude all pedestrians. Exclusion of pedestrian traffic is intended to prevent injury to the pedestrian and eliminate distractions which could cause injury to GZA personnel or other site workers.

### 4.2.8 Overhead Utilities and Hazards

Overhead hazards can include low hanging structures which can cause injury due to bumping into them. Other overhead hazards include falling objects, suspended loads, swinging loads and rotating equipment. Hard-hats must be worn by personnel in areas were these types of physical hazards may be encountered. Barriers or other methods must also be used to exclude personnel from these areas were appropriate. Electrical wires are another significant overhead hazard. According to OSHA (29 CFR 1926.550), the minimum clearance which must be maintained from overhead electrical wires is 10 feet from an electrical source rated $\leq$ 50 kV. Sources rated > 50 kV require a minimum clearance of 10 feet plus 0.4 inches per kV above 50 kV.

### 4.2.9 Underground Utilities and Hazards

The identification of underground pipes, utilities and other underground hazards is critically important prior to intrusive activities. In accordance with OSHA 29 CFR 1926.650, the estimated location of utility installations, such as sewer, telephone, electric, water lines and other underground installations that may reasonably be expected to be encountered during intrusive work, must be determined prior to opening an excavation. In New York State, the "Dig Safe" notification phone number is 1-800-962-7962. Additionally, SMC personnel will be asked to provide assistance in identifying on-Site utilities and approving intrusive locations prior to the start of the intrusive work. The mark-outs provided by the utility companies will be maintained on a regular basis during the intrusive work and Dig Safe will be re-notified if intrusive activities will take longer that 10-business days.

#### 4.2.10 Confined Space

Confined space entry activities, such as entering sewer systems requires specialized procedures beyond the scope of this plan. Therefore, if circumstances require such activities, this plan must be modified accordingly.

### 4.3 BIOLOGICAL HAZARDS

All personnel on site should be provided with the information and training necessary to avoid accidental injury or illness which can result from exposure to biological hazards. This includes assuring that the Site is carefully assessed so that the hazards associated with poisonous plants, insects or other sources of biological contamination (i.e., septic systems) are recognized and eliminated or controlled. In most cases this can be done by using proper PPE. Due to the current site conditions and time of year, biological hazards are not expected to be encountered.

## 5.0 AIR MONITORING

Air Monitoring falls into three separate categories; real time monitoring, community air monitoring and personal exposure monitoring. Real time monitoring will be conducted within the exclusion zone (EZ). Community air monitoring will be done at the down wind perimeter of the EZ. Attachment G-2 summarizes the type of environmental monitoring as well as appropriate response actions applicable to the Site. Additional details regarding air monitoring are presented below.

### 5.1 REAL TIME MONITORING

Real time monitoring that is required to determine the airborne concentrations of the volatile organic compounds and the corresponding response action, will be conducted using the instruments indicated in Attachment C-1. Although the data provided by these instruments can be used to determine the appropriate control actions and PPE requirements, the data may be inappropriate for use in determining employee time weighted average exposures as required by OSHA.

Monitoring with the specified instruments will be conducted at a frequency necessary to adequately characterize airborne contamination levels around the excavation area. Initial monitoring will be most frequent and will be either continuous or at intervals of once every 15 minutes as directed by the GZA's field representative. Monitoring shall be conducted in close proximity to the intrusive activities as described in this HASP. If instruments indicate the presence of elevated levels of organic vapors in the work area or the general breathing zone, then the EZ should then be monitored to determine

appropriate response action in accordance with the action levels specified in this section.

Equipment calibration must be performed in accordance with the manufacturer's instructions. Field checks using the appropriate reference standards must be made on-Site at the minimum frequency of twice per shift (pre- and post-sampling). A daily log of all instrument readings, as well as all field reference checks and calibration information, and corrective actions must be maintained.

### 5.1.1 Total Volatiles Organics

An OVM with a PID, equipped with a 10.2 ev lamp calibrated to a standard referenced to benzene in air, will be used to monitor the breathing zone of workers performing remedial activities to assess the potential presence of organic vapors. If elevated levels above background are sustained (> 1 minute) in the work area, work will be suspended until the situation can be assessed and the potential source of the organic vapors determined.

## 5.2 COMMUNITY AIR MONITORING

Real-time air monitoring, for organic compound levels at the perimeter of the work area will be conducted as follows. Volatile organic compounds shall be monitored at the downwind perimeter of the work area at a minimum of once per hour. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings shall be recorded and will be available for review.

### 5.2.1 Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater the 5 ppm over background but less then 25 ppm over background at the perimeter of the work area, activities can resume provided that the organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the GZA's field representative will be implemented.

5.2.2 Major Vapor Emissions

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, work activities must be halted.

If, following the cessation of the work activities, or as a result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and levels above 5 ppm above background persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect (See Section 5.2.3).

5.2.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken.

1. Emergency Response Contacts listed in the Health and Safety Plan will go into effect (See Section 10.2).

2. The local police authorities will immediately be contacted and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified.

5.3 PERSONAL EXPOSURE MONITORING

Determinations regarding individual exposure potentials will be based on the work area monitoring described above. Separate personal air sampling will not be conducted.

## 6.0 PERSONAL PROTECTIVE EQUIPMENT

PPE will be donned as described below for the activities covered by this HASP. Non-intrusive activities within the scope of this HASP will require Level D protection. All intrusive activities will be initiated in Level D for personnel working in the intrusive activities areas. Level C protection is outside the scope of this HASP.

## 6.1 NON-INTRUSIVE ACTIVITIES

Non-intrusive activities, which include Site meetings, air monitoring and utility location will require Level D protective equipment. This equipment is defined as:

- Hard hat;
- Steel-toed work boots;
- Work clothes;
- Hearing protection (if necessary ); and,
- Eye protection - contact lenses may not be worn on site.
- Disposable latex gloves (as needed).

## 6.2 INTRUSIVE ACTIVITIES

Intrusive activities, which include soils probes, test borings and monitoring well installation will require Level D protective equipment for personnel working in the excavation. This equipment is defined as:

- Hard hat;
- Steel-toed work boots;
- Disposable latex gloves;
- Eye protection;
- Hearing protection (see Section 4.2.4); and
- Eye protection - contact lenses may not be worn on site.
- Disposable latex gloves.

If air monitoring results indicate the need to upgrade to Level C respiratory protection, work will be stopped until the situation can be assessed. Due to number of employees and construction workers at the Delphi facility, unrelated to the RI investigation activities, an update to Level C would not be prudent until the situation can be properly assessed and the well being of the entire work force at the Delphi facility be taken into consideration.

# 7.0 SITE CONTROL

To prevent both exposure of unprotected personnel and migration of contamination due to tracking by personnel or equipment, work areas along with personal protective equipment requirements will be clearly identified as suggested in the "Occupational Safety and Health Guidance Manual for Hazardous

Waste Site Activities," NIOSH/OSHA/USCG/EPA, November, 1985. They recommend the area surrounding the work areas to be divided into three zones; the exclusion or "Hot" zone, contamination reduction zone (CRZ), and the support zone.

## 7.1 EXCLUSION ZONE

Due to the scattered locations of the activities covered within the scope of this HASP, the actual zones are expected to change frequently in accordance with daily activities. Therefore, all exclusion zones (EZ) are expected to be temporary or dynamic. Site personnel will be advised of the locations of temporary work zones as part of the routine Site safety meetings described in Section 9.0.

Each EZ will consist of the active work areas where Site investigations are taking place. A 15-foot radius will be established as the typical perimeter of the zone, however, this may be increased as necessary in order to protect personnel from contact with vapors that may arise from these operations. The perimeter of the zone will be marked with traffic cones or brightly colored hazard tape. All personnel entering these areas must wear the prescribed level of protective equipment.

## 7.2 CONTAMINATION REDUCTION ZONE

The contamination reduction zone (CRZ) will be the corridor between the exclusion and support zones. The actual length and/or location of the corridor will also be temporary or dynamic in accordance with the locations of the exclusion zones. The CRZ is where personnel will begin the sequential decontamination process when exiting the EZ. To prevent cross contamination and for accountability purposes, all personnel must enter and leave the exclusion zone through the CRZ. A separate heavy equipment decontamination zone will also be established at the Site. Figure 1 shows a typical layout of the EZ and CRZ.

## 7.3 SUPPORT ZONE

The support zone (SZ) will coincide with the project command post, and will consist of an area outside the exclusion zone and CRZ where support equipment will be staged. Eating, drinking and smoking will be allowed only in this area. Sanitary facilities will be located within the SZ. In addition, potable water and water and soap for hand washing will be available at the SMC facility, along with containers for solid waste for use by GZA and GZAs subcontractor personnel. Hazardous, or potentially hazardous, materials will be drummed, labeled and stored with other drums of substances generated during this project for future disposal as required by the project specific work plan.

## 7.4 OTHER SITE CONTROL AND SAFETY MEASURES

The following measures are designed to augment the specific health and safety guidelines provided in this plan.

- The "buddy system" will be used at all times by all field personnel. No one is to perform field work alone. The standby project team member must be intimately familiar with the procedures for initiating an emergency response.

- Avoidance of contamination is of the utmost importance. Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces or materials. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Protect air monitoring equipment from water by bagging.

- Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking or any other activities.

- Eating, drinking, chewing gum or tobacco, smoking or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited except in the support zone after proper decontamination.

- The use of alcohol or drugs is prohibited during the conduct of field operations.

- All equipment must be decontaminated or properly discarded before leaving the Site.

- Safety equipment (PPE) described in Section 6.0 will be required for all field personnel unless otherwise approved by the local/regional health and safety representative.

## 7.5 SITE SECURITY

Delphi has on-Site security 24 hours a day, seven days a week and all personnel entering and exiting the Site are required to sign in and out.

Equipment left on-Site during off hours must be locked, immobilized and/or otherwise secured to prevent theft or unauthorized use or access.

## 8.0 DECONTAMINATION

To the extent possible, the sampling methods and equipment have been selected to minimize both the need for decontamination and the volume of waste material to be generated. Used PPE will be disposed of as solid waste.

### 8.1 PERSONNEL DECONTAMINATION

Personnel decontamination will be accomplished by following a systematic procedure of cleaning and removal personal protective clothing (PPE). Contaminated PPE such as latex gloves, boot covers or Tyvek coveralls will be removed in the CRZ and disposed of. The following decontamination sequence in the re-useable PPE

#### 8.1.1 Decontamination Sequence

Steps required will depend on the level of protection worn in accordance with Section 6.0:

1. Remove and wipe clean hard hat.
2a. Rinse outer boots and outer gloves (if used) of gross contamination.
2b. Scrub boots and gloves clean (if used).
2c. Rinse boots and gloves (if used).
3. Remove outer protective boots (if used).
4. Remove outer gloves (if used).
5. Remove inner (latex) gloves.

Boots that have been decontaminated or protected with disposable boot covers can be worn into the support zone.

### 8.2 EQUIPMENT DECONTAMINATION

To the extent possible, measures should be taken to prevent contamination of sampling and monitoring equipment. Sampling devices become contaminated, but monitoring instruments, unless they are splashed, usually do not. Once contaminated, instruments are difficult to clean without damaging them. Delicate instrument which cannot be easily decontaminated should be protected while it is being used. It should be placed in a clear plastic bag, and the bag taped and secured around the instrument. Openings are made in the bag for sample intake and exhaust.

If solvents are used for decontamination of equipment all safety precautions specified on the

manufacturer's warning label and MSDS must be observed. Rinsate generated during the decontamination process will be containerized, labeled, sampled and properly disposed.

Drilling rigs, trucks, backhoes, and other heavy equipment are difficult to decontaminate. The method generally used is to wash them with water under high pressure or to scrub accessible parts with detergent/water solution under pressure. A decontamination pad will be constructed on-site by the drillers and/or test pit excavators for equipment decontamination.

In some cases, shovels, scoops and augers may require steam cleaning. Particular care must be given to those components in direct contact with contaminants. Personnel doing the decontamination must be adequately protected for the methods used since these can generate contaminated mists and aerosols.

## 9.0 MEDICAL MONITORING AND TRAINING REQUIREMENTS

### 9.1 MEDICAL

All personnel covered by this HASP must comply with 29 CFR 1910.120(f). Each individual must have completed an annual surveillance examination and/or an initial baseline examination within the last year prior to performing any work on the Site covered by this HASP. Documentation of the examination must include a physician's statement indicating the employee is fit and capable of performing their duties.

### 9.2 TRAINING

All personnel covered by this HASP must have completed the appropriate training requirements specified in 29 CFR 1910.120 Hazard Communication and 29 CFR 1910.120(e). Each individual must have completed an annual 8-hour refresher training course and/or initial 40-hour training course within the last year prior to performing any work on the Site covered by this HASP.

### 9.3 SUBCONTRACTORS

Subcontractors to Delphi and GZA will be required to provide to GZA specific written documentation that each individual assigned to this project has completed the medical monitoring and training requirements specified above. This information must be provided prior to their performing any work on site.

## 9.4 SITE SAFETY MEETINGS

Prior to the commencement of the FEA activities, a Site safety meeting will be held to review the specific requirements of this HASP. Sign-off sheets will be collected at this meeting. Short safety refresher meetings will be conducted by GZA weekly (at a minimum) or as needed throughout the duration of excavation work. In addition, the GZA will ensure that Site visitors have had the required training in accordance with 29 CFR 1910.120 and will provide pre-entry safety briefings.

# 10.00 HEALTH AND SAFETY AUDIT

The activities described in this HASP may be subject to audit by Delphi Thermal. The appropriate schedule for any such audit will be determined at a later date. In addition to the possible need for a formal audit, daily safety and health inspections may be conducted by the SSO to determine if field operations are being performed in accordance with this HASP and applicable OSHA regulations.

# 11.00 EMERGENCY ACTION PLAN

## 11.10 GENERAL REQUIREMENTS

OSHA defines emergency response as any "response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result in an uncontrolled release of a hazardous substance." The basic elements of an emergency action plan include employee training, alarm systems, escape routes, escape procedures, critical operations or equipment, rescue and medical duty assignments, designation of responsible parties, emergency reporting procedures, and methods to account for all employees after evacuation.

### 11.10.1 Employee Information

Employees must be instructed in the specific aspects of emergency evacuation applicable to the Site as part of the Site safety meeting prior to the commencement of on-Site activities. On-Site refresher or update training is required when escape routes or procedures are modified or personnel assignments are changed.

11.10.2 Emergency Signal and Alarm Systems

An emergency communication system must be in effect at all sites. **The most simple and effective emergency communication system in many situations will be direct verbal communications.** Each site must be assessed at the time of initial site activity and periodically as the work progresses. Verbal communications must be supplemented when voices can not be clearly perceived above ambient noise levels (i.e., noise from heavy equipment, drilling rigs, etc.) and anytime a clear line-of-sight cannot be easily maintained amongst work personnel because of distance, terrain or other obstructions.

Contractors shall notify Delphi Thermal if an emergency situation occurs. The contractor's supervising personnel shall have, as a minimum, a cellular telephone available to contact Delphi Thermal.

## 11.20 EMERGENCY CONTACTS

In the event of an emergency, assistance may be requested using the following telephone numbers:

- Police: 911
- Fire: 911
- Ambulance: 911
- Hospital: Lockport Memorial Hospital
  521 East Avenue
  Lockport, New York 14094
  (716) 434-9111
- Delphi Thermal
  Plant Security: (716) 439-2237

It should be noted that Contractors shall first contact Delphi Thermal Plant Security. They (Security) will contact outside emergency agencies, as needed.

Hospital Location

The hospital is located in Lockport, New York (See Figure 2).

Other Emergency Contact Information

- Delphi Thermal – Ms. Hillie LaDue (716) 439-2955
- Delphi Thermal – Ms. Cathy Ver (716) 439-2942
- Delphi Thermal – Mr. Richard Eisenman (585) 647-4766

## 11.30 INCIDENT REPORTING PROCEDURES

Any incident (other than minor first aid treatment) resulting in injury, illness or property damage requires an accident investigation and report. The investigation should be initiated as soon as emergency conditions are under control. The purpose of this investigation is not to attribute blame but to determine the pertinent facts so that repeat or similar occurrences can be avoided. A copy of GZA's Incident Investigation Form is included in Appendix A1.

The investigation should begin while details are still fresh in the mind of personnel involved. The person administering first aid may be able to start the fact gathering process if the injured are able to speak. Pertinent facts must be determined. Questions beginning with who, what, when, where, and how are usually the more effective ways to improve job performance in terms of efficiency and quality of work, as well as safety and health concerns. The Contractor shall contact Delphi Thermal immediately if an incident occurs.

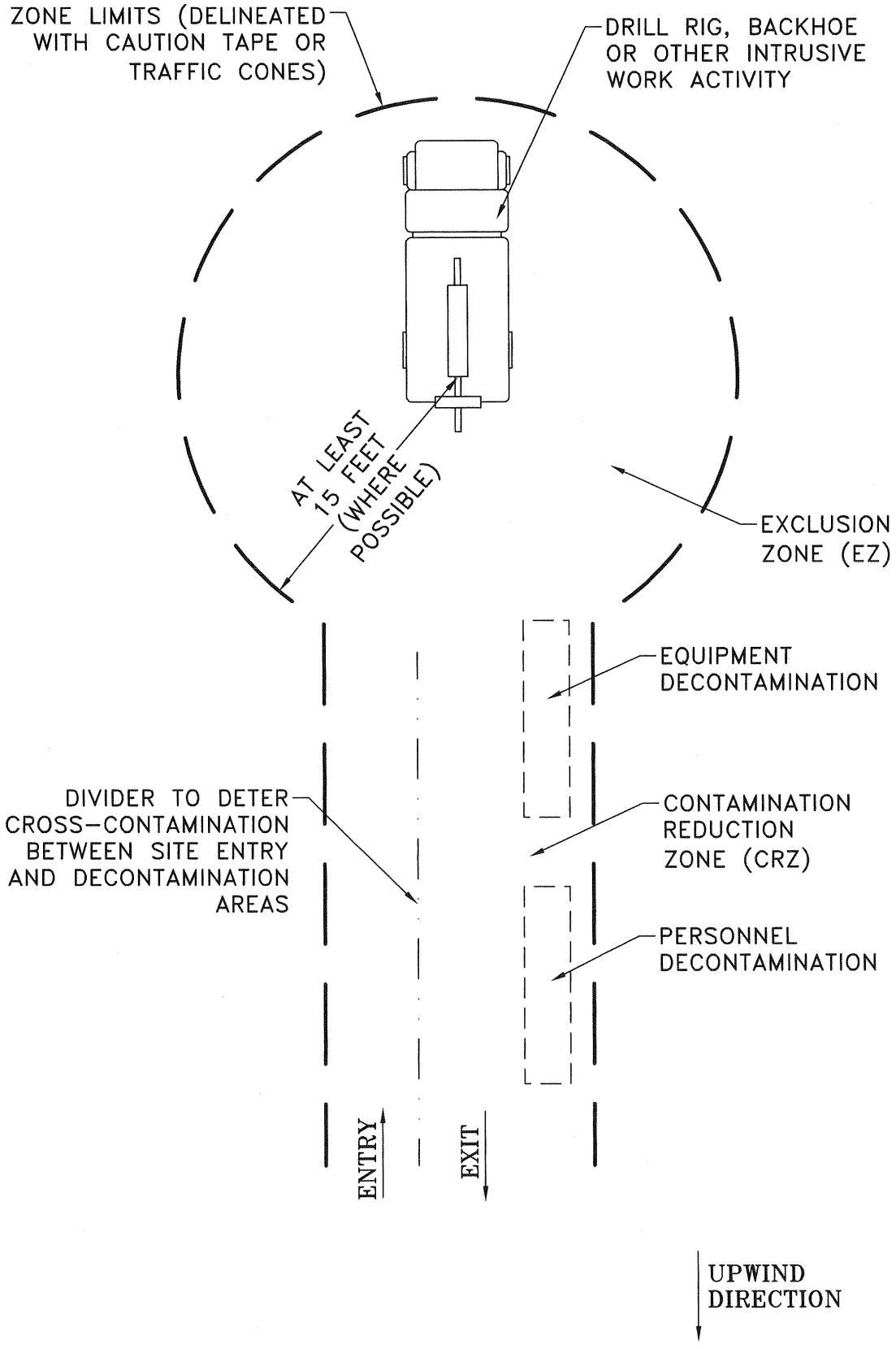
# TABLES

Table 1
ACTION LEVELS

| | Monitoring Type | Concentration | Instrument | Monitoring Location | Monitoring Frequency | Required Action |
|---|---|---|---|---|---|---|
| Real time Monitoring | Total VOCs | < 1 ppm | PID (10.2 ev) | EZ | At least every 15 minutes | Continue monitoring |
| Real time Monitoring | Total VOCs | > 5 ppm | PID (10.2 ev) | EZ | Continuous | Stop work and assess situation. |
| Community Air Monitoring (intrusive activities only) | Total VOCs | < 5 ppm above background | PID (10.2 ev) | Down wind of EZ | At least every 1 hour | Continue monitoring of EZ (potential source) and down wind perimeter of the EZ (work zone). |
| Community Air Monitoring (intrusive activities only) | Total VOCs | > 5 ppm above background | PID (10.2 ev) | Down wind of EZ | Continuous | Stop work. If organic vapors levels are >5ppm over background but less than 25 ppm over background at the perimeter of the work area than work can resume provided the organic vapor level 200 feet down wind of the work area or half the distance to the nearest structure is < 5ppm. If the level is > 5 ppm 200 feet downwind, follow procedures outlined in section 5.2.2 (Major Vapor Emissions) of this plan. |
| Community Air Monitoring (intrusive activities only) | Total VOCs | > 25 ppm above background | PID (10.2 ev) | Down wind of EZ | Continuous | Stop work. Follow air monitoring procedures outline in section 5.2.2 (Major Vapor Emissions) of this plan. |
| | | | | | | |

EZ= Exclusion Zone (work zone).
VOCs=Volatile organic compounds.

# FIGURES




DRAWN BY: DEW

DATE: JUNE 2007

GZA GeoEnvironmental of New York

APPROXIMATE SCALE IN FEET

0 100 200 800

DELPHI THERMAL AND INTERIOR SYSTEMS

DELPHI LOCKPORT FACILITY

200 UPPER MOUNTAIN ROAD, LOCKPORT, NEW YORK

FOCUSED ENVIRONMENTAL ASSESSMENT

HEALTH AND SAFETY PLAN

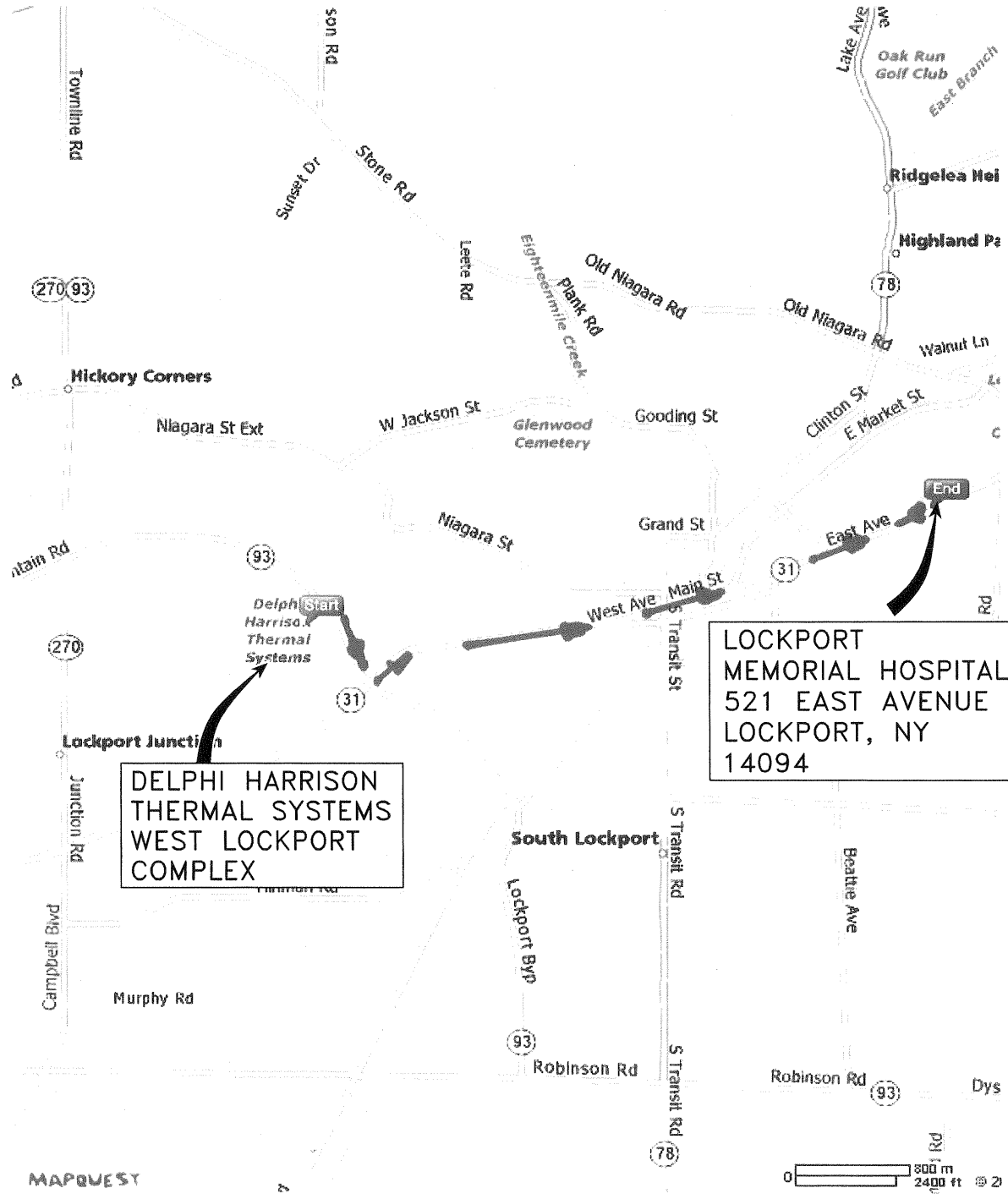
TYPICAL LAYOUT OF EXCLUSION ZONE AND CONTAMINATION REDUCTION ZONE

PROJECT No.

21.0056340.00

FIGURE No.

1





## NOTES:

1. BASE MAP ADAPTED FROM A MAP DOWNLOADED FROM WWW.MAPQUEST.COM.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

DRAWN BY: DEW

DATE: JUNE 2007

GZA GeoEnvironmental of New York

APPROXIMATE SCALE IN FEET

0 100 200 800

**DELPHI THERMAL AND INTERIOR SYSTEMS**

**DELPHI LOCKPORT FACILITY**

200 UPPER MOUNTAIN ROAD

LOCKPORT, NEW YORK

**FOCUSED ENVIRONMENTAL ASSESSMENT**

**HEALTH AND SAFETY PLAN**

**ROUTE TO HOSPITAL**

PROJECT No.

**21.0056340.00**

FIGURE No.

**2**

# APPENDIX A

# HEALTH AND SAFETY BREIFING/SITE ORIENTATION RECORD, SITE SIGN-IN AND INCIDENT INVESTIGATION FORM

# Health and Safety Briefing /Site Orientation Record

Delphi Lockport Facility
Focused Environmental Assessment
Lockport, New York

This is to verify that I, the undersigned, have been provided with a site (orientation) briefing regarding the safety and health considerations for the FEA at the Delphi Lockport facility, in Lockport, New York. I agree to abide by my project site-specific safety and health plan and other safety or health requirements applicable to the site.

| Name (Print) | Signature | Company | Date |
|---|---|---|---|
| | | | |
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| | | | |
| | | | |

Site (orientation) briefing conducted by: _____ Date:_____

# PROJECT INCIDENT INVESTIGATION FORM

Employee's Name | Company Name

Project Name | Project Location

Project Number

Building | Room | Other

Time Incident Occurred | Date

Supervisor's Name

Type of Case:

First Aid | Medical Treatment

Lost Time | Fatality | Property Damage

Occupational Illness

Describe the incident (What happened):

Describe the type of first aid or medical treatment provided:

Describe employee activity at time of incident:

Describe any tools or machinery involved:

Describe any personal protective equipment used by employee:

In your opinion, what the probable causes of the incident are:

In your opinion, how this incident could have been prevented:

Changes in process, procedure, or equipment that you would recommend:

How you would classify the apparent causes of this incident:

| | |
|---|---|
| Human error | Equipment |
| Material | Personal Protective Equipment |
| Real Time | Other |

Name and signature of person preparing this form:

---

Distribution:

Branch/Regional Office Manager:
Regional Health and Safety Coordinator:
Corporate Director of Health and Safety:
Other:

Note: If the space provided on this form is insufficient, provide additional information on separate paper and attach.

# APPRNDIX B

# DELHI THERMAL SYSTEMS GENERAL SAFETY RULES AND PROCEDURES FOR CONTRACTORS

# Safety Procedure

Uncontrolled Document when printed

## CONTRACTOR SAFETY

**PURPOSE:**

Delphi has developed rules that are intended to provide their employees, suppliers, visitors and contractors a safe, healthful and secure work environment.

All contractors including their equipment, procedures, and employees must comply with all applicable OSHA Safety and Health Standards: ( i.e. Construction, General Industry, and Hazard Communication Standards) and Delphi has specific programs, including but not limited to Confined Space, Aerial Lift, Lockout, and Fall Prevention.

In situations not specifically covered by OSHA regulations or Delphi safety procedures, contractor must consult with the Health & Safety organization to determine the safety operation plan.

**DEFINITION OF TERMS:**

**CONTRACTOR – INCLUDES ANY OUTSIDE VENDOR** on Delphi premises that is contracted to perform work onsite. This would include construction crews, equipment installers, repair persons, etc.

**DELPHI HOST** – would include, but not limited to, the following: engineering, superintendents, supervisors, etc. The Host provides a liaison between Delphi and the contractor and should be limited to one "contact" person and is responsible to notify Security, Engineering and Safety prior to job start and also completion of the attached Contractor Work Permit.

**ACCIDENT** – all personal injuries requiring medical treatment as well as incidents involving property damage.

**MEDICAL TREATMENT** – includes treatment (other than first aid) administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment (one-time treatment and subsequent observation or minor scratches, cuts burns, splinters, and so forth, which do not ordinarily require medical care) even though provided by a physician or registered professional personnel.

**GENERAL SAFETY RULES:**

For the protection of people, property and the environment, all personnel involved in new facilities construction or construction involving modifications and/or addition(s) to existing facilities shall observe the following Delphi Safety Rules. In addition, all personnel entering or working in a Delphi facility for any contractual work shall be cognizant of and conform to the following rules:

1. **GENERAL:**
   A. The contractor will be held responsible for the safety performance of their employees and sub-contractor employees. Compliance will be maintained with this document and with the requirements contained in safety standards of the State of New York, EPA, Department of Labor and all requirements of the Occupational Safety and Health Act of 1970 (latest revision).

   B. All subcontractors are required to attend a pre-job safety conference prior to working on-site.

   **If there is any conflict with applicable Delphi rules, Federal, State or local laws, the more stringent will apply.**

2. **ACCIDENTS:**
   A. The contractor shall report all accidents to the Delphi Host, in writing.

   B. All serious injuries, accidents, and/or safety violations must be reported immediately to Delphi Security at x-3333. Notify Security at x-2237 for non-emergencies.

   C. The contractor shall ensure that injured personnel receive prompt and proper medical treatment. Plant medical departments are located in Buildings 7A and 9A.

3. **CONDUCT:**
   The contractor is responsible for the conduct of its employees. Contractor employees must follow Delphi Safety and Shop rules and are prohibited from engaging in any unsafe or illegal activities.

4. **PRE-JOB SAFETY CONFERENCE:**
   A. Prior to starting on-site work, the Delphi Host **will** incorporate into the pre-construction meeting a scheduled safety conference. Required attendees:
      - Contractor supervisors
      - Delphi project supervisors/host
      - Delphi Salaried and UAW Safety Representatives
      - Delphi Maintenance and Tools representative, as needed

   Any change in a contractor's scope of work, a new pre-job safety conference must be held
General/routine maintenance – VME notification only required
Emergency work – ASAP - i.e., asbestos abatement

The frequency of these conferences will be dependant upon the scope of work..

At this meeting, the Delphi project supervisor/host, and safety representative will review general conditions, emergency procedures and systems, protective equipment, and permits. Also to be reviewed will be any specific requirements of the work area in which the job is to be performed. Approval for all chemicals/hazardous materials' used on Delphi property will be reviewed by the Hazardous Material Control Committee (HMCC) and be approved before the job begins. Contractors must maintain copies of the Material Safety Data Sheets at the job site.

NOTE: Upon completion of all asbestos handling projects, copies of all records pertaining to the project will be forwarded to the Delphi Plant Engineering Department, building 7A.

B. The contractor shall communicate and document all Delphi safety procedures information obtained at the pre-job safety meeting to all personnel and sub-contractors.

5. **PROTECTIVE EQUIPMENT AND CLOTHING:**

A. The contractor shall provide, and the contractor employees shall use, personal protective equipment and clothing, where required.

B. Industrial safety glasses (meeting ANSI Z87.1-A68 requirements) *must* be worn in the plant or yard areas at all times. Where posted, hearing protection must be worn at all times.

C. Safety glasses, goggles, face-shields, etc., *must* be worn when the task being performed presents a hazard from flying objects, glare or splashing liquid. (Examples: cutting, buffing, grinding, etc.)

D. Approved head protection is required for all overhead work.

E. Lifelines, harnesses, and lanyards will be used by contractor's employees when entering a hazardous space (trench, pit, tanks, etc.) which contain bulk or loose material that could engulf employee, and for above ground work over 6' where an unguarded work surface exists, as required by OSHA and Delphi regulations. Contractor, prior to use, will inspect equipment.

F. All contractor personnel shall wear clothing and footwear appropriate for the work performed. The wearing of high heels, or open toe/open heel shoes in our facilities *is prohibited.* Also, workers must wear a shirt.

**G.** Delphi Host and contractors *must* follow local agreement restriction for exhausting equipment, such as backhoes, compressors, etc. In addition, certain jobs, such as air hammering, spray painting, floor scraping, etc., should be scheduled with protection of Delphi personnel in mind. Jobs generating noise, fumes, or exhaust must be communicated to affected employees prior to start of work.

6. **DRIVING / PARKING / TRAFFIC RULES / RAIL SAFETY:**

   A. All vehicles shall be driven at speeds not to exceed the posted speed limits.

   B. All traffic signs must be observed.

   C. All personal vehicles must be parked outside of the security fence , or, in the absence of a security determination at a location identified by the assigned Delphi Host.

   D. Accidents involving motor vehicles must be reported to Plant Security office immediately.

   E. When working on or over railroad tracks, contractors must adhere to SP 329.

   Failure to follow the above noted driving rules will result in the contract employee losing driving privileges on Delphi property.

7. **FIRE PREVENTION:**

   A. Before starting a project, contact Plant Security. Cutting and welding operations shall be performed in strict accordance with the procedures of the Delphi location for which the work is being done. Plant Security must authorize a written permit for each cutting and welding job prior to the commencement of the work.

   B. Accumulation of trash, oily rags, combustible materials and similar fire hazards of any nature will not be permitted. Daily disposal is required. Excellent housekeeping is the only acceptable standard for all job sites. Questions regarding the disposal of these items should be directed to Environmental Engineering – Waste Engineer.

   C. The contractor shall provide and maintain appropriate protection equipment in the construction area at all times; i.e., fire extinguishers, spark catchers. In addition the contractor must provide and use adequate shields or enclosures to protect all employees from exposure to electric arc welding operations.

   D. No smoking inside

   E. All openings through roofs or walls requiring burning or welding require two (2) fire watches. Contractors shall be responsible for notifying Delphi Plant Engineering or appropriate designate via Delphi Host when this is required on project. Twenty-four (24) hour notice is to be given to Plant Engineer or designate when a fire watch is required.

   F. All contractors performing any type of torch operations (i.e. melt-down roofing, drying to repair or install roofing, burning or cutting, etc.) *must* not leave job till adequate time has passed after job completion to assure fire protection.

8. **FLAMMABLE AND COMBUSTIBLES LIQUIDS:**

   A. Containers shall have proper labeling with contents and hazards.

   B. Only original shipping containers or UL approved safety cans shall be used for storage and handling.

   C. Containers shall be tightly closed when not in use.

   D. Container storage shall be 250 gallons or less in any one-storage area.

   E. Explosives or any explosive powered tools, of any type, are not allowed on plant property without Safety approval.

   F. No open flame or spark producing equipment shall be used within 35 feet of a storage or dispensing area.

   G. Storage and refueling areas shall be posted with signs NO SMOKING or OPEN FLAME.

   H. Gasoline containers shall not be permitted inside of an enclosed building.

   I. All compressed gas cylinders must be transported and stored upright and secured by either chain or mechanical means. They shall not be stored or used in a laying position and the tie valve wrenches shall be removed when such equipment is not in use.

9. **TOOLS:**

   A. The use of Delphi heavy equipment, tools, ladders, or other similar equipment by contractor personnel is prohibited unless approved in advance by Delphi Maintenance Segment Leader. In any event, there use will be strictly prohibited where work violating the Delphi/UAW agreement would occur.

   **B.** All ladders must be non-conductive and equipped with safety feet. Extension ladders must be lashed to fixed building framework etc. Defective ladders must never be used. Wooden extension ladders are not permitted on site.

10. **EXCAVATION – BARRIERS, DEVICES TO PENETRATE THE FLOOR and/or EARTH:**

A. When excavations and penetrations of the earth, or breakthrough of walls, floors, or ceilings need to be performed by the contractor, the Delphi project engineer via using current-to-date underground and/or utility reference drawings must obtain an excavation permit. The Delphi project supervisor shall check each detail of the drawing before the Safety Department approves the excavation permit and work starts. (HD1297)

B. Excavations shall be properly shored in accordance with OSHA standards. The contractor shall guard any pits or piles of materials on the ground by rope guard, rails or barricades, and lanterns or flares shall be provided at night, except when area is inside a well-lit facility. When working overhead in areas that may be used by plant employees, such areas shall be roped off, barricaded, and warning signs will be posted.

11. **ELECTRICAL:**

A. It is the contractor's responsibility to ensure that all electrical work performed complies with applicable National Electrical Code (incorporated in OSHA Standard 1910.309) requirements, local authority, and Delphi Electrical Safe Work Practices Standards.

12. **GENERAL SAFETY RULES:**

A. The contractor shall actively promote safe work habits on the part of their employees. This includes recognition and avoidance of unsafe work practices or conditions necessary to prevent industrial injury or illness. Tools, equipment and methods declared unsafe by Delphi Safety shall not be used.

B. All rigging of equipment shall be done in such a manner as to prevent falling or tipping.

C. Adequate precautions shall be taken to protect all employees and company properties from injury or damage from falling objects or molten metals.

D. The contractor's employees will *not* operate any valves, switches, or plant equipment without the specific permission and approval of the Delphi plant supervision or Delphi Host.

E. The Delphi project engineer or supervisor assigned by plant engineering, manufacturing engineering or maintenance will instruct the contractor as to the area of work and any special requirements of a particular department. The contractor's personnel shall confine themselves to this area while performing their work in the plant. The project supervisor will point out to the contractor the cafeteria, rest room facilities which may be used by the contractor's employees.

F. The contractor shall provide, use and keep in good repair during the progress of their work, fences, temporary sidewalks, temporary floor opening or excavation guard rails, roofed passage ways, guards, warning lights, signs, signals and any other safeguard necessary for the protection and convenience of employees and the public.

G. Construction materials, tools and equipment shall be stored in a manner which will contribute to safety and good housekeeping in the area and according to the directions of the supervision of the area where the work is being used.

H. All contractor's offices, work sheds, or other temporary buildings which are moved onto the site premises will have their locations approved by the Delphi Host, and shall be located at least 50 feet outside of any building under construction, and the space between, shall be kept open. Utility connections and the general appearance of such structures will be clean or orderly. The contractor will furnish fire protection (extinguishers) for their offices, work sheds and equipment.

I. Intervention by Delphi supervision, Safety representative(s) or Plant Security, will be made when employee safety is threatened by contractor work or when Delphi can possibly incur liability. Delphi supervision and safety representative(s) or Plant Security will directly contact the contractor and request correction of the unsafe condition in an "emergency" or "life threatening" situation. In all cases, the Delphi Host will be notified. A log of contractor(s) infractions will be maintained and will be reviewed as needed by Delphi Safety Department and the project Host.

J. It shall be the responsibility of the contractor to:
- Take all steps necessary to perform the contracted work safely.
- Provide for the safety of contractor employees, employees of all subcontractors & material suppliers & all third party persons linked to the project through the contractor.

**Delphi will cooperate with the contractor as to safety measures, but does not assume any responsibility for the contractor.**

13. **CONFINED SPACE PERMITS:**

A. A confined space permit is to be issued when work is to be performed within a confined space. Confined Space Permits are only issued by Security to confined space trained Delphi project supervisor.

B. A permit for entry into confined space is required where the following conditions exist:

1. Any pit, manhole or excavations 4' or deeper
2. Any open surface tank deeper than 4'
3. Any limited entry/exit spaces limited in size & not normally inhabited
4. Any unfavorable natural atmosphere that could contain or produce dangerous air contaminants. Examples: tanks, vessels, degreasers, silos, boilers, etc. If in doubt contact Safety department.
5. Space or equipment listed as a Confined Space on the Confined Space Log.

**NOTE:** Delphi detection equipment will be available *only* as a secondary backup to contractors equipment.

C. Continuous monitoring of confined space is required.

D. Additional permits are required for welding and cutting in confined spaces and for other hazardous work requiring special preparation, equipment, or supervision.

14. **SECURITY:**

A. All contractor tools and equipment should be labeled so that ownership can be easily identified.

B. Other than regular working hours i.e. after hours, Saturday, Sundays, and holidays, the movement of contractor material leaving the plant is discouraged. Under emergency conditions, contact Plant Security.

C. Tools and/or equipment shall be secured after working hours. Report lost or stolen tools, material or equipment to Plant Security.

15. **HAZARD MATERIAL CONTROL COMMITTEE (HMCC):**

Use of any chemicals is restricted to those approved by the Delphi Hazard Material Control Committee (HMCC). No contractor is allowed to bring in any chemicals/hazardous materials specified in the contract agreement or otherwise deemed necessary by the contractor to comply with their job at the Delphi worksite without prior approval of the HMCC. The contractor shall provide MSDSs to the Delphi host for HMCC approval.

16. **INFORMING CONTRACTORS OF POTENTIAL CHEMICAL HAZARDS:**

Contractors shall be informed of any potentially hazardous chemicals to which their employees may be exposed. Before the contractor begins work the Delphi Host will ensure that information covering potential work site chemical hazards is provided to the contractor. The information provided to the contractor should be consistent with the information used at the specific plant location. It is the contractor's obligation to ensure that their employees are provided with the required information, training and personal protective equipment.

17. **ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS)**:

A. The facility has an Environmental Management System in place. Contractors and their employees are required to know the environmental policy and how they may impact the environment in the course of their work onsite.

B. The Contractor must review with the Delphi Project supervisor/manager/engineer/host any environmental concerns before work begins.

C. Any job that may have environmental impact must be reviewed by Delphi's Environmental Department.

## 18. CONTRACTOR ROOF ACCESS PERMIT

**PURPOSE:** To reduce the risk of injury associated with job assignments on Delphi roofs through the control and restriction of authorized personnel.

**SCOPE:** All facility/plant outside roof areas and penthouses (including substations whose access is from roof areas).

A. A Roof Access Permit must be completed prior to roof work commencing. See attached

B. A roof access log will be maintained by Security.

C. Appropriate fall prevention and protection must be utilized during all work performed.

**RULE: <u>Within 6 feet of an unguarded roof edge or an unguarded roof opening fall prevention/protection is required.</u>**

D. Before moving equipment, machinery, heavy loads, etc., across roof areas, the load capacity and appropriate safe procedure (i.e. planking) should be discussed with Plant Engineering personnel.

## Delphi Contract Work Permit

### Purpose:

The purpose of the Contract Work Permit Procedure is to assure that contractors work safely on Delphi property.

The contractor must maintain a copy of the work permit for presentation to Delphi safety or Management personnel at all times.

### General Requirements:

The Delphi Host will review safety requirements that will be expected of the contractor and their employees while working for Delphi via a Pre-Job Safety Conference (refer to Section #4 of this document).

The Delphi Host will initiate the contractor work permit form attached.

The Delphi Host must sign this form and the contractor's representative after all requirements set forth in this document are met.

All contract employees that enter Delphi **must** view the visitor safety protocol video. **It is of the utmost importance that contract employees know the emergency alarms, procedures, and emergency phone # 3333. No work can begin till this task is accomplished.** The Delphi Host and the contractor's representative are responsible to make sure this task is completed.

**It is the responsibility of the Delphi Host:**

1. **Retain copy of Work Permit for one year.**
2. **Return original signed and approved Work Permit to Safety 7A.**
3. **Forward copy to 7A Security**

**Permits will be retained for one year.**

# Safety Procedure

Uncontrolled Document when printed

**Delphi Contractor Work Permit**

P.O. # _____ Start Date:_____ Completion Date:_____

Contractor Name_____ Delphi Host_____

Job Description/Location_____

Plant_____ Dept. _____ Col # _____ Emergency Job _____ Normal Job_____

Prior to any work beginning the following form must be completed and signed by the contractor and Delphi Host. **Delphi safety or management personnel reserves the right to stop all jobs deemed to be unsafe.**

**Supervisor of Contract Employees:**

| | |
|---|---|
| 1. Have all your employees completed Delphi Visitor Protocol? | Yes__ No___ |
| 2. Will subcontractors be utilized for any portion of this project? | Yes__ No__ |
| If yes, has subcontractor attend a pre-job safety conference? | Yes__ No__ |
| 3. Have you been given, read and understand Delphi SP 345 | Yes__ No__ |
| 4. Have you visited the job site with Delphi supervisor/manager/engineer/host? | Yes__ No__ |
| 5. Are all your tools and equipment labeled and in safe operating condition? | Yes__ No__ |
| 6. Have all the necessary MSDS forms been processed and approved? | Yes__ No__ |
| 7. Do all employees know the environmental policy and possible site impacts? | Yes__ No__ |
| 8. Have you received all necessary information to perform the job correctly/safely? | Yes__ No__ |

Any violations of the above affirmative answers will be cause, without penalty to Delphi, for either the removal of an individual contract employee or termination of the work in process.

*Contractor Supervisor Signature*: _____

(The contractor must maintain a copy for presentation to Delphi safety or management personnel at all times.)

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**Delphi Host:**

| | |
|---|---|
| 1. Have you inspected the job site for possible safety hazards? | Yes__ No__ |
| 2. Are you completely familiar with the scope of work assigned to the contractor? | Yes__ No__ |
| 3. Have you reviewed with the contract supervisor Delphi shop & safety rules? | Yes__ No__ |
| 4. Have you issued all the necessary permits prior to work being started? | Yes__ No__ |
| 5. Have you reviewed the environmental policy and appropriate EMS procedures? | Yes__ No__ |
| 6. Have all affected departments been notified to work commencing? (Prod/Maint/Safety) | Yes__ No__ |

The Delphi Host is responsible for: coordination of contractor activities, the quality of the work performed and compliance to Delphi safety rules.

***Delphi Host***: _____

**Additional Signatures** (For notification purposes only):

1. Maintenance_____
2. Safety_____
3. Environmental (if environmental impact): _____

*Keep copy 1 yr. and forward original to 7A Safety and copy to 7A Security*

## Contractor Roof Access Permit

**Contractor's Name** _____ **Start Date:** _____ **Completion Date:** _____

**Time:** _____ **Roof Location** _____ **Duration of Permit:** _____
(Projects over 30 days require Safety Dept. approval)

Personnel Assigned:

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

Description of Work: _____

_____

Equipment and Materials: _____

_____

Load Capacity of Roof Areas Involved: _____

Roof Access/Egress Locations: _____

Emergency Rescue Plan in place? Yes ___ No ___

Evacuation plan in place? Yes ___ No ___

Weather Conditions: _____

Safety Precautions/Procedures: _____

Personal Protective Equipment: _____

**Hazard Analysis:**

Will work be performed within six feet of an unguarded roof edge?
Yes ___…*Fall protection required*
No ___

Will work be performed within six feet of an unguarded roof opening measuring 12 inches or more in its least dimension?
Yes ___…*Fall protection required*
No ___

Will an opening be cut or exposed in the roof surface?
Yes ___…*Install barrier guards, signs, covers*
No ___

Will employee work above the roof surface, i.e., scaffolds, ladders, etc.?
Yes ___…*Radius of elevation must not exceed to a point within 6 feet of the roof edge*
No ___

Will loads in excess of 500 lbs. Be moved across the roof surface?
Yes ___…*Engineering study required*
No ___

Has employee received proper class of training to correspond to the job to be performed?
Yes ___
No ___…***Employee to receive training prior to assignment***

Delphi Host: Name(print) _____ Signature _____

*Keep copy 1 yr. and forward original to 7A Safety and copy to 7A Security*

# *Subcontractors*

***List any subcontractors that will be working directly under the primary Contractor.***