PNG LNG Quarterly Environmental and Social Report

Fourth Quarter 2011

PNG LNG

Energy for the World. Opportunity for Papua New Guinea.
Eneji Bilong Wol. Luksave Bilong Papua Niugini.

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IDP
Infrastructure Development Partnership

Prepared by IDP Consulting Pty Ltd.

While this Report uses US English; document titles, institutions and legislation use exact titles, which may include variations of English, depending on the country of origin. In addition, all units of measure published in this Report are metric units.

For the purposes of this Report, the currency conversion rate used, between Papua New Guinea Kina (Kina) and United States Dollars (US$) is 0.4665 [1 Kina = US$0.4665]. This rate is as published by the Bank of Papua New Guinea at December 31, 2011.

PNG LNG

About This Report

The Papua New Guinea Liquefied Natural Gas Quarterly Environmental and Social Report – Fourth Quarter 2011, reports on the Project's recent construction, safety, health, environment and social management activities.

This Report demonstrates the progress made each quarter and is a commitment by the Project to ensure the citizens of Papua New Guinea, interested non-government organizations and other stakeholders are kept well informed.

This Report is published on the Project website, www.pnglng.com. Printed copies are also available.

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Developing partnerships to secure Papua New Guinea's future

"In addition to employment and business opportunities associated with the Project construction, we are supporting local communities by developing partnerships that focus on education, health and capacity building."

Decie Autin, Project Executive, Esso Highlands Limited

Lessons from other global resource extraction projects show that best practice approaches to community development are based on strong and sustainable partnerships. When community leadership and ownership is achieved, local skills and institutions can be developed, community expectations are more effectively managed, and projects are more likely to result in positive and sustainable outcomes.

Recognizing that improving health, education, community capacity, skills development and economic prosperity are shared goals, the Papua New Guinea Liquefied Natural Gas (PNG LNG) Project (Project) is developing inclusive and mutually beneficial partnerships with communities, Government, Landowner Companies (Lancos), non-government organizations and other key stakeholders, as it strives to create a legacy that will benefit the people of Papua New Guinea.

This is the eighth PNG LNG Quarterly Environmental and Social Report, which demonstrates how Esso Highlands Limited, as operator of the US$15.7 billion Project, is working in partnership with stakeholders to deliver on safety, health, environmental and social management commitments. Esso Highlands Limited, a subsidiary of Exxon Mobil Corporation, is responsible for the Project's construction and operation and is developing the Project with co-venturers: Oil Search Limited, National Petroleum Company PNG Limited, Santos Limited, JX Nippon Oil and Gas Exploration Corporation, Mineral Resources Development Company Limited and Petromin PNG Holdings Limited, and their affiliates.

Social development

Through its National Content Plan, the Project recognizes that making the most of energy resources means not just developing oil and gas, but also people and capacity, to deliver sustainable benefits to local communities.

The Project is partnering with communities, non-profit organizations, Project contractors, the Government and other stakeholders, to build on the core strengths that help communities thrive. This involves a long-term focus on areas including health, education, women's empowerment, public policy and capacity building for local businesses.

For example, because education is key to economic development and employment growth, the Project is providing scholarships, upgrading school facilities and delivering school materials throughout the Project area. This quarter, local companies were commissioned to build and deliver school desks to more than 20 schools to provide better classroom conditions and encourage improved attendance.

The Project is also working in partnership with Papua New Guinea's National Research Institute to develop a needs assessment of teacher training in the Project area. The assessment aims to identify formal training needs, such as teacher certification, as well as areas for continuous improvement nominated by the teachers themselves, to help overcome teaching challenges experienced in the classroom. The findings from this assessment will guide policy recommendations to the Department of Education for improving the quality of education in Papua New Guinea.

Other highlights for the quarter included the release of the fourth book in the series of Toea children's books, *Toea's Gulf Adventure*, and the opening of the Buk Bilong Pikinini community library at Koki. Made possible through the Project's support and refurbishment provided, in kind, by the Upstream Infrastructure contractor, the library is designed to instill a love of reading among community members.

Philomena Tom, aged 6, reading from her favorite book at the Buk Bilong Pikinini community library opening

Recognizing that agriculture is a major contributor to the livelihoods of Papua New Guinea's rural communities, the Project is also partnering with communities to grow fresh produce, build community nurseries and establish cashew orchards. In addition, numerous water projects were implemented this quarter, with 13 small water catchment projects undertaken in the Upstream North area alone.

The Project's Rapid Implementation Projects continue to provide opportunities within local communities. For example, this quarter, more than 100 kilometres of road clearing and road repairs were completed by village residents from Tindom Hill, Komo and the Hides area, providing much needed income for their communities.

Meanwhile, workshops to help build the capacity of Papua New Guinea businesses were conducted for Kikori-based organizations, and leaders in the Hides and Komo areas received management training during this quarter. This included Personal Viability training sessions designed to provide tools for improving livelihoods and managing social issues. The 136 participants covered topics such as promoting positive thinking, respect for others, making positive changes in life, budgeting for family needs and making money.

The Project's commitment to empowering women also expanded to supporting the World Bank's Women's Self Reliance Program. As a result, women in the Upstream and LNG plant site communities will be trained in areas such as basic financial skills, family life improvement skills and income generation through farming, sewing, baking or similar activities.

Pre-construction activities

In addition to the completion of pre-construction surveys for the 10-kilometre Gobe Spurline and the 2-kilometre Kutubu Spurline in the third quarter 2011, pre-construction surveys are now complete for the entire length of the 292-kilometre main onshore pipeline route. Only the pre-construction survey for the 24.8-kilometre Hides Spineline remains.

100% of the 292-kilometre main onshore pipeline route surveyed

Construction

Working together, the Project's contractors and subcontractors achieved many milestones this quarter, including: completion of the offshore pipeline LNG Plant (Caution Bay) landfall site clearing, trenching, shore pull and trench backfilling; completion of the LNG tank concrete foundations and the start of construction for the outer LNG tank shells, as well as completion of the first major river crossing for the onshore pipeline.

The Upstream Infrastructure contractor continued their impressive safety performance with more than 11 million work hours achieved without a Lost Time Incident.

Aerial view of the LNG plant site

Workforce development

By the end of the quarter, a team of more than 14,300 people were employed on Project activities, of which 60 percent were Papua New Guinean citizens. The Project also continues building a diverse and talented workforce through education and mentoring.

Table 1 – Contracts and construction highlights

Contract	Contractor	Major activities during the fourth quarter 2011
Upstream Infrastructure (C1)	Clough Curtain Brothers Joint Venture	More than 8 kilometres of the Hides Wellpad Access Road completed. Hides landfill cells completed, providing a central waste disposal facility for construction teams in Hides.
Offshore Pipeline (EPC2)	Saipem	Mobilized the offshore installation vessel. Completion of the onshore portion of the pipeline at Caution Bay. Initiated offshore pipe lay. Manufacture of all offshore pipe completed.
LNG Plant and Marine Facilities (EPC3)	Chiyoda and JGC	Start of work erecting the LNG tank walls. More than 50 percent of the marine jetty piles installed.
Hides Gas Conditioning Plant and Hides Wellpads (EPC4)	CBI Clough Joint Venture	Installation of the first foundation piles in the utilities area.
Onshore Pipeline (EPC5A)	SpieCapag	Pre-construction surveys for the 292-kilometre pipeline and the southern section of the pipeline completed. Completion of the first of four major river crossings.
Komo Airfield (EPC5B)	McConnell Dowell and Consolidated Contractor Group	Installation of the first foundations for the terminal building. Almost 50 percent of earthworks completed.
Associated Gas Development	Various	Control room construction and internal fit out, including power to the building, completed.
Drilling (new wells and workovers)	Nabors Drilling International Limited	The first of two drilling rigs successfully delivered from Texas, US to the Port of Lae, Papua New Guinea.

More than 8,500 Papua New Guinean citizens employed representing 60% of the Project workforce

For example, 73 Production Operations and Maintenance trainee technicians completed their 18-month program at the Production Operations Training Centre in Port Moresby. This course is part of their preparation for commissioning and start-up activities at the Hides Gas Conditioning Plant (HGCP) and LNG Plant. An additional 76 technicians will begin training in January 2012.

The Project also selected nine Papua New Guinean graduate engineers to commence employment with Esso Highlands Limited in February 2012.

In December, two biomedical repair technicians graduated after six months of intensive training in Texas, through the MediSend International Biomedical Equipment Repair Training program. Both technicians will now take their newly learned skills back to Kundiawa and Mount Hagen hospitals in Papua New Guinea.

Biomedical repair technicians during training

Partnering with Papua New Guinean businesses

Lancos and other Papua New Guinean businesses continue being contracted across all areas of the Project. This quarter, boat hire, heavy equipment rental and trucking services were among the many goods and services provided by Lancos, resulting in a Project-related spend with Lancos of around 170 million Kina (US$79 million). This brings the Project spend with Lancos to 685 million Kina (US$320 million) to date, of which approximately 490 million Kina (US$229 million) was spent in 2011 alone.

The total Project-related in-country spend as at the end of 2011 was just over 3.6 billion Kina (almost US$1.7 billion). For the full year 2011, Project in-country spend exceeded 2.1 billion Kina (almost US$1 billion), which is a 40 percent increase compared with 2010.

Helping build the skills of Papua New Guinean companies so they can contribute to the country's future growth and success, the Enterprise Centre has provided services to more than 10,600 business people. These services include training, business assessments, and advisory and mentoring services, in addition to serving as an information centre. The number of businesses assisted by the Centre increased by 50 percent in 2011 compared with 2010. Business opportunities presented to local companies also increased this quarter to 101, compared with 30 for the third quarter 2011.

550 work days of advisory services provided in 2011

Safety, health and security

Excellence in safety, security, and health in the workplace is a core value for Esso Highlands Limited, which translates into a proactive approach to safety management across all Project worksites. The Project engages in extensive, ongoing safety programs to improve safety performance and pursue the Project's goal – *Nobody Gets Hurt*.

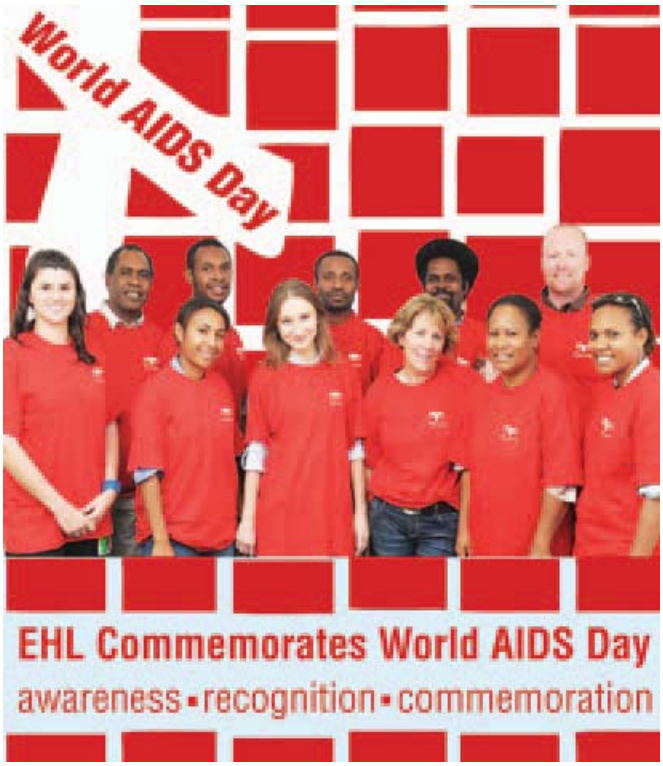
Despite this, the Project suffered a fatality in the fourth quarter when a worker for the Komo Airfield contractor died from injuries sustained in a trench collapse. The Project and Esso Highlands Limited express deepest sympathies to the family, friends, and fellow workers of this team member. Appropriate authorities were notified and an investigation into the incident was completed, resulting in specific measures implemented to address the identified causes.

Meanwhile, the Project advanced the Safety Champions initiative, which was launched in the third quarter 2011. The process used to increase awareness of events with a higher potential to result in an incident was improved. Senior Project executives also visited worksites to conduct 'fireside safety chats' with the Project workforce.

Within the Project workforce this quarter, one serious malaria case and one tuberculosis case were confirmed, continuing a downward trend in case numbers recorded, which suggests the Project's management of both malaria and tuberculosis is proving effective. The Project recorded its first illness outbreak for the year, related to chicken pox, which was isolated to a small group of workers. The Project Health team and construction contractor set up an Incident Response team to implement measures to contain the spread of the virus, and to establish a vaccination program for at-risk workers.

In partnership with the Papua New Guinea Institute of Medical Research (IMR), Population Services International, other non-profit partners and clinics, the Project's Community Health Program is building national capabilities in research and diagnostics.

The Project is also reaching out to communities and enhancing their understanding of diseases like malaria, tuberculosis and Sexually Transmitted Infections such as Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS). One way the Project has achieved this is through their support and participation in World AIDS Day activities.



World AIDS Day poster

A highlight during this quarter was the opening of a research center and patient examination facility at the Salvation Army run Papa Health Clinic near the LNG plant site. The research center is part of the Integrated Health and Demographic Surveillance System (iHDSS), supported by the 'Partnership for Health' agreement between the Project and the IMR. The center will monitor the health of LNG plant site communities, Hides area villages and two respective comparison sites. It will also be used for activities such as a Sexually Transmitted Infections study at the LNG plant site villages.

In addition, a site assessment and scoping exercise at Kikori Hospital was finalized this quarter in readiness for a tuberculosis prevention, diagnosis and control program through the IMR.

Meanwhile, health care providers from the Komo Airfield and HGCP areas benefited from a Project-supported emergency care training program conducted in November. The program was led by a physician specializing in obstetric and newborn emergencies, one of the most common causes for emergency evacuations in these areas.

The Project's Security team continues to proactively review the security incident reporting process and enhancing the skills of Papua New Guinean security personnel.

Landslide on January 24, 2012 near Hides

On January 24, 2012, a landslide occurred in the Southern Highlands approximately 5 kilometres from where the Project is constructing the HGCP. All Project personnel have been accounted for, and there was no damage to Project-owned facilities. However, local communities suffered a number of fatalities and considerable damage, and our hearts go out to all who have been affected by this tragedy.

It remains unclear what caused the landslide and it is too early to speculate in the absence of a full Government investigation. We understand that the Government has started its initial assessment.

The Project's immediate concern is for the wellbeing of our workforce and the community in the area, and we have offered our support to the Government, the National Disaster and Emergency Relief Office, which is in charge of managing this incident, and the local community. At the time of writing, this has included:

- **Supporting Government representatives to be transported to the area to assess the extent of the landslide.**
- **Arranging civil experts to be prepared to respond to assess the safety of the site.**
- **Providing support for the '*haus krai*' with rations, tarpaulins, generators, fuel and lights.**
- **Offering immediate deployment of equipment to the community to assist with recovery efforts.**
- **Being ready to assist the Government to reopen the road so the community can regain access.**
- **Supporting the Government by assessing community water, ration and temporary housing needs.**
- **Offering support to the community regarding assistance with victim recovery.**

Two outcomes achieved during the quarter were a revised system for analyzing security reports to more effectively manage resources, and the participation of four Papua New Guinean Project Security team members in a specialized maritime safety and rescue training course in Brisbane, Australia.

In Lae during early November, there was an escalation of communal unrest, which lasted for several days. While there was no direct threat to Project personnel, the Security team quickly deployed additional resources to secure Project personnel and facilities until Papua New Guinean authorities contained the situation.

Environmental performance

Greenhouse gas emissions rose this quarter in line with increasing construction activity, in particular, as fuel use in offshore marine works increased. The Project's onshore and aviation fuel use equated to a greenhouse gas emissions value of approximately 45,000 tonnes of carbon dioxide equivalent. This quarter also marked the second inclusion of emission totals from marine operations, which were calculated to contribute approximately 24,560 tonnes of carbon dioxide equivalent.

Marine operations occurred during this quarter and are planned for the first quarter 2012, so it is expected that emissions will trend upwards accordingly.

The Project continues to focus on effectively managing water quality and wastewater treatment. In response to grievances relating to water this quarter, the Project formed a water taskforce to address community concerns and review items such as water implementation plans, catchment proposals, community water system progress and water quality. The taskforce will initially focus on the Northern Highlands area and will report its findings to the Project and its contractors.

This quarter, the Project maintained all water extraction volumes within the annual limit set in the Project Environmental Permit. The Project obtained additional water extraction permits for two water wells at the HGCP site and six water wells to be established along Hides Ridge.

The LNG plant site received over 300 millimetres of rainfall during December, causing substantial damage to the surface water drainage system within the site. A drainage and erosion control action plan was developed and will be implemented in early 2012. Meanwhile, the LNG plant site did not extract any water from surface water sources this quarter. This was achieved through successful rainwater harvesting from stormwater run-off and recycling treated wastewater.

By the end of the quarter, the Project had 26 wastewater treatment plants in operation, with an in-depth systematic review of measures underway to assist and support contractors with further improving wastewater operation.

The Hides landfill cells were also completed during the quarter, providing a central waste disposal facility for construction teams in the Hides area.

Hides landfill cells

A two-day multi-stakeholder workshop for the Project's Biodiversity Offset Delivery Plan was held in Port Moresby during October. Another multi-stakeholder meeting is planned for 2012 to discuss implementation of the finalized plan.

Stakeholder and community engagement

The Project continued engagement with all levels of Government through 31 workshops with national Government departments and 21 workshops with provincial governments, involving 650 Government officials throughout 2011. Topics covered included national content, land and community affairs, business development, and Government initiatives which the Project supports, such as the Highlands Highway rehabilitation work between Mendi and Hides.

In addition to the Project's ongoing safety messages during community engagements, a broader range of informative and educational topics were also introduced this quarter, including methods for drilling gas wells, constructing a pipeline across a river, and installing a pipeline on the sea bed.

More than 26,000 people participated in over 1,000 engagements in 2011

With the rapid increase in Project-related activity, timely management of community grievances also becomes increasingly important. During the quarter, the Project registered 107 grievances and closed 105 grievances which were registered during this and previous quarters.

A key achievement this quarter was the payment of compensation to 14 clan agents from the Kerewo tribe in remote locations along the Omati River following more than six months of working in partnership with them and Papua New Guinea's Department of Petroleum and Energy to obtain access to the Omati waterway for installation of the offshore pipeline. Compensation was also paid for land impacted by the LNG Plant landfall, completing all statutory compensation payments required for construction access for the offshore pipeline.

In many Project areas, the construction of speculative structures by local community members in the hope of gaining resettlement compensation remains a challenge. The Resettlement team continues holding disclosure meetings with impacted communities as soon as land requirements are known, to communicate cut-off dates for the census and survey of structures and eligibility requirements for compensation.

Building on the partnerships created with communities, Governments, non-government organizations, Lancos and other key stakeholders, the Project remains committed to developing long-term successful partnerships that will drive sustainable economic and social benefits for Papua New Guinea.

1 Introduction

The US$15.7 billion PNG LNG Project is founded on a partnership of Papua New Guinea and international organizations, governments and the people of Papua New Guinea.

The Project's success depends on all stakeholders being kept informed so they can effectively work together in delivering Papua New Guinea's Liquefied Natural Gas (LNG) resource to the world, while building Papua New Guinea's economy.

Therefore, this Quarterly Environmental and Social Report provides updates on construction activity and the safety, health, environment and social management aspects of the Project. It is the eighth in a series of reports intended to keep Papua New Guinean citizens, interested non-government organizations and other stakeholders well informed about the Project as it progresses.

This quarter marks the end of the Project's second year of construction. *Case Study One: Working together on the PNG LNG Project* commemorates this accomplishment by providing a snapshot of key achievements of each of the main construction contractors to date.

The Project involves the construction of gas production and processing facilities in the Southern Highlands and Western Provinces of Papua New Guinea. It incorporates liquefaction and storage facilities (located north-west of Port Moresby on the Gulf of Papua) with a capacity of 6.6 million tonnes per year. More than 700 kilometres of pipelines will connect the facilities. The Project will progress in development phases, with the first LNG deliveries scheduled to begin in 2014.

The initial phase of the Project is estimated to cost US$15.7 billion. Over the life of the Project, it is expected that over 250 billion cubic metres of gas will be produced and sold. This will provide a long-term supply of LNG to customers including: the Chinese Petroleum Corporation, Taiwan; Osaka Gas Company Limited; The Tokyo Electric Power Company Inc.; and the China Petroleum and Chemical Corporation (Sinopec). The location and elements of the Project are illustrated in Figure 1.1. *Appendix 1* shows how the contracts for Phase I of the Project are divided.

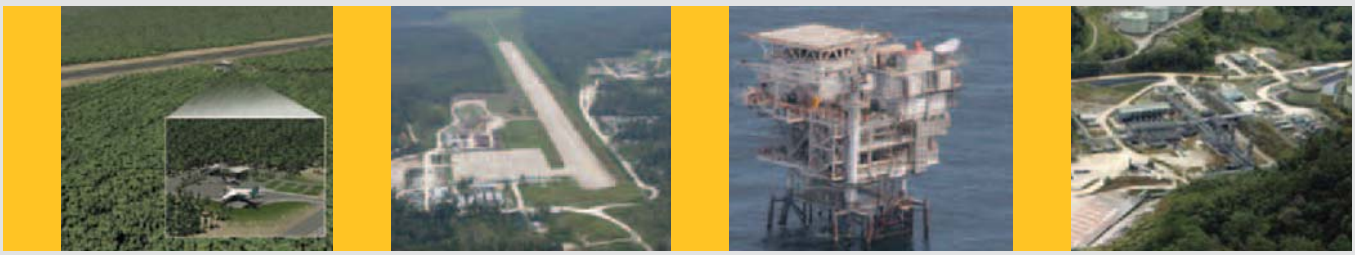
The complete Quarterly Environmental and Social Report series is available on the Project's website at www.pnglng.com. Printed copies of each quarterly report and translated summaries are also distributed, where applicable, to make information available to Papua New Guinean citizens who may have limited access to the internet.

Plate 1.1 – Aerial view of the HGCP site

Figure 1.1 – Project elements

Kopi Shore Base | LNG Plant | Juha Production Facility | Gobe Production Facility

Juni Construction Training Facility | Offshore Pipeline Install | HGCP Site | Agogo Production Facility



Komo Airfield | Moro Airfield | Kumul Marine Terminal | Kutubu Central Processing Facility

Case Study One

WORKING TOGETHER ON THE PNG LNG PROJECT

A team of over 14,300 contractor and subcontractor workers, including more than 8,500 Papua New Guinean nationals, are working together to build the massive infrastructure required for the US$15.7 billion PNG LNG Project over four years. This case study provides an overview of some of their achievements to date.

LNG Plant and Marine Facilities

Two LNG storage tanks large enough to hold the equivalent of 128 olympic-sized swimming pools of water are just one component of the LNG plant site.

The LNG Plant, being delivered by Japan's Chiyoda and JGC joint venture, involves the construction of two LNG tanks, the process area for two LNG trains and a 2.4-kilometre jetty with a marine offloading terminal. Also included in their scope of work is a permanent rotator and turnaround camp, an operations administration office, medical center, an industrial park with warehouse and maintenance workshops as well as diesel/chemical storage, and an emergency helipad. Early works for the LNG plant site included an 800-person camp and refurbishment of a portion of the Papa-Lea Lea Road, both of which were completed by the LNG Plant Early Works contractor – Curtain Brothers Papua New Guinea Limited.

LNG tank under construction

Since the ground-breaking for construction in early 2010, Chiyoda and JGC have completed almost 50 percent (more than 45,000 cubic metres) of the concrete foundations required for the LNG trains and storage tanks, more than half of the concrete piles for the marine jetty, more than three quarters of the underground piping in the common LNG process area, and an upgrade of part of the Papa-Lea Lea Road leading into the LNG plant site. To date, more than 3,500 tonnes of steel has been erected for the LNG plant site. At the end of 2011, Chiyoda and JGC started construction of the LNG tank's outer shell and roof.

Meanwhile, the contractor, Eos from Australia, completed the Port Moresby Construction Training Facility in early 2011. The Facility has already trained more than 1,500 Papua New Guinean nationals, of which 33 percent are females, in LNG Plant construction activities. Almost all graduates have been employed by the Project for construction works.

Aerial view of the LNG plant site

Port Moresby Construction Training Facility

Case Study One

WORKING TOGETHER ON THE PNG LNG PROJECT

Onshore Pipeline and Offshore Pipeline

More than 700 kilometres of pipeline will connect the facilities from the HGCP to Omati and then offshore from Omati to the LNG plant site. When coated, the pipeline will weigh approximately 700,000 tonnes. The scale of the pipeline is equivalent to driving by car from Washington, DC to Boston, having crossed through seven states, or from the outskirts of London to Frankfurt having crossed the English Channel, France and Belgium into Germany. The weight of steel in the pipeline is equivalent to the steel weight in approximately six Empire State Buildings (New York, US) or 25 Story Bridges (Brisbane, Australia).

The 292-kilometre main onshore pipeline is being delivered by French contractor SpieCapag, while Italian contractor Saipem is constructing the 407-kilometre offshore pipeline.

Since ground-breaking activity commenced in early 2010 for the onshore pipeline, the contractor has delivered the final line pipe shipment from Indonesia to the Kopi Shore Base, prepared close to 130 kilometres of ROW, and completed more than 105 kilometres of pipeline welding. By the end of 2011, the contractor had completed all pre-construction surveys and the first of four major river crossings.

Since the start of work for the offshore pipeline in mid-2011, Saipem has received all of the pipe needed for the offshore pipeline and completed more than 135 kilometres of offshore pipe laying, including the onshore portion where the pipeline surfaces at Caution Bay.

Onshore pipeline construction

Hides Gas Conditioning Plant and Hides Wellpads

When completed, the HGCP will include facilities for: gas conditioning; condensate stabilization and compression; and treatment and injection of produced water. The HGCP will also include accommodation, administrative and medical facilities, and an industrial complex featuring warehousing and maintenance workshops.

Since the start of work in early 2010, the contractor CBI Clough Joint Venture (US and Australia) has established telecommunications and site offices, constructed worker accommodation camps, installed the Plant's waste management area (including an incinerator), and commissioned a temporary power generation system. Installation of the first foundation piles in the utilities area was another highlight.

HGCP schematic

Komo Airfield

Despite frequent heavy rain, work on the Komo Airfield progressed throughout the year. Notably the contractor, McConnell Dowell, from Australia and Consolidated Contractor Group joint venture, was able to move up to 600,000 cubic metres of earth within a single month. By the end of the year the Airfield construction team achieved close to three million cubic metres of earth moved. Another milestone for the team was installing the first foundations for the Airfield terminal.

When completed, the Airfield will provide a 3.2-kilometre runway to support 70-tonne lifts by the Antonov AN 124, one of the largest planes in the world, and include associated terminal facilities.

Case Study One

WORKING TOGETHER ON THE PNG LNG PROJECT

Drilling and Associated Gas Development

The Project celebrated the first of two drilling rigs being mobilized from the United States and arriving in Papua New Guinea during this quarter. Transportation of the drilling rig from Lae to the first drilling location at Wellpad B near the HGCP commenced shortly after arrival. The drilling contractor, Nabors Drilling International Limited, has completed construction and commissioning of the second rig, which is due for delivery to Papua New Guinea in 2012.

Meanwhile, engineering design for the Project's Associated Gas Development facilities has been finalized and much of the construction work completed. These facilities will: provide commissioning gas to the LNG plant site; receive, store and export condensate from the HGCP; and deliver associated gas from the production systems at the Kutubu Central Processing Facility and Gobe Production Facility into the Project gas pipeline to the LNG Plant.

Since construction work began in November 2010, a new control room, the first of three triethylene glycol units, and a new thermal oxidizer have been installed at the Kutubu Central Processing Facility. All commissioning gas units and the export gas cooler were placed on their foundations and 130 out of 150 associated gas pipeline welds were completed. Meanwhile, worker accommodation buildings in Gobe were also completed.

In addition, upgrades to the condensate offloading system are well on their way with a new subsea tanker loading line and Catenary Anchor Leg Mooring (CALM) buoy system installed near the Kumul Marine Terminal for oil tanker usage.

Upstream Infrastructure and Telecommunications

All early works for Project facilities in the Hides to Komo region are being delivered by the Australian and Papua New Guinean Clough Curtain Brothers Joint Venture. These works encompass the Kopi Shore Base, the HGCP site early works, upgrades to the Highlands Highway and Southern Supply Route, and numerous construction camps.

Since work started in early 2009, the contractor has completed two wharves and the associated laydown area at Kopi Shore Base and all site clearing and earthworks for the HGCP site and Hides landfill cells. The Kikori River and Mubi River bridges have been upgraded and opened, the HGCP medical clinic constructed and Wellpad B at Hides is now ready for drilling mobilization. By the end of 2011, the contractor also recorded an impressive safety performance with more than 11 million work hours achieved without a Lost Time Incident.

At the same time, Telecommunications contractor TransTel Engineering from Singapore installed all telecommunications infrastructure for both the Project's construction and operational phases. This includes a permanent communication facility at the LNG plant site.

The Project's telecommunications will ultimately include more than 600 kilometres of fiber optic cable connecting the HGCP to the LNG Plant, and six mountain top facilities of radio repeaters, generators and equipment shelters. At the HGCP and LNG plant sites alone, two 70-metre towers were constructed for telecommunications.

First drilling rig prior to mobilization to Papua New Guinea

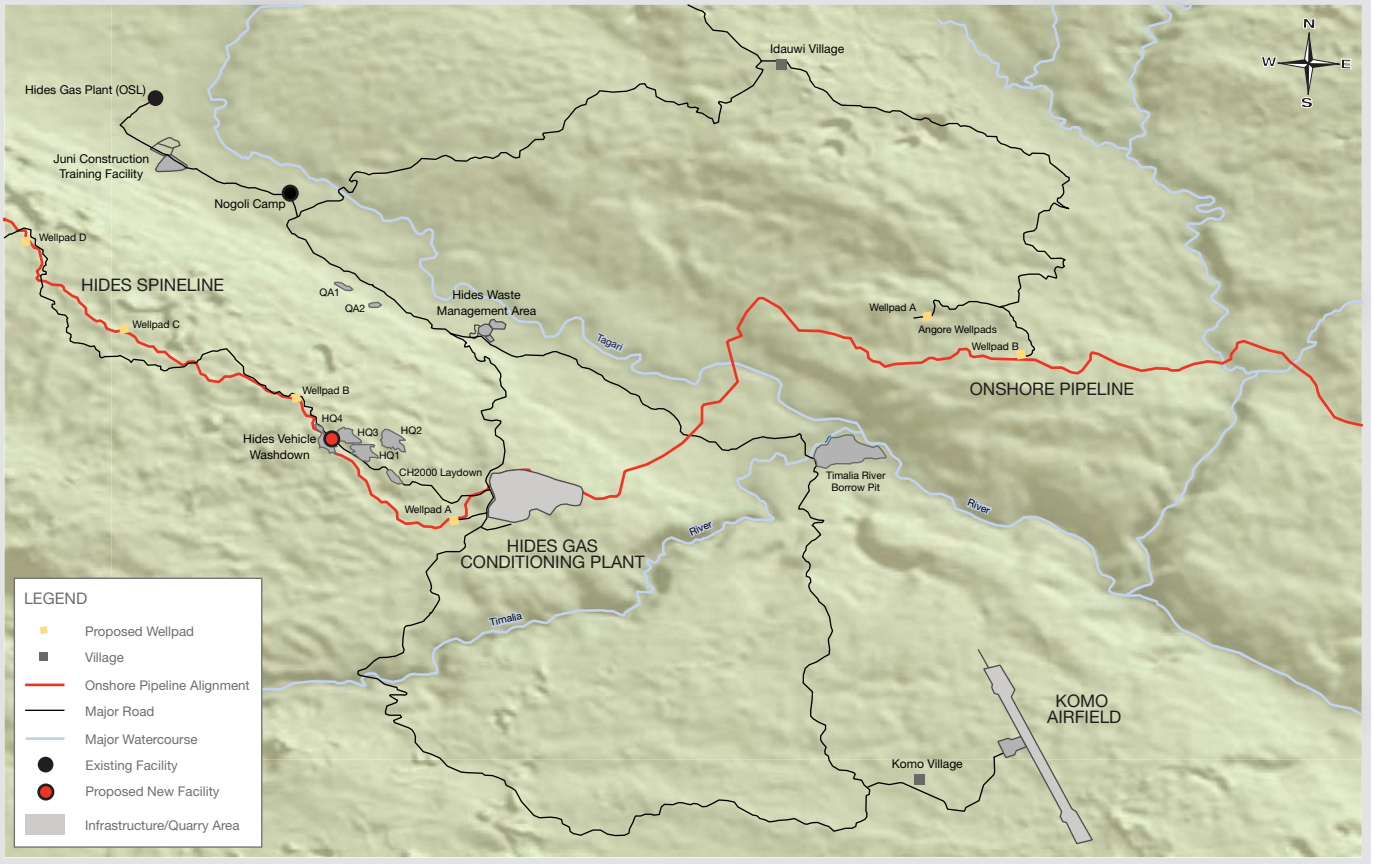
Mubi River Bridge

2 Construction Overview

The Project finished the year with a strong fourth quarter performance, achieving significant construction milestones including: the completion of the offshore pipeline LNG Plant landfall site clearing, trenching, shore pull and trench backfilling; completion of the LNG tank concrete foundations and erection of the outer LNG tank shells commencing; and the first onshore pipeline major river crossing at Kikori River. The pipeline was installed by horizontal directional drilling under the Kikori River for approximately 1 kilometre from one side to the other.

2.1 Highlands area

Figure 2.1 – Highlands area Project activities



2.1.1 Upstream Infrastructure

The Upstream Infrastructure contractor continued their impressive safety performance with more than 11 million work hours achieved without a Lost Time Incident.

Despite the increasing grades of the Hides Wellpad Access Road, construction progressed well with more than 8 kilometres of road completed. Fencing of Wellpad B also began. The Hides landfill cells were completed during the quarter, providing a central waste disposal facility for construction teams in the Hides area.

2.1.2 Hides Gas Conditioning Plant and Hides Wellpads

A milestone achieved at the HGCP site was the installation of the first foundation piles in the utilities area.

In addition, all orders were placed for long-lead equipment and the main generator packages were successfully tested and accepted.

Plate 2.1 – Foundation piles for the HGCP utilities area

2.1.3 Komo Airfield

Installation of the first foundations for the Komo Airfield terminal building were a highlight this quarter for the Komo Airfield contractor team. By the end of the quarter, the team also achieved a cumulative three million cubic metres of earth moved.

Plate 2.2 – First foundations of the terminal building

Plate 2.3 – Horizontal directional drilling rig in operation

Meanwhile, pavement trials commenced, with plans to pave a portion of the Komo Airfield runway.

2.1.4 Drilling

Drilling Rig 702 was successfully delivered from Houston, Texas to the Port of Lae and its mobilization along the approximately 800-kilometre Highlands Highway from Lae to the first drilling location on Wellpad B commenced. The second of the two drilling rigs is under construction in Houston.

2.2 Onshore Pipeline

A milestone was achieved with the completion of pre-construction surveys on the 292-kilometre main onshore pipeline route. These surveys included environmental, social, engineering and constructability assessments.

Pipeline construction activities progressed well during this quarter with the completion of pipeline installation in the Omati swamp area at the southern extent of the onshore pipeline. This marks an end to the pipeline installation in the south and a shift of the work front to north of the Mubi River.

With construction progressing north, the Onshore Pipeline contractor completed and commissioned Gobe Camp 3, a 500-person camp at Gobe. By the end of the quarter, the contractor also completed approximately 106 kilometres of pipe welding and 75 kilometres of trench backfill operations.

A 1 kilometre horizontal directional drill under the Kikori River and installation of the pipeline marked another major milestone for the Onshore Pipeline contractor this quarter. This is the first of four major river crossings along the 292–kilometre main onshore pipeline route.

A pre-fabrication workshop was constructed at the Kopi Shore Base to fabricate pipeline surface facility packages which will be transferred to the relevant surface facility sites along the pipeline.

2.3 Offshore Pipeline

Offshore pipeline construction activities advanced significantly during the quarter with the mobilization of the offshore installation vessel, which completed the installation of the onshore portion of the pipeline at the LNG Plant landfall site. The pipeline trench was also successfully backfilled and restoration of the mangroves began.

By the end of 2011, more than 135 kilometres of offshore pipe was installed, and dredging had commenced in the Omati River. Work also progressed at the Omati River landfall site in preparation for shore pull activities in this area.

At the same time, the contractor completed the manufacture of all offshore pipe, with delivery to Papua New Guinea underway.

2.4 LNG Plant and Marine Facilities

This quarter saw the start of work on erecting the LNG tank walls. The third ring of the outer shell on the north tank was installed and roof fabrication commenced.

The marine jetty construction also advanced with 54 of 100 concrete piles completed across 2.4 kilometres.

Plate 2.4 – North tank construction

Plate 2.5 – LNG plant site marine jetty construction

Plate 2.6 – Triethylene glycol module

The LNG Plant and Marine Facilities contractor completed the first of many heavy lifts in the LNG Plant process area with the installation of the high-pressure fuel gas mixing drum. The first of seven gas turbine generators was also installed.

2.5 Associated Gas Development

The Kutubu Central Processing Facility control room construction and internal fit out, including power to the building, was completed during this quarter. The installation of control equipment also progressed.

In addition, the commissioning gas unit skids were placed on foundations and the triethylene glycol module construction was nearing completion. More than 130 of the 153 welds were completed on the associated gas pipeline this quarter.

2.6 Development support execution, logistics and aviation

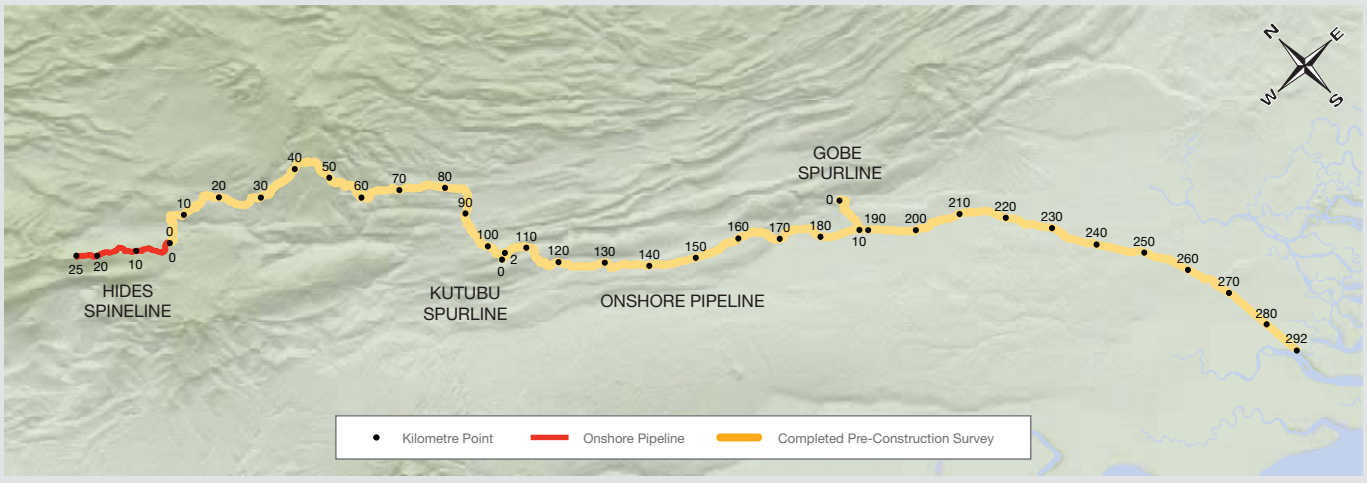
A detailed assessment of the Highlands Highway was completed, identifying areas where upgrades are required. Shipments along the Highway are expected to peak in 2012, so highway maintenance remains a priority.

2.7 Pre-construction surveys

Pre-construction surveys assess areas of ecological interest, weeds and water quality at Project worksites, while identifying potential archaeology and cultural heritage sites. The Project's Environmental and Social Management Plan (ESMP), and newly defined site-specific measures as necessary, outline management and mitigation measures to be applied to areas where sensitivities are identified. This enables compliance with the Project Environment Permit issued by Papua New Guinea's Department of Environment and Conservation.

During this quarter, pre-construction surveys were completed for northern campsites on the onshore pipeline and for the remaining portion of the main pipeline traversing the Omati River landfall site and Hides. As shown in Figure 2.2, pre-construction surveys now cover 100 percent of the 292-kilometre main pipeline route. With pre-construction surveys on the 10-kilometre Gobe Spurline and the 2-kilometre Kutubu Spurline also completed in the third quarter 2011, only the pre-construction survey on the 24.8-kilometre Hides Spineline remains.

Figure 2.2 – Pre-construction survey progress along the onshore pipeline



Pre-construction surveys in progress this quarter are illustrated in Figure 2.3.

Figure 2.3 – Pre-construction survey progress

1	Protected Areas	🖉	Report in Preparation
2	Protected Species	➔	Issued to DEC
3	High-Conservation Value Habitat	✘	No longer going to be used
4	Sites or Habitats of Ecological Significance	☑	Approved by Project
5	Cultural Heritage Sensitivity	➲	DEC Permission to Construct (as required)
6	Social Sensitivity	*	Submission/Approval Month/Quarter (Q) (2011)

Survey Site	Sensitivities Surveyed						Status	
	1	2	3	4	5	6		*
ONSHORE PIPELINE FACILITIES								
Moro Campsite and Kamari Quarry	✓			✓	✓		🖉	Q4
Onshore Pipeline Right of Way: Kilometre Point 0 - 9.5					✓		🖉	Q4
Onshore Pipeline Right of Way: Kilometre Point 9.5 - 28		✓		✓	✓		🖉	Q4
Onshore Pipeline Right of Way: Kilometre Point 28 - 50.5		✓		✓	✓		🖉	Q4
Onshore Pipeline Right of Way: Kilometre Point 50.5 - 65.5		✓		✓	✓		🖉	Q4
Onshore Pipeline Right of Way: Kilometre Point 65.5 - 85.4		✓		✓	✓		☑	Q4
Onshore Pipeline Right of Way: Re-alignment Kilometre Point 196.4 - 198		✓		✓	✓		☑	Q4
Gobe Spurline Kilometre Point 2.4 - 2.8 (Wah Fault Crossing)		✓		✓	✓		☑	Q4
Kilometre Point 172 Access Road and Kilometre Point 158.5 Borrow Pit		✓			✓		🖉	Q4
Homa/Paua Laydown and Quarry		✓		✓	✓		🖉	Q4
Homa Quarry 2				✓	✓		🖉	Q4
Kilometre Point 4.5 Campsite		✓		✓			🖉	Q4
Kilometre Point 24 Campsite		✓		✓	✓		🖉	Q4
Tagari Horizontal Directional Drilling Platform (formerly Tagari Campsite)		✓		✓	✓		🖉	Q4
Kilometre Point 97.5 Laydown Area		✓		✓			☑	Q4
Cathodic Protecton 2 and Associated infrastructure		✓		✓	✓		🖉	Q4
Wah River Horizontal Directional Drilling Platform		✓		✓			☑	Q4
Mubi River Horizontal Directional Drilling Platform		✓		✓	✓		🖉	Q4
UPSTREAM NORTH								
Tigari River Quarry	✓	✓		✓	✓		☑	Q4

Environment Permit sensitivity definitions:

1 - Protected Areas
Recognised or pending protected areas which include but are not limited to wildlife management areas, conservation areas, Ramsar sites, provincial reserves, national reserves, sanctuaries and protected areas, and national parks.

2 - Protected Species
Any species protected under Papua New Guinea legislation or listed in Convention on the International Trade in Endangered Species appendices, or in the International Conservation Union (IUCN) Red Data Book as Critically Endangered, Endangered Vulnerable or Data Deficient.

3 - High-Conservation Value Habitat
Any habitat identified within the high-conservation value Forest Toolkit as being within categories high-conservation value 1-5.

4 - Sites or Habitats of Ecological Significance
Sites or habitats of ecological significance such as:
a) Caves with a large entrance which may be used by bat colonies.
b) Pinnacles containing bat colonies.
c) Birds of paradise or bower bird display trees or display grounds.
d) *Pandanus* swamp forest.
e) Antarctic Beech *Nothofagus spp.* forest.
f) Areas of Antarctic Beech *Nothofagus spp.* dieback.
g) *Pharotis imogene* (New Guinea big-eared bat) colonies.
h) Sandalwood *Santalum macgregorii* trees.
i) High-value conservation swamps containing juvenile fish nursery habitat.
j) Swamps in sink holes < 50 m deep on Hides Ridge.
k) Areas of infestations of priority weeds or pests.
m) Mangrove stands and forest.
n) Seagrass beds.
o) Coral reefs.

5 - Cultural Heritage Sensitivity
Any site in which any cultural property as described in s. 20(1) of the National Cultural Property (Preservation) Act has been located.

6 - Social Sensitivity
Issues include, but are not limited to:
a) Impact on previously undisturbed sites of cultural heritage.
b) Significant and unpredicted loss of resources that affects livelihoods.

3 Safety, Security, Health, Environment and Social Management

Protecting the environment and the safety and health of Project workers and communities within which Project-related activities occur is a high priority for the Project. The Project also aims to promote social development and economic growth in Papua New Guinea while bringing LNG to the Asia region.

3.1 Approach

The Project's ESMP articulates the Project's commitment and approach to environmental and social management activities in Papua New Guinea. The ESMP is supported by discipline-specific plans, which are outlined in Figure 3.1. All of these plans were developed from the Project Environmental Impact Statement and are publicly available on the Project website at www.pnglng.com/commitment.

The Project also has a Safety Management Plan, a Health Management Plan, a Regulatory Compliance Plan and a Security Management Plan.

Collectively, these documents enable a best practice culture across the Project and demonstrate the priority that ExxonMobil has set on sustainable economic growth in Papua New Guinea.

3.2 Security

As part of an ongoing improvement program, the security incident reporting process was reviewed in detail during this quarter. One outcome is a revised system for analyzing security reports to better determine the impact of security incidents on the Project and nearby communities. The system will be implemented in early 2012 to enable more effective deployment of resources in the management of security incidents.

The Project's Security team is committed to enhancing the skills and capabilities of its Papua New Guinean security personnel. As part of this program, four Papua New Guinean Project Security team members attended a specialized maritime safety and rescue training course in Brisbane, Australia in late October.

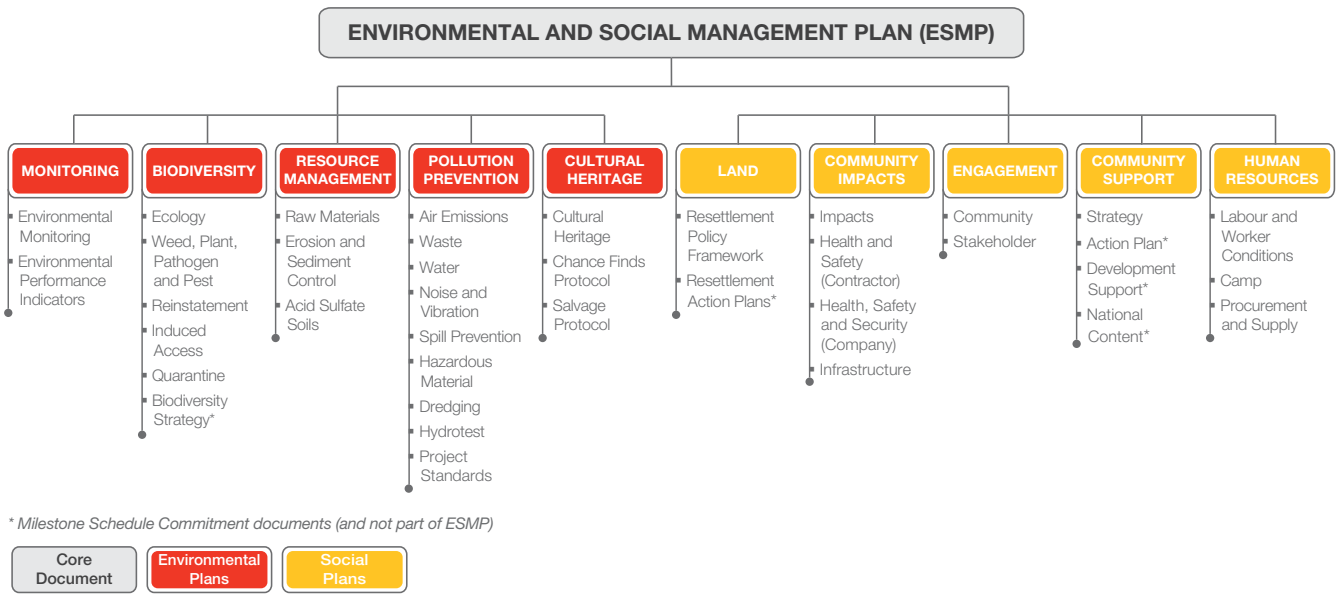
Another focus for the team has been ensuring that all Lanco guard force members are trained by their companies in the Voluntary Principles of Security and Human Rights and that the companies and individuals understand the Project's commitment to these Principles.

In Lae during early November, there was an escalation of communal unrest, which lasted for several days. While there was no direct threat to Project personnel, the Security team quickly deployed additional resources to secure Project personnel and facilities and conduct contingency planning until Papua New Guinean authorities contained the situation.

Also during the quarter, some work along the onshore pipeline was temporarily suspended as a precaution when a group of people unlawfully occupied the Gobe Main Camp. The group caused some damage to vehicles, construction equipment, and camp facilities. The group stated that their primary issue is Government commitments related to Memorandums of Agreement not related to the Project. The Papua New Guinean Department of Petroleum and Energy met with the group on three different occasions to discuss these legacy issues, and the occupiers have since left the site.

The Project is encouraging continued cooperation between communities, the Government and the Project so that any issues may be constructively addressed as they arise, without impacting Project activities.

Figure 3.1 – Environmental and Social Management Plans



3.3 Revenue management

In December, the Government of Papua New Guinea passed the Sovereign Wealth Fund Bill which will allow revenues associated with the extraction of oil, gas and other mineral resources to be transparently managed, while supporting Papua New Guinea's long-term economic growth and stability. The Government's December budget papers also committed to developing a detailed implementation plan for the Extractive Industries Transparency Initiative in Papua New Guinea and establishing a State Working Group.

Esso Highlands Limited welcomes this progress towards establishing a Sovereign Wealth Fund and is a long-standing proponent of the Extractive Industries Transparency Initiative along with the Group of Eight Transparency Initiative and the United Nations Convention Against Corruption.

Project-specific benefits sharing agreements are in place between landowners, local level governments, provincial governments and the Independent State of Papua New Guinea, addressing how royalties and development levies will be paid in accordance with the *Oil and Gas Act 1998*, once the Project begins production. Strengthened governance through improved transparency and accountability will help ensure that all Papua New Guinean citizens will benefit from the Project's contribution towards harnessing the country's rich natural resources.

3.4 Management of Change

The Project's Management of Change procedure is implemented when changes to the Project's scope are required. Prior to any proposed change, the Project's requirements comprising health, safety, security, environmental and social management, as well as operability and maintenance, regulatory and cost, and scheduling requirements, are considered. Changes are classified in accordance with how they need to be managed. For example, Class I changes require Lender Group review prior to implementation, while Class II changes only require Lender Group notification in the PNG LNG Quarterly Environmental and Social Report. This quarter, no Management of Change requests were raised.

3.5 Environmental and Social Milestone Schedule

Progress continues on the Project's ongoing Resettlement Action Plan commitment, with site-specific Resettlement Action Plans developed as they are required. Meanwhile, an agreement was reached between the Project and the Lender Group's Independent Environmental and Social Consultants (IESC) to delay the delivery of the Project's Biodiversity Offset Delivery Plan from December to the end of March 2012 so that it can be more completely developed. This Plan will detail the steps required to mitigate potential habitat loss, direct effects on fauna and indirect impacts such as introducing and spreading weeds related to Project activities along with a program for implementation.

Plate 3.1 – Forest Flame *Erythrium sp.*

Plate 3.2 – Saint Andrews Cross Spider *Argiope keyserlingi* found Project-wide

4 Procurement and Supply

Through its Business Development team and dedicated resources such as the Enterprise Centre, the Project is supporting Papua New Guinean suppliers and developing the capacity of Lancos as construction activities progress.

4.1 Supplier development

Lancos and other Papua New Guinean businesses continue providing goods and services across all areas of the Project. Increasing construction activities at both the LNG plant site and at the HGCP this quarter relied on Lancos supplying camp maintenance, catering, security and labor recruitment and hire services. This contributed to the Project-related spend with Lancos of around 170 million Kina (US$79 million) during the quarter. Lancos were also contracted to provide wooden skids, timber, boat hire, heavy equipment rental, trucking services and road construction during the quarter. The Project spend with Lancos to date is 685 million Kina (US$320 million), of which approximately 490 million Kina (US$229 million) was spent in 2011 alone. This increase reflects the results of Lanco capacity building assistance provided by both the Enterprise Centre and the Project's Business Development team.

The total Project-related in-country spend at the end of 2011 was just over 3.6 billion Kina (almost US$1.7 billion). For the full year 2011, Project in-country spend exceeded 2.1 billion Kina (almost US$1 billion), which is a 40 percent increase compared with the previous year.

The Enterprise Centre continues to play an important role in supporting capacity building of local suppliers by offering training, advisory services, coaching and mentoring, and facilitation services (refer to *Section 4.2 Enterprise Centre*).

The Project's Business Development team is also working with Lancos to identify business opportunities within Project activities, help Lancos develop business plans, identify training needs, and assist with developing business proposals.

4.2 Enterprise Centre

By the end of 2011, the Enterprise Centre had supported more than 10,600 Papua New Guinea business entrepreneurs through business training, business assessments and advisory, consulting and mentoring services. In addition, the Enterprise Centre is serving as an information centre for numerous Papua New Guinean businesses. The number of businesses served through the Centre increased by 50 percent in 2011 compared with 2010. To date, the Centre has delivered more than 4,000 training days, with the number of days increasing by 145 percent in 2011 compared with 2010.

During this quarter, Business Basics and Directors' training courses were conducted for 91 people from Boera, Papa and Lea Lea villages. The Centre also continued accommodating Project security, safety and cultural awareness workshops.

Enterprise Centre performance statistics

Advisory Services

During 2011, the Enterprise Centre delivered 550 work days of advisory services to Papua New Guinea businesses representing a substantial increase from the 15 work days delivered in 2010.

This year also marked the extension of advisory services to non-Lanco and women's groups. In total, 96 work days were dedicated to providing advisory services to non-Lanco groups and 57 work days were dedicated to women's groups.

Business Assessments

This year, the Enterprise Centre conducted 98 Business Assessments, completed and released 67 Business Assessment reports and presented 38 reports. All three areas show an increase from performance statistics recorded in 2010 as follows:

- **Business Assessments: Increased by 18.8 percent.**
- **Business Assessment reports completed and released: Increased by 3.9 percent.**
- **Business Assessment reports presented: Increased by 23.1 percent.**

Business Opportunities

The number of business opportunities facilitated by the Enterprise Centre has rapidly grown with 213 opportunities facilitated in 2011, compared to only 32 in 2010. This is an increase of over 560 percent.

4.2.1 Business advisory and mentoring

An LNG plant site Lanco is benefiting from the Enterprise Centre's business advisory and mentoring programs, with Lanco directors attending 18 one-hour mentoring sessions through the Centre over a six-month period. This program is available to other recognized Lancos.

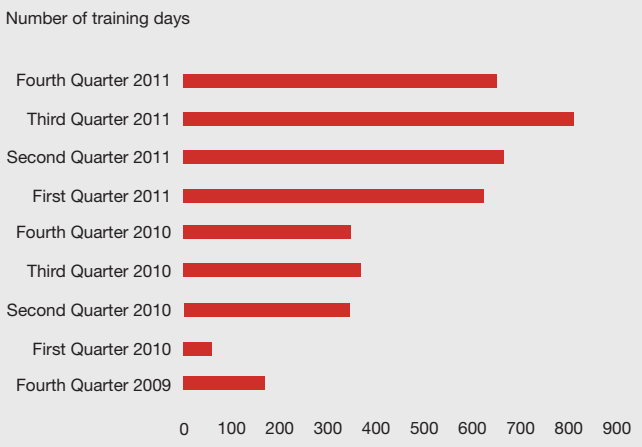
4.2.2 Business training

The Enterprise Centre continues enrolments for business training with landowners from areas across the Project Impact Area. During this quarter, the Centre delivered 651 days of training, representing a decrease of almost 20 percent compared to the third quarter 2011, as shown in Figure 4.1. The decrease is the result of training sessions for Upstream Lancos being cancelled in October when air charter services were restricted following an aviation incident which was not related to the Project.

Fundamentals of Business Management

Following the success of the first Fundamentals of Business Management training course conducted in September 2011, the Centre is continuing these sessions for Lancos which build upon the Centre's Business Basics training. Unfortunately, two sessions scheduled for this quarter were deferred as a result of the aforementioned aviation incident.

Figure 4.1 – Capacity building in training



NOTE: The Papua New Guinea Institute of Banking and Business Management provided training prior to the Enterprise Centre's opening in April, 2010.

Business Basics training

During the quarter, 45 participants from Boera, Papa and Lea Lea villages attended Business Basics training. Fifteen of the participants were from a women's group in Lea Lea Village.

Directors' training

In addition to the Papa Village women's group, Papa Magia Limited, who attended Business Basics training, another 15 women from the all-women group from Lea Lea Village were among 46 participants to attend the Directors' training course at the Enterprise Centre. Representatives from villages in the Hides, Omati and Central Province areas have registered their interest to attend the course next year.

Plate 4.1 – Director's training with attendees from the Lea Lea Village women's group

4.2.3 Business assessments

During this quarter, the Enterprise Centre conducted 48 business assessments, completed 21 assessment reports and made 15 assessment report presentations to local Papua New Guinean companies.

The Centre also continued to assist Lancos with business plan reviews in order to understand the business goals of Lancos and provide support on business planning processes and strategies.

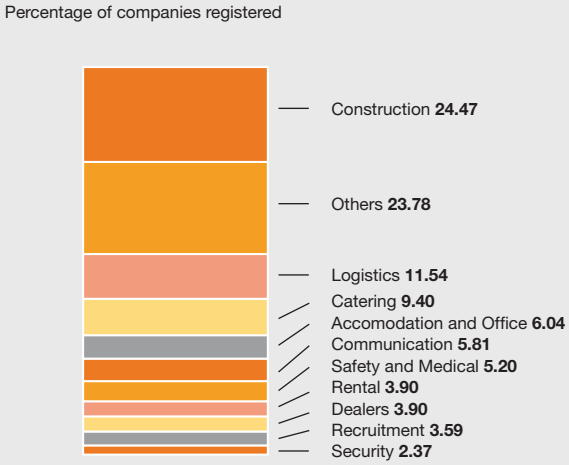
As part of the Project's commitment to support the development of Papua New Guinean companies, the Centre has completed a total of 98 business assessments year-to-date, compared with 68 completed by the end of 2010. These assessments evaluate companies across a range of areas including: Governance and Organization; Financial Management; Fixed Asset Management and Inventory Control; Quality Control; Human Resource Management; Business Management; Safety, Health and Environment, and Reputation and Image. Each area is explored in detail, for example, remuneration structure, adequacy of staff amenities, qualifications of managers, employment contracts, workplace safety and regulations, and training plans are just some of the components covered within Human Resource Management.

Through these assessments and participation in the Centre's Capacity Building Program, Lancos are identifying and addressing gaps in their company operations. In addition to assessed companies, others in the business community are accessing the Program. For example, during the quarter, 15 new companies expressed interest in participating in the Program in 2012. Participation is on a user pays basis, which contributes to the sustainability of the Enterprise Centre.

4.2.4 PNG Supplier Database management

Supplier registrations increased on the Enterprise Centre's PNG Supplier Database, with 1,308 Papua New Guinean businesses and Lancos, across a wide variety of activity areas (as shown in Figure 4.2) confirmed as suppliers on the Database by the end of 2011. In addition, the Centre received more than 3,474 dashboard logins to access the PNG Supplier Database dashboard on-line.

Figure 4.2 – Supplier registrations



All Project contractors and subcontractor procurement teams receive a brief induction on the Database to enable them to connect with local suppliers for goods and services. The Centre hosted five of these induction sessions during the quarter.

4.2.5 Business opportunities

The number of business opportunities presented to local companies also increased this quarter to 101, up from 30 in the third quarter 2011. Across 2011, 213 business opportunities were presented, including roles in general administration, medical supplies, bus services, plumbing, carpentry, cladding, paneling, landscaping, scrap disposals, and minor and major infrastructure works.

4.2.6 Other activities

Other highlights of the quarter included presentations by the Enterprise Centre Executive Director to more than 1,200 attendees across both the 2011 PNG Petroleum Seminar, sponsored by the Papua New Guinea Chamber of Mines and Petroleum; and the Wealth Creation – Management and Sustainability accountants' annual conference. These presentations were an opportunity to promote the Centre's work in building the capacity of Papua New Guinean businesses and encourage their participation in the Project.

5 Communities

Working closely with Papua New Guinean communities, the Project is able to understand community perspectives regarding the potential impacts of construction activities, and create programs that support community health, safety and investment.

5.1 Structure and relations

The Project follows a set of management plans, outlined in Table 5.1, to help manage community interactions and potential impacts from construction activities.

Table 5.1 – Scope of ESMP community impact management plans

Plan	Scope of Plan
Community Engagement Management Plan	Covers community relations, grievances and disruption.
Community Impacts Management Plan	Addresses impacts that may affect the structure of, and relations within, communities.
Community Infrastructure Management Plan	Aims to avoid or minimize the impact of construction activities on existing community infrastructure and services.
Community Health and Safety Management Plan	Focuses on avoiding or minimizing risks to, and impacts on, the health, safety and security of the local community during construction.

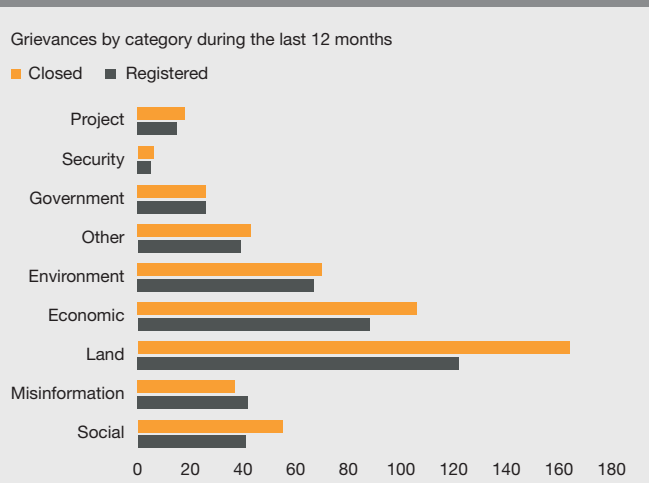
5.1.1 Community grievance management

With the rapid increase in Project-related activity, timely management of community grievances becomes increasingly important. The Socioeconomic team has more closely integrated processes between the team's central headquarters and field teams, enabling better communication and more effective responses to grievances.

During this quarter, the Project registered 107 grievances, while 105 grievances (from this and previous quarters) were closed. For the full 2011 year, the Project registered 447 grievances. During this 12 month period, 525 grievances were closed (including the carryover of 138 open items from the previous year) resulting with 60 open grievances at the end of 2011. The grievance profile by category for the 2011 full year is shown in Figure 5.1.

Most grievances during 2011 related to land, economic and environment concerns. Most land grievances related to compensation claims. More than half of the economic-related grievances were regarding access to local business development opportunities, while just under one third involved employment access. Almost half of the environmental grievances related to water impacts, particularly in the areas surrounding the HGCP and Komo Airfield construction sites. To address these concerns, the Project has established a water taskforce in the Hides and Komo areas, which is reviewing the current status of community water supplies and developing recommendations to resolve community water issues. Meanwhile, the Project's Development Support team continued building community water structures in areas where demand for water is high with 29 community water structures completed by the end of 2011.

Figure 5.1 – Grievances registered by category during 2011



Just over nine percent of the grievances recorded in 2011 related to social issues, with almost half of these grievances focused on resettlement. The majority of the remaining social grievances were concerned with labor and worker conditions, specifically regarding contractors and Lancos. These were managed to closure through close collaboration between contractors and the Socioeconomic team.

Grievances that arise from misinformation continue to be managed in the field through day-to-day and planned stakeholder engagement activities.

The Socioeconomic team continues to target closing grievances within 30 days. However, in the more remote areas of the Project where there is active construction close to communities, this has proved challenging. Since establishing a centralized team to support field personnel, the rate of closing grievances under the 30-day target has significantly improved. This is reflected in the monthly grievance closure rate, which has doubled since the start of the year.

To support this activity, the grievance card, which was introduced in the third quarter 2011 to provide a simple recording tool for field teams in remote areas, was deployed throughout the Project by the end of 2011.

5.1.2 Project Induced In-Migration

In order to better focus on Project Induced In-Migration, a new Project Induced In-Migration Coordinator was recruited this quarter, and interviews were conducted for a Project Induced In-Migration Officer.

Work with the In-Migration Committees in Lea Lea, Papa and Porebada continues, focusing on helping them develop community-based plans for monitoring and managing in-migration. During this quarter, focus group interviews were held with Lea Lea, Papa and Porebada In-Migration Committee members. Boera has yet to establish an In-Migration Committee due to internal village organizational challenges, for which the Project is helping to facilitate a resolution.

Focus group interviews engage Committee members in a dialogue on Committee capacity, explaining roles and responsibilities, and identifying issues and challenges encountered since the committees were formed. These findings are being used to further shape the respective plans under development, and to identify additional training opportunities for Committee members. More focus groups are planned with other community members in 2012.

In the Hides-Komo area, the Project Induced In-Migration assessment commissioned during the third quarter 2011 was completed. The findings of this assessment have provided a cultural interpretation of the issue and its impacts on the community, helping to enable a sensitive approach to addressing potential in-migration in the area by all concerned stakeholders. As a result, action plans for community engagement are being developed, and dialogue has started with the Hela Transitional Authority.

5.1.3 Fisheries surveys

During this quarter, the Project interviewed 119 fishers in Caution Bay and recorded almost 2,900 kilograms of fish caught in the area. Most of the fish are used for sale at town markets for income generation.

The Fisheries team also conducted four focus group interviews in the Caution Bay and Omati villages to obtain community feedback about the usefulness of the fish catch surveys and survey methods used. Findings from these focus groups will enable the Fisheries team to modify fish catch surveys as needed.

Meanwhile, community fisheries committees established earlier this year in the Papa and Porebada villages are allowing fishers to raise any concerns and provide the opportunity for joint community activities to improve fish resources. This quarter, the Enterprise Centre also conducted a training session for the Papa Fisheries Committee's newly formed executive and members aimed at helping them understand how businesses are formed in Papua New Guinea and explaining the legal requirements that must be complied with in setting up their Committee under the Papua New Guinean *Companies Act 1997*.

With dredging and trenching activities beginning along the Omati River in October, the Fisheries team is undertaking daily monitoring of waterways around the construction area until dredging and trenching is completed. This follows the disclosure of the Communal Resource Plan for the Omati region to over 750 people over a period of ten days in September 2011. It provided the community with details about the construction schedule and the Project's grievance process, and provided community members with opportunities to raise any initial concerns and ask questions.

Fish catch, sago and water quality, particularly around the Mubagowa, Ai'idio and Goare villages, are the main focus for monitoring and community feedback activity.

5.1.4 Social considerations for logistics activities

The Barging Route Waterways Memorandum of Understanding Scholarship Program, launched in the third quarter 2011, will fund 16 students from the Barging Route Waterways communities to attend tertiary studies within Papua New Guinea in 2012. Plans to announce scholarship winners this quarter have been delayed as the Committee is finding it difficult to identify students who could qualify for acceptance into tertiary institutions. The Project is supporting the Committee by identifying additional tertiary institutions for inclusion in the Scholarship Program.

In addition, progress was made on plans to support small community infrastructure projects in strategic locations that will benefit the respective villages of the eight tribal groups. These community projects include water supply, resource center and sawmill projects.

5.2 Infrastructure, services and resources

Construction of an access track is underway along the southern and northern boundaries of the HGCP site to improve access to resettled communities in the area. Along with the footpath completed in the third quarter 2011, the new track will provide easier access for communities around the HGCP site and significantly reduce the risk of unauthorized people coming into contact with construction activities. Meanwhile, construction of an access track around the northern and southern ends of the Komo Airfield site continued throughout the quarter.

Also in the Upstream North area, an additional two '*haus wins*' were constructed in Komo bringing the total to 23 '*haus wins*' completed to date. By the end of the quarter, another '*haus win*' was under construction. These facilities serve as a meeting place for communities and provide fresh rainwater through collection and storage systems at each site.

Plate 5.1 – *Haus win* and resettlement house in Tokaju

In mid-October, the Project was impacted by the failure of the Arua River Bridge located on the east side of Tari between Ambua and Tari. A temporary bypass around the bridge was built, with construction of a replacement bridge scheduled for the first quarter 2012.

The Project will continue supporting the Papua New Guinean Department of Works with their program to upgrade sections of the Highlands Highway as necessary.

Working together with local Lancos, the Project finished repairing and upgrading the Kaiam Village Road, allowing the Kaiam community to more safely access markets and other resources. The Kaiam Village Road project provided employment opportunities for local people and enabled construction teams to help several landowners with small clearing activities while their equipment was in the area.

Construction also began on the new Lea Lea Bridge following an upgrade to the existing bridge, which will continue being used until completion of the new bridge.

5.3 Verification, monitoring, assessment and audit

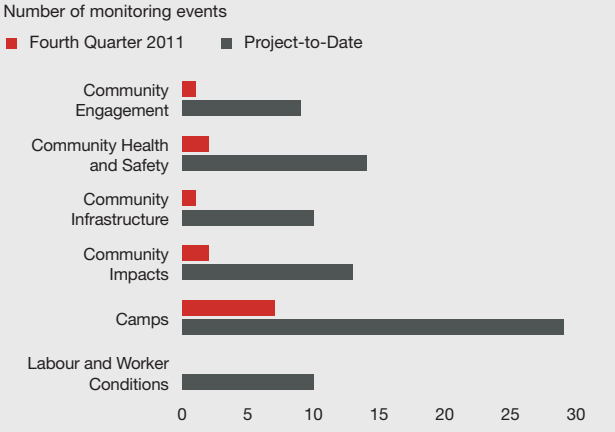
The Project continues to implement its four social management plans which cover: Community Engagement, Community Health and Safety, Community Impacts and Community Infrastructure. These are complemented by a Camp Management Plan and a Labour and Worker Conditions Management Plan to ensure healthy worker conditions.

During this quarter, the Socioeconomic team undertook in-depth monitoring in locations identified as having higher potential Project risks and impacts on communities. Monitoring activities focused on community safety, with a particular emphasis on road safety in the Komo/Hides and Idauwi areas.

Social Management Plan training and awareness sessions were also held for the soon to be mobilized drilling teams.

During this quarter, the Project's Socioeconomic team conducted 15 monitoring events against these social management plans focused on Community Health and Safety and Camps. This brings the total monitoring events held to date to 85, as shown in Figure 5.2.

Figure 5.2 – Summary of monitoring events against relevant social management plans



Conformance with the various social management plans is tracked through three reporting tools: non-conformances, field observations, and positive field observations.

Situations that are not consistent with Social Management Plan requirements and require corrective actions are classified as non-conformances. Potential situations, which could eventually result in a non-conformance, if not corrected in a timely manner, are classed as field observations. Corrective actions are implemented in these situations to prevent a field observation escalating to a non-conformance.

Meanwhile, innovative or excellent performance against Social Management Plan requirements is recognized as a positive field observation. Positive field observations are often used to help promote continued improvement across the Project.

As shown in Figure 5.3, 27 non-conformances and 14 field observations were raised during the quarter. The non-conformances primarily related to community health and safety and camp management, and corrective actions have been generated to resolve non-conformances and field observations. The closure status of these is shown in Figure 5.4.

In addition, nine positive field observations were recorded this quarter. Three related to traffic control, driver awareness of pedestrians and road maintenance. The others related to camps, for example, cleanliness of accommodation rooms, recreational facilities and food quality.

Figure 5.3 – Non-conformance and field observation summary

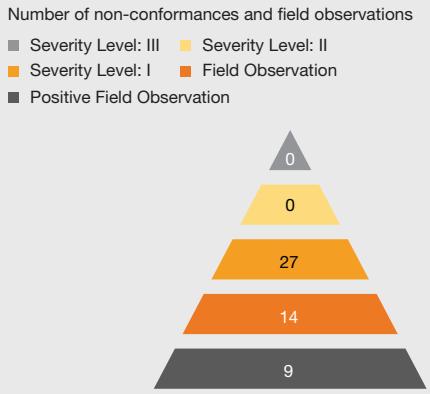
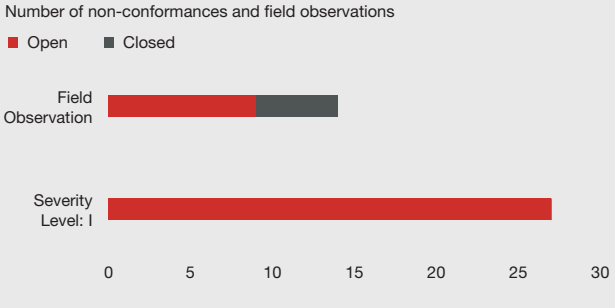


Figure 5.4 – Non-conformance and field observation closure status



5.4 Community health

The Project is working in partnership with Papua New Guinean health professionals and numerous non-government organizations to mitigate potential health impacts from contractor and community interaction. Mitigation and outreach efforts are managed through the Project's integrated Community Health Impact Management Program. This Program covers specific areas such as Sexually Transmitted Infections, water and sanitation, and potential exposures to chemical and physical hazards. The Program is based on a framework first developed by the International Petroleum Industry Environmental Conservation Association, also known as IPIECA, which effectively integrates environment, health and key social determinants. It has been further developed and expanded by the International Finance Corporation in its guidance notes to the performance standards, which include Performance Standard No. 4, Community Health, Safety and Security.

5.4.1 Integrated Health and Demographic Surveillance System

A highlight of this quarter was the opening of a research center and patient examination facility at the Papa Health Clinic, which is operated by the Salvation Army and located near the LNG plant site.

Plate 5.2 – Papa Health Clinic in 2008 and 2011

The research center is part of the iHDSS, supported by the 'Partnership for Health' agreement between the Project and the IMR. The center will perform an important role in monitoring the health of LNG plant site communities, Hides area villages and two respective comparison sites. It will also be used for activities such as a Sexually Transmitted Infections study at the LNG plant site villages.

As part of the iHDSS, ongoing illness (morbidity) assessments continued this quarter at local health centers, while the IMR established a base in the Komo/HGCP area. The Project is supporting this by constructing housing for the IMR physician.

Plate 5.3 – House construction for the IMR physician

In collaboration with the Komo Airfield contractor, access to health care and education for local villagers was improved when the roadway entrance to the Malanda Health Centre and a school in the Komo area was enhanced.

5.4.2 Tuberculosis

This quarter, the Project conducted a site assessment and scoping at Kikori Hospital to prepare for a tuberculosis prevention, diagnosis and control program through the IMR. Kikori Hospital is the primary health facility in the Gulf Province with the medical equipment and personnel able to diagnose and treat tuberculosis.

The Project is working in partnership with the IMR and the Hospital to improve diagnostic capability and develop accurate disease information for the area given that the tuberculosis burden on the Gulf Province may approach one percent, which is a level hundreds of times higher than seen in developed countries. A Memorandum of Understanding to improve tuberculosis diagnosis and follow-up was signed between the IMR and Gulf Christian Services, who manage and staff the hospital. During the quarter, the IMR recruited two infectious disease physicians from the Walter and Eliza Hall Institute in Australia.

Plate 5.4 – Entrance enhancements made to the roadway at the Malanda Health Centre

5.4.3 Support to non-government organizations

The Project supported the non-government organization Population Services International by conducting Marital Relationships training for 87 participants in the Porebada and Boera villages, 79 in the Hides area, and 98 in the Para area (next to the HGCP) this quarter. This training is benefiting villages by helping to reduce alcohol consumption, episodes of gender-based violence, concurrent partnerships, and increase school attendance. One participant stated: "If this training program were provided to all of the adults in these villages, I believe that communications between the clans would improve."

Plate 5.5 – A Marital Relationships training session

Water sanitation hygiene outreach

The Project is also working in partnership with Population Services International on programs to help communities develop safe water sources and improve sanitation. During the quarter, a Memorandum of Agreement providing Governmental approval for Population Services International to support the Southern Highlands Provincial Health Office was signed.

In addition, Population Services International appointed and trained two Water and Sanitation Hygiene Interpersonal Officers who are responsible for facilitating Community-Led Total Sanitation programs and for encouraging the use of water and sanitation hygiene kits throughout local communities.

Health staff capacity building

During November, an emergency care training program was held for 26 health care providers from the Komo Airfield and HGCP areas.

Supported by the Project, the program was conducted by a physician specializing in obstetric and newborn emergencies, one of the most common causes for emergency evacuations in these areas.

World AIDS Day

In coordination with World AIDS Day activities targeting the prevention of Sexually Transmitted Infections, the Project's Community Health team provided Sexually Transmitted Infection and HIV prevention educational materials, as well as rapid HIV test kits, to health centers throughout the Project area.

Plate 5.6 – Posters and t-shirts presented in support of World AIDS Day

5.4.4 Contractor conformance

Contractor conformance with community health-related requirements was integrated within the Project Health team's occupational health assessments. Results of these assessments are covered in *Section 7.3 Health management*.

5.5 Community safety

In addition to the Socioeconomic team providing safety awareness at the LNG plant site, construction of the new community access track at the HGCP site and vehicle access tracks for local communities around the southern and northern ends of the Komo Airfield site continued. Local residents are employed to patrol the Airfield perimeter fence and repair holes as part of a community-based initiative to discourage trespassing.

This quarter, an informal, daily market that was alongside a busy road close to the Komo Airfield construction site was relocated to a safer grassland area with community support. The Project also facilitated the relocation of a new local market just outside Kaiam Camp 2, which also has heavy traffic, to a safer location for market participants.

Meanwhile, the Project conducted a series of pipeline road shows from Gobe to the Moro and Homa/Paua areas, communicating safety messages about heavy equipment used during pipeline construction and the need for community members to avoid walking or driving along the pipeline Right of Way (ROW). These sessions were augmented with specific workshops relating to safety in local villages near the construction activities.

5.6 Community investment

Through investment in community initiatives, the Project aims to promote economic growth and create positive and sustainable outcomes for communities in the Project Impact Area.

5.6.1 Community Investment and Contributions Committee

During the quarter, Project senior management endorsed support for a new poultry project spanning the four villages around the LNG plant site. The Project is working in partnership with Goodman-Fielder, through the Business for Millennium Development organization, which helps businesses identify and create pathways out of poverty in developing communities.

Rapid Implementation Projects

This quarter was a busy one for Rapid Implementation Projects, with 18 projects completed and 31 new projects added. These projects provide small grants of up to 14,600 Kina for materials, small community works projects, or payments to villagers for community works performed by them, such as grass cutting and minor road maintenance.

Among the completed projects, school desks were supplied to over 20 schools to provide better classroom conditions and encourage improved attendance, with local companies commissioned to build and deliver the new desks.

Plate 5.7 – School desk construction in Walete

Numerous fresh water projects were also implemented, including 13 small water catchment projects in the Upstream North area. In Kutubu, the Project sponsored a cultural festival and provided sports equipment to villages and clans to help build community engagement.

Plate 5.8 – Water catchment construction in Komo

Local employment continues benefiting from Rapid Implementation Projects as well. For example, village residents from Tindom Hill, Komo and the Hides area were employed for more than 100 kilometres of road clearing and road repairs, providing much needed income for these communities.

5.6.2 Community Development Support Plan

The Project's community development support activities focus on Strengthening Social Resilience, Local Economic Development and Community Capacity Building and Partnerships, which are the core components of the Community Development Support Plan.

The Project's partnership-based approach to community development is showing early signs of success, as highlighted in *Case Study Two – Creating sustainable partnerships*.

Strengthening Social Resilience

This quarter, the fourth book in the series of Toea books, titled *Toea's Gulf Adventure*, was published. These books are intended to help build children's reading skills while providing knowledge and instilling pride in Papua New Guinea's unique geography and culture. Previous books follow Toea's adventures in the Sepik, Highlands and Hiri areas of Papua New Guinea.

The Project continued its support for the Delta Green Field Marketing Women's Group, conducting a training program to help them draft an organizational development plan. The plan identifies the types of agriculture skills training needed for the Group's members and the processes required for marketing and sales of vegetables. It covers a period of one year and includes details on how the group will monitor its progress.

This follows support provided in the third quarter 2011 with materials and construction of the Group's nursery in the Omati area. The nursery will enable local women to gain experience with new varieties of fruit and vegetables to supply to Oil Search Limited and Project construction camps in Kikori.

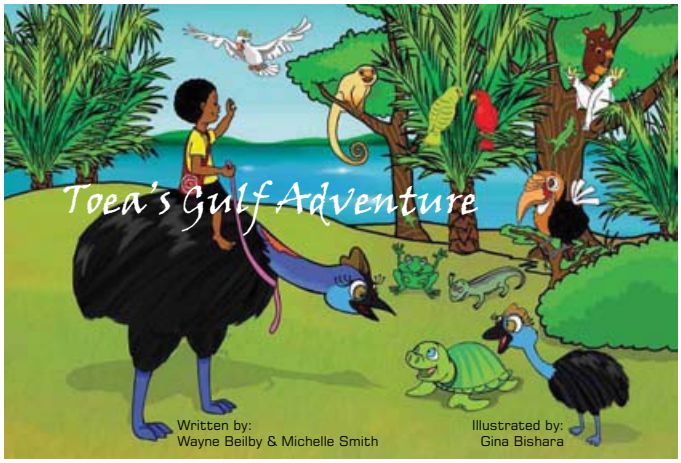


Plate 5.9 – The fourth book in the Toea series

Plate 5.10 – 'Toea' on a school visit

Plate 5.11 – Personal Viability training session

Local Economic Development

During this quarter, economic development activities focused on a number of projects already underway. For example, work progressed with planting cashew trees and conducting surveys of trees planted earlier in the year. Following an extended dry season, a significant number of trees were found to have died. As community demand for cashew saplings remains high, new trees will be provided at the start of the rainy season. The Project will also provide additional training for LNG plant site villages on planting and caring for cashew saplings.

Approval was also given this quarter by the Community Investment and Contribution Committee for a new egg production business to be established for the four LNG plant site villages. This business will provide local families with the opportunity to participate in growing egg-laying birds for egg production.

Community Capacity Building and Partnerships

During this quarter, capacity development workshops were conducted for Kikori-based organizations, and management training was delivered for leaders in the Hides and Komo areas.

Among the training provided, four Personal Viability training sessions attracted 136 participants from the Komo area. This training is designed to give participants the tools to improve their livelihoods and manage social problems, covering topics such as promoting positive thinking, respect for others, making positive changes in life, budgeting for family needs and making money. Participants included male and female community leaders, youths, pastors and married couples.

5.6.3 Strategic community investments

Significant progress was made with strategic community investment projects during the quarter, with refurbishment of the Kikori Police Station and construction of the staff house at Papa Primary School nearing completion, while materials were delivered to improve the water supply to the Kikori Hospital. Refurbishment of City Mission headquarters also began.

Personal Viability training testimonials

Payawi Pape

"I live at the bottom of Mt. Sisa (Aliago). I am a councilor for 25 years and I am a strong Huli man. When making decisions, I don't seek opinions from my wives and children but during compensation I make it their business/job to make money and provide pigs for compensation. From this training I have discovered that my wives, and children and grandchildren are very important people in my life. I will make it my business after this training to spend time with my family and involve them in decision-making. I hope to limit the unnecessary spending during compensation for tribal fights because I see it as a waste of money."

Alice Peter

"The lessons I receive during the day is so interesting that in the afternoon I go back home to teach my two sons and my family members. And now, after two weeks I am graduating and my family are so happy for me to go back home and start implementing our plans. Please I want those who sponsored this training to follow us up because I will definitely start something up with my family."

Andrew Abuli Mbuda

"I had no plans to attend this workshop but my wife who attended the first training convinced me to attend this training. Through this training I have had seen that I cannot waste time anymore. I must start saving money so that when I am old and can't work anymore I have some money to look after myself. And also as a Huli man I let my wife do all the household chores but now I am washing utensils, cooking and cleaning around the house too."

In December, biomedical repair technicians Phillip Kandaki and Onda Kupri, of Kundiawa and Mount Hagen hospitals respectively, graduated after six months of intensive biomedical repair training in Dallas, Texas, through the MediSend International Biomedical Equipment Repair Training program. Both Phillip and Onda will take their newly learned skills of installing, maintaining and repairing biomedical equipment back to their hospitals in Papua New Guinea.

In the area of education, the Project is supporting a number of initiatives in partnership with Papua New Guinea's National Research Institute, including a needs assessment of teacher training in the Project Impact Area. The assessment aims to identify both formal training needs, such as teacher certification, as well as components of continuous learning identified by the teachers themselves to help overcome teaching challenges experienced in the classroom.

The Project is also supporting the National Research Institute with an Improving Teaching Outcomes research project. This project encourages teachers to think analytically about their teaching and learning challenges in the classroom. The National Research Institute will work with teachers in five schools in the Southern Highlands and Central provinces over a series of five in-field visits. They will assist the teachers with reflecting on particular learning challenges, selecting and implementing a plan of action to resolve each challenge, analyzing the outcomes and, if necessary, identifying alternative strategies. The findings from this project will inform policy recommendations to the Department of Education for improving the quality of education in Papua New Guinea.

Women's economic empowerment

The Project's commitment to supporting women continued this quarter. More than 60 members of the Project's workforce participated in the Walk Against Violence on November 25, led by senior Project executives including Peter Graham, Decie Autin, Pete Martinez and Mark Hackney, as part of the International Day to Eliminate Violence Against Women and Children. The Esso Highlands Limited Women in Energy Network also hosted a lunch for employees to raise awareness about this issue.

Also in November, the Project and the World Bank concluded financing agreements to support the World Bank's Women's Self Reliance Program in areas impacted by projects in Papua New Guinea. Through this Program, World Bank consultants will deliver training to women in the Upstream and LNG plant site communities on topics such as basic financial skills, family life improvement skills and income generation through farming, sewing, baking or similar activities.

The aim of this Program is to enhance the women's ability to productively enter the informal employment sector – the largest in Papua New Guinea. The training will take place within the villages, and the Program will work with women's associations and other community membership groups to identify training candidates.

The Women's Self Reliance Program is part of the broader Women in the Extractive Industries Initiative, which is directly linked to the Global Assessment of the Gender Dimensions of the Oil and Gas sectors, being implemented in six pilot countries, including Papua New Guinea. The combined aim of this work is to develop an action plan for women in petroleum areas to help address development challenges.

Plate 5.12 – Participants in the Walk Against Violence

5.6.4 Volunteer Programs

In Koki, the official opening of Buk Bilong Pikinini's community library marked the first library of its kind in the region. The new library will complement and work alongside the already established Buk Bilong Pikinini Library. The Project provided volunteer staff to operate and support the community library, while the Upstream Infrastructure contractor refurbished the building and constructed all the furniture. This library aims to promote education and learning and instill a love of reading by encouraging community members to access the books for work, reference training or leisure.

Plate 5.13 – Children at the opening of the community library in Koki

Volunteers also worked at the Boera Elementary School completing a new concrete floor, and building a concrete base for a water tank with the help of the Port Moresby Construction Training Facility students.

Another project involved the Project's workforce volunteer committee coordinating the delivery of 36 school desks shared across Redscar, Porebada and Boera elementary schools in November.

Case Study Two

CREATING SUSTAINABLE PARTNERSHIPS

As part of its commitment to Papua New Guinea, the Project has developed a Community Development Support Plan and is implementing a range of initiatives intended to support the communities within the Project Impact Area.

The Community Development Support Plan has three focus areas: Strengthening Social Resilience, Local Economic Development, and Community Capacity Building and Partnerships. It is based on extensive analysis and research commissioned by the Project including: livelihood assessments; community mapping of each target area; and analysis of local industries in the Project Impact Area, the institutions involved in community development in Papua New Guinea, and the Papua New Guinean policy and legislative context.

A best practice approach

Through Esso Highlands Limited's Community Development Programs, a range of partnerships aimed at sustainable development within Project affected communities are being developed with various levels of Government, non-profit organizations and private sector agencies. This recognizes that the Project cannot and should not address development issues and challenges on its own. Lessons from other resource projects show that best practice approaches to community development are based on forging partnerships with communities, as opposed to offering handouts. By encouraging community leadership and ownership, local skills and institutions can be developed, community expectations are more effectively managed, and projects are more likely to result in positive and sustainable outcomes.

For these reasons, the Project's approach to community development is based on partnerships and participation. Communities are involved from the beginning in identifying, defining and prioritizing potential programs and projects. This encourages community ownership, participation and project longevity, while enabling initiatives to be defined and implemented in a culturally appropriate manner, incorporating traditional views and local concepts of development.

The starting point is always to identify the leaders and other important stakeholders within a community, and develop relationships between those identified and the Project. Developing these relationships takes time, and it is best done face-to-face so all parties can get to know each other, and understand each other's perspectives and intentions.

The downside to this approach is that progress is often slow and sometimes frustrating for the parties involved.

Once mutual respect and understanding has been gained, the Project encourages communities to develop a community development plan identifying priorities and potential projects following community consultation. Some communities are highly organized with strong leadership, established governance models and proven communication channels, so they are able to achieve this relatively quickly. Other communities require much greater support, and the Project is providing a range of training and education programs as well as ongoing mentoring and facilitation services to bring these plans to fruition.

Relationships build over time

"People want to see change quickly, but a community partnership approach requires patience and time. You can't build community capacity for sustainable development unless you have a relationship that is trusting and transparent. Communities know we are a business, and it takes time for them to get to know us and understand our intentions and that social development activities can lead to shared benefits for all stakeholders."

Sisa Kini, Social Impacts Coordinator, Socioeconomic team

Case Study Two

CREATING SUSTAINABLE PARTNERSHIPS

Community partnerships in action

Just two years in to the Community Development Support Plan, the Project's partnership-based approach to community development, is showing early signs of success. For example, in September 2011 a group of entrepreneurial women from Lea Lea Village established the Lea Lea Fish Market. The women were empowered to act on their idea having received support from the Project in the form of business-related training sessions and a facilitated women's forum. As a result, the 20 women involved in this project have created a permanent, communal point where fishers can sell their catch, generating an income for their community-at-large by charging a small fee to those who use their facility.

Meanwhile, Delta Green Field Marketing Limited, the women's group in Kikori, has become a source of local pride, having become the first group in their community to be recognized by a Lanco through a contract to sell vegetables for supply to Project construction camps. They are also setting up a nursery and supplying seedlings to over 500 women in the six villages of Omati, Baina, Kaiam, Turama, Kibeni and Gibidai, enabling local women to gain knowledge and practical experience with new varieties of fruit and vegetables.

Another strong example of a partnership in action is the Barging Route Waterways Memorandum of Understanding. Signed in the third quarter of 2010, the Memorandum of Understanding is empowering eight tribes in the Omati River Delta region to drive the development of their respective villages by providing opportunities for community and infrastructure development projects, as well as training and scholarship programs.

Through engagement with village leaders, represented on the Barging Route Waterways Memorandum of Understanding Committee, a number of programs were identified, approved and implemented. So far, the Project has facilitated training for 24 Committee members on good governance, effective business management and leadership and 16 students from their communities will receive assistance to attend tertiary institutions in Papua New Guinea in 2012 through the Barging Route Waterways Memorandum of Understanding Scholarship Program.

All eight clans have also identified their top priority infrastructure project from the 50 that were tabled in initial consultations. Five clans nominated a portable sawmill so they can produce their own sawn timber for community construction projects such as repairs to health and education facilities, two clans identified rainwater collection and storage systems to help ensure clean water supplies for their communities, and another clan desired a community meeting hall. A fisheries project that will increase income to Barging Route Waterways families is another project in its early planning stages.

By coming together, a wide range of different stakeholders is building stronger communities, individuals and institutions, so they can manage and maximize development opportunities that are arising in partnership with the Project.

Kila Oumabe, Chairperson of Delta Green Field Marketing Limited, addressing group members

Thirty-five women and their families witnessed signing of the nursery development agreement between Delta Green Field Marketing Limited, Esso Highlands Limited and Community Development Initiatives Foundation Trust Fund

6 Compensation and Resettlement

The Project's approach to resettlement aims to give physically and economically displaced people the opportunity to, at a minimum, restore their livelihoods and standards of living. Livelihood restoration activities are carefully monitored and evaluated to ensure they are leading to planned outcomes.

6.1 Compensation

The Socioeconomic team continues engaging with customary landowners to facilitate access to land required by the Project.

The Project recorded a major achievement this quarter when compensation was paid to 14 clan agents from the Kerewo tribe in remote locations along the Omati River. These payments are the culmination of more than six months of working in partnership with this tribe and Papua New Guinea's Department of Petroleum and Energy regarding the use of the Omati waterway for installation of the offshore pipeline. Compensation was also paid for land impacted by the LNG Plant landfall, completing all statutory compensation payments required for construction access for the offshore pipeline.

In addition, six new In-Principle Compensation Agreements were signed for land along the pipeline ROW and Hides spoil stockpile sites during the quarter, while two statutory compensation payments were made in Komo under Clan Agency Agreements. This means that of the 11 clans, seven have received statutory compensation payments, with 40 percent of the compensation owed for the Komo Airfield paid. The four remaining clans in Komo continue working to resolve internal issues with clan leadership, land distribution and compensation following recent tribal disputes.

Statutory compensation discussions are underway with clans at the HGCP site, with final negotiations planned for early in the first quarter 2012. The Project continues to have access to the site with no issues related to compensation. Negotiations with landowners at quarry sites, spoil stockpile sites and the Hides Waste Management Facility are also underway, with compensation payments planned for the first half of 2012.

In the Upstream South area, payments continue for the onshore pipeline ROW, with an additional 58 clans/sub-clans in the Kopi area having received compensation for their land. To date, compensation for 55 kilometres (approximately 19 percent) of the pipeline ROW has been paid. Disputes between clans prevented compensation payments for approximately 10 kilometres of the pipeline ROW near Kopi and an additional 45 kilometres near Gobi. Landowners in these areas will be compensated upon settlement of the clan disputes. In the meantime, construction is continuing unimpeded.

6.2 Resettlement

Resettlement activities continue focusing on land access for the Project and livelihood restoration for impacted communities. For physical and economic displacement of households or individuals, the Project conducts monitoring to ensure livelihoods and standards of living are restored.

The Project's Livelihood Restoration Program is proving successful with confirmation that new varieties of sweet potato can be grown by resettled communities. To further enhance the Livelihood Restoration Program, the Resettlement team is seeking opportunities to extend agricultural development into commercial applications. Similarly, planning commenced this quarter for non-agricultural-based training courses, such as training for trade storeowners and potential sewing businesses. Meanwhile, monitoring and evaluation of the welfare of resettled people continues, with particular attention paid to the monitoring of 'at-risk' individuals or groups who, by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage or social status, may be more affected by displacement than others and/or limited in their ability to claim resettlement assistance.

The building of speculative structures in many Project areas remains a challenge to control. To mitigate impacts to land access and the Project's schedule, the Resettlement team is holding disclosure meetings with impacted communities as soon as land requirements are known. These meetings are intended to communicate the cut-off dates for the census and survey of structures, and promote awareness and understanding of the eligibility requirements for resettlement compensation.

6.2.1 Milestones and progress

During this quarter, resettlement activities progressed with particular emphasis on the onshore pipeline in the Moro area, the spoil stockpile sites along the Hides Quarry Road, and the access road from Komo to Hides.

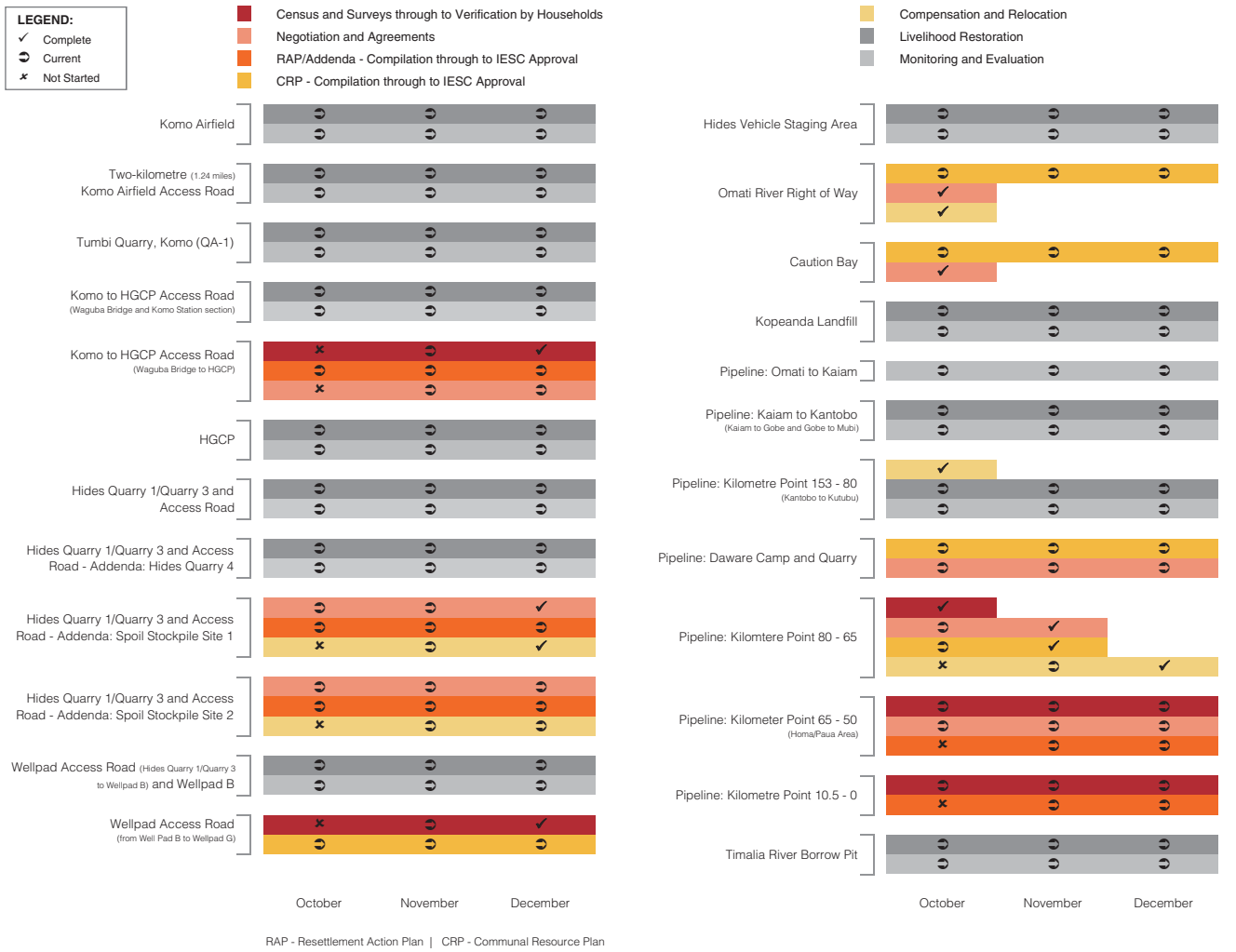
Resettlement milestones achieved in this quarter included:

- Completing Communal Resource Plans for the portion of the pipeline from Kutubu to Moran (Kilometre Point 65 to 80), and a pipe laydown area at Kilometre Point 97.5 as an addendum to the Kantobo to Kutubu portion of the southern pipeline (Kilometre Point 80 to 153).
- Submitting a draft Resettlement Action Plan for the southern pipeline portion from Homa to Moran (Kilometre Point 50 to 65) to the IESC.
- Land access provided to Hides Vehicle Staging Area, Tumbi Quarry (QA1), Daware Camp and Tugiri Quarry, the Wellpad Access Road from Wellpad C to Wellpad E, and a spoil stockpile site at Hides Quarry 2, as and if required by the Project.

- Completing resettlement census and surveys for new areas such as the access road from Komo Airfield to the HGCP and additional spoil stockpile sites.
- Commencing the second round of livelihood restoration surveys at Hides and Komo as part of post-resettlement monitoring activities.
- Developing and issuing the Monitoring Guide for Vulnerable Households/Individuals.

Figure 6.1 provides an overview of the status of key resettlement activities during the quarter.

Figure 6.1 – Status of key resettlement activities



6.2.2 Highlights, achievements and lessons learned

The following activities took place during this quarter.

Komo Airfield and HGCP: The second round of livelihood restoration monitoring surveys commenced with resettled gardens at the Komo Airfield. Five replacement houses for resettled households were completed, with plans to build an additional ten houses in the first quarter 2012. The average time for construction was reduced from six weeks to approximately three weeks. Fourteen communal water structures were also constructed this quarter, and additional sites identified.

Hides Quarries: The first round of surveys of resettled gardens was completed at Timalia River Borrow Pit.

Pipeline camps and components: Resettlement census and surveys were finalized for campsites at Kilometre Points 4 and 24.5, while disclosure meetings were held with impacted communities. The Communal Resource Plan for the onshore pipeline from Kilometre Point 65 to 80 was developed and garden payments progressed. Garden and household surveys continued for the Homa/Paua area (Kilometre Point 50 to 65) and the Resettlement Action Plan was developed. Meanwhile, resettlement activities for the onshore pipeline from Kilometre Point 0 to 10.5 continued.

Spoil stockpile sites and logistics routes: Surveys of gardens and households were completed for spoil stockpile sites along the Hides Quarry Road, and for construction logistics needs along the road from Komo to Hides in preparation for Resettlement Action Plans being developed.

Livelihood restoration: In addition to extending agricultural programs to a commercial scale and planning non-agricultural based training courses, the Project conducted training for more than 300 women from ten women's groups in the Hides and Komo areas this quarter. The training focused on baking, food preservation and sewing. Due to the year-round availability of fresh garden produce, food processing and preservation technologies have not been traditionally utilized in Papua New Guinea, however lifestyles and eating habits are changing, with processed foods sometimes preferred for their convenience. By introducing food-processing technologies to communities in the Project Impact Area, the Project aims to help participants make informed decisions about investing their resources in sustainable food processing and agriculture-based income generation activities.

Resettlement housing: Plans were implemented to improve the time to construct houses for families that have been resettled. This includes pre-fabrication of some housing components to accelerate house construction at more accessible sites and the use of kit homes.

Plate 6.1 – Miriam Gai, women's group leader, selling scones, coffee and tea at Juni station

Plate 6.2 – Jukuli Kapiako of the Mapuli women's group harvesting cabbages for sale at local markets

7 Workforce

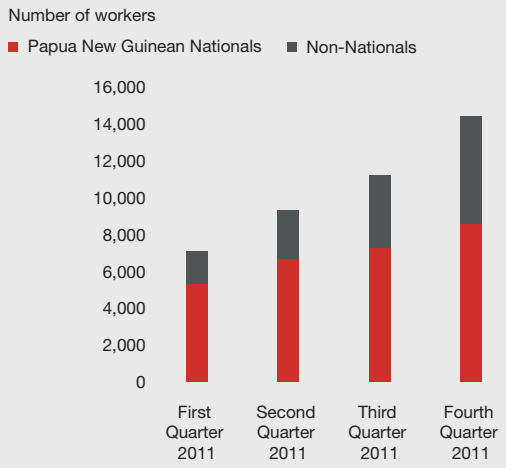
In accordance with the Project's National Content Plan, the Project is providing employment and training opportunities to Papua New Guinean nationals, and developing the skills of its workforce to meet the demands of construction activities.

7.1 Development

The Project's workforce continues growing rapidly to meet increasing construction needs, with works at the LNG plant site and the HGCP accounting for the majority of growth this quarter. By the end of 2011, just over 14,300 people were engaged in the Project workforce, of which 60 percent were Papua New Guinean citizens, as shown in Figure 7.1. This represents an 18 percent increase in the national workforce from last quarter and a 75 percent increase since 2010. More than 1,000 people in the workforce are females, and 94 percent of these are Papua New Guinean citizens.

In addition to the number of Papua New Guinean citizens employed by the end of 2011, the Project has engaged many more Papua New Guinean nationals at various times for specific construction needs. Of the Papua New Guinean citizens engaged in the Project workforce, approximately 50 percent are sourced through Lancos.

Figure 7.1 – Project workforce



The rapid acceleration of works at the LNG plant site and the mobilization of the Hides Gas Conditioning Plant and Hides Wellpads contractor accounted for close to 80 percent of the increase in employment of Papua New Guinean nationals this quarter.

Demobilization of workers in the Omati to Kikori River area also commenced during the quarter as construction activities moved north towards the Mubi River. With this move, recruitment of workers from the region between Kikori and the Mubi rivers commenced.

Communication sessions were conducted this quarter providing workers with both written and oral information about the demobilization process, the financial aspects they need to be aware of along with the documentation they will receive.

7.2 Workforce training

The Project builds the skills of workers in several ways, ranging from formal structured training at custom-built facilities in Port Moresby and Juni and on-the-job training by the construction contractors, to in-house training provided by the Project.

7.2.1 Construction training

With the Project's strong emphasis on developing the national workforce, more than 8,000 Papua New Guinean citizens have been trained-to-date across all Project sites for field-based roles and Port Moresby office support roles, as well as in preparation for future production roles. By the end of 2011, approximately 900,000 hours of training had been delivered, with more than 160,000 hours completed in this quarter alone. Of the 3,060 courses completed to date, approximately 840 courses were delivered during this quarter.

Project provided training

The Project has developed training plans for many workers incorporating mandatory training, which in some cases is required to be completed annually. These training plans are helping identify training needs in relation to Project work being completed. For example, this quarter the Project delivered approximately 50 different courses covering areas such as cyber security, change management, electrical fundamentals for facility engineers, risk assessment, materials engineering, and emergency response incident training.

Safety courses are consistently offered by the Project. This quarter they included a safety vision workshop, first aid, first line supervisors Safety, Security, Health and Environment (SSHE) training, personal safety planning, and working in uncontrolled environments training.

Contractor provided training

Contractors continue providing training relevant to construction activities within their scope of work. Workers are trained both formally and on-the-job across a wide variety of disciplines including driving, electrical and instrumentation, mechanical and piping, painting and insulation, catering and housekeeping, and office administration.

For example, 40 Papua New Guinean citizens are being sponsored by the Offshore Pipeline contractor for training with the Papua New Guinean Department of Works facility in Port Moresby. This will develop transferable skills that can be used in their local communities and in other workplace roles. This quarter, the contractor partnered with the Enterprise Centre to find local companies that could provide the trainees with practical experience to enhance their learning.

In addition, engineering graduates sponsored by the LNG Plant and Marine Facilities contractor are gaining experience in Yokohama, Japan in preparation for work at the LNG plant site.

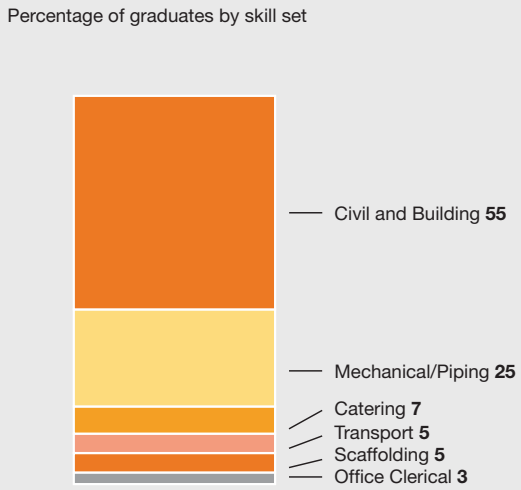
7.2.2 Contractor workforce training

Following its recent completion, the Juni Construction Training Facility hosted training in first aid, cyber security and safety inductions as well as fundamentals of business management this quarter. In addition, 15 trainees from the Juni area commenced a 12-week Certificate II in General Construction and Civil Construction, which is certified to the Australian Quality Training Framework standard and will provide them with skills relevant to employment at the HGCP.

Plate 7.1 – Trainees at Juni Construction Training Facility

The Port Moresby Construction Training Facility continues training people from the four villages (Boera, Papa, Lea Lea and Porebada) near the LNG plant site in basic skills and safety to assist in the construction of the LNG Plant. By the end of the quarter almost 1,460 graduates, of whom over 30 percent were female, completed training through the facility. Figure 7.2 illustrates the skills that graduates achieve through the Port Moresby Construction Training Facility.

Figure 7.2 – Graduate skill areas



Six months after commencing work, these graduates are visited at their workplaces, and their skills and knowledge are assessed. With permission from their supervisor, the assessment results are sent to Technical and Further Education (TAFE) Australia for issue of their Certificate I in Resources and Infrastructure Operations. This certification is recognized throughout Papua New Guinea, Australia, Asia, some parts of Europe and the Middle East. To date, nearly 300 graduates have achieved their Certificate I and begun learning the workplace skills and knowledge required for a Certificate II in Resources and Infrastructure Operations assessment. To support these graduates, a two-week intensive training and assessment program will be conducted through the Port Moresby Construction Training Facility in 2012.

Plate 7.2 – Presentation of certificates at the Port Moresby Construction Training Facility

7.2.3 Graduate programs

The Project has selected nine Papua New Guinean graduate engineers from the 2011 graduate recruiting program to commence employment with Esso Highlands Limited in February 2012. Two will join the Safety, Health and Environment team in Port Moresby, one will be assigned to Global Real Estate and Facilities, and the remaining six will become part of the Operations Technical team and join ExxonMobil's graduate engineering program in Melbourne. They follow six other Papua New Guinean employee graduate engineers who are nearly two-thirds into their 18-month development program in ExxonMobil's affiliate in Melbourne, Australia.

Another 13 Papua New Guinean graduates contracted to the Project in 2011 continue building their skills at Project construction sites in the Highlands region, at the LNG plant site and in Esso Highlands Limited head office in disciplines such as procurement, human resources and business controls.

Experienced engineers in ExxonMobil's affiliate in Melbourne continue to mentor and support two Papua New Guinean drilling engineers.

7.2.4 Operations and Maintenance training

This quarter, all 73 Production Operations and Maintenance trainee technicians completed their 18-month program at the Production Operations Training Centre in Port Moresby. Along with their families and Project representatives, they attended the first Graduation Ceremony for the Production Operations Training Centre in December.

Plate 7.3 – Tom Hooper, Project Operations Manager presenting graduation certificate to Daniel Kui

Completing the first stage of their training, with a combination of the Foundation Skills Program and the Basic Skills Training Program, the trainees were deployed into relevant disciplines in either production operations or one of the maintenance trades – mechanical, electrical or instrumentation.

In 2012, the Production Operations and Maintenance trainees, all of whom met the Program's academic and behavioral expectations, will advance to the second phase of their training. They will spend one year in Canada completing Advanced Skills training, before returning to Papua New Guinea for the final phase of their on-the-job facility-specific training. They will also assist in commissioning and start-up activities at the HGCP and LNG Plant.

Meanwhile, 76 trainees have been selected for the second intake of Operations and Maintenance training, beginning in January 2012. Given the strong academic performance of the Production Operations Training Centre's first graduates, the Foundation Skills Program and Basic Skills Training Program has been reduced from 18 months to one year.

In addition, 50 positions were identified across the Project for applicants who missed out on Operations and Maintenance trainee selection. They will be engaged as staff contractors to the Project as part of an Intern Program.

7.3 Health management

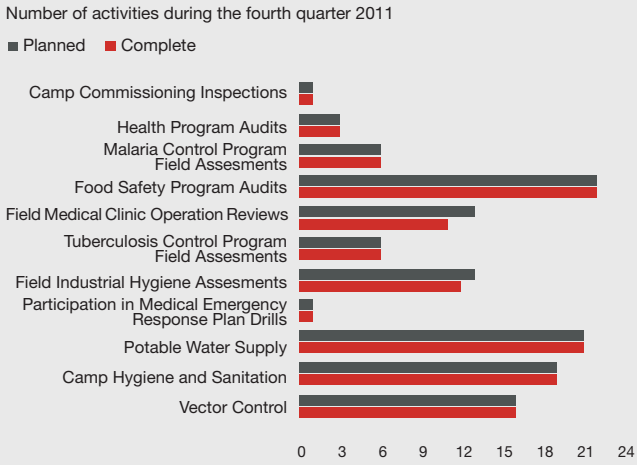
Health assessment monitoring continues to deliver leading indicators that help focus health services and training requirements to key areas of need across the Project. Leading indicator metrics obtained for the quarter indicate improvements across all health disciplines were achieved.

For example, improvements in diagnostic testing were achieved for malaria, while activities to further improve tuberculosis diagnosis are underway. The Project also developed an infectious disease outbreak preparedness program, and plans are underway to conduct a gap analysis across Project worksites in 2012.

Meanwhile, contractors and subcontractors continue conducting health self-assessments, with the results of these recorded on monthly health metrics scorecards.

Figure 7.3 illustrates the Health team's activities during this quarter.

Figure 7.3 –Key planned versus completed health activities



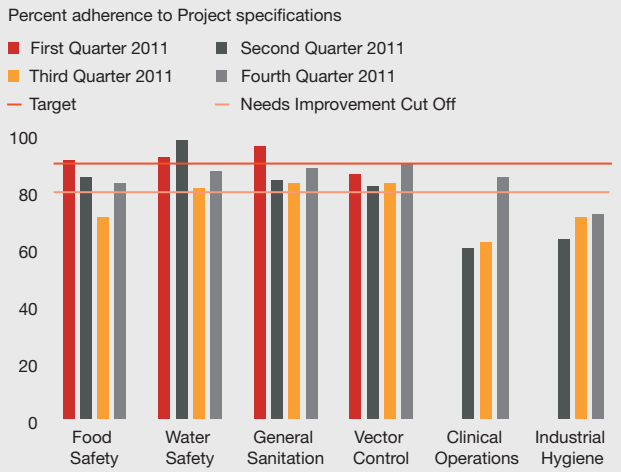
7.3.1 Camp and contractor health support

During the quarter there was an increase in personnel mobilization as construction activity increased across Project worksites in the Highlands area, offshore pipeline areas and the LNG plant site. This population increase has resulted in larger camps, which require additional health service provisions, and subsequently, additional training for the increased number of health staff. Consequently, identifying camp services risks was a focus this quarter, with camp service health assessments conducted at each campsite and on the offshore pipe lay and support vessels.

Camp health inspections were completed for: clinics; food and potable water safety; vector control; camp hygiene and sanitation; and camp industrial hygiene across the Project this quarter. Results showed improvements were achieved across all program areas, and particularly for clinical operations. Despite this, there is still some need for improvement in the area of industrial hygiene, as shown in Figure 7.4. In addition to the camp health inspections, three construction contractor health program audits were also conducted.

The Project Health team is working with contractors and subcontractors to address areas for improvement. An industrial hygienist has been engaged by the Project to assist contractors in meeting industrial hygiene requirements.

Figure 7.4 – Camps adherence to Project specifications by public health category



An additional activity this quarter involved assessing the capability of each clinic to provide appropriate medical and emergency response services. Challenges observed were primarily related to logistics to the Highlands and availability of medical supplies, in particular, supply of vaccines. The Health team worked with the medical provider to identify gaps and solutions. At the end of the quarter, improvements in the capacity to mobilize medical supplies to Highlands camps were observed.

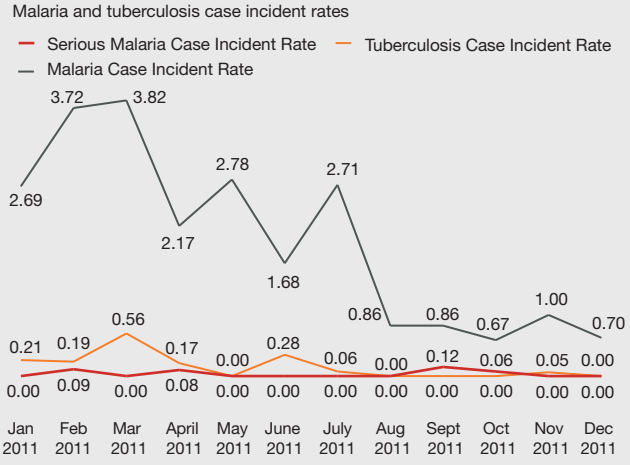
7.3.2 Leading and lagging indicators

Leading indicators are those which reflect the Project's proactive management of worker health, for example, compliance with the Malaria Control Program. Lagging indicators reflect the Project's response to a health-related situation, for example, increased tuberculosis awareness communications in response to an increase in tuberculosis cases. This section covers both leading and lagging indicators for Project health criteria.

Malaria and tuberculosis

The Project recorded one confirmed serious malaria case and one confirmed tuberculosis case this quarter. Case numbers recorded each quarter continue to show a downward trend, which is evidence that the Project's management of both malaria and tuberculosis is proving effective. Over the past year there have been a total of five serious malaria cases, 310 non-serious malaria cases and 18 tuberculosis cases confirmed for the Project. Malaria and tuberculosis incident trends for the year-to-date are shown in Figure 7.5.

Figure 7.5 – Malaria and tuberculosis incident rates per 200,000 work hours



NOTE: Malaria and tuberculosis case incident rates include all worksites. Health incidents included in the PNG LNG Quarterly Environmental and Social Report are based on the best information available at the time of publication. Health incidents are subject to an investigative process and this sometimes leads to incidents being re-categorized or an illness confirmed, following a detailed investigation, after the Report has been released. This means that the number of incidents reported against a particular category may increase or decrease between one Report and the next.

Malaria

This quarter a second review of all serious malaria cases on the Project was conducted as a follow-up to the initial review undertaken in the third quarter 2011. This second review resulted in a number of serious malaria cases being re-classified as non-serious for the 2011 year.

During the quarter, the Health team conducted monthly Malaria Control Program assessments of all contractors and compiled results in a Project-wide malaria scorecard. The scorecard results were used to identify gaps in the Malaria Control Program and help contractors understand areas for improvement, including diagnosis and reporting and documentation of bite prevention protocols.

A key component of the Malaria Control Program is malaria diagnosis. A standardized diagnostic system was implemented within each clinic on the Project, along with a supporting quality control process for all suspected malaria cases. For each suspected malaria case, a rapid test and blood smear test is performed and then referred to a World Health Organization accredited quality control lab for confirmation. Another crucial component of the Malaria Control Program, applicable for non-immune individuals, is taking chemoprophylaxis. Samples of chemoprophylaxis tablets are now collected for testing for efficacy and quality.

During the quarter, significant improvement was achieved in Malaria Control Program compliance, with a Project-wide compliance rate of 86 percent.

Compliance with the Malaria Chemoprophylaxis Compliance Program remains steady, with the non-detect rate[1] of 0.54 percent for the year. This indicates that less than 1 percent of individuals tested did not show detectable levels of chemoprophylaxis. This result is lower than the 0.93 percent recorded in 2010, which reflects the work conducted by the Project in raising awareness about using chemoprophylaxis and controls around monitoring compliance.

Tuberculosis

During this quarter, several suspected tuberculosis cases were reported across the Project. One case was confirmed, while other cases remain under investigation. Tuberculosis diagnosis remains challenging because laboratory services located in hospitals in remote areas of the Project are unable to conduct confirmatory tuberculosis testing. The Project is investigating options to provide tuberculosis testing equipment within Project clinics to support accurate and timely confirmation of suspected tuberculosis cases.

In the meantime, the Project Health team continues to monitor compliance with the Project's Tuberculosis Control Program. Project-wide compliance with the Program reached 83 percent by the end of December. High-level case management and good worksite controls have prevented on-site transmission of tuberculosis. All tuberculosis cases reported to date have been the result of prior exposure in the home or local village.

Food and water safety

This quarter, the Health team conducted a review of all camp and offshore pipeline vessel food and potable water safety systems. This included camp and vessel kitchens, dining rooms, and food storage and transport facilities. Results revealed that most food caterers performed well in a remote and challenging environment.

Plate 7.4 – Temperature monitoring for food quality control

The Project is working with one food caterer to improve standards and provide support in areas where necessary. The challenges observed during the assessments were found to be: logistics and food supplies to the Highlands; supervision and continual training of staff; as well as working in hot and humid environments.

Project entomologist has positive impact on Highlands community

A Project entomologist has had a positive impact on a local Highlands community by demonstrating to community members how to stop mosquitoes breeding around their houses.

The entomologist observed mosquitoes breeding in cut bamboo around houses located adjacent to a Project camp. In response, the entomologist demonstrated to the local community how to cover cut bamboo with moss and other vegetation to prevent water ponding and reduce access to the bamboo by mosquitoes.

The community embraced this idea and now sticks of cut bamboo around the Kobalu Camp area are covered with moss to reduce mosquito breeding.

Cut bamboo covered with vegetation to discourage mosquito breeding

Potable water safety remains a high priority on the Project and recent assessments show that camps are effectively implementing potable water safety controls.

Camp hygiene and sanitation

Heating, ventilation and air-conditioning systems remain high priorities on camp and vessel hygiene and sanitation assessment programs. Maintenance, cleaning and air quality monitoring of these facilities within accommodation quarters is paramount due to the risk of transmission of respiratory illness within shared accommodation. An Upstream camp accommodation risk assessment was completed this quarter and mitigation measures, such as increasing ventilation flow combined with cleaning and disinfection procedures, were recommended to reduce the risk of respiratory transmission in large shared bunkhouse type accommodation.

Vector control

This quarter, the first dengue case was reported on the Project. Investigations revealed the dengue case was most likely acquired outside of Papua New Guinea, based on the onset time of symptoms and arrival time in country. The person came from a known dengue area prior to arriving in Papua New Guinea. Quick response diagnosis and treatment, combined with vector control at the worksite, reduced the risk of on-site transmission.

1 A non-detect means chemoprophylaxis is not detected during testing.

Vector surveillance by contractors in the Highlands continues to find the malaria (anopheles) vector mosquito and the dengue vector mosquito around camp and worksite locations. To minimize the risk of infection of Project workers, effective vector and pest control management practices are being implemented in this area. For example, routine surveillance detected an increase in adult mosquitoes at one Highlands camp and in response a fogging program was immediately commenced. Other measures such as routine residual spraying for pests aim to prevent infestations by reducing pest populations before they become established.

Clinical operations

As the Project's construction workforce expands, the need for basic health care and emergency response increases. Similar to food supplies, logistics for medical supplies to remote Highland camps remain a challenge. A review of the medical cold supply chain was conducted this quarter and improvements implemented.

Industrial hygiene

Welding and surface coating operations were highlighted during health program audits this quarter. With increasing pipeline construction activity in the Upstream and offshore areas, hearing conservation, heat stress and respiratory protection risks were also investigated.

Workers, such as those involved in abrasive blasting operations, follow a strict heat stress program including regular work breaks and water intake breaks, based on ambient temperature, humidity and other environmental factors.

Plate 7.5 – Worker conducting abrasive blasting

General illness events

This quarter the Project recorded its first illness outbreak for the year, which was related to chicken pox and isolated to a small group of workers from India. The Project Health team worked closely with the contractor setting up an Incident Response team and implementing measures to contain the spread of the virus. The Incident Response team was also charged with establishing a vaccination program for at-risk workers.

In addition, a single mumps case was reported this quarter in an expatriate worker, raising the total mumps cases to two for the Project this year. The chicken pox outbreak along with the dengue and mumps cases have prompted a review of the Project's expatriate pre-travel and screening requirements.

Work-related medevacs and medical transfers

Medevac activity increased slightly this quarter, from an average of five per month in the previous quarter to seven per month. This increase can be directly attributed to the increased number of personnel engaged in construction activity across the Project. Medical transfer and referral activity remains high with a total of 87 transfers and referrals recorded, up from 55 recorded in the previous quarter. Most of the medical transfer and referral activity was located at the LNG plant site.

Medical emergency response drills were conducted by contractors and a multi-casualty drill was conducted in the Highlands area, prompting some improvements to medevac procedures. One key learning was a need to plan for emergency medevacs direct from Papua New Guinea's Highlands to Australia.

7.3.3 Other strategic initiatives

The Project's objectives this quarter were the addition of tuberculosis diagnosis equipment to Project clinics and integrating clinical services, with both objectives in their final stages of implementation. There was an increased community health focus around Project camps this quarter, which included additional awareness-raising and training for national workers on the HIV and Sexually Transmitted Infections and participation in World AIDS Day events across Project sites.

7.4 Safety management

A fatality occurred during this quarter when a worker for the Komo Airfield contractor died from injuries sustained in a trench collapse. The Project and Esso Highlands Limited express deepest sympathies to the family, friends, and fellow workers of this crew member. Appropriate authorities were notified and an investigation into the causes of the incident was completed. As a result of the investigation, specific measures were implemented to address the identified causes.

The Safety Champions initiative, which was launched in the third quarter 2011, to reduce the risk of safety incidents continues providing Papua New Guinean workers with training so they may positively influence safety in the workplace. Approximately 125 personnel were trained during this quarter, bringing the total number of workers who have graduated since September 2011 to 175.

Plate 7.6 – Safety Champions at the LNG Plant – *Nobody Gets Hurt*

Plate 7.7 – Field Safety in Uncontrolled Work Environments training

The Project has also implemented an enhanced process to increase its awareness of higher potential incidents. The process examines incidents based on the most credible worst-case scenarios, recognizing that sometimes 'luck' prevented the consequences from being more significant. This simulates in-depth analysis of higher potential incidents during investigations and provides insight for identifying focus areas to eliminate higher potential incidents.

Also during the quarter, senior executives from the Project and its contractors visited all major Project locations to host 'fireside safety chats' with the Project workforce. Held both in the field and in office environments, these meetings are proving popular as they allow the workforce to experience the strong commitment of senior management to the Project's safety principles, and give workers the ability to offer direct and candid feedback to management.

Training continues for field-based line managers and SSHE personnel, with specialist trainers visiting each worksite to conduct First Line Supervisor SSHE training. This training aims to familiarize supervisors and workers with the Project's SSHE management system and help them understand the importance of their role in its successful implementation. Approximately 70 people were trained during this quarter, with over 375 personnel trained to date on the Project.

The Project continues providing incident management training to its line managers and SSHE personnel with over 250 personnel trained to date. Training covers all aspects of the Project's incident management system, with a focus on incident investigation and root cause analysis.

During the quarter, the Project conducted Field Safety in Uncontrolled Environments training for more than 30 remote field personnel. This training addresses the unique hazards and challenges associated with working in some of the most remote and least known regions of the world. Training participants included surveyors, archeologists, botanists, and the Cultural Heritage team who are all engaged in pioneering work. Approximately 225 personnel have been trained to date.

7.4.1 Leading indicators

As illustrated in Figures 7.6 and 7.7, the Project is achieving an ongoing positive safety trend through core safety processes (such as Job Safety Analyses and Observation and Interactions) which increase safety awareness and engage workers in hazard management on a daily basis.

Figure 7.6 – Job Safety Analysis trends[2]

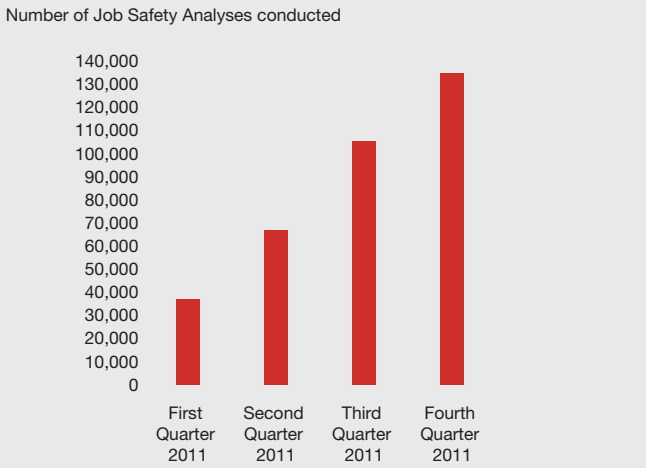
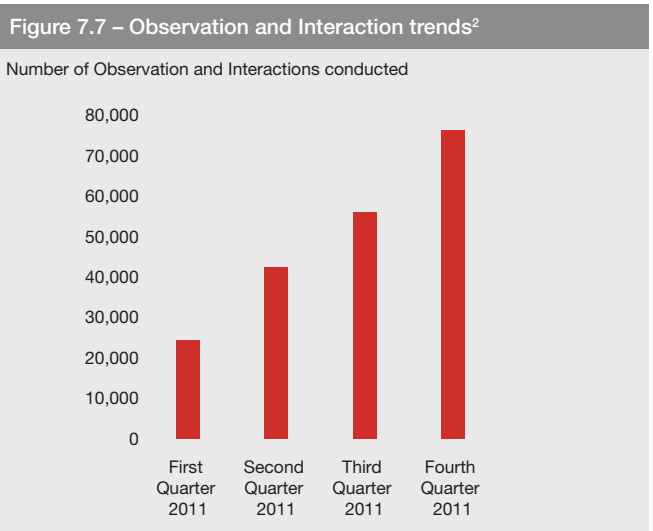


Figure 7.7 – Observation and Interaction trends[2]



7.4.2 Lagging indicators

The Project's Total Recordable Incident Rate continues to improve (as shown in Figure 7.8), while the Lost Time Incident Rate remains unchanged from previous reporting periods. At the same time, the Project's work hours are significantly increasing with more construction activity, as illustrated in Figure 7.9.

Figure 7.8 – Trend analysis[2]

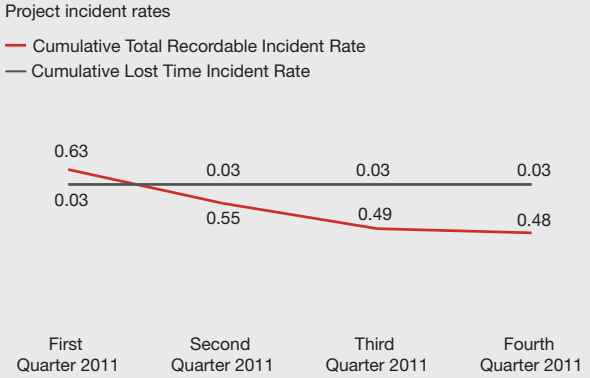
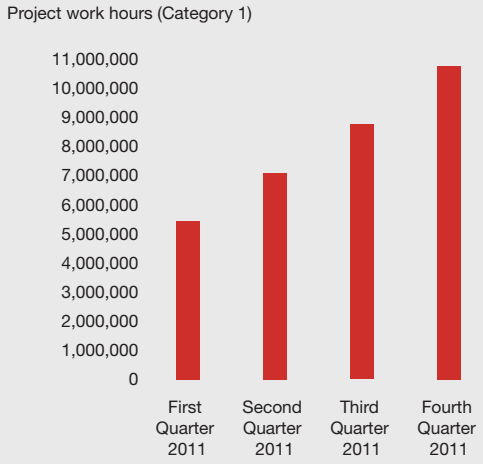


Figure 7.9 – Project work hours[2]



NOTE: Project-to-date work hours totalled 46,559,255.

7.5 Worker welfare and conditions

As the number of Project workers approaches its peak, the Project aims to maintain high standards of recruitment, training and fair treatment in the workplace, along with a high standard of worker accommodation.

7.5.1 Camps

Kaiam Camp 2 reached capacity during the quarter and is now fully operational. Mirroring the facilities at Kopi Camp 1, the Camp accommodates more than 1,000 people who are supported with full catering, laundry, maintenance and security services.

Roads allowing access to both Kopi Camp 1 and Kaiam Camp 2 are open, but heavy rains limited access to the camps during the quarter.

The Socioeconomic team monitored six camps during the quarter, including three Lanco camps in Komo. The team also conducted monitoring of worker accommodation conditions on the pipeline installation and support vessels. In Komo, efforts to maintain high standards of camp accommodation include expanding the range of food available to the diverse multicultural workforce. Additional recreational facilities, such as a billiard table, tennis tables, card table and large screen television, were also installed.

7.5.2 Labor and worker conditions

To promote positive labor relations, the Project adopted an Industrial Relations strategy during the quarter which encompasses: worker engagement mechanisms; worker communication; conflict handling procedures; pay processes; Lanco challenges; effective supervision; cultural diversity management; and strike handling procedures.

A gap analysis was subsequently conducted across the Project to determine where efforts are most needed to ensure effective processes are standardized. Implementation and monitoring of the strategy will occur in accordance with the Project's Labour and Worker Conditions Management Plan.

The worker representative committee, which was formed by the Hides Gas Development Corporation, held a meeting during the quarter which resulted in a salary review for Hides Gas Development Corporation employees. The outcome is to increase the pay rate for Hides Gas Conditioning Plant and Hides Wellpads contractor employees who will now receive an increased rate, based on their performance in the areas of safety, environment and attendance.

Increased subcontractor representation has boosted the LNG Plant worker committee, with representatives granted regular time from work to participate in the committee. The worker committee is being reviewed to expand the model across the Project with other contractors.

During the quarter, two Lancos that hire local labor for the Project were monitored by the Socioeconomic team. Another two Lancos received training about the Labour and Worker Conditions and Camp Management Plans.

2 Data adjustments may be reported by contractors after the Report is released, and as such safety data may be refined between one report and the next.

8 Conformance

The Project manages conformance with the environmental commitments outlined in the ESMP using verification, monitoring, assessment and audit systems. These measures enable the Project to identify and effectively manage areas for improvement, and to share success and lessons learned across all worksites.

8.1 Verification

The Project's Field Environmental team continued verification at worksites during this quarter. The team includes field leaders, field environmental advisors, a trainee and an archeologist who are involved in daily and weekly inspections, scheduled meetings and awareness raising workshops and training sessions with contractors. Their field observations and non-conformances, are reported in the Project's Information Management System. This quarter, a dedicated, cross-Project resource was added to the Field Environmental team to monitor and provide advice on target areas such as waste management, reinstatement, and weeds and plant pathogens. This role provides a central source of expertise and the ability to share lessons learned across the Project.

At the LNG plant site, an environmental internship program was launched during the quarter. The annual program provides the opportunity for three internship students to work at the LNG plant site and is conducted in partnership with the University of Papua New Guinea and the Pacific Adventist University. The program will give these students first-hand experience with implementation of the ESMP and enable them to participate in a collaborative research project, both of which can be credited towards their study. This program will also provide trained candidates with the possibility of future employment with the Project.

8.2 Monitoring

In-field training continued this quarter on the Project's Environmental Verification and Monitoring Manual. The Manual provides detailed procedures to communicate consistent monitoring methods across the Project, and is regularly updated to address identified issues and share lessons learned.

Contractors are also using their individual environmental management systems to meet the monitoring requirements of the ESMP and the Environmental Monitoring Plan. Results of monitoring programs undertaken this quarter are outlined in the following sections.

8.3 Assessments and audits

In November, the IESC conducted its fifth site audit, visiting worksites and meeting with Project workers and members of Project-impacted communities to monitor conformance with the Project's environmental and social commitments. The IESC findings will be published on the Project website, www.pnglng.com, when completed.

In the interim, the IESC has released a report from its fourth site visit conducted in July 2011 and this is available on the Project website in the environmental and social reports section.

Contractors supplement regular Project inspections and verifications with their own independent audits and assessments. This quarter, the Upstream Infrastructure contractor audited environmental control plans including environmental rehabilitation, raw materials, weed and plant pathogen management, cultural heritage and water quality.

Meanwhile, the Onshore Pipeline contractor's senior management undertook an internal audit to assess implementation of ISO 14001, the international environmental management systems standard, on the Onshore Pipeline portion of the Project. A Dupont consultant also visited the Onshore Pipeline contractors' Kaiam Camp 2 waste management area and noted their waste management facilities as being an industry benchmark.

The LNG Plant and Marine Facilities contractor completed a second compliance audit of all subcontractors with 20 observations recorded, with all but two closed at the end of the quarter. The LNG plant site was also externally audited with no major findings reported.

This quarter, joint site inspections involving Project, contractor and subcontractor representatives included the interim waste storage area, wastewater treatment plants, medical clinic and construction areas at the LNG plant site, as well as various sites for the onshore pipeline works.

8.4 Incidents, non-conformances and corrective action

8.4.1 Incident summary

During this quarter, there were no serious environmental incidents (greater than Severity Level 0) requiring notification to the IESC/Lender Group or the Papua New Guinean Department of Environment and Conservation. However, there were 113 environmental incidents (less than Severity Level 0) reported. The reported incidents were primarily spills of hydrocarbon and two wastewater spills. None of the hydrocarbon spills were over 50 litres and the spill rate in November was the lowest rate for the Project since January 2010.

All incidents are recorded and investigated to a level appropriate to the severity so that causal factors can be determined and corrected. Figure 8.1 illustrates incidents classified by severity, while Figure 8.2 groups incidents by their cause.

Figure 8.1 – Environmental incident summary[3]

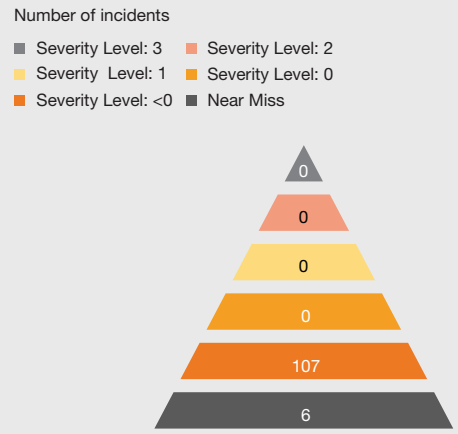
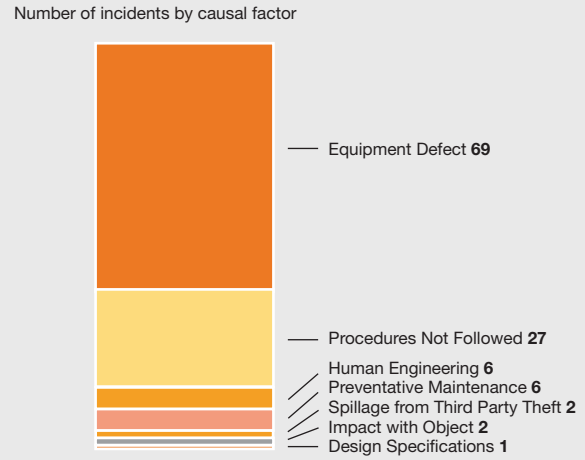


Figure 8.2 – Environmental incident and near miss causal factors[3]



8.4.2 Non-conformance and field observation performance

Recording non-conformances and field observations is an integral part of ongoing environmental performance verification efforts. Field observations are recorded if a contractor inadvertently fails to meet the requirements of environmental management plans (negative field observation) or if a contractor exceeds the environmental requirements of the environmental management plans (positive field observation). A non-conformance is an environmental lapse that is deliberate, or is a repeat offence that increases the level of risk or harm to the environment. This quarter, the results of 78 site visits were recorded across the Project, during which 182 field observations and eight Level I non-conformances were raised. A decrease in field observations, compared with 255 recorded in the third quarter 2011, coincides with the focus on proactive efforts to quickly rectify potential environmental issues as they were identified. A summary of all non-conformances and field observations is outlined in Figure 8.3.

A total of 18 positive field observations were made this quarter. Many positive field observations related to the rapid response by contractors to Project findings regarding erosion and sediment control and spill prevention. In particular, the Upstream Infrastructure contractor was noted for good erosion control structures at the Hides Waste Management Area. The Onshore Pipeline contractor was commended for extra efforts installing silt fences along water bodies.

Most field observations and non-conformances recorded this quarter related to waste, erosion and sediment control, spill prevention and response, water and reinstatement. The majority of these were closed within the targeted 30-day maximum timeframe. The Project is working closely with each contractor to proactively address areas of risk identified by recurrent field observations and non-conformances. This is aimed at reducing the level of risk and preventing environmental incidents. The closure status for non-conformances and field observations is shown in Figure 8.4.

Figure 8.3 – Environmental non-conformance and field observation summary[3]

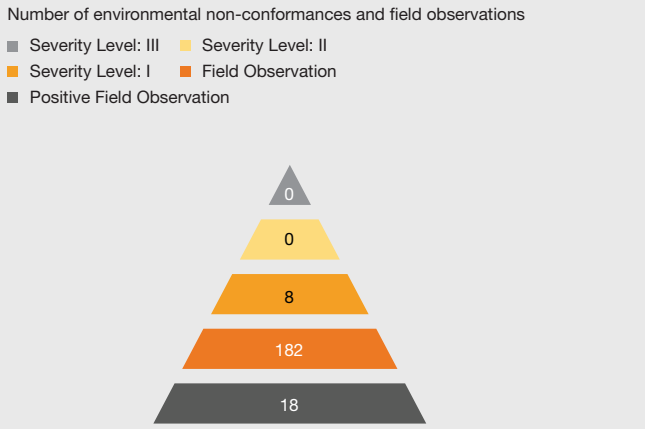
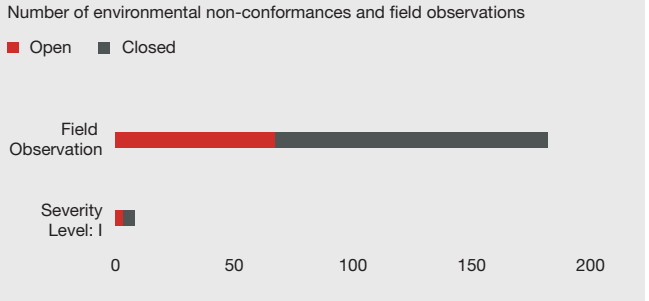


Figure 8.4 – Environmental non-conformance and field observation closure status[3]



3 Data adjustments may be reported by contractors after the Report is released, and as such safety data may be refined between one report and the next.

9 Pollution Prevention and Abatement

The Project manages its activities with the aim of minimizing pollution to air, water and land while promoting recycling.

9.1 Air emissions

Project-related activities generate air emissions in the form of dust from exposed soils and equipment movement, exhaust gas from machinery and incinerator operation, and greenhouse gas emissions from fuel combustion. During dry periods, dust control measures were employed at several worksites. For example, the Upstream Infrastructure contractor used water spray trucks supplied with Project-dedicated well water. Water trucks were also used at the LNG Plant and Marine Facilities and the Hides Gas Conditioning Plant and Hides Wellpads contractors' sites to control dust. During the quarter, rain persisted in areas surrounding the onshore pipeline works, so there was little requirement for dust control measures at these worksites.

Reducing vehicle speed is key to reducing dust. Light vehicles on-site are monitored via speed sensors that alert drivers if they exceed the Project speed limit. The requirement to follow vehicle speed limits was reinforced this quarter through environmental toolbox talks and driver training.

Meanwhile, dust from earthwork stockpiles was managed through progressive reinstatement and revegetation where possible (see *Section 10.5 Reinstatement*).

Although dust control measures are implemented on an ongoing basis there are periodic, localized instances when dust is at elevated levels.

Project contractors also continue their efforts to minimize exhaust emissions from machinery operations. For example, the LNG Plant and Marine Facilities contractor use buses to transport crews to worksites, the canteen and camps, and limits the number of vehicles on-site through vehicle pooling. Through toolbox talks, Upstream Infrastructure contractor personnel are encouraged to report machines with excessive emissions (such as black smoke) so that these may be removed from work until fixed. In addition, contractors are predominantly using new equipment and making sure it is regularly maintained to reduce emissions.

As part of managing air emissions, this quarter the Project undertook a validation program of incinerator operations, which included developing a Construction Waste Incinerator Standard Operating Practice drawing on experience gained within the Project. As well as disseminating the Standard Operating Practice among contractors, posters in English and Tok Pisin were placed at all incinerators to raise awareness. The location of incinerators Project-wide was also mapped to help manage resources.

At the HGCP site, commissioning of the first of two planned construction waste incinerators was completed. The second incinerator was ready for commissioning by the end of the quarter.

The interim use of three drum burners continued during the quarter while the construction incinerators and associated electrical, mechanical and water systems were installed.

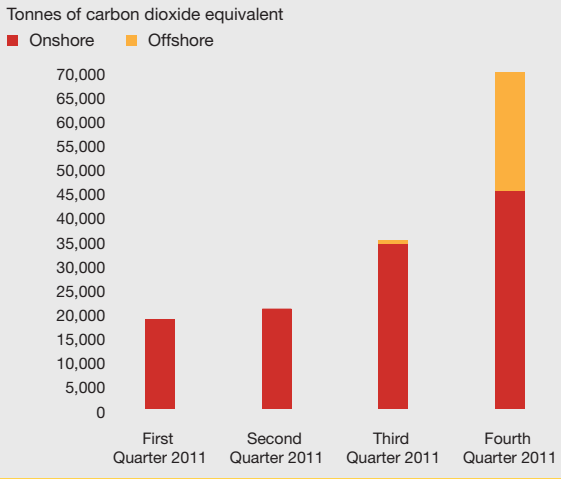
The Onshore Pipeline contractor has implemented a service agreement with the Oil Search Limited Gobe Production Facility to incinerate waste as an interim measure pending the arrival of spare parts to repair the Gobe Camp 3 incinerator. A joint inspection of the Oil Search Limited incinerator at the Gobe Production Facility was undertaken by Project and contractor environmental personnel to ensure it met Project requirements. A worker for the Onshore Pipeline contractor was stationed at the incinerator to manage ash resulting from the contractors waste. Collected ash is being stored in drums at the Gobe Camp 3 waste management area.

Greenhouse gas emissions rose this quarter in line with increasing construction activity, in particular, as fuel use in offshore marine works increased. Greenhouse gas emissions are calculated based on direct fuel use within the Project. Indirect sources, such as purchased electricity, are not included. Greenhouse gas emissions from aviation and marine transport are calculated using transport conversion factors, and all other Project fuel conversion factors are based on stationary sources. Marine operations use automotive diesel, so emission factors are lower than the heavier marine fuels typically used in shipping.

The Project's onshore and aviation fuel use equated to a greenhouse gas emissions value of 45,090 tonnes of carbon dioxide equivalent. This quarter also recorded the second calculation of marine operations, contributing approximately 24,557 tonnes of carbon dioxide equivalent. Marine operations occurred during this quarter and are planned for the first quarter 2012, so it is expected that emissions will trend upwards accordingly.

Figure 9.1 shows the increase of Project-related greenhouse gas emissions.

Figure 9.1 – Greenhouse gas emissions per quarter



NOTE: Emissions calculations are based on the Australian Government Department of Climate Change and Energy Efficiency, National Greenhouse Accounts Factors, July, 2011.

Atmospheric air monitoring continued at the LNG plant site, with four designated areas monitored for sulfur dioxide and nitrogen dioxide in December. All sites were well below the air monitoring criteria levels adopted for the Project.

An Ambient Air Quality Modeling Report was also completed for the Hides landfill based on new incinerator specifications. The modeling concluded that all ambient air quality specifications – from the International Finance Corporation, Project Environmental Impact Statement and United States Environmental Protection Agency National Ambient Air Quality Standards – for carbon monoxide, nitrogen dioxide, particulate matter (PM10), sulfur dioxide and lead would be met at the landfill boundary. In addition, the Report stated that other ambient standards for hydrogen chloride, mercury, cadmium, dioxin and furan would also be met at the landfill boundary.

9.2 Noise and vibration

Noise monitoring is required in the vicinity of semi-permanent accommodation camps, while vibration monitoring of airblast overpressure is required where blasting is undertaken near sensitive noise receptors.

Noise levels at all monitored facilities were under the Project's noise level guidelines for industrial/commercial noise levels and residential/educational/institutional levels this quarter, with the exception of Komo Main Camp. Higher noise levels recorded at the Komo Main Camp during this quarter and in the third quarter 2011 were found to be attributable to residential activities, not construction. The Project is modifying monitoring locations and methods to enable better differentiation between construction and residential noise sources.

Contractors continue working in partnership with the Project to identify and manage noise and vibration at construction sites. For example, this quarter the Upstream Infrastructure contractor worked with the Project's Socioeconomic team in developing sensitive receptor monitoring locations at the HGCP worksite. Noise monitoring equipment also arrived on-site.

Project-wide, there were no unresolved noise grievances at the end of the quarter.

9.3 Waste management

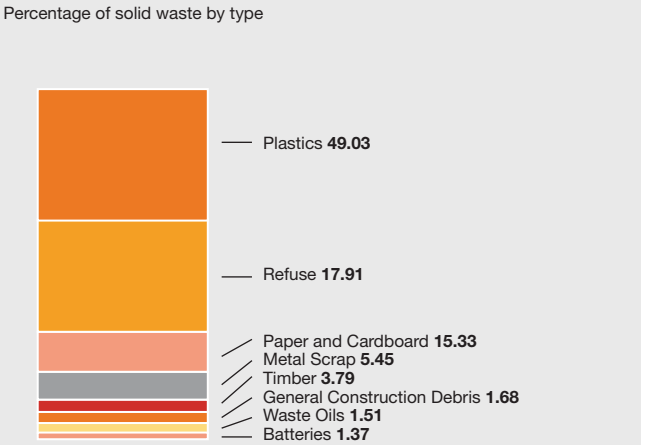
Following the assessment of recycling providers in the third quarter 2011, the Project explored opportunities for recycling plastics, tires and paper/cardboard with recycling companies in Papua New Guinea and Australia. Potential recycling providers are now developing shipping and processing proposals for Project consideration.

Progress was also made on developing a Project-wide waste register. One of the many functions of the register will be comparing projected landfill waste volumes with actual volumes, which are currently stored for landfill. The register will also provide information about volumes of potentially recyclable materials for use in discussions with recycling companies.

The Upstream Infrastructure contractor continued investigating reuse and recycling options this quarter, which included completing a due diligence assessment in Madang and Port Moresby for the potential reuse of waste oil. The contractor is also investigating the use of a biologically active absorbent material for treating hydrocarbon-contaminated soil which will be trialed early in 2012.

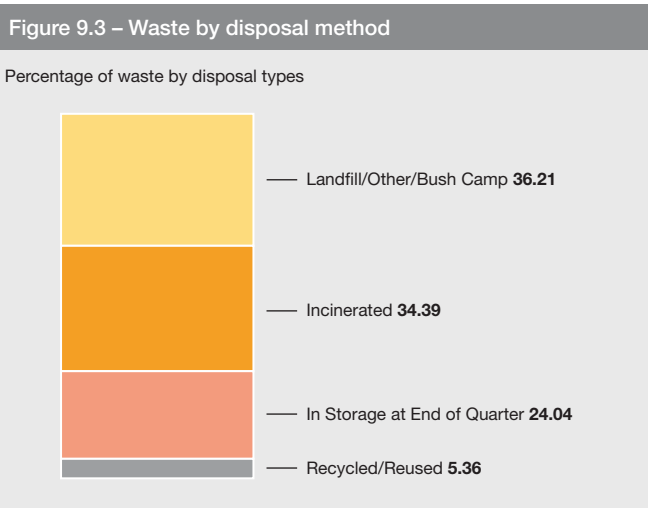
Project-related waste materials generated this quarter were predominantly plastics, paper and cardboard, and general camp refuse as illustrated in Figure 9.2. Figure 9.3 illustrates disposal methods for solid waste during the quarter.

Figure 9.2 – Solid waste by type



NOTE: The following waste types have a value of less than 1%: Timber – Clearing and Grubbing Waste [0.09%], Oily Rags and Used Clean-up Materials [0.70%], Empty Containers (Non-Restricted) [0.39%], Ash (Restricted) [0.37%], Tires (Whole) [0.35%], Ash (Non-Restricted) [0.31%], Oil and Chemical Contaminated Soil [0.27%], Filters (Restricted) [0.23%], PPE and Clothing [0.10%], Empty Containers (Restricted) [0.08%], Medical Waste [0.07%], Glass [0.06%], Paint Waste [0.05%], Filters (Non-Restricted) [0.02%], Tires (Crumbed) [0.01%], Electrical Goods [0.01%], Printer Cartridges and Toner [0.005%], Insulation [0.003%],Chemical – Spent/Unused/ Contaminated [0.002%], Pigs and Other Parts [0.001%], and Fluoroscent Tubes [0.001%].

Figure 9.3 – Waste by disposal method



This quarter, 199 Upstream Infrastructure contractor personnel received waste management training, and the Project recorded positive field observations for this contractor with regard to good housekeeping and the appropriate separation of wastes. As part of the contractor's commitment to effective waste management, they placed environmentally-themed stickers on 89 on-site vehicles during the quarter.

Plate 9.1 – Environmental messages on site vehicles

In addition, Upstream Infrastructure contractor representatives visited the LNG plant site waste management area and landfill, reviewing procedures and design, and sharing lessons learned about interim waste storage and the start-up of waste management facilities. The visit will assist in the establishment of the Hides Waste Management Facility.

Construction work at the Hides Waste Management Facility this quarter included stormwater liner installation and piping sediment retention pond completion. Work is now underway on perimeter fencing and the driller's laydown area.

Meanwhile, the Hides Gas Conditioning Plant and Hides Wellpads contractor completed a purpose-built Waste Segregation Area at the HGCP site for waste collection, sorting, segregation, bunded storage and incineration. A dedicated waste management officer is assigned to address HGCP waste needs.

By the end of 2011, the Kaiam Camp 2 Waste Processing Unit became fully operational. Crushing equipment, including an aerosol crusher, a filter crusher and a drum crusher are reducing the volume of waste received by up to 70 percent. Shredding and tire debeading is also significantly reducing the volume of tire storage, while crushing and compressing of metal shavings and other loose scrap metals items is progressing.

At the end of this quarter, the Onshore Pipeline contractor had operational waste management areas in place at all its camps. These areas are self-sufficient in treating domestic waste, while all recyclable waste is sent to the new Waste Processing Unit at Kaiam Camp 2 for processing.

Supervisors for some of the Onshore Pipeline contractor crews dedicated a crew member to collect and pack wastes including food waste, end caps and plastic wraps from their crew, which resulted with an improvement in the amount and quality of waste received for processing. Improved waste segregation and waste management in kitchens also occurred this quarter following a series of waste-focused toolbox talks on the implementation of a waste management color coding system, general housekeeping and hazardous waste, such as detergent cans and cleaning sprays.

Waste generated by the Offshore Pipeline contractor is largely disposed of in the LNG Plant and Marine Facilities contractor's landfill. While waste from the LNG Plant landfall and Omati River landfall sites is segregated on-site and delivered to the waste management area for further treatment and disposal or recycling. Food wastes from the pipe lay barge are incinerated onboard, and general waste and scrap metal are sent onshore for further treatment and disposal or recycling. This quarter, a waste compactor was ordered for the pipe lay barge to reduce the space taken up by metal shavings from the ends of each section of pipe. Meanwhile, hazardous waste such as contaminated oily rags and filters were stored and shipped out of Papua New Guinea for appropriate disposal.

At the LNG plant site, both the construction and operations landfills were completed, a waste management contract was awarded and workers received relevant training. Operation of the construction landfill began late in the quarter and included the use of a drum compactor, plastic bottle shredder and plastic compacter. The transfer of inert wastes from the interim waste storage transfer facility to the landfill area is 95 percent complete, while scrap metal, used batteries and cable/wires are sent to an approved Papua New Guinean recycling facility. An aerobic biodigester is processing organic food wastes from all camp kitchens on the LNG plant site to compost material.

Plate 9.2 – LNG Plant and Marine Facilities contractor plastic container shredder

Plate 9.3 – LNG Plant and Marine Facilities contractor cardboard baler

Plate 9.4 – Shredding of pipe end caps at Kaiam Camp 2

Plate 9.5 – Metal shavings being compacted into drums at Kopi Logistics Camp

9.3.1 Wastewater

By the end of the quarter, a total of 29 wastewater treatment plants were deployed throughout the Project, of which 26 were in use, while the others were in storage or requiring maintenance or commissioning.

Verification activities and field observations from previous quarters identified difficulties in consistently maintaining wastewater treatment plant operations in conformance with Project requirements. This trend prompted the Project to commence an in-depth systematic review of measures to assist and support contractors with improving wastewater operations.

As part of this review, posters and educational materials were distributed to all Project sites to raise wastewater awareness. Use of standard operating procedures and field test kits for water analysis was also expanded based on successful practices already employed within the Project. Systematic verification of wastewater operations will continue into the first quarter 2012, with a coordinator assigned to monitor wastewater performance across the Project.

Contractors are also closely monitoring wastewater treatment plants. For example, the Upstream Infrastructure contractor raised an internal non-conformance report when in-situ values for total coliform bacteria and *Escherichia coli* were found to be elevated. This prompted an investigation of plant operations and as a result chlorine dosing was modified. In-situ testing was increased to a daily frequency during this period until results were stable, and then reduced to a three to four day frequency.

Sewage generated by the Offshore Pipeline contractor from the LNG Plant landfall site was collected and brought to the LNG plant site sewage treatment plant for further treatment and disposal this quarter. Sewage onboard the pipe lay barge was treated onboard utilizing a MARPOL (the International Maritime Organization's Convention for the Prevention of Pollution From Ships) approved sewage treatment system.

9.4 Hazardous materials

The Project aims to avoid using hazardous chemicals and materials, particularly those that are subject to international bans or phase-outs. During the quarter, no materials subject to bans or phase-outs were reported to be on any Project site.

In response to a near miss of a contained small spill of polyurethane coating, the Offshore Pipeline contractor fabricated drip trays and installed barricades to further reduce the risk of reoccurrence.

Plate 9.6 – Biodigester at the LNG plant site

Plate 9.7 – Waste segregation onboard an offshore pipeline vessel

Contractors continue identifying ways of minimizing the use of hazardous materials. For example, the Hides Gas Conditioning Plant and Hides Wellpad contractor has selected a highly biodegradable hydraulic fluid from naturally regenerative resources for use in cranes.

Meanwhile the Project undertook an environmental assessment of selected industry drilling fluids including foams, water based muds and non-aqueous drilling fluids. Factors such as product constituents, water solubility, biodegradability and bioaccumulation were reviewed and assigned a score, facilitating a comparative ranking of products. Products were then selected based on ranking and fed into a series of Drilling Fluids Management Risk Assessments, which appraised multi-disciplinary aspects of the fluids in areas such as health, safety, technical suitability, costs and logistics.

9.5 Spill prevention and response

Contractors continued training on spill prevention, refueling procedures, the use of spill kits and spill response measures. A spill response drill was also conducted by the Offshore Pipeline contractor this quarter.

In November, the Upstream Infrastructure contractor achieved its best spill performance since the start of the Project, testifying to the success of the *Spills Nogat!* campaign launched in the third quarter 2011. The campaign reinforced spill prevention and response through one-on-one spill prevention coaching, and implementing spill prevention training at pre-start inspections, along with placing *Spills Nogat!* commitment billboards around worksites. The follow-up to this campaign included: spill kit inspections, pre-start meeting awareness sessions on secondary containment; auditing mobile lighting plants for bunds, designated champions to continue to drive improvement, and the distribution of drink coolers displaying the *Spills Nogat!* message.

As construction progressed this quarter, the Hides Gas Conditioning Plant and Hides Wellpads contractor's field environmental advisors observed construction personnel occasionally using spill kits as a handy source of cleaning materials for routine construction and maintenance activities. This has the potential to lead to spill kit contents being depleted to the point where a kit may not actually be useable when it is needed most – during emergency spill response.

To address this, the following measures were implemented:

- On-site stores now maintain an abundant supply of hydrocarbon absorbent pads and other materials for ready access and use by workers conducting routine construction and maintenance tasks.
- Spill kits are sealed with tape and initialed to act as a quick and easy indicator of whether the kit has been accessed or opened. If a seal is observed to be broken during routine site inspections, then an inventory of the kit contents is completed, and contents are replenished as necessary.
- Spill kit training was conducted and, in October alone, 71 personnel completed the training and were competency assessed.

To ensure the effectiveness of these measures, the Hides Gas Conditioning Plant and Hides Wellpads contractor implemented an additional Performance Indicator to verify spill kit contents. Tracking against this Performance Indicator is reported monthly.

Plate 9.8 – Fuel farm showing drip trays, bunding and spill kits

9.6 Dredging and offshore trenching

Dredging was undertaken at Omati this quarter to maintain access for offshore pipeline works. Dredging operations were conducted in accordance with the Papua New Guinean Department of Environment Omati River Dredging Approval. Two dredge vessels worked during the period, however, by the end of the quarter only one remained for maintenance work. The Offshore Pipeline contractor undertook monitoring to validate that dredged material disposal did not have an adverse impact on the Omati River. The Project's marine fauna observation procedure was also employed during dredging works and a survey conducted to assess compliance with Project procedures.

Meanwhile, trenching works in Caution Bay were completed this quarter, with the pipeline installed and the trench backfilled.

There were no unresolved grievances regarding dredging or trenching activities at the end of the quarter.

10 Biodiversity

The Project implements a variety of management and monitoring measures to ensure that any effects of construction activities on Papua New Guinea's valuable biodiversity resources are minimized. For example, the Biodiversity Strategy for the Upstream Project Area aims to maintain the ecological intactness of this area as a whole, to conserve priority ecosystems, to protect focal habitats and to account for residual impacts through a Biodiversity Offset Delivery Plan. The Project's performance will be measured against the developed Biodiversity Monitoring Plan.

10.1 Ecological management

During the quarter, pre-construction surveys (refer to *Section 2.7 Pre-construction surveys*) identified fauna including the Dwarf Cassowary *Casuarius bennetti*, Southern Cassowary *Casuarius casuarius*, Blyth's Hornbill *Rhyticeros plicatus*, Raggiana Bird-of-Paradise *Paradisaea raggiana*, Magnificent Riflebird *Ptiloris magnificus*, Palm Cockatoo *Probosciger aterrimus*, Papuan King Parrot *Alisterus chloropterus* and Papuan Lorikeet *Charmosyna papou*. In addition, the presence of the Eastern Long-beaked Echidna *Zaglossus bartoni*, Goodfellow's Tree Kangaroo *Dendrolagus goodfellowi*, Ifola Tree Kangaroo *Dendrolagus notatus* and New Guinea Pandemelon *Thylogale browni* were reported by locals.

As the Onshore Pipeline contractor progresses along the pipeline route from Gobe to areas north of Mubi, the Project is reinforcing the importance of worker awareness about potential biodiversity sensitivities. Specialized training this quarter focused on topics such as weeds management requirements, dieback concerns and general mitigation measures identified in pre-construction survey reports.

The Onshore Pipeline contractor also continued verification surveys of the planned versus actual construction footprint, covering Kilometre Point 173 to Kilometre Point 192. Some incidents of excursions outside the approved footprint were recorded with minimal biodiversity impact. To reinforce the importance of remaining within the approved footprint, information was disseminated to workers through means such as leaflets and toolbox talks, which highlighted lessons learned and stressed the need for compliance. Environmental induction training regarding working within Project footprints was also given to bush cutting crews.

Monitoring of a bat cave close to Tamadigi campsite revealed that an access route was mistakenly created towards the cave in an attempt to source water from the underground streams flowing into the mouth of the bat cave. A non-conformance report was issued for working beyond the footprint at the Tamadigi campsite and the area was barricaded to ensure no further disturbance from Project activity. Meanwhile, alternative water extraction sources are being sought.

The second annual monitoring of two Sandalwood *Santalum macgregorii* trees outside the border of the LNG plant site confirmed that there were no observable detrimental effects from Project activities. The surrounding mangrove was also intact and growing well.

In addition, the flow of watercourses along the onshore pipeline ROW from Kilometre Point 180 to Kilometre Point 176 remained undisturbed following construction activities. Where it was not feasible to leave a vegetated buffer zone at the bank of a watercourse, sediment erosion control measures were installed to ensure that sensitive Freshwater Crocodile *Crocodylus novaeguineae* habitat was not disturbed. A grievance was raised this quarter concerning damage to crocodile habitat at Kilometre Point 179. Upon investigation, including a site visit, the grievance was concluded as unfounded and was subsequently closed.

As part of the Project's Environmental Monitoring Program, sampling was undertaken of macro-invertebrates in the freshwater streams, creeks and rivers along the onshore pipeline route during the quarter. Macro-invertebrates are animals without a spine that are large enough to be seen with the naked eye and are useful indicators of water conditions. Sampling aims to characterize the natural variation in watercourse condition and to identify Project-related impacts. This quarter, 21 sites were sampled, with sites downstream of the ROW considered as potential impact locations, while sites upstream acted as control sites. Observations made at each sampling location included watercourse conditions such as flow, surrounding land use and stream morphology. The survey also covered in-situ and laboratory measurements of physical and chemical aspects (such as pH, temperature, dissolved oxygen, conductivity, turbidity, metals, suspended solids, hydrocarbons, oxygen demand, and phenols) to provide context for the biological assessment of watercourse health. Data from this survey will be compared with previous surveys to establish a baseline of natural ecological variability within upstream surface waters.

In the meantime, marine mammal observations in Caution Bay continue. One Whale Shark *Rhincodon typus* was observed during surveying for the offshore pipeline and a Flat Back Turtle *Natator depressus* was also observed at the cantilever bridge during Caution Bay jetty construction.

10.2 Quarantine management

This quarter, new washdown and office facilities were constructed at Motukea Island in accordance with Papua New Guinea's National Agriculture Quarantine and Inspection Authority specifications. Other activities included an inspection of the pipeline coating facility in Malaysia, along with pre-inspections of pipe laying vessels in Singapore by the National Agriculture Quarantine and Inspection Authority, which is supporting clearing and discharging of vessels carrying this equipment at sea.

Contractor adherence to the Project's Quarantine Management Program has been a focus during the quarter, including monitoring to identify the emergence of any trends. While rates of inspections and re-fumigation of imported consignments for the Project have been high, all consignments passed inspection from the National Agriculture Quarantine and Inspection Authority officers, with no significant delays. The Project is also in the process of updating the Quarantine Procedure to formalize definitions of non-conformances, near misses and incidents as well as the associated reporting and corrective action requirements for contractors and subcontractors.

10.3 Weed, plant pathogen and pest management

A small quantity of weeds identified at the Hides Gas Conditioning Plant and Hides Wellpads contractors' sites were removed this quarter. Active weeds management along the Gobe to Kantobo Road was also completed in the quarter by spraying the weeds with herbicide or through hand pulling and slashing techniques. Removed plants were incinerated on-site. Big Lip Rope *Merremia peltata* and the grasses *Paspalum* sp. and *Saccharum* sp. were observed in abundance, while other species included Bamboo Piper *Piper aduncum*, Leadtree *Leucaena* sp., Japanese Sunflower *Tithonia diversifolia*, Swamp Sedge *Cyperus* sp. and *Crassocephalum* sp. The Project's weed management activities succeeded in keeping the road edges clear from Priority 1 weeds this quarter.

Big Lip Rope *Merremia peltata* was removed from the list of Priority 1 weeds this quarter as it was found to be widespread in the Project area and believed to be acting as a soil stabilizer, as well as a creeping cover or pioneer plant, which prevents other weeds from becoming established.

The second annual weed survey was also conducted at the LNG plant site as part of a four-year program. It found that the vegetation composition on undisturbed areas remained the same as previously recorded.

Plate 10.1 – Priority 1 weed species Kans Grass *Saccharum spontaneum* is removed

Newly established weeds were present at road crossings installed across the drainage lines during construction activities and there was minimal growth of weeds along newly constructed drains, with some weed growth at the outfall of one of the sedimentation ponds. Site roads generally showed no weed growth apart from one location where Gamba Grass *Adropogon gayanus* and Milkweed *Euphorbia heterophylla* require some control.

The Onshore Pipeline contractor noted one new priority weed outbreak (Singapore Daisy *Sphagneticola trilobata*) on the access road near Kilometre Point 271. Preventive inspections were undertaken on the ROW sections from Kilometre Point 260 to Kilometre Point 278 where partial reinstatement was completed, particularly at road crossings, to ensure that there were no further outbreaks of Priority 1 weeds. Existing areas demarcated for weed control, such as Quarry 266, and the pipe laydown area at Kilometre Point 275, were maintained. The Project also undertook a review of priority weeds distribution and weeds management by the Onshore Pipeline contractor, with concerns raised about the colonizing effect of the Priority 1 weed *Ludwigia* sp. A report outlining the review outcomes and any follow-up actions will be available in the first quarter 2012.

Plate 10.2 a-b – Weed control operations and weed drying platform along the Kantobo to Mubi River Road

Soil samples were collected from Kilometre Point 4.5 to Kilometre Point 28 and Kilometre Point 60 to Kilometre Point 120 as part of dieback sampling at locations previously identified during the dieback aerial survey. The samples were sent to the Project dieback laboratory in Moro where analysis for the plant pathogen Cinnamon fungus *Phytophthora cinnamomi*, which causes dieback, will be performed.

Training on weeds management continued this quarter. For example, measures to prevent the spread of invasive weeds across defined weed management areas were highlighted to all Project supervisors during a stand-down day. Toolbox talks on weeds management were also provided to crews working around the Gobe, Kantobo and Tamadigi areas.

During the quarter, more than 2,000 washdown certificates were issued by the Upstream Infrastructure contractor. Meanwhile, the Hides Gas Conditioning Plant and Hides Wellpads contractor identified the need for a temporary washdown facility and drivers are hand washing their vehicles on hardstand areas while a permanent facility is constructed. The Onshore Pipeline contractor's washdown station at the Kantobo to Mubi River Road section was placed on hold due to a pre-existing weed infestation on the road. Meanwhile, the improved concrete-lined temporary washdown bay at the start of the Hides Ridge was commissioned to control the spread of priority weeds along this sensitive area.

10.4 Induced access

Induced access continues to be a fundamental consideration in the planning and execution of Project activities, with the control of access to new Project roads and reduction of potentially damaging non-Project activities being key objectives. Wherever possible, existing roads are utilized to facilitate access to Project construction worksites. During this quarter assessments of existing roads in the Hides, Angore and Benaria regions were undertaken to determine current access to the northern section of the onshore pipeline ROW corridor. The results of these assessments will form the baseline, to be used in assessing potential induced access for any additional roads requested by the Onshore Pipeline contractor.

During this quarter, only three short access roads (under 200 metres) were established to access the onshore pipeline ROW between Kilometre Point 183 and Kilometre Point 187, in the Gobe region. This section of the ROW was particularly steep and these access roads provided safe passage for heavy vehicular traffic to the ROW. Security checkpoints are maintained at main junctions linking onshore pipeline access roads to existing community roads. Monitoring of Project roads has shown that they are used exclusively by Project-related traffic.

The Upstream Infrastructure contractor continues its control of access to the Hides Wellpad Access Road through the use of worker inductions and identification cards.

Further work was undertaken by the Project during this quarter regarding the need for permanent vehicle access to certain aboveground facilities. This work concluded that vehicle access to mainline valve stations and pipeline cathodic protection facilities would support maintenance, security and emergency response for long-term operations. This review is ongoing, as is a review of certain sections of construction access roads to determine if permanent access may be advantageous.

Induced access and in-migration aspects will continue to be key factors in the decision-making process regarding operational access to the pipeline and aboveground facilities.

10.5 Reinstatement

During the quarter, the Upstream Infrastructure contractor identified plant species to be used for reinstatement. Locally sourced grass seeds were spread on banks above the new sediment retention structure at the HGCP laydown area and on one of the spoil stockpile sites, which was also subject to the planting of local species. Seed collection for later use in reinstatement continues, with dry conditions aiding this process. A hydromulcher, which spreads seeds in a liquid suspension, is being sourced to help with seeding on slopes.

Plate 10.3 – Site in early stages of reinstatement

The Onshore Pipeline contractor is monitoring preliminary clean-up activities and temporary erosion controls behind the ROW backfill crew. Preliminary reinstatement was completed between Kilometre Point 261 and Kilometre Point 278, involving topsoil being spread with brush laid over the top. Gaps were opened across the temporary crown over the pipeline to allow for the flow of water across the ROW and the crown of soil over the trench was also reduced in places. In addition, permanent diversion structures were installed along steep slopes. By the end of the quarter, final reinstatement was also undertaken between Kilometre Point 237 and Kilometre Point 240, a low-lying area which is subject to seasonal flooding. Six worksites were reinstated with brush and timber spread over the restored site to prevent vehicle access. For newly opened areas along the ROW, segregation of topsoil and subsoil continued, which will aid reinstatement efforts.

Plate 10.4 – A ROW section spread with topsoil as part of reinstatement

Plate 10.5 – Komo Airfield contractor on-site nursery

The Komo Airfield contractor expanded the on-site nursery to accommodate an additional 14,000 plants for use in reinstatement. Following this, tree planting was undertaken at the base of the Komo Main Camp batters, with 295 trees planted. Work also started on the establishment of a new nursery at Timalia and training was provided on nursery set up and management.

Following completion of works in part of the mangrove area for the LNG Plant landfall site, replanting was completed during the quarter (see *Case Study Three – Preserving the mangroves of Caution Bay*).

10.6 Biodiversity Strategy

The Project's Biodiversity Strategy aims to identify, avoid and manage potential ecological risks in the Upstream Project area during Project design and construction. The Project has formed a Steering Committee tasked with developing a Biodiversity Offset Delivery Plan detailing the steps required to offset biodiversity-related impacts and a program for doing so.

The Plan will be the outcome of an extensive consultation process with governments, non-government organizations and communities to inform the development of the Biodiversity Offset Delivery Plan, maintain transparency and distribute information to key stakeholders.

In October, a multi-stakeholder meeting was held over two full days at the Project's Port Moresby Construction Training Facility. This meeting provided an opportunity to update stakeholders on the status of the Biodiversity Strategy and Biodiversity Offset Delivery Plan and demonstrate how ideas received from stakeholders are being addressed, as well as present the guiding principles for the Offset Program. Another multi-stakeholder meeting is planned for 2012, once the Biodiversity Offset Delivery Plan has been finalized, to discuss its implementation.

Additional detail is included in *Case Study Four – Offsetting impacts to biodiversity*.

Case Study Three

PRESERVING THE MANGROVES OF CAUTION BAY

Preparations for constructing the Caution Bay shore approach and LNG Plant landfall site for the offshore pipeline have been carefully managed in balance with the need to preserve the area's important mangrove habitat.

Mangroves extend along much of the coast of Caution Bay and are dominated by the Red Mangrove *Rhizophora stylosa* with patches of smaller Grey Mangrove *Avicennia marina* plus a few individuals of other species, including Club Mangrove *Aegialitis annulata* and Yellow Mangrove *Ceriops* sp. They support a rich biota, providing habitat for fauna such as the widespread Crab-eating Water Snakes *Fordonia leucobalia* and Richardson's Mangrove Snakes *Myron richardsoni* and for the Mangrove Monitor *Varanus indicus*.

The mangrove areas of Caution Bay are an important resource for local people, used daily for fishing, collecting coconut and mud crabs and clamshells for consumption and gathering wood for fuel and building materials. Despite this, the mangroves of Caution Bay are predominantly intact with abundant saplings colonizing available spaces.

The Caution Bay shore approach and LNG Plant landfall site for the offshore pipeline passes through an area of mangrove and required clearing a corridor to allow for soil and timber stockpiles and equipment access. The corridor was 75 metres maximum width for a distance of 160 metres – 120 metres of Red Mangroves *Rhizophora stylosa* and 40 metres of Grey Mangroves *Avicennia marina*. The pipeline installation was completed, the trench backfilled and the corridor replanted with mangrove species. The exception is a 15-metre safety zone above the pipeline to prevent tree roots interfering with the buried pipe while allowing access to the pipeline.

Site surveys prior to clearing the site determined the extent and type of mangroves affected to ensure that their distribution pattern could be followed during replanting. In total, 7,200 square metres of Red Mangroves *Rhizophora stylosa* (which can tolerate high inundation and deep mud) are planted close to the water and 2,400 square metres of Grey Mangroves *Avicennia marina* (which prefer being further away from the shore) will be replanted. Mangrove seedlings were grown to an infant stage by the University of Papua New Guinea, and purchased from the University.

As a 30 percent seedling mortality rate is not unusual, additional seedlings were planted to take account of losses. More than 1,000 seedlings have been individually planted using a specially fabricated extension fixed to the amphibious swamp excavator, which ensured holes were dug in a pre-defined grid pattern.

Mangrove seedlings

Magnificent mangroves

Mangroves provide an important ecological link between the land and sea. Usually found growing in the area between the low and high tides, they act as buffers against erosion during severe weather, and their root systems stabilize sediment and behave as a natural nutrient filtration system. Mangroves also offer shelter and nursery and feeding habitats for many fish species and marine invertebrates, and produce significant quantities of leaf material which benefit estuarine food chains.

Mangroves adapt to their saline and watery environment in several ways. Their stilt roots hold them up in soft mud and elevate the trees above the water. When their lower roots are submerged they breathe through their trunk and prop roots (coming from branches) which are permeable to gases. They also use ultrafiltration to exclude salt, and any salt that is accumulated is stored in old leaves that shed.

Case Study Four

OFFSETTING IMPACTS TO BIODIVERSITY

The Project's Biodiversity Strategy aims to identify, avoid and manage potential ecological risks in the Upstream Project area during Project design and construction. The Strategy enables compliance with International Finance Corporation Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management, and aligns with the Papua New Guinean Government's National Biodiversity Strategy and Action Plan.

During construction, biodiversity-related aspects are managed through several environmental management plans, which are appendices to the Project's ESMP. These plans describe specific measures and mitigation commitments made in the Project Environmental Impact Statement supplemented by site-specific measures identified through pre-construction surveys. Dedicated field personnel inspect and verify that management and mitigation commitments are fulfilled.

Where impacts cannot be avoided or directly mitigated (residual impacts) they are to be offset in accordance with the Biodiversity Offset Delivery Plan.

Biodiversity Offset Delivery Plan

The Project Environmental Impact Statement predicted residual impacts to be overall habitat loss and direct effects on fauna and indirect impacts including potential introduction and spread of invasive species and enhanced access.

In 2011, the Project began developing a Biodiversity Offset Delivery Plan detailing the steps required to offset biodiversity-related impacts and a program for doing so. As a first step, an internal Steering Committee and Technical Advisory Group was formed comprising Project management and discipline specialists, management from the ExxonMobil Development Company functional organization, management and specialists from other stakeholder companies within ExxonMobil and specialty external consultants.

Extensive consultation has been undertaken to inform the development of the Biodiversity Offset Delivery Plan, maintain transparency and distribute information to key stakeholders. Informal discussions held in 2010 were followed by a formal program of meetings during 2011. To date, the Project has met, in many cases on several occasions, with more than 15 respected national and international bodies including Government representatives and non-government organizations.

In addition, a multi-stakeholder meeting was held over two full days in October at the Project's Port Moresby Construction Training Facility.

View of landscape in the Upstream Project area from Kobalu Camp

Biodiversity values

The biodiversity value of the Upstream Project area has been defined in the Biodiversity Strategy.

Kikori River Basin (Upstream Project area):

- Extensive intact forest.
- High floristic and faunal diversity.
- Endemic species.
- Unique assemblages of species.
- Species of conservation concern.
- Biodiversity of importance to local communities (resource, cultural, spiritual).

Priority Ecosystems (areas of particular biodiversity significance):

- Forests at Juha.
- Hides Ridge.
- Lake Kutubu.
- High altitude forest at Homa.

Focal Habitats (small or local scale habitat types of conservation value):

- Caves.
- Sinkhole swamps.
- Upland streams.
- Swamp forest.
- Stream refuges in unstable landscapes.
- Lowland rivers in stable landscapes.
- Off-river water bodies.
- Habitats and flora and fauna of cultural significance.

Case Study Four

OFFSETTING IMPACTS TO BIODIVERSITY

This meeting provided an opportunity to update stakeholders on the status of the Biodiversity Strategy and Biodiversity Offset Delivery Plan and demonstrate how ideas received from stakeholders are being addressed, as well as present the guiding principles for the Offset Program.

Another multi-stakeholder meeting is planned for 2012, once the Biodiversity Offset Delivery Plan has been finalized, to discuss its implementation.

Working collaboratively with Conservation International

In June 2011, the Project signed a collaboration agreement with the international non-government organization, Conservation International. During a first phase, Conservation International will provide recommendations, which will be utilized by Esso Highlands Limited to finalize the Biodiversity Offset Delivery Plan. Conservation International has proven success worldwide in biodiversity and conservation activities, along with expertise in Offset Program design, conservation financing and biodiversity monitoring. They will develop a technical rationale for offset selection, scope offset areas and activities, assess potential partners and scope offset implementation feasibility. Conservation International's team from Papua New Guinea brings the added benefit of local experience.

The finalized Biodiversity Offset Delivery Plan will provide a detailed technical rationale for what constitutes an offset and will be geared to creating and managing protected (conservation) areas, with satellite projects where necessary, addressing residual impacts that cannot be accounted for through conservation. A set of Guiding Principles have been developed for the Conservation Area Program.

As the Offset Program is likely to involve community-based conservation activities, there is synergy with the Project's strategic community investment work. As such, the relevant Project teams are working together to identify opportunities and constraints.

Biodiversity Monitoring Plan

Once the Biodiversity Offset Delivery Plan is finalized in mid-2012, it will be supported by a long-term Biodiversity Monitoring Program aimed at providing biodiversity-related information throughout the Project's operational phase.

Multi-stakeholder meeting

Pacific Baza *Aviceda subcristata*

Case Study Four

OFFSETTING IMPACTS TO BIODIVERSITY

Guiding Principles for Offset

Conservation priorities

Conservation should be carried out in the Project Impact Area or at least target the same biodiversity values impacted. Areas of priority are based on the Priority Ecosystems identified by the Project and prior work done by organizations in Papua New Guinea, for example, the Department of Environment and Conservation, The Nature Conservancy, the World Wide Fund for Nature and Conservation International, in the Kikori River Basin.

Conservation areas

The Project ultimately seeks to establish legally gazetted and community managed Conservation Areas under the Papua New Guinea *Conservation Areas Act 1978*, which allows for 'protection, development, land use activities, management and control of the conservation area'. Conservation Areas are the favored vehicles for conservation in Papua New Guinea.

Work within Organic Law on Provincial Governments and Local Level Governments

The precursor to legally establishing a Conservation Area is a conservation agreement with communities and supporting management plan documentation, which should be recognized by district (ward council), local level government and provincial government.

Support Kikori-wide program

Conservation Areas established through the Project's Offset Program will align with a Kikori River Basin scale program such as the United Nations Educational, Scientific and Cultural Organization World Heritage listing. Conservation Areas established through the Offset Program will form part of an overall protected area system and facilitate recognition/management planning.

Meaningful conservation transactions

In all cases, the Project recognizes that a meaningful conservation 'transaction' is key, and will seek out communities within the target areas who have an intrinsic interest in conservation.

Capacity building

Community ownership is critical to the long-term success of conservation. The Project is providing community education and building technical capacity to ensure that appropriately qualified and experienced biodiversity professionals are involved in delivering conservation management activities.

Partnerships

The Project intends delivering offset projects through partnerships and Memorandums of Understanding with non-government organizations that build on and combine the strengths of each.

Alignment with the Department of Environment and Conservation

Alignment with, and support of, the Department of Environment and Conservation (DEC) is a core principle. Offset activities will assist the DEC, as appropriate, achieve its commitments in relation to conservation (National Biodiversity Strategy and Action Plan) and enable a platform for wider conservation activity in Papua New Guinea.

Grass roots and home grown

Conservation Areas should be:

- Community inspired, designed and managed.
- Supported/implemented by local/national non-government organizations.
- Engrained in the legal and institutional framework of the Organic Law on Provincial Governments and Local Level Governments.

11 Resource Management

The Project recognizes the ongoing social, economic and cultural value of Papua New Guinea's natural resources such as water, timber, quarry materials and soils, and takes care to sustainably manage these resources during construction activities.

11.1 Water management

11.1.1 Usage

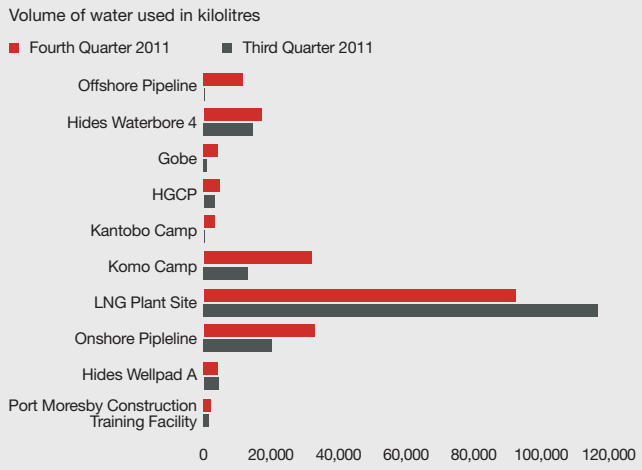
During this quarter, all extraction volumes were within the annual limit set in the Project Environmental Permit. The Project obtained additional water extraction permits for two water wells at the HGCP site and six water wells to be established along Hides Ridge. The HGCP wells will support camp operation and HGCP construction at Hides, while the water wells along the Hides Ridge will support drilling activities.

Across the Project a total volume of 204,602 kilolitres was used for drinking, domestic camp needs, dust suppression and construction-related activities in the quarter. This increased from approximately 184,600 kilolitres used in the third quarter 2011 as a result of growing construction activity.

The LNG plant site did not extract any water from surface water sources this quarter. This was achieved through successful harvesting of rainwater from stormwater run-off and recycling treated wastewater. At the end of the quarter, 2,458 kilolitres of harvested and recycled water was used at the LNG Plant, while all other water requirements were met through seawater treated at the LNG plant site's desalination facility.

The volume of water used by each extraction source is shown in Figure 11.1.

Figure 11.1 – Water use in the third and fourth quarters 2011



NOTE: Volumes under 50 kiloliters and data for Juni, Moro B and Kobalu Camps are not presented in this figure. Water usage adjustments may be reported by contractors after the Report has been released, and as such volumes may be refined between one Report and the next.

11.1.2 Quality

The Project conducts water quality testing and monitoring in surface waters, groundwater and seawater surrounding Project activities. Test results are compared with baseline studies undertaken before construction, as well as guideline criteria adopted by the Project. Any changes detected that may have a potential to impact the environment are proactively managed. For example, tests include background or inflow water for potable water, and outflows of wastewater treatment plants (see *Section 9.3.1 Wastewater*), water pumped from excavations (refer to *Section 11.4 Acid sulfate soils*) and hydrotest waters.

Following baseline monitoring surveys conducted both upstream and downstream of the pipeline ROW in the third quarter 2011, the data gathered was collated and analyzed to gain an understanding of the health of streams in the area. Laboratory results and a full report initially expected during the fourth quarter are now scheduled for delivery in early 2012.

The Onshore Pipeline contractor also undertook baseline water quality monitoring for major streams traversed in sections of the ROW. This focused on streams near habitation, such as the villages of Neango and Auwitangi.

This quarter, the Komo Airfield contractor undertook a review of sampling locations in the area, taking into account recent landscape modifications and changes in drainage patterns.

Water quality reviews of areas within and adjacent to the HGCP site were also initiated during the quarter, taking pre-construction and construction data into account. While a report is yet to be finalized, initial results indicate no material shift in water quality recorded at in-stream monitoring points around the HGCP site between pre-construction and during construction sampling events. Meanwhile, on-site monitoring undertaken by the Upstream Infrastructure contractor at the HGCP site showed the improved quality of outflow water following the completion of numerous sedimentation retention ponds and rubble drains.

Hydrotesting was conducted by the Onshore Pipeline contractor during this quarter for a section of pipe installed by horizontal directional drilling under the Kikori River. No chemicals such as biocides or oxygen scavengers were required for the hydrotest due to the short duration of the test. Water used in the hydrotest was discharged through a three-stage settlement and de-aeration tank then pumped onto vegetated ground. Prior to discharge, a sample of water was collected to confirm that the water quality discharge criteria met the Project's discharge criteria.

This quarter, water quality monitoring conducted by the LNG Plant and Marine Facilities contractor recorded values well within the Project discharge criteria for pH (acidity), dissolved oxygen, oil and change in turbidity and temperature from background levels.

Stormwater discharge quality monitoring also showed that discharge criteria for all sediment ponds were well below the Project's required level. In addition, the LNG Plant and Marine Facilities contractor's seawater quality monitoring recorded no significant changes as a result of offshore pipe laying, trenching and dredging activities in Caution Bay.

In response to grievances relating to water this quarter, the Project formed a water taskforce to address community concerns. The taskforce's initial focus is on the Northern Highlands area around Hides.

11.2 Raw materials

The Project sources quarry materials for construction activities from existing third party (operating or previously abandoned) quarries where possible, in preference to opening new quarries. The Project has quarry management requirements, which include risk assessments, pre-construction surveys and permit requirements as applicable. No new Project quarries were developed this quarter.

Table 11.1 shows the volume of quarry material extracted by the end of the quarter.

Table 11.1 – Quarries in use and extracted volumes during the fourth quarter 2011

Area/quarry name	Volumes extracted (cubic metres)
LNG plant site (2 suppliers)	170,538
Hides (4 quarries)	586,292
Komo (1 quarry)	58,353
Onshore Pipeline (6 quarries)	239,040
Offshore Pipeline (1 supplier)	34,830

The Onshore Pipeline contractor held safety toolbox talks on creating steps to the edges of the quarry, to prevent and minimize the danger of rock falls. Two disused quarries in the Hides area were re-established as laydown areas for drilling operations, to minimize the area disturbed for Project work.

Quarry material also proved beneficial in enabling the creation of underwater rock piles to protect the offshore pipeline from anchors in the shipping channel.

The Hides Gas Conditioning Plant and Hides Wellpads contractor was the primary user of timber for the Project this quarter. With no suitable lumber on-site, pine was available for purchase from supplier who uses material from certified sustainable plantations and treats it with heat prior to importation. This is in addition to plywood board sourced from a Papua New Guinean supplier who uses certified sustainable materials. Pine and plyboard timber is used for construction activities such as formwork for cementing, structural frames and various temporary installations such as barricades, stairs and storage boxes. By the end of the quarter, a total of 389 cubic metres of timber was purchased for Project activities.

11.3 Erosion and sediment control

The combination of high rainfall, changing landscapes and construction activities kept erosion and sediment control as areas of focus for Project contractors this quarter.

At the HGCP site multiple sediment ponds were installed and civil erosion and sediment control crews maintained erosion and sediment control structures across the site. Meanwhile, the Onshore Pipeline contractor focused sediment and erosion control activities between Gobe and the Mubi River where many silt fences needed replacement after pipeline stringing activities. The environmental crew also focused on proactively maintaining silt fences in streams where pipe bending and welding operations have the potential to damage those fences. In addition, erosion control structures were erected to divert water on a slope where erosion occurred on the ROW following heavy rains, and temporary structures were installed following the completion of clear and grade activities on steep sections of the ROW. More than 2,000 metres of silt fence and 700 metres of geotextile were used to manage erosion and sediment control on the pipeline ROW during this quarter alone, along with sandbags, pickets and rock socks.

Plate 11.1 – Erosion control structure at the HGCP site

Plate 11.2 – Stabilization of batter slope using Japanese Millet *Echinochloa* spp. at Komo Main Camp

Meanwhile, the Offshore Pipeline contractor is conducting daily inspections for trench erosion and weekly inspections for erosion and sediment control failure. To date, no failure has been recorded.

The LNG plant site received approximately 320 millimetres of rainfall during December, causing substantial damage to the slope and drainage system within the site. A drainage and erosion control action plan was developed and will be implemented in early 2012.

At Komo Airfield, surface water monitoring detected elevated turbidity as a result of the heavy rains this quarter. Extensive ongoing sediment and erosion control measures were put in place to manage and mitigate erosion at the site.

11.4 Acid sulfate soils

Testing for potential acid sulfate soils at the LNG Plant landfall trench and stockpiles this quarter indicated that all results were within the required range. The Offshore Pipeline contractor will continue monitoring acid levels in this area.

Ongoing acid sulfate soil monitoring is also occurring at several locations along the onshore pipeline route as backfill operations and river crossing installations are undertaken. Results to date show that pH values are within the acceptable range and it is thought unlikely that acid sulfate soils will develop in the shallow trenches given the wet nature of the trench spoil and the short time between trenching, lowering and backfill operations. As an added precaution, limestone is used for backfill to neutralize any potential acid that may be released.

This quarter, a third party specialist conducted a review of acid sulfate soil monitoring undertaken across the Omati area, as per the approved Acid Sulphate Soil Management Plan. The review indicated that the construction methodology met and exceeded the requirements of the Management Plan and any concerns of a future release of acid in the Omati area following the completion of construction activities are negligible.

12 Cultural Heritage

The Project respects the culture and history of communities located in the Project Impact Area and implements measures to manage known cultural heritage resources and as-yet unrecorded resources, which are called chance finds. Known sites are either subject to salvage activities or protection from disturbance by construction activities. The Project monitors ground disturbance activities and manages chance finds in accordance with a Protocol agreed with the Papua New Guinean Government and in close communication with affected communities.

Training is important for managing potential cultural heritage impacts. For example, the Onshore Pipeline contractor is providing training on cultural heritage sensitivities and the Chance Finds Protocol via toolbox talks and general awareness training to the ROW clearing and grading crews and brush clearing crews at Kopi Scraper Station, Gobe Mainline Valve, Kantobo and Tamadigi.

Audits are another mechanism to help manage cultural heritage resources. Internal audits were undertaken by the Upstream Infrastructure contractor and the Komo Airfield contractor during the quarter.

Transfer of Archaeological Materials Protocol

Developed as part of the Project's Cultural Heritage Management Plan, the Protocol aims to:

- **Outline the steps for appropriately collecting and storing artifacts identified during cultural heritage surveys and chance finds monitoring at construction sites.**
- **Prescribe the appropriate way in which artifacts are transferred to the Project, which in turn transfers custody to the Papua New Guinea National Museum and Art Gallery.**
- **Provide the necessary chain of custody and reporting templates.**

The steps involved in the material transfer process are:

- **Packing and labeling – storage precautions are defined for each type of archaeological material, for example, small metal artifacts, waterlogged metal, dry glass, and low-fired ceramics.**
- **Handover to the Project – a field investigation and verification of related documentation by the Project Archaeologist is undertaken on-site prior to transfer.**
- **Dispatching and tracking – departure from site to the Project storage warehouse in Port Moresby.**
- **Material storage in Port Moresby – safekeeping of material before dispatch to the Papua New Guinea National Museum and Art Gallery.**
- **Delivery of material to the Papua New Guinea National Museum and Art Gallery.**

To protect archaeologically significant material during construction, a hand-over protocol for heritage resources was established between the Project and the Onshore Pipeline contractor this quarter. Following this agreement, a stone tool artifact found at Kilometre Point 241.5 (10 kilometres north of Kaiam) in early 2011 was transferred to the Project. Meanwhile, all chance finds discovered at Komo Airfield were transferred to the Papua New Guinea National Museum and Arts Gallery in the quarter.

12.1 Pre-construction surveys

Pre-construction surveys are conducted to identify cultural heritage sites requiring preservation. Where sites cannot be preserved, the Project works in partnership with local landowners to determine appropriate mitigation measures (such as relocation, compensation and spirit ceremonies). This is accompanied by cultural heritage recording.

This quarter, onshore pipeline ROW pre-construction surveys identified 42 cultural heritage sites between Kilometre Point 153 and Kilometre Point 173.6. Of these, 31 were located within the ROW. The sites included 25 spirit trees (16 within the ROW), five spirit waterways, five spirit sites, two ritual sites, one sacred waterway, one spirit cave, one rock shelter, one abandoned village and one settlement site. In the case of the spirit trees, the species of Fig *Ficus* spp. is found almost everywhere along the ROW from Kilometre Point 120 to Kilometre Point 192 but it is only in the section Kilometre Point 153 to Kilometre Point 173.6 that it is considered as a spirit tree by the local community. For example, individual trees with hollows in the trunks and growing in isolation, not entangled with other trees, are believed to be the home of malevolent spirits – '*Sosaka*' (the female spirit) and '*Kamukirika*'/'*Daso*' (the male spirit).

The presence of '*Sasoka*' in fig trees is reported by community members to be indicated by cries of infants at night. Two other tree types are also considered as trees for the spirits '*Ira Agibu*' and '*Ira Borakui*'. Most spirit trees are located at sacred places where trespassing is strictly forbidden to certain members of the community including pregnant women, infants and intruders. Following consultation with villagers, agreement was reached and compensation arranged for the 16 spirit trees within the onshore pipeline ROW.

Brush cutting and tree felling were monitored daily during the quarter to ensure that sites identified in pre-construction surveys were avoided. Monitoring continued for five cultural heritage sites that are not directly on Project work areas but were previously demarcated for protection (listed in Table 12.1). These sites were found to be undisturbed. Three new sites, located within the survey area but outside the onshore pipeline ROW, were also demarcated this quarter.

Table 12.1 – Cultural heritage sites monitored during the fourth quarter 2011

Location	Site description
Kilometre Point 143	Spirit pool/lake.
Kilometre Point 143	'*Kekenoparti cave*' containing human remains.
Kilometre Point 153	'*Baiwara'araumarisa*'/'*baiwara'araumahaii*' oral tradition site.
Kilometre Point 203	A '*korpu*' rock shelter.
Kilometre Point 223	'*Kupute*' site, a former burial site located just off the ROW.
Kilometre Point 242	An oral tradition site called '*yowame*'.
Kilometre Point 281	An oral tradition site that is the home/sleeping place of the snake spirit '*Gouobo*'.
Site TA010	'*Tumbuna*' oral tradition site, located outside the ROW area.

12.2 Salvage excavations

No salvage excavations were undertaken in the quarter.

12.3 Incidents of disturbance to known cultural heritage sites

No incidents of Project-related disturbance to known cultural heritage sites occurred in the quarter.

12.4 Chance finds

Cultural heritage spotting during construction activities continued this quarter. The Onshore Pipeline contractor focused on initial earthworks (topsoil stripping) along the ROW and off-ROW sites and topsoil removal at Tamadigi campsite.

At Komo Airfield, spotting continued at the southern end of the Airfield and along an access road to the southern drainage area. Chance finds recorded this quarter are shown in Table 12.2.

Plate 12.1 – HGCP chance find – stone item

Table 12.2 – Chance finds during the fourth quarter 2011

Location of find	Type of find
Komo Airfield	Waisted blade
	Chert flake scatter
	Tanged blade (2)
Onshore pipeline ROW	Stone tool artifact (Kilometre Point 227)
Tamadigi campsite	Stone artifacts
	Flakes
	Probable broken stone axe head
HGCP	Old settlement site with various items located on the surface and within small excavation pits (a total of 594 cultural items were recorded from this site)
	Chert/flake (7)
	Ritual stone item
	Waisted stone blade
	Tanged blade
	Stone item (4)
	Burial rock shelter
	Chert item
Wellpads	Rock shelter (containing two skulls that had been recently placed)

Komo Airfield blades

Waisted and tanged blades are archaeologically significant cultural items protected by Papua New Guinean Government law. Waisted blades are so called as they have an indentation in the middle, made by flaking off pieces, perhaps for hafting purposes. The waisted blades from the Komo Airfield area are related to specimens dating back 40,000 years, which were found on the Bobongara archaeological site on the Huon Peninsula coastline about 100 kilometres northwest of Lae. The Bobongara specimens are important as they originate from the earliest dates for human arrival and colonization of the island of New Guinea – 40,000 years ago or even earlier. The Komo Airfield specimens have not been dated, but could be as old as the Bobongara specimens.

Komo Airfield specimen – waisted blade

Tanged blades are similar in form to waisted blades and previous research in the 1970s confirmed a specimen as 26,000 years old, although more recent research in 2009, shows the site at which the item was found to be dated back to 40,000 years. One of the tanged blades from Komo Airfield is of the same type, although the age of the blade is not known.

13 Stakeholder Engagement

Through ongoing engagement with Papua New Guinean communities, the Project and its contractors are working to develop lasting positive relationships with communities based on trust, mutual understanding and collaboration.

13.1 Government

The Project liaises regularly with all levels of Government, ensuring that Ministers, members of the Papua New Guinean national and provincial governments and Government agencies are kept abreast of Project activities and progress.

13.1.1 People processes

During the quarter, there was a slight increase in average approval times for work permits and visas as a result of the peak mobilization period for construction coinciding with some internal changes within Papua New Guinea's Immigration and Citizenship Services, and resource challenges within the Papua New Guinean Department of Labour.

In response, the Department of Labour recruited and trained 30 casual employees, while Immigration and Citizenship Services recalled senior processing officers who were overseas on training assignments. Additionally, Immigration's internal restructure involved the appointment of a new Acting Chief Migration Officer. These changes resulted in work permits and visas being processed closer to the agreed target of 10 working days.

By the end of 2011, more than 5,500 work permits and over 4,400 visas were processed at an average of 12 and 10 working days respectively.

The security clearance process stewarded by Papua New Guinea's National Intelligence Organisation and the Australian High Commission continues working effectively. Both organizations have advised they will continue assisting the Project and providing training sessions when requested.

13.1.2 Materials and tax

This quarter, Esso Highlands Limited and the Papua New Guinean Customs Service signed a Memorandum of Understanding and engaged a third party service provider to support the Customs Service with additional capacity to expedite customs clearances for the Project.

In December, Esso Highlands Limited hosted a workshop with the third party service provider and construction contractor Logistics Coordinators to provide new procedures and administrative processes as agreed to by the Customs Service and Esso Highlands Limited. Meanwhile, the Project is seeking further clarification about administrative processes for Goods and Services Tax.

Plate 13.1 – Vessel offloading equipment at Motukea Island

13.1.3 Infrastructure and Government support

In addition to supporting the Government's Highlands Highway rehabilitation work between Mendi and Hides, the Project is assisting the Department of Works with construction of a temporary causeway to replace the collapsed Alua River Bridge located near Tari in the Southern Highlands Province.

This quarter, the Project established a dedicated multi-disciplinary Highland Highway Area team to increase engagement with the community and improve the interface between trucking companies, the Government and landowners along the Highway. The team is helping the Government implement a program for landowner participation in minor bridge repair and maintenance work for the bridges between Mendi and Hides. This improved engagement is helping to keep the Highway open for all users.

Meanwhile, the Government has commissioned the new Mendi and Lai River bridges, which were built by the Project.

Plate 13.2 – Highlands Highway

13.1.4 Advocacy

In December, the Project completed the 2011 Advocacy Workshop Program with key national Government departments and provincial governments, covering topics such as national content, land and community affairs, and business development. The Program encompassed 31 workshops with national Government departments and 21 workshops with provincial governments, involving a total 650 Government officials.

Planning for the 2012 Advocacy Workshop Program is complete and implementation scheduled to begin in February 2012. This Program will expand to relevant business segments and foreign missions and will include some workshops at the LNG plant site to allow participants to view construction progress.

13.1.5 Benefits assurance delivery

The Government Interface team maintains regular contact with the Department of Petroleum and Energy and the Department of Commerce and Industry, along with other Government departments tasked with benefits administration, to highlight the importance of the Government meeting its obligations under benefit sharing agreements. The Department of Commerce and Industry was able to achieve the release of seed capital following an agreement reached with disputing parties in Juha.

This quarter, the Government decided not to pursue the proposed approach of having its National Petroleum Company of Papua New Guinea provide Government representation through field officers at Project worksites. The Project is now working through the Department of Petroleum and Energy to achieve Government representation in the field so that any issues and grievances that arise, which require action by the Government, can be effectively managed.

13.2 Communities

The Socioeconomic team closely interacts with community members in the Project Impact Area, with the objective of fostering mutual understanding.

13.2.1 Engagement activities

This quarter, over 130 engagements were conducted including more than 500 participants. For the year 2011, more than 1,000 engagements were conducted with a total participation of 26,000 people. As construction activities ramp-up, engagements are covering a broader range of Project-related topics. For example, discussions with communities range in topics from drilling a well, to how a pipeline crosses a river; or from installing a pipeline on the sea bed, to how oversized pre-assembled equipment is delivered to a worksite. During this engagement process, the Socioeconomic team remains sensitive and responsive to community concerns, perceptions and expectations.

Hides and Komo

Almost half of all planned community engagements this quarter took place in the Hides and Komo areas, primarily in the locations of the HGCP and Komo Airfield. This reflects increasing construction activity in these areas and the associated interaction required to inform communities in a timely manner. With the volume of traffic and load size increasing in line with construction activity, most of the engagements in the Hides area focused on road safety.

Safety awareness was also a significant component in engagements conducted in the Komo area. The Komo area Clan Issues Committee is working with the Project and distributing safety and other messages to communities, with almost one third of the Project's community outreach efforts directed through the Committee and local leaders. In addition to enabling effective communication, this engagement approach is facilitating mutual understanding with local communities.

In Komo, the Socioeconomic team is working with the Komo Airfield contractor to develop a joint stakeholder engagement plan.

Pipeline (North and South)

The Socioeconomic team continues keeping communities informed of planned construction activities along the onshore pipeline route and providing opportunities for community members to ask questions and give feedback prior to construction. Information provided to communities includes general Project awareness, pipeline-specific information as well as details about the Project's grievance process. Where relevant, information on the resettlement process and associated compensation is provided.

For those communities where construction is already underway, interaction this quarter focused primarily on construction and traffic safety awareness. In areas where construction is yet to start, the emphasis is placed on general Project awareness and pipeline-specific information, including how river crossings are managed. Where relevant, information on the resettlement process and associated compensation is being provided, as well as details about the Project grievance process.

LNG plant site

Engagement activities at the LNG plant site this quarter focused on safety awareness and facilitating meetings between local communities and the Enterprise Centre.

As work progresses on the offshore pipeline, the Socioeconomic team is providing communities with details of the construction work and reinforcing safety messages and the 'no-go' zone through tools such as the colorful pocket-sized 'No-Go Zone Onshore Access Timetable' and 'No-Go Zone Offshore Access Timetable' launched in the third quarter 2011.

Plate 13.3 – Shore pull awareness session at Lea Lea Primary School

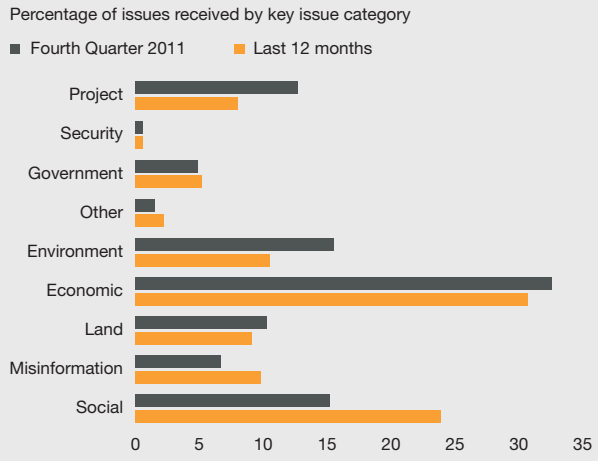
As a result of this close engagement with the LNG plant site communities, the operation in which the offshore pipeline was pulled into the LNG plant site was safely conducted this quarter.

Engagement activities with the Enterprise Centre involved providing access to business opportunities, particularly for women. Enterprise Centre representatives provided LNG plant site communities with advice on how to develop and register a business, approaches to establishing a cooperative and information about the Centre's training opportunities.

Issues identification

As shown in Figure 13.1, economic and social concerns account for half of all issues recorded during the quarter, as well as for the full year.

Figure 13.1 – Comparison of issues received



As the Project completes its second year of community interaction and construction activity becomes more complex, a higher number of issues require further investigation before a response can be provided to the complainant.

In 2010, around five percent of the more than 5,900 issues recorded required further investigation. By comparison, almost ten percent of the 8,900 issues recorded 2011 required further investigation. Throughout 2011, the majority of issues raised were in relation to LNG plant site activities.

The Project has responded by establishing closer coordination between the field teams and centralized Socioeconomic team functions. For example, approximately 40 percent of economic issues related to community development. Providing this data to the Project's Community Development Support team is helping to identify future community investment opportunities for the Project. In return, this closer departmental interaction provides more information for the field teams about ongoing and planned community projects, so this can be relayed to communities.

By the end of 2011, the Community Observation and Interaction Report card launched in the third quarter was deployed throughout the Project.

13.2.2 Media

The Project's seventh PNG LNG Quarterly Environmental and Social Report covering activity during July to September 2011 was published on the Project website, www.pnglng.com, as well as in hard copy for distribution to a wide network of stakeholders. Additionally, the Executive Summary was distributed in Tok Pisin and English through a suite of national papers including the *Post Courier*, *The National*, *Pacific Business Review*, *Wantok Nius*, and *The Sunday Chronicle*.

14 Acronyms

AIDS	Acquired Immune Deficiency Syndrome
DEC	Department of Environment and Conservation
ESMP	Environmental and Social Management Plan
HGCP	Hides Gas Conditioning Plant
HIV	Human Immunodeficiency Virus
IESC	Lender Group's Independent Environmental and Social Consultants
iHDSS	Integrated Health and Demographic Surveillance System
IMR	Papua New Guinea Institute of Medical Research
Lanco(s)	Landowner Company (Companies)
LNG	Liquefied Natural Gas
PNG	Papua New Guinea
ROW	Right of Way
SSHE	Safety, Security, Health and Environment

APPENDIX 1 – Project Contractors and Work Scopes

Table A1.1 – Summary of contractors and work scopes

Contract	Description of work scope
Upstream Infrastructure Clough Curtain Brothers Joint Venture	• Infrastructure upgrades in support of main construction activities in the Gulf Province and Southern Highlands Province. • Camps for Esso Highlands Limited and to support construction activities. • Construction of a landfill site at Hides. • Bulk earthworks for the HGCP and wellpads.
LNG Plant Early Works Curtain Brothers Papua New Guinea Limited	• Upgrade of existing road from Motukea Island to LNG plant site. • New Bypass Road (re-routing of existing public road, which transects with the LNG plant site).
Telecommunications TransTel Engineering	• Installation of a telecommunications system to support construction and operations.
Offshore Pipeline Saipem	• Construction and installation of the offshore pipeline from Omati River landfall to LNG Plant landfall site. • Pipeline tie-in at Omati River landfall and shore crossing at the LNG Plant landfall site.
LNG Plant and Marine Facilities Chiyoda and JGC	• LNG facility engineering and construction, including LNG process trains, condensate storage tanks, LNG storage tanks, utilities, permanent accommodations, heliport, and telecommunications. • Marine facilities including the jetty and LNG/condensate export berths.
Hides Gas Conditioning Plant and Hides Wellpads CBI Clough Joint Venture	• Engineering and construction of the HGCP processing facilities and associated wellpads, including permanent accommodations and maintenance facilities.
Onshore Pipeline SpieCapag	• Installation of the onshore gas and condensate pipelines, and associated valve and metering stations. • Installation of the pipelines for the Hides gathering system including flowlines, spineline, utility lines, and associated power and telecommunications cables.
Komo Airfield McConnell Dowell and Consolidated Contractor Group	• Airfield and supporting infrastructure.
Associated Gas Development Various	• Upgrades and modifications to Kutubu Central Processing Facility and Gobe Production Facility including gas dehydration, metering, and condensate handling.
Nabors Drilling International Limited	• Drill and complete 12 new wells and execute two workovers.
Permanent Office and Housing Company (to be determined)	• Construction of office accommodation and housing to support the operation of the facilities.

Esso Highlands Limited acknowledges the aforementioned contractors for their respective contributions to the development of this PNG LNG Quarterly Environmental and Social Report.

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