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# MUNICIPAL INFRASTRUCTURE AND IDP HOUSING REHABILITATION PROJECT

**HEALTH AND SAFETY PLAN**

**CONTRACT: AID-EDH-I-00-08-00027-00, TASK ORDER: AID-114-TO-11-00002**

**28 APRIL 2012**

This document was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech for the Municipal Infrastructure and IDP Housing Rehabilitation Project, Task Order number AID-114-TO-11-00002 under the USAID Architectural and Engineering (A&E IQC).



# MUNICIPAL INFRASTRUCTURE AND IDP HOUSING REHABILITATION PROJECT

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**Health and Safety Plan (Draft)**

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ORDER: AID-114-TO-11-00002**

**28 APRIL 2012**

**Prepared by:  
Michael McGovern, PE  
Sr. Construction Manager /Engineer**

## DISCLAIMER

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May 6, 2012

Mr. Bradley Carr  
Water Irrigation and Infrastructure Advisor  
Office of Economic Growth  
US Agency for International Development  
11 George Balanchine Street  
Tbilisi, 0131  
Georgia

Re: Health and Safety Plan for the Municipal Infrastructure and IDP Housing Rehabilitation Project

Dear Mr. Carr:

This report is being submitted to you in accordance with the requirements of task order no. AID-114-TO-11-00002 of contract AID-EDH-I-00-08-00027-00. It provides Tetra Tech's Health and Safety Plan for the Municipal Infrastructure and IDP Housing Rehabilitation Project.

We look forward to your review and welcome your comments and suggestions.

Very truly yours,

A handwritten signature in black ink that reads 'Jeffrey W. Fredericks'.

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Chief of Party  
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CC: USAID (George Kokochashvili); MDF (Kartlos Gviniashvili); Tetra Tech (Firouz Rooyani, Dean White, Tom Chicca, Ilia Eloshvili)

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## ACRONYMS

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CCN	Cooperating Country National
CFR	Code of Federal Regulations
CO	USAID Contracts Office
COP	Chief Of Party
DCOP	Deputy Chief Of Party
DRC	Danish Refugee Council
EA	Environmental Assessment
EC	European Commission
EIA	Environmental Impact Assessment
EPI	Economic Prosperity Initiative USAID Project
ESS	Environmental Scoping Statement
GEL	Georgian Lari
Geo	Geo Ltd
GMIP	Georgia Municipal Infrastructure And IDP Housing Rehabilitation Project (the project)
GoG	Government of Georgia
HO	Home Office
ICRC	International Committee of the Red Cross
IDP	Internally Displaced Persons
IL	Implementing Letters
Kav	Kavgiprotransi-Mg Ltd
KfW	Kreditanstalt für Wiederaufbau (German International Development Banking Agency)
LTTA	Long Term Technical Assistance
MDF	Municipal Development Fund
MLHSA	Ministry of Labor Health and Social Affairs
MRA	Ministry of Refugee Affairs
MRDI	Ministry of Regional Development and Infrastructure
NEO	New Economic Opportunities (USAID Project)
NGO	Non-Government Organization
NTP	Notification to Proceed
PE	Licensed Professional Engineer
PEA	Programmatic Environmental Assessment
PMC	Project Management Committee
PMP	Performance Monitoring Plan
SDC	Swiss Agency for Development and Cooperation
SIDA	Swedish International Development Corporation Agency
SOW	Scope of Work
STTA	Short Term Technical Assistance
TBD	To Be Determined
TOCOTR	USAID Task Order Cognizant Technical Officer
Tt	Tetra Tech
UNHCR	United Nations High Commissioner for Refugees
UNTC	United Nations Treaty Commission
USAID	United States Agency For International Development
USG	U.S. Government
WB	World Bank

# **Municipal Infrastructure and Irrigation and IDP Housing Rehabilitation Project**

## **Health and Safety Plan**

### **I. Description of the Project**

Under the United States Agency for International Development (USAID)/ Caucasus – Municipal Infrastructure and IDP Housing Rehabilitation Project (GMIP) Contract No. AID-EDH-I-00-08-00027-00 Order No: AID-I 14-TO-I 1-00002, Tetra Tech (Tt) is responsible for providing support to monitor current processes and practices, identify and mitigate areas of risk, and carry out oversight and quality control efforts to ensure that selected municipal and Internally Displaced Persons (IDP) infrastructure projects are implemented effectively and in accordance with U.S. and Georgian standards and regulations.

The major purpose of this project is to improve the infrastructure in five selected municipalities - Dusheti, Mtskheta, Gori, Kareli, and Oni, (See **Appendix A**) affected during Russian Georgian conflict in 2008 and improve living standards for nearly 4,000 houses constructed by the GoG without running water or sewer systems for IDPs from the August 2008 conflict, to provide each house with a shower, sink, toilet, water taps and other renovation as necessary. The funds will also be used to upgrade existing IDP shelters and redevelop buildings for use as durable housing for IDPs from previous conflicts. Funding will also support various other activities focused on ensuring overall sustainability of IDP housing.

Activities performed under this task order will complement and reinforce the activities, project management, and engineering expertise of USAID/Georgia and its implementing partners. From 2010 to 2013, USAID/Georgia will undertake works in the infrastructure sector in collaboration with the GoG's Municipal Development Fund (MDF) to upgrade municipal infrastructure in targeted municipalities, to install and extend irrigation channels, and to upgrade IDP housing. Municipal infrastructure and irrigation rehabilitation will be implemented through an agreement with the MDF, and the IDP housing will be implemented through a separate agreement with this same agency. Tt will be expected to form a close working relationship with the MDF in the implementation of both projects, accompanying the MDF in all phases of the project and providing monitoring and oversight services to the MDF and USAID.

The purpose of this award is to monitor current processes and practices, identify and mitigate areas of risk, and carry out oversight and quality control efforts to ensure that selected infrastructure projects are implemented effectively and in accordance with U.S. and Georgian standards and regulations. Efforts will not duplicate work that MDF does or might perform under its agreement with USAID. The monitoring and oversight role will encompass all areas of project intervention, from procurement planning to final acceptance. It will help to ensure that infrastructure deliverables are effective, efficient, and sustainable and that implementation is carried out within allowable budgets, time restraints, and within accepted quality standards.

### **2. Health and Safety Plan Introduction**

This plan supersedes any prior Health and Safety Plans for the proposed work and it will be revised as any changes in site conditions or the overall implementation environment warrant. Revisions

must be made in writing and approved by Tetra Tech COP and Health and Safety Officer prior to implementation change. All Tetra Tech personnel and personnel under subcontract to Tetra Tech working on GMIP in Georgia shall read and sign a certification (see **Appendix B**) that they have read, understand and will comply with the conditions of this Health and Safety Plan.

The GMIP Safety Officer is a staff position designated by the COP. The GMIP Safety Officer is responsible for ensuring that Tetra Tech GMIP direct and subcontracted personnel in any Tt GMIP office and any Tt GMIP site have read and signed the Health and Safety Plan certification; that this plan has been given to them, they have read it and understand it and that they will comply with the provisions of this plan. The GMIP Safety Officer has the authority to enforce the conditions and the implementation of this plan by GMIP staff and subcontractors. This includes the authority to stop GMIP work and/or to ask GMIP personnel to disengage from work or leave a work site if they do not comply with the provisions of this plan or if hazards arise that this plan does not consider or that in the opinion of the Safety Officer, the staff member is unprepared for in terms of his own safety or of others. If the GMIP Safety Officer is absent or cannot be present from the office or any work site, it is the GMIP Safety Officer's responsibility to delegate responsibility to another employee who will be present for Health and Safety Plan enforcement as he/she sees fit.

This Health and Safety Plan addresses the work and travel and actions and activities of both Georgian national and expatriate GMIP staff including work carried out in GMIP offices and vehicles and during working hours. It includes the physical hazards associated with local and foreign travel during proposed work, hazards in remote locations, heat stress, biological hazards, and security issues. It also offers safety measures that staff shall follow and with which staff shall comply. All GMIP staff, both Georgian host country and expatriate staff whether they have signed the certification sheet or not are bound by the terms and conditions of this plan during any official work time, in GMIP vehicles, in GMIP offices, on GMIP construction sites, or on any GMIP business.

#### **a. Tetra Tech Corporate Health and Safety Plan**

In the event that any material, direction, or advice included in this document is in conflict with any part of the corporate Tetra Tech Health and Safety Manual, it shall be brought to the attention of the COP and/or the Safety Officer for their determination as to which applies. This plan is also written to be in general agreement and conformance with the Tetra Tech corporate plan and also to include the same "safety first" spirit. To that end, **Appendix E** includes reprinted sections from the corporate plan to expand upon themes and material presented in the body of this GMIP plan.

#### **b. Educate Yourself – A Culture of Safety**

The culture of any office determines the vitality of an organization. The office safety culture is a subset of the corporate culture. Each office culture and each safety culture is unique and for GMIP both the office culture and its safety culture are determined by its individual staff members as a group. While it is crucial for GMIP leaders to lead by example when it comes to managing GMIP operations in light of the importance of the Health and Safety Plan, it is equally important for each staff member to realize that he / she plays a major role in the preventing illness and accidents in their GMIP work by adherence to good health and safety habits. This Plan attempts to set out some of these habits and calls for compliance to others. In the end however, it is simply incumbent upon each GMIP staff member to educate themselves about safety and to practice safe work all the time, every day. The loss of life or injury to accident can be prevented. No accident should ever be an acceptable outcome to any GMIP staff member. It has never been easier for anyone to educate themselves about safety as it is today. A simple

perusal of the internet will fill any gap, answer any question about safety that anyone has. Tetra Tech not only encourages, it expects its staff to educate themselves about safety.

### 3. General GMIP Project and Project Staff Information

Project Number: EDH-I-00-08-00027-00  
Project Name: Municipal Infrastructure and IDP Housing Rehabilitation Project  
Location: Project Office 10<sup>th</sup> Floor 154 Agmashenebeli Ave. Tbilisi, 0112, Georgia Tel: +995-322910401, Fax: +995-322910401

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#### 4. Emergency Information and Phone

Fire Department:	111
Police Department	122
Ambulance	113
USAID Main	+995322544000
US Embassy	+995322277000
International Code	+995

#### 5. Hazard Assessment

The hazards that could exist in the GMIP offices, other offices, while travelling or at construction sites during field activities can be grouped into the following categories:

- Physical Hazards
  1. Office Environments
  2. Construction Sites
  3. Other Site Visits
- Biological and Chemical Hazards
- Heat Stress
- Travel and Security Issues

The dangers that can be attributed to these hazards are discussed in the following section.

## 6. Physical Hazards

The greatest hazards to which GMIP staff may be exposed to are briefly discussed below.

- **Office Environments:** Hazards in the GMIP offices are numerous with the largest ones including possible electrical shocks, exposure to surfaces or edges that can cut or abraded skin, and/or mechanical equipment. **Appendix C** includes an Office Hazard Checklist that must be completed and acted upon semi-annually by the GMIP Safety Officer. All staff should read the Checklist to make themselves aware of and avoid unsafe office conditions.
- **Construction Sites:** GMIP staff on GMIP construction sites shall abide by both the GMIP Health and Safety Plan terms and conditions and the Construction Contractor's Safety Plans. In the event of a conflict, the Contractor's Safety Plan overrules the GMIP Safety Plan. However, if there is any question that the conflict puts GMIP staff in an unsafe position due to this situation; GMIP staff shall contact the GMIP Safety Officer for guidance.

Hazards on construction sites are numerous and changing over time. They include falling objects, flying objects, debris on the ground, materials in storage/transport or temporary storage near construction activities, ladders, temporary walkways, scaffolding, operating power and hand equipment, construction vehicles, open trenches and other excavations.

All GMIP staff on Construction sites shall wear protective clothing and equipment as noted in the following section on protective clothing.

- **Other Site Visits:** During most site visits hazards are related to debris at site and to a much lesser flora and fauna. Personnel should always be aware of their local surroundings and potential hazards. When on non GMIP construction sites where construction is in progress, personnel should maintain a safe distance away from the machinery and overhead construction and should abide by any other safety rules and regulations that may be in force by or through other agencies.

## 7. Biological and Chemical Hazards

Poisonous plants and some venomous and dangerous snakes are potentially present at the project sites and Tt staff should be aware to avoid exposure to these plants and to avoid walking in areas of high grass without staying alert. It is important that personnel are aware of their surroundings and are cognizant of biological hazards in the area, especially as medical facilities are sparse and anti-venom medicine may not exist. Other biological hazards include insect bites and stings. Personnel should wear proactive clothing and use bug spray to minimize exposure to these hazards. If personnel are allergic to these hazards, alert the GMIP Safety Officer prior to making field trips or site visits. Make such notices during pre-trip briefings including requests for re-assignment or to make provisions for additional pre-cautions and first aid.

Chemical hazards may exist at old or abandoned industrial sites in Georgia. Hazardous liquid and/or solid chemical wastes may be stockpiled or dumped on or near these sites and Tt staff should be alert to the existence of such areas and avoid them. In the event such areas are encountered, Tt staff shall make a report of such on the Safety Incident Report. Further many older buildings that are included under the GMIP for rehabilitation may have been constructed with hazardous materials such as asbestos. Tt staff is advised to avoid or if they must enter, wear respirators in these buildings during demolition activity.

## 8. Heat Stress

Warm weather may become a health factor if the temperature is over 30 Celsius. The following are some heat-related problems that could be issues for GMIP Tt staff:

- **Heat Rash.** Caused by continuous exposure to heat and humid air, and aggravated by chafing clothes. Decreases ability to tolerate heat, as well as being nuisance.
- **Heat Cramps.** Caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs and symptoms: muscle spasm and pain in the extremities and/or abdomen.
- **Heat Exhaustion.** Caused by increased stress on various organs to meet increased demand to cool the body. Signs and symptoms: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness; and lassitude. After the body begins to return to normal, sudden and extreme cooling may occur.
- **Heat Stroke.** The most severe form of heat stress. Body must be cooled immediately to prevent injury and/or death. Signs and symptoms: red, hot, dry skin; no perspiration; nausea, dizziness, and confusion; strong, rapid pulse; coma. Obtain medical help immediately!

If work is to be conducted during weather with a temperature over 25 Celsius, the following precautions should be taken for Tt staff wearing personal protection equipment:

- Increase fluid intake by drinking water or sports drink. Coffee, tea, or carbonated beverages are not recommended.
- Adjust the work schedule to early morning or evening to avoid periods of extreme heat.
- Shorten work periods in conformance with American Conference of Governmental Industrial Hygienists (ACGIH) guidelines. Take periodic breaks in a cool, shaded place.
- Wear appropriate sun protective clothes and lotions.

## 9. Travel and Security

All personnel involved in field work must be mentally and physically fit for the tasks required. Expatriate Tetra Tech staff must receive medical clearances prior to departure from USA. In some cases, the employee's general health or travel destination may present health risks associated with poor sanitation, food preparation, and diseases endemic to the area or the expected tasks associated with the travel. To minimize these risks, Tetra Tech recommends employees use caution drinking locally available potable water, carry bottled water or water that is known to be safe. Further, GMIP employees are warned to pay close attention to food purchases and preparation. Food preparation should be done with food that is known to be cleaned in an acceptable sanitary manner by responsible individuals or in responsible establishments.

Also the political and security situation near Abkhazia and South Ossetia remains unpredictable, and a number of attacks, criminal incidents, and kidnappings have occurred in and around these regions over the past several years. GMIP staff needs to exercise caution while travelling near these areas. Political demonstrations take place from time to time in Tbilisi and in other cities in Georgia. While

these demonstrations are generally peaceful, some confrontations between the government and protesters have occurred. Staff should be aware that even peaceful demonstrations can escalate into violence with little or no notice and should attempt to stay clear of such demonstrations while on duty.

Review your security practices and be aware of your surroundings at all times. Expatriate staff are advised to be aware of your surroundings and consider varying your regular travel times and routes, especially from places of residence to work locations. Maintain a low profile – do not carry large amounts of cash or otherwise draw unnecessary attention to yourself is normally good advice when in questionable areas.

#### **a. Working in Remote Areas**

As many project and construction sites are in remote locations, traveling long distances can sometimes present some difficulty in logistics. Tt personnel need to be aware of potential hazards and prepare for travel delays and attendant issues. Staff on overnight trips is required to check in daily with the project manager, administrative assistant, and/or COP/DCOP. The project vehicle must have adequate supplies and tools to change a tire and emergency supplies. Tt staff should ensure their vehicle is properly stocked and in sound mechanical condition. Only Tt designated drivers are allowed to drive Tt project vehicles. When working in remote locations where emergency care clinics might be distant, it is a good idea also that a member of the field trip team be certified in First Aid/CPR training.

#### **b. Carry With You**

The following items should be on or about you at all times:

- Expatriates – Two copies of your passport and foreign driver’s license
- Project business cards and project ID
- Fully charged cell phone and 220 charger if on travel
- Minimum 200 GEL – small denomination notes when on field trips, plus funds necessary to pay for food and lodging
- Flashlight with fresh batteries– when on field trip

#### **c. Vehicle Travel**

It is recommended that GMIP staff traveling throughout the country do so during daylight hours only and provide a travel itinerary and contact telephone numbers to the COP/DCOP and/or the Administrative Assistant each day especially if any changes in itinerary or schedule are anticipated. Any travel after official sunset time (see internet weather page for official time) must be agreed to by the GMIP COP or DCOP.

Vehicular traffic in Georgia moves along the right side of roadways. Speed limits range from 80 to 100 km/hour on highways, and from 30 to 60 km/hour on urban thoroughfares. Motorists are NOT permitted to make right turns at red traffic lights. Front seat passengers are required by law to fasten their seat belts in moving vehicles. GMIP expatriates as well as Georgian staff should be aware that a driver with any blood-

alcohol concentration is considered to be driving under the influence of alcohol and will be subject to the full force of the law in regard to operating vehicles while intoxicated. GMIP Drivers are not permitted to drink alcohol while on duty and also shall not imbibe alcoholic beverages eight hours prior to driving a GMIP vehicle.

GMIP drivers should exercise extreme caution when driving in Georgia, as many drivers do not operate their vehicles in accordance with established traffic laws. Traffic signals and rules of the road are often ignored. Motorists are often sighted driving erratically, often recklessly, at excessive speeds. Motorists frequently encounter oncoming high-speed traffic attempting to pass other vehicles at blind turns or over hilltops. Pedestrians enjoy no right-of-way and need to be extremely careful when crossing streets. The Georgian Patrol Police, who come under the authority of the Ministry of Internal Affairs, are responsible for maintaining traffic safety in Georgia, but enforcement of traffic regulations is haphazard. There is no requirement that vehicles are certified safe to drive, and some vehicles may not have working headlights or tail lights.

Undivided two-lane roads connect most major cities in Georgia. Outside of major highways, roads can be in poor condition, unpaved, and they can lack shoulder and lane markings and lighting. In addition, traffic signals may not work due to poor maintenance. Driving at night can be especially dangerous. Travel on mountain roads is treacherous in both rain and snow, and during winter, heavy snowfalls may make some roads impassable.

GMIP Drivers shall drive the speed limit and drive in a “defensive” manner. GMIP passenger staff shall not interfere with the operation of GMIP vehicles but shall report drivers who are not in compliance with the GMIP Health and Safety Plan.

## 10. Safety Measures

### a. Protective Clothing

GMIP Staff shall wear protective clothing and equipment when on and around construction activities. Minimum protective clothing for any all construction site visits shall include:

- **Hard Hat:** Shall be MSA V-Gard Hard Hat with Ratchet Suspension, ANSI Z89.1-2003 Class E and G, or equal or better. It shall have the Tetra Tech Logo on the front of the hat. Tetra Tech staff shall not paint or deface the hat and must wear the hard hat at all times when in areas designated as “hard hat” areas or in all construction areas where there is no signage.
- **Protective Safety Glasses:** Delano Safety Glasses Clear-Black Frame with Anti-Reflective Lenses, ANSI Z87.1+ 2003, equal or better. Tt employees shall wear their glasses at all times when in “hard hat” designated areas or in all construction areas where there is no signage;
- **Colored Vest:** Radwear Orange ANSI Class 2 Surveyor Mesh Safety Vest or equal or better. Tt employees shall wear their vests at all times when in “hard hat” designated areas or in all construction areas where there is no signage.

- **Leather Shoes:** Tt employees shall wear leather or better material (uppers) work shoes with substantial leather or composite rubber soles when performing visits on construction sites that will deflect dropped objects and protect feet from accidental bumping or blows and offers non-slip soles. Athletic footwear is not permitted for use on construction sites by Tt employees.
- **Hearing Protection (Optional):** Tt Employees shall carry at least three pair of foam disposable ear plugs(equal or better) when on site and they shall use them when standing near or about loud impact / cutting equipment or heavy machinery that generates sustained high levels of intense noise that lasts more than five minutes.
- **Respirator (Optional):** When Tt employees are present during construction activities that generate dust, such as concrete batching, wood, steel or concrete cutting, building demolition, etc. they shall wear a respirator such as the North Safety N95 Respirator Masks or equal or better that meets applicable NIOSH standards.
- **Steel Toed Shoes (Optional):** When Tt employees are conducting inspections or in certain high construction activity areas, they may consider or be directed to use steel toed shoes that comply with ANSI Z41.1-1991 or equal. Such direction shall be made by the Safety Officer.
- **Protective Leather Gloves (Optional):** Memphis Black Multi-Task Gloves, equal or better, When Tt employees are conducting inspections or in certain high construction activity areas, they may consider or be directed to have a pair of leather (or equal/better material gloves) and use them during their inspection activities as needed to protect hands and fingers.
- **Other Protective Clothing Equipment (Optional):** Tt employees may be required or asked to wear other specialized equipment by Contractor Safety Officers or by the GMIP Safety Officer if and when they are inspecting or observing certain construction activities such as steel cutting, welding, the use of other torch equipment or when climbing. Tt employees are expected to consult with Safety Officers if they have any questions about such activities or equipment requirements.

#### **b. Office and Vehicle Equipment and Inspections**

The Safety Officer shall ensure that all GMIP vehicles have a large secure box with the following items/; eight liters of potable water, a well-equipped first aid kit, and two emergency heavy duty flashlights with extra batteries, a small tool kit, and a fire extinguisher. He /she shall also ensure that each vehicle has been regularly maintained and is fit for travel. He /she shall ensure that all tires have an acceptable amount of tread as defined by the tire manufacturer to permit long term highway driving. He / she shall also ensure that the spare tire is in good condition, that there is a working jack and tire iron, and that the driver has experience changing a flat tire (every GMIP driver shall change a tire once each six months for the Safety Officer to demonstrate this skill and the Safety Officer shall keep a record of this test).

The Safety Officer shall ensure that there is a well-stocked and appropriate First Aid kit in all GMIP Offices. He / she shall ensure that it is up to date and that it periodically is

re-stocked. He / she shall also ensure that there are at least three portable fire extinguishers in every GMIP Office and that they are all regularly charged and inspected.

### **c. High Risk Construction Work**

The following works are designated as 'High Risk Construction Works'. GMIP employees shall not approach closer than 25 meters to any of these activities or work without an appropriate approved 'Safe Work Method Statement' (SWMS) prepared by a Contractor or by the GMIP Safety Officer and confirmed to be adequate in the specific circumstances of the site/work (approved by the Safety Officer and COP). Staff must be trained in the use of the safe work method statements. The 18 specified high risk areas are as follows:

1. Where there is a risk of a person falling more than two metres;
2. On telecommunications towers;
3. Involving demolition;
4. Involving the removal or likely disturbance of asbestos;
5. Involving structural alterations that require temporary support to prevent collapse;
6. Involving a confined space;
7. Involving a trench or shaft if the excavated depth is more than two metres;
8. Involving a tunnel;
9. Involving the use of explosives;
10. On or near pressurised gas distribution mains or piping;
11. On or near chemical, fuel or refrigerant lines;
12. On or near energised electrical installations or services;
13. In an area that may have a contaminated or flammable atmosphere;
14. Involving tilt-up or precast concrete;
15. On or adjacent to roadways or railways used by road or rail traffic;
16. At workplaces where there is any movement of powered mobile plant;
17. In an area where there are artificial extremes of temperature;
18. In, over or adjacent to water or other liquids where there is a risk of drowning;

SWMSs shall include:

- A step by step description of how work is to be carried out.
- Identification of the safety risks involved with each step that have a potential to cause a "high degree of harm."
- A description of the control measures that will be applied to the work activities.
- A description of the equipment used in the work, the standards or codes to be complied with if applicable
- A description of the qualifications required for the personnel to do the work.

### **d. Safety Meetings**

It is the responsibility of the Safety Officer to schedule and lead a one half hour safety meeting each week in the main Tt GMIP office. The meeting will be scheduled at a time when maximum staff participation is expected, for instance Monday morning or Friday morning. The Safety Officer shall also record attendance and proceedings and post them to all GMIP staff. Topics to be covered every week shall include:

- Any and all accidents during the previous week.
- A brief lesson on a safety topic from the news or the internet.
- Any staff questions and answers.

Safety meetings are an opportunity for GMIP management and the Safety Manager to communicate to and with employees about how they can do their jobs safer and better. Staff should also recognize the opportunity to improve GMIP health and safety and energetically participate in these meetings. GMIP business is construction management and it can be dangerous.

#### **e. Health and Safety Plan Implementation and Review**

All Tt personnel must read this Health and Safety Plan, acknowledge their understanding by affixing their signature on the following signature page. This signed copy will be kept with the field file. All GMIP Tt personnel are also encouraged to suggest any potential changes to this plan that they feel would improve it for themselves, their colleagues and the general public.

#### **f. Incident Reporting**

The Safety Officer or Chief of Party shall complete an incident report for all accidents and injuries to Tetra Tech staff and sub-contractors. Reporting forms IR-A for injuries IR-C for vehicle accidents and IC are included in **Appendix C**.

Reporting shall be completed within 72 hours of incident and submitted to the Chief of Party for further disposition.

## **II. APPENDICES**

- A. Map of Georgia
- B. Certification Form
- C. Office Safety Inspection Checklist
- D. Safe Work Method Statement Template
- E. Excerpts from Tetra Tech Corporate H&S Manual
  - 1. Incident Form IR-A
  - 2. Vehicle Incident Form IR-C
  - 3. General Safe Work Practices for Field Work Form SWP 5-1
  - 4. General Safe Work Practices for Office Employees Form SWP 5-3
  - 5. Travel Program 2-18
  - 6. Biohazard Safety Form SWP 5-17
  - 7. Prevention of Sun Exposure Form SWP 5-26

## APPENDIX A – MAP of GEORGIA



**APPENDIX B – CERTIFICATION FORM**

**Mamuka Shaorshadze**

EHS Specialist

Tetra Tech/USAID

Municipal Infrastructure and IDP Housing Rehabilitation Project (GMIP)

10th Floor, 154 Aghmashenebeli Ave.

Tbilisi, 0102, Georgia

**SUBJECT: Health and Safety Plan Certification of Receipt and Understanding**

This is to certify that I have received a copy of the subject document, have read and understand it and will comply with its terms and conditions.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

## APPENDIX C – Office Safety Inspection Checklist

Date of Inspection: \_\_\_\_\_

Inspection by: \_\_\_\_\_

*The inspector shall carry out an inspection of the entire office and all office spaces used and travelled in by GMIP staff and check the appropriate box and note any and all unsafe conditions. Any items checked in a shaded box shall have an explanatory note at the bottom of the form (use back of pager if needed). The inspection then shall be presented to the GMIP Safety Officer and COP and they shall take action to correct any unsafe conditions. This form and any follow on messages or correspondence in this regard shall be properly filed by the GMIP Safety Officer*

#	ITEM DESCRIPTION AND QUESTION	YES	NO	N/A
1	Are floor surfaces chipped and uneven? Are there broken door jambs? Does carpeting show worn spots or holes?			
2	Are aisles or walkways too narrow to prevent easy movement?			
3	Are electric and telephone cords placed where they might trip a passerby?			
4	Do any power cords or extension cords appear in poor condition? Has any employee received an electrical shock within the past 60 days in the office?			
5	Are power strips plugged into other power strips?			
6	Do electrical cords look frayed or damaged? Are they draped around hooks or sharp edges, or are they stepped on?			
7	Do electric outlet boxes or power strips on the floor pose a tripping hazard?			
8	Are employees allowed to stand on chairs, desk, drawers, or other improvised ladders?			
9	Does the Office First Aid Kit need to be replenished?			
10	Do employees wear dangling jewelry or floppy clothing around moving machinery (i.e. wearing ties while using shredders)?			
11	Are employees allowed to run in the office?			
12	Are there unsafe or unhealthy conditions in the employee bathrooms or kitchen including the refrigerator? Are bathroom door locks and handles working properly?			
13	Are scissors, knives, razor blades improperly stored and used?			
14	Are office and/or office building stair hand-rails, treads and risers in poor condition? Are there any dark spots on stairways or lights out?			
15	Is there any litter on floors and stairs like paperclips and scraps, etc. and liquid spills?			
16	Are desk or file drawers left open?			
17	Are files top heavy, with empty drawers at the bottom and full drawers on top?			

#	ITEM DESCRIPTION AND QUESTION	YES	NO	N/A
18	Are Office Door locks and handles working properly?			
19	Are there a Fire and/or Emergency Evacuation Plan posted in the Office?			
20	Are there fire extinguishers in the Office and are they properly charged?			
21	Do all employees know the location of exits, alarms, and fire pull stations? Are key personnel trained to use fire extinguishers?			
22	Do employees take caution to avoid spills while carrying liquids through the office? Are spills cleaned up promptly?			
23	Are all flammable materials stored in metal cabinets and nonflammable fluids used whenever possible?			
24	Are heating elements (coffee makers, portable electric heaters) safely used, stored and inspected on a regular basis?			
25	Are fire drills conducted frequently (semi-annually)?			
26	Do fire doors close during alarm or power outage?			
27	Are employees instructed in the proper lifting techniques?			
28	Are all accidents promptly reported? And do employees know who to report accidents to?			
29	Is there a procedure to assist people who may be trapped in an elevator and advice of elevator malfunctions? Are these procedures posted?			
30	Are all elevator landings posted "Do not use elevator during an emergency or fire"?			
31	Are employees aware of the written safety program and are evacuation maps posted?			

**EXPLANATION / RECOMMENDATION**

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## APPENDIX D – Safe Work Method Statement Template

### GMIP Safe Work Method Statement

*This SWMS is an activity specific statement that must be prepared and approved before a Tetra Tech staff member is in the vicinity of any high-risk construction work. See the directions at the end of the form for help completing it.*

<b>Person Responsible</b> for ensuring compliance with this SWMS:	Safety Officer:	<b>Date:</b>
	COP:	
	Other:	
<b>High-Risk Job:</b>	<b>Location:</b>	
<b>What Are the Tasks Involved?</b> <i>(Think about the worksite and each stage of the high risk activity including preparation and clean-up, entering and exiting.)</i>	<b>What Are the Hazards and Risks?</b> <i>(Possible Death, Possible Injury, Possible Illness, WITH description of hazard and level of risk – HIGH, MEDIUM, LOW</i>	<b>How Will Hazards and Risks Be Controlled?</b> <i>(Describe the control measures, how It will improve staff safety)</i>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

#### Steps for Filling Out SWMS

1. While Tt staff enters the construction worksite as Visitors and Observers, they are still exposed to the dangers of “high risk construction” and need to take their own precautions simply being around these activities. Many times simply maintaining a safe distance may be sufficient but in others Tt staff needs to observe closely and may need special equipment, clothing, or even training.
2. In the ‘What are the tasks involved?’ column, list the inspection/observation work tasks in sequence to how they will be carried out.
3. In the ‘What are the hazards and risks?’ column, list the hazards and risks for each work task.
4. In the ‘How will the hazards and risks be controlled?’ column, select the hazard or risk and then work through the control levels 1 – 4 from top to bottom. Choose a control measure (and how it is to be used) that is as close to level 1 as is reasonably practicable.
  - a. If the proposed Control Measure includes a Safety Standard or practice from a documented Safety Code, provide the reference number in this column.
  - b. If the proposed Control Measure includes equipment or clothing, describe it adequately.
  - c. If training is required, describe the formal training program and qualifications that must be obtained by the Tt staff member prior to inspecting / observing the work.

#### Control Levels

1. **Eliminate** any risk to health or safety associated with construction work.
2. **Reduce** the risk to health or safety by any one or any combination of the following:
  - **Substituting** a new activity or procedure
  - **Isolating** persons from the hazard, such as barricading and/or fencing
3. **Use administrative controls**, such as changing the way the inspection / observation is done, or training staff
4. **Provide appropriate personal protective equipment.**
5. Brief each Tt staff member on this SWMS before commencing work. Ensure they know that they should stop their work if the SWMS is not being followed.
6. Tt staff should know that if their activities are being carried out and the controls are not adequate, they should stop their work, review the SWMS with the Safety Officer, adjust as required and the Safety Officer should re-issue the SWMS.

## **APPENDIX E – Excerpts from Tetra Tech Corporate H&S Manual**

1. Incident Form IR-A
2. Vehicle Incident Form IR-C
3. General Safe Work Practices for Field Work Form SWP 5-1
4. General Safe Work Practices for Office Employees Form SWP 5-3
5. Travel Program 2-18
6. Biohazard Safety Form SWP 5-17
7. Prevention of Sun Exposure Form SWP 5-26

I. Incident Form IR-A



TETRA TECH, INC.  
INCIDENT FORM IR-A

INSTRUCTIONS:	
Complete all sections below for incidents involving injury or illness. Do NOT leave any blanks. Attach this form to the IR FORM completed for this incident.	
Incident Report Number: (From the IR Form)	
EMPLOYEE INFORMATION	
Company Affiliation	
Tetra Tech Employee? <input type="checkbox"/>	TetraTech subcontractor employee (directly supervised by Tt personnel)? <input type="checkbox"/>
Full Name	Company (if not Tt employee)
Street Address, City, State and Zip Code	
Address Type	
	Home address (for Tt employee) <input type="checkbox"/>
	Business address (for subcontractors) <input type="checkbox"/>
Telephone Numbers	
Work: _____	Home: _____ Cell: _____
Occupation (regular job title)	Department
Was the individual performing regular job duties? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Time individual began work _____ AM <input type="checkbox"/> PM <input type="checkbox"/> OR Cannot be determined <input type="checkbox"/>	
Safety equipment	
Provided? Yes <input type="checkbox"/> No <input type="checkbox"/>	Type(s) provided: <input type="checkbox"/> Hard hat <input type="checkbox"/> Protective clothing
Used? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, explain why _____	<input type="checkbox"/> Gloves <input type="checkbox"/> High visibility vest
_____	<input type="checkbox"/> Eye protection <input type="checkbox"/> Fall protection
_____	<input type="checkbox"/> Safety shoes <input type="checkbox"/> Machine guarding
_____	<input type="checkbox"/> Respirator <input type="checkbox"/> Other (list) _____
NOTIFICATIONS	
Name of Tt employee to whom the injury or illness was first reported	Was H&S notified within one hour of injury or illness? Yes <input type="checkbox"/> No <input type="checkbox"/>
Date of report	H&S Personnel Notified
Time of report	Time of Report
If subcontractor injury, did subcontractor's firm perform their own incident investigation? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, request a copy of their completed investigation form/report and attach it to this report.	

INJURY / ILLNESS DETAILS			
<b>What was the individual doing just before the incident occurred?</b> Describe the activity as well as the tools, equipment, or material the individual was using. Be specific. Examples: "Climbing a ladder while carrying roofing materials"; "Spraying chlorine from a hand sprayer"; "Daily computer key-entry" <hr/> <hr/> <hr/>			
<b>What Happened?</b> Describe how the injury occurred. Examples: "When ladder slipped on wet floor and worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time" <hr/> <hr/> <hr/>			
<b>Describe the object or substance that directly harmed the individual:</b> Examples: "Concrete floor"; "Chlorine"; "Radial Arm Saw". If this question does not apply to the incident, write "Not Applicable". <hr/> <hr/>			
MEDICAL CARE PROVIDED			
Was first aid provided at the site: Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, describe the type of first aid administered and by whom? <hr/>			
Was treatment provided away from the site: Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, provide the information below:			
Name of physician or health care professional	Facility Name		
Street Address, City State and Zip Code	Type of Care?		
Telephone Number	Was individual treated in emergency room? Yes <input type="checkbox"/> No <input type="checkbox"/> Was individual hospitalized overnight as an in-patient? Yes <input type="checkbox"/> No <input type="checkbox"/> Did the individual die? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, date: _____ Did Ambulance respond? Yes <input type="checkbox"/> No <input type="checkbox"/> Will a worker's compensation claim be filed? Yes <input type="checkbox"/> No <input type="checkbox"/>		
NOTE: Attach any police reports or related diagrams to this report.			
SIGNATURES			
I have reviewed this report and agree that all the supplied information is accurate			
Affected individual (print)	Affected individual (signature)	Telephone Number	Date

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

## 2. Vehicle Incident Form IR-C

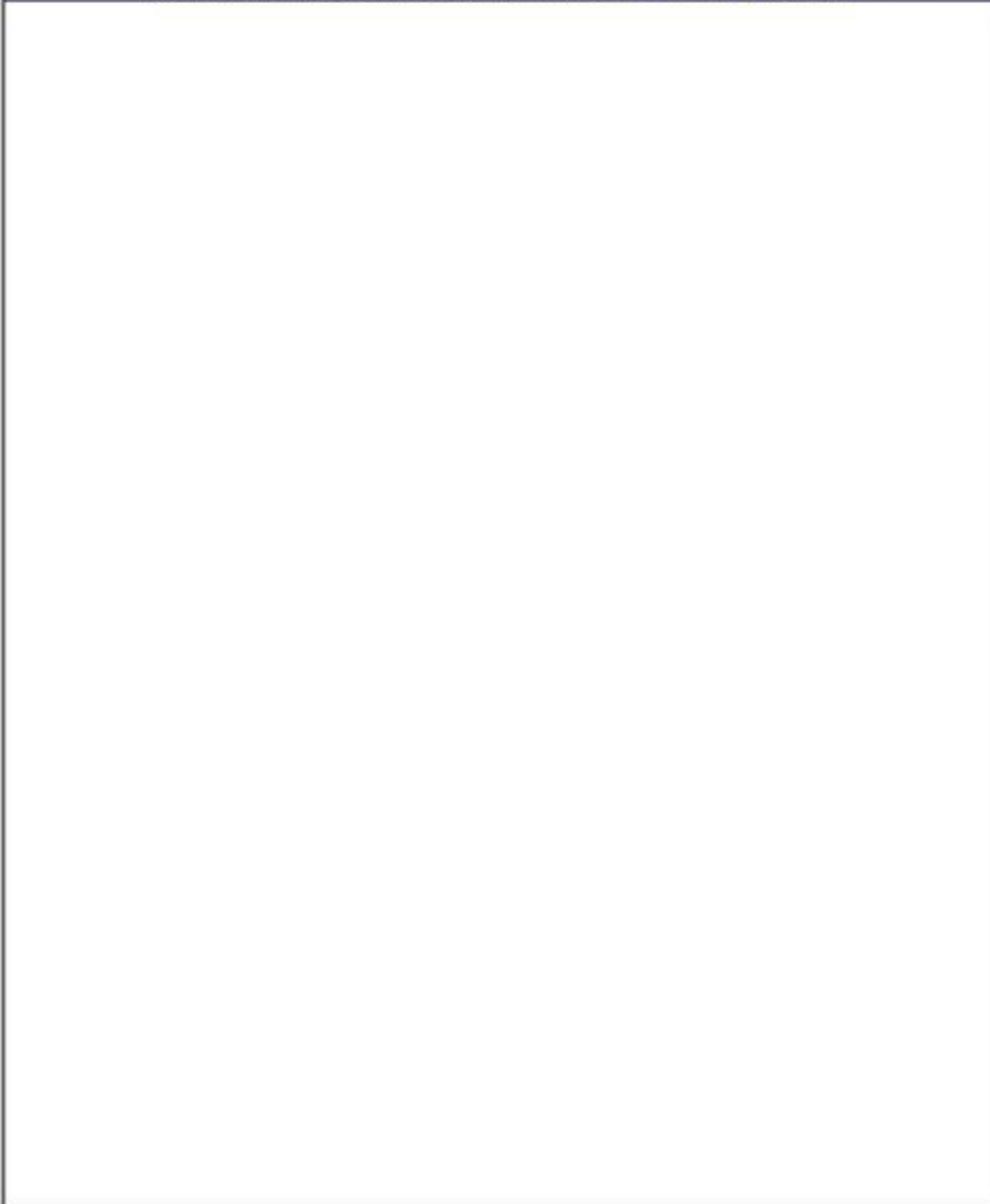


TETRA TECH, INC.  
INCIDENT FORM IR-C

<b>INSTRUCTIONS:</b>			
Complete all sections below for incidents involving motor vehicle accidents. Do NOT leave any blanks. Attach this form to the IR FORM completed for this incident.			
Incident Report Number: (From the IR Form)			
<b>INCIDENT DETAILS</b>			
Name of road, street, highway or location where accident occurred		Name of intersecting road, street or highway if applicable	
County	City	State	
Did police respond to the accident?		Did ambulance respond to the accident?	
Yes <input type="checkbox"/> No <input type="checkbox"/>		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Name and location of responding police department		Ambulance company name and location	
Officer's name/badge #			
Did police complete an incident report? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, police report number: _____ Request a copy of completed investigation report and attach to this form.			
<b>VEHICLE INFORMATION</b>			
How many vehicles were involved in the accident? _____ (Attach additional sheets as applicable for accidents involving more than 2 vehicles.)			
Vehicle Number 1 – Tetra Tech Vehicle		Vehicle Number 2 – Other Vehicle	
Vehicle Owner / Contact Information		Vehicle Owner / Contact Information	
Color		Color	
Make		Make	
Model		Model	
Year		Year	
License Plate #		License Plate #	
Identification #		Identification #	
Describe damage to vehicle number 1		Describe damage to vehicle number 2	
Insurance Company Name and Address		Insurance Company Name and Address	
Agent Name		Agent Name	
Agent Phone No.		Agent Phone No.	
Policy Number		Policy Number	

DRIVER INFORMATION						
Vehicle Number 1 – Tetra Tech Vehicle				Vehicle Number 2 – Other Vehicle		
Driver's Name				Driver's Name		
Driver's Address				Driver's Address		
Phone Number				Phone Number		
Date of Birth				Date of Birth		
Driver's License #				Driver's License #		
Licensing State				Licensing State		
Gender		Male <input type="checkbox"/> Female <input type="checkbox"/>		Gender		Male <input type="checkbox"/> Female <input type="checkbox"/>
Was traffic citation issued to Tetra Tech driver? Yes <input type="checkbox"/> No <input type="checkbox"/>				Was traffic citation issued to driver of other vehicle? Yes <input type="checkbox"/> No <input type="checkbox"/>		
Citation #				Citation #		
Citation Description				Citation Description		
PASSENGERS IN VEHICLES (NON-INJURED)						
List all non-injured passengers (excluding driver) in each vehicle. Driver information is captured in the preceding section. Information related to persons injured in the accident (non-T1 employees) is captured in the section below on this form. Injured T1 employee information is captured on FORM IR-A						
Vehicle Number 1 – Tetra Tech Vehicle				Vehicle Number 2 – Other Vehicle		
How many passengers (excluding driver) in the vehicle? _____				How many passengers (excluding driver) in the vehicle? _____		
Non-Injured Passenger Name and Address				Non-Injured Passenger Name and Address		
Non-Injured Passenger Name and Address				Non-Injured Passenger Name and Address		
Non-Injured Passenger Name and Address				Non-Injured Passenger Name and Address		
INJURIES TO NON-TETRATECH EMPLOYEES						
Name of injured person 1				Address of injured person 1		
Age	Gender	Car No.	Location in Car	Seat Belt Used?	Ejected from car?	Injury or Fatality?
	Male <input type="checkbox"/> Female <input type="checkbox"/>			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Injured <input type="checkbox"/> Died <input type="checkbox"/>
Name of injured person 2				Address of injured person 2		
Age	Gender	Car No.	Location in Car	Seat Belt Used?	Ejected from car?	Injury or Fatality?
	Male <input type="checkbox"/> Female <input type="checkbox"/>			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Injured <input type="checkbox"/> Died <input type="checkbox"/>
OTHER PROPERTY DAMAGE						
Describe damage to property other than motor vehicles						
Property Owner's Name				Property Owner's Address		

**COMPLETE AND SUBMIT DIAGRAM DEPICTING WHAT HAPPENED**



### 3. General Safe Work Practices for Field Work Form SWP 5-1

	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES FOR FIELD WORK</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-1</b>
		Page 1 of 3

To prevent injuries and adverse health effects, the following general safe work practices (SWP) are to be followed when conducting work involving known and unknown site hazards. These SWPs establish a pattern of general precautions and measures for reducing risks associated with field operations not conducted on hazardous waste sites. This list is not inclusive and may be amended as necessary.

- Be familiar with and knowledgeable of and adhere to all instructions in the construction health and safety plan (C-HASP), job safety analysis, job hazard analysis, work permit or other health and safety documentation.
- At a minimum, a safety meeting will be held at the start of each project to discuss the hazards of the site and site work. Additional meetings will be held, as necessary, to address new or continuing safety and health concerns.
- Be aware of the location of the nearest telephone and all emergency telephone numbers.
- Attend a briefing on the anticipated hazards, equipment requirements, SWPs, emergency procedures, and communication methods before going on site.
- Plan and delineate entrance, exit, and emergency escape routes.
- Rehearse unfamiliar operations prior to implementation.
- Use the "buddy system" whenever respiratory protection, fall protection, or other protective equipment is in use. Buddies should establish hand signals or other means of emergency communication in case radios break down or are unavailable.
- In order to assist each other in the event of an emergency, buddies should maintain visual contact with each other and with other on-site team members by remaining in close proximity.
- Do not bring nonessential vehicles and equipment onto the site.
- Immediately report all injuries, illnesses, and unsafe conditions, practices, and equipment to the site safety coordinator (SSC).
- Maintain a portion of the site field logbook as a project safety log. The project safety log will be used to record the names, entry and exit dates, and times on site of all Tetra Tech personnel, subcontractor personnel, and project site visitors; and other information related to safety matters.

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	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES FOR FIELD WORK</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-1</b>
		Page 2 of 3

- A portable eyewash station should be located in the support zone if corrosive materials are used or stored on the site.
- Smoking is not allowed on Tetra Tech projects sites, except in designated smoking areas.
- Do not bring matches and lighters in the exclusion zone or contamination reduction zone.
- Observe coworkers for signs of toxic exposure and heat or cold stress.
- Inform coworkers of nonvisual effects of illness if you experience them, such as headaches, dizziness, nausea, or blurred vision.
- Anyone known to be under the influence of drugs or intoxicating substances that impair the employee's ability to safely perform assigned duties shall not be allowed on the job while in that condition.
- Horseplay, scuffling, and other acts that tend to have an adverse influence on the safety or well-being of the employees is prohibited.
- Work shall be well planned to prevent injuries in the handling of materials and when working with equipment.
- No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness, or other causes that might unnecessarily expose the employee or others to injury.
- Use proper lifting techniques. Heavy objects will be lifted using the large muscles of the leg instead of the smaller muscles of the back.
- Wear appropriate footwear and all other protective equipment required for work.
- Cleanse thoroughly after handling hazardous substances.
- Maintain all tools and equipment in good condition.
- First aid kits shall be located in a prominent location and stocked with basic first aid supplies.

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	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES FOR FIELD WORK</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-1</b>
		Page 3 of 3

**Disclaimer:** This safe work practice (SWP) is the property of Tetra Tech, Inc. (Tetra Tech). Any reuse of the SWP without Tetra Tech's permission is at the sole risk of the user. The user will hold harmless Tetra Tech for any damages that result from unauthorized reuse of this SWP. Authorized users are responsible for obtaining proper training and qualification from their employer before performing operations described in this SWP.

Revision Date	Document Authorizer	Revision Details
10/1/2008	Chris McClain	NEW

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#### 4. General Safe Work Practices for Office Employees Form SWP 5-3

	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES for</b> <b>OFFICE EMPLOYEES</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-3</b>
		Page 1 of 6

To comply with the Tetra Tech, Inc. (Tetra Tech) Safety Policy, and Injury and Illness Prevention Program (IIPP), all employees shall comply with the safe work practices (SWP) discussed below, which apply to all office job classes.

- Do not leave filing cabinet drawers, kitchen cabinet doors, or office equipment cabinet doors open while the drawers or doors are unattended.
- When possible, fill filing cabinets from the bottom to the top to prevent tipping.
- Open only one drawer on a filing cabinet at a time to prevent tipping.
- Use only appropriate step stools and ladders to gain access to out-of-reach places.
- Never remove grounding wires from equipment and appliances.
- Do not overload electrical circuit boxes.
- Do not allow electrical cords, computer cables, and telephone wires to be tripping hazards.
- Tape down or insert into rubber protectors all cords in walkways.
- Anyone known to be under the influence of drugs or intoxicating substances that impair the employee's ability to safely perform assigned duties shall not be allowed on the job while in that condition.
- Horseplay, scuffling, and other acts that tend to have an adverse influence on the safety or well-being of the employees is prohibited.
- Work shall be well planned to prevent injuries in the handling of materials and when working with equipment.
- No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness, or other causes that might unnecessarily expose the employee or others to injury.
- Use proper lifting techniques. Heavy objects will be lifted using the large muscles of the leg instead of the smaller muscles of the back.
- Wear appropriate footwear.

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		Document Control Number:
		<b>SWP 5-3</b>
		Page 2 of 6

- Cleanse thoroughly after handling hazardous substances.
- Maintain all tools and equipment in good condition.
- First aid kits shall be located in a prominent location and stocked with basic first aid supplies.

Additional SWPs related to reporting, fire safety, housekeeping, equipment safety, chemical safety, vehicle safety, and earthquake safety are discussed below.

#### **Reporting**

- Report all unsafe conditions and equipment to the office health and safety representative (OHSR).
- Report all accidents, injuries, and illnesses to the OHSR or operations manager (OM) immediately.

#### **Fire Safety**

- Keep all means of egress (exits) unblocked, well lighted, and unlocked during work hours.
- Sound the alarm and evacuate in the event of fire.
- Upon hearing the fire alarm, stop work and proceed to the nearest clear exit. Gather at the designated location.
- Do not attempt to respond to a fire or other emergency unless properly trained.
- Exit doors must comply with fire safety regulations.
- Keep all stairways clear of items that can be tripped over.
- Do not store materials and equipment against doors or exits, fire ladders, or fire extinguisher stations.

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	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES for</b> <b>OFFICE EMPLOYEES</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-3</b>
		Page 3 of 6

#### Housekeeping

- Keep aisles clear at all times.
- Maintain work areas in a neat, orderly manner. Throw trash and refuse in proper waste containers.
- Store all field equipment in designated storage areas and not in offices.
- Wipe up all spills promptly.
- Store files and supplies in a manner that precludes damage to the supplies or injury to personnel when they are moved. Store the heaviest items closest to the floor and lightweight items above.

#### Work Station Set Up

- The computer keyboard should be located so that wrists are in a neutral posture while typing and at a height so that forearms are approximately parallel to the floor.
- Wrists should be supported by a wrist rest during pauses in typing.
- Input devices such as the mouse, touch pad etc. should be located to the side of the keyboard at the same height as or slightly higher than the keyboard.
- The monitor screen should be viewed without tilting the head up or down, close enough to read comfortably (about an arm's length from the eyes) and can be viewed by looking straight ahead.
- Feet should be touching the floor with a comfortable amount of space between the edge of the seat and the back of the knees.
- Desktop accessories (telephone, stapler, and manuals) should be within easy reach and arranged according to frequency of use.

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	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES for</b> <b>OFFICE EMPLOYEES</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-3</b>
		Page 4 of 6

#### Equipment Safety

- Plug all electrical equipment into appropriate wall receptacles or into only one extension cord of similar size and capacity. Use three-pronged plugs to ensure ground continuity.
- Keep individual heaters in work areas clear of combustible materials such as drapes or waste from waste baskets. Use newer heaters that are equipped with cutoff switches in case the heater tips over.
- Keep appliances such as coffee pots and microwaves in working order and inspect them for signs of wear or fraying cords.
- Fans used in work areas should be guarded. Guards must not allow fingers to be inserted through the mesh. (Newer fans are equipped with proper guards.)
- Use general office equipment such as scissors, staplers, and so on for their intended purposes only and not as hammers, pry bars, screwdrivers, or other tools. Misuse can cause damage to the equipment and possible injury to the user.
- Never clean or adjust machines while they are in operation.
- Remove equipment or machines in need of repair from service immediately and do not return them to use until they have been properly repaired.
- Installation, repair, or maintenance of any office equipment shall be performed by qualified persons.
- Keep the blades of hand paper cutters in the down position and locked at all times when not in use.
- Ladders or step stools of adequate design to support the employee's weight and the material to be obtained shall be provided and readily available to allow reaching high files, upper lockers, or storeroom shelves. Do not stand on a swivel or folding chair for such purposes.
- Report all hazards, such as sharp file cabinet edges or any other conditions likely to do bodily harm, damage clothing, or constitute a fire hazard to the OHSR or OM.

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	<b>TETRA TECH, INC.</b> <b>GENERAL SAFE WORK PRACTICES for</b> <b>OFFICE EMPLOYEES</b>	Revision Date: 10/1/2008
		Document Control Number:
		<b>SWP 5-3</b>
		Page 5 of 6

#### Chemical Safety

- Store cleaning supplies away from edible items on kitchen shelves.
- Store cleaning solvents and flammable liquids in appropriate containers.
- Keep solutions that may be poisonous or not intended for consumption in well labeled containers.

#### Earthquake Safety

- During an earthquake, duck or drop down to the floor and take cover under a sturdy desk, table, or other furniture. Hold onto the furniture and be prepared to move with it. Hold the position until the ground stops shaking and it is safe to move.
- Stay clear of windows and heavy furniture. Do not rush outside because injury may result from falling glass or building materials.
- If driving during an earthquake, stop if it is safe and stay inside the car. Do not stop on or under a bridge, overpass, tunnel, trees, light posts, electrical power lines, or signs. Move the car out of the normal traffic pattern if possible.
- Do not use the elevators during or after an earthquake.
- Arrange a gathering location for employee evacuation and be prepared to account for all employees including visitors.
- After an earthquake, check for employee injuries and conditions such as fire, gas leak, damaged electrical wiring, and downed or damaged utility lines. Replace telephone receivers that are knocked off the hook to ensure that they function properly.
- Do not use lighters or candles until the building has been cleared of possible gas leaks.
- Do not operate electrical switches or appliances, including telephones, if a gas leak is suspected; they may produce a spark that could ignite leaking gas.
- Do not use your telephone except in an emergency.
- Be prepared for aftershocks.

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Revision Date	Document Authorizer	Revision Details
10/1/2008	Chris McClain	Update from 1998 format

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- Cleanse thoroughly after handling hazardous substances.
- Maintain all tools and equipment in good condition.
- First aid kits shall be located in a prominent location and stocked with basic first aid supplies.

Additional SWPs related to reporting, fire safety, housekeeping, equipment safety, chemical safety, vehicle safety, and earthquake safety are discussed below.

**Reporting**

- Report all unsafe conditions and equipment to the office health and safety representative (OHSR).
- Report all accidents, injuries, and illnesses to the OHSR or operations manager (OM) immediately.

**Fire Safety**

- Keep all means of egress (exits) unblocked, well lighted, and unlocked during work hours.
- Sound the alarm and evacuate in the event of fire.
- Upon hearing the fire alarm, stop work and proceed to the nearest clear exit. Gather at the designated location.
- Do not attempt to respond to a fire or other emergency unless properly trained.
- Exit doors must comply with fire safety regulations.
- Keep all stairways clear of items that can be tripped over.
- Do not store materials and equipment against doors or exits, fire ladders, or fire extinguisher stations.

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## 5. Travel Program 2-18

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This program outlines Tetra Tech's international travel procedures and includes guidance on types and classification of travel, notification, travel safety review, medical surveillance, employee travel resources, incident notification, and additional general travel health precautions.

### 1.0 SCOPE

This procedure defines the minimum health and safety requirements and applies to all US based Tetra Tech employees traveling or living as expatriates abroad. Additional procedures may apply depending on operating unit procedures or contract specific requirements.

### 2.0 RESPONSIBILITIES

#### Management

Management is responsible for ensuring that adequate planning efforts and resources are available so that the provisions of this program can be effectively implemented and maintained. Management must utilize processes implemented for the review and approval of potential international projects.

#### Health and Safety Personnel

Corporate Health and Safety is responsible to provide overall direction for the program. Operating Unit H&S Representatives (HSR) are responsible to ensure that all elements of the program have been implemented at the operating unit level and to coordinate international travel safety reviews as appropriate.

#### Human Resources

In processes detailed outside of the scope of this document, HR shall also evaluate and communicate employee benefits and resources available to affected employees.

#### Employees

Employees shall perform their job duties in a manner that is compliant with the requirements of this program. Employees shall also be responsible to participate in the medical surveillance requirements outlined in this program and to book all international travel through Tetra Tech's designated travel partner.

#### Corporate Travel

The Corporate Travel office in conjunction with Tetra Tech's travel partner shall provide timely notification to H&S of pending employee international travel.

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### 3.0 PROGRAM ELEMENTS

#### 3.1 International Travel – Employee Classifications

Tetra Tech has established the following international travel classifications to define the types of travel conducted by US based Tetra Tech employees. When applicable, health and safety requirements will be assigned according to the various classification of international travel.

##### Business Travel

Travel outside the United States or US territories for purposes of visiting clients, project reviews or marketing purposes. Travel is not intended to extend beyond a brief visit ranging from 1 to 30 days.

##### Short Term Travel

Travel conducted outside United States or US territories for purposes of working on an assigned project from 31 to 180 days.

##### Expatriate Employees

Travel conducted outside the United States or US territories for 181 days or more. Typically expatriate employees are assigned to a long term specific project or client office.

#### 3.2 Travel Notification

Tetra Tech has established the following methods of international travel notification for both project related travel and travel conducted for company business.

##### Project Related Travel

Addressing international travel as early as possible is the most effective way to implement the requirements of this program for travel associated with project work. Notification of intent to bid on work outside the US must be addressed through processes established by the Contract Policy 100 and Corporate International Administration.

In summary, operating unit management must complete the Tetra Tech International Project Checklist for all targeted international work prior to bidding on the project. The completed checklist is reviewed and approved by corporate personnel representing key areas within the enterprise including Health and Safety. Upon receipt of a completed international project checklist, the operating unit HSR shall be

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notified of the potential for work abroad. The HSR shall begin to work with project management to identify the risks associated with the project, the potential cost of H&S requirements as well as the recommended staff that will support the work.

Non Project Travel

Since not all international travel may be related to a specific project, and project personnel assignments may change during the proposal and actual staffing of a project, the Corporate Travel Office will also support notification of all employee travel abroad.

All employee reservations for international travel must be made through the Tetra Tech travel reservation system at least 14 days before travel when possible. Once a reservation for travel outside the US has been completed, an email notification will be sent to an international travel email address established for each operating unit and corporate H&S office.

This email notification will include employee name and number, operating unit, dates of travel and travel destination. It is the responsibility of each unit HSR to regularly check and respond to email notifications sent to the international travel email address.

**3.3 International Travel Safety Review**

Upon notification to H&S of employee international travel, an international travel safety review may be conducted depending upon key risk factors which include:

- Travel destination,
- Duration and season of travel,
- Purpose of travel,
- Standards of medical care, accommodation, food hygiene and sanitation at each travel destination,
- Security risks, and
- Underlying health of the traveler.

Travel to most major cities in developed countries pose relatively few serious health risks. However, travel to developing nations, remote areas or areas impacted by natural disasters, infectious diseases or civil unrest may present risks to our employees and will require an international travel safety review.

Upon notification of employee international travel, the HSR shall review the travel itinerary. If travel presents significant health risks, the HSR of each operating unit

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shall work with Project Management to insure the following items have been evaluated and communicated to the employee:

- Current participation and clearance in the Tetra Tech international travel medical surveillance program,
- Determination of additional medical surveillance through consultation with Tetra Tech’s medical surveillance administrator,
- Arrange for additional medical surveillance if required or completion of the Declination of Immunization Form (section 3.4.1) if the employee declines to participate or if the travel dates will not accommodate an immunization schedule,
- Identify local medical facilities, and
- Applicable security information.

The HSR or his/her designee shall complete the Tetra Tech H&S International Travel Safety Review Form (Form I-Travel, H&S Manual) or equivalent. This form details the H&S requirements listed above. A copy of the completed I-Travel form or its equivalent shall be provided to the employee. A copy of this form is included in Appendix A of this document.

In the event the H&S review identifies areas of special risk that will require additional controls, the HSR will notify project management to review findings and determine the best course of action.

### 3.4 Medical Surveillance

Proactively encouraging good general health and up to date immunizations will insure that Tetra Tech’s travelers maintain good health while traveling abroad. In some cases, the employee’s general health or travel destination may present health risks associated with poor sanitation, food preparation, diseases endemic to the area or the expected tasks associated with the travel. To minimize these risks, Tetra Tech has established a medical surveillance program for employees traveling abroad for company business purposes.

The following protocols have been established for employees classified as short term travel and expatriate employees. Employees within these classifications shall be identified by the HSR and included in international travel medical surveillance protocols. Business travel employees will not be included in travel medical surveillance unless indicated by specific travel events.

The international travel protocols are considered the minimum standard; any client required medical surveillance shall take precedence over the travel protocols

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established below except in those cases where client requirements are less stringent than the Tetra Tech protocols.

Unless specified by the client, medical surveillance will be administered by Tetra Tech's medical surveillance partner.

Tetra Tech's medical surveillance partner shall also maintain and apply country or client specific medical surveillance requirements and/or prophylactic medication assessments upon notification of specific travel events.

Short Term Travel Protocol

Biennial Travel Health Questionnaire  
 Immunization Review  
 Core and Selective Vaccinations as needed

Expatriate Employee Protocol

Biennial Travel Health Questionnaire  
 Immunization Review  
 Biennial physical examination  
 Electrocardiogram (if over 40 years)  
 Urinalysis & Microscopy  
 Blood Chemistry Panel: Complete Blood Count  
 Core and Selective Vaccinations as needed  
 TB Skin Test  
 Prophylactic Medication Assessment

Tetra Tech's medical surveillance partner shall establish a record of these employees and track medical history questionnaires, immunization schedules and physical examinations. Tetra Tech's medical surveillance partner shall issue an international travel clearance for each employee that meets established medical criteria. Health and security information specific to the areas of travel is also available through Tetra Tech's medical surveillance partner.

As with all medical surveillance requirements, the cost of the program will be borne either as overhead costs to the operating unit or as project costs.

In certain situations medical surveillance may be conducted outside the US (i.e. expatriate employees, in-country required clearances). In these cases the cost for services will be handled on a case by case basis and are not included in annual medical surveillance pricing agreements for services performed within the US. Clinic costs will be paid directly by Tetra Tech's medical surveillance partner at the time of service and included on monthly invoices provided to the operating unit.

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### 3.4.1 Immunization Requirements

Vaccination is a highly effective method of preventing certain infectious diseases. Tetra Tech's medical surveillance provider will review the immunization status of Tetra Tech international travelers and determine the need for additional immunization and/or preventive medication to avoid disease while on travel status. Immunizations are classified as core, selective and mandatory.

#### Core Immunizations

All international travelers participating in the travel medical surveillance program shall have received a core group of immunizations which include the following:

- Diphtheria, Tetanus and Pertusis
- Hepatitis A
- Haemophilus influenzae type b (Hib)
- Measles, Mumps and Rubella
- Poliomyelitis
- Varicella (Chicken Pox) if applicable

#### Selective Immunization

Upon notification of specific travel events, additional selective immunizations may be recommended based upon the country of travel, the individual's medical history and travel health risk. These vaccines may include:

- Seasonal Flu Shot
- Pneumococcal Disease
- Hepatitis B
- Meningococcal Meningitis
- Cholera
- Rabies
- Tick Borne Encephalitis
- Typhoid Fever
- Yellow Fever

#### Mandatory Immunizations

Mandatory immunizations are required in certain countries as indicated under the World Health Organization (WHO) International Health Regulations. These immunizations may include the following:

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- Yellow Fever
- Meningococcal Meningitis
- Poliomyelitis

A list of countries that require proof of mandatory vaccinations can be found on the WHO website.

Immunization Declination

An employee may decline participation in the immunization program however Tetra Tech reserves the right to restrict the travel of non-immunized employees to areas of high risk. The decision to restrict travel will be based on consultation with the Medical Director of Tetra Tech’s Medical Surveillance program in conjunction with management and the operating unit HSR.

If an employee eligible for core and selective immunizations declines to participate, he or she must sign the “Immunization Declination Form” located in Appendix B of this document. The employee will also be required to sign this document in cases where notification has not occurred in time to accommodate additional immunizations. Tetra Tech employees must comply with international mandatory immunization requirements.

**3.5 Employee Medical and Other Travel Resources**

The good health and welfare of our travelling employees remains a priority. Travel assistance is available to all employees traveling for company business as well as expatriate employees and their dependents. These services include:

- Medical evacuation and assistance
- Identification of medical facilities abroad
- Security evacuation
- Online security information by country
- Assistance with lost baggage, passports, legal assistance, etc

Tetra Tech relies on several organizations to provide assistance to employees. Given the number of these providers and the difficulty it presents to employees navigating this process, Tetra Tech has partnered with two organizations that will serve as clearinghouses for all medical and security assistance calls. This allows employees to access these resources using clear and concise instructions and at the same time allow the company to direct authorization.

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**Medical Assistance**

International ISOS (ISOS) provides medical coordination services for our employees traveling abroad. ISOS will gather initial medical reports, make initial recommendations and either provide services when authorized or coordinate with Tetra Tech resources to provide service as appropriate for the situation. The authorization to provide services will come from authorized company representatives in conjunction with the affected Group Operation’s knowledge and input.

Employees are directed to call the medical assistance contact number when the following is required:

- Health advice
- Consultation with a western-trained physician
- Identification of local doctors or providers
- Medical supplies or medication
- Assistance arranging for medical transportation or care
- If they are hospitalized
- Coordination of medical fees
- Need to be evacuated to appropriate medical facilities

**Security Assistance**

Employees will also have access to security assistance services supported by Chartis Travel Guard. The authorization for any security related services that may result in additional costs will also come from authorized company representatives in conjunction with the affected Group Operation’s knowledge and input.

Employees are directed to call the security assistance contact number when the following is required:

- Language assistance or translation services
- Legal referrals
- Need to replace critical travel documents (passport, credit card)
- Emergency cash advance
- Embassy or consulate contact information
- Require security assistance/political evacuation

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**Wallet Cards**

Upon notification of international travel, employees will be asked to download and complete incident notification wallet cards from the "My.TetraTech" site (Figure 1). These cards will have clear instructions to access assistance in the event of either a medical or security emergency and will include contact information. All Business, Short Term or Expatriate employees should print a copy of this card and carry it with them at all times while traveling abroad.

There may be project specific resources available either through Defense Base Act insurance providers when work is conducted on or near military installations abroad or through project required contracts with other independent providers. In these cases, these resources will be utilized as the primary contacts for assistance.

Figure 1



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#### Additional Resources

Additional travel resources available to Tetra Tech employees are outlined below.

Resource	Provider / Program Name	Services Provided
International SOS	ISOS Member Services	Online access to medical alerts and country guides at <a href="http://www.internationalsos.com">www.internationalsos.com</a> Member Number: 11BCMA000238
Travizon	Global Guard	Real time, world wide locating and tracking of employees during travel status. Tracking feature only available for employees who purchased tickets through Travizon. Travel Alerts specific to travel destinations
Additional Health and Security Resources	US State Department	<a href="http://www.travel.state.gov">www.travel.state.gov</a>
	US Embassy Contact Information	<a href="http://www.usembassy.gov">http://www.usembassy.gov</a>
	CDC Travel Website	<a href="http://www.cdc.gov/travel">Travelers' Health   CDC</a>
	Travel Care	800 455-6155 <a href="mailto:Travel@workcare.com">Travel@workcare.com</a>

#### 3.6 Incidents Abroad

In the event of an incident such as injury or illness, motor vehicle accident, chemical spill or release, property/ equipment damage or near miss that occurs while traveling abroad, the employee shall follow incident investigation requirements as detailed in the Tetra Tech Incident Reporting and Investigation Program as well contract or project specific guidance.

Guidance for the reporting of major incidents is provided below:

##### Major incidents

A major incident is defined as the following:

- Results in a fatality
- Results in the hospitalization (e.g., admittance) of 1 or more employee(s)
- Specific treatment for the injury or illness is rendered by a health care professional and may result in permanent total, permanent partial or temporary total disability

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- Significant property or equipment damage has occurred

In the event of a major incident while working abroad, local project management must notify the operating unit HSR as soon as possible who in turn will notify the corporate H&S office.

Injury or Illness

Depending on the severity of the injury or illness, the Project Manager or the most senior person responsible for the project will make the decision for local treatment or in coordination with ISOS, evacuation to near by emergency facilities, or emergency evacuation from the country.

In cases where significant transportation assistance will be necessary and not provided by the client or project contract, ISOS will review the circumstances of the incident and in consultation with company authorized personnel will determine the proper course of action and type of assistance.

**3.7 General Health Precautions**

While vaccinations are successful in preventing disease they do not fully protect the business traveler. The following excerpts from the CDC Travelers Health website should be used as guidance. Employees are encouraged to review the CDC Travelers Health website for additional travel health guidance.

**3.7.1 Food Safety**

To avoid illness, travelers should be advised to select food with care. All raw food is subject to contamination. Particularly in areas where hygiene and sanitation are inadequate, the traveler should be advised to avoid salads, uncooked vegetables, and unpasteurized milk and milk products such as cheese, and to eat only food that has been cooked and is still hot or fruit that has been washed in clean water and then peeled by the traveler personally. Undercooked and raw meat, fish, and shellfish can carry various intestinal pathogens. Cooked food that has been allowed to stand for several hours at ambient temperature can provide a fertile medium for bacterial growth or be recontaminated by food-handling techniques so should be thoroughly reheated before serving.

Consumption of food and beverages obtained from street vendors has been associated with an increased risk of illness. Travelers should be advised to wash their hands or use hand gel with more than 60% alcohol prior to eating, after using the bathroom or changing diapers and after direct contact with preschool children, animals or any feces. <sup>1</sup>

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### 3.7.2 Water Safety

Water that has been adequately chlorinated according to the minimum recommended water treatment standards used in the United States will afford substantial protection against viral and bacterial waterborne diseases. However, chlorine treatment alone, as used in the routine disinfection of water, may not kill some enteric viruses and the parasitic organisms that cause giardiasis, amebiasis, and cryptosporidiosis.

In areas where chlorinated tap water is not available or where hygiene and sanitation are poor, travelers should be advised that only the following may be safe to drink: beverages, such as tea and coffee, made with boiled water, canned or unopened bottled beverages, including water, carbonated mineral water, soft drinks, beer, and wine.

Where water might be contaminated, travelers should be advised that ice should also be considered contaminated and should not be used in beverages. If ice has been in contact with containers used for drinking, travelers should be advised to clean the containers thoroughly, preferably with soap and hot water, after the ice has been discarded.

It is safer to drink a beverage directly from the can or bottle than from a questionable container. However, water on the outside of beverage cans or bottles may also be contaminated. Therefore, travelers should be advised to dry wet cans or bottles before they are opened and to wipe clean surfaces with which the mouth will have direct contact. Where water may be contaminated, travelers should be advised to avoid brushing their teeth with tap water and that locally prepared fruit juice may also contain tap water. <sup>2</sup>

<sup>1 & 2</sup> CDC Travelers Health Website

### 4.0 Recordkeeping

Copies of employee medical records associated with international travel shall be kept confidential and stored by WorkCare in accordance with US based OSHA and HIPPA regulations. Copies of international travel clearances shall be maintained in employee personnel records.

All other records generated as the result of this program shall be maintained at the operating unit level and are expected to comply with all applicable health and safety standards and company policies.

## 6. Biohazard Safety Form SWP 5-17

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Biological hazards, or "biohazards," include plants, animals or their products, and parasitic or infectious agents that may present potential risks to worker health. This safe work practice (SWP) discusses procedures for working with biohazards, preventive guidelines, and first-aid procedures for the most common hazards field staff are likely to encounter. This SWP does not address biohazards such as those associated with medical waste. Procedures for working with this type of biohazard should be addressed in the site-specific health and safety plan (HASP), construction health and safety plan (C-HASP), job safety analyses (JSAs), activity hazard analyses (AHAs), or other health and safety project planning documents on a case-by-case basis.

During preparation for site work, the document preparer should consider which plants, animals, and other biological agents may be encountered; assess their potential risk to project personnel; and attach this SWP to the document if necessary. Office health and safety representatives should become familiar with biological hazards indigenous to the geographical area in which most of their office personnel work and assist in evaluating the risks to personnel on projects staffed from their offices. SWPs for insects, snakes, animals, plants, waterborne pathogens (giardia), and hantavirus are provided below.

### 1.0 INSECTS

SWPs for reducing the chance of insect bites or stings and for treating bites or stings are listed below.

- Workers should keep as much skin area covered as possible by wearing long-sleeved shirts, long pants, and a hat. Pant legs should be tucked into socks or boots and shirts into pants. In addition, workers should wear light colored clothing.
- A proven insect repellent should be used on bare skin and clothing.
- When possible, tall grasses and brush that could harbor ticks should be avoided.
- Several times during the day and at the end of the work day, each worker should perform a check for evidence of imbedded ticks or previous bites. Particular attention should be paid to the scalp, neck, ankles, back of the legs, and waist.

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- When opening well covers, vaults, or other closed items, workers should watch for hornet or wasp nests and black widow or brown recluse spiders. Workers should never reach into spaces with unprotected arms.
- Workers should watch carefully for bees around open soft drinks or food.
- If a worker is stung by a bee, the stinger should be carefully removed, if present. The wound should be washed and a cold pack applied. Allergic reaction should be watched for and is evidenced by extreme swelling, redness, pain, or difficulty breathing.
- If a worker is stung or bit by a spider or scorpion, medical attention should be obtained immediately.

## 2.0 SNAKES

SWPs for encounters with snakes and for treating snakebites are listed below.

- Workers should avoid walking in areas known to harbor snakes. Workers should be cautious when picking up or moving items that have been on the ground.
- Workers should wear boots made of heavy material that protect the ankles and pants. Heavy work gloves should be worn for picking up items.
- If one snake is encountered, others may be present. Workers should leave the area by retracing their steps.
- If a worker is bitten, the wound should be washed and the injured area immobilized and kept lower than the heart, if possible. Ice or a tourniquet should not be applied to a snake bite. The wound should not be cut. If medical care is more than 30 minutes away from a work site, a snakebite kit should be available on site and workers should know how to use it.

## 3.0 ANIMALS

SWPs for encounters with animals and for treating associated wounds are listed below.

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- If workers encounter a wild animal, the animal should be observed for unusual behavior such as a nocturnal animal out during the day, drooling, an appearance of partial paralysis, irritability, meanness, or a strangely quiet demeanor.
- Workers should never touch the body of a dead animal because certain diseases could be carried by fleas still on the body.
- Workers should avoid animal droppings (including bird droppings). Pathogens, some of which can become airborne, may still be present in the droppings.
- If a worker is bitten, he or she should get away from the animal to avoid further bites. Workers should not try to stop, hold, or catch the animal.
- If the wound is minor, it should be washed with soap and water. Any bleeding should then be controlled, and an antibiotic ointment and dressing should be applied. All animal bite wounds should be watched for signs of infection.
- If the wound is bleeding seriously, the bleeding should be controlled but the wound should not be cleaned. Medical assistance should be summoned immediately.
- If a rabid animal is suspected, immediate medical attention should be summoned. If possible, workers should try to remember what the rabid animal looked like and the area in which it was last seen. The animal should be reported by calling the local emergency number.

#### 4.0 PLANTS

SWPs for plants are as follows:

- Workers should be aware of the types and appearances of poisonous plants in the work site area. Poison ivy, oak, and sumac are the most frequently encountered plants that can cause reaction from casual contact. If a worker is extremely sensitive to these plants, he or she should avoid the area entirely because airborne drift could be sufficient to cause a reaction. Other plants, such as fireweed, can cause painful, short-term irritation and should be avoided as well. Workers should avoid touching face and eye areas after contact with any suspicious plant.

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- Workers should wear proper clothing if working in or near overgrown areas. Disposable outerwear should be used, if necessary, and workers should not touch the material with bare hands during removal if the outerwear may have contacted poisonous plants.
- If contact with a poisonous plant has occurred, the affected area should be immediately washed thoroughly with soap and water. If a rash or weeping sore has already begun to develop, a paste of baking soda and water should be applied to the area several times a day to reduce discomfort. Lotions such as Calamine or Caladryl should be applied to help soothe the area. If the condition gets worse and affects large areas of the body or the face, a doctor should be consulted.
- Bushy and wooded areas should be thoroughly checked for thorn-bearing trees, brush, and bramble. In some cases, impalement can cause severe pain or infection.

#### 5.0 WATERBORNE PATHOGENS-GIARDIA

Giardia is a waterborne pathogen consisting of a protoplasmic parasite of the mammalian digestive tract. Giardia is present worldwide, with the highest occurrence in areas with poor sanitation. In the United States, most reported cases are in mountainous regions where drinking water is obtained from streams and is unfiltered or untreated.

Giardia is contracted by ingesting water contaminated with giardia cysts in the dormant state. Giardia parasites can only thrive in the digestive tracts of mammals. Dormant giardia organisms enter water through the feces of infected animals or humans. Giardia symptoms include severe diarrhea and upset stomach. Some people are asymptomatic but can transmit the disease to others. Medical treatment of giardia can be difficult and unpleasant; therefore, prevention is critical. Precautions for preventing exposure to giardia are listed below.

- Workers should assume that all fresh water streams are infected with the giardia organism and not drink any untreated water.
- Team members collecting sediment and water samples from streams should wash their hands thoroughly with soap and water after collecting the samples.

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- Giardia parasites are relatively easy to destroy or filter. Water should be treated for drinking or cooking with iodine or another recommended giardia treatment before use.

## 6.0 HANTAVIRUS

Hantavirus pulmonary syndrome (HPS) is a potentially fatal infection caused by a rodent-borne hantavirus. HPS begins with a brief illness most commonly characterized by fever, muscle pain, headache, coughing, and nausea or vomiting. Other early symptoms include chills, diarrhea, shortness of breath, abdominal pain, and dizziness. In the first identified cases of HPS, this stage of the infection lasted 2 to 5 days before victims were hospitalized. Typically, by the time of hospitalization, victims were found to have tachycardia (a heart rate of greater than 100 beats per minute) and tachypnea (a breathing rate of greater than 20 breaths per minute). Fever was also common. In most cases, death occurred within 2 to 16 days of the onset of symptoms, and victims exhibited pulmonary edema and severe hypotension.

Currently, experts believe that HPS is spread by the deer mouse (*Peromyscus maniculatus*). Though the deer mouse has been found to be the primary host of hantavirus, several other rodent species have also tested positive for the virus. Pinon mice (*Peromyscus truei*), brush mice (*Peromyscus boylii*), and western chipmunks (*Tamias spp.*) are also likely to carry the virus. Also, cases of HPS have been reported in areas of the United States where these particular rodents are not indigenous.

Infected rodents shed the virus in their urine, feces, and saliva. Humans can be exposed to the virus through (1) inhalation of suspended rodent excreta or dust particles containing rodent excreta, (2) introduction of rodent excreta into the eyes or broken skin, and (3) ingestion of food or water contaminated by rodent excreta. HPS has a reported mortality rate of 55 percent. Transmission of hantavirus from infected individuals to healthy persons has not been documented.

Prevention of HPS infection is essential because no known antidote and no specific treatment exists for treating HPS. Therefore, employees should practice risk reduction and control measures. Guidelines for workers in locations that may have rodent infestations or habitats are listed below.

- The best approach for HPS control and prevention is through environmental hygiene practices that deter rodents from colonizing the work environment.

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- Information about the symptoms of HPS and detailed guidance on preventive measures should be provided to all employees assigned to field activities.
- Medical attention should be sought immediately for workers who develop a febrile or respiratory illness within 45 days of the last potential exposure to rodents. Attending physicians should be advised of each worker's potential for occupational exposure to hantavirus. Physicians should contact local health authorities promptly if hantavirus-associated illness is suspected. A blood sample should be obtained from the affected worker and forwarded with the baseline serum sample through the state health department to the Centers for Disease Control and Prevention for hantavirus antibody testing.
- Respiratory protective equipment should be worn when handling rodents, when removing rodents from traps, and when working in areas with evidence of rodent droppings or hair. Respiratory protective equipment should include, at a minimum, a half-face air-purifying respirator (APR) or powered APR equipped with a high-efficiency particulate air (HEPA) filter (P100). Full-face regulators may be needed under some circumstances. Respiratory protective equipment should be used in accordance with Occupational Safety and Health Administration regulations.
- Dermal protection should be worn when handling rodents or traps containing rodents, or if contact with contaminated surfaces could occur. Dermal protection should include rubber or plastic gloves that should be washed and disinfected before removal.
- A trap contaminated with rodent urine or feces or in which a rodent was captured should be disinfected with a commercial disinfectant or a 0.4 percent bleach solution. A dead rodent should be disposed of by placing the carcass in a plastic bag containing enough general-purpose household disinfectant to thoroughly wet the carcass. The bag should be sealed and disposed of by burning or by burying it in a 2- to 3-foot-deep hole. Local and state health departments can also provide appropriate disposal methods.

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10/1/2008	Chris McClain	Update from 1998 format

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7. Prevention of Sun Exposure Form SWP 5-26

	<p><b>TETRA TECH, INC.</b> <b>PREVENTION of SUN EXPOSURE</b></p>	Revision Date: 10/1/2008
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By far, the most common cause of skin cancer is overexposure to the sun. Ninety percent of all skin cancers occur on parts of the body that not usually covered by clothing. People who sunburn easily, and those with fair skin and red or blond hair are more prone to develop skin cancer. The amount of time spent in the sun also affects a person's risk of skin cancer. Premature aging of the skin also occurs with prolonged sun exposure. Tetra Tech encourages personnel to avoid prolonged exposure to the sun, and recommends the following:

- Sunburn can occur during any time of the year. To avoid sunburn, wear hats with wide brims.
- Use sunscreen with a Sun Protective Factor (SPF) rating of 15 or higher.
- To prevent skin cancer:
  - Cover up with a wide brimmed hat and a bandanna for your neck. Wear long-sleeved shirts and pants which the sun cannot penetrate.
  - Use sunscreens to help prevent skin cancer as well as premature aging of your skin. Use a Sun Protective Factor (SPF) rating of 15 or higher.
  - Apply sunscreen at least an hour before going into the sun and again after swimming or perspiring a lot.
  - Do not use indoor sun lamps, tanning salons/parlors, or tanning pills.
- You can still get burned on a cloudy day. Try to stay out of the direct sun at midday, because sun rays are their strongest between 10 a.m. and 3 p.m. Beware of high altitudes - where there is less atmosphere to filter out the ultraviolet rays. Skiers should remember that snow reflects the sun's rays, too.
- Know your skin. Whatever your skin type, do a monthly self-examination of your skin to note any moles, blemishes or birthmarks. Check them once a month and if you notice any changes in size, shape or color, or if a sore does not heal, see your physician without delay.

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