DWP & SS-ESMMP

Nam Ngiep Power 1 (NNP1) Project

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PART 1
DETAILED WORKS PROGRAM (DWP)
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Part 1 Detailed Works Program (DWP)

1. General

Lao UNEOD Copper Co., Ltd., (LAUNC) UXO clearance was engaged by Nam Ngiep 1 Power Company Limited (NNP 1PC) in February 2915 which that NNP1 has received the concession agreement from the Government of Lao PDR (GoL) to Build, Operate and Transfer the "Nam Ngiep I Hydropower Project (NNP1)" in Bolikhamxay Province. Among Resettlement Action Plan (RAP) and Social Development Plan (SDP) for Project Affected Peoples (PAPs), PAPs residing at Zone 2LR at Hom District Xaysoboun Province and Zone 3, Hatsaykham, which is the sub-village of Hat Gniun Village, Bolikhan District, Bolikhamxay Province needs to be resettled at "Houay Soup" on the opposite bank of Hat Gniun Village. In order to commence the resettlement site development, the Employer must conduct the UXO clearance at Resettlement Site (Houay Soup) for Construction (work).

2. Scope of work

The contractor shall perform UXO clearance at Resettlement Site (Houay Soup) under the supervision of the Environmental and Social Division (ESD) of the NNP1PC. Prior to commencing the Works, the Contractor shall prepare a detailed work procedure and schedule for approval by the Manager of SMO (Social Management Office) of ESD or his designated representative(s). The Contractor shall coordinate with ESD to cooperate with Resettlement Management Unit (RMU) of Bolikhamxay Province, in order to assure the Works are to be conducted according to the standards and guidelines of Government of Lao PDR (GoL) and Asian Development Bank (ADB).

3. Methodology approach

LAUNC will provide UXO Survey and Clearance as mentioned above which includes the detection and destruction of single encountered mines, but not the clearance of minefields. The clearance of minefields is substantially different to the clearance of UXO regarding required time and costs. In the unlikely case a minefield is encountered and it is not possible to divert it, additional costs of mine clearance have to be separated calculated and agreed.

3.1 Field activities

The LAUNC will be responsible for all aspects of the Works, including employment of personnel, provision of accommodation and meals, transportation, specialist personnel qualified and experienced in Explosive Ordnance Disposal (EOD), search instruments and equipment, safety equipment and machines, and management and reporting. Also the contractor will be found and recruited local labors in Ban Thaheua, Hatngiun, and Ban Hatxaykham to support field work especially marking/pegging on boundary area and bush clearance at Resettlement Site (Houay Soup) in advance of the construction of access road, residential areas, irrigation dam, paddy field land, water supply and grassland. Resettlement villages and agricultural areas have been established by Environment and Social Division (ESD).
The team leader will accurately record the boundaries/coordinates of all searched areas by means of GPS equipment or other agreed means. It will maintain comprehensive and accurate records defining the location and boundaries of each search area. Search boundary markers will be installed at no greater than 50 m spacing. The boundary markers shall be semi-permanent in construction, be highly visible and painted appropriately to indicate the cleared status of the marked area.

The LAO UNEOD COOPER CO., LTD Planning to be Settled 3 teams:

- **Mapping Team:** 3 Teams
  - Install Coordinate in Boundary 7 laborers: Teams leader 1 and 6 surveyors

- **Bush Clearance Teams:** 3 Teams
  - Bush Clearance Team of Launc: 1 Team / 20 Persons
  - Bush Clearance Team – Local Villager: 2 Teams / 40 persons

- **UXO Clearance Teams:** 3 Teams
  - EOD Team manager: 1 person/Team
  - EOD - technician: 2 persons / Team
TEAM COMPOSITION AND ORGANIZATION CHART

National Director Lao UNEOD Cooper Co Ltd

Office Manager HQ

Finance HQ

Administration HQ

Logistics HQ

Operations Director HQ/Field (Expat)

EOD Technician/s level 2 or 3

EOD Technician/s level 1

Trauma Medic/s

Driver/s

Guard/s
3.2 Clearance area

The Contractor shall be responsible for UXO search, marking and clearance work within each work area identified by the Client. The areas to be searched and cleared are intended sites for the construction of access road, residential areas, irrigation dam, paddy field land, water supply and grassland. There are 3 areas in resettlement site (Houay soup) where search is required, as shown in the following table.

Table 1-1 UXO clearance area

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Surface areas (ha)</th>
<th>Work priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Access road</td>
<td>19.7</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Paddy field land</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Residential area</td>
<td>99.3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total area</strong></td>
<td><strong>157</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Install Coordinate in Boundary
- Bush Clearance
- UXO Clearance
- UXO Disposal
- Clearance Certificates

The estimated searching area includes:

- Shallow and Deep Search of Access road with area of 19.7 Ha
- Shallow Search of Paddy field land with area of 38 Ha
- Shallow and Deep Search of Residential area with area of 99.3 Ha

Plate 1:
- Mine lap F1A4 for shallow search for 30cm
- PIDD for shallow search for 30cm

Plate 2:
- Large - loop metal detector for deep search 2,5m
- F3 for deep search 4 m
- MAGNEX 120 LW for deep search 5m
3.3 Tools, UXO Equipment and Specification of Equipment

The contractor to be used tools and equipment for UXO clearing work at resettlement area especially access road, paddy field, irrigation, residential area also other site as involved agriculture area so that consideration to be appropriated tools and equipment selection to conduct UXO survey, search, and UXO clearing on clearance area as below:

- Coordinates Survey with Hand Held GPS - Garment for 8 unit
- Mobile 7 set survey and data collection
3.4 Work Schedule of UXO Clearing Work

The contractor will be carried out 69 days for UXO clearing work including contact local authorities to find and recruit local labours, marking or pegging on boundary of clearance area, bush clearing, survey and also UXO clearing on resettlement area.

Table 1-2 work schedule of UXO clearing work
4. UXO Clearance Location

LAUNC to be conducted UXO survey and clearing on main area especially access road, paddy field, and residential. The location site is far from Ban Hatsaykham village is 2.5 kilometers of east north of Houysoup (resettlement area) please see figure 3: as below:

Figure 3: UXO clearance area location map
Figure 4: UXO Deep + shallow search map
Figure 5: Vegetation cover map
PART 2
SITE SPECIFIC ENVIRONMENTAL & SOCIAL MANAGEMENT AND MONITORING PLAN (SS-ESMMP)
Part 2 Site Specific Environment & Social Management and Monitoring Plan (SS-ESMMP)

5. Introduction

This Site Specific Plan has been prepared to highlight environmental and social conditions prior to the beginning of UXO clearing activity and will be used as a tool to ensure the particular activity follows the correct management and mitigation procedures. Sub-Plans will be used to detail mitigation methods for each of the activities associated with UXO clearing works.

The contractor will be conducted UXO clearing work on resettlement area especially access road to Houysoup, paddy field, and residential area before UXO clearing work the team to be carried out marking or pegging on boundary of clearance area, data collection on field, bush clearing, survey, and also search UXO on resettlement area.

Table 6-1 below shows the referential linkages of documents regarding environmental matters in the NNP1 Project. The Owners (NNP1) documents use references and information from the Concession Agreement. This SS ESMMP (Contractor) uses references and information from Owners EIA/ESMMP and Owners ESMMP-CP.

Table 6-1 List of Main Documents and Approving Authority

<table>
<thead>
<tr>
<th>Item</th>
<th>Hierarchy of Documents</th>
<th>Approving Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concession Agreement</td>
<td>GOL</td>
</tr>
<tr>
<td>2</td>
<td>NNP1 EIA/ESMMP</td>
<td>GOL</td>
</tr>
<tr>
<td>3</td>
<td>ESMMP-CP</td>
<td>GOL</td>
</tr>
<tr>
<td>4</td>
<td>Contractors EMP</td>
<td>NNP1</td>
</tr>
<tr>
<td>5</td>
<td>SS-ESMMP</td>
<td>NNP1</td>
</tr>
</tbody>
</table>

5.1 Environmental and Social Pre-Construction Description

5.1.1 Land and water use in the area

Previous land use at the UXO clearing site was largely agricultural land, consisting of shifting cultivation and seasonal plantations such as rice, corn, bananas and pineapples. At present vegetation and agricultural land has already approved by GoL to resettlement area and for during UXO clearing work on resettlement area. Remaining agricultural land and vegetation surrounds the site.

The main water source is the Nam Ngiep River and Houysoup Ngai, however during rainy season small streams from around the site.
5.1.2 Proximity to villages, cultural sites

The closest village to the resettlement area is Ban Hatsaykham, more than 3 km to the east north of Houpsoup Ngai the this location there are no temples or cemeteries in the vicinity of resettlement area.

Table 6-2 is a checklist used to assess pre-construction description of UXO clearing site, this checklist will be used to determine what sub-plan will be used.

<table>
<thead>
<tr>
<th>Environmental Assessment Checklist - for Pre Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Is there surface water located in close proximity to the site?</td>
</tr>
<tr>
<td>Is there a village or community located in close proximity to the site?</td>
</tr>
<tr>
<td>Is the site located in a vegetated area?</td>
</tr>
<tr>
<td>Is the site located in agricultural land?</td>
</tr>
<tr>
<td>Are there any PCR sites in the area?</td>
</tr>
<tr>
<td>Is there an existing access road to the site?</td>
</tr>
<tr>
<td>Is the site located within an existing Agriculture Area?</td>
</tr>
</tbody>
</table>
### Environmental Impacts

<table>
<thead>
<tr>
<th>Environmental Impacts</th>
<th>Likelihood (Yes/No)</th>
<th>Mitigation measure to be Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will the site development result in increased dust generation at near-by villages?</td>
<td>No</td>
<td>No truck to access on resettlement area</td>
</tr>
<tr>
<td>Will the site development result in increased noise generation at near-by villages?</td>
<td>No</td>
<td>Villages are far from resettlement area</td>
</tr>
<tr>
<td>Will the site development result in surface water contamination?</td>
<td>No</td>
<td>UXO clearing work activities do not disturb or contaminate water quality in the watercourse.</td>
</tr>
<tr>
<td>Will site development result in changes to drainage patterns?</td>
<td>Yes</td>
<td>Vegetation clearing will be changed drainage patterns especially wet season.</td>
</tr>
<tr>
<td>Will vegetation clearing be required?</td>
<td>Yes</td>
<td>Vegetation shall be required to clear on resettlement area especially access road, paddy field, and residential area.</td>
</tr>
<tr>
<td>Will the site be setting up hazardous components? (storage and workshop)</td>
<td>Yes</td>
<td>Hazardous components such as Patrol, explosive, and materials of explosive will need to be in a well-designed Storage workshop.</td>
</tr>
<tr>
<td>Will the site generate waste?</td>
<td>Yes</td>
<td>Sufficient waste bins will be placed around the temporary camp. A main collection point should be designated with all waste separated into general/recycle/hazardous/</td>
</tr>
<tr>
<td>Access road will be conducted UXO clearing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy field will be conducted UXO clearing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential area will be conducted UXO clearing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6-3 identifies the relevant list of Sub Plans required for the UXO clearing work. The Sub Plans were selected after a review of the following:

- Detailed Works Program (DWP)
- Pre-Construction assessment (Table 6-2 Environmental Assessment Checklist)
- NNP1 - EIA and ESMMPs

Table 6-3 Relevant Sub Plans for UXO clearing Works

<table>
<thead>
<tr>
<th>Sub-Plan</th>
<th>Item</th>
<th>Environmental</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP01</td>
<td>Erosion and Sediment Control</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>SP02</td>
<td>Water Availability and Pollution Control</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SP03</td>
<td>Emission and Dust Control</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SP04</td>
<td>Noise and Vibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP05</td>
<td>Waste Management</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>SP06</td>
<td>Hazardous Material Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP07</td>
<td>Vegetation Clearing</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>SP08</td>
<td>Landscaping and Re-vegetation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SP09</td>
<td>Biodiversity Management</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SP10</td>
<td>Spoil Disposal</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SP11</td>
<td>Quarry and Construction Layout</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SP12</td>
<td>Un-exploded Ordnance (UXO) Survey and Disposal</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>SP13</td>
<td>Construction of Worker Camp</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>SP14</td>
<td>Traffic and Access</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SP15</td>
<td>Training and Awareness</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SP16</td>
<td>Project Personnel Health Program</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SP17</td>
<td>Emergency Preparedness</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SP18</td>
<td>Cultural resources</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Detailed descriptions are found in the relevant sections relating to Environmental or Social Management and Monitoring Plans.

6 Sub plan detail for UXO clearing works - environmental

All Sub-Plans in this section refer to UXO clearing activities unless otherwise mentioned.

6.1 SP02 water availability and pollution control

- Implementation of solid and septic system waste management systems, such as proper location, containment and disposal of construction debris and temporary camp trash (e.g., use of watertight dumpsters and weekly trash
collection/removal), and appropriate location (at least 30 m from drainage courses or other sensitive areas) and containment of septic systems;

- The contractor shall provide sanitation facilities/toilets with septic tanks with sufficient capacity to handle and treat domestic wastewater generated by workers;
- A licensed contractor will be used to remove all waste when septic tanks reach capacity. NNP1 will be notified and will be present on site when discharging any septic waste;
- Warning signs will be placed in areas of hazardous material use or storage and along drainages and storm drains (or other appropriate locations) to avoid inadvertent hazardous material disposal.

6.2 SP03 emission and dust control

- Speed limits (20 km/h) will be imposed to pass community area especially Ban Nonsomboun, Thaheua, Hatngiun, and Ban Hatxaykham and 40 km/h to be used to pass the other area;
- Unsealed Project roads, compounds and work areas accessible by vehicle will be regularly sprayed with water to suppress dust when a dust hazard exists;
- The burning of waste materials shall be minimized on site and only take place under the following conditions:
  - Burning will only be undertaken in the presence of a trained fire protection officer;
  - Burning will not be undertaken during severe wind conditions;
  - Appropriate fire protection equipment will be available on-site during the burn;
  - Burning will be undertaken at a safe distance from vegetated areas.

6.3 SP05 waste management

- Dumping of waste into watercourses, agricultural land and surrounding areas is highly prohibited;
- A sufficient number of waste containers or similar one will be made available at the construction site;
- Waste containers will be marked clearly for “Hazardous Waste” and for “Non-Hazardous Waste” for separation and sorting of waste;
- Construction waste will be minimized by applying the waste minimization hierarchy principles of ‘Avoid/Reduce/Re-Use/Recycle/Dispose’. Any waste material that is unable to be re-used, re-processed or recycled will be disposed at a facility approved to receive that type of waste;
- Hazardous waste such as paint and solvent containers will be disposed of according to appropriate best practices;
- Waste will be stored in appropriate facilities (e.g. bins, stockpiles), with hazardous waste stored away from streams and rivers in secure areas;
- Secure lids will be fitted to bins that store food waste to prevent scavenging by birds and animals;
- Pit toilets will be installed for temporary camp, and they will be instructed to use these facilities.
6.4 SP06 hazardous material management

- All chemicals and waste considered as potentially hazardous materials will be registered in order to follow up type, quantities stored, quantities used or generated;
- Hazardous Materials Containers of or waste must be labelled with correct MSDS;
- Personal protective equipment (PPE) will be provided to all workers and the use of equipment will be enforced;
- All re-fuelling of heavy equipment and machinery will be undertaken by a service vehicle, with appropriate safeguards and protection measures to prevent any spillage or contamination by chemical wastes or maintenance oils, lubricants etc;
- Safety procedures regarding fire and accidental spill management to be posted on-site;
- “No Smoking” labels and posters will be placed wherever fuel is handled or stored;
- All the fuel and hazardous material storage will be in adequately bunded areas to minimize the risk of spillage;
- Only minimal chemicals, hazardous substances and fuel will be stored on site works, within an enclosed and covered secure area that has an impervious floor and impervious bund around it (with capacity at least 120% of the total capacity of the tanks). The storage area will be located away from watercourses, flood-prone areas, accommodations, and danger areas.
- Oily rags, paint and solvent containers shall collected and disposed of through recyclers/authorized waste handlers and disposal in authorized waste facilities;
- The hazardous materials and chemical used in the construction shall be separated and kept in a suitable storage and the Material Safety Data Sheet (MSDS) shall be in place;
- Proper equipment shall be installed at hazardous material storage facilities, including temporary construction sites (i.e. concrete floor, roof or sunshade, oil weir or trap and closed valve);
- Firefighting equipment will be kept available next to each storage facility;
- Ensure availability of spill clean-up materials (e.g., absorbent pads, etc.) specifically designed for petroleum products and other hazardous substances where such materials are being stored and used. If spills or leaks do occur, undertake immediate clean up;
- Discharge of paint/solvent contaminated water into the environment is prohibited.

6.5 SP07 vegetation clearing

- After completed marking or pegging on clearance area including access road, paddy field, and residential the contractor will be carried out vegetation clearing work on along the marking alignment;
- As for the timing of clearing works within resettlement area after its notification from the ESD/NNP1PC (owner), the contractor will carry out it;
- The material to be cleared shall include trees, stumps, bush, undergrowth, grass, and other vegetation;
• The vegetation waste shall be piled and stored at the vicinity of resettlement area also contractor shall be appropriate management on site especially stockpile, how to remove materials, and elimination;
• The clearing materials will be piled along clearing alignment, also clear marking on stockpile can be visible as well as give way from jungle or forest to protect forest fire incase burning on site shall be controlled by watchman or foreman on dry season, the materials do not stockpile on watercourse due to block water flow on wet season;
• Clearing materials shall be appropriate piled and corrected management due to materials can be decomposed by itself after that to become fertilizer on future.

6.6 SP12 un-exploded ordnance (uxo) survey and disposal

• The contractor will be carried out UXO survey and clearing on resettlement area including access road, paddy field, and residential on total 157 ha;
• Timeline to conduct UXO survey and clearing shall be completed within 69 working days so that the contractor shall be ensured search UXO to remain on resettlement area also confident elimination on that area without remain there;
• The contractor shall be noticed and consult with head of village also villager to understand as regarding UXO elimination thus exactly time and blasting location on resettlement area to protect dangerous will be occurred with communities especially villager of Ban Hatngiun and Hattrxaykham, as well as second remind on surround area within safety radius 400 m for outside people of blasting area before conduct blasting;
• UXO scrap to be collected by search and transport to dispose on appropriate storage area also install sign label, No smoking, extinguisher and daily record to report owner to acknowledge on this issues.

6.7 SP13 construction of worker camp

• Temporary accommodation facilities are to be located in consultation with local communities to ensure that they do not affect local economic activities or social and cultural values;
• They are to comply with all national or local regulations concerning the construction of temporary facilities;
• Temporary accommodation sites are to be well drained and, if necessary, have sufficient soil depth to permit the digging of toilets, wastewater soak pits and rubbish pits;
• The establishment and operation of temporary accommodation facilities is to be carried out in a manner that avoids or minimizes erosion and the discharge of silt into any watercourse;
• Toilets should be provided on each clearance worksites and for temporary accommodation facilities. Personnel are not to deposit human waste on the soil surface or in watercourses;
• Toilets should be provided at a minimum of one for every 20 persons and they are to be located at least 50m from any clearance worksite administration or control point, accommodation or food preparation areas, watercourses or wells;

• Where toilets are dug into the ground, the depth of the hole is to be sufficient to allow 0.5m of earth cover over the toilet pit when it is filled in.

7 Sub plan detail for UXO clearing works-social

7.1 SP14 traffic and access

• Employ flag persons to control traffic when truck to carry equipment and materials entering or leaving the work area to guide vehicles to regulate traffic movements, and to lead traffic through potentially hazardous areas;
• Safety issues and regulations regarding traffic and site access will be included in the training plan for construction personnel (refer to SP14);
• Reduce materials falling onto the road, trucks may use tarpaulins or sheets to cover their loads;
• Speed limits will be 40km/h outside villages and 20km/h in the vicinity of each villages.

7.2 SP15 training and awareness

• All new employees will be required to complete Induction Training from contractor/NNP1 prior to commencing any work on site;
• In this training, the Contractor will highlight site regulation/rule, and safety & environmental issue;
• A register of induction training will be maintained and can be provided to NNP1 on request;
• Daily safety meetings will be conducted with all employees, and will cover all relevant health and safety issues on site;
• Weekly meetings are also conducted to bring further awareness to environmental, health and safety issues.

7.3 SP16 project personnel health program

• Health and safety related posters covering; disease, drug use, waste disposal, PPE use of toilet facilities and site rules will be provided in visible locations around the construction site;
• First aid kits will be provided and will be appropriately located at the construction site;
• The Project ambulance will be contacted when an accident occurs;
• Vector control of mosquitoes and other pests will be managed according to the following actions:
  - Effective storm water drainage systems implemented to avoid stagnant water;
  - Storm water drains and borrow pits will be kept free of vegetation;
  - Minimizing the presence stagnant water within containers and other pools of
water;
- Removal of discarded items that could contain water;
- Adequate drainage at construction site will be provided to avoid water logging/accumulation of stagnant water and formation of breeding sites for mosquitoes;
- Training in general housekeeping and sanitation facilities for all workers at the workers’/construction camps will be provided;
- Reliable supply of water for drinking, cooking and washing purposes at the workers’ camps;
- Provide fire-fighting equipment at the work areas;
- Appropriate safety equipment such as safety boots, helmets, gloves, protective clothes, breathing mask, goggles, ear protection, and etc. must be worn when required.

7.4 SP17 emergency preparedness

- Referring to the emergency action plan in Appendix 9.4, the emergency response procedures, emergency contact numbers and communication and reporting procedures will be clearly displayed and each staff always carry it;
- Hazardous materials will be stored in the permitted area only and according to the instruction by the authorities;
- Hazardous materials will be stored on-site with the MSDS in accordance with the requirements of SP06;
- In the event of a spill of any hazardous materials, work will be ceased in the immediate vicinity and the area will be cleared of all construction personnel except those involved in the clean-up activities, if necessary;
- In the event of a spill of any hazardous material, the following response hierarchy will apply and will be used at development of the detailed emergency response procedures:
  - Seek medical attention for any injured personnel;
  - Prevent further injury to personnel;
  - Prevent environmental damage;
  - Clean-up spill;
  - Remediate area of spill;
  - Complete reposting requirements;

- At each construction site, information on emergency response procedures, including fire prevention, emergency contact numbers and communication procedures will be clearly displayed on notice boards;
- All construction workers should be trained in basic emergency response procedures including communication and reposting procedures to be implemented in case of an emergency situation;
- The communication processes will include the following information in relation to accidental releases or spills:
  - Location of spill;
  - Nature of material spilt;
  - Amount of material spilt;
  - Clean-up processes to be implemented;
  - Any injuries to personnel;
  - Need for emergency or external assistant
- Any safety/evacuation requirements to be implemented on the construction Site.
  • Within 48 hours of the completion of a spill clean-up, a report will be submitted to the Owner. The report will be used to identify any required corrective or preventive actions and emergency response procedures and training programs will be modified accordingly;
  • First aid kits will be readily accessible by workers;
  • Prior to the rainy season, all construction site will be reviewed for slope stability and stability of infrastructure and management measures identified to prepare for incidents that may arise as a result of flash flooding for example machinery being dislodged or landslip;
  • Include clearly marked exclusion barriers around hazardous areas around construction site required to exclude access from non-working staff and the public.
## Appendix

### 8 List of key person and field staff

<table>
<thead>
<tr>
<th>No</th>
<th>Name and surname</th>
<th>Qualification</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mr. Khouthana Salibouth</td>
<td>Project Management</td>
<td>National Director</td>
</tr>
<tr>
<td>2</td>
<td>Mr. Chanthalah Sihaphone</td>
<td>Master of Science</td>
<td>Field Management</td>
</tr>
<tr>
<td>3</td>
<td>Mr. Stuart Broome</td>
<td>SEOD ( EOD4 )</td>
<td>EOD consultant</td>
</tr>
<tr>
<td>4</td>
<td>Mr. Paul Stanford</td>
<td>SEOD ( EOD4 )</td>
<td>Partime EOD consultant</td>
</tr>
<tr>
<td>5</td>
<td>Mr. Nouphet Chanthalangsy</td>
<td>SEOD ( EOD4 )</td>
<td>Field Operation</td>
</tr>
<tr>
<td>6</td>
<td>Mr. Xay Xaymouangkhoune</td>
<td>SEOD ( EOD4 )</td>
<td>Field Operation</td>
</tr>
<tr>
<td>7</td>
<td>Mr. Xayasanh xaymoungkhoun</td>
<td>SEOD</td>
<td>Field Operation</td>
</tr>
<tr>
<td>8</td>
<td>Mr. Somphanh Xayaseng</td>
<td>SEOD</td>
<td>Field Operation</td>
</tr>
<tr>
<td>9</td>
<td>Mr. Thuy Vilaysouk</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>10</td>
<td>Mr. Keth Luanglarth</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>11</td>
<td>Mr. Xai Maiteechith</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>12</td>
<td>Mr. Oudom Vongdalarth</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>13</td>
<td>Mr. Phaivan Khonesvanh</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>14</td>
<td>Mr. Mai Lorchalern</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>15</td>
<td>Mr. Somphat Singpaserth</td>
<td>EOD3</td>
<td>Team Manager</td>
</tr>
<tr>
<td>16</td>
<td>Mr. Sipaserth</td>
<td>EOD2</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>17</td>
<td>Mr. Khonesvanh</td>
<td>EOD2</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>18</td>
<td>Mr. Kanyoh Kanthivong</td>
<td>MEDIC</td>
<td>Field Medic</td>
</tr>
<tr>
<td>19</td>
<td>Mr. Davone Bounthavysai</td>
<td>MEDIC</td>
<td>Field Medic</td>
</tr>
<tr>
<td>20</td>
<td>Mr. Chaimeung Chanthalangsy</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>21</td>
<td>Mr. Viengkham Sysaed</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>22</td>
<td>Mr. Mima Xaisonsombath</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>23</td>
<td>Mr. Air Vongvilay</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>24</td>
<td>Mr. MekDouangchanh</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>25</td>
<td>Mr. Sam Sithiphone</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>26</td>
<td>Mr. Thongda Keobouabanh</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>27</td>
<td>Mr. Mima Xaisonsombath</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>28</td>
<td>Mr. Thavone Chomthavong</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>29</td>
<td>Mr. MeKDouangchanh</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>30</td>
<td>Mr. Kenh Inthathilarth</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>31</td>
<td>Mr. MeKDouangchanh</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>32</td>
<td>Mr. Maicheng Phearxai</td>
<td>EOD1</td>
<td>EOD - Technician</td>
</tr>
<tr>
<td>33</td>
<td>Mr. Amphone</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>34</td>
<td>Mr. Don</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>35</td>
<td>Mr. Dao</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>36</td>
<td>Mr. Southid</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>37</td>
<td>Mr. Khampanh</td>
<td>Assistant</td>
<td>Survey</td>
</tr>
<tr>
<td>38</td>
<td>Mr. Maima Xaysonsombath</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>39</td>
<td>Mr. Thavonh choumthavong</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>40</td>
<td>Mr. Bounsai manivong</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
</tbody>
</table>
8.1 UXO equipment & specification of equipment

<table>
<thead>
<tr>
<th>No.</th>
<th>Work Items</th>
<th>Description of equipment</th>
<th>Detection depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Technical Survey Depth 30cm</td>
<td>Mine lap F1A4 for shallow search for 30cm PIDD for shallow search for 30cm</td>
<td>30cm</td>
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<tr>
<td>2.</td>
<td>Depth search</td>
<td>Large - loop metal detector for deep search 2,5m F3 for deep search 4 m</td>
<td>2.5m 5m</td>
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<tr>
<td></td>
<td></td>
<td>MAGNEX 120 LW for deep search 5m</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Work Items</th>
<th>Assistant</th>
<th>EOD Assistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Mr. Singsakhonh</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>42</td>
<td>Mr. Makduangchanh Chanthavong</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
<tr>
<td>43</td>
<td>Mr. Maycheng piexay</td>
<td>Assistant</td>
<td>EOD Assistant</td>
</tr>
</tbody>
</table>
Search and locate

UPEX® 740 M
PI large-loop metal detection system

- Deep search and large-area surveying
- High productivity of up to 2.5 ha per day and device
- Detects ferrous and non-ferrous metals and alloys
- Simple to operate
- Digital surveys

www.ebinger.org
MAGNEX® 120 LW
Magnetic anomaly locator

- Detection of ferromagnetic objects
- Normal landuse, wateruse, bore hole inspection
- Digital survey, single or multi-channel system

www.ebinger.org
9 Bush clearance map

Uxo Clearance Map of Provide Village
Block-1 of Bush Clearance Complete

Legend
- Point_Parcel_Block.1
- Bush Clearance Complete
- River_NungMap_1

1:8,000
10 UXO clearance map
11 Corrective & preventive action

Corrective & Preventive Action

- Identify non-conformity (responsive)
  - Fix immediate problem (correction)
  - Determine root cause of non-conformity
  - Determine appropriate corrective action focused on root cause to avoid re-occurrence of non-conformity
  - Implement corrective action
  - Evaluate effectiveness of action taken
  - Close out
- Identify potential non-conformity or suggestion for improvement (proactive)
  - Determine root cause of potential non-conformity or cost/benefit analysis of suggestion for improvement
  - Determine appropriate preventive action (focused on root cause) to avoid occurrence of non-conformity or implement suggestion for improvement
  - Implement preventive action

CONTINUAL IMPROVEMENT