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# **PERU LNG**

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**Independent Environmental and Social Monitoring – IESM  
April 03-04 / 2008 Monitoring Mission**

**LNG Plant and Marine Facilities Final Report**

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**June, 2009**



**Consultoria e  
Participações Ltda.**

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## 1.0

### Introduction

This Report refers to the IESM Monitoring Mission, conducted at the LNG Plant and Marine Facilities, on April 3 to 4, 2009.

The scope of inspection included the LNG Plant and the Marine Facilities at Melchorita, as detailed in Section 4.0 herein. As noted, not all construction fronts were inspected. Focus was placed on areas where most intense construction activity was ongoing and on those that had been the object of previous IESM Team recommendations. The Quarry and its access road were not inspected.

IFI representatives participating in the Mission included:

Carlos Arias – Environmental and Social Specialist - IFC

Ximena Herbas – Environmental Specialist - IDB

Maria da Cunha – Social Specialist - IDB

JGP's monitoring team included:

Juan Piazza

Main Environmental and Social Specialist

Gustavo Acaccio

Ecologist – Biodiversity Specialist

Humberto Vera

Local Environmental and Health and Safety Specialist

Guillermo Salas

Local Social Specialist

It is important to mention that before the IESM Mission, PERU LNG issued, in January 2009, its Environmental, Social and Health and Safety Report corresponding to Q4-2008. Further to this report, several other documents were reviewed by the IESM Team, as delivered previously or after the mission upon IESM Team member's requests. **Annex 01** includes a complete list of documents reviewed in preparation of this Monitoring Report.

Furthermore, it is important to mention that whereas the cut-off date of PERU LNG's reporting prior to the mission is December 31, 2008, information reported herein, when referred to activities conducted during the mission, reflect the situation on April 3, 2009.

## 2.0

### List of Monitoring Activities

Activities during the mission included:

Friday - 3 April 2009:

All participants:

- Presentation of construction status – Marine Facilities and LNG Plant – COLP

Environmental and H&S Group (Ximena Herbas, Juan Piazza, Humberto Vera and Gustavo Accacio):

- Inspection of construction and civil works – LNG Plant
- Inspection of Marine Facilities
- Meeting with COLP to discuss specific issues about ESIPs (only Humberto Vera)

Social Group (Maria da Cunha and Guillermo Salas):

- Presentation by CB&I's labor relations manager
- Presentation of social projects and community relations activities – CB&I
- Presentation of social projects and community relations activities - CDB
- Meeting with SwissContact and Recursos S.A.C. - Presentation of PERU LNG Additionality Programs – Agroprogreso and Local Supplier Development
- PERU LNG presentation on progress on the Fishermen's Compensation Management Plan (with participation of Juan Piazza and Ximena Herbas as well)

Biodiversity Program Review and Inspection (only Gustavo Accacio):

- Inspection of Tillandsia transplant areas.

Saturday - 4 April 2009:

Ximena Herbas, Maria da Cunha, Juan Piazza and Guillermo Salas:

- Meeting on E&S Programs.

Humberto Vera:

- Inspection of GyM Campsite - a CB&I sub-contractor – on environmental and social issues;
- Inspection of CB&I's car wash, fuel storage and refueling facilities.

Gustavo Accacio:

- Meeting on the Marine Monitoring and Seabirds and Marine Mammals Monitoring programs;
- Document review - Seabirds and Marine Mammals Monitoring Program.

All participants:

- Closing meeting with PERU LNG.

### 3.0

## Construction Summary

### 3.1 LNG Plant

Construction progress at the LNG Plant was reported by PERU LNG at the beginning of the mission. 5,600 workers were reported to be on site, 4,400 of which from CB&I and the remaining 1,200 from CDB. Both on-site camps were full and some CB&I staff is being housed at rented facilities in Cerro Azul. A similar solution at Asia del Sur is planned to house approximately 200 PERU LNG / COLP employees. Construction workforce is expected to peak off at approximately 6,000 workers.

The incoming pipeline's installation was completed and hydrotested, including the liquids separator. The installation of the flow control device was pending and it was reported that it is scheduled to arrive in Peru shortly.

During inspections, intense activity was under way in the plant's premises, including trench digging, piping assembly, steel structures, electrical installations, process equipment assembly and painting.

In the utilities area, three gas turbines for electrical power generation and large air compressors have been installed, and associated piping and instrumentation was in progress.

The firewater grid, pumps and storage tank were almost complete. External painting of the firewater tank as well as installation of hydrants and valves throughout the plant was still in progress.

In the main train and BOG areas, piping and instrumentation and electrical installations were the main activities. The pressurized tanks were installed.

Work on both LNG tanks is still ongoing. The inner tanks are almost finished and the outer shell was being garnet-blasted and painted during the mission. The fixed cranes to be installed on structures built over both tanks was already at the plant. These cranes will be used during plant operation for maintenance of the loading pumps.

On the sleeperway between the Plant and the Marine Terminal, foundations were complete and piping installation was nearing completion. Non-destructive testing by the specialized sub-contractor (SGS) was ongoing.

At CB&I's camp, the reverse osmosis (RO) treatment plant expansion had been concluded and was already operating jointly with the initially installed RO treatment plant. The plant is already intaking seawater and the concentrated brine is being discharged to the sea. Utilization of brine as a component of reused water for dust control has been discontinued. Only effluents from the wastewater treatment plant are currently being reused. These could be discharged to the sea mixed with the brine if necessary.

Permanent community civil works were in progress and most of the foundations were in place.

### 3.2 Marine Facilities

During the mission, both the trestle and the provisional extension were complete and being utilized by trucks for transportation of rocks to the breakwater. Pipeline installation on the trestle was being completed.

It was reported that the DGAAE had already approved an Environmental Management Plan (EMP) for use of the provisional trestle extension to facilitate breakwater construction.

Rock loading operations for the breakwater were taking place simultaneously by the “Le Guerrier” vessel and by trucks operating on a 24-hour cycle. It was estimated that rock loading activities shall be complete by end May. Simultaneously, BCRs (Grooved Concrete Blocks) will be placed on the west side of the main breakwater. Until March 2009, 1,340,000 tons of rock and 1,776 BCRs had been put in place in the RLOF and the main breakwater. A total of 9,384 BCRs had been produced and were stocked at the K1 platform.

Mooring dolphins are currently being fabricated in Callao. Dredging had been resumed and was reported to be 74% complete.

CDB continues intaking water from Cañete River.

### 3.3 Quarry and Access Road

By March 2009, the Quarry had produced 1,973,000 tons of rocks. Rocks were being taken directly to the breakwater by trucks, without having to be stored temporarily on platforms K4 by the marine facilities and K5 near the main entrance of the LNG plant on the other margin of the Pan-American Highway. Large amounts of rock are still being stored at these platforms.

## **4.0 Construction-Related Performance**

### Scope of the IESM Team’s Review

Inspection of construction fronts at the LNG Plant focused on the utility sector and the pipeline inlet, the main LNG train and process area, the BOG area, the LNG tanks and the sleeperway down to the coast.

The Marine Facilities were thoroughly inspected, including the trestle, the provisional trestle extension, and the main breakwater.

The quarry, its access road and associated facilities were not inspected.

Camp facilities and construction support infrastructure inspected during the mission included CB&I storage tanks and fueling tanks and GyM's (one of CB&I's main subcontractors) campsite and workshops (not including lodging for workers). CDB's waste handling area near the trestle was also checked.

Inspection Protocols on all inspected facilities are presented in **Annex 02**.

#### 4.1 Environmental Compliance

Housekeeping and pollution prevention at construction fronts and support facilities was generally very good with rare exceptions which were observed on the field and immediately corrected. These observations included:

- Spill trays under TEREX lighting units at the LNG train and process area were absent in three cases. This problem had not been previously observed by PERU LNG's environmental team, indicating the need for review of the inspection procedure of both CB&I and PERU LNG.
- Chemical products storage and handling at the GyM camp was generally adequate. However, since the warehouses were full, some products were being accommodated outside the designated areas (i.e. without secondary containment).

Other minor problems were observed on the field but were generally considered to be within the acceptable margin of error on projects with this one's size and complexity.

#### 4.2 Health and Safety Compliance

Several relatively minor observations affecting health and safety were identified and are summarized below:

- Protective fencing around excavations and trenches was not always in place due to constant evolution of construction fronts.
- Wires used on scaffolding assembly should be bent and attached to the scaffold's structure in order to prevent injuries to workers.
- Though compressed air hoses and connections were found to be in good condition, some hoses lacked high flow shut-off valves and this should require immediate correction.
- Corrective action is required for eye washing devices. Both eye washing devices found in the area were found with water level below minimum level, and one of them was obstructed by a fence and a trolley.
- No eye washing devices were found at the GyM camp in the chemical products handling area.
- Also at the GyM camp, one of the chosen locations for emergency meeting points is not appropriate in case of fire and there was not enough signage indicating the other meeting point location (this was immediately corrected).
- GyM's fueling facilities lack a static current clamp and static current connection to the gasoline supply pump (system currently being implemented).



Of the above observations, protecting fencing was considered the main issue since it is difficult to control in view of the rapid evolution of work and high density of workers in some construction fronts. Routine daily inspections focused exclusively on fencing should be contemplated, and should be accompanied by workers in order to implement corrective action immediately.

Other minor observations were considered “margin of error” issues since they refer to aspects that are generally compliant throughout the plant. These include some loose objects near worker circulation areas (steel rods, wooden pieces with nails and similar materials), one unsafe stairway, delayed inspection of a fire extinguisher and two workers without all necessary personal protection equipment.

#### 4.3 Social and Community Relations

Construction related social and community relations issues refer to social impacts / disturbances that are directly attributable to construction activity and are not being managed under one of the project’s E&S Programs (i.e. the Local Hiring and Purchasing Plan, the Stakeholder Engagement Plan or the Fishermen’s Compensation Management Plan).

Social and community relations issues affecting construction are minor in the case of the LNG Plant and the Marine Facilities since there are no occupied areas near or adjacent to construction fronts. Notwithstanding, three community relations issues were identified / discussed during the mission:

- PERU LNG received an observation from OSINERGMIN because it is housing approximately 20 workers (bus drivers) in Chincha, which is within the Project’s direct area of influence. The EIA does not allow for any out-of-region workers to be housed in the direct area of influence. The bus drivers are being housed in Chincha because they pick up locally hired workers every day and transport them to the Melchorita plant. Camp facilities at the plant are currently full, and it wouldn’t make sense to house the bus drivers at a distant location. At OSINERGMIN’s request, PERU LNG has submitted a management plan to demonstrate that housing between 20 and 30 bus drivers within the direct area of influence will produce no local impacts or conflicts with community. OSINERGMIN was reported to be reviewing this management plan at the time of the mission.
- PERU LNG reported that it will be renting a condominium by the beach at Asia del Sur (outside the project’s direct area of influence) to house additional staff during coming months (approximately 70). No worker-community issues are expected to result from this situation since the condominium is not adjacent to any local community. Notwithstanding, employment of local workers by the condominium’s administrator will occur. Furthermore, there are opportunities for additional local procurement that could be exploited.

- Sports fishermen that own houses at Wakama beach or other nearby resorts are coming by car to fish under the trestle. This creates a safety issue and in spite of warnings by construction personnel, the fishermen insist that it is their right to fish wherever they like. PERU LNG has not closed the beach to third parties (as foreseen in the EIA) in order to minimize disturbance to artisanal fishermen. However, a specific strategy to deal with this issue is warranted.

## **5.0 Internal E&S Assurance**

### **5.1 PERU LNG E&S Supervision and Audits**

During Q4 2008, PERU LNG performed six internal EHS Audits of Plant and Marine Facilities construction work. These took place during the months of November and December 2008. During the month of October no internal audit was scheduled.

One of the November audits focused on verification of compliance with the Pollution Prevention ESIP. In December, audits focused on the Compliance Monitoring ESIP and on procedures for protection of archaeological finds. These audits resulted in issuance of 02 WINs and 01 CAR to the Marine Facilities contractor, and of 01 WIN to the LNG Plant contractor.

Further to the internal audits, PERU LNG carries on routine inspections of construction fronts and camp and other support facilities. The resulting quality of internal E&S assurance is considered to be very high and is clearly having an effect on contractor and sub-contractor E&S performance.

Observations and improvement opportunities affecting E&S assurance detected by the IESM Team during the mission team are minor and easily implementable. They refer mainly to the need to review specific aspects of PERU LNG's inspection procedures, where it was found that observations raised by the IESM Team had not been previously noted by PERU LNG's environmental inspectors (see Section 4.1).

### **5.2 Construction Related Monitoring and Performance Assessment**

Further to the auditing and supervision activities described above, E&S assurance includes several monitoring/management programs relative to specific project impacts and/or performance parameters. Results of these programs as verified during the April IESM Mission are briefly described below. They were assessed against requirements in PERU LNG's CMPs and/or contractor ESIPS, and were based on information included in the monthly reports submitted by PERU LNG to OSIINERGMIN in October, November and December 2008.

### Air Quality / Dust Control

PERU LNG reported daily visual monitoring of dust levels in order to establish the adequacy of dust control procedures by contractors, which included daily watering of all unpaved circulation routes. In its monthly reports to OSINERGMIN it included emission certificates on new vehicles and equipment and on those that were required to renew said certificate.

During the IESM Mission no problems of excessive dust were observed at either the LNG Plant or the Marine Facilities (the quarry and access road were not inspected), and no vehicles or equipment with emission problems were observed. Certificates included in the reports to OSINERGMIN were reviewed selectively. Based on this, it is possible to conclude that dust control by contractors is compliant with the Dust Control ESIP (157883-000-HS-PR-0007) and that air quality on site is compatible with D.S. N° 047-2001-MTC.

### Noise Monitoring

PERU LNG reported one monitoring campaign per month, including day and night monitoring, at five (05) monitoring stations during Q4 2008. The IESM Team's scope of review was limited to an analysis of monitoring results.

According to the applicable ESIP, noise should be monitored during the construction start-up process and whenever new sources become active. During Q4 2008 no new noise sources were introduced on site. However, intensity of construction activity increased. Hence, monthly monitoring as performed is considered compliant with the project's requirement.

All results at point NM2 (both day and night) were approximately 75 dB(A), whereas the applicable Peruvian standard (DS. 085-2003-PCM) at that point (industrial premises) is 80 dB(A) for daytime noise and 70 dB(A) for nighttime. At NM4 and NM5, night results were in the 54-56 dB(A) range, while the applicable standard (residential areas) is 60 dB(A) for daytime and 50 dB(A) for nighttime. These noise levels are similar to those measured to date and to those in the established baseline, and reflect outside noise sources not attributable to the project (Panamerican highway in the case of NM2 and NM4, and sea waves in the case of NM5).

The above results indicate that there are no major construction related compliance issues related to noise. However, this aspect will become more significant once operations begin. At this time, it will be important to include additional points in the noise monitoring program, particularly at the permanent community and in administrative areas.

### Water Quality – Cañete River

PERU LNG monitored Cañete River's water on a monthly basis during Q4 2008. Whereas frequency of monitoring is compliant with the project's requirement, only downstream samples were taken and the established procedure requires measurement of upstream samples as well.

In all three months, results for nitrates were well in excess of the applicable standard (2.287, 1.130 and 3.547 mg/l versus a standard of 0.100 mg/l). As mentioned, no upstream sample results are available to demonstrate that this is not attributable to the project, though it is reasonably certain that a water intake cannot produce an impact on nitrate levels.

It is unlikely that the water intake at Cañete River is negatively affecting water quality. Though monitoring results do not prove this, PERU LNG has notified the Lenders that the CDB Quarry and Marine Pollution Prevention ESIP was revised to reflect a change in the sampling number and locations at the Cañete River. The extraction of water from a high flowing river like the Cañete River would not deteriorate the water quality, nor would the extraction process itself lead to any contaminants entering the water body.

On another issue, it is noted that laboratory results presented for 2 out of 24 parameters (ester phthalate and hexane extractable material) indicate detection limits that exceed the applicable standard and hence the method used is not appropriate for compliance verification purposes. If there are no laboratories with the technical resources necessary to measure those parameters with appropriate detection limits, then this should be argued by PERU LNG as a basis for reviewing the established project standards for those two parameters. In this event, continuity of current detection limits should be acceptable, provided that only INDECOPI certified labs are used.

### Water Quality – Camp Facilities

During the Q4 2008, PERU LNG monitored water quality at one point in each of the three main camps (CB&I, CDB and Sipan), on a monthly basis. In the case of drinking water containers, both CB&I and CDB report analyzing several containers per month. Only CB&I identifies the number of the analyzed container.

In the case of water produced at the camp's water treatment plants, monthly monitoring meets project requirements. However, the ESIP requires monitoring of several samples, since treated water can become polluted along the grid.

In the case of drinking water containers, the requirement is for sampling one container per lot. Since the number of lots received per month is not reported by either CB&I or CDB, compliance with this requirement cannot be fully assessed.

Additional shortcomings were observed in the way that laboratories are reporting monitoring results. Free Chlorine and Residual Chlorine are two different parameters. Residual Chlorine should be no less than 0.5 mg/l to ensure proper disinfection, but Free Chlorine should not exceed 5.0 mg/l in order to avoid altered water taste. Both CB&I and CDB results are reporting values for Free Chlorine, which are compliant in all cases. However, there are various results for Residual Chlorine below the 0.5 mg/l minimum and there is no indication that this is not compliant since the only standard indicated in the results tables is 5.0 mg/l.

Similarly, results reported by CB&I do not demonstrate compliance with the standard for total and fecal coliforms. There is a problem with the laboratory's detection limit in this case as well, since the project standard for coliforms is zero ("0").

In spite of the various shortcomings described above, laboratory results on drinking water consumed by workers indicate that water quality is adequate.

However, both CB&I and CDB should take action with the laboratories to ensure that the proper detection limits and standards are adopted for all parameters.

#### Treated Effluents

During Q4 2008, both CB&I and CDB have reported monitoring results for wastewater treatment plant effluents on a monthly basis. In cases where results exceeded the applicable standards, CB&I conducted additional monitoring, and reported accordingly.

CB&I has also monitored the quality of water used for hydrostatic testing. These results serve only as reference, since the water from the tests was subsequently treated at CB&I's waste water treatment plant. Monitoring by both CB&I and CDB as described above, is compatible with the applicable Project requirements.

Results of monitoring generally indicate that treated effluents meet the applicable standards. These are the Class III Standards established in the General Water Law, in view of the fact that effluents are not discharged to a water stream but rather used for dust control.

#### Marine Water Quality

CDB monitored marine water quality at 10 controlled points, including samples at three depths in all cases, except at the control point next to the beach. Monitoring was conducted once during Q4 2008, during the month of November.

The quarterly frequency of marine water monitoring and the number and location of monitoring points, as conducted by CDB, is compliant with the corresponding ESIP.

CB&I was not releasing any effluents to the sea during Q4 2008, and was therefore not required to monitor marine water quality near the point of discharge. However, release of brine from the reverse osmosis plant is already taking place and, hence, marine water monitoring will need to begin during the first quarter of 2009.

All monitoring results reported by CDB were compliant with standards applicable to the Project, with the only exception of Dissolved Oxygen, which was in some samples below 4 mg/l, especially in the case of the deeper samples. However, low Dissolved Oxygen values in deep waters are normal and it can be reasonably assumed that they are not caused by the Project's activities.

In the case of CB&I's ESIP relative to marine water quality, it is important to note that Table 9 included in the ESIP is presenting the applicable legal standard for industrial effluents, and not that which establishes requirements for the receiving body). Hence, it will be important for PERU LNG to ensure that this standard table is substituted.

#### Solid Wastes

Total waste generated by type, on a month by month basis, is reported both by CB&I and CDB, and the corresponding summary tables are included by PERU LNG in the Environmental and Social Monthly Progress Reports. These reports indicate that solid waste management and control is a continuous daily activity, and that reporting ensures control of waste generation, transportation and final disposal.

During the April Mission, the IESM team verified waste management practices at all construction fronts and camp facilities inspected. Due to limited time available, daily records were not checked on the field.

Notwithstanding, the results of field inspections and the review of waste generation statistics included in the E&S Monthly Progress Reports for Q4 2008, demonstrate that both CB&I and CDB are compliant with the applicable ESIPs (ESIP 157883-000-HS-PL-0003 and ESIP 157883-000-HS-PL-0003 – Revision D1).

Minor problems identified on the field occur mostly at the point of generation and initial segregation, where some occasional misplacement of wastes in segregation bins still occurs. However, due to limited occurrence, these problems were assessed as “margin of error” issues.

#### Dredging Monitoring

It was reported that dredging activity took place only during four days, between October 1 and October 4. Monitoring of turbidity and total suspended solids took place on a daily basis during those four days, at the geographical coordinates and varying depths established in the corresponding ESIP. Arsenic readings were taken on a weekly basis with the last sample taken on September 29 when dredging was ongoing at the south entrance channel. No Arsenic readings were taken in October.

Results of monitoring were used by CDB to improve its understanding of the relation between Turbidity levels and Total Suspended Solids, establishing the corresponding correlation curve.

Due to limited time available, the IESM Team was not able to verify the correct location of buoys at the pre-established control points on the field.

Results of monitoring presented to OSINERGMIN for the dredging period were far below the applicable standard. Highest value of Total Suspended Solids at the dredging area was 60.3 mg/l, and at the dredged material dump-site it was as low as 36.8 mg/l, whereas the applicable standard is 200 mg/l.

#### Air Quality Monitoring at the Quarry

CDB monitored PM<sub>10</sub> at control points A2 and A4 on a monthly basis during Q4 2008. Similarly, CO, SO<sub>2</sub> and NO<sub>2</sub> were monitored on a quarterly basis at control points A0, A2 and A3. These monitoring frequencies and locations are compliant with requirements established in the corresponding CDB ESIP.

Results for PM<sub>10</sub> exceeded the applicable Project standard (70 µg/m<sup>3</sup> – World Bank) and all three months, in the case of control point A4, and, in two of three months, in the case of control point A1. Results ranged between 78 µg/m<sup>3</sup> and 388 µg/m<sup>3</sup>. It is important to mention in this context, that these control points are within the quarry's installations and that there are no urban occupations in the vicinity. Quarry workers are protected by personal protection equipment (PPE's) and are submitted to regular health checkups.

Other pollutants monitored (CO, NO<sub>x</sub> and SO<sub>2</sub>) were all within the Project's applicable standards.

#### Noise Monitoring at the Quarry

At control point QM 1, Peru LNG reported monthly monitoring during one hour at daytime and one hour at nighttime. At QM 2, QM 3 and QM 4, similar monitoring took place on a quarterly basis. Furthermore, at control point P 2, noise monitoring was conducted during explosions. Monitoring as reported above is compliant with ESIP requirements.

Only one of the monitoring results, taken at point QM 1, exceeded the applicable project standard, both during daytime and nighttime. It is important to note that this monitoring point is subject to the influence of traffic noise from the Pan-American Highway.

### Ecological Monitoring - Native Plants

According to the Ecological Management Plan (F12254-CDB-W01-HSE-PLA-00105), cactii of the species known as “Gigantón” (*Neoraimondia arequipensis*) in the vicinity of the quarry were translocated. No monitoring of translocated individuals was reported on during Q4 2008 and this aspect was not verified during the April Mission since the quarry and access road were not inspected.

Another native species translocated according to Project requirements are Tillandsias. PERU LNG did not report any monitoring activity during the quarter in this case either. However, detailed verification of compliance and results by the IESM Team took place.

A meeting was conducted with the program’s supervisor to explain historic and current status of the program. A field visit to the nursery also took place.

Since the EIA is very vague and only states that Tillandsias found on site must be translocated to another site, the project can in principle be considered to be compliant. Notwithstanding, Tillandsia translocation was almost a total failure, since the vast majority of plants died.

These plants live in harsh habitats and are apparently dependent on a very specific combination of environmental conditions to thrive. They have patchy distributions and their scattered presence in areas near the LNG Plant site, contrasting with their crowded conditions on some other sandy hills more distant from the Plant’s vicinity, seems to indicate that areas near are not the most suitable habitat.

Besides natural causes, Tillandsia mortality at the nursery seems to have resulted from inadequate cultivation procedures due to inexperience (including poor site selection, since most of the plant beds were located behind a sand dune which is probably a relatively low humidity area). Excessive density, repeated translocation and dust generated by neighboring activities (e.g. the fishermen’s beach access), could have also had a negative effect.

Currently, PERU LNG is conducting some controlled experiments with surviving plants in order to determine best cultivation procedures.

There are only a few remaining individuals still thriving and no further translocation is recommended as they are not likely to survive additional stress. Since Pipeline Contractor is about to start a similar program in a Tillandsia rich section of the pipeline’s RoW, a meeting should be arranged between the environmental teams for exchange of experiences in order avoid the same mistakes.



## 6.0

### External E&S Assurance

#### 6.1 OSINERGMIN Inspections and Observations

During Q4 2008, OSINERGMIN conducted two Social Audits (October and November) and one Environmental Audit (December).

**Table 6.1** below summarizes the OSINERGMIN observations resulting from the audits.

**Table 6.1**

#### Summary of OSINERGMIN Inspections During Q4 2008

Month	Description of Field Observations
October	<p><b>SOCIAL INSPECTION TO THE PLANT AND MARINE FACILITIES</b></p> <p><u>Area Inspected:</u> Three day inspection to the Plant, Quarry and Marine Facilities and area of influence (Chincha and Cañete)</p> <p><u>Observations:</u> One observation was raised about the need to communicate officially to Topará authorities regarding the blasting schedule at the quarry.</p>
November	<p><b>SOCIAL INSPECTION TO THE PLANT</b></p> <p><u>Areas Inspected:</u> Three day inspection to the plant and plant's social area of influence. The social auditor verified the communication and information program to the community, local hiring program, social beach monitoring, development of the community relations plan, and residents of the non-local workers and pending observations.</p> <p><u>Observations:</u> No field observations were raised requiring follow-up. The observation about an official letter to local authorities of Topará on the blasting hours at the quarry was closed, as official letters from Peru LNG were delivered to the authorities.</p>

**Table 6.1**

#### Summary of OSINERGMIN Inspections During Q4 2008

Month	Description of Field Observations
December	<p><b>ENVIRONMENTAL INSPECTION TO THE PLANT AND MARINE FACILITIES</b></p> <p><u>Area Inspected:</u> Three day inspection to different open work fronts in the Plant and Marine Facilities. The audit covered EIA commitments focusing on Waste Management and Compliance Monitoring.</p> <p><u>Observations:</u> One field observation requiring a response was raised, referring to the temporary bridge erection as part of breakwater construction. The inspection minutes signed in the field stated that the length of the trestle was being extended and that this extension was not considered in the EIA.</p> <p>Peru LNG formally responded on December 31 that the construction of a temporary bridge was not an extension of the trestle, that this structure is temporary there is a, is part of the approved marine construction procedures and the potential impacts and mitigation measures from this activity have been contemplated in the EIA. Also, the letter indicated that the temporary bridge was approved by the competent marine authority (Autoridad Portuaria Nacional – APN). Peru LNG is currently awaiting a response from OSINERGMIN.</p>

As can be seen in the table above, the only material issue raised by OSINERGMIN refers to construction of the provisional trestle extension reaching the breakwater. According to OSINERGMIN, this 300 m extension, was not included in the Project's EIA and hence could not have been executed without a permit. This observation was initially raised on December 4, 2008. On December 31, PERU LNG responded that the extension was provisional, is part of the marine construction procedures and the potential impacts and mitigation measures from this activity have been address in the EIA.

Furthermore, PERU LNG indicated that the temporary bridge was approved by the marine authority (Autoridad Portuaria Nacional – APN).

On February 3, 2009, OSINERGMIN responded that it did not agree with this interpretation and that it will proceed to apply a fine to PERU LNG. Additionally, removal of the trestle within 30 days was requested.

PERU LNG is questioning this position and in parallel, prepared an Environmental Management Plan for the trestle extension. This Management Plan was submitted to the Direccion General de Asuntos Ambientales Energéticos (DGAAE) of the Ministry of Energy and Mines, that approved, issuing the corresponding Environmental Permit on March 10, 2009.

The Management Plan argues that the extension will minimize environmental and health and safety risks associated to breakwater construction, that its use will generate no impacts different than those already considered in the EIA and the Marine Facility's footprint will not be altered as a result. The IESM Team considers that this is a correct assessment.

Since approval of the Management Plan by DGAAE, the requirement for removal of the trestle extension within 30 days no longer applies. Definition of the value of the fine to be applied by OSINERGMIN was still pending at the time of the April Mission.

On another issue, PERU LNG reported that OSINERGMIN communicated it is not complying with the EIA which indicates that no non-local project personnel can live in the direct area of influence of Chinchá or Cañete. During Q4 2008, about 20 bus drivers were living in communities in the direct area of influence. These cannot be housed at the plant's camps which are full, and since they drive local workers from Chinchá and Cañete to the Plant, it wouldn't make sense to house them at distant locations outside the area of influence.

At the request of OSINERGMIN, PERU LNG submitted a Social Management and Monitoring Plan, to assure adequate management of potential social impacts from housing of a reduced number of workers in the direct area of influence. At the time of the April Mission, PERU LNG was awaiting confirmation that continued housing of up to 30 extra-regional workers in the direct area of influence would be allowed.

Further to the results of OSINERGMIN Audits as summarized in **Table 6.1** above, PERU LNG reported that eight (08) observations raised in Q3 2008 or before, have been responded and are awaiting confirmation of closure by OSINERGMIN.

## 6.2 IESM Missions and Recommendations

An Independent Environmental and Social Monitoring Mission to the LNG Plant and the Marine Facilities took place on December 18 – 19 2008. Observations and recommendations resulting from this mission refer in part to requests for improved reporting by PERU LNG and partly to corrective actions affecting both CB&I and CDB.

With regards to CB&I, the IESM Team requested that a DIGESA permit for blending and reutilization of wastewater effluents and reverse osmosis (RO) rejected brine, be obtained; and that while this is pending only treated wastewater should be reused. PERU LNG has responded that mixing of the RO effluent and domestic wastewater has ceased. The RO effluent is now being discharged to sea as per the existing permit. Domestic effluent is treated and reused and is compared to Class III standards.

With regard to CDB, observations were raised affecting minor health and safety issues at construction fronts. PERU LNG has responded that corrective action has been implemented.

With regards to improved reporting requests, PERU LNG has responded that they will be considered in the upcoming Q1 2009 Report.

The status of PERU LNG follow-up on IESM recommendations issued during the December 2008 Mission is reported in the *Recommendation Tracking Table* included in **Annex 03**. This table also incorporates recommendations issued in this report.

## 7.0

### Environmental and Social Program Implementation and Performance

#### 7.1 Marine Monitoring

##### *Progress Reported by Peru LNG*

A summary of marine monitoring activities undertaken by PERU LNG and Contractors, as well as brief overall findings was presented in the Q4 2008 Report. The last marine monitoring campaign was undertaken between November 5 and 12 and accounted for the 3<sup>rd</sup> year springtime monitoring event.

PERU LNG has reported that it plans to reduce the marine environment monitoring frequency, from four times per year to twice per year (fall and spring) in accordance with the EIA. This change is justified because accumulated data from the past three years indicates no significant variation either on fish populations or on observed benthos. At the same time, PERU LNG has begun a desktop review in order to obtain local and regional fish statistics from different government institutions, including the Ministry of Fishing, IMARPE (Institute of Peruvian Sea) and others. This data should complement and support data obtained through the Marine Monitoring Program.

### *Scope of the IESM Team's Review*

During the April Mission, a meeting with PERU LNG's Team responsible for the Marine Monitoring Program was held. No field inspections took place.

### *Compliance Assessment*

Monitoring under the Marine Monitoring Program has thus far surpassed EIA requirements, since PERU LNG understands that the marine ecosystem and the fishermen are the most sensitive subjects that could be affected by the Project. Since monitoring has not identified any material variations and most of the Project's marine intervention has been executed, PERU LNG now plans to downsize the monitoring effort to the standard established in the EIA. It is important to mention that the new level of monitoring will be equally capable of detecting eventual environmental changes.

### *Results Assessment*

Results of monitoring campaigns since the beginning of the Marine Monitoring Program are still being consolidated in a new comprehensive report that PERU LNG reported will be complete in the next quarter. Some specific monitoring reports have been finished (Palabritas study) and an official letter summarizing the current findings and clarifying specific points (including fishermen complaints) was produced by the researchers responsible for monitoring. However, the finished document is needed for an in depth analysis of cumulative results.

### *Suggestions and Recommendations*

Consolidated monitoring results should be presented as soon as possible.

### *Program Evaluation.*

The program is performing in accordance with Project commitments.

## 7.2 Seabirds and Marine Mammals Monitoring

### *Progress Reported by Peru LNG*

As stated by PERU LNG, the objective of the Seabird and Marine Mammal Monitoring is to establish baseline conditions regarding species' presence/absence, relative abundance and distribution of seabirds and marine mammals in relation to the LNG facility, evaluating potential effects of the construction on the populations of these organisms and on their geographical distribution.

The baseline was established in the end of 2007 and the results were discussed with key stakeholders (government institutions, scientific and non-governmental organizations) in a workshop carried out in October, 2008. According to the last Q4 2008 Report, the next survey is programmed to take place during the first quarter of 2009.

*Scope of the IESM Team's Review*

During the April Mission, a meeting with PERU LNG's environmental team responsible for the program was held. No ongoing monitoring was taking place during the mission.

*Compliance Assessment*

The Seabird and Marine Mammal Monitoring Program is not an EIA requirement and is not part of PERU LNG's commitments list under the Loan Agreement. Hence, it is an additionality issue not subject to compliance assessment. PERU LNG is proceeding with the program because the targeted organisms are important components of the regional marine ecosystem and are also considered to be good environmental indicators.

*Results Assessment*

The 2007 baseline survey produced an initial overview of the community of marine mammals and seabirds present along a 42,5 km strip of seashore, but was not designed to establish baseline parameters to evaluate possible effects of trestle and breakwater construction. After gathering many suggestions in the 2008 workshop, PERU LNG and its partners in the program are currently developing new experimental protocols for cause/effect monitoring. Due to this, the programmed Q1 2009 monitoring campaign was postponed until a suitable experimental design is concluded.

*Suggestions and Recommendations*

Since there is no baseline, monitoring must have a control/experiment arrangement, with surveys being carried not only around the facility, but also away from its area of influence to correctly establish any role of the construction in detected differences (there is an understanding that the 42,5 km seashore strip already surveyed is sufficiently large to allow for such an experimental arrangement). To gain more statistical power in results analysis, it would be better to concentrate monitoring with more replicates in fewer contrasting seasons, rather than to spread the surveys along the year. These two points were discussed in the meeting with PERU LNG's team.

Another issue of minor concern discussed with PERU LNG during the April Mission refers to the fact that as construction progresses, more and more seabirds are concentrating around the trestle and breakwater, searching for food, resting and even nestling sites. In fact, this is expected because the structures mimic some of their preferred natural habitats, which are the rocky islands near the shore. This may represent some risk to the attracted birds. Procedures to avoid or minimize any incidents should be adopted as possible during construction.

### *Program Evaluation*

No evaluation is possible because proper monitoring has not yet begun. Timing is a concern because absence of data during construction may render the establishment of cause/effect relations unfeasible.

#### 7.3 Coastline Monitoring

During Q4 2008, PERU LNG executed two topographic surveys to monitor evolution and/or changes of the coastline. The first survey of Q4 was concluded in October 2008, and included 30 transects north of the trestle, 25 transects south of the trestle, and one along its axis. The results of the survey were delivered to the Program Consultants for a detailed evaluation.

A complete new topographic survey was executed in December 2008 and the results will be analyzed jointly with those of a third survey, which is already scheduled for April 2009.

At the time of the IESM Mission, the Program Consultant had not yet delivered its report on the results of the October survey, and hence, a detailed evaluation of coastline evolution is not possible at this point in time.

Notwithstanding, it is important to mention that work executed as per the Coastline Monitoring Program is compatible with approved requirements. A more detailed evaluation of the results of monitoring under this program will be presented in the next IESM Mission's report, subject to previous delivery of the results of the topographic surveys mentioned herein.

#### 7.4 Luminosity Monitoring

PERU LNG understands luminosity monitoring as an additionality issue, since it is not a part of the FC or FD commitments under the loan agreement, was not required during the EIA process, and has no specific compliance issue included in Peruvian legislation.

Luminosity monitoring conducted in the previous quarter (Q3 2008), executed in order to verify any alterations in marine environment luminosity attributable to the Project, identified no material Project related impacts.

Based on these previous results, PERU LNG conducted no additional luminosity monitoring during Q4 2008. It is the IESM Team's opinion that luminosity monitoring conducted thus far is sufficient for the Project's construction phase.

## 7.5 Groundwater Monitoring

### *Progress Reported by Peru LNG*

PERU LNG informed that it concluded quarterly monitoring of groundwater levels and groundwater quality parameters at Topara, on November 25, 2008. It also reported that an additional survey was executed in February 2009 and another was scheduled for May 2009.

### *Scope of the IESM Team's Review*

Review by the IESM Team was, in this case, limited to verification of the information contained in the Q4 2008 Environmental, Social and Health and Safety Report. No field visits or further review of monitoring records was conducted.

### *Compliance Assessment*

Monitoring performed during Q4 2008 is compatible with requirements established in the corresponding program.

### *Results Assessment*

PERU LNG reports that no material alteration of groundwater levels and/or quality was verified in any of the eight (08) monitoring wells included in the program.

### *Suggestions and Recommendations*

None at this point in time.

### *Program Evaluation*

The Groundwater Monitoring program is effectively demonstrating that no impacts on ground water levels and/or quality can be attributed to activities at the quarry. Whereas the community of Topara seems to be relatively convinced that this is the case, it is nonetheless convenient to continue with monitoring activities until exploitation of the quarry is terminated.

## 7.6 Vibration Monitoring

No additional vibration monitoring campaigns were conducted at Topara during the Q4 2008. However, results of vibration monitoring during Q3 2008, executed in June and July, were presented to the community of Topara on October 22.

Based on results reported for Q3 2008, it seems reasonable to assume that vibration attributable to blasting at the quarry is producing no negative impacts on the aquifers under Topara valley. PERU LNG has therefore decided to discontinue vibration monitoring since it is not an EIA requirement and is not a project commitment anyhow.

## 7.7 Cultural Heritage Management Plan

### *Progress Reported by Peru LNG*

PERU LNG reported in its Q4 2008 Report that a chance find, consisting basically of a small organic waste dump, was identified during sleeperway foundation construction. The site was surveyed and its limits were identified and fenced. The INC has inspected the site and agreed that rescue is not necessary in this case.

It was furthermore reported that during the quarter, rescue of the site identified in the previous quarter along sector 1C of the access road to the quarry was concluded.

### *Scope of the IESM Team's Review*

During the April mission, the IESM Team inspected works along the sleeperway and this included verification of fencing of the aforementioned archaeological chance find. No further verification of Cultural Heritage Management Plan activities took place during the mission.

### *Compliance Assessment*

Procedures adopted in the two cases mentioned herein are fully compatible with requirements established in the Management Plan and have been accepted by the INC.

### *Results Assessment*

Proper identification of archaeological remains and management of rescue activities has thus far taken place as planned and proposed. The chance find reported on Q4 2008 is of no material significance.

### *Suggestions and Recommendations*

None at this point.

### *Program Evaluation*

The Cultural Heritage Management Plan has been very effective in ensuring that no material cultural property is damaged during the Project's implementation phase. It was particularly important during construction of the access road to the quarry, when it actually influenced alignment decisions.

At the current stage of the construction cycle, further chance finds seem unlikely and the Cultural Heritage Management Plan should focus on the thorough documentation of all rescued material and on the gradual substitution of provisional fencing for definitive archaeological markings to be installed according to INC guidelines.



## 7.8 Local Hiring and Purchasing Plan

### *Progress Reported by Peru LNG*

According to the Q4 2008 Report, during the reporting period the local workforce content comprised almost 38% of the total Peruvian workforce on the LNG Plant and Marine Facilities (including quarry).

Contractors fulfilled the project's commitment to hire equally from Cañete and Chinchá. On average, 1,308 workers from the communities of Cañete and Chinchá remained hired on the project during Q4 2008, as summarized in the table below.

Local hiring	October	November	December
Chinchá	582	671	644
Cañete	618	690	718
<b>Total</b>	1,200	1,361	1,362

According to PERU LNG, during Q4 local procurement totaled US\$ 258,167 in October US\$ 256,261 in November, and US\$ 243,205 in December, adding up to US\$ 757,633 for the quarter. Procurement from Chinchá and Cañete was primarily by contractors. The following table classifies local procurement by types of goods and services:

Item	%
Construction materials and supplies	36
Food	30
Lodging	17
Services in general	14
Fuel	3

### *Scope of the IESM Team's Review*

During the April Mission, the IESM Team received information about the program until February 2009 from PERU LNG's community relations staff.

In January, local workers were 39% of the total Peruvian workforce. In February this percentage rose to 40%. This is a significantly higher presence of local workforce in comparison to Q4 2008. The table below summarizes the situation in the first two months of 2009. It is worth noting that the number of workers from Cañete is approximately 2.5% larger than Chinchá workforce.

Local Hiring	January		February	
	Workers	%	Workers	%
Chinchá	692	18	800	19
Cañete	791	21	870	21
Total local workforce	1,483	39	1,670	40
Total Peruvian workforce	3,843	100	4,210	100

In January the total local purchases amounted for US\$ 239,593 and in February to US\$ 342,426. PERU LNG furthermore reported that there have been efforts to articulate the project's demands for textile products that can be produced in the region. During February the Supply Chain Program (PLNG/IFC) assumed the main role in organizing this demand. Local procurement by contractors is being continuously monitored.

#### *Compliance Assessment*

There is a slight difference in the number of local workers in favor of Cañete which can be corrected in coming months. This is a minor adjustment that does not alter the compliance status of the Local Hiring Program.

#### *Results Assessment*

The program has achieved good results and is benefiting a significant number of local workers and local businesses. The percentage of local workers in the total workforce has increased significantly in the beginning of 2009.

#### *Suggestions and Recommendations*

The need for a detailed transition plan between the construction and operation phases of the Project, including retrenchment planning, has been pointed before out by the IESM Team and will be essential in order to smoothen the social impacts of demobilization and decrease of local workforce and goods/services demand.

#### *Program Evaluation*

The Local Hiring and Purchasing Plan is effectively maximizing the benefits of the construction process for the local population of both Cañete and Chinchá in a balanced way.

### 7.9 Stakeholder Engagement Plan

#### *Progress reported by Peru LNG*

According to the Q4 2008 Report, during the quarter there were 742 visitors registered at Cañete's office and 425 at Chinchá. Additionally, the Chinchá office received 228 inquiries on pipeline activities.

Visits to the offices were mostly related to inquiries about employment, fishermen compensation and requests for information on the Project, including updates on construction and benefits of the Project in the community. The table below classifies inquiries by subject.

Type of visits to both offices – Q4	Number	%
Employment Inquiries	633	45
Fishermen compensation	572	41
General Consultation	147	11
Received Mail	40	3
Claims / Grievances	3	0
<b>Total</b>	1,395	100

PERU LNG also reported on the continued distribution of booklets (comics) on project environmental activities. Until the end of Q4, 3,414 comics had been distributed to local schools, local institutions, and fishermen associations through the PERU LNG offices in Chincha and Cañete.

Three grievances were received at the Cañete office in relation to the Plant and all are currently closed. Two of them were related to local workers and the third was related to a minor property damage. There have been efforts to better distribute and explain PERU LNG's grievance procedure to the local population.

There was one stoppage at the Quarry Haul Road (QHR) that took place in Q4. The owner of a mining concession near the QHR claimed that the access road to the quarry was causing damage to his mining concession. The damages were never proven as no mining activity is ongoing. The stoppage was solved and the Marine EPC Contractor resumed operations.

#### *Scope of the IESM Team's Review*

During the April Mission the IESM Team held a meeting with PERU LNG's and the contractors' community relations teams. During this meeting, activities under the Stakeholder Engagement Plan during Q1 2009 were reported on.

Main aspects to highlight refer to efforts to strengthen relationships with stakeholders through sponsoring cultural activities (i.e. Verano Negro de Chicha) and also participation in the Technical Committee for Local Development of Chincha, which is sponsored by UNDP.

Visits to the Canete and Chincha offices roughly followed the same pattern of Q4 2008. However, there is significant difference in the reasons for visiting the offices at Cañete and Chincha. While more than 50% of the visits to the Cañete office are related to the Fishermen Compensation Program, at the Chincha office the main reason for visiting the office are employment inquiries. A detailed breakdown is provided in the following table:

Type of visits - Q109	Cañete Office	%	Chincha Office	%	Total	%
Employment inquiries	194	26	455	78	649	49
Fishermen compensation	408	55	93	16	501	38
Other	105	14	25	4	130	10
Local providers	29	4	3	1	32	2
Social support	3	0	6	1	9	1
Grievances					6	0
<b>Total</b>	<b>739</b>	<b>100</b>	<b>582</b>	<b>100</b>	<b>1,327</b>	<b>100</b>

The process of adjustment of CB&I and CDB procedures with the Grievance Procedure established for the Project was concluded, ensuring there are no gaps between them.

During the Q1 2009, 6 grievances were reported at the Cañete and Chincha offices. Four of them, related to labor issues and have been closed. One was caused by damage to a local road provoked by a CB&I sub-contractor. Repairs have been done and the grievance is closed. The last grievance was presented by a fisherman who claims that his net was destroyed by a dredge. This last case has not been closed yet.

#### *Compliance Assessment*

During Q4 2008 PERU LNG reviewed the existing Grievance Procedure with focus on reception of grievances, follow-up and documentation of corrective action. During Q1 2009, gaps between CB&I and CDB grievance procedures and that established for the project were assessed and adjustments implemented as necessary. At the time of the April Mission, all adjustments of grievance registration, follow-up and documentation aspects that had been previously suggested by the IESM Team had been properly implemented.

#### *Results Assessment*

After adjustment of the Grievance Procedure there has been no significant increase in number of registered grievances, indicating that there are only few and minor causes of discomfort in the local communities regarding the Project's construction process. It is important to note in this context, that communications in relation to the Fishermen Compensation Plan are not registered as grievances or claims.

#### *Suggestions and Recommendations*

None at this time.

### *Program Evaluation.*

The Stakeholder Engagement Plan is properly managing and documenting Project interaction with the local population. Records to date confirm that employment opportunities and fishermen compensation are the two main issues of concern of the local population with regards to the Project.

#### 7.10 Fishermen's Compensation Management Plan

##### *Progress Reported by Peru LNG*

PERU LNG reported that during Q4 2008 seven (07) agreements were signed with artisanal fishermen associations and negotiations were ongoing with the remaining 3. These remaining associations prefer to receive cash compensation as opposed to compensation in social/economic projects, and this is hindering the process.

205 agreements were signed with independent fishermen, out of 284 identified as eligible in the Compensation Plan. There has been an adjustment in the number of independent fishermen initially identified. Of the original 319 independent fishermen that were eligible for compensation in the Social Baseline Study, 35 registries were excluded due to inexistent addresses, registry duplication in Cañete and Chinchá files, or due to death of the entitled person.

Seven associations are involved in the development of implementation plans for their business ideas. Two associations are well advanced in these efforts and are expected to start productive projects by February 2009. Market surveys are being developed for business ideas in the following sectors: transport, trade, manufacturing, services and fisheries.

80% of independent fishermen who have signed compensation agreements are developing working plans for their business ideas.

Finally, it is important to mention that PERU LNG's team is working with SwissContact – Recursos SAC (the implementation partner) to develop indicators to assess results of the Fishermen Compensation Plan, particularly in terms of income generation resulting from the development of businesses and productive projects, as well as in terms of their sustainability.

##### *Scope of the IESM Team's Review*

The IESM Team held a meeting with PERU LNG staff responsible for the Fishermen Compensation Plan, jointly with representatives of SwissContact – Recursos SAC. Information provided focused on recent developments (until March 2009), as summarized below:

- One more association signed an agreement; hence only two associations are still negotiating (APARCHPC – 63 fishermen - and Tambo de Mora – 169 fishermen). Both demand monetary compensation.

- 32 additional independent fishermen signed an agreement. Hence 237 out of 284 independent fishermen have signed agreements.
- All fishermen (independent or associated) who have signed agreements have also signed supplementary agreements regarding individual benefits (which are independent of the compensation and consist in goods and services - scholarships, food vouchers, etc. – for an amount of 4,200 nuevos soles per individual, approximately ).

The process of technical assistance is being implemented by SwissContact - Recursos SAC. Until March 2009, 236 workshops covering different phases of the process of developing business plans had been held, as detailed in the following table:

Process of Technical Assistance	Participants	Workshops	Invested Consultant hours
Introductory sessions	66	10	22
Identification of business ideas	430	52	196
Elaboration of working plans	415	47	170
Elaboration of Baseline	275	46	141
Elaboration of Business Plan	207	45	454
Review and implementation	120	36	229
<b>Total</b>		236	1,212

Two projects involving 24 fishermen and dedicated to transportation are in the process of implementation and the disbursement for the acquisition of goods and equipment has taken place.

Project and businesses profiles (transportation, agriculture, livestock, commerce and services) involving 73 fishermen have been concluded and approved. Other project and business profiles involving 91 fishermen are already finished and will soon be reviewed for approval. Hence, at the end of March 188 fishermen – either independent or associated – have advanced their project and business plans. This represents 37% of the fishermen that have already signed agreements individually or through their associations.

Most of the investment plans submitted are not related to fishing activities but to complementary ones. In most cases, they enhance other economic activities that families were already carrying on.

It was furthermore reported that the technical assistance team has been strengthened with additional permanent personnel.

PERU LNG is developing two kinds of indicators for this program:

- Indicators of temporary impact related to the individual benefits
- Indicators of long-term impact related to the implementation of projects and businesses.

PERU LNG indicated that it is still in the process of validating the indicators and verifying the baseline data.

### *Compliance Assessment*

Negotiations with fishermen associations are extending for a longer period than planned. However, this timeframe is due to the unexpected difficulty in reaching agreements with some associations and cannot be considered a non-compliance.

### *Results Assessment*

The negotiation process has thus far been successful, but is resending difficulties with two associations. PERU LNG reported it expects to reach an agreement sooner with APARCHPC than with the Tambo de Mora association. While the scenario is complex, the team is making sustained progress. The following months will be critical for a successful signing of all remaining agreements.

Businesses and projects are beginning to be implemented and it is too soon to assess results in this regard.

### *Suggestions and Recommendations*

The effectiveness of technical assistance and support for the implementation and sustainability of the businesses and projects will be a critical success factor. Clear positive results of the initial businesses and projects may be very important in facilitating pending agreements with fishermen associations.

Long-term indicators to be developed should take into account the capital invested by the Fishermen Compensation Plan on each project, and the corresponding multiplier effects should be calculated. These indicators could include investment vs. employment and investment vs. net income generated for project beneficiaries.

### *Program Evaluation.*

The program's negotiation phase is achieving good results, taking into account that it is facing complex negotiations with the remaining associations which are demanding not only monetary compensation (as opposed to projects), but also higher sums than those offered by PERU LNG.

The phase of implementation of the businesses and projects is just starting.

## **8.0 Additionality Programs**

### **8.1 Contractors' Investment in Community Development**

As briefly described below, both CB&I and CDB are carrying out a wide variety of social interventions in the communities of Cañete and Chincha. These include social, economic, cultural and environmental initiatives.

During the April Mission, the IESM Team attended presentations by CB&I and CDB community relations teams in which all social investment initiatives were reviewed in detail. All projects continue to be implemented.

### *Social Development*

#### *Health Campaigns (CB&I and CDB)*

During Q4 2008 health campaigns consisting of expedite medical checks-ups and 11 campaigns of Hepatitis B vaccination were carried out with 3,588 people included in the campaigns, most from rural areas. The contribution of the CB&I and CDB is through support in logistics, transport and funding for informative material to the health centers in Chincha and Cañete

#### *Health/Hygiene Training in Community Kitchens (CB&I)*

During Q4, 3 nutritional and environmental workshops, 1 home safety and 3 sanitary facility workshops were held for 172 women that are active members of Community Kitchens in Chincha and Cañete. These activities are carried out in coordination with local governments.

#### *Workshops on the prevention of family and sexual violence (CDB)*

During Q4, workshops have been carried out in 8 schools with a total of 932 participants. The workshops focused on the problems of the family and sexual violence, and ways to prevent it and were promoted in close coordination with the municipalities of Chincha and Cañete.

### *Economic Development*

#### *Strengthening Local Textiles Workshops (CB&I)*

Six (06) Textiles Workshops (3 in Chincha and 3 in Cañete) were sponsored during Q4 2008. Participants received administrative training. PERU LNG supports this initiative by purchasing uniforms, both for plant and pipeline activities.

#### *Silk-screen printing workshops (CDB)*

During Q4 2008, 15 training courses were sponsored in a school in Chincha, teaching participants silk-screen printing techniques.



### Cultural Development

#### *Dance school (CDB)*

This program promotes local music and dance among children from Chíncha and Cañete. Around 100 children participate in the program. In Q4, the dance school held 56 class-hours.

#### *Football school (CDB)*

The football school was initiated to develop skills of children from Chíncha and Cañete. There were 120 children participating in this project during Q4 2008.

#### *Supporting Volleyball (CB&I)*

In coordination with local governments and the Peruvian Institute of Sport, CB&I supports volleyball teaching and training with children and teenagers from both Chíncha and Cañete. During Q4, there were 170 active participants in this project.

### Environmental Protection

#### *Healthy School Program (CB&I)*

The goal of this program is to support and improve safety, health and protection of the environment in schools. It is implemented in coordination with health centers, municipalities and National Police. During Q4, 17 lectures on emergency preparedness were given to school brigades, 15 lectures on nutrition were given to teachers and 10 lectures to students on the care for the environment, including management of solid waste, took place.

### Other Social Projects

Further to the projects listed above, the following complementary social initiatives were reported on during the mission:

- CB&I has carried out 3 provincial workshops and 3 district workshops in order to promote the elaboration of Concerted Development Plans, Municipal Institutional Development Plans and Participatory Budgets.
- CB&I is carrying out and publishing studies of the project's area of influence which will help district municipalities in planning their development efforts.
- CDB is promoting the governmental program *Plan Lector* that seeks promotion of reading among children.

## 8.2 PERU LNG Social Projects

PERU LNG is undertaking investment in community development through targeted programs in agricultural promotion and supply chain management.

- *Agroprogreso* (agricultural development project), is a three-year program that began in February 2008 and intends to increase the income of 300 small agricultural producers in the provinces of Chíncha and Cañete. The program works with a local partner in the delivery of specialized technical assistance, training, commercialization assistance and access to funds, in order to improve the skills of selected beneficiaries from the local communities.
- The *Local Supplier Development Project*, aims at benefiting 100 small local businesses. It will be implemented jointly with IFC through IFC's Linkages Program. The project is planned to last 2 years, with part of the budget provided by PERU LNG (70%) and part by IFC (30%). This program, launched November 21, 2008.

With regards to *Agroprogreso*, the Q4 2008 Report informs that following an in-depth evaluation of program deliverables and achieved targets, the contract for implementation of this program was terminated in December. A new implementation partner would be selected in the first quarter of 2009. During the transition phase, PERU LNG has given continuity to specific ongoing tasks, such as technical training, in order to ensure that beneficiaries' interests and expectations are not jeopardized.

During meetings held during the April Mission, it was informed that in January 2009 the Instituto Rural Valle Grande, with almost 50 years of experience in the region, was selected as the new implementing partner for the remaining part of the project (March 2009 – March 2011).

Field activities were re-started in March, with an initial field diagnosis of 255 agricultural fields. Assessments of required vineyard improvements were concluded for 24 farmers. 168 grape producers were found with conditions to be included in grapevine production chain.

The Instituto Rural Valle Grande has developed an agreement for the bulk acquisition of fertilizers and other inputs, thus ensuring low prices and loans with low interests. It has also obtained a credit line of US\$ 217,500 for the project. Furthermore, a baseline survey with the data of 500 farmers will be developed in the second quarter.

The proposal of the Instituto Rural Valle Grande has a strong focus on grape production. However, other technical packages will be delivered to non-grape producers who are participating in the program (the program currently includes 168 grape producers and 90 non-grape producers, and there is still a margin for including additional beneficiaries).

With regards to the *Local Supplier Development Project*, the Q4 2008 Report informs SwissContact - Recursos SAC have been selected as the implementing partners. Initial meetings with local entrepreneurs were carried out for identification of potential demand of products.

The first activities on the field were carried out on January 2009, including:

- Identification and assessment of supply capacities. 143 SMEs have been registered. With this information, a database and baseline is also being developed. 83 assessments and 80 improvement plans are being developed.
- Identification and assessment of demand: 15 local large enterprises have been contacted. 9 show a potential demand for local goods and services. 6 of them already purchase from local suppliers.
- Initial commercial articulation (PERU LNG request): 1000 t-shirts, 200 uniforms, 140 shirts, 120 vests, 90 pants, 500 *panetones*.

## **9.0 Project KPI Analysis**

### **9.1 Environmental Indicators**

During Q4 2008, all environmental indicators were within the project's targeted performance. Notwithstanding, it is worth commenting that in the case of EPT7 (treated effluent discharges), performance is not yet ideal.

EPL7 requires a 20% reduction of the previous year's non-conformant situations. Since complete data on treated effluents for 2007 is not available, PERU LNG is not able to establish compliance. Whereas this is the case, it must be noted that 4 out of 9 monitoring results for Phosphorous were non-compliant with the applicable standard and hence there is room for improvement.

### **9.2 Social Indicators**

All performance targets established in the Project's Social KPI's were met during Q4 2008. The only comment worth registering in this context is that local hiring is slightly unbalanced in favor of Cañete. An effort to re-balance the situation should be undertaken.

### **9.3 Health and Safety Indicators**

Only one minor accident without lost time was reported during Q4 2008. This was a hand injury during rock manipulation and classification activities at the K5 platform. A Job Safety Analysis (JSA) was conducted and the safe work procedure was adjusted as a result. Worker training to ensure applicable precautions when materials are handled manually are understood also took place.

The Lost Time Incident Rate for the LNG Plant and Marine Facilities was stable at 0.03 (per 200,000 man-hours worked) during all of Q4. This is well below the corresponding KPI of 0.25.

## 10.0 Ongoing E&S Claims / Legal Processes

There are no ongoing claims relative to environmental or social issues.

## 11.0 Consolidated Suggestions and Recommendations

Recommendations set forth herein are classified into six main categories as follows:

- Recommendations affecting PERU LNG's E&S assurance procedures relative to construction.
- Recommendations requiring PERU LNG to request corrective action from EPC Contractors.
- Recommendations relative to ongoing E&S Programs.
- Suggestions relative to Additionality projects.
- Requests for inclusion of complementary information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports.
- Recommendations for future action in view of perceived environmental and social upcoming risks (i.e. recommendations for preventive action with regards to future works, rather than for corrective action on past or ongoing performance).

New recommendations resulting from the April Mission are presented below, organized according to the six categories specified above. A **Recommendation Tracking Table** is presented in **ANNEX 03**.

### **Recommendations Affecting PERU LNG's E&S Assurance Procedures Relative to Construction**

No recommendations in this category are being presented as a result of the April Mission.

### **Recommendations Requiring PERU LNG to Request Corrective Action from Contractors**

- Table 9 (page 13) of CB&I's ESIP relative to Marine Water Quality should be substituted.
- The applicable standard for Residual Chlorine should be correctly indicated in the water quality results tables. in CB&I's Compliance Monitoring ESIP.
- PERU LNG should require both CB&I and CDB to issue detailed technical specifications when contracting laboratories for water quality monitoring services, so as to ensure that the analytical methods used have detection limits that are compatible with the applicable standards for all parameters.

- Regarding construction, the main recommendation refers to the need to assure that spill trays are always provided with Terex lights used for illuminating construction fronts at night. Three Terex lights without trays were observed during inspections. This seems to be the result of a missing item in both PERU LNG and CB&I inspection checklists.

#### **Recommendations Relative to Ongoing E&S Programs.**

- It is necessary to improved feedback of E&S program results to local communities. This was found to be particularly relevant with respect to the Marine Monitoring Program.
- It is recommended that there be an exchange of information and experiences between the community members participating in participatory monitoring activities on the pipeline's coastal spread and on the Marine Monitoring Program. Among local community members, the Project is only one and the division of monitoring activities may seem unclear.
- Continued technical assistance and monitoring of economic projects to be implemented by fishermen with the compensation delivered by PERU LNG under the Fishermen's Compensation Plan will be essential. Due to the large amount and diversity of projects, this will require a specialized team with fulltime dedication. Periodic review of technical assistance staffing needs is recommended.

#### **Suggestions Relative to Additionality Projects.**

- There is a good opportunity to develop synergies between the two additionality social projects (Agroprogreso and Local Suppliers) and the Fishermen Compensation Management Plan.

#### **Requests for Inclusion of Complementary Information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports.**

Two recommendations with regard to improved reporting by Peru LNG were formulated during the mission:

- Firstly, it was requested that updates on the influx management plan be included as part of the standard scope of the Quarterly Environmental, Social and Health and Safety Reports.
- In the second place, it was requested that a section on labor force management be included as part of the monthly construction reports. This will include indication of the total workforce at quarter beginning and end, both at CB&I and CDB, as well as with main sub-contractors. Local labor from Chíncha and Cañete should be reported in this context, as well as indication of the number of workers housed at each camp at Melchorita, and at external locations. This will include the bus drivers at Chíncha

and/or Cañete, CB&I staffed currently housed at Cerro Azul, and PERU LNG staff to be housed at Asia del Sur. This report on the labor force should also include information on any breaches of the Code of Conduct, and mention of community grievances related to worker-community conflicts.

### **Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks**

- Two abandoned precarious constructions remained in place within the LNG plant's buffer zone. It is recommendable that PERU LNG proceeds with formal requests to the Ministry of Agriculture, in order to remove these unoccupied shacks.
- The need for rapid conclusion and implementation of a transition plan for the end of the construction process is highlighted. This plan should include both retrenchment issues and influx management strategies.
- It is necessary to evaluate the future of CB&I and CDB social initiatives in the transition from the construction to the operation phase. They are not sustainable in themselves; hence it is necessary to start defining what will be the policy of PERU LNG in terms of continuity of these projects in the future.
- PERU LNG should develop a strategic social responsibility plan in the near future. It will be important for PERU LNG to establish and disclose which kind of projects it wishes to support and develop. In this context, it is also recommended that the pipeline and plant teams exchange information and share experiences and that the overall project strategy for the operations phase be integrated to the extent possible.

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**ANNEX 01 - List of Documents Reviewed**

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## **Annex I – List of Documents Reviewed – Peru LNG – PLANT AND MARINE FACILITIES**



Construction Progress Power Point Presentation  
 Power Point Presentation – Grievance Procedure  
 Letter presented to OSINERGMIN - Lodging Management Plan for Workers in Chincha and Cañete  
 CBI's Labor Relations Regulation  
 Power Point Presentation - AgroProgreso, Supply Chain Management and Fishermen Compensation  
 Marine Monitoring: ERT Letter - Marine Impacts  
 Marine Monitoring: ERT Report (Nov 2008 Survey) - Draft  
 Coastline Survey Draft Report  
 JSA Ship Fueling - Hazard Identification and Risk Assessment Format  
 Plant Commitment Register  
 Air Compressor Air Quality Evaluation – Nov 2008  
 Power Point Presentation - CDB Community Relations  
 CDB Grievance Procedure - (Spanish)  
 CBI Grievance Procedure - (Draft Version)  
 2009 - Registered Grievances and Responses  
 Influx Management Plan Report  
 AgroProgreso Summary Report  
 AgroProgreso Framework  
 Supply Chain Management Project Summary  
 Supply Chain Management Framework  
 Power Point Presentation - H&S  
 Monthly EHS Progress Report - Oct 2008  
 Monthly EHS Progress Report - Nov 2008  
 Monthly EHS Progress Report - Dec 2008  
 Monthly EHS Progress Report - Jan 2009  
 Monthly EHS Progress Report - Feb 2009  
 Monthly EHS Progress Report - March 2009  
 Monthly Report - OSINERGMIN - Oct 2008  
 Monthly Report - OSINERGMIN - Nov 2008  
 Monthly Report - OSINERGMIN - Dec 2008  
 Monthly Report - OSINERGMIN - Jan 2009  
 Monthly Report - OSINERGMIN - Feb 2009



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**ANNEX 02 - Inspection Protocols**

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 <b>IP.01</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING  <b>INSPECTION PROTOCOL – LNG PLANT</b>						
						Rev. 01	13/04/2009

Inspection Check List		Inspected Facilities							
A. Housekeeping and Pollution Prevention		Utility Sector	LNG Train	BOG Area	LNG Tanks	Sleeper Way			
A.1	Control of fugitive dust	Na	Na	Na	Na	Na			
A.2	Control and/or containment of activity-related emissions (blasting, painting, others)	o	o	o	√	o			
A.3	Control of vehicle and equipment emissions	√	√	√	√	√			
A.4	Control of vehicle and equipment noise emissions	▲	▲	▲	▲	▲			
A.5	Location restrictions for installations or activities with high contamination risk	Na	Na	Na	Na	Na			
A.6	Construction equipment spill prevention	√	√	√	√	√			
A.7	Control of concrete mixer washing	Na	Na	Na	Na	Na			
A.8	Control of construction front liquid effluents	Na	Na	Na	Na	Na			
A.9	Handling and storage of chemicals, fuel, oil, paints and other liquids at construction fronts	√	√	√	√	√			
A.10	Hydrotest water handling (sourcing, reuse, additives, pre-discharge treatment, other)	o	o	o	o	Na			
A.11	Construction front sanitary installations	√	√	√	√	▲			
A.12	Construction front canteen and worker resting areas	▲	▲	▲	▲	▲			
A.13	Classification and provisional storage of solid waste in construction fronts	√	√	√	√	√			
A.14	Control of solid waste off-site transportation and disposal	√	√	√	√	√			
A.15	Destination of recyclable wastes	▲	▲	▲	▲	▲			
A.16	Proper corrective action in case of spills	o	o	o	o	o			
A.17	Control of water use, including permits	Na	Na	Na	Na	Na			
A.18	Transportation and handling of radioactive or other hazardous products, including permits	▲	▲	▲	▲	▲			
A.19	Access and circulation restriction (barriers) around and within construction fronts	√	√	√	√	√			

Na    Not Applicable    o    Not Active    ▲    Not-Verified    √    Compliant    X    Non-Compliant

 <b>IP.01</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING  <b>INSPECTION PROTOCOL – LNG PLANT</b>								
						Rev. 01	13/04/2009		



Inspection Check List		Inspected Facilities							
B. Archaeological Chance Finds		Utility Sector	LNG Train	BOG Area	LNG Tanks	Sleeper Way			
B.1	Delimitation and protection of archaeological remains	Na	Na	Na	Na	√			

C. Erosion and Run-off Control		Utility Sector	LNG Train	BOG Area	LNG Tanks	Sleeper Way			
C.1	Erosion control at borrow pits and surplus material deposits	Na	Na	Na	Na	Na			
C.2	Stabilization of soil and aggregate piles within construction fronts	Na	Na	Na	√	Na			
C.3	Control of inclination of platforms, cut and fill sections and drainage components	√	√	√	√	√			
C.4	Stabilization / recovery of erosion	√	√	√	√	√			
C.5	Geological inspections	o	o	o	o	o			

D. Construction Front Signaling		Utility Sector	LNG Train	BOG Area	LNG Tanks	Sleeper Way			
D.1	Signaling – Access restriction	√	√	√	√	√			
D.2	Signaling – Vehicle and equipment circulation and maneuvers	√	√	√	Na	Na			
D.3	Signaling – Health & Safety warnings	√	√	√	√	▲			



E. Worker's Health and Safety		Utility Sector	LNG Train	BOG Area	LNG Tanks	Sleeper Way			
E.1	Use of Protection Equipment	▲							
E.2	Worker's transportation	Na	Na	Na	Na	Na			
E.3	Vehicle and equipment conditions	▲	▲	▲	▲	▲			
E.4	Compliance w/ Safe Work Procedures (SWP) – Earth Movement	▲	▲	▲	▲	▲			
E.5	Compliance w/ SWP – Work in high places	√	√	√	√	Na			
E.6	Compliance w/ SWP – Welding	▲	▲	▲	√	▲			
E.7	Compliance w/ SWP – Sandblasting	o	o	o	√	o			
E.8	Compliance w/ SWP – Electric risk	√	√	▲	▲	▲			
E.9	Compliance w/ SWP – Confined space	o	o	o	o	Na			

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non-Compliant
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 <b>IP.01</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING  <b>INSPECTION PROTOCOL – LNG PLANT</b>	
		Rev. 01    13/04/2009



Inspection Check List		Inspected Facilities							
E. Worker's Health and Safety		Utility Sector	LNG Train	BOG Area	LNG Tanks	Sleeper Way			
E.10	Compliance w/ SWP – Pressure testing	o	o	o	o	o			
E.11	Compliance w/ SWP – Safe driving	Na	Na	Na	Na	Na			
E.12	Compliance w/ SWP – Other	Na	Na	Na	Na	Na			
E.13	Emergency equipment (including extinguishers and first aid)	√	√	√	√	√			

Na    Not Applicable    o    Not Active    ▲    Not-Verified    √    Compliant    X    Non-Compliant

 <b>IP.02</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING  <b>INSPECTION PROTOCOL – MARINE FACILITIES</b>		
		Rev. 01	13/04/2009

Inspection Check List		Inspected Facilities									
A. Housekeeping and Pollution Prevention		Trestle	Break Water								
A.1	Control and/or containment of activity-related emissions (sandblasting, painting, others)	o	Na								
A.2	Control of equipment air emissions	▲	▲								
A.3	Control of equipment noise emissions	▲	▲								
A.4	Construction equipment spill prevention	√	√								
A.5	Construction front sanitary installations, canteens and worker resting areas (on land)	√	√								
A.6	On board sanitary conditions (canteen, restrooms, etc.)	Na	Na								
A.7	Handling of construction front liquid effluents (sanitary and other)	√	√								
A.8	Handling and storage of chemicals, fuels, oil, paints, and other liquids at construction fronts	√	√								
A.9	Handling and storage of chemicals, fuels, oil, paints, and other liquids on board	Na	Na								
A.10	Classification and provisional storage of solid waste in construction fronts	√	▲								
A.11	Classification and provisional storage of solid waste on board	Na	Na								
A.12	Control of solid waste off-site transportation and disposal, including recyclables	▲	▲								
A.13	Control of ship waste disposal	Na	Na								
A.14	Transportation and handling of radioactive or other hazardous products, including permits	▲	Na								
A.15	Control of ship fuel supply operations	Na	Na								
A.16	Proper corrective action in case of spills at land	o	o								
A.17	Marine spill containment and withdrawal capabilities	Na	Na								
A.18	Proper corrective action in case of spills at sea	Na	Na								
A.19	Seawater contamination surveillance / monitoring	√	Na								
A.20	Beach contamination surveillance / monitoring	√	Na								
A.21	Beach access and circulation restriction around and within land construction fronts	X	Na								
A.22	Access restriction around marine construction fronts (exclusion zone enforcement)	√	Na								

Na    Not Applicable    o    Not Active    ▲    Not-Verified    √    Compliant    X    Non-Compliant



 <b>IP.02</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING  <b>INSPECTION PROTOCOL – MARINE FACILITIES</b>	
		Rev. 01      13/04/2009

Inspection Check List		Inspected Facilities							
B. Marine Footprint Minimization		Trestle	Break Water						
B.1	Control of beach erosion and debris deposition	√	Na						
B.2	Dredging plan compliance assurance	Na	Na						
B.3	Control of dredged material disposal at dump site	Na	Na						
B.4	Control of breakwater footprint limits	Na	√						
B.5	Other sea bed disturbance reduction measures	▲	▲						

C. Construction Front Signaling		Trestle	Break Water						
C.1	Signaling – Access restriction	√	√						
C.2	Signaling – Vehicle and equipment circulation and maneuvers	√	√						
C.3	Signaling – Health & Safety warnings	√	√						
C.4	Marine signaling – navigation	Na	Na						
C.5	Marine signaling – footprint limits	Na	Na						



D. Worker's Health and Safety		Trestle	Break Water						
D.1	Use of Protection Equipment	√	√						
D.2	Worker's transportation	▲	▲						
D.3	Vehicle and equipment conditions	√	√						
D.4	Compliance w/ Safe Work Procedures (SWP) – Navigation / work at sea	Na	Na						
D.5	Compliance w/ SWP – Work in high places	√	Na						
D.6	Compliance w/ SWP – Welding	▲	Na						
D.7	Compliance w/ SWP – Sandblasting / Garnet Blasting	√	Na						
D.8	Compliance w/ SWP – Pressure testing	▲	Na						

Na    Not Applicable    o    Not Active    ▲    Not-Verified    √    Compliant    X    Non-Compliant

 <b>IP.02</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING			
	<b>INSPECTION PROTOCOL – MARINE  FACILITIES</b>		Rev. 01	13/04/2009

Inspection Check List		Inspected Facilities							
D. Worker's Health and Safety		Trestle	Break Water						
D.9	Compliance w/ SWP – Fuel supply	▲	▲						
D.10	Compliance w/ SWP – Other	√	√						
D.11	Emergency equipment (including extinguishers and first aid)	√	√						



Na *Not Applicable*
o *Not Active*
▲ *Not-Verified*
√ *Compliant*
X *Non-Compliant*

 <b>IP.05</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING			
	<b>INSPECTION PROTOCOL – OPERATION OF  CAMP FACILITIES &amp; PROVISIONAL  INDUSTRIAL INSTALLATIONS</b>		Rev. 01	13/04/2009

Inspection Check List		Inspected Facilities							
A. Housekeeping and Pollution Prevention		CB & I Tanks	GyM Camp	CDB Waste Area					
A.1	Control of fugitive dust	√	√	√					
A.2	Dust containment during aggregate loading / unloading and similar operations	o	o	o					
A.3	Control of point source emissions	▲	▲	Na					
A.4	Cleaning and maintenance of filters and other emission control devices	Na	Na	Na					
A.5	Control of point source noise emissions as pertinent	▲	▲	Na					
A.6	Handling and storage of chemicals, fuels, oil, paints and other hazardous products	√	√	√					
A.6	Spill prevention around tanks, storage areas and vehicle and equipment maintenance yards	√	√	Na					
A.7	Location restrictions affecting fuels or other hazardous products (radioactive, explosives)	√	√	Na					
A.8	Classification and provisional storage of solid and liquid wastes (including recyclables)	√	√	√					
A.9	Control of solid and liquid waste off-site transportation and disposal	√	√	√					
A.10	Concrete mixer washing facilities	Na	Na	Na					
A.11	Control of surplus concrete disposal conditions	Na	Na	Na					
A.12	Oil/water separation installations and maintenance	Na	√	Na					
A.13	Run-off retention devices and maintenance	Na	Na	Na					
A.14	Sanitary installations and maintenance	Na	▲	√					
A.15	Kitchen and canteen infrastructure	Na	▲	Na					
A.16	Effluent treatment and/or infiltration	Na	Na	Na					
A.17	Effluent monitoring	Na	Na	Na					
A.18	Water quality monitoring (potable)	▲	▲	▲					
A.19	Water quality monitoring (effluent discharge receptor)	Na	Na	Na					

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non- Compliant
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 <b>IP.05</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING  <b>INSPECTION PROTOCOL – OPERATION OF CAMP FACILITIES &amp; PROVISIONAL INDUSTRIAL INSTALLATIONS</b>			
			Rev. 01	13/04/2009



Inspection Check List		Inspected Facilities							
A. Housekeeping and Pollution Prevention		CB & I Tanks	GyM Camp	CDB Waste Area					
A.20	Pest control	▲	▲	▲					
A.21	Physical delimitation of camps and industrial facilities (barriers)	√	√	√					
A.22	Safety and surveillance of key facilities	√	√	√					

B. Erosion and Footprint Minimization		CB & I Tanks	GyM Camp	CDB Waste Area					
B.1	Containment of facilities and activities within pre-established limits	√	√	√					
B.2	Stabilization of soil and aggregate piles	Na	Na	Na					
B.3	Protection of site from floods	Na	Na	Na					
B.4	Permanent maintenance of site provisional drainage and sediment retention basins	Na	Na	Na					
B.5	Stabilization / recovery of erosion	Na	Na	Na					
B.6	Withdrawal of run-off from natural drainage and/or irrigation channels downstream	Na	Na	Na					

C. Signaling		CB & I Tanks	GyM Camp	CDB Waste Area					
C.1	Signaling – Access restriction	√	√	√					
C.2	Signaling – Vehicle and equipment circulation and maneuvers	Na	√	Na					
C.3	Signaling – Health & safety warnings	√	√	√					
C.4	Signaling – Environmental markings	Na	Na	Na					

D. Worker's Health & Safety		CB & I Tanks	GyM Camp	CDB Waste Area					
D.1	Use of Protection Equipment	√	√	√					
D.2	Compliance with applicable Safe Work Procedures	√	√	√					
D.3	General cleanliness & hygiene (canteen, restrooms, living quarters, other)	√	√	√					

Na    Not Applicable    o    Not Active    ▲    Not-Verified    √    Compliant    X    Non-Compliant

 <b>IP.05</b>	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING		
	<b>INSPECTION PROTOCOL – OPERATION OF  CAMP FACILITIES &amp; PROVISIONAL  INDUSTRIAL INSTALLATIONS</b>		Rev. 01      13/04/2009

Inspection Check List		Inspected Facilities							
D. Worker's Health & Safety		CB & I Tanks	GyM Camp	CDB Waste Area					
D.4	Building standards (room size, number of bathrooms, etc.)	Na	▲	Na					
D.5	Ergonomics	▲√	▲	▲					
D.6	Emergency equipment (including extinguishers, ambulances, first aid, other)	√	√	X					
D.7	Medical facilities	Na	Na	Na					

<div>Na</div>	<div>Not Applicable</div>	<div>o</div>	<div>Not Active</div>	<div>▲</div>	<div>Not-Verified</div>	<div>√</div>	<div>Compliant</div>	<div>X</div>	<div>Non- Compliant</div>
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**ANNEX 03 - Recommendation Tracking Table**

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### ANNEX 03

#### Recommendation Tracking Table

Recommendations affecting PERU LNG's E&S assurance procedures relative to construction					
Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
02.09	In order to obtain a more clear analysis of the KPI for contractor response on corrective action requests (EPT1), it is recommended that the indicator be calculated not only on a month-by-month basis, but also cumulatively.	KPI- Performance (NCR's, CAR, WIN)	Misleading evaluation of results and performance of the non-compliance management system	Cumulative analysis included within the Q1 2009 E&S report. See Table 5.5 – 1	Corrective action considered satisfactory. This recommendation to be removed from the Tracking Table in next IESM Report.
02.09	Continue to revise routines and to improve tracking tables and the documentation process of the Grievance and Complaints Procedure, revising categories in use and presenting detailed information in the next Quarterly report.	Grievance Register	Reputation and Legal Risk	Tables for tracking of grievances have been updated and revised for more adequate control. Documentation on the closing of the grievances has been added to the database	Corrective action considered satisfactory. This recommendation to be removed from the Tracking Table in next IESM Report.
02.09	Present a summary of cumulative results of fauna observations executed to date as part of the Ecological Monitoring Plan and include it in the next quarterly report.	Ecological Monitoring Plan	Risk of biotic integrity decrease	Included within Section 5.3.2 of the Q1 2009 E&S report.	Corrective action considered satisfactory. This recommendation to be removed from the Tracking Table in next IESM Report.
05.09	Table 9 (page 13) of CB&I's ESIP relative to Marine Water Quality should be substituted.	Water quality standards	Non-compliance with applicable water quality standards	Pending	

Recommendations Requiring PERU LNG to Request Corrective Action from Contractors					
Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
02.09	With regard to blending wastewater effluents and reverse osmosis (RO) rejected brine for reutilization, PERU LNG should request the Plant EPC Contractor to ask DIGESA for the corresponding permit and, in the meantime, reuse only the wastewater effluent when it meets the standards.	Wastewater effluents permits	Legal Risk	Mixing of RO effluent and domestic wastewater has ceased. RO effluent is discharged to sea as per the existing permit. Domestic effluent is treated and is reused and is compared to Class III standards.	Corrective action considered satisfactory. This recommendation to be removed from the Tracking Table in next IESM Report.

Recommendations Requiring PERU LNG to Request Corrective Action from Contractors					
Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
02.09	Request the Marine EPC Contractor to improve signaling regarding usage of ear protection PPE at the workshop.	Health and Safety-PPE Signaling	Risk for workers' security and health	Signaling improved. Continuous monitoring	Corrective action considered satisfactory. This recommendation to be removed from the Tracking Table in next IESM Report.
02.09	Request the Marine EPC Contractor to improve inspection and signaling procedures in order to always maintain eye washing devices full of water.	Health and Safety	Risk for workers' security and health	Inspection and signaling improved. Continuous monitoring.	Corrective action considered satisfactory. This recommendation to be removed from the Tracking Table in next IESM Report.
05.09	The applicable standard for Residual Chlorine should be indicated in water monitoring result tables.	Water quality standards	Non-compliance with applicable water quality standards	Pending	
05.09	PERU LNG should require both CB&I and CDB to issue detailed technical specifications when contracting laboratories for water quality monitoring services, so as to ensure that the analytical methods used have detection limits that are compatible with the applicable standards for all parameters.	Water quality standards	Non-compliance with applicable water quality standards	Pending	
05.09	Deploy spill trays under Terex lights used for illuminating construction fronts at night. Three Terex lights were without trays were observed during inspections.	Pollution prevention	Soil and groundwater contamination	Pending	

Recommendations Relative to Ongoing E&S Programs					
Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
02.09	Present a summary of cumulative results of fauna observations executed to date as part of the Ecological Monitoring Plan and include it in the next quarterly report.	Ecological Monitoring Plan	Risk of biotic integrity decrease	Included within Section 5.3.2 of the Q1 2009 E&S report.	Corrective action to be confirmed upon review of the Q1 2009 Report.

### Requests for Inclusion of Complementary Information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports

Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
05.09	Status of the Influx Management Plan should be included as part of the standard scope of the Quarterly Environmental, Social and Health and Safety Reports.	Induced migration Retrenchment	Unchecked in-migration to the project's area of influence	Pending	
05.09	A section on workforce management should be included as part of the monthly construction reports. This should include indication of the total workforce at quarter beginning and end, both at CB&I and CDB, as well as with main sub-contractors. Local labor from Chinchá and Cañete should be reported in this context, as well as indication of the number of workers housed at each camp at Melchorita, and at external locations. This will include the bus drivers at Chinchá and/or Cañete, as well as CB&I staff currently housed at Cerro Azul, and PERU LNG staff to be housed at Asia del Sur. Information on any breaches of the Code of Conduct, and mention of community grievances related to worker-community conflicts, should also be included.	Local hiring practices Worker / community relations	Worker / community conflict	Pending	

### Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks

Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
05.09	Two abandoned precarious constructions remained in place within the LNG plant's buffer zone. It is recommendable that PERU LNG proceed with formal requests to the Ministry of Agriculture, in order to remove these unoccupied shacks.	Influx management	Risk of occupation within buffer zone	Pending	
05.09	The need for rapid conclusion and implementation of a transition plan for the end of the construction process is highlighted. This plan should include both retrenchment issues and influx management strategies.	Influx management Retrenchment	Loss of means of livelihood Worker unrest	Pending	

Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks					
Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
05.09	It is necessary to evaluate the future of CB&I and CDB social initiatives in the transition from the construction to the operation phase. They are not sustainable in themselves; hence it is necessary to start defining what will be the policy of PERU LNG in terms of continuity of these projects in the future.	Community relations Social responsibility	Deterioration of relations with local communities	Pending	
05.09	PERU LNG should develop a strategic social responsibility plan in the near future. It will be important for PERU LNG to establish and disclose which kind of projects it wishes to support and develop.	Social responsibility	Deterioration of relations with local communities	Pending	

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**ANNEX 04 - Photographic Records of Mission Observations**

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**Location:** Construction front at LNG Plant process area.

**Comment:** Eye-washing equipment with small quantity of water and with access obstructed by wheelbarrow and fence. There was another eye-washing equipment nearby with smaller quantity of water.



**Location:** Construction front at LNG Plant process area.

**Comment:** Information signage and waste containers painted in different colors, according to types of residues. Waste separation was compliant with established norms.



**Location:** Graña y Montero Camp at Melchorita Plant

**Comment:** Containers do not follow CB&I's color standard procedure and waste separation performed by workers was not compliant. Corrective measures were undertaken during the Mission.



**Location:** Construction front at LNG Plant.

**Comment:** Not all hoses were equipped with an excess flow safety valve.





**Location:** Fuel storage and supply area in the San Martin zone.

**Comment:** Anti-static clamp requiring replacement.




**Location:** Construction front at LNG Plant.

**Comment:** Containment device / tray for fuel or chemical products leaks / spills.

	<p>INDEPENDENT ENVIRONMENTAL &amp; SOCIAL MONITORING</p> <p>PHOTOGRAPHIC RECORD OF AUDITS</p>	  April 2009
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	<p><b>Location:</b> Construction front at LNG Plant</p> <hr/> <p><b>Comment:</b> Excavation areas with no appropriate fencing to impede workers from inadvertent falls. This observation was immediately corrected.</p>
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	<p><b>Location:</b> Construction front at LNG Plant</p> <hr/> <p><b>Comment:</b> Potential hazard or unsafe condition that might cause head injury. Situation was immediately corrected by installing a warning fence.</p>
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