

**Nkamouna Project
Environmental and Social Assessment
Emergency Response
and Contingency Plan**

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Prepared for

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Nkamouna Project Environmental and Social Assessment Emergency Response And Contingency Plan

Table of Contents

List of Tables.....	iii
List of Figures.....	iii
List of Appendices.....	iii
List of Abbreviations and Acronyms.....	iii
1.0 Introduction.....	1
2.0 Organization and Management Responsibilities.....	2
2.1 General Manager.....	2
2.2 Technical Services Manager.....	2
2.3 Environmental, Health and Safety Manager.....	2
2.4 External Affairs Manager.....	3
2.5 Emergency Response Team.....	4
2.6 Supervisor Responsibilities.....	4
2.7 Contact List.....	4
2.8 Mine Layout and Emergency Facility Locations.....	5
3.0 Communications.....	6
3.1 Internal Communications.....	6
3.2 Communications During an Emergency.....	6
3.3 Communications with the Public.....	7
4.0 Responding to Emergencies.....	8
4.1 General Emergency Response Procedures.....	8
4.2 Emergency Response Checklist.....	8
4.3 Accident Spills or Releases.....	9
4.3.1 Fuel and Bulk Oil Storage Facilities.....	9
4.3.2 Response Procedures.....	9
4.3.2.1 Reporting Procedures.....	10
4.3.3 Chemicals, Reagents or Hazardous Materials.....	10
4.3.3.1 Response Procedure.....	11
4.3.3.2 Reporting Procedures.....	12

Table of Contents (Continued)

4.3.4 Spill Clean-Up Equipment.....	13
4.4 Fire and Explosions.....	13
4.4.1 Preparedness.....	14
4.4.2 Response Procedure.....	14
4.5 Accident Spills or Releases from the Processing Plant.....	15
4.5.1 Response Procedures.....	15
4.5.2 Reporting Procedures.....	17
4.6 Medical Emergencies.....	17
4.6.1 Response Procedures.....	18
4.6.2 Notification and Reporting.....	18
4.7 Social Unrest	19
5.0 Transportation.....	20
5.1 Transportation Vehicles.....	20
5.2 Transportation Accidents.....	20
5.3 Transport of Hazardous Materials.....	21
6.0 Emergency Response Procedures.....	22
6.1 Hazard Recognition.....	22
6.2 Emergency Response Training.....	22
6.3 Employee and Contractor Training.....	23

List of Tables

Table	Title
1	List of Chemicals Used at Geovic Cameroon Site

List of Figures

Figure	Title
1	Geovic Cameroon Organizational Structure
2	General Facilities Layout

List of Appendices

Appendix	Title
A	Critical Item Checklist
B	Spill Reporting Procedures
C	Spill Report Form
D	Material Safety Data Sheets (MSDS)

List of Abbreviations and Acronyms

CPR	Cardiopulmonary Resuscitation
ERCP	Emergency Response and Contingency Plan
GeoCam, Ltd.	Geovic Cameroon PLC
MSDS	Material Safety Data Sheet

Nkamouna Project Environmental and Social Assessment Emergency Response And Contingency Plan

1.0 Introduction

Geovic Cameroon (GeoCam) developed this Emergency Response and Contingency Plan (ERCP) to provide employees and managers with specific instructions that will allow them to respond quickly and efficiently to any foreseeable emergencies likely to occur at the Nkamouna Project. This ERCP was developed using recognized and accepted methods and practices, but because it was prepared prior to opening the mine, the plan will need to be updated during the pre-production phase in year 1. This update will include specific responses, protocols, and management contact information based on actual site conditions.

GeoCam is committed to operating at the highest standards to protect the health and safety of its workers, the public, and the environment. Therefore, the employees of GeoCam will develop and maintain the ERCP in compliance with applicable laws and industry standards to ensure a timely and appropriate response to emergencies.

This document was developed to provide specific emergency response guidelines for employees and managers of GeoCam. The plan also identifies who will be responsible for plan implementation and what records and reporting procedures will be required to meet the commitments made in the Environmental and Social Action Plan (Volume 2 of the Environmental and Social Assessment). The ERCP has been developed based on accepted methods and practices.

2.0 Organization and Management Responsibilities

GeoCam will assemble a team of qualified and specialized staff to fill the key management roles for the project. Certain members of the management team will have direct responsibilities for responding to on-site emergencies. An organization chart for GeoCam management is provided on Figure 1. The responsibilities of key management personnel are summarized for each position in this section. The discussion is meant to provide an overview of key responsibilities and is not a complete list of responsibilities for each position.

2.1 General Manager

The General Manager is the senior executive on site and is responsible for all actions and activities at the mine. The General Manager will be the primary decision-maker, and will work closely with the Technical Services Manager, the Environmental, Health, and Safety Manager, and the Chief Medical Officer in responding to emergencies. The General Manager will coordinate with the External Affairs Manager, who is responsible for public and government relations actions in Kongo Village and Lomié, as needed to assure that the appropriate government authorities and the public are adequately informed of accidents or emergencies that may occur on site.

2.2 Technical Services Manager

The Technical Services Manager will be the second-in-command in responding to emergencies. As the second-most senior executive at the mine site, the Technical Services Manager will work closely with the General Manager to coordinate efforts and limit hazards to employees, the public and the environment.

2.3 Environmental, Health and Safety Manager

The Environmental, Health and Safety Manager will be an extremely valuable resource to the General Manager and the Technical Services Manager in the event of an emergency. The Environmental, Health and Safety Manager is responsible for the development and implementation of the Emergency Response and Contingency Plan. This person will also assure that the plan is periodically updated to address changes in site conditions, management changes and improvements in emergency response procedures and techniques. In addition, this individual will also be responsible for the training of first responders in emergency procedures (what to do and how to do it), and as such, will be thoroughly familiar with all aspects of the emergency response program.

The Environmental, Health and Safety Manager is responsible for the disposition of materials and wastes that may be accidentally released and the clean up and proper disposal of spilled materials. He is also responsible for the occupational health and safety programs including employee training and specialty training of the Emergency Response Team. The Environmental, Health and Safety Manager is responsible for communications with the public, including notification of incidents and disclosure of important factual information.

Specific responsibilities of the Environmental, Health, and Safety Manager include the following:

- Prepare a list of emergency contacts.
- Maintain the inventory of emergency response equipment and supplies.
- Arrange for the replacement of used or obsolete emergency supplies and equipment.
- Organize and train the Emergency Response Team.
- Oversee first response programs.
- Inspect and maintain fire extinguishers.
- Maintain records on emergencies or fatalities.
- Maintain records on spills, leaks, or ruptures.
- Oversee spill clean-up and disposal programs.
- Report to regulatory agencies and stakeholders.

The Environmental, Health and Safety Manager will also interact with the public to:

- Provide information on project hazards and emergency response programs.
- Brief the public and employee relatives on emergencies.
- Arrange for accommodations for members of the family in the event of extreme emergencies.

2.4 External Affairs Manager

The External Affairs Manager is based in Yaoundé and is responsible for general GeoCam public relations with the media, the government, and the public. The Managing Director

Geovic Cameroon PLC will coordinate with the External Affairs Manager in establishing the factual information that needs to be communicated with national authorities and the media.

2.5 Emergency Response Team

The Environmental, Health and Safety Manager is responsible for recruiting and training the Emergency Response Team. The team will comprise site employees who are willing to receive specialty training in order to assist in the case of an emergency. The Environmental, Health and Safety Manager will select qualified and willing candidates in sufficient numbers as to facilitate the response programs required by the plan.

The Emergency Response Team will receive specialty training to respond to on-site emergencies. The Team will receive training in the use of self-contained breathing apparatus in the event that a fire or explosion renders the work atmosphere unsuitable for entry. The Emergency Response Team will be trained in appropriate procedures to:

- Respond to emergencies involving fires or explosions.
- Respond to emergencies involving injuries or fatalities.
- Train staff on site in safety and emergency response procedures.
- Control and mitigate spills or other accidental releases.
- Assist with evacuation procedures in responding to dam emergencies.

2.6 Supervisor Responsibilities

On-site line supervisors will each be responsible for identifying potential safety issues and for coordinating the response to emergencies in their work areas. They will be responsible for notifying the appropriate personnel in the event of an emergency. Supervisors will help monitor for accidental spills and releases that may occur at facilities under their supervision. Supervisors will also be responsible for documenting and reporting accidental spills or releases in areas under their direct supervision.

2.7 Contact List

The Environmental, Health, and Safety Manager will prepare a list of contacts for inclusion in this plan. Emergency contact information will be inserted in the front of this plan so that it is readily accessible in the case of an emergency. Emergency contacts will also be posted in prominent places in the mine facility. The emergency contact information will include names and detailed contact information that will be updated periodically for the following:

- GeoCam personnel in key management positions, including medical professionals.
- Contractors or local residents with earthmoving or response equipment that may be needed to supplement the mine fleet in the event of an emergency.
- The Emergency Response Team(s).
- Local community leaders including Chiefdom Authorities.
- Appropriate Cameroon government authorities.

2.8 Mine Layout and Emergency Facility Locations

Figure 2 shows the current layout of the mine and support facilities. A first aid facility will be constructed to provide first response medical services for on-site medical emergencies. It will be located near the mine village. Prior to the initiation of operations, a map will be prepared to show the locations of first aid stations, emergency equipment and lists of individual emergency contacts.

GeoCam will work with GeoAid, a GeoCam-funded local NGO, to add capacity to the hospital located in Lomié so that it can serve as a trauma center for the mine in the case of an emergency. This would also include the procurement of an emergency vehicle and driver either directly by GeoCam or through GeoAid.

3.0 Communications

Effective communication systems are critical to successful emergency response. The following provides the communication procedures to be followed during routine mine operations and emergency events.

3.1 Internal Communications

The internal communications system will be used to alert workers to danger, convey safety information, and maintain site control. Radios or field telephones will be used when work teams are working away from the main communications system. The internal system will consist of alarms or short signals that can easily be conveyed by audible signals. Training on the internal communications system will be provided to all employees as part of their employee orientation program.

3.2 Communications During an Emergency

During an emergency, the dispatch station will be contacted immediately. Information will be transmitted from the dispatch station to the rest of the mine site. The dispatch station will be manned 24 hours a day by on-site personnel and will be equipped to handle all radio and telecommunications in the case of an emergency. The mine site will also be equipped with a satellite phone that is capable of direct international communication at all times.

In the event of an emergency, there will be prompt notification of appropriate individuals. Such individuals to be notified, may include, but are not necessarily limited to:

- General Manager.
- Technical Services Manager.
- Environmental, Health and Safety Manager.
- External Affairs Manager.
- GeoAid Programs Director
- Emergency Response Team.
- Other Line Supervisors.
- GeoCam Executive Management.
- Cameroon Governmental Agencies.
- Community Leaders.
- Employee Family Members.

In the event that there is a need for the rapid notification of local communities, the first responder will immediately contact the dispatcher who will immediately contact the key management team. This will trigger the appropriate emergency notification system that has

been developed by the Environmental, Health and Safety Manager. An announcement will also be made over all radio channels stating which channel will be designated as the channel for the emergency, and that all non-emergency communications will be discontinued. The notification process will be documented in writing to include information such as date, time, location, nature of the event and actions taken to address the situation.

3.3 Communications with the Public

The Environmental, Health and Safety Manager will be responsible for all on site and local communications with the public. As required, meetings will be held to disseminate information related to on-site emergencies. Local residents, community leaders, other stakeholders, and non-governmental agencies will be contacted as appropriate and invited to attend these meetings. The Environmental, Health and Safety Manager will coordinate with the External Affairs Manager to brief him/her on the facts of the incident and what pertinent information should be released to the public, government officials and other interested stakeholders in Yaoundé. The External Affairs Manager will be responsible for informing the appropriate parties at the national level.

GeoCam will also establish waiting and briefing areas for family/relatives of those involved in serious accidents. Food and a sitting/sleeping area will also be provided to members of the family and relatives as appropriate.

In providing information to the public, the Environmental, Health and Safety Manager and the External Affairs Manager will provide information on the following:

- Description of the event.
- Identification of the population that might be affected.
- Description of any injuries and disposition of those involved in the accident.
- Identification of any existing hazards.
- Description of precautions taken to limit future risks.
- Identification of contaminated water sources (if any).
- Description of mitigation measures that are proposed or have been taken to correct the problem.
- Contact information.

4.0 Responding to Emergencies

4.1 General Emergency Response Procedures

In the case of an emergency, general emergency response procedures will be followed prior to any other activities. The general procedures include the following:

- Avoid danger to yourself, others, and the environment.
- Prevent further loss of material or damage to equipment, if this can be done safely.
- Assess the size and severity of the emergency.
- Report the emergency to the dispatcher, who will contact medical, safety, and senior management of the mine.

In addition to these general procedures, more detailed procedures have been developed for a number of different types of emergencies. It is noted, however, that common sense and good decision-making will still be required in responding to any emergency. Emergency response procedures for the types of emergencies that sometimes occur at mining operations are provided in the following sections.

4.2 Emergency Response Checklist

A set of checklist items that need to be addressed as part of any emergency response has been developed for the GeoCam site based on guidelines developed by the U.S. Mine, Safety, and Health Administration. These checklists will be used by GeoCam personnel in the case of mine emergency, and are organized according to the following categories:

- Notification.
- Shutdown operation.
- Security and site monitoring.
- Command Center.
- Communications.
- Medical arrangements.
- Acquisition of equipment, materials, and services.
- Information.

These checklists have been included in Appendix A.

4.3 Accident Spills or Releases

A chemical inventory and map showing storage locations will be prepared to identify all storage tanks located at the Nkamouna Mine Site. The inventory will include the following information:

- Locations of storage tanks.
- Type/make of the tank.
- Tank storage capacity.
- Product contained in the tank.

All aboveground storage tanks will be constructed with surrounding berms to provide adequate secondary containment capacity. Inspections will be performed as part of the normal foreman's shift reports. Such inspection will occur on at least a monthly basis to evaluate the integrity of tanks, piping and containment berms for potential leaks.

Below ground storage tanks will be constructed to resist corrosion and to limit the potential for accidental spills. All below ground tanks will be equipped with overfill/spill buckets on the fill line, annual leak testing on all non-consumptive tanks, and regular reconciliation of volumes in both consumptive and non-consumptive tanks.

4.3.1 Fuel and Bulk Oil Storage Facilities

The Engineering Manager will be responsible for the fuel and oil storage facilities. Also, the Engineering Manager will assign personnel to inspect the fuel and oil storage facilities as part of their normal duties of dispensing and tracking fuel consumption. Above ground storage tanks will be visually inspected for leaks, damage, or unusual conditions. The Engineering Manager will keep an inventory of inputs and outputs to each tank, and will reconcile the balance on a monthly basis to detect any fuel or oil losses.

4.3.2 Response Procedures

In the event that a leak, spill, tank rupture, or other accident associated with the fuel and oil storage areas, the following procedures will be implemented:

- Avoid danger to yourself and others (i.e., stop working, shut off power sources and any moving machinery and equipment, extinguish smoking materials or other spark or flame-making devices, and alert others in the area of danger).
- Stay upwind of the emergency/spill scene.

- Identify the product that has been spilled, as well as immediate potential hazards (such as possible contact of the spilled material with equipment or other chemicals, or entry into a waterway).
- If possible from a safety standpoint, prevent spill from entering waterways.
- Assess spill quantity and characteristics.
- Notify dispatch with as much information as possible.
- Arrange for a safe and timely cleanup of spilled material by contacting the Environmental, Health and Safety Manager and the Technical Services Manager.

4.3.2.1 Reporting Procedures

The Environmental, Health, and Safety Manager is responsible for keeping the following records associated with spills, leaks, ruptures, or other upsets in the fuel storage system or bulk oil storage system. Such records shall document:

- Person or people involved.
- Date, time, and location of spill/discharge.
- Description of the situation and site conditions.
- Identification and estimated volume of spilled material.
- Actions used to control the extent and severity of the spill.
- Final deposition of spilled material.
- Documentation of clean-up actions taken and final disposition of contaminated material.
- Description of environmental effects from the spill.

All records of spills will be documented according to Spill Reporting Procedures (Appendix B) using the Spill Report Form (Appendix C). Completed forms will be submitted to the Environmental, Health, and Safety Manager for filing. Records will be periodically reviewed to verify that proper corrective actions have been taken, including remediation of contaminated areas and replacement, repair, or maintenance to storage systems.

4.3.3 Chemicals, Reagents or Hazardous Materials

A number of chemicals, reagents, and hazardous materials will be stored or generated on site. Process reagents (sulfur, sulfurous acid, sulfuric acid, hydrochloric acid and various solvent

extraction reagents) will be stored as part of the mineral recovery activities. A list of chemicals that are expected to be used at the mine site is provided in Table 1. In addition to process reagents, other potentially hazardous materials will also be stored on site. These materials will likely include, but are not limited to, diesel fuel, gasoline, engine coolant, transformer fluid, hydraulic fluid, paints, solvents, propane, acetylene, cleaners, cement and concrete additives.

The Environmental, Health and Safety Manager will provide copies of the Emergency Response and Contingency Plan with relevant Material Safety Data Sheets (MSDS) for all chemicals, reagents, and hazardous materials in areas where those chemicals are used. Copies of MSDSs are included in this plan as Appendix D. All employees whose regular duties may involve handling or exposure to these materials will receive training in hazardous material safety and awareness and in the response protocols outlined in this document. The training program will include recognition of hazard symbols, precautions for handling, use and disposal, and emergency response to spills or exposure.

Since spills, leaks, or other unplanned releases of chemicals, reagents, and hazardous materials are expected to be infrequent, special hazardous material inspections and surveillance will not take place. Instead, areas containing hazardous materials will be inspected by shift foreman as part of their normal duties and reported in the daily foreman's report. Individuals who are responsible for handling these materials will be responsible for monitoring for leaks in areas where chemicals are used. These employees will also be responsible for monitoring storage areas to ensure that adequate containment is provided.

4.3.3.1 Response Procedure

In the event that a leak, spill, tank rupture, or other release of chemicals or other hazardous materials occurs, the following procedures should be followed:

- Avoid danger to yourself and others (i.e., stop working, shut off power sources and any moving machinery and equipment as before, alert others in the area of danger).
- Stay upwind of the emergency scene.
- Identify the product that has been spilled, as well as immediate potential hazards (such as possible contact of the spilled material with equipment or other chemicals, or entry into a waterway).
- If the identity of the substance cannot be determined, assistance should be requested and the identity of the substance should be determined by qualified personnel.

- If possible to do safely, prevent spill from entering waterways.
- Assess spill quantity and characteristics.
- Notify dispatch with as much information as possible.
- Arrange for a timely cleanup of spilled material by contacting the Environmental, Health and Safety Manager and Technical Services Manager.

Depending upon the nature of the spilled material, the air quality in the area of the spill could become hazardous and unsuitable for breathing. Therefore, only trained personnel will be allowed to enter areas that are not well ventilated. Trained personnel will only enter these areas with appropriate breathing devices and will always use the “buddy system” to provide assistance in the case of an emergency.

4.3.3.2 Reporting Procedures

Following an accidental spill event, the following information will be reported to the Environmental, Health and Safety Manager:

- Person or people involved.
- Date, time, and location of discharge.
- Description of the situation and site conditions.
- Identification and estimated volume of discharged substance.
- Actions used to control the extent and severity of the discharge.
- Final disposition of discharged solutions.
- Documentation of clean-up actions taken and final deposition of contaminated material.
- Description of environmental effects from the discharge.

All records of spills will be documented according to Spill Reporting Procedures (Appendix B) using the Spill Report Form (Appendix C). Completed forms will be submitted to the Environmental, Health, and Safety Manager, who will be responsible to assure that proper corrective actions have been taken, including remediation of contaminated areas and the appropriate storage and disposal of the spilled material. The Environmental, Health and Safety Manager will also coordinate with the Technical Services Manager to assure that the necessary repairs and/or training is provided to limit the potential for similar incidents in the future.

4.3.4 Spill Clean-Up Equipment

The following emergency spill equipment will be kept in a cabinet or other accessible area.

- Absorbents.
- pH paper.
- Tools (including screwdriver, crescent wrench, pliers, and knife).
- Large plastic bags.
- Floor and hand broom.
- Dust pan.
- Mop, bucket, and wringer.
- Shovels.
- Neutralizer for acids and bases.
- Empty open-top drums.
- Overpack drums.
- Labels and permanent ink markers.
- Caution tape.

This equipment will only be used for emergencies and will not be used for any other purposes. When the above supplies become depleted, they will be restocked as soon as possible.

4.4 Fire and Explosions

Bulk fire protection will be provided from the plant water distribution system. This system will be connected to a hydrant distribution system for fire fighting in the plant and administration area. Fire fighting equipment will be maintained on site. In high-risk areas such as control rooms, laboratories, and mineral processing areas, and in mobile equipment, chemical fire extinguishers will be placed in convenient locations.

The Engineering Manager will be responsible for keeping fire suppression equipment in good working condition. The Environmental, Health and Safety Manager will be responsible for

inspecting and ensuring that chemical fire extinguishers are properly charged and are in good working condition.

The incidence of fires or explosions is expected to be rare. However, the installation of smoke detection equipment will be considered in high-risk facilities and areas heavily used by personnel such as common areas, offices, and residential areas. Trained employees will be required to perform periodic inspections of high-risk areas and equipment to ensure that potential fire hazards are detected and corrected.

4.4.1 Preparedness

The Environmental, Health and Safety Manager, will be responsible for organizing and training an Emergency Response Team to respond to fires, explosions, accidents, and injuries. The Emergency Response Team will act as first responders and will be trained in first aid, fire rescue, evacuation, and working in closed and/or oxygen deficient space. The fire rescue training will include annual training sessions comprised of the following:

- Activating the fire suppression system.
- Performing drills to put out fires.
- Responding to practice rescue scenarios.

4.4.2 Response Procedure

In the event of a major fire or explosion, the following procedures will be followed:

- Assess the location and severity of the situation.
- Extinguish the fire if it can be accomplished without being exposed to potential hazards.
- Activate the emergency warning system.
- Restrict access to the area.
- Do not take health or safety risks by entering unstable or fire areas.
- Notify the Environmental, Health and Safety Manager and Emergency Response Teams according to established protocols.
- Assist in extinguishing the fire and securing the area only under the direction of the Emergency Response Team.

The emergency response procedure will be implemented upon detection of a fire. Fire fighting equipment and an emergency response vehicle equipped with fire fighting equipment (provided by GeoCam) will be dispatched to the area immediately.

Fire and explosions can cause oxygen deficient atmospheres. These events can also generate poisonous gas as part of the combustion process. In addition, hazards associated with other structures, such as fuel tanks and chemicals may cause additional unexpected fires or explosions. Training programs will be performed to educate employees of the dangers associated with entry into a burning area.

4.5 Accident Spills or Releases from the Processing Plant

Inventories of all chemicals used at the mine site, including their respective MSDSs, will be kept on file at the environmental services building and at specified locations where the chemicals are used. Examples of such chemicals are hydrochloric acid, sulfuric acid, lime, soda ash, xylene, isodecanol, cleaning solvents and degreasers, paints and other types of industrial chemicals required for the solvent extraction of cobalt and nickel. In addition, documentation of all first aid and emergency medical treatments administered to employees will be maintained. The MSDSs will accompany the chemicals during shipping and handling. Spill prevention briefings for operations personnel will occur monthly. Employees will be informed of where spill response equipment is kept and how it is to be deployed, where the list of contact names is kept and notification and spill response procedures.

4.5.1 Response Procedures

Personnel operating the processing plant will be trained in emergency response procedures. These individuals will be properly instructed in the operation and maintenance of all equipment used to prevent oil and hazardous material discharges, as well as the applicable spill prevention regulations. Personal protective equipment will be available and will be adequate to protect workers responding to a worst-case scenario with the most hazardous chemical.

A contingency plan will be developed to determine scenarios of where accidents are most likely to occur. Scenarios will be evaluated for the potential risk of failure, leakage detection, maximum release, notification and response time, and potential pathways to sensitive ecosystems. For each scenario, a plan will be developed to determine the most effective way of responding to the spill. A decision tree will be developed to help evaluate response measures.

Spill containment materials and personal protective equipment will be kept at the mine site for use in the event of an emergency. Procedures for using, inspecting, testing, and maintaining the emergency response equipment will be developed once spill containment equipment is acquired. Containment equipment will be stored in sufficient quantities to control the volume of a worst- case spill and may include the following:

- Floating booms.
- Pneumatic barriers.
- Absorbent pads.
- Pumps.
- Impermeable holding ponds.

The need to capture and treat contaminated birds, mammals, or other organisms will be evaluated on a case-by-case basis. In the event that treatment is required, wildlife will be captured and to the extent practical treated by a trained wildlife specialist or veterinarian.

The contingency plan will also focus on reducing potential risks to human health and the environment by controlling spills in a timely manner. The Emergency Response Team will be immediately dispatched to the spill location. Where practical, actions will be taken to contain the spill using berms, barriers, absorbent pads, or other control devices.

The spill containment contingency plan will include the following steps and guidelines:

- The spill should be approached with caution. The area should be evacuated and isolated except for the response team.
- Identify hazards. Evaluate all available information and consult the recommended guide to reduce immediate risks.
- Situation Assessment. The following items should be considered:
 - Is the emergency related to a fire, spill, or leak?
 - What are the weather conditions?
 - At what location within the plant-site did the spill occur?
 - Who/what is at risk - people, property or the environment?
 - What actions should be taken: Is an evacuation necessary?

- Is diking or blocking of a drainage/waterway necessary?
- What resources (human and equipment) are required?
- Spill response will include the following:
 - Locate chemicals.
 - Equipment deployment.
 - Chemical removal.
 - Temporary storage.
 - Mechanical recovery for disposal or re-processing.

4.5.2 Reporting Procedures

Spill information will be made available immediately to other relevant personnel and groups. The following information will be provided:

- Location of spill, land and water.
- Source of spill.
- Time of spill.
- Estimated volume of spill.
- Nature and potential danger of spilled material.
- Anticipated movement of spilled material.
- Responsible party name, address, phone number.
- Action already taken.
- Weather conditions at spill site.

A preventative measure will be the tracking of spill histories. Records will include a description of any observed spill and the corrective action taken. A follow-up report will also be generated to make recommendations on future preventative measures. The follow-up report will be integrated into operation and emergency response plans.

4.6 Medical Emergencies

The Emergency Response Team will respond to fires, explosions, and medical emergencies. The team will be prepared to perform emergency first aid treatment, including

cardiopulmonary resuscitation (CPR) as required. The Emergency Response Team will be trained as first responders in the disciplines of first aid, CPR, fire rescue, evacuation, and in working in closed or oxygen deficient spaces. The Team will also be trained in transferring accident victims to the on-site medical clinic or local medical facility in Lomié.

4.6.1 Response Procedures

In the event of a medical emergency or fatality, the following procedures will be followed:

- Do not take health or safety risks by entering a dangerous or unstable area.
- Assess the location and severity of the situation.
- Address life threatening issues such as lack of pulse, blocked air passages, or severe bleeding using basic first aid techniques.
- Notify the Senior Medical Officer, the Environmental, Health and Safety Manager, and the Emergency Response Teams according to established protocols.
- Assist in securing the situation and transporting the victim under the direction of the Senior Medical Officer and the Emergency Response Team.

Emergency response procedures will be implemented immediately upon the detection of an accident or fatality. First responders will notify the dispatch operator who will immediately dispatch a GeoCam emergency response vehicle equipped with first aid equipment to the scene of the accident.

4.6.2 Notification and Reporting

The Environmental, Health and Safety Manager is responsible for keeping the following records:

- Person or people involved.
- Date, time, and location of accident.
- Description of the situation and site conditions.
- Measures taken to prevent its reoccurrence.
- Actions used to control the extent and severity of the problem.
- Final disposition of the patient.

The Environmental, Health and Safety Manager is responsible for data management, record keeping, and reporting to the appropriate regulatory authorities and stakeholders.

4.7 Social Unrest

GeoCam has developed a Public Consultation and Disclosure Plan that includes procedures for dissemination of information to the public, stakeholders, and non-government organizations. The plan also includes a mechanism for grievances, so that public concerns related to the project can be addressed through a formal grievance process.

Despite this proactive approach, social unrest at the mine could occur for a number of reasons outside of GeoCam's control. Such unrest may result in violent or non-violent protests, attacks on mine personnel, property damage, or even hostage taking. The Environment, Health and Safety Manager oversees an on-site security team that will be used to maintain the security of the mine site. This team will also work closely with local government authorities (police, military) to maintain the security of the mine area. In addition, a response program to address these issues, in cooperation with the Cameroon government, will be developed for the GeoCam site.

In the event of a confrontation with mine employees or personnel, the Environment, Health and Safety Manager will be immediately contacted. The security team will, under the direction of the Environment, Health and Safety Manager, implement response protocols based on pre-determined plans. These plans and protocols are not outlined here in order to maintain confidentiality and assure that such response protocols can be undertaken without counter-plans having been developed that would undermine the effectiveness of the response.

5.0 Transportation

The GeoCam mine site is located in the Haut Nyong Division, East Province of Cameroon about 640 kilometers by road from the seaport of Douala and 400 kilometers by road from the capital of Yaoundé. The closest town of any significant population is Lomié approximately 26 kilometers west southwest of the mine site. Reagents, fuel and products from the mine will be shipped by truck to and from the seaport of Douala. A paved provincial highway extends easterly from Douala, through Yaoundé and ends at the town of Ayos. From Ayos, a wide two-lane gravel road scheduled for paving by the Cameroon Government extends to Abong Mbang where a narrow two-lane road extends southerly to the town of Lomié. From Lomié, the road extends to Kongo Village and the GeoCam mine site. Prior to initiation of mine operations, available medical facilities located between the mine site and Douala will be identified. Local routes to and from medical facilities will be maintained so that they are accessible year round.

Most transport carriers to the Nkamouna site will be contractors. GeoCam will oblige its contractor(s) to the following, and will conduct random inspections to confirm compliance with contractual obligations. Non-compliance will result in contract termination.

5.1 Transportation Vehicles

All transportation vehicles will be equipped with a first aid kit and fire extinguisher. Transportation vehicles will also be equipped with a radio system or cellular phone that has an appropriate range to request assistance, if required. The vehicles will be maintained in good working condition and will be equipped with functional seat belts that are used by all passengers.

Limited air transportation to just north of the process plant site will be provided through contracted services. This service is primarily for transport of personnel to and from the site and will not be used to bring bulk materials, supplies and mine products to and from the mine site. Contractual arrangements with the carrier will require that an implementable ERCP be available for GeoCam inspection and acceptance.

5.2 Transportation Accidents

The majority of personnel, equipment, supplies and mine products will be transported to and from the mine site by trucks and various types of light vehicles, although there will be limited transport of mine personnel by air transportation. Since transportation incidents could occur at a number of locations, the specific emergency response will vary depending on location.

In general, any transportation incident will be reported to the nearest dispatch. The first responder will report as many specifics about the incident as possible to the dispatcher.

In the event that an accident or unsafe condition is encountered during transportation, drivers will be instructed on plausible scenarios that may be encountered and what to do in those instances. Personnel will stay a safe distance from vehicles in the event of a fire.

5.3 Transport of Hazardous Materials

All chemicals, reagents, hazardous materials and wastes will be transported to their destination in designated shipping containers. The materials will ultimately be stored in an appropriate storage facility that is designed for safe storage of hazardous materials and wastes.

All suppliers of hazardous materials will be required to have their own emergency response procedures in place as part of their contractual agreements with GeoCam. In addition, supply contractors will be required to provide the following information:

- Environmental liability insurance, if available.
- Evidence of employee and driver training in safety and emergency response.
- Appropriate plans for spill prevention, control, and clean-up for equipment and vehicles.
- Maps to identify environmentally sensitive areas or areas with potential social or public safety issues along drive routes.
- Contingency plans for responding to emergencies, including response equipment and third party contacts to respond to emergencies.

Prior to finalizing contracts with potential suppliers, the supplier's emergency response and contingency plans will be reviewed in compliance with corporate, local, national, and international standards.

6.0 Emergency Response Procedures

6.1 Hazard Recognition

Employees will undergo formal safety training and task training by experienced personnel under the direction of the Environmental, Health and Safety Manager. This training will teach employees techniques in hazard identification and recognition. The training will also identify potential hazards associated with the mine site and their occupations. Following training, employees will be responsible for identifying potential hazards as part of their normal job requirements. Rapid recognition of potentially hazardous situations can avert an emergency. Weekly safety meetings will be held among all staff to discuss a broad range of health and safety topics, but will periodically address the following:

- Specific tasks to be performed.
- Time constraints.
- Hazards that may be encountered, including their effects, how to recognize symptoms, and other danger signals.
- Emergency procedures.

Each safety meeting will discuss a specific topic or issue. The meetings will also serve as a reminder of potential occupational hazards. By limiting discussions to a focused topic, the meetings are expected to require less than 15 minutes.

6.2 Emergency Response Training

The Environmental, Health and Safety Manager will be responsible for coordinating emergency response training. The Emergency Response Team will participate in annual training at the mine site to ensure that all members are trained in equipment use and emergency response methods. The Emergency Response Team members will be trained in transportation of hazardous materials, fire fighting, spill control and prevention, mitigation, first aid, and personnel rescue techniques. Training will be directly related to their specific emergency response roles, and will include:

- Emergency chain-of-command.
- Communication methods and signals.
- How to call for help.
- Emergency equipment and its use.

- Emergency evacuation while wearing protective equipment.
- Removing injured personnel from enclosed spaces.
- Offsite support and how to use it.

Emergency personnel will receive training in first aid and CPR and will practice hands-on rescue techniques on at least an annual basis. Training will also include recognizing and treating chemical and physical injuries and heat stress.

6.3 Employee and Contractor Training

The Emergency Response Team, under the supervision of the Environmental, Health and Safety Manager, will provide safety and emergency response training to all mine personnel. The training will identify site-specific hazards and hazards associated with mines in general. The training will also review standard operating procedures, use of personal protective equipment, signaling an emergency (the alarm to be used, how to summon help, what information to give and who to give it to), evacuation routes and refuges, reporting protocol when an alarm sounds, and other general safety procedures. Emergency response training will also be provided to staff on emergency response procedures, chains of command, and responsibilities of key individuals.

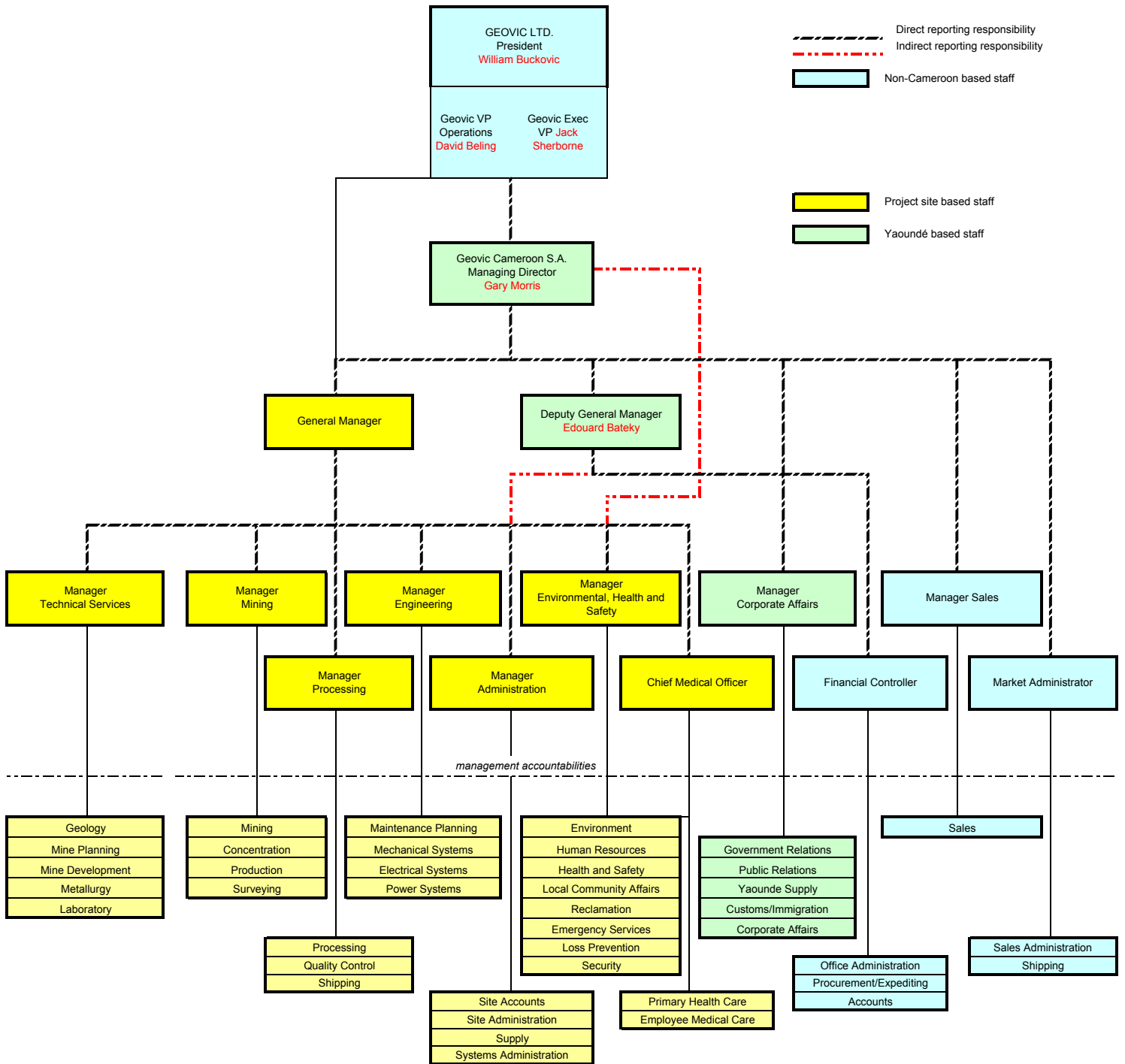
Safety, emergency response, and first aid training will be provided at the time of hire. All staff will also be required to attend annual refresher courses. Contractors that perform any work on site will be required to show evidence of current and appropriate health, safety and emergency response training. GeoCam will develop an orientation program to advise contractors and site visitors on basic health, safety and emergency procedures such as emergency signals and evacuation routes.

Tables

Table 1
Nkamouna Emergency Response and Contingency Plan
List of Chemicals Used at Nkamouna Project

Chemical	Use	Hazard Rating	Toxicity	Irritation	Recommended Disposal	Comments
Aluminium Sulfate	Water Treatment	Water soluble, acidic and toxic in water supplies	Moderate Toxicity; Low aquatic toxicity	Non Irritant	Flush with plenty of water	
Calgon Cagulate 25	Water Treatment	Non Hazardous	Non Toxic	Non Irritant	Flush with plenty of water	Non-hazardous
Sodium Hypochlorite (granular)	Water Treatment	Health: High Fire: Slight Reactivity: High	TLV: 0.5 ppm; 1.5 mg/m ³ (as TWA); TLV: 1 ppm; 2.9 mg/m ³ (STEL) (skin) (ACGIH 1992-1993).	Skin: High; Eyes: High; Lungs: High	Flush with plenty of water	A harmful concentration of this gas in the air will be reached very quickly on loss of containment.
Sulfur	Mineral Processing		Non Toxic		Suitable waste disposal facility	Flammable
Sulfuric Acid	Mineral Processing	Acidic Corrosive	Poison; High toxicity to aquatic organisms	Corrosive, causes severe burns	Neutralize with lime/sodium carbonate	
Sulfurous acid	Mineral Processing	Acidic Corrosive				
Hydrochloric Acid (concentrated)	Mineral Processing	Acidic Corrosive	Highly Toxic	Corrosive, severe burns, irritating to respiratory system.	Dilute and neutralize with NaHCO ₃	
Extractant (Bis (2,4,4-trimethylpentyl) dithiophosphinic acid)	Solvent Extraction	Corrosive	Very Toxic		Incineration or Hazardous Waste Facility	Use self-contained breathing apparatus in emergency situations
TiOA xylene	Solvent Extraction		Toxic	Moderate irritant	Absorb on vermiculate and recycle; or Hazardous Waste Facility	Highly flammable
Exsol D-80	Solvent Extraction		Harmful to aquatic organisms	Minor irritant	Hazardous Waste Facility	May form explosive mixture with air above 77 °C
Flocculant	Agglomeration of tails		No known effects on ingestion	Minor irritant	Landfill	
Hydrated Lime	pH adjuster	Alkaline	Low	Moderate irritant	Non-hazardous landfill	
Soda Ash	pH adjuster	Alkaline	Low	Moderate irritant		

Figures



EH&S PROGRAM DETAIL

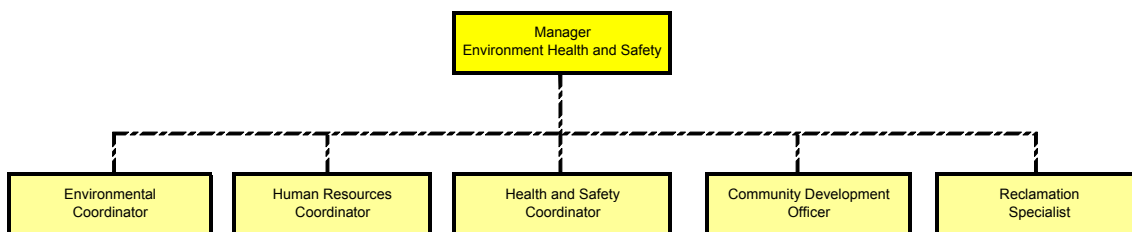


Figure 1. Geovic Cameroon S.A. Organizational Structure

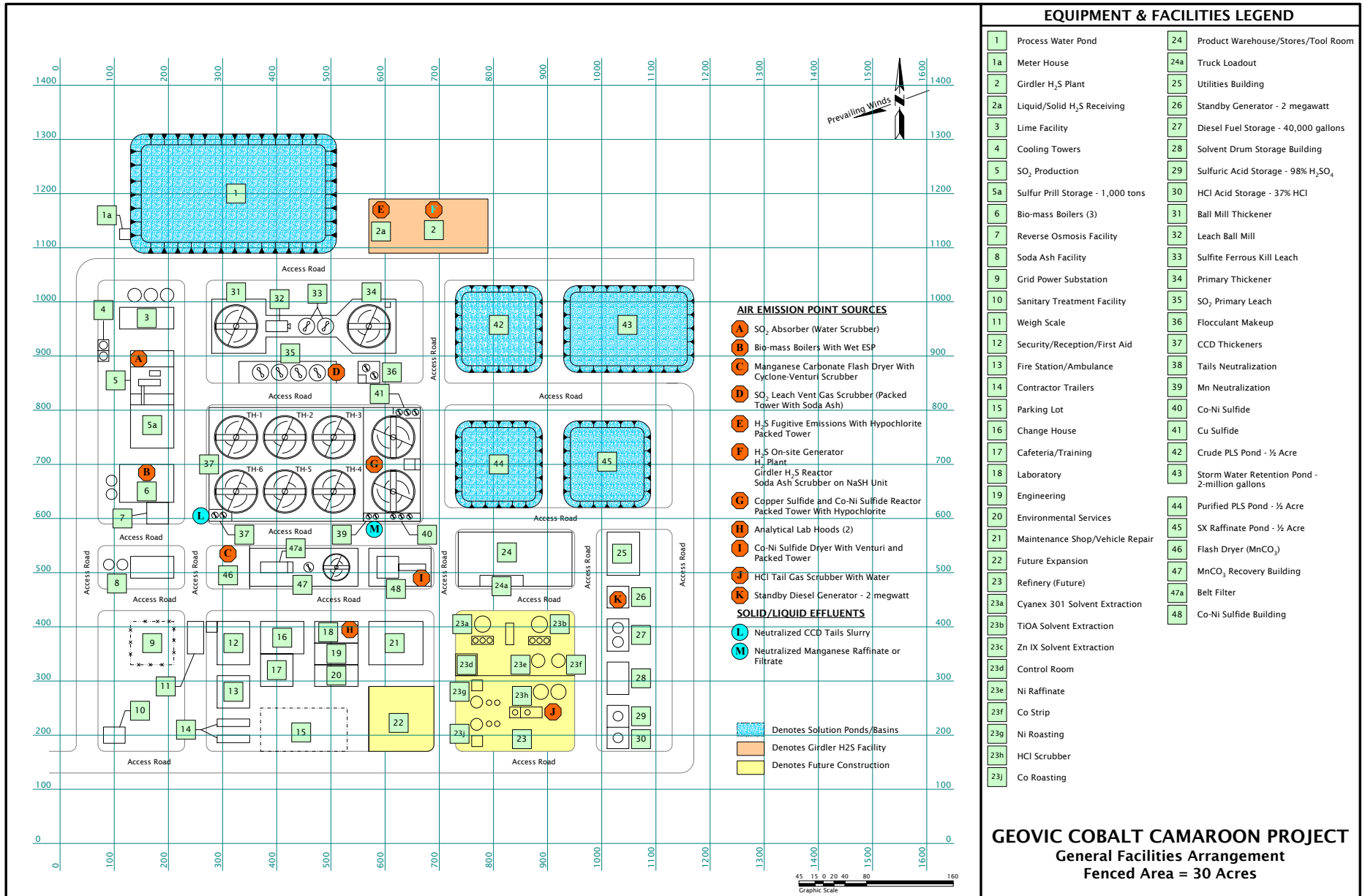


Figure 2. General Facilities Arrangement

Appendix A

Critical Item Checklist

Appendix A

Critical Item Checklist

The U.S. Mine Safety and Health Administration (MSHA) prepared critical item checklists to be completed during a mine emergency is also appropriate to this project. GeoCam personnel will complete these checklists during a mine emergency.

Notification

1. Activate notification procedures for emergency contacts
2. Notify key mine officials
3. Notify key agency officials
4. Notify fire/rescue officials
5. Notify neighboring residents
6. Notify family members
7. Notify support medical personnel

Shutdown Operation

1. Assemble employees
2. Debrief witnesses
3. Account for all persons known to be at mine
4. Assign employees to tasks

Security and Site Monitoring

1. Establish security – all access roads and routes
2. Establish check-in/check-out system for all authorized persons
3. Assign site monitors and shift rotation schedule
4. Establish parking and staging areas

Command Center

1. Follow mine emergency plan
2. Setup a mine emergency command system
3. Staff emergency organization
4. Delegate authority and assign duties
5. Give appropriate orders
6. Brief arriving personnel
7. Review all mine maps, and coordinate reference points to all maps
8. Make extra copies of all maps
9. Follow appropriate safety precautions
10. Request/dispatch additional persons to area as required
11. Establish a shift rotation schedule for command personnel

Communications

1. Relay information to the command center
2. Establish external communications
3. Monitor and log all communications

Medical Arrangements

1. Arrange for ambulance and medical services
2. Setup temporary morgue (if required)

Acquisition of Equipment, Materials, and Services

1. List all equipment available at the mine
2. Locate and check onsite equipment for possible use
3. Arrange for heavy equipment, if required
4. Arrange for portable radios
5. Provide transportation for equipment
6. Obtain personal protective equipment
7. Establish waiting and briefing area for family/relatives (provide food and sitting/sleeping area)

Information

1. Appoint a spokesperson for all entities (Environmental, Health and Safety Manager)
2. Brief family members on a regular schedule
3. Brief local residents on a regular schedule

Appendix B

Spill Reporting Procedures

Appendix B

Spill Reporting Procedures

To report a spill, call the dispatcher and provide the following information:

- Person and/or department responsible.
- Contact phone number.
- Substance spilled.
- Location of spill.
- Approximate amount spilled.
- Possible cause of the spill.
- Preliminary Assessment of damage.
- Cleanup activities under way.

A follow-up written report will be required to document the spill event.

If you need help in cleaning up the spill, contact the Environmental, Health and Safety Manager for assistance.

Appendix C

Spill Report Form

Spill Report Form

Date: _____ **Time:** _____

Name and Contact Number: _____

Supervisor and Contact Number: _____

Department: _____

Nature of Incident: _____

Was Medical Attention Required? _____

If so, describe: _____

Identity of Released Chemical (or its components): _____

Medium or Media into which Release Occurred:

Air Land Sewer Building or Room Other

Duration of Event or Release: _____

Estimated Quantity of Material Released: _____

Description of Incident: _____

Any Actions taken to Clean-Up Release: _____

Appendix D

Material Safety Data Sheets (MSDS)