LP

CHELOPECH SAFETY REPORT

REVISION HISTORY

REV	DATE	BY	CHCK'D	APPR'D	COMMENTS

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1. MAJOR ACCIDENTS PREVENTION POLICY

1.1. Major Accident Prevention Policy (MAPP)

MAJOR ACCIDENT PREVENTION POLICY

XXX EAD acknowledges that the nature of certain activities carried on at its site are subject to the Seveso II Directive, and have the potential to give rise to major accident hazards impacting on employees, contractors, visitors, the public in general and the environment.

XXX EAD is committed to ensuring that its activities are undertaken in such a manner so as to prevent accidents wherever practicable and in all cases to ensure that risks associated with those activities are as low as reasonably practicable (ALARP). In particular, our site is committed to operating in accordance with the site's major accident prevention policy document (MAPP).

XXX EAD believes that high standards of safety and environmental performance are an integral part of good business practices and that the responsibility for achieving these standards lies with line management at all levels.

Specifically, XXX EAD is:

committed to regularly reviewing and updating this major accident prevention policy to ensure that the policy remains current and relevant,
committed to providing the necessary resources to enable the full implementation of this policy
committed to providing sufficient supervision, information, instruction and training for its employees, and where required others (such as contractors, visitors and neighbours) who may become involved in, or affected by its activities,

committed to operating in accordance with written procedures established within the framework of an integrated safety, health, environmental and quality management system,
committed to monitoring compliance with this policy,
committed to investigating non-compliances with the policy and taking appropriate action to prevent continued non-compliance, so as to ensure that the company's obligations to safeguard the health and safety of its employees, its neighbours and to protect the environment, are met by preventing major accidents.

Whilst it is the responsibility of the Chief Executive of XXX EAD to ensure these commitments are adhered to, the principal responsibility for operational activities necessary to develop, implement and maintain the necessary management systems to comply with this policy rests with the Managing Director of Chelopech Mining EAD.

To this end the Managing Director will:

ensure that the organisation's Safety Management System is monitored and maintained and will seek to prevent major incidents and mitigate their effects,

assign the roles and responsibilities of those involved in the management of major accident hazards at all levels within the company,

select competent personnel, including contractors where appropriate, ensure their effective induction and maintain their competency by identifying training needs and satisfying these through appropriate training, information and instruction,

implement arrangements and procedures for the safe operation of plant, equipment and processes, for the safe handling, storage and transportation of chemicals, and for the maintenance of systems in both normal and abnormal situations,

ensure through effective consultation to develop a culture in that all employees are committed to achieving the aims of this policy and that they fully co-operate with management to optimise performance and minimise the risk of a major accident occurring,

ensure the influence of human factors is taken into consideration when designing/ modifying plant, equipment and developing working practices,

implement arrangements for systematically identifying hazards that may result from both normal and abnormal operations and to assess their likelihood, consequence and severity through a risk assessment process,

ensure that an appropriate safety case is prepared to ensure hazard identification and risk assessment at the planning stage, and during the development of all processes and storage equipment or modifications, including the establishment of standards of engineering design and operation so that a major accident will be prevented,

implement arrangements for identifying possible emergencies by ongoing systematic analysis and for preparing, testing and reviewing emergency plans to deal with such emergencies in consultation with the appropriate regulatory authorities and neighbours,

provide appropriate information in a proactive manner to the general public regarding the nature of the activities being carried out and the measures to be taken during an emergency,

implement arrangements for the ongoing assessment of compliance with all elements of this policy and promote safety and environmental performance through a planned approach to continued improvement.

implement arrangements for investigating non-compliance with this policy including a recording system of corrective actions taken to prevent a re-occurrence, and ensure the reporting of all accidents and near misses, particularly where these are due to a failure of protective measures,

ensure that relationships with all regulatory authorities and the general public are open and transparent.

To ensure the effectiveness, reliability and suitability of the MAPP and the SMS a formal review shall be carried out every three years by the Managing Director, the Operations Manager, the Environmental Manager and any other relevant person or Body Representative that may be determined pertinent at the time.

This Policy shall be reissued every four years or at any other time when significant changes are effected or after accidents, incidents and near misses.

For and on behalf of XXX EAD

Signed CEO

Signed MD

1.2. Safety Management System

The Safety Management System Manual is presented in full in Appendix A of this Safety Report and covers the seven protocols required by the Seveso II directive. The manual is a high level document describing the structure of the Safety Management System (SMS) and referring to lower level documents which describe in detail how the principles of the SMS will be put into action. The lower level documents are not a part of the Safety Report as they will be developed and refined on an ongoing basis to suit the needs of the operation.

An extract from the Introduction to the SMS is included below.

The purpose of this Safety Management System Manual is to provide all XXX EAD Personnel and Contractors, with a clear understanding of the required standards for managing occupational health and safety in their area of responsibility. This will

reduce the risk of injury and ill health to people, impact on the environment and property damage.

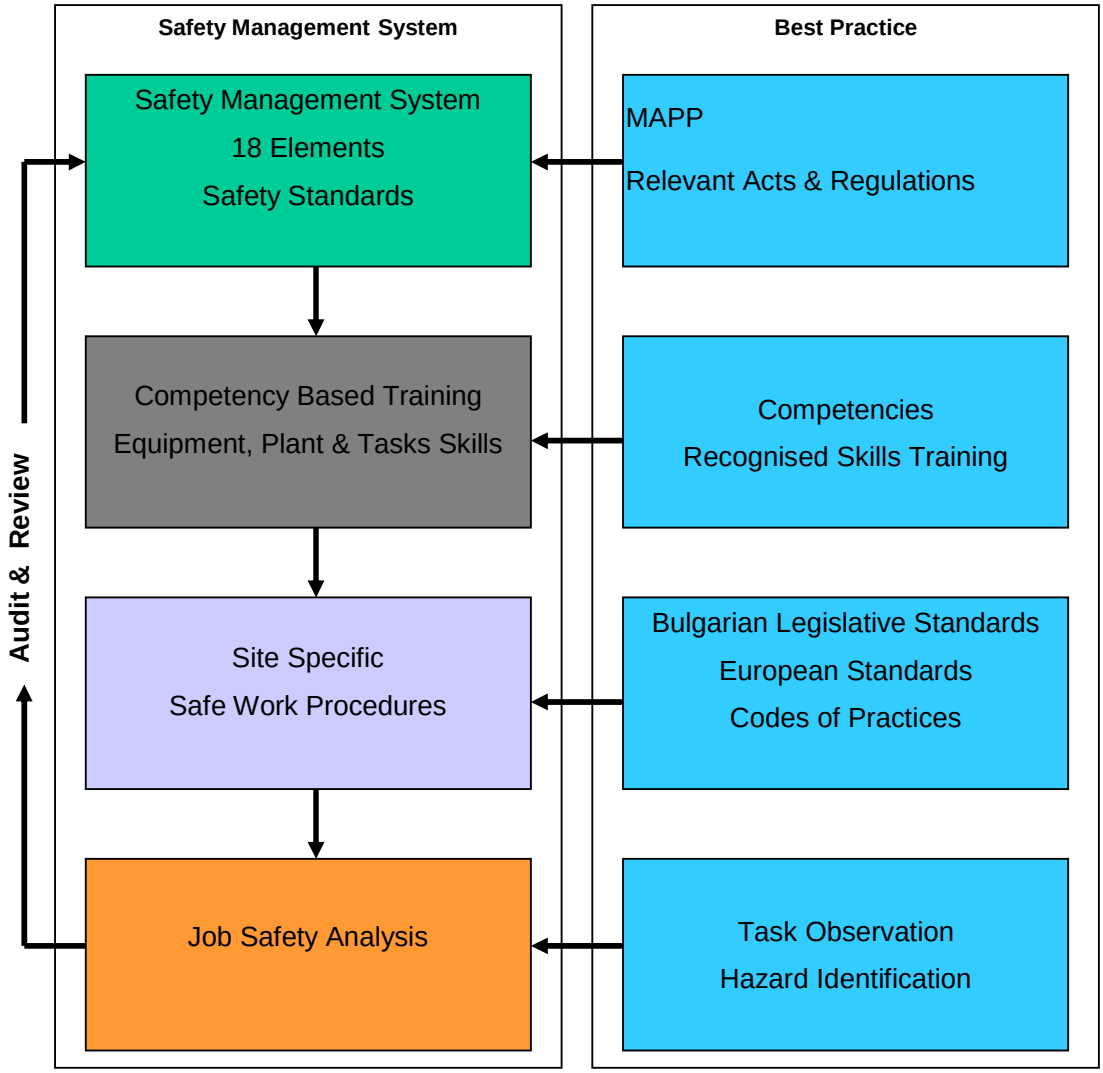
This document is part of the *Major Accidents Prevention Policy* (MAPP) and the Safety Standards within this manual are contained within 18 Key Elements, reflecting the *Directive 96/82/EC (Seveso)* 7 protocols which make up the Safety Management System. Each Element includes an *Intent* that describes the purpose of the Element and *Standards* that describe actions necessary to comply with the Element. Guidelines, relevant training and associated procedures for each area of responsibility are set out to provide a clear plan on what must be done to achieve compliance.

1. ***Organisational arrangements and personnel***
    - *Leadership and Commitment*
    - *Responsibility and Authority*
    - *Occupational Health and Safety Legal Compliance*
    - *Occupational Health and Safety policy*
    - *Training and Competence*
    - *Contractors*
2. ***Identification, evaluation and control of the risks of major accidents occurring***
    - *Risk Management*
3. ***Management and control of technological processes***
    - *Document control*
    - *Occupational Health and Safety planning*
    - *Communication*
    - *Plant and Equipment*
    - *Health and Hygiene*
4. ***Change Management***
    - *Change Management*
5. ***Emergency Planning***
    - *Emergency Preparedness*
    - *Accident and Incident Management*
    - *Injury Management*
6. ***Monitoring***
    - *Performance Indicators*
7. ***Audit and scheduled reviews.***
    - *Audits and Continuous Improvement*

The Safety Standards have been developed to ensure compliance with the requirements of the XXX EAD "duty of care" obligations. It provides managers and supervisors with the "what-to-do" information to enable them to adequately manage their area of responsibility.

To comply with the Safety Standards, the hazards associated with XXX EAD operations will be identified, assessed and controlled to minimise any risk they may pose to the occupational health and safety of people.

Figure 1.1 Safety Management Model



DEFINITION OF TERMS

Accident means an incident resulting in and injury or affecting a person's health.

Actions Register is a status list of items for action, including the person responsible for close out of each action as a result of safety meetings.

Alternative Jobs Register is an itemised list of alternative jobs or light duties for injured workers.

Audit means a systematic examination against defined criteria to determine whether activities and related results conform to planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve the organisation's policy and objectives.

Company means XXXEAD and all its subsidiary companies

Continuous Improvement means the process of enhancing the occupational health and safety management system, to achieve improvements in overall occupational health and safety performance, in line with the company's Safety & Health Policy.

Contractor means an individual, company or organisation engaged under a contract with the Company to perform work or supply goods or services in connection with the Company.

Emergency Response Plan (ERP) is a critical document outlining the procedures and responsibilities of all personal in the case of an emergency. It also includes pre and post incident planning and actions to be taken.

First Aid Injury refers to Minor Injury.

Hazard means a source or situation with a potential for harm in terms of human injury or ill health, damage to property or a combination of these.

Hazard Identification is the process of recognising that a hazard exists and defining its characteristics.

Hazard Register means a register showing all potential hazards, a level of risk of each potential hazard, control measures for each potential hazard, and documented references for control measures.

Health Surveillance (Mine Workers') is the process of monitoring individuals for the purpose of identifying changes in health status due to occupational exposure to a hazard.

Injury Management is the managed process of returning injured or ill employees to suitable employment.

Incident means any unplanned event that results in, or has the potential for injury, ill health, damage, or other loss.

Job Safety Analysis (JSA) is the process of determining hazards in each step of a job or task and identifying control measures for each hazard. Interchangeable terms are Job Hazard Analysis and Task Hazard Analysis.

Lost Time Injury (LTI) means a work related injury or harm to health that results in time lost from work of one day/shift or more, and is supported by an approved Workers' Compensation Claim.

MAPP (Major Accident Prevention Policy) is a statement which sets down the objectives and responsibilities for the safe operation of a major hazard establishment.

Maintenance Management System (MMS) is specific system covering all maintenance requirements including critical areas such as pipe integrity, pressure systems, electrical systems, rotating critical equipment and the like.

Medical Treatment Injury (MTI) means an injury normally requiring treatment by a registered medical practitioner.

Minor Injury (MI) means a minor injury requiring only first aid treatment or observation.

Near Miss means any unplanned event that has the potential for injury, ill health, damage, or other loss, however did not result in such.

Safety Management System is that part of the overall management system which includes organisation structure, planning activities, responsibilities, performance requirements, practices, procedures, process and resources for developing, implementing, achieving, reviewing and maintaining the Health & Safety Policy, and so managing the occupational health and safety risks associated with the XXXEAD operations.

Practicable means something is capable of being done. Whether it is also reasonable takes into account:

- The severity of any injury or harm to health that may occur;
- The degree of risk (or likelihood) of that injury or harm occurring;
- How much is known about the hazard and the ways of reducing, eliminating or controlling it; and
- The availability, suitability and cost of the safeguards.

Risk is the combination of the potential consequences arising from a specified hazard together with the likelihood of the hazard actually resulting in an unplanned event.

Risk Assessment is the process used to determine risk management priorities by evaluating and comparing levels of risk against pre-determined standards, targets, risk levels or other criteria.

Safe Work Procedure (SWP) is the defined method of conducting an activity in accordance with the Standard set by XXX EAD.

Safety is a state in which the risk of harm to persons, or damage is limited to a tolerable level.

Safety & Health Policy is a statement by XXXEAD of its intentions and principles in relation to its overall occupational health and safety performance, which provides a framework for action and for the setting of its occupational health and safety performance requirements and targets.

Shall means it is mandatory.

Should means it is highly recommended but not mandatory.

Significant Injury includes Medical Treatment Injury and Lost Time Injury.

Standard is a specific minimal safety requirement in the Safety Management System and in Safe Working Procedures.

Sub-contractor means an individual, company engaged under a contract by XXXEAD to perform work or supply goods or services.

Unplanned event is any undesired outcome that could arise from a hazard.

Workplace means any area of the mining lease or company territory.

RESPONSIBILITY AND AUTHORITY

(a) The Executive Director;

- Shall ensure that safety responsibilities and authorities are documented in all job profiles, and are communicated and agreed with each individual
- Shall identify and provide the resources required to implement, maintain and improve safety. Resources should include specialist skills, technology, human and financial resources
- Shall provide an occupational health and safety resource professional to provide Department Shift leaders with support and advice on meeting their safety responsibilities, and provide expertise and assistance as required.

(b) Shift leaders;

- Shall be responsible for the safety performance of his or her area of operational control. This includes responsibility for the effective implementation of the Safety Management System
- Shall be responsible for the effective implementation of the Maintenance Management System
- Shall ensure that areas of responsibility and accountability are defined and agreed with Contractors, and are documented accordingly.

(c) Supervisors

- Shall be responsible for the safety performance of the people reporting to them and for ensuring that those people meet the requirements of the XXXEAD Occupational Health& Safety Policy and Safety Standards.

(d) All site personnel including Contractors and Visitors

- Shall be responsible for ensuring their own occupational health and safety, and the occupational health and safety of others, by carrying out their work in a safe, skilful and competent manner, pointing out hazards and contributing to safety by way of suggestions, serving on committees and the like.

Responsibility and Accountability Statements

The Board of XXXEAD will:

(a) Provide a statement of their commitment to highest Occupational Health and Safety principles.

(b) Provide a statement of their commitment to the Major Accident Prevention Policy and the monitoring of its effectiveness.

(c) Ensure there is an effective Safety Management System that covers employees, Contractors, sub-contractors, consultants, visitors and the public.

(d) Provide adequate resources to enable XXX EAD to comply with the health, safety and environmental policies,

(e) Monitor the Occupational health and safety performance of Chelopech Mining EAD to ensure there is a continuous improvement, and

(f) Appoint the Executive Director to

- Be the responsible officer for Safety & Health,
- Delegate the resources provided in an appropriate manner to enable compliance with the Major Accident Prevention and Health, Safety and Environmental policies,
- Develop and disseminate a Health, Safety and Environmental manual to the facilitate the implementation of the Health, Safety and Environment policies,
- Take appropriate action should he/she become aware that compliance with health, safety and environment policies is or may not be achieved,
- Make himself/herself aware of significant health, safety and environmental issues affecting the plant or its operators,
- Carry out periodic reviews of the effectiveness of the health, safety and environmental policies.

1.3. OCCUPATIONAL SAFETY & HEALTH LEGAL COMPLIANCE

Intent

To ensure that XXX EAD complies with, or exceeds, all occupational health and safety laws, regulations, standards, codes, statutory licences and other legal requirements that apply to its operations, and exercises a duty of care to personnel and an undertaking to provide open consultation in the community where they operate.

Standards

a.The ED

- Shall identify all safety related Acts, Regulations and other legislative and regulatory requirements applicable to XXXEAD operations and assess the implication of any changes in the Regulations

- Shall ensure that all amendments and changes (including new requirements) are identified and any implications are assessed, and that all personnel, who need to be aware of these changes, are advised

- Shall be responsible for the formulation, documentation and delegation of implementation of systems to ensure compliance with all relevant legislative and regulatory requirements

- Where practicable, shall endeavour to contribute to the development of legislation, which has the potential to affect XXXEAD operations.

b. Shift leaders

- Shall implement systems with the support of the OHSE Manager to ensure compliance with all relevant legislative and regulatory requirements within their areas of responsibility.

- Shall establish and maintain systems with the support of the OHSE Manager to ensure compliance with requirements related to regulatory reporting and record keeping.

- Shall ensure that activities are conducted in a manner that is consistent with the requirements of the Company's Standards, relevant national and international Standards which apply to individual sites and competent engineering and risk management principles and practices.

- Will demonstrate a duty of care to all XXXEAD employees, Contractors, visitors and undertake support to the public consultation process.

c.Occupational Health, Safety and Environmental Manager

The Occupational Health, Safety and Environmental Manager (OHSE Manager) will assist the ED in meeting OHSE responsibilities. The duties of the OHSE Manager are determined by the General Manager and will include;

- Provision of advice and assistance to the GM in the maintenance and implementation of the OHSE system,

- Provision of advice to the GM on advances in OHS tools, techniques, legislation and accidents in related industries that may have a bearing on equipment and activities at the plant,

- Carry out other occupational health, safety and environmental related activities at the direction of the GM

d. Operators/technicians

Operators/technicians are required to;

- Operate and maintain the plant in accordance with the plant operating and maintenance procedures,
- Comply with the requirements of the OHSE procedures and safe work instructions and other legitimate requirements related to safety that XXX EAD may impose from time to time,
- Report hazards and take immediate steps to eliminate or control any hazards, or if this is not possible, remove themselves to safety and warn others,
- Suggest initiatives for continuous improvement in the XXX EAD OHSE Manual, procedures and work instructions,
- Conduct themselves in such a way as not to expose themselves, others and XXX EAD assets to unacceptable risks.

e.All XXX EAD Personnel

All XXX EAD personnel are required to;

- Comply with the requirements of the MAPP, OHS Policy, OHSE Manual, procedures and work instructions and other legitimate requirements related to safety that XXX EAD may impose from time to time.
- Report hazards and take immediate steps to make the hazards safe, or if this is not possible, remove themselves to safety and warn others,
- Suggest initiatives for continuous improvement in the XXX EAD OHSE Manual, procedures and work instructions,
- Conduct themselves in such a way as not to expose themselves, others, XXX EAD assets to unacceptable risks.

f. Contractors

From time to time XXX EAD may appoint contractors to conduct activities on their behalf in relation to the plant and its facilities. These contractors, in addition to contractual obligations, are required to;

- Meet all requirements set out by the company from time to time including but not restricted to those requirements laid out under (Section 1.2) Responsibility and Authority and (Section 1.6) Contractors of this document.

OCCUPATIONAL HEALTH AND SAFETY POLICY

Intent

To ensure that the values and the commitment of XXXEAD to health and safety are clearly stated and communicated to all persons associated with its operations.

Standards

a) **The Board** of XXXEAD and the **Executive Director** shall ensure that an *Occupational Health & Safety Policy* is prepared in consultation with employees and clearly states the company's commitment to improving occupational health and safety performance including meeting the statements declared in the company's policies and systems.

b) Shift Leaders;

- Shall ensure that their employees are aware of and understand the Safety & Health Policy.

- Shall ensure that copies of the Safety & Health Policy are displayed in prominent locations.

- Shall ensure that the Safety & Health Policy is explained to all new employees at induction.

o

c. Employees

- o Shall understand and comply with their occupational health and safety responsibilities in relation to the Safety & Health Policy and the Environmental Protection Act 2002

TRAINING AND COMPETENCE

Intent

XXX EAD's training and competence assurance program will ensure that employees are provided with information, instruction and training in order to be competent to perform their work in a safe and healthy manner.

Standards

a) **The Company** shall establish and document the competency requirements (Training Matrix) for all occupational health and safety training.

b) **Shift leaders** shall ensure that:

- o The competencies for each position are identified, documented and periodically reviewed;
- o Personnel are reviewed annually to identify training needs;
- o An annual occupational health and safety training program is developed and implemented.
- o Shall ensure that training is competency based and meets applicable national training standards.
- o Shall ensure that only appropriately certified personnel with the required skills, experience and qualifications will deliver any occupational health and safety training.
- o Shall ensure that a record of all training is maintained.
- o Shall ensure that the recruitment and selection criteria include evidence of current competence or identification of training needs for the role.

Guidelines

All Contractor personnel must include a clear definition of their competency standards.

Relevant Competency Training

- o Formal train the trainer

- One to one skill trainer
- Various Operator Skills Training Requirements
- Supervisor development
- Correct PPE usage
- Dangerous Goods & Hazardous Substances Handling
- Manual Handling Techniques

CONTRACTORS

Intent

To ensure that all Contractors have effective systems for managing occupational health and safety that complies with XXXEAD occupational health and safety standards and meets any requirements of the MAPP.

Standards

(a) **Contract Documentation** shall clearly delineate the responsibilities and accountabilities of all parties to minimise risk.

(b) **Department Shift leaders**

- Shall ensure compliance with the Company procedure (Selection & Management of Contractors).
- Shall ensure that procedures are implemented to verify that contractors comply with all occupational health and safety requirements during the term of the contract.
- Shall ensure that deficiencies identified during verification audits are subject to a corrective action and closeout process.
- Shall ensure that persons responsible for contractor management shall have the necessary competencies to manage the contract.

(c) **The Executive Director** shall be responsible for reviewing compliance with the Company procedure for the (Selection & Management of Contractors).

Guidelines

All Contractor personnel shall use the company standards as a minimum.

MAJOR HAZARDS IDENTIFICATION & EVALUATION

RISK MANAGEMENT

Large Scale Accident Prevention

Intent

To ensure that a consistent approach is taken to the identification of possible scenarios that may result in large scale accidents and to assess risks and the development of appropriate control measures to eliminate or minimise the potential impact of each hazard in line with the company's Major Accident Prevention Policy.

Standards

a) **The Company** shall define, document and communicate a procedure for conducting safety risk assessments to determine the identification and prevention of large scale accidents.

b) **The Company** shall develop and maintain an appropriate system, based upon the company procedure including:

- Identification and detailed recording of hazards of a large scale nature;
- Assessment of the magnitude of the hazards and the seriousness of the consequences to determine the level of risk;
- Implementation of controls based on a formal action management process;
- Provision of a description of technical parameters and the equipment used for the safe operation of the plant;
- Provision of internal and external resources that can be mobilised to minimise the consequences of accidents, and
- On-going monitoring and review of control effectiveness.

c) Each Shift Leader;

- Shall develop and maintain a Major Hazard Register that records the details of all large scale hazards identified and the controls used to minimise risk.
- Shall ensure that the information documented in the Major Hazard Register is effectively communicated to appropriate persons.

- Shall ensure that employees are trained in the principles of risk management commensurate with their level of responsibility.
- Shall ensure that all steps are taken, commensurate with their level of responsibility in line with the company's Major Accident Prevention Policy.

Operational Risk Management

Intent

To ensure that a consistent approach is taken to the identification of occupational health and safety hazards, assessment of risks and development of appropriate control measures to eliminate or minimise the potential impact of each hazard.

Standards

The Company shall define, document and communicate a procedure for conducting occupational health and safety risk assessments.

The Company shall develop and maintain an appropriate system, based upon the company procedure including:

- Identification and recording of hazards in a *Hazards Register*;
- Assessment of hazards to determine the level of risk;
- Implementation of controls based on a formal action management process; and
- On-going monitoring and review of control effectiveness.

Shift Leaders;

- Shall maintain a Hazard Register that records the details of all hazards identified and the controls used to minimise risk.
- Shall ensure that the information documented in the Hazard Register is effectively communicated to appropriate persons.
- Shall ensure that employees are trained in the principles of risk management commensurate with their level of responsibility.

OPERATIONAL CONTROL

DOCUMENT CONTROL

Intent

To ensure that when reference is made to any occupational health and safety document only the current version is available.

Standards

(a) Company occupational health and safety documents shall be identified and controlled by ED.

(b) Department occupational health and safety documents shall comply with the Company Safety Document Control System.

(c) Documents shall include the revision number, the date of issue of the referenced section and the person responsible for issue and control of the document.

(d) External documents referenced in the Safety Management System including Acts, Regulations and Codes of Practice shall be controlled to ensure their currency.

Guidelines

Shift leaders should be actively involved in the development of occupational health and safety documents and ensure that required performance requirements are used.

OCCUPATIONAL HEALTH & SAFETY PLANNING

Intent

To ensure that a planned, systematic approach to improving occupational health and safety is adopted throughout the company and that all objectives and targets are measurable and achievable.

Standards

a) **The Company** shall develop an annual occupational health and safety plan based on risk assessment.

b) **The Executive Director** shall endorse the Company occupational health and safety plan.

c) Shift Leaders

- Shall ensure that actions in the occupational health and safety plan are completed in the required time frame.

- Shall ensure that sufficient time and resources are allocated to allow for the effective implementation of the plan.

Guidelines

Occupational Health and Safety Plan should include:

- Achieve compliance with XXXEAD Occupational Health and Safety Policy;
- Meet or exceed Company performance indicators;
- Be developed so costs may be included in annual budgets;
- Identify training requirements through *Training Needs Analysis* for all employees;
- Names of responsible persons;
- Have realistic dates for completion; and,
- Comply with Contractor Selection and Management Procedures.

COMMUNICATION

Intent

To ensure that systems are in place for the effective two-way communication of occupational health and safety information and consultation on OHS issues within the Company.

Standards

a) The Executive Director

- Shall identify and establish formal mechanisms for the effective communication of OHS information and issues.

- Shall establish and maintain relationships with relevant government authorities and other organisations to influence and respond to OHS changes that may affect the company.

b) Shift leaders

- Shall ensure that OHS information is disseminated in an appropriate form and understood by all employees.

- Shall ensure that forums and mechanisms are established, supported and maintained for the purposes of effective communication and consultation of occupational health and safety issues.

- Shall actively promote and encourage the establishment and role of OHS Representatives and Committees in accordance with the relevant legislation.
- Shall identify and establish opportunities for communication with local authorities and communities regarding to occupational health and safety issues.

c) OHS Committees

The plant OHS Committee is the primary forum for the communication of OHS issues and is comprises representatives from management, the workforce and contractors as appropriate. All meetings are held periodically and are minuted with any assigned actions completed in a timely manner.

Safety meetings include but are not restricted to the following topics;

- Status of action items from previous meetings
- Monthly OHS statistics
- Results of OHS inspections, audits and reviews held since last meeting
- Hazards, incidents and accidents reported under the XXX EAD Hazard, Incident and Accident Reporting and Investigation Procedure
- Any other business

The minutes shall be distributed to all attendees, contractor mangers and posted on safety notice boards.

d) OHS Notice Boards

OHS notice boards are provided to communicate OHS issues to the workforce and are located at the plant administration building and operators' lunch room.

The following items are displayed on the notice boards;

- XXX EAD Major Accident Prevention Policy
- XXX EAD OHS Policy,
- Minutes of latest OHS Committee meeting,
- Safety alerts and instructions related to topical safety requirements issued by the GM,
- Information required to be displayed by relevant statutory authorities,
- Information related to the XXX EAD Plant Emergency Response Plan.

Once the OHS Committee meeting minutes are superseded they will be removed.

e) Disputes and Grievances

- Disputes and grievances will be dealt with as per the PR-10-01 Disciplinary Sanctions Procedures.

f) Management Resources

XXX EAD has and will continue to provide adequate resources, including training for the provision of OHS support at both a corporate and plant level. An Occupational Health, Safety and Environmental Officer has been appointed to provide technical OHSE support at plant level.

Any further technical OHSE advice will be sought by way of the services of a specialist contractor.

Guidelines

Workplace teams have an important role to play in the promotion and maintenance of safe and healthy work environment.

a) Teams shall include OHS as a standard item on the agenda of their general team meeting, at intervals not exceeding 3 months.
b) Minutes shall be kept of any meetings or decision made in relation to occupational health and safety in the workplace in an *action plan register*.

Actions shall be captured in the register with the status of the recommended action/s, the responsible person and the expected completion date included in the register.

PLANT AND EQUIPMENT

Intent

To ensure that all plant, equipment, materials and assets are selected, operated, calibrated and maintained to minimise the risk of injury or harm to health.

Standards

a) Shift leaders

- Shall ensure that personnel responsible for the selection of plant, equipment and materials make OHS key considerations, in consultation with relevant personnel prior to purchasing.

- Shall ensure that any purchased/leased/rented equipment meets the minimum required standard as set down under the Maintenance Management System and XXX EAD Capital Purchasing requirements
- Shall ensure that systems, including the Maintenance Management System, are developed and maintained to provide a maintenance plan and auditable schedule for all plant and equipment.
- Shall ensure that a register is developed of all certified plant and equipment including; -
    i. Location;

ii. Maintenance and calibration schedule;

iii. Inspection frequency;

iv. Type of inspection and person responsible; and

v. Templates shall be developed and used for these inspections.

- Shall ensure that records of completed inspections are maintained.
- Shall ensure that the maintenance system is audited at appropriate intervals defined in the auditing schedule.
- Shall ensure the lawful and appropriate decommissioning and disposal of plant and equipment.

Guidelines

All Contractor plant and equipment shall meet the above standards.

MANAGEMENT OF CHANGE

CHANGE MANAGEMENT

Intent

To ensure that change is assessed for any potential occupational health and safety risks, and that appropriate action is taken to ensure existing safety performance levels are not compromised.

The term “Change” may relate to plant, processes, equipment, materials, conditions, personnel or organisational structure and the Safety Management System.

Standards

a) **Department Shift leaders** shall ensure that where any of the following changes or conditions occur, a process is applied to assess and manage *the Major Accident Prevention and Occupational Health and Safety* implications of the change:

- Acquisition of new facilities or processes
- Modifications to processes, organisation structures or responsibilities;
- Changes to operating or maintenance procedures or conditions;
- Changes to design construction or engineering standards;
- Changes to materials used or their composition;
- Changes to facilities, plant or equipment; and
- Changes to personnel training and competency requirements.

b) **The Executive Director** shall ensure that processes are in place to identify changes which may impact on Major Accident Prevention and Occupational Health and Safety, assess the potential risk to personnel, plant and equipment, and ensure appropriate action is taken to manage those risks.

c)**Occupational health and safety Representatives** shall be notified of changes in accordance with the Environmental Protection Act 2002.

d) Where relevant, changes shall be reported to the appropriate authority in accordance with statutory requirements.

PLANNING FOR EMERGENCIES

EMERGENCY PREPAREDNESS

Intent

To minimise the adverse impact to the health and safety of people, XXXEAD assets, equipment and reputation in the event of an emergency have put systems in place to ensure trained and competent personnel are available to operate the emergency response equipment and to render first aid.

Standards

(a) Executive Director

- Shall ensure that a systematic and consistent approach is applied to the development of emergency systems, and plans based upon identified emergency scenarios and risk assessment for both on site and off site.
- Shall ensure that a systematic and consistent approach is applied to the development of emergency systems, and plans based upon identified emergency scenarios and risk assessment for Large Scale Accidents.
- Shall ensure that an *Emergency Response Plan* is in place for the operation and adequate and appropriate resources are available.

(b) Shift leaders

- Shall ensure that a systematic and consistent approach is applied to the development of emergency systems, and plans based upon identified emergency scenarios and risk assessment.
- Shall ensure that the *Emergency Response Plan* is appropriate for their area of responsibility and regular emergency drills are performed.
- Shall ensure that adequate resources are available to effectively manage emergencies (competent people, equipment and procedures).
    i. Qualified medical attendant
    ii. Mobile fire unit operators
    iii. Trained first aiders and fire wardens

iv. Trained and equipped emergency responses teams distributed across each shift

- Shall ensure that all emergency plans and capabilities are periodically tested and verified.

Guidelines

a) For each type of potential emergency identified, the Company shall document a procedure, including a pre-incident and post incident plan which addresses the following (where relevant):
   - Description of the potential emergencies;
   - Alarm initiation;
   - Emergency response and control;
   - Emergency operations centre;
   - Notification of authorities;
   - Public relations;
   - Evacuation procedure;
   - Exercises;
   - Training;
   - Location maps and site layout diagram;
   - Incident investigation procedures;
   - Termination of emergency and debrief;
   - Communications;
   - Emergency operations flowchart;
   - Distribution list;
   - Frequency of, responsibility for emergency exercises.

b) All normally occupied buildings and facilities shall have a documented emergency evacuation procedure. The procedure shall consist of at least a diagram of the facilities showing the location of exits and muster points in relation to the exits. Diagrams shall be displayed in all prominent locations in each facility.

c) **Shift leaders**
   - Shall identify from emergency procedures the type and quantity of emergency equipment required, and readily available.
   - Shall arrange for and implement a schedule of inspections of emergency equipment in accordance with the manufacturer's specifications.
   - Shall ensure that the appropriate personnel are instructed and trained in the emergency procedures and operation, inspection, maintenance and storage of emergency equipment.
   - Shall identify all potential emergency situations and ensure that emergency procedures, including pre and post incident plans are in place for each potential emergency with regular exercises conducted to test the effectiveness of the procedures.
   - Shall ensure that all employees and contractors need to be trained in relevant emergency response procedures.

Guidelines

Each department needs to provide the required emergency response equipment and to maintain the equipment.

ACCIDENT AND INCIDENT MANAGEMENT

Intent

To ensure all accident and incidents, including near misses, are reported, classified, investigated and appropriate corrective action is taken to minimise potential future risk.

Standards

(a) **The Executive Director**

- Shall implement the Company Accident and Incident Management Procedure to ensure that all incidents are: -
  - i. reported in a timely manner,
  - ii. accurately classified,
  - iii. effectively investigated and analysed to determine basic causes and the adequacy of existing systems, and
  - iv. corrective actions are appropriate and closed out.

b) Shift leaders

- Shall ensure that all corrective actions are subject to an action management process.
- Shall ensure all personnel are adequately trained to report hazards and incidents.
- Shall ensure that persons responsible for conducting an incident investigation/analysis are appropriately trained.

Guidelines

Ensure that in each department accident and incident report forms are readily available.

INJURY MANAGEMENT

Intent

To ensure that employees who suffer an injury or ill health at work are provided with support to promote their effective rehabilitation and early return to work.

Standards

a)Shift leaders

- Shall ensure that the Company's Injury Management System is implemented in their area of responsibility.
- Shall identify and train an Injury Management Co-ordinator.

- Shall ensure that line Shift leaders and supervisors receive training in the Company's Injury Management Procedure.
- Shall ensure that all employees understand and comply with the requirements of the Corporate Injury Management Procedure.
- Shall develop an *Alternate Jobs Register* to be used for the early return to work of an injured employee.
- Shall make available trauma counselling for employees and immediate family members should the need arise as a result of an incident or injury.

Guidelines

Ensure that accident and incident report forms are readily available in each department area.

MONITORING PERFORMANCE

PERFORMANCE INDICATORS

Intent

To ensure that Major Accident Prevention and OHS measures are developed, communicated and analysed to identify any adverse trends and opportunities for improvement.

Standards

a) The Executive Director

- Shall identify occupational health and safety performance indicators and targets including Major Accident Prevention safety measures for the Company.
- Shall consider industry benchmarks in the setting of XXXEAD indicators and targets.
- Shall endorse the performance indicators and targets for the Company.

b) The Board of XXXEAD

- Shall review OHS performance including Major Accident Prevention safety measures on a monthly basis and will revise performance indicators annually.

c) Shift leaders

- Shall ensure that their indicators and performance targets enable the Company to achieve annual targets.
- Shall communicate performance measures to personnel in their area of responsibility.

Guidelines

The Company's current performance indicators are described on the following pages for general safety measures and large Scale Accident Prevention measures.

Major Accident Prevention Safety Measures

To measure achievement against Major Accident Prevention objectives and targets and to provide direction for further improvement, XXXEAD (and Contractor's) safety performance will be measured as follows:

These Performance Indicators are divided into **Lag** Indicators and **Lead** Indicators for Large Scale Accident safety measures.

Within this system **Lag** indicators (measuring data) are defined as;

- Number of unexpected loss of containment incidents
- Number of failures of safety critical instrumentation/alarms

For an adequacy measurement they are further broken down into;

- Number of failures during instrument testing.

Within this system **Lead** indicators (measuring data) are defined as;

- Number of major accident risk assessments to identify main threats
- Number of major accident group recommendations or actions
- Number of recommendations closed out

The process shall be defined as follows;

- Create Performance Indicators based on actions
- Set Performance Standards
- Monitor performance against Standards
- Take corrective actions to improve/maintain performance to Standard
- Regularly review/measure effectiveness of performance against controls/actions
- Raise Standards for improvement

By adding Lag Indicators with Lead Indicators and dividing by 2, a performance average can be measured.

Performance Indicators	Definitions

	Performance Indicators	Definitions
Engineering Indicators for Prevention	1. Critical asset integrity condition audits for: • Structures • Mechanical equipment • Electrical equipment • Control systems • Emergency shutdown systems • Safety systems 2. Engineering standards review audit 3. Bridging logs audits 4. Management of change closure rates 5. Overdue inspections, HV, pressure systems, LV	Number of reports of conditions with the potential to cause a major hazard incident. Number of scheduled audits Number of completed audits Number of failures in normal operation Number of failures during testing
Operational Indicators for Prevention	Operational compliance audits, Operational procedures update audits Operation procedure reviews closure rates. PTW compliance audits	Number of reports of conditions with the potential to cause a major hazard incident. Number of scheduled audits Number of completed audits
Other Indicators for Prevention	Audit adherence Emergency drill completed to schedule	Number of completed audits Number of completed emergency drills
Incident Indicators	Unexpected loss of containment Failure of safety critical instrumentation/alarms Alarm log audits Process condition “out of control” envelope (abnormal operation)	Number of losses per month Number of failures per month Number of alarms per month Number of events per month
Positive Performance Indicators	Closure of Actions from Incident or Hazard Report Closure of Audit Actions Closure of Actions from Workplace Inspections Closure of Risk Assessment Actions	Number closed out x 100 (as a percentage) Number Reported
Current Performance	Monthly Report to Board Report to Authorities	

General Safety Measures

To measure achievement against occupational health and safety objectives and targets and to provide direction for further improvement, XXXEAD (and Contractor's) occupational health and safety performance will be measured as follows:

	Performance Indicators	Definition
Prevention Indicators	1. Hazard reports	Number of reports of conditions with the potential to cause injury or damage
	2. Audits	Number of completed scheduled audits of systems and procedures
	3. Workplace inspections	Number of completed scheduled Inspections of workplace methods, behaviours, equipment and housekeeping
	4. Participation in safety related training	Percentage of available time spent on training in workplace legislative requirements, procedures and safety related behaviour
Incident Indicators	Significant Injury Frequency Rate	No. LTI's + MTI's X 1000000 / Total Hours Worked
	Lost Time Injury Frequency Rate	No. of LTI's X 1000000 / Total Hours Worked
	Medical Treated Injury Frequency Rate	No. of MTI's X 1000000 / Total Hours Worked
	Minor Injury Frequency Rate	No. of MI's X 1000000 / Total Hours Worked
	Duration/Severity Rate	No. of days lost / No of LTI's
Positive Performance Indicators	1. Closure of actions from hazard and incident reports	Percentage of actions closed
	2. Closure of audit actions	Percentage of actions closed
	3. Closure of actions from workplace inspections	Percentage of actions closed
Current Performance	Monthly Report to the board	

AUDIT AND REVIEWS

AUDITS AND CONTINUOUS IMPROVEMENT

Intent

To ensure an effective system is implemented to evaluate the efficacy of the company's Safety Management System and to identify deficiencies and non-compliances and facilitate continuous improvement.

Standards

(a) The Executive Director

- Shall ensure that audit protocols are developed to measure the effectiveness of the Major Accident Prevention processes.
- Shall ensure that audit protocols are developed to measure the effectiveness of the Safety Management System.
- Shall ensure that only appropriately trained personnel, with requisite skills, experience and qualification conduct audits.
- Shall conduct a periodic review of the Safety Management System and its processes to determine the system's continued suitability, adequacy and effectiveness.

(b) Shift leaders

- Shall ensure that appropriate audits are conducted to evaluate the effectiveness of the Safety Management System and all their OHS Systems and that all deficiencies are subject to an action management process.
- Shall ensure that an *action register* is implemented including the status of the action, the responsible person and the proposed completion date.
- Shall audit Contractors in accordance with the Corporate Occupational Health and Safety Procedure Selection & Management of Contractors.
- Shall ensure that control measures are reviewed on a regular basis.

Guidelines

Occupational health and safety audits consist of both internal audits and external audits.

Workplace inspections do not form part of the audit process but may be carried out in conjunction with an audit.

2. DESCRIPTION OF SITE AND ENVIRONMENT

2.1. Presentation of the Environment of the Establishment

Introduction and general information

The XXX EAD is situated west of the village of …….. at the foothills of the Balkan Mountains at about 740 masl.

Main Activities and Production

The principal scope of business of XXX EAD currently involves storing and distribution of LPG automotive and domestic fuel via railroad and automotive transport.

Major Hazards associated with the Establishment

The major hazard which is associated for XXX EAD is the presense of LPG, which is extremely flammable and could lead to fires, explosions and via polluted firewater – to significant environmental pollution.

Location

Topography

The site of XXX EAD (CMEAD), west of the village of …….. The site is a non-residential area adjacent to the village. It is located on the southern edge of the foothills of the Balkan Mountains in the northern part of the Zlatitsa Valley. The landscape setting is dominated by low rounded hills formed by the erosion processes at the foothills of the mountain range. The Zlatitsa Valley is segmented by the Topolnitsa River and its tributaries.

The nearest settlements to the operation site are:

- To the northeast - ……. Village (300 m away), ……. Village (2 km away), the town of ……. (5 km away);
- To the northeast - ……. Village (300 m away), ……. Village (2 km away), the town of ……. (5 km away);

- To the south–east - ……. Village (2 km away);
- To the southwest – ……. Village (6 km away);
- To the northwest – …….. Village (5 km away).

The railway line connecting Sofia to Bulgaria's largest port Bourgas is adjacent to the Company site. Figure 2.1 presents the location of ……. Village, the main site of XXX EAD and the other industrial sites in the region.

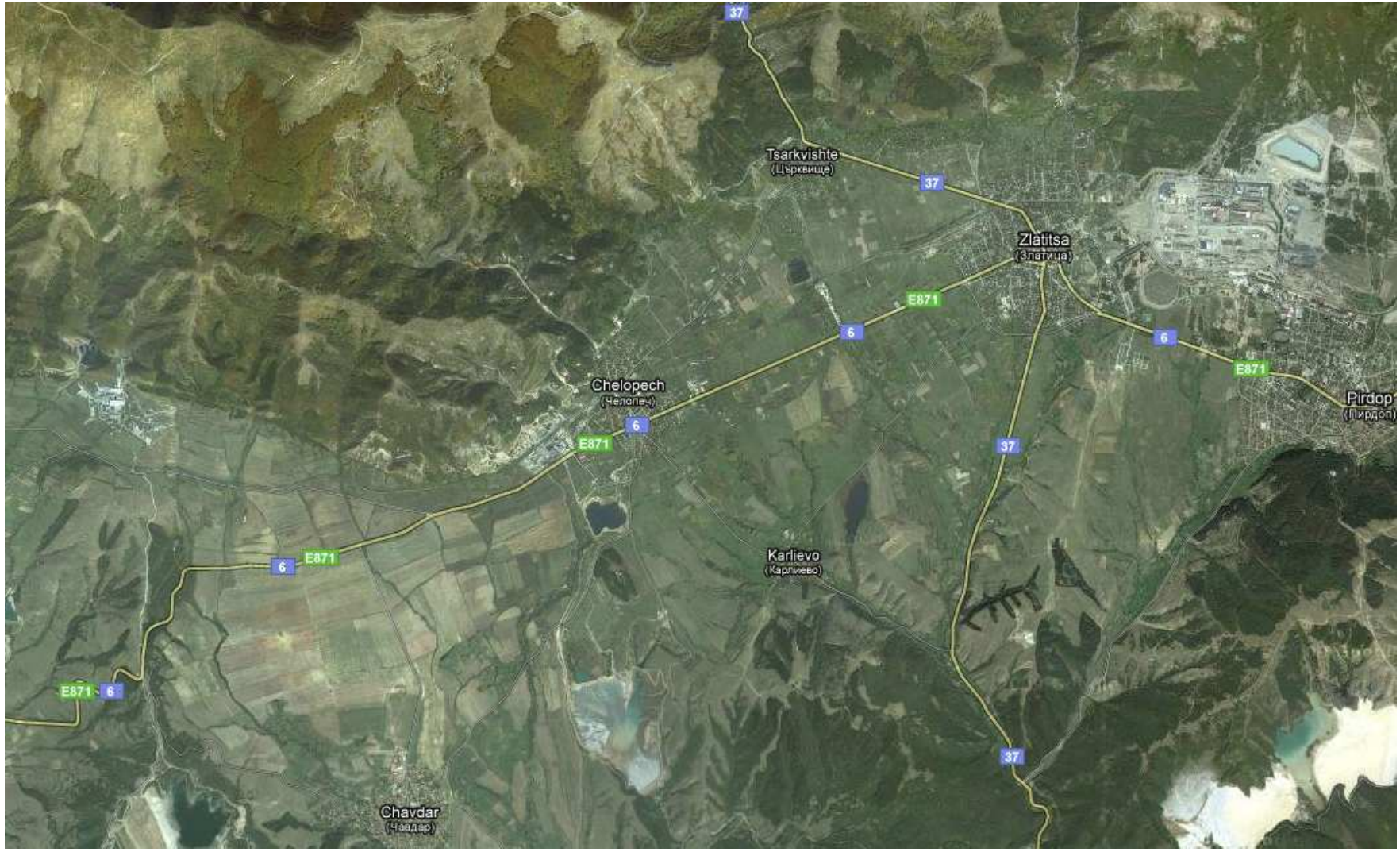


Figure 2.1 Location of ……. Village

Figure 2.2 Existing site layout

2.1.1.1. Land Use Patterns

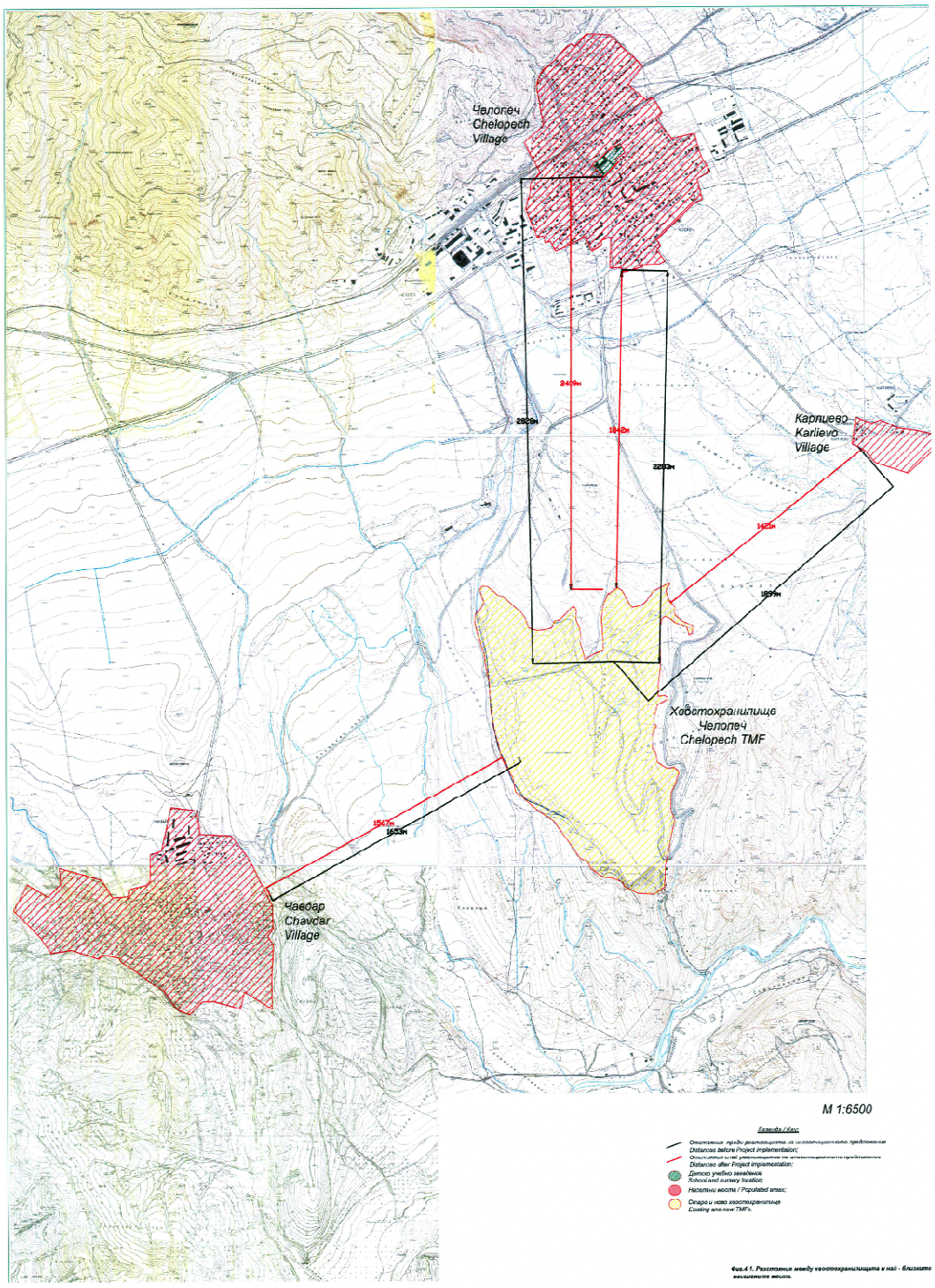


Figure 2.3 Populated Areas adjacent to the Development

Refer to Figure 2.3 for information about population use adjacent to the site.

Meteorological Data

Climatic background

According to the climate zonation by Sabev and Stanev, the project site under consideration is occupies the Transitional-Continental Sub-Area of the European Continental Climate area and, more particularly, in the rolling and low-mountain climate area of the Western Central Bulgaria. In general, this climatic region features a transitional and continental climate, modified by its complex topography and relief and the differences in altitude. The climate here is rather mild in comparison to the climate of the pre-Balkan zone with relatively similar altitude.

The following is a general seasonal review of the of the climatic background of the region using data from the only representative weather station at ……..... The use of data from other neighbouring stations may result in misrepresentation of the climatic conditions at ……. due to differences in altitude and location characteristics.

Winter. The mild climate is most apparent during the winter. Due to relatively good protection from cold air pushing in from the northeast and, to a certain degree, from the prevalent western winds, the average temperatures in January vary between -1.5 and 0℃. The temperature may drop below minus 19℃ in the deeper depressions after longer spells of anticyclonic (stable continental high pressure) weather that results in cooling by radiation loss.

Winter is the driest season with an average seasonal precipitation totalling 104 mm, with snow accounting for more than 50%. The mild winter conditions explain the relatively short snow retention periods. On average, permanent snow cover forms in the middle of December and melts in the first week or two in March. In total, there are 36 days with snow cover on average, 14 of which occur in January. The winter month with the highest average monthly precipitation is December, at 39 mm.
Winter is relatively windy, with average monthly wind velocity of 1.2 to 2.1 m/sec. The weather is overcast in 40-50% of the season, with a total cloud cover rating of 8-10.

Spring. Spring here is relatively cool with average temperatures not rising above 5° until mid-March. The average temperature of the middle spring month, April, is 9.1℃, significantly lower than its “opposite” month of October.

Increasing precipitation is observed during the spring, when the seasonal average is 162 mm. During the spring month with highest precipitation - May - the average monthly precipitation is 81 mm, which is approximately 15% higher than the levels in July. The maximum 24-hour precipitation in May averages 21 mm.

The active meteorological dynamics make spring the windiest season, with average monthly wind speeds between 1.8 and 2.2 m/sec. Overcast days are fewer, less than 30% of the total number of days during the season.

Summer. The altitude and the proximity to the mountains make the summer relatively cool, with an average monthly temperature in the middle summer month of July at 19℃. Average sustained air temperatures rise above 15℃ occurs during the first week of June. The continental climate features markedly higher summer and lower winter precipitation. This makes the summer the most rainy season with average precipitation of 220 mm. One of the specific features of the area is that the annual precipitation level (617 mm) is relatively small compared to the pre-Balkan region, relatively higher than that of the Thrace Lowlands. The small seasonal differences in precipitation are characteristic of the transitional nature of the climate. Despite the higher summer precipitation, the variance between the summer and the winter precipitation levels is within 10 - 12% of the total annual precipitation.

Autumn. This is the calmest season. The prevailing anticyclonic weather accounts for the average wind speeds of 1.5 to 1.7 m/sec. Autumn is warm, with an average temperature in October of 15℃, which is 5℃ higher than that in the “opposite” month of April. The average sustained daily temperature does not drop below 15 C until the end of September. In 18 - 20% of the days the weather is clear, with only 20% of the days in September and October being overcast. The average autumn precipitation is 130 mm. It is higher than in the summer, but compared to the prevalent clear and quiet weather in the autumn, it is lower than that in the spring.

The described climatic background is illustrated and completed by the figures below made using data from the Repulbic of Bulgaria’s Climate Reference Books.

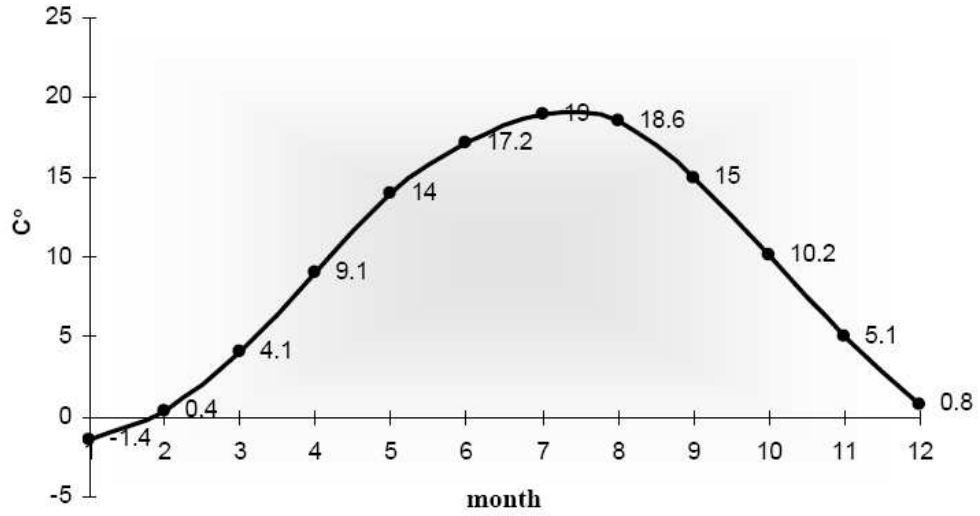


Figure 2.4 Average Monthly Temperature.

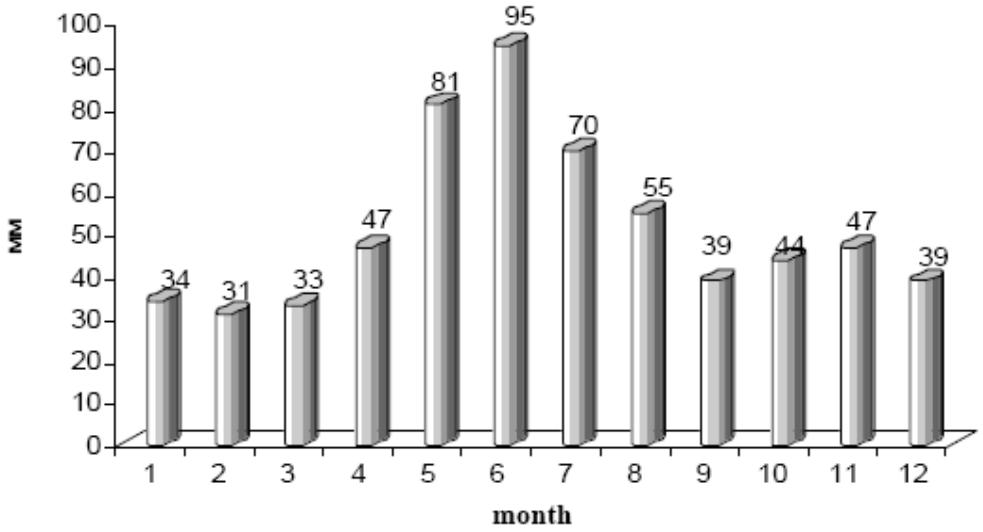


Figure 2.5 Average Monthly Precipitation.

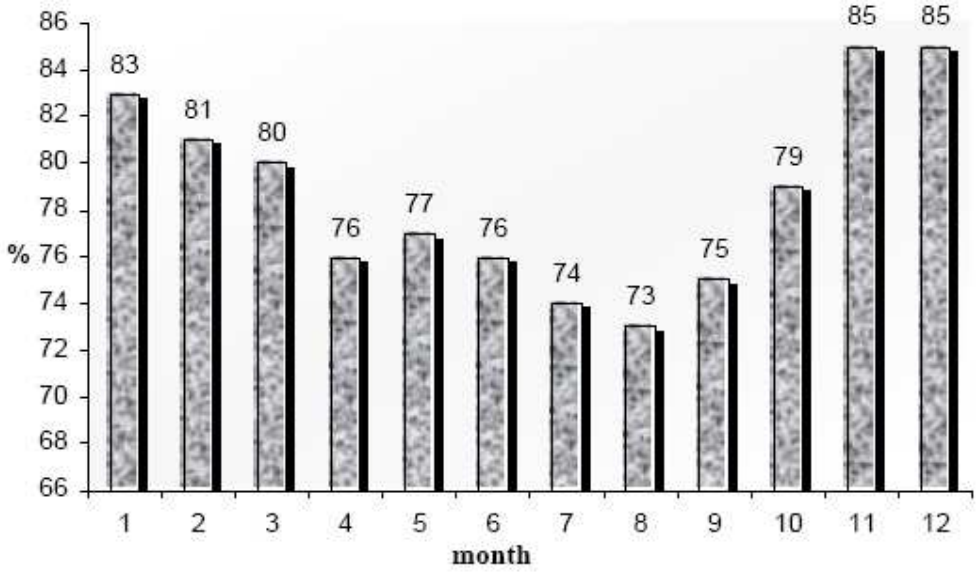


Figure 2.6 Average Monthly Relative Air Humidity.

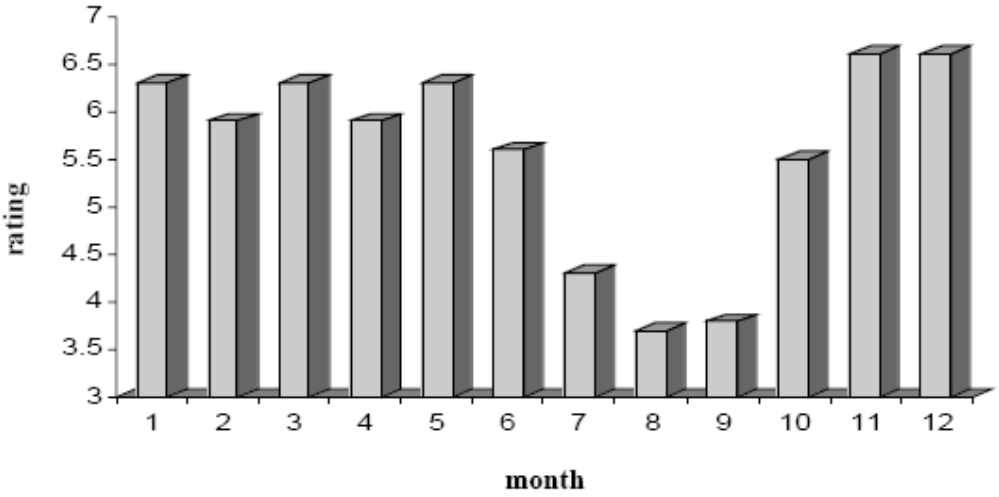


Figure 2.7 Average Monthly Overcasting.

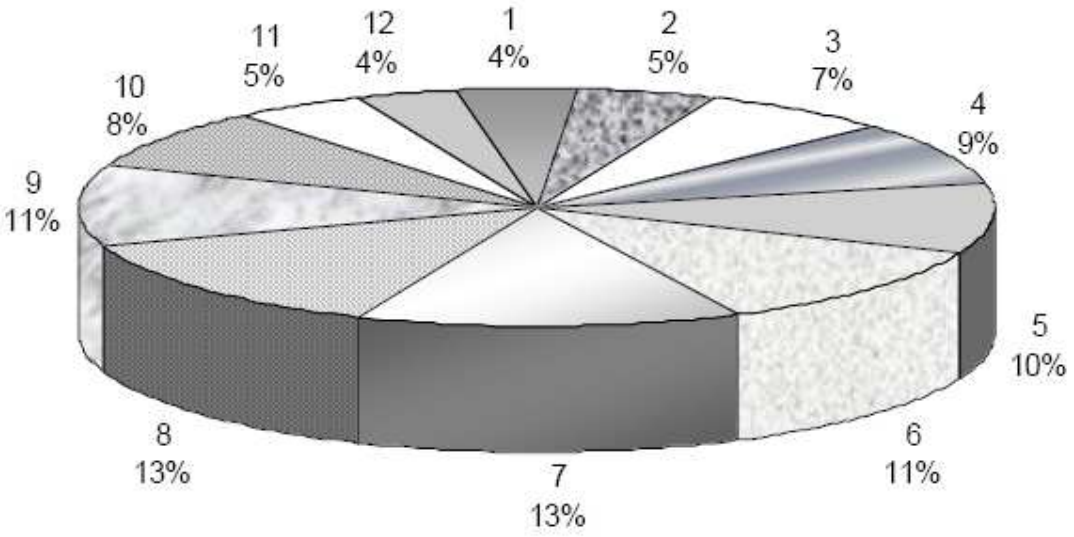


Figure 2.8 Average Monthly Sun Radiation.

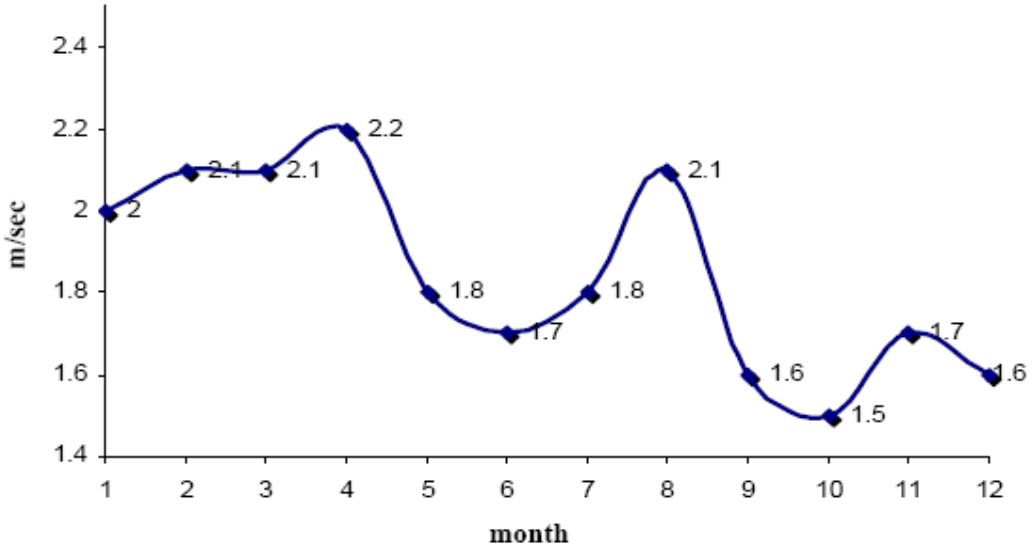


Figure 2.9 Average Monthly Wind Velocity.

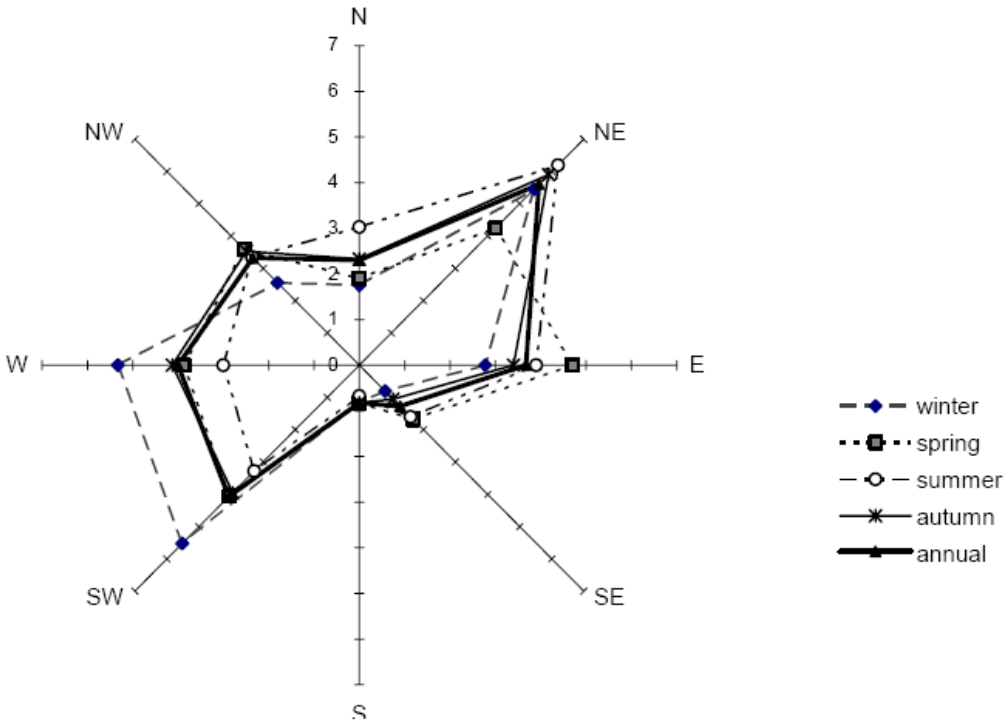


Figure 2.10 Annual and Seasonal Wind Patterns.

Calm: winter 15.8%, spring 9%, summer 5,4%, autumn 9.3%

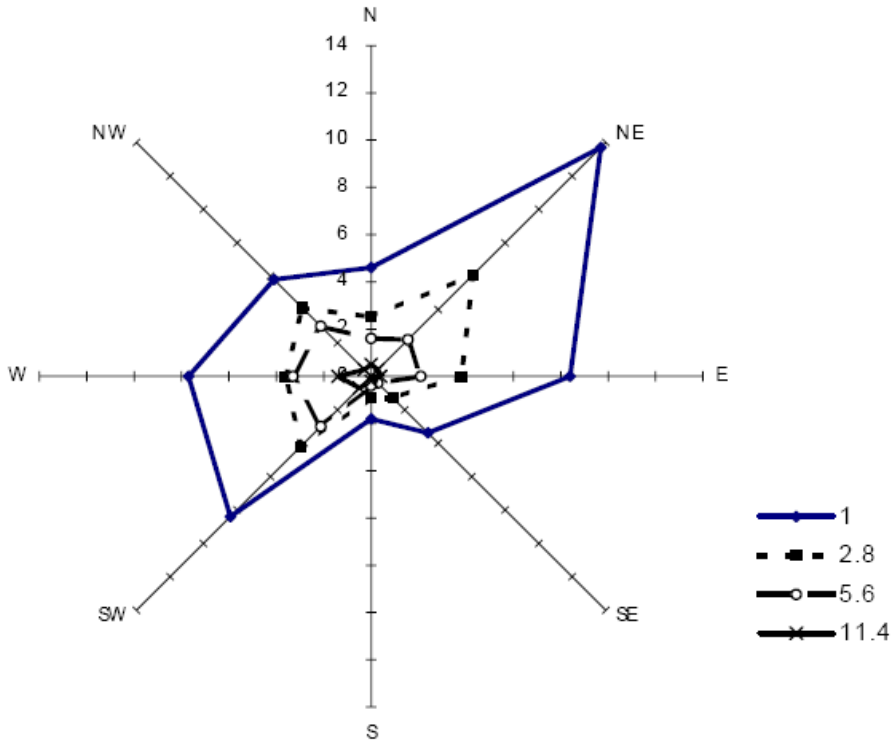


Figure 2.11 Annual Wind Patterns Based on Wind Velocities.

Microclimate of the area

Some of the described climate features sustain substantial change due to the morphographic characteristics of the location. The hills and gullies of varying

sizes, combined with the vegetation cover of varying type and density create a specific climate. For the sake of simplicity, the changes to the elements which are most sensitive to meteorological location specifics will be considered separately . The correction factors were derived from existing database and from data from the monitoring system in the region.

Temperature

In clear and calm daytime periods the terrain hollows retain air which overheats and its maximum temperature increases by 11.5℃. Co nversely, on similar nights and in stable anticyclonic weather, night-time radiation cooling of the surrounding slopes brings cold air towards the bottom of depression areas, thus creating □lakes□ of cold air. This stable stratification of the atmosphere creates a temperature inversion. The temperature inversions may form also from the "flooding" and retaining of cold air in the region during incoming cold spells. The depth and intensity of inversions depend on the specific geometry of the region and cannot be determined without measurement. Only tentatively, the data of Tishkov 1985 may be used for assessment of the temperature inversions. The temperature inversions are most frequent and intensive during the cold half of the year when 10-15 days with inversion may be observed in one month. They are most stable during this season and temperature inversions that remain stable for 5 and more days can be observed. In the summer, inversions are a significantly less intense and less frequent, with 5-6 inversions on average. Usually, they occur in the mornings and gradually disappear after the sunrise. The inversions constitute a factor for retaining and accumulation of pollutants in the ground air as they prevent their dispersion.

Wind

The complex low-mountain topography of the region affects wind changes in two ways - a) mechanical and b) thermal.

a) Mechanical variation

The wind speed is different in rugged terrain compared to the speed in the open plain of which the nearest weather station is probably an example.

- Above open elevations, and on the peaks wind speed may increase by a factor of 1.6 - 1.8.
- Along upwind slopes the speed changes by a factor of 1.4-1.6 in the upper slope sections, by 1.0-1.1 in the middle section, and by 0.8-0.9 at the base.

- For slopes running parallel to the wind direction, the respective adjustment factors are 1.3-1.4; 1.1; 0.9.
- In the different parts of the downwind slopes the adjustment factors are 0.7 0.8; 0.7, respectively.

At the bottom of the gullies and depressions not susceptible to winds, there is an adjustment factor of approximately 0.6 with lower values possible. The high level of protection of some of the depression areas enclosed from nearly all directions explains the prevalence of quiet spells and light winds that can retain pollutants and particulate matter in the area.

b) Thermal variations

The different thermal regimes of slopes with different aspects create local winds. At night these occur as slope winds that bring cold air from the slopes to the depression areas. During daytime turbulence, warm air is expelled upwards the slopes, which may take lighter aerosols upwards and outside the depression areas, and may disperse them over larger distances.

Conclusions

- The climate in the area under consideration is transitional-continental, modified by the complex orography (topography and relief) of the area and by the differences in altitude.
- The climate is characterised by mild winter (with average January temperatures between 1.5 and 0℃) and relatively c ool summer (with average July temperature of 19℃).
- Summer is the wettest season with average precipitation of 220 mm. The variance between the summer and the winter precipitation levels is within 10 - 12% of the total annual precipitation
- The prevailing winds registered at the weather station blow from NE, followed by those blowing from SW and W, with spring rated as the windiest season (with an average monthly wind speed of 1.8÷2.2 m/s), and autumn as the quietest (with average wind speeds of 1.5 - 1.7 m/s).
- The average relative humidity is 80 □ 85% during the cold season.
- The temperature inversions are typical for the cold season, when 10 - 15 days per month on average have inversions.
- The complex gentle mountainous topography of the region affects thermally and mechanically the wind pattern. Wind speed changes have been recorded in the open plain areas.

- The depression forms predicate conditions for the retention of air pollutants emitted from low sources, especially during the cold season, and the nights throughout the whole year.

Geological, hydrological, hydrographical data

Soils

1. The low-mountainous and hilly topography and river valleys in the region have helped in the formation of soils of varying thickness, physicochemical and mechanical properties that affects the soil quality and suitability for various agricultural crops.
2. There exist four main ways to use the land in the region - agricultural use (tobacco growing, vegetable growing, orchards and livestock raising), forestry and hunting, recreation and construction. Agriculture is consistent with the features of the agro-ecological regions of the cinnamon forest soils and alluvial and alluvial-meadow soils. There are few lands of second productivity rating - very good lands, with productivity rated at 61-80. A large part of those belong to the forest lands and to productivity class group five.
3. Erosion is one of the most substantial soil-formation factors. Soils of various degree of erosion and profile thickness have been formed. Erosion processes are facilitated by the topography and torrential erosive rainfalls. Refer to **Error! Reference source not found.** for a diagram of soil types in the area.

Among the most important erosion-control activities are forestation and soil-protection measures such as stone thresholds, wooden fences, blocking with materials available at hand, etc.

Subsurface

1. Geologically, the area under consideration belongs to the northern part of the Panagyurishte (Panagyurishte-Etropole) ore region. The geology of the field is dominated mainly by the formation of the Upper Cretaceous volcanic, intrusive and sediment rocks. They are formed on a base of various older rocks, while the southern parts of the area are overlain by the Post-Cretaceous Pliocene and Quaternary deposits of the Zlatitsa-Pirdop graben:
    - Base rocks - The Late Cretaceous base of the Elatsite-Chelopech ore field hascomplex composition. Pre-Cambrian highly metamorphous rocks (Bortuchenska Group and Arda Group) belonging to the Pra-Rhodopean super group occur in the southern parts of the field.

- Upper Cretaceous sediment and magmatic rocks - These are subdivided into:
    a) Turonian terrigenic complex;
    b) Panagyurishte sediment-volcanogenic group;
    c) Popinska sedimentogenic group.

2. Structurally, the area belongs to the Alpine tectonic system. The main structural units are the Central Balkan syncline, the Sredna Gora anticlinorium, the Chelopech syncline, the Panagyurishte volcanogenic belt and the Pirdop graben.
3. The tectonic characteristics of the Elatsite-Chelopech ore field are mainly determined by the fault structures, which have resulted from tectonic activities of varying age and characteristics:
    - pre-mineralisation structures - with regional span and confined to the rock base;
    - post-mineralisation structures - associated with Larameian, Pyrenean and Neotectonic structures. To a large extent, they define the contemporary structural features of the ore field.

Site specific natural factors

Surface Water

- The natural flow of the Vozdol River is impacted by the mining operations downstream of the Kachulka Reservoir diversion to the point of confluence. The absolute average flow and the average low flow in the strip between the diversion and the old confluence of Chugovishko Gully with the Vozdol River (monitoring point #3) are reduced as a result of the diversion and the infiltration of water into the new riverbed. The average low flow increases downstream of the confluence as a result of the recharge with seepage water from the reservoir. However, a possible derogation of the absolute average annual flow may occur from abstractions of water for irrigation.
- The natural flows of the Chugovishko Gully, the Mezerlak Gully and the Gagalkovo Gully are slightly impacted by the operations, which is evident from the minor impacts on the Topolnitsa River flow quality in the strip between the confluences of the Chiflik Gully and the Vozdol River.
- The concentrations of sulphate ions (SO4) and chlorides (Cl) in the surface water courses meet the quality standards as follows: Vozdol River - category I; Chiflik Gully - category III, which means deterioration of the required water quality as per category II; and Topolnitsa River - category II.

All these streams have got high oxygen content that meets the standards for category I of receiving water.

Groundwater

- The hydrogeological conditions and the potential yield of groundwater are determined by the geological and lithological structures and the degree of rock jointing and weathering in the region.
- Depending on the lithological structure of the water-bearing rocks and the groundwater flow conditions, the groundwater is subdivided into groundwater flowing in sedimentary and sedimentary-metamorphic rocks, groundwater flowing in the ore bearing andesite rocks, and groundwater flowing in the Quaternary depositions.
    - sediment and sediment-metamorphous rocks is mainly fissure-ground water. The natural resource of this water is not significant, because the jointing of the rock in depth is minimal.
    - The groundwater flowing in the andesite rocks is relevant to the mine development. The groundwater in these rocks is fissure-ground and fissure-vein (pressure) water.
    - The Quaternary deposits in the region are represented by alluvium, talus, and proluvium and are part of the Pirdop-Zlatitsa Pan Valley aquifer (with a maximum length of 32 km and with of 10 km).. These formations occur mainly along the lower stretches of the Vozdol River, west of, and near, the existing Flotation TMF and are natural accumulators of precipitation and snowmelt.
- The water in the region is rated as fresh and slightly mineralised (less than 1 g/L).
- The monitoring results indicate that the chemical composition of the shallow groundwater depends on the quality of the surface water in the Vozdol River.

Landscape

a) The site can be classified as “Landscapes of mid-mountainous broad-leaved forests located on massive and metamorphous rocks”, according to the typological landscape zoning.
b) From regional landscape perspective, several territorial units can be distinguished, with one or more landscape components altered as a result of anthropogenic activities. The most vulnerable landscapes are the forests along

the slopes of surrounding mountains and the storage areas for operational waste from the process plant or from the ore mining. The natural landscape in the latter area has changed radically and has become anthropogenic landscape with specific internal structure. They have both landscape-ecological significance and also marked landscape-aesthetical aspect. These changes are clearly visible in the landscape types which are affected by the existing possibility for technogenic migration of substances in this specific natural and geographic circumstances.

c) From regional landscape perspective, significant anthropogenic alterations have occurred in terms of the landscape of the area affected by the Chelopech deposit. The secondary landscape structure has, as a result, its own specific functional typification that results into a specific and altered landscape structure.

d) Based on geomorphological diagnostic criteria, the site is located between two landscape types - mountainous and pan valley. The boundary between the two classes passes in the area of transition from mountainous slopes to pan valleys (mountain base). The mountain landscape class is the predominant class.

e) There are 34 landscape types. The diagnostic parameters are from the landscape taxonomic ranking. Xeromorphic landscape types prevail on the site, followed by the mesomorphic landscape types.

   i. **Forest landscapes** occupy mainly forest lands, including a small part of the forests present on the site. The vegetation is of forest type, the forests being coniferous (“Forest coniferous slope medium rich mesomorphic” and “Forest coniferous slope poor xeromorphic” type), broadleaved high-stem (“Forest broad-leaved high-stem slope medium-rich mesomorphic”, “Forest broad-leaved high- stem slope rich mesomorphic”, and “Forest broad leaved high-stem slope poor xeromorphic”), and low- stem (“Forest low-stem slope medium-rich mesomorphic” and “Forest low stem slope poor xeromorphic”);

   ii. **Meadow landscapes** - represented mainly in the land fund, and comprising 7 landscape types, the most widespread being the “Meadow slope xeromorhpic” and “Meadow slope mesomorphic”;

   iii. **Rock landscapes** represented by 5 landscape types, the most widespread being the “Rocky magma intrusive” and “Rocky metamorphous silicate”;

   iv. **Agricultural landscapes** - in the land fund of valley areas;

   v. **Aquatic landscapes** represented by TMFs and rivers;

vi. **Technogenic landscapes** - represented by 3 landscape types, in the area of mining and process sites.

f) The greatest impact is observed on the forest landscapes, resulting from the mining and site operation (development of Chelopech Mine, reconstruction of Chelopech TMF, as well as the relevant infrastructural facilities, and etc).

Nature Sites

1. The existing protected areas - the Central Balkan National Park and the Sakardzha, Braia, and Kazanite nature landmarks - are relatively far from the area (7 to 10-12 km).

Layout of the Facility

Refer to **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.** for layout drawings highlighting stormwater services and storage areas and tanks

2.2. Identification of installations/activities which could present major accident hazard

HAZID

A HAZID (team based risk assessment) was conducted in April 2008 covering the majority of the plant areas. The objective was to identify all hazards associated with the plant by using guidewords to trigger topics for discussion.

Under each guideword, any hazards identified for the particular plant area were noted together with engineered safeguards proposed as part of the design and recommendations for risk reduction. Each hazard so identified was scored for **consequence only without safeguards in place** and in accordance with the guidelines contained in Table 2.1.

Consequence Rating	Health & Safety	Environment
0	The hazard does not exist or is not applicable to the area under review	The hazard does not exist or is not applicable to the area under review
1	No medical treatment required.	Limited damage to minimal area of low significance.
2	Minor first aid – no disabling impact	Minor effects on biological or physical environment.
3	Medically treated injury with no permanent impact	Moderate, short-term effects but not affecting ecosystem function.
4	Permanent disabling injury	Serious medium term environmental effects.
5	Fatality or multiple serious (permanent) disabling injuries that were life threatening	Very serious, long-term environmental impairment of ecosystem function.
6	Multiple fatalities or very serious irreversible injury to multiple persons in localised area	Significant impact on highly valued species, habitat, or eco system.
7	More than 10 fatalities or very serious irreversible injury to broad group of persons across many areas	Very significant impact on highly valued species, habitat or eco system.

Table 2.1 Consequence Rating Table

By ignoring any safeguards, the team was able to isolate those hazards with consequences likely to be within the focus of the Seveso directive, which are those with rating 5, 6 or 7 (coloured red in Table 2.1).

These hazards can be grouped as follows:

- Loading/unloading procedures
- Pressured vessels for liquefied under pressure LPG
- Pipeline transport of LPG onsite

The greatest safety related hazard identified was the potential for one or more fatalities due to:

- Boiling Liquid Expanding Vapor Explosion (BLEVE) of LPG storing sphere
- Let fire from a pipe leakage
- Fire at the loading facilities

A number of operability issues were identified that had major potential production impacts. The most significant of these were major damage to plant
and equipment from:

- Fire/explosion, either internal or external, to vessels and piping, and subsequent loss of containment
- Poor or unsafe isolation practices

- Incorrect operation of Loading facilities
- Poor maintenance or operation of LPG spheres
- Overpressure of LPG spheres due to non operating vent system
- Long term corrosion and wear issues throughout the site due to poor maintenance and corrosion control
- Process and equipment sensitivities to low ambient temperatures in winter ultimately resulting in loss of containment issues
- Inadequate fire water available on demand in site emergency
- Operator error or valve failure to closed position on high pressure lines in uncontrolled manner.

Following screening for compliance with the definition of an MAE and grouping common elements form hazards identified as described in the preceding sections, the following hazards were taken forward for analysis and risk assessment:

- Catastrophic Failure of LPG sphere and BLEVE
- Leakage of a Pipeline and jet fire
- Fire on a loading facility and subsequent BLEVE of the LPG tank

Description of areas where major accident may occur

The main areas where a major accident can occur are the tanks for LPG, the loading facilities for rail and road tanks and the connecting pipework. They are described in detail in the next sections. For a visualisation, please refer to the figures below.

3. DESCRIPTION OF THE INSTALLATION

Main activities/products relevant to major accident hazards

According to its name, the object is formed as a depot for liquefied propane - butane, which will be delivered, stored and sold to customers for the needs of stations and heating of various production, administrative and residential buildings. Propane-butane arrives with tanks and rail-rail-by inflowing device, gas compressor and piping system is transported for storage at 6 smaller tanks and one big tank, each tank with a spherical geometry. By the means of pumping units, a system of pipelines and two outflowing devices gas is loaded from the tanks to road tankers for delivery to customers. A respective bypass provides links and direct loading of tankers by rail tanks and loading of rail tank directly from the tanks.

Risk Associated with the Operation of Pressurised Vessels

The design and operation of pressurised vessels strictly complies with the relevant statutory requirements and good engineering practice. This includes preparation and implementation of operating instructions and procedures for technical supervision of pressure vessels and pipelines, definition of responsibilities and actions that ensure suitable repair, maintenance and operation of pressure vessels, training of the workforce and simulation of scenarios to verify the skills acquired and observance of the Emergency Plan procedures.

The tanks are manufactured and delivered by experienced contractors, complete with passports, certificates for materials, test reports and Non-destructive tests, instructions for service and other documents. The tanks are mounted on concrete fundament and are certified to withstand an earthquake of 9 Richter scale.

There are a series of in-built fail-safe mechanisms in the tanks in order to avoid an emergency. The main fail safe systems include the following:

- Safety valves
- Back up generators are used to maintain power to critical pumps
- Shut down procedures protect pumps and valves
- Correct venting procedures
- Level meters
- Temperature sensors

Emergency Preparedness includes the following:

- Timely maintenance and checks of all the equipment
- Personnel fully trained in the operation of the tanks, including loading and unloading procedures
- Training on dealing with LPG
- Establishment of lines of communication with emergency services.

Risk from Road Accidents

The transport infrastructure onsite includes motor roads and a railway track, which is near the Company site.

For transportation of hazardous cargoes by road, XXX EAD contracts roadtanks that hold certificates for compliance with the Industry Guidelines for the Security of the Transport of Dangerous Goods. It is mandatory to ensure compliance with the

requirements of the European Agreement on International Road Transportation of Dangerous Goods (ADR).

For railroad tanks, similar requirements are met. There is a contract with the Bulgarian rail AD to use only railcars compliant with the Bulgarian and international acts.

Risk from Natural Disasters

The structures at the site have been designed to be safe at a 1:100 72-hour precipitation event considering the seismic stability of the region and the class of the facility. The site is partially protected against stormwater from off site by the site sewage system. This runoff is diverted to enclosed natural gullies on the east and west of the site.

As previously discussed, all structures are designed to withhold scale 9 earthquake.

Risk from Emergencies Caused by Wrongful Acts

To minimise the risk from thefts, acts of vandalism, etc, security guards are engaged to protect the site, paying special attention to the tanks. The design includes appropriate types of fencing and safety measures for reliable separation of the railway track from working sites. Individual areas are fenced and have access control measures in place when the risk of unauthorised access has been deemed sufficient.

Description of Processes and Operating Methods

Loading operations

By the means of pushing manoeuvres a maximum of 3-rail tankers enter the site. They get situated at the beginning of the railway track. The maximum geometric volume of a railroad tank is about 106 cubic meters of gas and the weight is about 44 tons. In practice, tanks will arrive with lesser capacity - 36 t, 28 t and more. After the manoeuvre, the first full rail tank is freed and is positioned at the unloading facility under the drencher installation. Tanks are locked and earthed. After the unloading is finished, the tank is pulled to the end of the track.

Similarly, road tankers are placed under drencher devices and the loading is done by adding to the flanges of the nozzles for the liquid and gas phase Road tankers are

locked and earthed again. Unloading of road and rail tankers is done by the means of compressor mounted in the pump-compressor station. Depending on the location of the unloading - in storage tanks, rail tanker ro road tanker, the respective pipelines for liquid and gas phase are adjusted and the respective shut-off valves are opened and closed. When pipelines are ready to work, remotely - via mobile, a signal is given to the operator-compartment. Then the compressor is started and unloading starts. In the same way the operators proceed with the filling of road tankers and rail tankers using of pump sets in the pump-compressor station.

Storage activities

There are 6 smaller tanks and one big tank, each tank with a spherical geometry. Through a pipeline system they are connected to the loading facilities. They are made of steel and meet all the fire and safety requirements.

The design of storage facilities follows the guidelines of the Reference Document on Best Available Techniques on Emissions from Storage, July 2006. The principles adhered to are:

- Storage facilities will meet minimum specifications commensurate with the type and quantity of goods stored as per BAT ECM
- Tank colour – will have a reflexivity of greater than 70% (if exposed to direct sunlight)
- Safety features – safety valves, level meters, temperature meters

Pipelines

The tailings dam is a structure designed to store the flotation waste after recovering of the Cu-Au concentrate from the ore. The facility has one main embankment and retention walls. The embankment and walls retain the tailings slurry in a pond where solids settle and compact. Further water is released from the solids, decanted off and recycled to the process water tank situated on the North industrial site for re-use in the process.

Description of dangerous substances

Inventory

Table 3.1 following outlines the chemical inventory of the site.

Chemical name	CAS No	EC No	Category of hazard (standard risk phrases)	Design capacity of the facilities (t)**	Available Quantity (t)
1	*2*	*3*	*4*	*6*	*7*
LPG, mixture of hydrocarbon gases, mainly propane and butane	68606-25-7	271-734-9	*F+; R: 12-45-46*	1800	1600

(**) Maximum capacity of storage facilities, incl. pipelines within the company and/or facility site.

Table 3.1 Chemical Inventory

Physical, chemical, toxicological properties under normal/accident conditions

Propane is a hydrocarbon fuel, chemical description C3H8. Its boiling point is -44℉ (-42℃) Its octane rating is 104 Latent heat of vapor ization = 183 BTU's / lb (426 kJ/kg) 91,500 BTU's per gallon (25300 kJ/L) Autoignition temperature 855℉ (457℃) Stoichiometric by weight = 15.5:1 Molecular weight = 44.09 Carbon % by weight = 89% Hydrogen % by weight = 18% Flammability limits = 2.1 – 9.6% Viscosity at 68℉ = 0.592 BTU/lb ℉ (2.48 KJ/Kg ℃) Expansion rate = 270:1 (expands in volume 270 times from liquid to ambient pressure vapor) LPG is auto-refrigerating, when pressure is reduced, it boils by absorbing heat

Propane's vapor pressure (the amount of pressure required to keep LPG liquid at ambient temperatures) is zero at -44℉ (-42℃), abo ut 120 psig at 70℉, about 250 psig at 125℉, and close to 400 psig at 160℉.

LPG is approximately twice as heavy as air when in gas form and will tend to sink to the lowest possible level and may accumulate in cellars, pits, drains etc. LPG in liquid form can cause severe cold burns to the skin owing to its rapid vapourisation. Vapourisation can cool equipment so that it may be cold enough to cause cold burns. LPG forms a flammable mixture with air in concentrations of between 2% and 10%. It can, therefore, be a fire and explosion hazard if stored or used incorrectly. Vapour/air mixtures arising from leakages may be ignited some distance from the point of escape and the flame can travel back to the source of the leak. At very high concentrations vapour can have an anaesthetic effect and subsequently become an asphyxiant by diluting the available oxygen. A cylinder that has contained LPG is normally empty but may still contain LPG vapour and be potentially dangerous. Therefore treat all LPG cylinders as if they were full.

4. IDENTIFICATION AND ACCIDENTAL RISKS ANALYSIS AND PREVENTION METHODS

Description of major-accident scenarios and their probability

After analyzing the possible negative effects through the risk identification procedure (all risk identification procedures are documented and are available on the site premises) a list of accident scenarios has been prepared:

1. Catastrophic failure - total contents released: immediate ignition leads to fireball, delayed ignition could result in a flash fire or pool fire.

2. Localised failure of a pressure vessel above liquid level: ignition leads to jet flame and flash fire and possible explosion.
3. Localised failure of a pressure vessel below liquid level: ignition leads to jet flame and flash fire and possible explosion. For a refrigerated vessel failure it would be a pool fire or flash fire/explosion.
4. Overfilling: ignited pressure relief valve discharge, or spill of liquid if refrigerated (and possible pool fire).
5. Pipe failures: rupture, hole diameter equal to pipe radius, flange leak, ignition leads to jet fire, flash fire, and possible explosion
6. Vaporiser leak: ignition leads to jet fire, flash fire, and possible explosion.
7. Leak inside cylinder filling plant: confined explosion.
8. BLEVE of vessels including storage vessel, road tanker, rail tanker

In order to identify representative major accident scenarios, bowtie diagrams for each scenario have been developed and the probability of the occurrence thereof has been evaluated by numerical means. Data on equipment failure have been taken from the Purple Book, published by TNO. Data of the conclusions is given in Annex F.

After calculating the probabilities, a semiquantative evaluation of the extent and severity of consequences of the identified accident scenarios was conducted and the data has been put into a risk matrix in order to identify the reference major accident scenarios. Data of the conclusions is given in Annex F.

Identification of reference major accident scenarios

After performing the procedure, three reference accident scenarios have been identified on the basis of the probability of their occurrence and the consequences thereof. The referent scenarios are as follows:

1. Catastrophic failure - total contents released: immediate ignition leads to BLEVE.
2. BLEVE of vessels including storage vessel, road tanker, rail tanker
3. Pipe failures: rupture, hole diameter equal to pipe radius, flange leak, ignition leads to jet fire

Extent and severity of consequences of identified accidents

The reference accident scenarios have been studied in more details regarding the consequences thereof. A modelling has been performed for the expected phenomena associated with these events – overpressure effects and thermal radiation for accidents for which BLEVE is the main negative consequence (reference scenarios 1 and 3) and thermal radiation effects for the jetfire scenarios (reference scenario 2).

For the modelling the ALOHA software was used, using meteorological data and data about the site. The expected impact zones are given in Annex F.
An expert analysis has been performed to evaluate the possible negative consequences to the environment as a result form a major accident. The main pollution sources are the products from the burning of LPG and polluted firewater runoff. The dilution effect for air pollution would lead to negligible effects on the air quality around the site. As for the polluted firewater runoff and subsequent pollution of water and soils, the site sewage system will collect the firewater and via the pipelines detour will eventually lead it to the firewater pond. If large amounts of firewater have to be used, the remains of the water will be redirected to the city sewage system. After discussing the issue with the operator of the local sewage treatment plant, XXX EAD was reassured that the plant con process such pollutants and an alerting procedure has been established.

Control measures

Wherever a pathway has been identified from an initiating event towards a major accident event, or from an MAE to an unwanted consequence, controls have been provided within the design to prevent the MAE from occurring or to limit its consequences if it does occur. This is illustrated in the Bow Tie diagrams developed for each MAE which are described in Appendix F.

Each control was assessed for its effectiveness to prevent the identified initiator from giving rise to an MAE. This assessment prompted the development of recommendations on the Bow Tie diagram and actions relating to new or upgraded controls.

Control assessment was undertaken by posing the following questions for each control:

1. Is the control designed specifically to address the hazard?
2. Is the control independent of other controls?
3. Is the control dependable to stop/overcome the hazard?
4. Is the control available to work on demand within tolerance?

Controls not meeting all four criteria were normally not included on the Bow Tie on the basis that every control included within the design should be fully effective. On occasion only three of four criteria were met but the control was still accepted on the basis that no reasonable improvement in effectiveness was practicable.

Controls of lesser effectiveness were not included on the Bow Tie unless there was reason to believe that they could be made effective but there was currently no means of

demonstrating this, in which case they were tagged “unknown”. In line with Section 7 of the SMS (Audit & Review), it is expected that there will be periodic reviews of all Bow Ties after commissioning when there will be first hand experience of the effectiveness of all controls. Using the Safety Report workshop records as a baseline, XXX EAD will be able to assess each control and if necessary re-evaluate its effectiveness, possibly discarding some and adding or modifying others in order to provide the required controls adequacy. All the software and data used in the original Safety Report workshops has been supplied to XXX EAD for ease of such re-evaluation exercises.

Codes were assigned against each control:

- Level One Hard control (HC1 - control deemed to give the most protection from the threat, and is an engineering control, i.e. human intervention is not required for activation
- Hard control (HC) - control which is an engineering control
- Level One soft control (SC1) - control deemed to give the most protection from the threat which are procedural, i.e. requires human intervention to activate
- Soft control (SC) - control which is procedural, maintenance and inspection work or PPE

The approach was to require a minimum number based on the following guidelines for each pathway:

- Preferably at least one hard and one soft control
- A single hard control would be accepted if the risk was judged relatively low
- If it was not possible to have a hard control, then at least two soft controls were required.

The barriers against many of the generic causes of an MAE (such as inadequate design, construction or operation) are primarily if not exclusively soft controls, emphasising the importance of the SMS. In this regard, it is worth noting that there is a rigorous process whereby all design and construction activities are overseen by an independent engineer appointed by XXX EAD and acceptable to the Bulgarian authorities.

Hard controls are of many different types, with the main ones including:

- Separation distances
- Process control
- Bunding or other secondary containment
- Materials of construction

◗ Automated fire suppression

Assessment of the acceptability of the major accident risk

After consideration of the above-mentioned facts, the management of XXX EAD thinks that the risks of major accidents are acceptable, because:

- Accident safety has been dealt with on all of the stages of the planning, design, building and exploitation of the site
- Adequate safety management measures have been planned and implemented
- The negative consequences of a potential accident are to be expected in the nearest vicinity of the establishment, where there are no residential areas, protected sites, water or infrastructure
- The probability of an occurrence of a major accident is satisfactory low
- There are MAPP and SMS, developed and implemented for the site, which guarantee that major accident safety will be kept on appropriate high level

Technical parameters and equipment used for safety

Please refer to Annex E.

5. MEASURES OF PROTECTION AND INTERVENTION TO LIMIT CONSEQUENCES

Refer to the attachéd Emergency Plan

6. INFORMATION ABOUT FIRE SAFETY ORGANISATIONAL ARRANGEMENTS IN PLACE

6.1. Fire safety rules and norms for the particular site and operations of the facilities and installations

6.2. Action Plan for on-site employees in case of fire and accident

6.3. Plans for provision of fire safety upon repairs, rehabilitation and refurbishment on the site

6.4. Employees' and visitors' evacuation plans in case of fire or accident

6.5. Order for safe delivery of any hotworks

6.6. Order for safe use of heaters and other electrical devices

6.7. Order for designated smoking areas

6.8. Order for disconnecting the power supply at the end of the working hours, with the exception of 24-hour users

6.9. Order for employee's fire safety induction and preparation

6.10. Order for provision of after-hours fire safety

6.11. Order for fire alarm and fire extinguisher systems

6.12. Order for fire alarm and fire extinguishing devices and tools

6.13. Order for appointment of a commission for determination of the fire safety category and fire safety and blasting category in compliance with the current fire safety norms

6.14. Order for off-payroll management designated to coordinate actions of the Management, operative and support staff in case of fire and for the purpose of cooperation with the fire safety departments and any authorities responsible for coping with emergencies and disasters and protecting the population while emergency and rescue operations take place

6.15. Other documents certifying compliance with the fire safety rules on the site

7. IV. INFORMATION ABOUT ANY INDIVIDUALS AND/OR LEGAL ENTITIES INVOLVED IN THE PREPARATION OF THE SAFETY REPORT, INCLUDING: NAME, ADDRESS, TELEPHONE, FAX AND E-MAIL

Appendix I – Material Safety Data Sheets