

ANNEX 1

Urucu-Porto Velho Gas Pipeline

Introduction

The Urucu-Porto Velho Gas Pipeline (the “Pipeline”) is part of the Advance Brazil Program and, as such, is considered a national priority. The Pipeline is to be developed by a consortium consisting of Petrobras (50 percent), El Paso Energy International (25 percent), and C.S. Participações (25 percent). The Pipeline will transport natural gas from the existing Urucu oil and gas production facility known as the “Polo Arara,” in the Urucu Gas Production Field located in the State of Amazonas, the second largest natural gas field in Brazil, to the municipality of Porto Velho, State of Rondônia, a distance of approximately 522.2 km (see Figure A-1). Both the federal government and the State of Amazonas have significant interest in developing the Urucu Gas and Production Field and in increasing the use of natural gas for power generation in Brazil.

Phase I and Phase II of the Termonorte Power Plant will be the principal users of the natural gas transported by the Urucu-Porto Velho Gas Pipeline, which is being developed as a separate effort from the Termonorte Power Plant. Petrobras is responsible for the environmental permitting process to obtain the necessary in-country permits, is responsible for construction of the Pipeline and will also be the operator of the Pipeline. The Pipelines will supply natural gas to Eletronorte, the government owned utility in northern Brazil, which in turn supplies fuel to Termonorte. Under Termonorte’s PPAs with Eletronorte, Eletronorte has the sole responsibility for supplying and delivering fuel to Termonorte. Eletronorte is currently supplying liquid fuel to Termonorte and intends to supply natural gas to Termonorte upon completion of the Urucu-Porto Velho Gas Pipeline¹.

Project Location

The Urucu-Porto Velho Gas Pipeline will connect the Urucu Gas Production Field in the State of Amazonas to the Termonorte Power Plant in the State of Rondônia. Both the Rondônia and Amazonas states are located in northern Brazil, in the region known as the Legal Amazon (see Figure A-1). Approximately 90 percent of the Pipeline corridor is located within the borders of the State of Amazonas, in undeveloped areas of the Amazon rainforest where the demographic density is very low and communities consist of small families that live at or near the rivers. The nearest towns are Lábrea, Humaitá, Coari, Canutama, Porto Velho, and Tapauá. The right of way (“ROW”) will also run near lands of various indigenous groups (“Indigenous Lands”) and conservation areas. Figure A-2 depicts the general Pipeline setting and the proximity of the Pipeline to federally designated and proposed Indigenous Lands.

Project Description

The Urucu-Porto Velho Gas Pipeline consists of a 14-inch, 522.2-km pipeline to be constructed within a 20-meter ROW and will be buried to an average depth of 1 meter below ground surface (“bgs”) and with meter stations and shut-off valves placed every 25 km along the length of the Pipeline. Where the Pipeline crosses a river, average depth of bury will be 1.5 meters bgs. In addition, when large rivers (e.g., the Purus and Madeira) are crossed using directional drilling technology, the Pipeline will be buried to a depth of approximately 6 meters below the bottom of the river. The thickness of the pipe will vary from 0.219 to 0.375 inches to accommodate varying environmental conditions encountered along the 522.2 km of ROW. The Pipeline ROW will be no greater than 20 meters, except at the monitoring stations, which will be located at intervals of

¹ Under Termonorte’s PPAs with Eletronorte, Termonorte is contractually committed to accept on-specification fuel from Eletronorte – be it liquid fuel or natural gas.

25 km along the ROW. The Urucu-Porto Velho Gas Pipeline will be remotely monitored and controlled via equipment that will be tracked by satellite system.

The Pipeline corridor is to be divided into four areas and construction is proposed to be initiated simultaneously at each area. These areas will each have a support post where lodging facilities will be constructed and from where materials and equipment can be deployed throughout construction of the Pipeline. The four areas of the Pipeline include:

- Area I (Trecho I): From the Polo Arara Facility (km 0) to a point just before the pipeline crosses the Purus River (km 154.4), in the municipalities of Coari and Tapauá.
- Area II (Trecho II): From km 154.4 (end of Area I) to the end of the floodplain of the Purus River (km 194.4), in the municipality of Tapauá.
- Area III (Trecho III): From km 194.4 (the end of the Area II) to the point where the Pipeline crosses the TransAmazon Interstate Road, at km 352.2, in the municipality of Canutama.
- Area IV (Trecho IV): From km 352.2 (end of Area III), in the municipality of Canutama, to the City Gate at the Termonorte Power Plant, after crossing the Madeira River, in the Municipality of Porto Velho, Rondônia.

Before reaching the Termonorte City Gate, the Pipeline will branch out to reach two future City Gates; one for the existing industrial district near the fluvial port in the City of Porto Velho and the other near the future industrial district, also in Porto Velho. Figure A-3 provides an overview of the Pipeline site depicting each of the four segments and principal construction staging areas.

GasPetro (a subsidiary of Petrobras) will be responsible for the construction, maintenance, and operation of the Urucu-Porto Velho Gas Pipeline. During construction, the primary means of transportation for personnel, fuel, pipes and other supplies will be via fluvial barges and boats. It is anticipated that the pipes and supplies will be transported to the construction sites during the rainy season when the rivers are most navigable and the barges can reach further into the flooded areas to deliver the supplies. Barges will travel the following main rivers: Madeira, Amazonas, Purus, Mucum, Coari, and Urucu. The construction equipment and supplies will be stored at staging areas that will be cleared just prior to the start of construction. Some portions of the Pipeline corridor may also be reached via interstate highways BR-319 and BR-230 from the City of Porto Velho. A permanent access road will not be constructed as part of the Pipeline. Once areas have been cleared, helicopters may also be used for the transport of personnel and supplies to the support areas and between the four construction fronts.

Special barges will serve as lodging for the construction workers. These floating lodging facilities will be most useful in the early stages of the construction phase when land needs to be cleared for the staging areas and construction sites. Once the four leading staging areas are cleared, temporary lodging facilities will be constructed to accommodate additional workers. Basic medical facilities will be constructed at each of the support centers, and helicopters will transport injured workers to those facilities or to regional cities in the event of serious injuries. The construction of the Pipeline is expected to employ a maximum of approximately 1,800 workers disbursed throughout the four segments. Once construction begins, the Pipeline should be completed within 22 months. The cost of the Urucu-Porto Velho Gas Pipeline is estimated at approximately US\$250 million.

Analysis of Alternatives

The Urucu oil/gas reserve is located in a remote area within the Amazon Region. The nearest town is Coari, approximately 280 km northeast of the Polo Arara production facility. Some of the basic criteria used to select the proposed Pipeline corridor include:

- Avoid urban areas or areas reserved to urban growth (since about 90 percent of the area between Polo Arara and Porto Velho consists of rain forest, this criterion is not significant);
- Avoid environmentally susceptible areas (e.g., areas subject to erosion);
- Minimize the areas where the Pipeline crosses large rivers or large areas susceptible to flooding; and
- Identify a site or sites for the City Gate in the City of Porto Velho that would allow access to users other than the Termonorte Power Plant.

The siting was based largely on secondary information, satellite images, and maps. Not too many options were viable for routing the proposed gas pipeline, as the area is characterized by the presence of indigenous territories, environmental conservation areas, sensitive ecosystems and the presence of large and small rivers, which aggravates the impact on the environment during construction activities. A route following a straight line would have crossed several indigenous territories and other routing options would cross other ecological areas with higher status of protection.

Given the characteristics of the region and the location of the Urucu gas reserve, it appears that the transport of natural gas via pipelines is the safest, least expensive, and most reliable technology available when compared to the road, rail and fluvial transport of natural gas with compressed gas in cylinders and with liquefied natural gas (LNG).

Regulatory Agencies and Compliance

IBAMA (the Brazilian Environmental Protection Agency) is the responsible regulatory agency overseeing the permitting process because the Pipeline crosses the borders of two states. IPAAM (the State of Amazonas Environmental Agency) and SEDAM (the State of Rondônia Environmental Agency) have been allowed to review the Environmental Impact Assessment (EIA) and provided input, but the environmental permits as well as the project-specific terms and conditions will be imposed by IBAMA. FUNAI (the Brazilian Foundation of Indigenous People) and IPHAN (the National Historical and Archaeological Heritage Institute) have coordinated with IBAMA to provide technical information with regard to potential impact on indigenous people and archaeological sites that may be encountered along the Pipeline corridor.

Following the submittal of the EIA to IBAMA in late 2001, various public hearings were held in the first quarter of 2002. Petrobras conducted six official public hearings that were mediated and promoted by IBAMA. These official public hearings were conducted in the following towns: Coari, Lábrea, Humaitá, Porto Velho, Canutama, and Tapauá. Prior to each public hearing, information regarding the time and location of the meetings was published in local newspapers, as required by Brazilian regulations. In addition to the six official public hearings, Petrobras conducted 49 public forum meetings in small communities to inform residents of the Pipeline.

In August 2002, IBAMA issued the Preliminary License (“LP”) for the Pipeline. However, due to the fact that the Urucu-Porto Velho Gas Pipeline will traverse previously undisturbed portions of the Amazon rainforest, a number of national and international non-governmental organizations (“NGOs”) have voiced opposition to its construction. In addition, the Federal Public Ministry (MPF) raised concerns against the Pipeline, which was basically in need of additional studies to understand the potential impacts better and provide adequate preventive, corrective, or mitigating measures. On March 19, 2003, the MPF submitted a request to the federal court seeking a suspension of the Pipeline LP until Petrobras complies with 14 recommendations made by the MPF in August 2002. On April 8, 2003, the Federal Court of the State of Amazonas validated the request to suspend the Urucu-Porto Velho Gas Pipeline LP and levied a fine of 4,000 Reais per day (approximately US\$1,333) until Petrobras complies with the recommendations of the

MPF. This legal action by the MPF is delaying completion of the environmental permitting process. IBAMA stated that the Pipeline may be delayed, but expects it should still move forward once Petrobras complies with the request from the MPF.

Environmental and Social Conditions

Approximately 90 percent of the Pipeline corridor is located within the State of Amazonas and crosses undeveloped rainforest. The remaining 10 percent of the Pipeline corridor lies within the State of Rondônia and will largely traverse portions of the rainforest that have already been altered by human activities, such as farming, especially along Interstate BR-319.

The Pipeline corridor will run through an area that is characterized by relatively flat topography and an absence of significant geomorphological features. The two predominant soil types in the area of the Project are the yellow/reddish Lateritic Podzolic and Gley soils.

The general area of the Pipeline corridor is characterized by a mosaic of water bodies, including numerous rivers, bayous, channels, creeks, and lagoons of varying sizes. The majority of these water bodies are perennial in nature, but their width and flow can change significantly from the rainy season to the dry season. During the rainy season, the water level rises and river waters flood large forest areas. The Pipeline corridor will run through the floodplains of some important Amazon Basin rivers, such as the Purus, Coari, and Madeira. The floodplains of these rivers have unique ecosystems, and contain some plant and animal species not found in other regions of Brazil. However, given the remote and difficult access to areas outside of the floodplains, detailed studies of the flora and fauna are rare and not particularly comprehensive.

The 522.2 km of Pipeline corridor will run through a broad range of tropical forests, from extremely dense rainforests characterized by trees with large canopies to savannah-like environments. The dense rainforests are most predominant in the inter-fluvial terraces of the Purus, Coari, and Mucuí rivers, while the savannahs are more prevalent within the Madeira River Basin.

One of the unique features of the Amazon Region is its great diversity of large mammals. These include the spotted jaguar, the red jaguar, and the freshwater manatee, the latter of which is found in the Tapauá River, according to information obtained from local fishermen. Other unique aquatic mammals include the otters (*Lutra longicaudis*) and “ariranha” (*Pteronura brasiliensis*). These are only found near the small tributaries of the Mucuí and Tapauá rivers, and are listed as endangered species since they have been hunted for their fur. The freshwater porpoises *Inia geoffrensis* (red boto) and *Sotalia fluviatilis* (tucuxi boto) are found throughout the region in rivers, lakes, and small tributaries, but especially at the confluence of rivers.

The floodplains of the Amazon River basins offer unique seasonal conditions that favor a wide variety of fish, most of which are of commercial value and serve as the primary food source for indigenous and local communities. The area of the Pipeline is characterized by many clear-water and dark-water rivers that create special conditions at their confluence. The Purus River (clear-water river) has many dark-water tributaries (e.g., Tapauá and Mucuí rivers), and numerous species of fish adapt their life cycles to take advantage of the various conditions within each type of river and their confluence. The confluence of the dark-water tributaries with clear-water rivers is an important habitat for many Amazon species that disperse into the flooded forests during the rainy season. Examples of such species include the *Curimata* spp. (“branquinha”), *Semaprochilodus* spp (“jaraquí”), and *Prochilodus nigricans* (“curimatã”).

The Amazon Region possesses a large diversity of avian species, and the local communities make different uses of these species (e.g., food, pets, etc.). The Taracuá Lake, located on the Tapauá River near its confluence with the Purus River (Area II of the pipeline corridor), is a dendritic

river that presents great diversity of aquatic birds. The Mucuí River is also an important habitat for regional birds.

The Amazon Region is known to host a large number of invertebrates, and many of the insects are carriers of endemic diseases such as malaria, yellow fever, dengue, etc. The region also hosts a large number of the genus *diptera* (butterflies) and other related species.

The Pipeline corridor will cross the land of five municipalities including Coari, Tapauá, Canutama, and Lábrea in the State of Amazonas, and Porto Velho in the State of Rondônia. Each municipality encompasses a number of small towns not directly affected by the Pipeline corridor, the only exception being Porto Velho, which will receive the natural gas and contain city gates. The Pipeline corridor will largely cross remote areas where the population consists of small families that live at or near the main rivers, and indigenous groups who reside on federally designated Indigenous People Conservation Areas or Indigenous Lands (see Figure A-2).

Along the four areas of the Pipeline corridor (Areas I through IV), a short-term survey was conducted and detailed demographic information has been collected (see Table A-1). Additional studies were conducted in the rural areas of the Municipality of Porto Velho and the areas surrounding the City of Porto Velho.

Certain areas near the Pipeline corridor has been designated as Indigenous Lands and cannot be crossed by any project. This acreage is located near the Areas I, II, and III of the Pipeline and includes the following Indigenous Lands: Paumari of the Lago Manissuã; Paumari of the Lago Paricá; Paumari of the Cuniuá; Boca do Jacaré; Banawá; HI Merimã; Juma; Caititu; and Jacareuba/Katatuxi, Paumari of the Lago Maraha and Jamamadi/Jarawara/Katauxi. All of these lands are located within the State of Amazonas, in the Municipalities of Tapauá, Canutama, and Lábrea.

One Conservation Unit is located near the proposed Pipeline corridor within the State of Amazonas. This area is the Municipal Jamandua Beach Turtle Conservation Unit, which is located along the Purus River in the Municipality of Canutama. In the State of Rondônia, in Area IV of the Pipeline corridor, three Conservation Units are present. Of these, two are designated by the State of Rondônia, and include a FERS (Sustainable Development State Forest) of the Madeira River and an APA (Área de Proteção Ambiental or Environmental Protection Area) of the Madeira River. The third Conservation Unit is a municipal park (the Parque Ecológico Municipal de Porto Velho or Municipal Ecological Park of Porto Velho).

Very few roads exist that provide access to this region of the Amazon. The primary interstate highways are BR-319, which connects Porto Velho to Manaus, and the BR-230, both of which are located near the end of the proposed Pipeline corridor, north of the Madeira River. Near the terminus of the gas pipeline, on the southern margin of the Madeira River, the Pipeline ROW will run along Interstate Highway BR-364 (Porto Velho-Cuiabá) before reaching the Termonorte Power Plant. Due to the access provided by BR-319 and BR-230, the land along these roads is occupied by large and small properties where the native rainforest has been removed or altered.

Environmental and Social Impacts and Associated Mitigation Measures

Most of the environmental impacts associated with the construction of the Pipeline are localized and contained largely within and adjacent to the ROW itself. Social impacts will likely be more broadly distributed and may affect small communities throughout the general area.

Construction of the Pipeline has the potential to impact directly both the hydrology and water quality of the water bodies to be crossed. Major impacts may include excessive amounts of solids and turbidity that may be carried by runoff during heavy rainfall. These impacts can be

minimized by the use of simple runoff control measures. The construction of the Pipeline during the dry season will also help in controlling increased runoff and turbidity.

Directional drilling will be used to cross major rivers including the Purus and Madeira. This construction technique can be successful in minimizing direct impacts to surface waters by effectively burying and pulling the pipeline beneath the riverbed. This technique minimizes adverse impacts to water quality and river flows. Other construction techniques will be used to cross smaller water bodies, which typically involve either a dam or a diversion of the water flow to allow construction within the area crossed by the water body. Trenching will then be carried out in the “riverbed” and the Pipeline installed. The original contour of the riverbed will be restored and the water diverted back to its original course in the water body. The potential exists for short-term impacts to both water quality and the hydrodynamic flows of the smaller water bodies. It is anticipated that these impacts will be of relatively short duration, on the order of up to several months. Reportedly all water bodies will be returned to their pre-construction condition and flow regimes. Past projects of a similar nature have resulted in adverse impacts to local waterways and local settlements due to diversion or blocking of some of the smaller tributaries to the larger rivers. If normal drainage of smaller river bodies (igarapés) is interrupted, this could directly affect the source of water supply for local river communities and their supply of fish and “mandioc flour” production. This interruption of the natural drainage may increase the incidence of mosquito-transmitted diseases such as malaria and yellow fever.

Potential adverse impacts to the soil and subsurface during construction include contamination from spills of fuel, lubricants, or chemicals of concern, as well as soil erosion during heavy rainfall. Good environmental practices during construction can minimize the potential risks.

The overall area to be impacted by the construction and operation of the Pipeline hosts threatened and endangered species, including both terrestrial and aquatic organisms. IBAMA has requested that Petrobras conduct additional field studies to identify sensitive habitats of such species so that recovery and protection plans can be prepared and implemented during the construction and operation of the pipeline.

Potential impacts to the aquatic flora and fauna are associated with the numerous rivers and igarapés to be crossed by the Pipeline. Large rivers such as the Purus and Madeira will be crossed using directional drilling. This construction technique should be effective in minimizing potential impacts to these systems. The smaller rivers and igarapés will be crossed using the more traditional technology of diverting the water flow while trenching through the riverbed and burying the pipeline within the trench. This construction technique will result in short-term increases in turbidity that can adversely impact aquatic biota. It is anticipated that these impacts will be of relatively short duration, on the order of up to 22 months. It is important that all water bodies be restored to their original condition.

Impacts to biota associated with construction of the natural gas Pipeline facility will be limited primarily to the 20-meter ROW and immediate adjoining areas. The 522.2-km Pipeline will cross large areas of undisturbed rainforest as well as areas of rainforest that have had some level of human activity (near the City of Porto Velho and along highways BR-319 and BR-320). The vegetation within the 20-meter-wide ROW will be removed during construction. Following construction, vegetation will be allowed to reestablish within the ROW. Wildlife will likewise be removed from the ROW during construction. Most wildlife will actively avoid the immediate construction area because of the noise and other construction activities. However, it is likely that some wildlife mortality will occur.

It is anticipated that a maximum of approximately 1,800 workers will be onsite during the peak construction period. The workers will be housed at temporary lodging facilities and at specially

modified barges that will include lodging accommodations. The specialized labor will be recruited from various parts of Brazil. Unskilled labor can be recruited from local communities, but it is anticipated that the majority of the workforce will come from other regions of the country and will be housed at temporary lodging facilities.

During construction, heavy river traffic for the mobilization of equipment, supplies, and workers as well as improper disposal of sanitary and general waste could have potential adverse impact on surface water bodies and, consequently, adversely impact fishing, production of mandioc flour, and the water supply. Noise and destruction of forest may disrupt hunting by indigenous people and local residents who also rely on hunting for their subsistence.

Some large towns could experience an influx of migrants in search of jobs, which could strain the limited resources of these municipalities. Quite often, an increase in alcoholism, drugs, prostitution, and sexually transmitted diseases occurs when large group of migrants move to small towns located near large projects.

Residents from small communities and indigenous people may want to visit the construction site and its workers in an effort to exchange or sell goods and services. Representatives from FUNAI will need to work closely with the indigenous people and workers to prevent clashes that periodically result from misinterpretation and lack of understanding of the indigenous customs and cultures. It also is anticipated that prostitution of young girls from small communities may occur. This is apparently a major concern of local NGOs that have witnessed similar projects and conduct in remote areas of the Amazon Region. Petrobras has a Worker's Code of Conduct that is intended to prevent improper behavior by members of the construction workforce.

Indigenous people who live in protected Indigenous Lands that are relatively close to the proposed Pipeline corridor may be enticed by prospective financial compensation and abandon their traditional lifestyles for the accompaniments of a more contemporary standard of living. More importantly, it is believed that isolated, nomadic indigenous groups may inhabit the general area of the Pipeline corridor and could possibly become involved in confrontations with the construction workers while trying to defend their territory. It is also feared that if these isolated nomadic groups come into contact with construction workers, they may contract diseases such as the flu and their populations could be eradicated.

Since there is virtually no infrastructure in the areas near the proposed Pipeline corridor, careful planning by Petrobras will be necessary to ensure that its temporary infrastructure will meet the needs of the workers during the entire construction period.

It is not known whether Petrobras will need to relocate any family that may reside near or at the Pipeline ROW. In the event of any family resettlement, Petrobras will be required to compensate the affected family in accordance with Brazilian laws.

Occupational hazards associated with construction of the Pipeline are typical of medium-scale construction work. Health and safety concerns during construction include hazards such as transportation of equipment and materials to and within the site, handling and storage of materials onsite, use of cranes and other heavy equipment, welding, excavations and trenching, confined-space work, electrical and other energized work, hydraulic work, fire, explosion, spill, and other emergencies. The Basic Environmental Plan (PBA – *Plano Básico Ambiental*) prepared by Petrobras outlines basic health and safety practices that should increase protection of workers and minimize the potential for work-related injuries.

During the operation phase, the natural gas Pipeline will not pose significant environmental impacts to the surrounding ecosystem, unless a leak or explosion occurs. The Pipeline will remain buried and the ground surface along the ROW will be returned to its natural grade, which

will allow areas of the ROW to be flooded and covered by native plants. No large trees will be allowed to grow within the ROW since their roots could compromise the integrity of the Pipeline. However, small plants and grasses will be allowed to flourish.

There is the potential for illegal hunting, poaching, mining, and invasion of Indigenous Lands if the ROW facilitates the access to previously inaccessible areas of the rainforest. By returning the ground surface to its preconstruction condition, Petrobras will minimize the potential for the ROW to be used as an access route. Some people may access the ROW by small boats and penetrate portions of the land adjacent to the ROW for illegal hunting, poaching, and mining and therefore monitoring of the ROW will be required to ensure that it is not being used as an access.

Environmental, Social and Health and Safety Management

The EIA and PBA for the Urucu-Porto Velho Gas Pipeline have proposed general environmental and social mitigation that are based on secondary data and a short-term field survey. The general mitigation and monitoring measures proposed in the EIA and PBA present overall good management practices, but detailed plans have yet to be developed. In addition, site-specific long-term studies have to be conducted to better identify sensitive areas that serve as habitats for endangered and threatened species, and to understand better the isolated indigenous groups and small communities.

Petrobras will be working with federal, state, and municipal agencies (IBAMA, FUNAI, IPHAN, IPAAM, etc.) to develop detailed compensatory plans. Although the PBA cites social programs (health, education, recreation, etc.) for local communities and indigenous people, as well as compensatory and environmental programs (restoration of forests and protection of endangered species, etc.), specific plans are to be developed before the construction of the Pipeline. Currently, FUNAI is working with Petrobras to develop mitigation and compensation plans for indigenous tribes.

The Pipeline owners are responsible for the costs associated with the execution of all control, monitoring, mitigation, and compensatory programs that will be required by IBAMA. In addition, for the development of management plans of conservation areas, the Pipeline owners will need to coordinate with state and municipal agencies responsible for the management of such conservation areas.

Petrobras has extensive experience conducting similar projects in Brazil and will require the EPC contractor to have a vast experience in the construction of pipelines. The PBA presents general discussion of programs and plans that will be developed for construction and operation of the Pipeline. Details of such programs and plans, as well as a binding document that will ensure that the Pipeline owner complies with the plans, have yet to be drafted by the EPC.

In connection with the proposed financing of the Termonorte Phase II Project by the IDB, the sponsors of the Urucu-Porto Velho Gas Pipeline have agreed for the benefit of the IDB to a series of commitments, including compliance with environmental related regulations, adequate information disclosure and to provide access to environmental project related information. In addition, the sponsors Urucu-Porto Velho Gas Pipeline agree to have an independent annual environmental, social, health and safety audit performed on the Pipeline, which results will be made available to the public, in particular the locally affected population. The sponsors of the Urucu-Porto Velho Gas Pipeline agreed as well as to meet with IDB and/or their designees to discuss areas of concern associated with environmental, social, health and safety, and labor aspects. A Letter Agreement formalizing such commitments is expected prior to financial closure of the Termonorte Phase II Project.

Figure A-1
Regional Map of the States of Amazonas and Rondonia
Depicting the Proposed Urucu-Porto Velho Pipeline Route

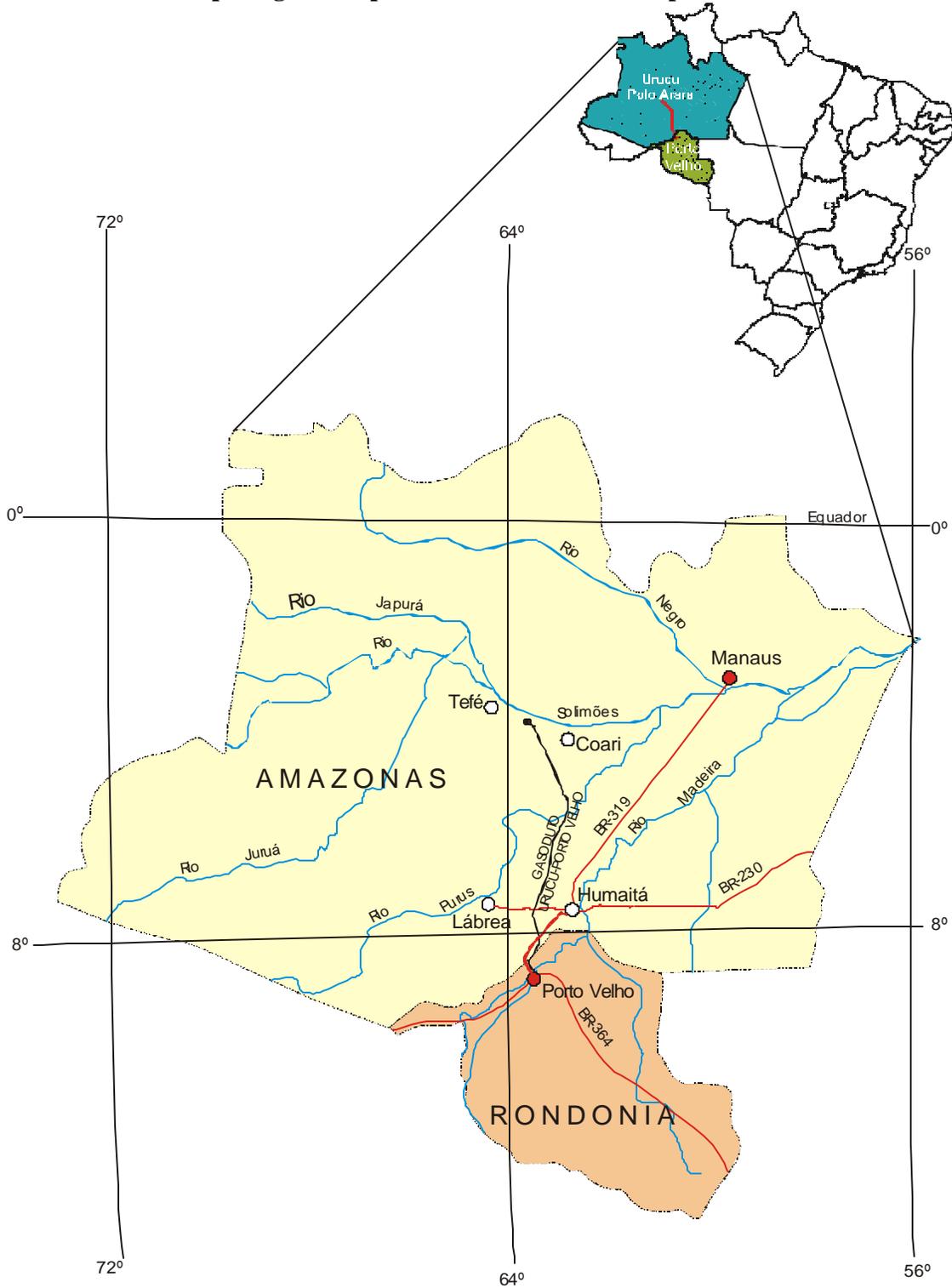


Figure A-2
General Project Setting and Proximity to Federal Indigenous Lands

[Refer to separate file]

Table A-1

Demographic information along the pipeline corridor

<p>In Area I (Trecho I), from the Pólo Arara to the point where the pipeline crosses the Coari River, six small communities were identified with a total population of at least 36 people.</p>
<p>In Area II (Trecho II), located between the mouth of the Tapauá and the mouth of the Mucuí River, the following small communities were identified: Belo Monte, Saudade, Aramiã, Porto Alegre, Caburite, Gitimaria, Macaquari, Sacado do Cassian, Maduru, São João, Nazaré, Foz do Tapauá, Penha do Tapauá, Ribeirão, Camaruã (rio Tapauá), Fortaleza, Prainha, Gloria, Jamadoá, and Salvação. A total of 246 houses were recorded with an estimated population of 1,397 residents in 231 families, including 631 adults and 526 children. Each family consists of approximately 6.04 people, of which two-thirds are children between the ages of 0 to 14. Among the children, there were more girls than boys.</p>
<p>In portions of Areas II and III (Trecho II and III), located between the mouth of the Mucuí River and the Community of Cristo (also situated on the same river), the short-term survey identified several small groups of homes that included Lua Nova, Fazenda São Francisco, Santa Cruz, and Lago Preto. Approximately 20 people live in these small groups. In Lago Açunã and the Community of Cristo, located on Interstate Highway BR-230, the survey identified 27 houses and 25 families totaling 128 residents. Of these, 56 were adults and 72 children.</p>
<p>Another area also studied during the short-term survey was a stretch of Interstate BR-319, from the left margin of the Madeira River. The survey identified five small communities in the area indirectly affected by the Pipeline. The Community of Nova Jerusalém consists of 14 houses and 17 families totaling 53 residents, including 20 children and 33 adults. There is also a restaurant located on Interstate Highway BR-319 that serves as the residence for one individual. The property covers an area of approximately 6,000 m².</p>
<p>The São Francisco Community, located approximately 20 km from Interstate Highway BR-319 and accessed by smaller roads via Interstate Highway BR-310, has a population of about 240 people in 80 families, according to information from local residents.</p>
<p>At km 53 on Interstate Highway BR-319, more than 10 families reside in this small community, according to information from local residents.</p>
<p>At the Riacho Doce Farm on the border between the states of Rondônia and Amazonas, two families totaling five people reside in the area.</p>