

BRIEFING PAPERS

PROVIDED TO:

**Water-Related Agencies (briefing given March 28, 2008)
Wildlife Division, Ghana Wildlife Society and CI
Forestry Services Division and CI
MINCOM**

**Example Briefing Paper Attached
(for Forest Services Division and CI)**

OBJECTIVES

1. Introduce the new Newmont Project Team
2. Present information being used to inform the new EIS document
3. Review the issues raised by EPA at the re-start meeting on 13th March
4. Achieve common understanding of the path forward to generate a revised EIS

PROJECT TEAM

- Robin Budden; General Manager Environment and Social Responsibility, Akyem Project
- James Badu; Director Environment (absent)
- Appiah Kusi Obodum; ESR Coordinator, Akyem Project
- John Ocran; Senior Communication Officer, Akyem Project
- Clark Gilbert; Technical Studies Manager; Newmont Mining Services (Denver) (absent)
- Myles Grotbo; Geomatrix Consultants
- Evans Darko Mensah; Refast Consultants (absent)

EXISTING ENVIRONMENT

Existing biological resources in the Study Area are described below. Data and information presented were collected during Company-sponsored baseline studies as well as through a review of available scientific literature. Because a portion of the proposed mine pit associated with the Project would be developed within the southern end of the Ajenjua Bepo Forest Reserve (ABFR) a separate discussion of the flora and fauna resource areas within the ABFR is presented. Conditions outside the ABFR are also discussed and compared and contrasted to those present within the reserve. The area of interest to the Company are shown in Figures 1, 2 & 3

FIGURE 1 – MINING AREA

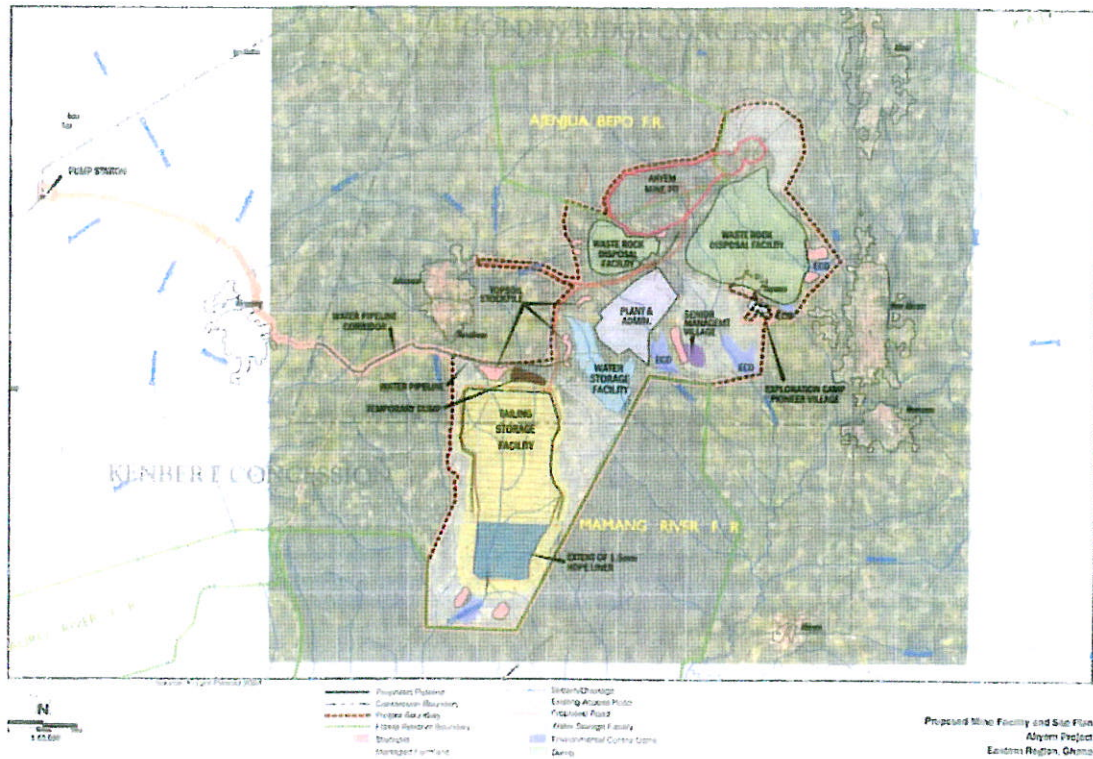


FIGURE 2 – PIT DEVELOPMENT IN ABFR

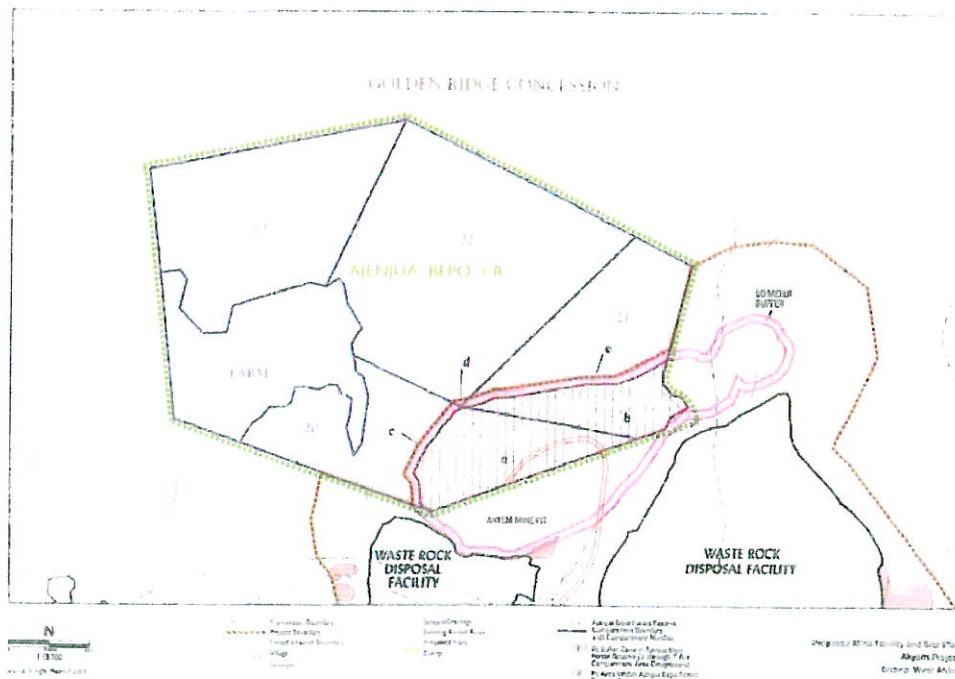
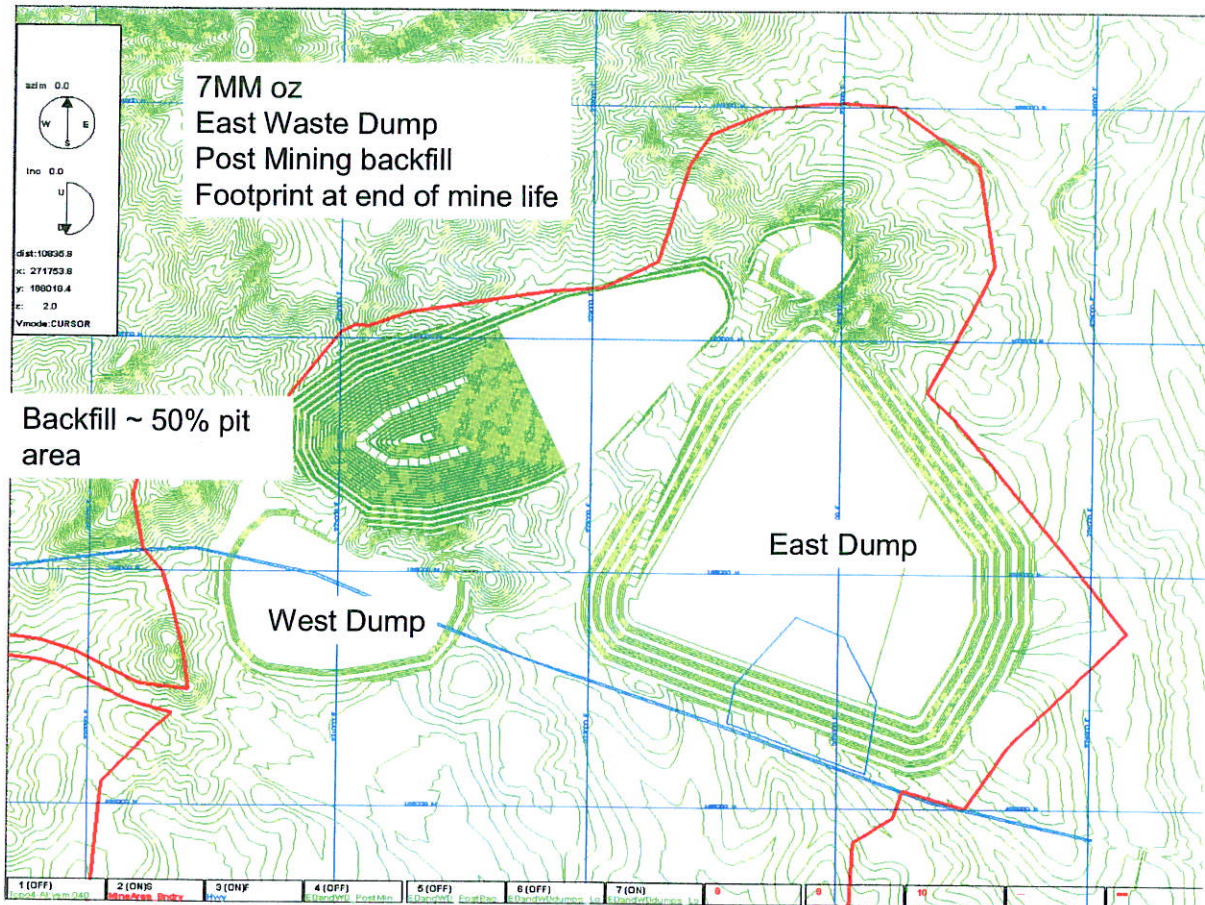


FIGURE 3 – PROPOSED MINE FOOTPRINT – POST CLOSURE

BIOLOGICAL ENVIRONMENT

The proposed development of a mine pit within a portion of the southern end of the ABFR is of particular significance because development of a mine within a forest reserve in Ghana is unusual. The following sections discuss flora and fauna both within the ABFR and within the Study Area but outside the ABFR.

FLORA AND FAUNA WITHIN THE AJENJUA BEPO FOREST RESERVE

The focus of this discussion is on the flora and fauna within the ABFR. The ABFR is divided into Timber Compartments, a mechanism used by the Ghana Forestry Division to manage timber on forest reserves in Ghana. The Company obtained data from the Resource Management Service Center in Kumasi regarding individual compartments that subdivide the Ajenjua Bepo Forest Reserve. Table I summarizes the area of disturbance in the four Timber Compartments (20, 21, 22 and 23) that comprise the ABFR.

TABLE I			
Area of Ajenjua Bepo Forest Reserve Affected by Proposed Mine Pit Akyem Project			
	Compartment	Area (hectares)	Percent Impacted
FOREST COMPARTMENTS			
Compartment 20	20	102	--
Total Project Impact on Compartment 20		46.5	45.9
Compartment 21	21	93	
Total Project Impact on Compartment 21		35.3	41.4
Compartment 22	22	175	--
Total Project Impact on Compartment 22		0.25	0.1
Compartment 23	23	116	--
Total Project Impact on Compartment 23		0	0

FLORA

The ABFR is classified as Moist Semi-deciduous forest (Hall and Swaine 1976; 1981) with a total area of 569 hectares. Established in 1930, the ABFR is located entirely within the Pra River drainage basin. Biodiversity studies of the ABFR have been conducted by SGS (1998 and 2004a, 2004f, 2004g), Conservation International (2005 and 2006), and Geomatrix (2008a, 2008b) in conjunction with baseline studies associated with exploration and mining interests in the area.

The ABFR has been extensively logged, converted to cropland and planted with non-native timber species (e.g., *Cedrela odorata*). The structure and composition of plant communities and wildlife habitats have been fragmented and altered by human activities and have little resemblance to natural forests once typical of the region. Several communities are located near the boundary of the ABFR and local residents access and use the ABFR for bushmeat hunting, farming and gathering of forest products.

Species Diversity and Forest Health

A common method used in Ghana to evaluate floral species density and biodiversity is the "Star" system, developed by Hawthorne and Abu-Juam (1995). Using this system, plant species are evaluated on a scale ranging from "Black Star" (rare globally and not widespread in Ghana) to a "Green Star" (species are common and widespread in tropical Africa). **Table 2** summarizes this rating system. Hawthorne and Abu-Juam (1995) also developed a system to evaluate the condition of forest reserves in Ghana. The scale extends from a score of 1 (excellent condition) to 6 (no significant forest remaining). This rating system for forest condition is presented in **Table 3**.

Star Rating	Description
Black	Highly significant in context of global biodiversity; Rare globally and not widespread in Ghana.
Gold	Significant in context of global biodiversity; fairly rare globally and/or nationally.
Blue	Mainly of national biodiversity interest; e.g. globally widespread, nationally rare; or globally rare but of no concern in Ghana due to commonness.
Scarlet	Common and widespread commercial species with potential seriously threatened by overexploitation.
Red	Common and widespread commercial species; under significant pressure from exploitation.
Pink	Common and widespread commercial species; not currently under significant pressure from exploitation.
Green	Species common and widespread in tropical Africa; no conservation concern.
Other	Unknown, or non-forest species e.g. ornamentals or savannah plants.

Source: Hawthorne and Abu-Juam (1995).

Score	Description
1	EXCELLENT: with few signs (<2 %) human disturbance, with good canopy and virgin or late secondary forest throughout
2	GOOD: with <10 % heavily disturbed. Logging damage restricted or light and well dispersed. Fire damage none or peripheral.
3	SLIGHTLY DEGRADED: Obviously disturbed or degraded and usually patchy, but with good forest predominant; maximum 25 % with serious scars and poor regeneration; maximum 50 % slightly disturbed, with broken upper canopy.
4	MOSTLY DEGRADED: Obviously disturbed and patchy, with poor quality forest predominant; 25-50 % with serious scars; maximum 75 % disrupted canopy or forest slightly burned throughout.
5	VERY POOR: forest with coherent canopy < 25 % or more with half the forest with serious scars and poor forest regeneration; or almost all heavily burned with conspicuous pioneer species throughout.
6	NO SIGNIFICANT FOREST LEFT: Almost all deforested with savanna, plantation, or farm; <2 % good forest; or 2-5 % very disturbed forest remaining; or 5-10 % left in extremely poor condition.

Source: Hawthorne and Abu-Juam (1995)

Initial studies conducted by Hawthorne and Abu-Juam (1995) in the ABFR rated species density and biodiversity as poor within the southern portion of the Reserve with no "Black Star" timber species nor any species classified as rare in Ghana. They concluded that the land at the southern end of the ABFR (targeted for exploration at the time) was highly degraded (Forest Reserve Condition Score of 6) with a small patch of Condition 4 (moderately degraded) forest present along the southeast forest reserve boundary. The investigators concluded the best natural forest preserved was located on a hill in the northern portion of the ABFR.

Biodiversity studies conducted by SGS (1998) focused primarily on the 250 hectares of forest in the southern portion of the forest which was of interest to the Company for exploration. They also completed more generalized studies of the balance of the ABFR. The 1998 SGS assessment confirmed conclusions reached previously by Hawthorne and Abu-Juam.

The assessment and Environmental Management Plan was reviewed and accepted by the Ghana Environmental Protection Agency and Forestry Commission and permission was granted by the Chief Conservator of Forests for the Company to commence work by letter # G474.S11/4, dated 6 July, 1998, granting GRRL permission to conduct mineral exploration activities on the 250 hectares of forest land located in the southern half of the ABFR.

In 2001, the Forestry Commission in consultation with the Minerals Commission established a technical committee to assess potential environmental impacts of proposed mining operations within forest reserves. The committee reported the following concerning the targeted exploration area within the southern portion of the ABFR:

- Except for the southeast corner where there is a small patch of original forest with a rating of 4, the remainder of the mineral concession area is a secondary forest with a rating of 6 (ratings range from 1 to 6, with 1 being excellent and 6 having no significant forest remaining).
- The number of species and species density in the concession area is poor and vegetation is heavily degraded.
- The portion of forest currently undergoing exploration is under convalescence and consists of *Cedrella odoratai* and *Gmelina arboreai* plantation with patches of natural forest.
- The economic potential of the deposit warrants continued access for further exploration and access should be permitted.
- Good quality forest in the southeast corner of the Forest Reserve should be preserved and the integrity of important rivers in the area should be maintained.

This committee's report is not specific with respect to identifying potential impacts within the area proposed for development of an open pit mine within the Forest Reserve.

In January 2003, the Ministries of Mines, Lands and Forestry, and Environment and Science conducted an assessment of the ABFR and the 250 hectare area targeted for mining. Additionally, they reviewed the Company's plan for business development. The objective of this assessment was to provide Cabinet with information on which they could make a decision regarding the issue of Mining in Ghanaian forest reserves. The conclusions reached by the Ministers' assessment are as follows:

- "120 hectares of the allotted forestry area of 250 hectares constituting 21% of the total forest area will be affected by mining."
- "The Ajenjua Bepo Forest Reserve has a low level of bio-diversity and had significantly been degraded prior to a portion of it being assigned for mineral exploration."
- "Newmont Ghana Business plan can provide significant economic and employment benefits to the country over the long term in the light of the anticipated costs of impact."
- "The Company's size, financial strength, global experience, and industry profile make it an attractive investor. It has demonstrated a history of high technical and moral standards in both its domestic and international operations."

Based on the above conclusions from the assessment, the ministers made the following recommendations to Cabinet:

- “The Ajenjua Bepo Forest, particularly the portion accessed for exploration is determined by the Forestry Commission office in Kade to be ‘devoid of any special protected biological areas, provenance areas, institutional research plots, community sacred groves, black star species or hill sanctuaries’. An on-the-spot check confirms the facts that all the primary trees have been logged and the original forest destroyed.”
- “In the light of the poor state of the forest and considering the insignificant portion of the area to be covered by mining, it is recommended that Newmont’s request for a mining lease be granted so that the forest can be properly rehabilitated by the company at the end of the day. “

The Company commissioned SGS, Conservation International and Ghana Wildlife Society (GWS) to conduct additional biodiversity studies to update the data collected at the ABFR previously. These studies (SGS 2004b, Conservation International 2005 and 2006, and GWS 2007) evaluated the Study Area flora both within and outside of the ABFR. Results of these studies indicated that the condition of the ABFR had not changed measurably from the previous assessments conducted by Hawthorne and Abu-Juam (1995) and SGS (1998).

Biodiversity

A common index used to evaluate flora diversity in Ghana is the Genetic Heat Index (GHI). GHI reflects the concentration of rare plant species in an area and allows prioritization of conservation areas. In Ghana, the Wet Evergreen forests and Southern Dry forests typically have the highest GHI values whereas the Moist Semi-deciduous forest zone comprising the ABFR typically has low to moderate GHI values, even under pristine conditions. Average values for natural forest vegetation in the ABFR range from 60 to 85. On a national scale, these genetic heat index values are low compared to values reported by Hawthorne and Abu-Juan (1995) for the Ankasa Conservation Area and Neung North Forest Reserve, which have the highest ratings in Ghana with average index values of 301 and 269, respectively.

Economic Value of Timber Species

Economic values of timber species in the ABFR are reflected in Economic Index (EI) values developed by Hawthorne and Abu-Juam (1995). EI values on the portion of the ABFR within the mine footprint are low (Abu-Juam as cited by SGS, 2004b). EI values within the mine footprint in the ABFR are similar to EI indices measured outside the ABFR, demonstrating the degraded nature of this portion of the ABFR.

The following species of trees, found within the southern portion of the ABFR in the vicinity of the proposed mine development, are common, widespread timber species in Ghana (Scarlet Star Rating) but are under pressure because of their economic value: Awiemfosamina (*Albizia ferruginea*), Edinam (*Entandrophragma angolese*), Penkwa (*E. cylindricum*), Kusia (*Nauclea diderrichii*), Danta (*Nesogordonia papaverifera*), Keyereye (*Pterygota macrocarpa*) and Emire (*Terminalia ivorensis*). These species are listed by the International Union of Conservation and Nature and Natural Resources (IUCN) as “Vulnerable” (see discussion on *Fauna* regarding IUCN).

Non-Timber Forest Products (NTFPs)

Non-timber forest products (NTFPs) contribute to all aspects of rural life providing food, fodder, fuel, medicine, building materials, household items and intangible benefits such as cultural symbols, ritual artifacts and sacred sites. NTFPs in the ABFR include chewing sponge from *Acacia kamerunensis*; firewood and charcoal, mostly from hardwood species with Esakoko (*Celtis zenker*) being the preferred species; kola nut from Bese (*Cola nitida*); and wrapping leaves from species in the family Maranthaceae. Studies in the ABFR have found that 24 percent of flora provides herbal medicine.

FAUNA

Brief discussions of the various species of fauna present in the ABFR and other general attributes of fauna in the ABFR follow.

Large Mammals

SGS (1998) report 24 species of large mammals are present in ABFR. Large mammal occurrence in the ABFR is low with rare encounters. The most widespread species is the grasscutter (Akrante). Interviews with local residents and observations concerning large mammals have not indicated use of large mammal species as totems. There is strong evidence of dependence on large mammal species for bushmeat in communities near the ABFR, which could be a major contributory factor to their low population density.

Several of large mammal species have national or international conservation status under:

- The Ghana Wildlife Conservation (GWC) Regulations (First Schedule and Second Schedule) that control use of wildlife as bushmeat or other consumptive purposes.
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which addresses species involved in international trade; and
- The IUCN, which evaluates species based on their level of extinction risk.

Large mammal species of conservation concern reported within ABFR are the IUCN "Near Threatened Species" including the Maxwell's duiker (Otwe), black duiker (Oyuo), royal antelope (Adowa), and Pel's anomalure (Otra) and the "Vulnerable" Zenker's fruit bat (Apan). These species are associated primarily with forest habitats but forage in agricultural land and in fallow regrowth. Species within the ABFR that are protected by CITES are the spot-nosed monkey, putty-nosed monkey, Bosman's potto and bushbaby.

Small Mammals

Eighteen species of small mammals, other than bats, were reported as present in the ABFR including seven species of shrew, four species of squirrel, eight species of mouse and two species of rat. The most common small mammals are the soft-furred mouse, fire-footed rope squirrel and the zebra mouse. No species of small mammals reported for the ABFR are of conservation concern based on IUCN, CITES, or GWC criteria.

Bats

Twenty-three species of bats (nine species of insect-eating bats and 14 species of fruit bats) have been documented in the ABFR. This number of bat species is among the highest in Africa. Most fruit bats forage and roost in habitats both inside and outside of ABFR. Plantations of non-indigenous *Cedrela odorata* and *Gmelina arborea*, planted in the ABFR provide seasonally abundant food for some species of fruit bats. The Zenker's fruit bat, round-leaf bat and horseshoe bat are classified as "Near Threatened" by IUCN. No bats reported within the ABFR are regulated under CITES. All fruit bats identified in the ABFR are protected under the GWC regulations.

Birds

Biodiversity studies conducted in the ABFR identified 258 species of birds of which 23 species were found exclusively in the forest habitats. Birds most commonly associated with the ABFR (e.g., turacos, hornbills, trogons, owls, parrots, and most woodpeckers) often have specific habitat or breeding requirements provided by forest habitats. Some forest species require cavities in large trees for nesting, which are mostly available in forest stands in later stages of ecological succession. Eight species in the area are regulated under CITES and 25 species are protected under GWS regulations.

Reptiles

Biodiversity studies in the ABFR recorded 19 species of frogs and toads, 21 species of lizards and skinks, 19 species of snakes and two species of tortoise and terrapin. The green mamba and black cobra are common venomous snakes in and out of forest habitats. The hinged tortoise is listed by the IUCN as "Vulnerable." The Nile monitor, hinged tortoise, chameleon, royal python and African python are regulated under CITES and the hinged tortoise and Nile monitor are protected under GWC regulations.

Butterflies

Surveys identified 162 species of butterflies in the ABFR, a biodiversity typical of moist, deciduous forests. IUCN lists one species for Ghana (the African giant swallowtail), which was not found in the ABFR. Although not identified by IUCN or CITES as of conservation concern, several rare and forest interior species of butterflies were identified.

SUMMARY ASSESSMENT OF IMPACTS

FLORA

Construction of the mine and ancillary facilities would remove crops, fallow fields and patches of secondary forest. Reclamation would re-establish vegetation and stabilize soil and restore land surface capable of supporting crop and timber production on all disturbed sites except the un-reclaimed portion of the mine pit). Approximately 19 hectares of the eastern lobe of the mine pit would be backfilled concurrently with pit development and reclaimed for forestry or agricultural uses. The portion of the mine pit that would not be backfilled and reclaimed would remain devoid of vegetation. Species of

conservation concern that would be affected include seven species of trees that are listed as IUCN “Vulnerable” species;

- Awiemfosamina (*Albizia ferruginea*),
- Edinam (*Entandrophragma angolese*),
- Penkwa (*E. cylindricum*),
- Kusia (*Nauclea diderrichii*),
- Danta (*Nesogordonia papaverifera*),
- Keyereye (*Pterygota macrocarpa*) and
- Emire (*Terminalia ivorensis*).

These commercial species are relatively common (Scarlet Star species) but their status is of concern because of intensive timber harvesting. One Gold Star tree species, Kwaebrofre (*Cussonia bancoensis*) would be affected, but this species is widespread and re-establishes on disturbed sites.

FAUNA

Construction of the mine and ancillary facilities would remove wildlife habitat in the Ajenjua Bepo Forest Reserve and on land that has been modified by agricultural activities outside of the forest reserve. Species with strong affinities for forest habitat (i.e., “obligate forest species”) would be directly affected by removal of vegetation in the forest reserve by the mine pit; whereas species occupying habitat modified by human activities (“habitat generalists”) would be directly affected by construction of mine facilities outside of the forest reserve. Indirect effects on obligate forest species could result from increased bush meat hunting in adjacent forest reserves and alteration of habitat in forest reserves for farming. Species of conservation concern (IUCN Red List) that would have potential to be directly affected by the proposed Project are Pel’s flying squirrel, Maxwell’s duiker, black duiker, royal antelope and Zenker’s fruit bat. Species protected by Schedule I of the Ghana Wildlife Regulations that would have potential to be affected include all of the hoofed animals (e.g., duikers), primates (e.g., monkeys and pottos), and raptors (hawks, owls, eagle, and vultures). A large proportion of the protected wildlife species that would have potential to be affected by the proposed Project and alternatives have been recorded in the Ajenjua Bepo Forest Reserve and Maman River Forest Reserve.

Reclamation activities following mining would create habitat for habitat generalists and habitat enhancement in forest communities would improve habitat for forest-dwelling species. The Project would result in a net decrease in wildlife habitat within the Ajenjua Bepo Forest Reserve because portions of the mine pit would not be reclaimed to wildlife habitat. The commitment of a 3:1 offset for forest reserve land disturbed by the Company has been made to mitigate this net loss.

MITIGATION OF IMPACTS

Impacts of proposed mine development on the flora and fauna would be minimized and avoided where possible through pre-mining planning and analysis. Impacts that cannot be avoided or minimized would be mitigated through restoration of wildlife habitats and cropland through implementation of reclamation to replace soil and establish stable, self-sustaining plant communities of comparable biodiversity to pre-mining conditions. Education of residents influenced by mine development to enhance sustainable crop production would also be a component of mitigation.

To help ensure that socioeconomic and biodiversity impacts are identified, mitigated, and compensated, the Company has become a participant in the Business and Biodiversity Offset Program (BBOP), an international partnership among non-governmental organizations (NGO's) and businesses that develop projects with the potential to affect the human and natural environment.

FLORA

Following mining, reclamation activities would include re-establishment of forest communities and cropland on land affected by mine development. Within the ABR the areas of the pit backfilled during and after mining operations will be either re-forested or turned to cropland in accordance with an agreed closure and reclamation plan. Forest communities could also be established on the steeper portions of the waste rock dump and on the tailings storage facility.

The Company has an onsite tree nursery, which has successfully grown more than 62 species of native trees for use in current reclamation activities. The Company has commissioned Conservation International to study seedlings of medicinal and herbal plants that could be propagated in the nursery and become an alternative to collecting from the forest. The Company has also conducted site studies at the Anglogold Ashanti Bibiani Mine and the Resolute Amansie Ltd. Obotan Mine to assess reclamation practices that have been successful in re-establishing forest species and crops.

FAUNA

Impacts to wildlife would be mitigated by re-establishing native habitats, enhancing habitat quality and biodiversity in existing forest habitats (e.g., Ajenua Bepo and Mamang River Forest Reserves), and discouraging illegal harvest of bushmeat through education and implementation of projects to propagate bushmeat species such as grasscutters and snails.

Consumption of bushmeat is deeply ingrained in the culture of West Africa and is generally considered a special food as opposed to a staple. Several programs in Ghana that focus on conservation awareness have been conducted by various NGOs. These programs apparently have had localized positive impacts on reducing overexploitation of fauna to support the bushmeat trade. Educational programs combined with mitigation measures mentioned above could be developed for the mine area to raise conservation awareness and reduce impacts on bushmeat species. The Company, in association with the OICI (an NGO contracted to develop skills and capacity in the local communities) established a number of small scale demonstration farms in collaboration community members to raise grasscutter.

Demand for bush meat could also be reduced by increasing poultry production and developing fish farming. The potential for members of the communities to produce poultry successfully is high especially if the supply of chicks, feed and veterinary products are available and affordable and the supply of these is accompanied by training in feed production, health, housing requirements and production techniques. Basic requirements for establishing fish farms are: a dependable supply of water, equipment to construct fish ponds or dugouts that can hold water perennially, supply of healthy fingerlings, feed, and the technology for combining these efforts to successfully produce fish in captivity. All these requirements can be met in the area. Preferred types of fish (tilapia and mud fish) also lend themselves to aquaculture development. In the same manner as used for the grasscutter farming demonstrations, the Company OICI and community member have established a demonstration fish farm in New Abirem in 2007 to introduce the concept to the area and test its acceptance and viability.

THREE FOR ONE PROGRAM

In 2005, the Company committed to a re-establishing 3 acres of forest for every 1 affected by the project development. The modalities of this have not been finalized however it is anticipated that this will be incorporated into a wider biodiversity offset program, including the Business and Biodiversity Offset Programme outlined below.

BUSINESS AND BIODIVERSITY OFFSET PROGRAM (BBOP)

The BBOP, managed by Conservation International and Forest Trends, is a partnership of companies, scientists, NGO's, government agencies, and research institutions to explore biodiversity offsets. Biodiversity offsets are conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by major development projects to ensure "no net loss" of biodiversity. The objectives of BBOP are:

- Demonstrate conservation and livelihood outcomes in a portfolio of biodiversity offset pilot projects;
- Develop, test, and disseminate the practices on biodiversity offsets, and;
- Influence policy and corporate developments on biodiversity offsets so they meet conservation and business objectives.

The Akyem Project is one of the international pilot biodiversity offset projects that is being conducted World wide. Company participation in the BBOP has been ongoing and the company is in the process of identifying the extent and magnitude of compensatory actions that could be necessary to offset biodiversity and socioeconomic impacts of the Akyem Project.

CLOSURE PLAN

Decommissioning and reclamation of the Project would be accomplished in accordance with applicable Ghanaian laws and regulations and the Company's Policy and Standards. Several aspects of site decommissioning and reclamation planning have already been incorporated into the initial design of the Project. Reclamation activities would be designed to achieve, at a minimum, post-mining land use consistent with a level of productivity and biodiversity present at pre-mining levels. Post-mining land use would be determined in consultation with the Ghanaian government and local communities and is likely to include areas for agriculture (crops), livestock grazing and wildlife habitat. Maintaining or improving the biodiversity of the Mining Area would be an important consideration in the ultimate reclamation plan developed for the Project.

In accordance with Ghanaian law, an Environmental Management Plan including a detailed land rehabilitation plan is required to be delivered to EPA within 2 years of mine closure. The Company is proposing to initiate formal reclamation planning for the Project sooner than the mandated date for several reasons:

- Opportunities currently exist through the various groups that are already formed in the Study Area to engage a variety of stakeholders into the reclamation design process. Outcomes from

this planning process could be used, in turn, to refine the design of certain mine and processing components that may not be available once construction begins.

- By consulting a variety of government and community stakeholders in the decommissioning and reclamation planning process, agreements may be reached regarding acceptable design criteria, closure criteria and end land use determination criteria. Such agreements, likewise, could influence mine and processing facility design and operational procedures.
- Strategies could be developed to address decommissioning with respect to determining how infrastructure would be removed or maintained and applied to other uses. These strategies would be considered in evaluating various sustainability options for the mine areas that consider using the existing infrastructure for other non-mining applications. The useful life of the infrastructure, retrofitting costs, maintenance requirements and costs and liabilities to the various parties involved in the Project could be determined. Activities that could “jump start” other business lines during the mine life could be identified that may result in commodities that could be used in the reclamation and closure phases of the Project or at other mines in Ghana.
- If post-mine land use were agreed upon, programs could be planned and designed to conduct research and perform pilot studies on various reclamation methods that would reinforce the overall plan. Likewise, appropriate monitoring and evaluation programs could be developed to ensure the reclamation methods would be successful, as intended.

It would be preferable to understand and incorporate the objectives of existing and planned social investment plans and livelihood enhancement programs into any decommissioning and closure plan prepared for the Project such that social programs can remain consistent and targeted at the end result of providing alternatives means of livelihood to Project employees.
