REPORT OF THE:

EXTERNAL COMPLIANCE MONITORING GROUP

BHAGYAM AND AISHWARIYA FIELD DEVELOPMENT

3rd Site visit: January 2011

India

Prepared for

International Finance Corporation

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FREQUENTLY USED ACRONYMS

BFF; Bhagyam Field Facility
CDF: Community Development Framework
CEIL: Cairn Energy India Pty Limited
CSR: Corporate Social Responsibility
CWA: Central Waste Accumulation
DG: Diesel Generator
EC: Enterprise Center
ECMG: External Compliance Monitoring Group
EHS: Environmental Health and Safety
EHSS-MS: Environmental, Health, Safety and Social Management System
EMP: Environnemental Management Plan
EIA: Environnemental Impact Assessment
HDPE: High Density PolyEthilene
IFC: International Finance Corporation
IOTL: Indian Oil Tanking Limited
KPTL: Kalpa-Taru Limited
LACP: Land Acquisition and Compensation Plan
LAO: Land Acquisition Officer
LT: Larsen and Toubro
MPT: Mangala Process Terminal
OHL: Over-Head electrical Line
PCDP: Public Consultation and Disclosure Plan
PL: Punj Lloyd
PM: Particulate Matter
PPE: Personal Protection Equipment
PS: Performance Standard
RO: Reverse Osmosis
RoU: Right of Use
REIA: Rapid Environmental Impact Assessment
RSPM: Respirable Suspended Particulate Matter
SOP: Standard Operating Procedures
SPM: Suspended Particulate Matter
SRT: Stakeholder Relations Team
WMP: Waste Management Plan
WP: Well Pad

INTRODUCTION

This report summarizes observations made during the third site visit (January 16th and 17th, 2011) by D'Appolonia S.p.A., Italy (D'Appolonia), serving as the External/Independent Environmental, Health and Safety (EHS) Compliance Monitoring Consultant (referred to as the External Compliance Monitoring Group – ECMG) for the Bhagyam and Aishwariya Field Development Project, India ("the Project" or the "Satellites Project").

This External Compliance Report is broken down into three key subject areas, as follows:

- compliance with International Finance Corporation (IFC) Policies and Guidelines;
- compliance with the Environmental Impact Assessment (EIA) documentation and projects Environmental Management Plans (EMP); and
- recommendations for improvement based on the findings of the visit and D'Appolonia's experience.

ECMG observations that require actions and that will be reviewed in subsequent assessments have been collected in Table 1.1: Follow-up Issues that is updated by the ECMG following each project visit assessment. The Follow-up table is structured as follows: new issues are given a distinctive, progressive number with the first digit indicating the mission (e.g. 1 for the first mission, 2 for the second, etc.); when applicable, issues closed during the current visit have been designated as such and highlighted in gray; and issues closed during a previous visit have been deleted. The ECMG has also provided recommendations for Project improvement based on the collective experience and expertise of the team members. These recommendations are not always to be considered compliance requirements and there is no onus on the operation for implementation. ECMG, however, encourages the Project to consider the usefulness of the recommendations and incorporate them, as appropriate, into management activities.

Cairn Energy India Pty Limited (CEIL), a subsidiary of Cairn India Limited, is party of the RJ-ON-90/1 Block (Rajasthan Block or Block) Production Sharing Contract, dated May 15 1995, and Operator of it on behalf of a Joint Venture with the Oil and Natural Gas Corporation Ltd, a Public Sector Organization. CEIL has then undertaken a comprehensive exploration program in the Rajasthan Block, an area of about 5,820 km^2, during the past five years resulting in a number of oil and gas field discoveries (see Figure 1.1).

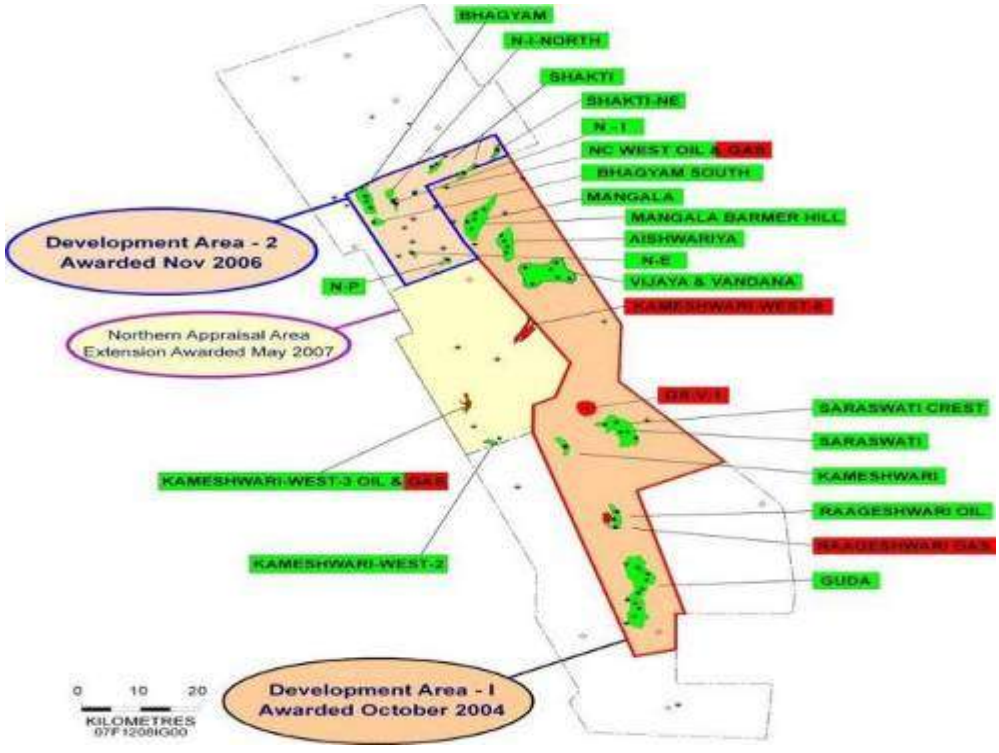
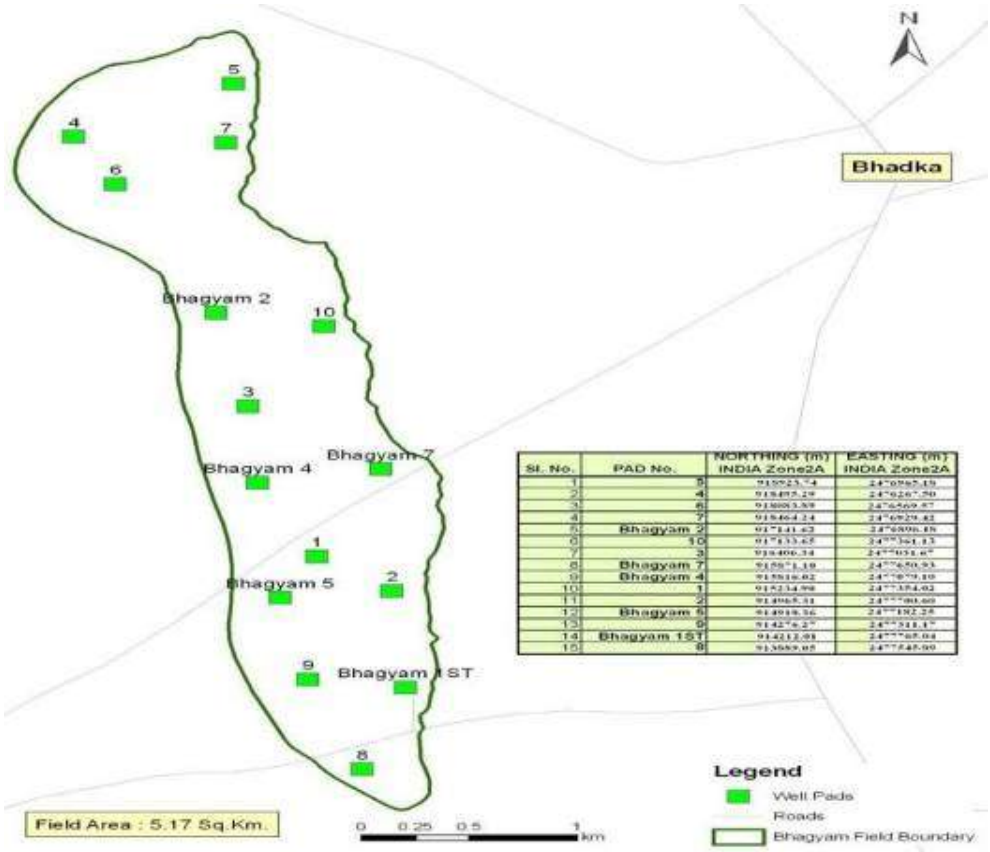


Figure 1.1: Discoveries Fields in the RJ-ON-90/1 Block

The exploration program included the drilling of over 100 exploratory and appraisal wells resulting in over twenty five hydrocarbon discoveries in the block. In early 2006 CEIL obtained Environmental Clearance from the Ministry of Environment and Forests for the development and production of five fields located in the northern and central parts of the Rajasthan Block: Mangala, Aishwariya, Saraswati oil fields and the Raageshwari oil and gas fields. In March 2008, CEIL has obtained the Environmental Clearance from MoEF for the development and production of the Bhagyam field, located approximately 17 km from the Mangala Process Terminal (MPT). The field lays within the Barmer District, southwest Rajasthan, on the northern part of the Block, covering an area of approximately 5.17 km^2. The Bhagyam field is being developed as a satellite of the Mangala field and extracted crude integrated into the MPT for processing, storage, and export.

The Bhagyam field development plan includes the construction of approximately 15 Well Pads (WPs), a field facility where individual well pads flowlines converge, a network of underground in-field pipelines connecting the WPs to a field facility; a series of transfer pipelines connecting the field facility to the MPT, and expansion of the MPT to accommodate the new crude production. The 15 WPs include a total of 82 wells of which 51 are production and 31 injection wells (see Figure 1.2).



Sl. No.	PAD No.	NORTHING (m) INDIA Zone2A	EASTING (m) INDIA Zone2A
1	5		
2	4		
3	6		
4	7		
5	Bhagyam 2		
6	10		
7	3		
8	Bhagyam 7		
9	Bhagyam 4		
10	1		
11	2		
12	Bhagyam 5		
13	9		
14	Bhagyam 1ST		
15	8		

Figure 1.2: Bhagyam Field Development

Drilling of production/injection wells consists of multi-well drilling that enables several wells to be drilled from a single drilling pad location. The maximum depth of the wells is estimated to be around 1,500 to 2,000 m depending on the targeted hydrocarbon zones. Each WP requires approximately 4.4 ha for a total required area of about 66 ha. It should be noted that the total area will not be contiguous but spread over several land parcels within the Bhagyam field. The network of underground in-field pipelines will be first clustered to a receiving WPs (WPs 1, 9, and 12) and then connected to the Bhagyam Field Facility (BFF). This network consists of various size pipelines (e.g. 4 to 16 inches in diameter) to carry the crude oil to the BFF and to distribute injection water, power fluids and utility from the MPT to the well heads. The BFF, which according to preliminary plans will be located within WP 15, consists of a manifold station that receives the well head fluid from the individual WPs and transfers it, through a common pipeline, to the MPT. In addition, the BFF receives and distributes the service pipelines from the MPT to the individual WPs. Connecting the MPT to the BFF will be a series of pipelines that will be laid within a corridor 30 m

wide and approximately 40 km long. With the integration of the Bhagyam field, the total processing capacity of the MPT is expected to increase from 100,000 bopd to 140,000 bopd of crude oil. The utilities, water injection, electrical power, power fluid requirements for the Bhagyam field abstraction and processing will be shared and augmented from the facilities installed at the MPT.

The Aishwariya Field (Figure 1.3) is located approximately 15 km southeast of the MPT area. The overall development of this field will be similar to the Bhagyam field with areas set up for WP development (a total of 8 WPs), associated in-field pipeline, and a series of transfer pipelines connecting the field facility to the MPT along a common Right of Use (RoU).

Figure 1.3: Aishwariya Field Development

Cairn has sought financial assistance from IFC and committed to apply its Performance Standards (PS) on Social and Environmental Sustainability to the design, construction, operation, and closure of the Project. In general, IFC's involvement and financing require both pre-finance project due diligence and post-finance project assurance with respect to social, environmental, health, and safety aspects to ensure compliance with IFC Policies and Performance Standards relevant to the Project. CEIL has committed to external/independent social, environmental, health, and safety compliance monitoring to provide an additional level of transparency to the implementation of its management programs.

D'Appolonia scope of work is to conduct quarterly visits during the construction of the Project in order to:

- identify areas and degrees of compliance with the Equator Principles and the following IFC Policies and Guidelines:
  - IFC General Environmental, Health and Safety Guidelines (April 2007), and
  - IFC Environmental, Health and Safety Guidelines for Oil and Gas Development, Onshore (April 2007);
- identify areas and degree of compliance with each of the following IFC Performance Standards:
  - Performance Standard 1: Social and Environmental Assessment and Management Systems,
  - Performance Standard 2: Labor and Working Conditions,
  - Performance Standard 3: Pollution Prevention and Abatement,
  - Performance Standard 4 Community Health, Safety and Security,
  - Performance Standard 5: Land Acquisition and Involuntary Resettlement; and
  - Performance Standard 8: Cultural Heritage;
- compliance with any previously developed Action Plans and/or agreements between Cairn and IFC and other Banks;

- identify areas and degree of compliance with the following CEIL developed plans:
  - Environmental, Health, Safety and Social Management System (EHSS-MS) as described in the Cairn India Corporate Responsibility Management System,
  - Projects specific EIA and EMP,
  - provide practical guidance and advice to Project's field teams; and
  - identify specific EHS issues and conduct follow-up and closure of open issues.

The Focus areas of the EHS reviews are the following:

- EHS Management performance;
- EHS compliance (versus Indian and International standards as presented in project specific EIA and EMPs);
- compliance with IFC PS on Social and Environmental Sustainability and EHS Guidelines;
- facilities review; and
- Implementation of the EHS Action Plans (as presented in the EIA and EMP).

During the field activities, D'Appolonia assessed all Project's associated facilities (i.e. the WPs, the in-field pipeline corridor, etc.) based on direct observations, interviews with project personnel, and pertinent documentation provided by CEIL.

Specific activities conducted during this site visit included the following:

- Evaluation of implementation of the commitments contained within the project specific EIA and EMPs. Items addressed in these documents include: air quality, surface and ground water resources, soil resources, natural resources (flora and fauna), noise and vibrations at off-site receptors, waste management, and cultural resources;
- evaluation of the Project compliance with Corporate Responsibility Guiding Principles and Management System, with the Public Consultation and Disclosure Framework Plan (Corporate, and for Rajasthan) and with the Land Acquisition Framework Plan (Corporate, and those developed specifically for Rajasthan);
- evaluation of the implementation of Project commitments contained within specific EHS Action Plans developed in the EIA and EMPs;
- evaluation of compliance with IFC PS Policies and Guidelines listed above;
- visit of the ECMG environmental team to the Project facilities including: the MPT, the concrete Batching plant area, WPs 3, 5, 8, 9, 13, and15 in the Bhagyam field, the infield pipelines, Larsen and Toubro (LT) fabrication yard, and Kalpa-Taru (KPTL) fabrication yard. In addition, the trunk pipeline corridor connecting WP15 to the MPT and Punj Lloyd (PL) yard and workers camp were visited. In the Aishwariya Field visits were conducted ate WPs 2 and 6 and the main access road;
- meetings of the ECMG social team included:
  - Corporate Social Responsibility (CSR), Stakeholder Relations and land acquisition teams,
  - the CSR and communication management in Gurgaon,
  - the Business Transformation Group in Gurgaon,
  - two school libraries, one Science Van event and one Mobile Health Van event, and
  - groups of land losers in Bothia, Sutaro Ki Basti, Junejo Mehr Kibasti, Rohili and Gaokeidi villages;
- participation to the malaria awareness program in Bothia.

The final closeout meeting was conducted at CEIL's Gurgaon offices on January 20th, 2011, and the information presented in the meeting has formed the basis for this report. The information, observations, and opinions presented in this report are those of D'Appolonia and are independent of those of CEIL and IFC.

EXECUTIVE SUMMARY

The Project is in the middle of the construction phase at the Bhagyam field while early civil works at the Aishwariya field have just started. The Project has developed an overall construction strategy for the Bhagyam and Aishwariya fields that foresees two main stages: Stage I, which includes early civil works, major civil works and the construction of the in-field corridor; and a Stage II, which includes post drilling civil works, completion works, and in-field corridor completion. Other components of fields' developments include drilling, well completion, well pads mechanical and piping construction, infield piping connecting the single well pads to clusters and then to the well pad 15, an Over-Head electrical Line, and a trunk pipeline connecting the well pad 15 to the Mangala Processing Terminal. At the time of the ECMG visit, early and major civil works in the Bhagyam field were close to be completed. Works related to the infield piping and the trunk pipeline have started and construction of the over-head electrical line posts has begun. At the Aishwariya field only early civil work at few well pads and along the main access road has started.

CEIL has developed the necessary documentation to cover all aspects of EHS including detailed Standard Operating Procedures (SOPs) for specific field activities. All the main contractors currently involved in the different component of the Project have developed their EHS documentation that has been reviewed and approved by CEIL. Atson's Engineering, which has recently been awarded a contract has not yet mobilized in the field, needs to submit EHS related documentation to CEIL for approval. Early civil work contracts are awarded to local companies that have to complete a comprehensive check list prior starting their work in the field.

For the Bhagyam field CEIL developed a robust EHS management structure, consistent with Project commitments and requirements. No changes have been reported in the existing EHS Project organograms. Although limited early civil work activities have started at the Aishwariya field, the Project should revise its EHS structure to supervise on-going activities in that area. All contractors currently working at the Bhagyam field have their own EHS personnel in place that appears to be sufficient to oversee their field work component. However, Kalpa-Taru Limited, contracted to build the infield piping, may not have sufficient personnel to cover the numerous field activates that are on-going at different locations at any given time. All contractors are required to submit weekly and monthly EHS reports to CEIL management. In addition, daily briefing between CEIL and key contractors' EHS personnel are reported to be conducted. CEIL field management submits regular EHS monthly reports to corporate management. Overall, the EHS reporting scheme developed appears to be robust and sufficient for the Project needs.

Ambient air monitoring is on-going at the Bhagyam field while has yet to be implemented at the Aishwariya field where early civil work has just started. The very nature of early civil work and some activities of major civil work generate a considerable amount of dust suspension in the air, in particular in the dry and desert setting of the area. The Project has identified specific areas where working activities could significantly increase particulate suspension and has developed a schedule for dust suppression (wetting of the grounds) throughout the Bhagyam field sites. However, complains about dust from the local population living near active sites have been recorded and monitoring data confirms that dust is a sensitive issue. The Project should increase ground wetting activities at the Bhagyam field sites and should start an aggressive approach to ground wetting activities to mitigate dust suspension in the ambient air at active Aishwariya sites.

At the Bhagyam field, ambient air monitoring data for the months of September 2010 and from November 2010 to January 2011 have been submitted to ECMG for review. It should be noted that J. M. Environet PVT, a contractor of CEIL, provided the monitoring services for the October 2010 audit report while Nakshatra Enviro Services, a contractor of IOTL, is currently doing the monitoring at the Bhagyam field. Ambient air monitored parameter included Suspended Particulate Matter, which could be comparable to Particulate Matter (PM) less than 100 µgm/m^3, and Respirable Suspended Particulate Matter, or PM10, SO_2, NO_x, and CO. This group of analytes does not comprise lead (Pb), which is included in the Project requirements, or Ozone and PM2.5, which are IFC requirements. Furthermore, sampling duration, as evinced from the submitted documentation, is limited to 8 hours at each location while for most parameters (PM10, PM2.5, and SO_2) the average sampling period should be 24 hours. It should be noted that, according to Project information, the limited duration of PM measurement, which is in line with the required Indian air quality standards, is due to the heavy loading of the Whatmann fllter papers used in the

monitoring equipment. The Project should include all pertinent Project and IFC monitoring parameters in its monitoring campaigns and ensure that the minimum sampling period is met. Data collected during this monitoring campaign indicated that dust parameters indicate exceedance of both national (100 μg/m^3) and IFC (50 μg/m^3) standards (the area is subject to very dry and at times high wind conditions that significantly increase dust suspension in the ambient air and may directly affect PM field measurements).

The current Project needs for water include industrial water used for the civil work, dust abatement activities, portable toilets, and domestic water used for drinking purposes. According to the information provided, at the Bhagyam field Indian Oil Tanking limited, contracted to do major civil work, and Larsen and Toubro, contracted to construct the over-head electric line, are the contractors with the most need for industrial water. All industrial water is sourced from local suppliers as the Project's continued efforts to provide opportunities to nearby business although CEIL has the capability of meeting its needs through the Reverse Osmosis plant located at the nearby Mangala Processing Plant. Each contractor has its own drinking water arrangements and supplier. Bottled water is supplied by different vendors to contractor's staff field offices while water for camps and yards comes from local suppliers.

At the Bhagyam field, CEIL continues its monitoring program with monthly analysis of ambient air, noise, and drinking water quality. It should be noted that J.M. Environet, a CEIL contractor, performed monitoring during the early stages of work at this field while Nakshatra Enviro Services, an IOTL contractor, took over monitoring starting September 2010. Review of the data collected for September 2010 and November 2010 through January 2011 indicates that drinking water tests are generally within the national permissible limits with few exceptions (Fluoride, Chloride, water turbidity) in some selected samples. Ambient noise at the Bhagyam field currently includes monitoring point located at the gates of active well pads and the IOTL fabrication yard. No exceedances were recorded. Soil tests have been conducted, as part of the drilling activities, at selected well pads with no exceedances recorded.

A soil assessment of the Bhagyam area has been carried out indicating that soil is characterized by low fertility and productivity. A similar assessment for the Aishwariya field was not submitted to ECMG for review. Only a table indicating that one soil sample was collected and analyzed at five different locations was provided without a comprehensive report assessing the overall soil fertility and productivity in the area.

CEIL has outlined an overall approach to greenbelt development plan for the Bhagyam field and determined the type and number of plants/trees to be planted at each well pad area and along the access roads. The beginning of plantation at each site will strictly depend on construction completion and on the favorable monsoon season, however, since work in this area is gearing toward completion, the Project should start developing a detailed strategy for the greenbelt implementation by identifying local partners and define overall roles and responsibilities.

CEIL and all main contractors have developed comprehensive waste management plans, consistent with Project requirements, and are carrying out adequate implementation in the field. Central waste accumulation areas have been established at all key locations (contractors' main yards/camps) with waste streams segregated, registered, regularly picked up, and for the most part, recycled through authorized and audited enterprises. Oily rags, produced in very small quantities, are now stored at site and would be disposed off to MPT landfill and incinerator facilities, whereas biomedical wastes are disposed off in the contained burial pit. Food waste is reported to be processed at the composting facility located at the MPT. Working areas, WPs, and contractors' yards/camps are all provided with toilet facilities and wastewater is processed through septic tank - soak pit systems or is collected in septic tanks and transported to the Sewage Treatment Plant located at the MPT.

All contractors have established a hazardous and chemical storage area at their field sites. These areas have been observed to be properly constructed with a paved floor and berms and provided with sufficient ventilation. All DGs observed in the field have secondary containment as they were placed on concrete skids or plastic sheeting and provided with earth berms. Material Safety Data Sheets were observed to be present at all visited sites and properly posted/available near hazardous material storage areas.

CEIL has fully adapted available health and safety plans to the specific Project. In addition, all main contractors have developed their own EHS plan, job safety analysis and work tasks risk evaluation, and specific standard operating procedures that have been approved by CEIL.

EHS inductions and training of all workforces are well implemented throughout the Project and all employees undergo medical and security screening at the time of hiring. In addition to basic EHS inductions, task specific trainings have been conducted and workers involved in specialist jobs undergo competency checks. Site supervisors continue to conduct regular toolbox meetings and EHS awareness shows are still on-gong on a monthly basis at the Bhagyam field. Regular audits and site inspection are carried out by CEIL personnel. Specific equipment inspections are also carried out on a regular basis; however, wrong wire rope clipping was observed on several rigging equipment employed in the field. CEIL personnel quickly responded to this issue by fixing the problems and, as reported to EHS personnel, further inspection will be conducted to verify that other rigs do not have a similar problem.

Required Personal Protection Equipment has been observed to be fully implemented at all work sites. Housekeeping has been observed to be generally good at all sites visited. EHS warning signs are posted near critical area throughout the Project. Portable toilets have been placed at all WPs where work is on-going and along infield and trunk pipeline sections where workers are present.

First aid rooms, staffed with paramedics, have been set up at most field camps and, for those sites located away from the Barmer village, ambulances are present on-site. Emergency vehicles are kept at the gate of all active work pads and a medical car is deployed along the trunk pipeline where workers are present. Medical supplies and first aid kits have been observed to be present and sufficient for the on-site workforce at all visited sites. No major incidents have been reported since the start of the Project and only 34 minor incidents, with no injuries, have been logged to date.

According to field personnel, five HS drills (evacuation, rescue drill, etc.) have been conducted at work sites while a drill with the participation of local authorities (e.g. hospitals, fire fighting, etc.) is planned for the future.

Fences/barricades have been deployed where excavations are present; however, along the trunk pipeline, several long sections of welded pipeline were observed to be missing end-caps although according to field personnel, welding of the pipe end-caps is on-going.

PL labor camp was found to be in acceptable conditions with the exception of smoke detectors missing in the workers rooms.

ECMG noticed that the Project's engagement with communities and land owners has slowed down in the last year, due to the insufficient number of CSR officers, some of whom left or were redeployed. The effects of this slowdown were evident in the field visits: members of the communities and land owners complained about the irregularity of the visits and the delay of the feedback. In the Aishwariya area, very few CSR activities are on-going and the affected communities have been visited only by the land team for land acquisition. Tensions with land owners were evident as documented by the incidents reported in Project's logs and as witnessed by the ECMG team while in the field. The tense situation is acknowledged by the Project that has strengthened the security in the area. During this visit, the ECMG team was escorted by security personnel.

At the end of the year (2010), new CSR officers have been appointed. Villagers acknowledged the fact that visits from Project's people have been more frequent in the last month. However, it is clear that the Project has now to catch up the lost time.

The CSR staff for the Upstream Project (including the Bhagyam and the Aishwariya fields' development Project) now comprises ten field officers, three of them women, based in Barmer. The new CSR staff members met by the ECMG team appear qualified and experienced. ECMG commends the increased number of CSR members and the reorganization of their tasks. However, some concern remains on the overall coordination of the team in Barmer. At present, the coordination is ensured by the CSR manager based in Gurgaon, who in addition coordinates the activities of the Enterprise Center in Barmer, as the new manager has not been posted yet. ECMG is of the opinion that a CSR coordinating manager based in Barmer is needed. He/she could be selected among the existing staff, or the responsibility given to the EC manager, who should be named as soon as possible.

According to ECMG, CEIL should improve reporting on CSR and communication activities. The various meetings and interactions are properly logged, but no quarterly report, as established by the framework PCDP, is regularly prepared.

ECMG received and reviewed a draft of a comprehensive Community Development Framework, prepared for CEIL by a consultant, for the Mangala Development Pipeline Project. The document is a comprehensive scoping document that synthesizes most of CEIL policies and practices and gives sound recommendations, including best practices and methodologies. The next step is transform this scoping document into a Corporate document (CEIL Community Development Strategy) that outlines the Company's objectives with reference to community investment, approach, methodology and actions for implementation (drawing from already existing practices that have been successful and new proposed ones), project time lines, budget etc. The document should reflect Cairn's commitments to Community Investment and the model that Cairn will adopt for successful project outcomes that are appropriate to the local context and meet project requirements

Land owners' expectations in terms of employment with the Project appear to be the main issue. Given that the construction works for the well pads and the trunk line are less labor intensive than the previous construction phase at MPT, there is a problem of conflict between the affected land owners who compete for employment. In Bhagyam, affected villagers have set up a Village Committee that has successfully collaborated with the Project and solved some issues like grievances, employment distribution, wages, and local contracts. However, during the ECMG meetings with land losers, the fairness of the Committee's work has been questioned by some villagers. ECMG recommends that the Project establish a clear and transparent employment procedure in concert with the affected communities, giving employment to the different affected villages by percentage or in turns. This should be supplemented by Cairn's own committee (including a grievance mechanism function) to liaison with the villagers in addition to the village committee. Cairn should engage with the villagers to give them give assurance to the communities on transparency of the process adopted for recruitment.

No issues specifically pertaining to the land acquisition process have been raised by the affected land owners met by the ECMG team. They all stated that the process was fair and without problems. In one case, however, the Project did not take the mitigation measures it was committed to: the digging of a pond for one village that lost a water catchment because of the land acquisition. The appropriate corrective measures should be taken in a timely manner.

Given the tense situation, ECMG is concerned that in the Bhagyam area a community liaison has been established only at the Punj-Lloyd trunk line camp. The Project should expedite the establishment of this function at all construction sites both for CEIL and the contractors and clarify the coordination between the CSR, SRT, and the security team.

ECMG has also concerns about the long term livelihood opportunities for the most affected villagers. In Bhagyam some of them lost a considerable amount of land (some reported all their land was acquired), also because they were impacted by other projects as well (a mining project and a steel factory project). However, they acknowledge that CEIL is the only project to visit them and take interest in their future and recognize that the establishment of CEIL Project brought economic development to the District. They also understand that the construction period will be short and hope to find other employment and contract opportunities with other projects in the area.

The ECMG team received a positive feedback from the villagers about the ongoing CSR activities, mainly related to health and education. ECMG recognizes that the Project is developing a good offer of development activities in its area of intervention, and acknowledges the effort in fine-tuning the strategy. The Project is also considering new programs related to girls' schooling as demanded by villagers. ECMG recommends that the villages affected by the Satellites Project development are rapidly included in development activities, particularly those offering alternative livelihood opportunities.

Communities living close to the construction sites did not raise any major issue concerning the impact of on-going works. However, the village of Bothia, which is very close to work site, asked for more frequent watering of the road running close to the school. The women members of the CSR team should visit women in communities both for specific CSR programs and for mitigating possible impacts of the works.

Only one awareness meeting on AIDS has been held on the World AIDS Day. Although AIDS is not a major concern in the communities affected by the project, ECMG suggests coordinating with the National Aids Control Program at District level to increase the Project's engagement on this topic. In addition, ECMG again recommends sensitizing communities, and particularly children in schools, on road safety issues.

CEIL corporate draft document on security covers most of the principles and guidelines outlined in IFC PS4 and the United Nations Voluntary Principles on Security and Human Rights. However, the document should expand and better detail the section titled *Guards and Guard Management* to incorporate CEIL policies and procedures when private and/or governmental security forces are directly hired by CEIL. Furthermore, contrary to what is stated at the end of the section titled *Weapons/Firearms & Use of Force*, CEIL is ultimately responsible for the actions of security forces directly hired by the Company. With respect to the Satellite Project, no specific information on security has been provided to ECMG. Overall, CEIL should develop a site specific risk assessment and a relative comprehensive security plan, as specified in its corporate draft document. The security plan should be shared with all Project contractors and all field supervisors briefed on security issues and how to respond (line of communications, type of action, etc.) to potential problems in the field.

At the time of ECMG visit, about 800 persons were reported to be working on site. In the Bhagyam field, of the current 546 total workers, 543 are from Barmer out of which 158 are land losers; all rented vehicles (90) came from local suppliers, 49 of which from land-losers. In the Bhagyam trunk pipeline project, 50 on 73 unskilled or semi-skilled workers are local (including all drivers), and 24 small contracts for renting vehicles have been awarded to local people.

Non-local workers (136) working for PL on the Bhagyam trunk pipeline are accommodated in a brick building, a former college located in Barmer. The accommodation is overall adequate; however, as the Project is expecting more workers and will have to rent more accommodations, ECMG recommends re-distributing the workers so to avoid bunk beds and empty the central rooms of the building that have no windows and can be too hot in the warm season. Also, a formal grievance mechanism for workers should be established at this labor camp.

CEIL issued a Local Content Policy and is developing a number of initiatives to ensure that its operations offer the maximum benefit to local population in terms of contracts and employment. These initiatives will also allow the Project to track the employment offer and the impact on communities.

Table 1.1: Follow-up Issues

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
Air Quality					
M1.7 M3.1	IFC – PS3 EIA and EMP	The Project should increase ground wetting activities in the Bhagyam field site under construction (**Modified**). At the Aishwariya field sites CEIL should start an aggressive approach to ground wetting activities to mitigate dust suspension in the ambient air.	Pending	On-going at Bhagyam To be implemented at Aishwariya	High
M3.2	EMP § 10 IFC – General EHS Guidelines §1.1	The Project should include in its monitoring campaigns all Projects and IFC required parameters and ensure that the minimum sampling period is met.	New		Medium - High
Monitoring					
M3.3	EIA §6.2; EMP §10	Of the Project list concerning water analytes only a reduced set is currently tested.	New		Medium
Reclamation, Revegetation, and Topsoil Management					
M2.1	IFC EHS Guidelines for Onshore Oil and Gas Development p. 13 EIA §4.5.6	The Project should start developing a details strategy on greenbelt implementation at the Bhagyam field by identifying local partners, and define overall roles and responsibilities (**Modified**).	Pending		Low
M3.4	EIA §6.2; EMP §10	For the Aishwariya field the Project should prepare a report assessing the overall soil fertility and productivity in the area.	New		Medium
Waste Management					
M2.2	IFC – General EHS Guidelines §1.3 and 1.6 EMP §7.0	The Project should segregate all contaminated material, and manage and dispose it as per the approved waste management plan and in compliance to applicable regulations and IFC standards.	Closed		Medium
M2.3		The Project should process portable toilets wastewater through the two Sewage Treatment Plants located at the MPT.	Closed		Medium

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
Hazardous Materials Management and Pollution Prevention					
M2.4	IFC – PS3 EMP §7.0	The diesel storage area should be provided with adequate ventilation and a way (e.g. raised bricks by the door entrance) to prevent potential spills to impact the surrounding soil.	Closed		Medium - low
Heath and Safety Management and Occupational Health					
M2.5	IFC – General EHS Guidelines p.70	Cement bag trailer should be provided with adequate ventilation and its floor kept clean of any cement dust.	Closed		Medium
M3.5	DOE-STD-1090-2001	Wrong wire rope clipping was observed on several rigging equipment employed in the field.	New	Project quickly responded to fix observed issues. Project will conduct additional inspections	High
M3.6	IFC EHS Guidelines for Onshore Oil and Gas Development p. 20	Welded pipeline should be provided with end caps.	New	Reported to be on-going	Medium - High
M3.7	IFC General EHS Guidelines – p. 86	PL labor camp rooms should be provided with smoke detectors.	New		Medium
Social management					
M1.10	IFC PS 1 , §17 Organizational Capacity	Provide sufficient management sponsorship and human and financial resources on an ongoing basis to achieve effective and continuous social performance.	Closed	The number of staff appears adequate. However the Project should expedite the appointment of the EC manager and ensure overall coordination	High
M3.8	PCDP § 4.3.1	CEIL should regularly prepare quarterly and annual CSR and public consultations reports.	New		Medium
Stakeholders Engagement - Public Consultation and Communication					
M1.12	Framework PCDP (§1.1 Key Principles; § 3.5 Record of consultations; §4.3 Monitoring and Evaluation)	Contractors should designate a liaison person for community interactions and grievances at each site. This person should speak the local languages and be introduced to communities, authorities and land-losers. All interactions should be recorded. Contractors should be briefed on CEIL's policies and approach practices. All interactions should be documented and regularly updates provided to CEIL on issues that arise (**Modified)**	Pending	Done in Punj-Lloyd Bhagyam trunk pipeline camp, to be done in other construction sites	High
M1.13		Keep tabulated records of all community interactions and prepare a progress report (quarterly or monthly during construction phase).	Closed		Medium

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
M1.14	PS 1, § 19 Community Engagement, §23 Grievance mechanism §25 Reporting	Establish regular information meetings with the affected communities including information on Project's progress, grievance procedure and liaison persons in charge, employment and business opportunities, with time and number limits, and HSE awareness (**Modified**).	Pending	The Project's team must catch up the slowdown of engagement activities.	High
Stakeholder Engagement – Development Program					
M1.15	IFC PS 1 § 19 Community Engagement	Prepare a Community Development Plan for the Satellites Project in the frame of the general Community Development Framework (**Modified**).	Pending	Community Development Framework Draft prepared, to be revised and disclosed. The Project should prepare a specific CSR Action Plan for Bhagyam and Aishwariya	High
Land Acquisition					
M1.16	IFC PS5 Corporate framework LACP	Prepare a specific LACP for the Satellites Project. Brief LAO and staff on LACP/PCDP and IFC PSs and maintain a copy in the local languages, at each local office.	Pending	The Project should revise the Rajasthan LACP including references to the Bhagyam Impact Assessment and an update of the grievance mechanism	Medium
M1.17	IFC PS5 Corporate framework	Brief CA and staff on LACP/PCDP and IFC PSs and maintain a copy in the local languages, at each local office.	Closed		High
Community Health, Safety and Security					
M1.18	PS 4 Community Health, Safety and Security: §6, Infrastructure and Equipment Safety; §10, 11 Community Exposure to Diseases	Include awareness programs on H&S, environment and HIV-AIDS.	Pending	Awareness programs have been implemented for gas pipeline safety and malaria. Only one on AIDS.	High
M1.19		Use school programs to build safety awareness amongst children.	Pending		Medium
M3.9	IFC PS4	CEIL draft corporate security document (E5) expand and better detail Section 14 (Guards and Guard Management) to incorporate CEIL policies and procedures when private and/or governmental security forces are directly hired by CEIL.	New		Medium
M3.10	IFC PS4 – CEIL E5 (§11)	CEIL should develop a site specific risk assessment and relative comprehensive security plan.	New		High

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
Employment and Working Conditions					
M1.20	PS 6 Labor and working conditions: §6 Human Resources Policy; §7, 8 Working conditions and terms of employment; §13 Grievance mechanism, §16 Occupational Health and Safety; §17 Non-employee workers Cairn Group Corporate Responsibility Guiding principles (§3.2.1)	Brief contractors and workers on IFC PS 2 (**Modified**).	Closed		Medium
M1.21		Brief local workers in their own language on employment conditions and their rights. Display wages on site in local languages.	Closed		High
M1.22		Develop a transparent procedure for recruitment of land-losers and local workers and a transparent communication on criteria for wages.	Pending		High
M1.23		Ensure adequate grievance procedure for workers and record grievances.	Pending	Grievance committee to be set up in Punj-Lloyd labor camp	Medium

THIRD SITE VISIT OF THE D'APPOLONIA ECMG TO THE BHAGYAM AND AISHWARIYA DEVELOPMENT FIELDS PROJECT INDIA, JANUARY 2011

1 CONSTRUCTION STATUS

The Project is in the middle of the construction phase at the Bhagyam field while early civil works at the Aishwariya field have just started and land acquisition required for the WPs and the RoU for infield pipes is about 75% completed. It should be noted that the Project is acquiring the land for both the WPs and the RoU on a permanent basis.

The Project has developed an overall construction strategy for the Bhagyam and Aishwariya fields that foresees two main stages: Stage I, which includes early civil works, major civil works and the construction of the in-field corridor; and a Stage II, which includes post drilling civil works, completion works, and in-field corridor completion. Other components of fields' developments include drilling, well completion, WPs mechanical and piping construction, infield piping connecting the single WPs to clusters and then to the BFF (WP15), an Over-Head electrical Line (OHL), and a trunk pipeline connecting the BFF to the MPT.

At the time of the ECMG visit, Stage I in the Bhagyam field was close to completion. Early civil works (fencing, ground leveling and compaction, grading, etc.) at all WPs and access road works (grading and compaction), contracted out to local companies, have been completed with the exception of WP9 where site filling is on-going. Major civil work (construction of the drill cutting pits, well cellars, drilling rig supporting tracks and facilities necessary to carry out drilling activities), contracted to Indian Oil Tanking Limited (IOTL), has been completed at four WPs (1, 2, 3, and 15), is ongoing at other nine WPs, and has yet to start at the remaining two WPs. The four completed WPs have been handed over to the drilling contractor, Wetherford International Ltd, with drilling currently on-going at WP1. At WP15 drilling activities have finished and completion activities, performed by John Energy Ltd, are about to start (the contractor was moving equipment in at the time of ECMG visit). Mechanical and WPs piping work has been awarded to Artson Engineering that has just began mobilization at the time of ECMG visit.

Infield piping work started in late December 2010 with the contract awarded to KPTL. This component of the Project consists of laying three separate pipes underground: two carbon steel pipes, one for product and one for water injection; and a high density polyethylene (HDPE) pipe for irrigation water (greenbelt, fire fighting, etc.). Overall, 46.1 km of infield pipelines will be laid of which 19.5 km are product pipes and 13.3 km are water injection and irrigation pipes. As reported by field management, currently about 36% of the welding and 60% of the stringing operations have been completed and only 2.4 km of pipe still need to be unloaded along the RoU. The target completion date for the infield pipeline task is April 2011.

Another component of the field development is the construction of a 33 KV OHL. Work has been awarded to LT that has mobilized and established a pole fabrication and pre-casting yard close to the Bhagyam field area. Poles installation in the field is scheduled to begin at the end of January 2011 with a targeted completion date of April 2011.

The trunk pipeline component of the Project consists of the underground laying of three pipelines: a 24 inch insulated and heated product pipe; a 24 inch insulated water injection pipe; and an 8 inch HDPE pipe for the irrigation water. The three pipelines will run in a single 24.5 Km trench connecting WP15 to the MPT. The trunk line also includes the construction of a pig receiving station for the product line and a pig launching station for the injection water line, both located at WP15, and a substation building for the heating of the production line. The contract has been awarded to PL with work starting in October 2010. According to the information provided, RoU survey and route verification along the entire 24.5 Km has been completed while boundary marking, clearing and grading is about 50% completed. Over 50% of the product and water injection pipes have been received on site and stringed along the RoU. Welding of these two pipelines is at about the halfway mark while only about 0.8 km of trenching has been completed. The 8 inch HDPE irrigation line is expected to be delivered in the field by the end of January 2011.

Overall, the expected date of completion of the Bhagyam field development is June 2011.

At the Aishwariya field, early civil work has commenced at three WPs (2, 3, and 6) as well as grading activities work along the main access road to the WPs. Four local contractors are currently involved in these tasks: three are involved in WPs preparation and one in the access road work. The Project has not awarded the contract for major civil work yet.

2 EHS MANAGEMENT ORGANIZATION

Project Strategy:

CEIL environmental, health, safety and social commitments are contained and grouped under the overall CEIL Corporate Responsibility Management System and are outlined in Project specific ESIAs and EMPs. In addition, CEIL requires that all its subcontractors, as part of their contractual obligations, develop their respective EHS and Social plans in line with CEIL commitments and standards.

A Project EIA and EMP have been developed and are an integral component of CEIL overall planning, design and implementation. In addition, the Project has developed a detailed Health, Safety, Environmental, and Security Requirements document to cover early civil work activities.

Observations:

CEIL has developed a robust Corporate EHS structure and documentation that is at the base of Project specific EIA commitments. The EMP developed by CEIL includes the general requirements, standards, and overall framework for mitigation measures, roles, and responsibilities, including subcontractors, environmental management, training, inspection, and monitoring related to the Project activities. Overall CEIL has developed the necessary documentation to cover all aspects of EHS including detailed Standard Operating Procedures (SOPs) for specific field activities.

Early civil work at both the Bhagyam and Aishwariya fields was awarded to a total of six local contractors, four of which are currently engaged in the field. According to Project management, all local companies working for CEIL are required to complete a comprehensive check list prior starting their work in the field. Furthermore, all local contractors used in the Project have established their EHS plan, method statement, and job safety analysis. ECMG recognizes that ensuring a correct and continuous implementation of the Project EHS requirements, in particular with local contractors, is a constant challenge. The regular presence of CEIL supervisors in the field and their coaching of the local workforce can ensure compliance with Project procedures and standards. Overall, good progress towards this goal has been observed in the field.

The Project, as described in Section 1, has several components that have been awarded to different contractors. The main contractors currently present in the field include IOTL, KPTL, and LT while Artson has just been awarded a contract and has not mobilized yet. As reported in the October 2010 Audit, IOTL has developed a series of EHS documents that have been approved by CEIL management. Also, KPTL, LT, and PL have developed Project specific EMPs that have been submitted and approved by CEIL. ECMG reviewed these plans and found them adequate for the work component awarded to each contractor (KPTL: infield pipeline laying; LT: OHL installation; PL: trunk pipeline). Overall, CEIL reported that around 23 EHS documents have been developed for the Project. In addition, according to Project information, all main contractors have established method statements and job safety analysis for all identified critical activities. Artson's EHS plans are in the process of being finalized and will be submitted to CEIL for review and approval before field activities start.

Elements of CEIL Quality Health, Safety, and Security management team involved in the construction activities at the Mangala field (part of the Rajasthan Block Project) are now overseeing this Project. Their number and roles are considered adequate to cover the current Project activities. In addition, all main contractors (IOTL, KPTL, LT, and PL) have developed their work component specific EHS organograms that appears sufficient for the on-going work activities.

The addition of new contractors in the field will present a challenge for the Project to ensure their smooth integration within the existing EHS system. Therefore, CEIL field personnel should closely supervise these new contractors from the early stages of field work to guarantee Project standard and policies are implemented from the onset.

IFC and/or ESIAs/EMPs Action Items
Nil

Recommendations for Improvement:

a. CEIL EHS field supervisors should:
   - Continue their regular presence in the field and their pro-active coaching of the local workforce to ensure continuous compliance with Project procedures and standards;
   - Ensure that implementation of the EHS plans are done from the onset of field activities by all new contractors;
   - Maintain close communication on all EHS issues with all contractors; and
   - If needed, provide the necessary EHS guidance and training to enhance contractors' performance.

b. CEIL should ensure that Artson EHS plans conform with Project policies and standards, include all relevant components for the assigned tasks, and are approved by CEIL management before field work begins; and

c. CEIL should ensure that Artson EHS team assigned to the Project is sufficient to cover the field tasks.

3 ENVIRONMENT

3.1 ENVIRONMENTAL ORGANIZATION AND STAFFING

Project Strategy:

At company level, Health, Safety, Environment, Security, and CSR fall under the umbrella of CEIL Corporate Responsibility Management System. According to the information provided to the ECMG team, two environmental managers, one for the Aishwariya and one for the Bhagyam fields, report directly to the construction manager. While the complete EHS structure for the Aishwariya field will be defined at a later stage, the draft structure for the Bhagyam field has been defined. Assisting the EHS manager will be a series of EHS coordinators in charge of the WPs, a training instructor, a scaffolding supervisor and a site paramedic.

Observations:

CEIL management reported no significant changes in the Project EHS personnel structure at the Bhagyam field. As outlined in the October 2010 report, the Project structure consists of a HS manager, five EHS field coordinators, one equipment inspector, and one scaffolding supervisor. The environmental manager coordinates the activities of two field supervisors also in charge of data collection and training. Overall, the EHS structure is consistent with Project commitments and requirements and appears to be sufficient to ensure complete coverage of all field activates. Although limited early civil work activities have started at the Aishwariya field, the Project should revise its EHS structure to supervise on-going activities in that area.

At present, most field activities are centered at the Bhagyam field where IOTL, LT, and KPTL are respectively involved in civil works, OHT, and infield pipe laying activities. The EHS organization and staffing for IOTL includes an EHS manager assisted by two deputy managers: one overseeing safety issues and one for environment. These deputy managers coordinate four EHS officers and four EHS supervisors. For LT, currently only an EHS manager is on site; however, as reported by CEIL personnel, two safety officers will join the field team at the end of January 2011 when field activities expect to pick up. Similarly, KPTL has one EHS manager and one safety officer present in the field with one additional safety officer expected to join the team in late January. IOTL and LT personnel assigned to oversee EHS issues appears to be sufficient for their field work component; however, KPTL personnel may not to be sufficient to cover the numerous field activities in the infield pipes construction (loading/unloading of the pipes, stringing, welding, trenching, etc.) that may be on-going at different locations at any given time.

For the construction of the trunk pipeline stretch from WP15 to MPT, a site EHS manager, assisted by a two safety engineers, have been assigned by CEIL. On PL side, the reported EHS team includes an EHS manager assisted by one deputy manager. They coordinate the activities of two EHS engineers, one for the WP5 and one for the MPT, one EHS officer in charge of the main line construction, and one EHS supervisor in charge of road crossing.

All contractors are required to submit weekly and monthly EHS reports to CEIL management. In addition, daily briefing between CEIL and key contractors' EHS personnel are reported to be conducted. CEIL field management submits regular EHS monthly reports to corporate management. Overall, the EHS reporting scheme developed appears to be robust and adequate for the Project needs.

IFC Action Items
Nil

Recommendations for Improvement:

a. The Project should strengthen its EHS structure to supervise on-going activities at the Aishwariya field;

b. CEIL should continue their supervision of contractors' field EHS personnel to ensure they are familiar with Project procedures and standards and, if necessary, provide mentorship and training;

c. CEIL EHS personnel should continue the implementation of the Project EHS plan, strengthen their direct supervision of new contractors in the field from the onset of their activities, and maintain close communications with all contractors' key personnel; and

d. KPTL may need to increase its EHS personnel in the Bhagyam field to cover the numerous field activities in the infield pipes construction that may be on-going at different locations at any given time.

3.2 AIR QUALITY

Project Strategy:

The Project EIA recognizes dust as the main potential impact on air quality during the construction phase. Dust impacts are only temporary and limited to those areas in close proximity of the sites where work is on-going and along routes frequently used by Project trucks. Dust is associated with civil work activities including excavation work, trenching, material hauling, dumping, site grading, backfilling activities, as well as from increased vehicular traffic in the area. Other gaseous emissions are mainly generated from operation of Diesel Generators (DGs) and vehicular exhausts; however, these emissions are evaluated to be minor, localized, and transient in nature.

The control measures to mitigate fugitive dusts, as outlined in the Project's EIA (Section 4.4.3) and EMP (Section 7.0), include watering of the working areas and of those roads where Project traffic is intense. In addition, the use of cover sheets on topsoil and/or soil piles and of covers on all vehicles delivering construction materials containing fine particles (sand, aggregates, etc.) to/from the site should be implemented. Nose masks are required as standard Personal Protection Equipment (PPE) for workers involved in operations that may entail potential dust inhalation.

Gaseous emissions are mitigated through proper operation and maintenance of all vehicles and construction equipment (e.g. DGs) should have sufficient exhausts height to ensure adequate dispersion. The Project has committed to implement dedicated air monitoring programs for both dust and gaseous emissions control. Air quality parameters, including ambient air parameters (SPM, RPM, SO_2, NO_x, CO, Pb), to be checked during the construction phase are reported in Table 2, Section 10.0 of the Project EMP and summarized in Table 3.1 of this report.

Observations:

Currently, early civil work is being completed in the Bhagyam field and has just started in the Aishwariya field while major civil work is on-going only at the Bhagyam field. It should be noted that the nature of early civil work (cutting, filling, leveling, compaction, and grading) and some activities of major civil work (excavation, equipment movements, etc.) generate a considerable amount of dust suspension in the air, in particular in the dry and desert setting of the area. The Project has identified specific areas where working activities could significantly increase particulate suspension and has developed a schedule for dust suppression (wetting of the grounds) throughout the Bhagyam field sites. According to the field personnel, and as observed by ECMG during their site visit, at the Bhagyam field six tractors, all belonging to locals, are used to wet the grounds: three trucks are used for the WP areas and three for the access roads. Despite these efforts, complains from the local population living near active sites have been recorded indicating that dust is a sensitive issue. Monitoring data confirms that complains from the local population are founded. Furthermore, although minor civil work has started at the Aishwariya field, ground wetting activities information have not been provided by the Project nor observed in the field during ECMG visit. The Project should increase ground wetting activities at the Bhagyam field sites under construction, in particular where local dwellings and/or people are present. At the Aishwariya field sites, where minor civil work has already started and where the number of dwelling close to Project sites has been observed to be considerable more than in the Bhagyam field, CEIL should start an aggressive approach to ground wetting activities to mitigate dust suspension in the ambient air.

At the Bhagyam field, ambient air monitoring data for the months of September 2010 and from November 2010 to January 2011 have been submitted to ECMG for review. It should be noted that J. M. Environet PVT, a contractor of CEIL, provided the monitoring services for the October 2010 audit report while Nakshatra Enviro Services, a contractor of IOTL, is currently doing the monitoring at the Bhagyam field. Ambient air monitored parameter included Suspended Particulate Matter (SPM), which could be

comparable to Particulate Matter less than 100 μgm/m^3 (PM100), and Respirable Suspended Particulate Matter, or PM10, SO_2, NO_x, and CO. This group of analytes does not comprise lead (Pb), which is included in the Project requirements, or Ozone and PM2.5, which are IFC requirements. Furthermore, sampling duration, as evinced from the submitted documentation, is limited to 8 hours at each location while for most parameters (PM10, PM2.5, and SO_2) the average sampling period should be 24 hours. It should be noted that, according to Project information, the limited duration of PM measurement, which is in line with the required Indian air quality standards, is due to the heavy loading of the Whatmann fllter papers used in the monitoring equipment. The Project should include all pertinent Project and IFC monitoring parameters in its monitoring campaigns and ensure that the minimum sampling period is met.

During the September, November and December 2010 monitoring campaigns the Project collected ambient air samples at IOTL batching plant and fabrication sites as well as at WP1, 2, 3, and 15. During the January 2011 campaign, samples were collected again at IOTL batching plant and fabrication sites and at WP4, 5, 12, and 13. Although a direct comparison of the single analytes (PM10 and SO_2) monitoring results is not possible because of the limited sampling period (8 hours), the PM10 data collected at many sites suggest exceedance of both National Ambient Air Quality (100 μg/m^3) and IFC (50 μg/m^3) standards. It should be noted, as also indicated by PM baseline values reported in the Project EIA, that the area is subject to very dry and at times (summer months) high wind conditions that significantly increase dust suspension in the ambient air and directly affect PM field measurements. No exceedances were detected in any of the other analyzed parameters.

Stack emission tests were conducted by Nakshatra Enviro Services in conjunction with ambient air campaigns. It included testing of DGs located at working WPs and units at the IOTL batching plant and fabrication yard. A review of the reports indicated that none of the parameters analyzed (SPM, SO_2, and NO_x) was detected at abnormal levels.

IFC and/or ESIA/EMP Action Items

M1.7 The Project should increase ground wetting activities in the Bhagyam field site were construction is on-going (**Modified)**.

M3.1 At the Aishwariya field sites CEIL should start an aggressive approach to ground wetting activities to mitigate dust suspension in the ambient air.

M3.2 The Project should include in its monitoring campaigns all Projects and IFC required parameters and ensure that the minimum sampling period is met.

Recommendations for Improvement:

a. The Project should carefully monitor ambient dust, in particular early during civil work, and adopt strong mitigation measures (frequent watering of the grounds, use of masks by the workforce, switch to activities that do not suspend dust into the ambient air during windy conditions, etc.) to reduce dust generation;

b. The Project should pay particular attention to dust issues at those sites in the Aishwariya field where dwellings are located in close proximity to WPs. Close coordination with the CSR team should be implemented to ensure that people living near WPs are protected; and

c. Monitoring reports should include legislative, Project specific, and IFC limits for each parameter. In addition, the reports should highlight and discuss any exceedances of the above mentioned limits (*repeated*).

3.3 GROUNDWATER AND SURFACE WATER

Project Strategy:

According to the Project EIA, water requirements for the construction and operational phase will be sourced from the already existing facilities (Thumbli extraction field and Reverse Osmosis Plant at MPT) that service the Rajasthan Block Project. The daily water consumption during the construction period is

estimated to be about 100 m^3/day for a period of one year (Section 2.4.3.2 of the EIA). However, the recently approved EMP indicates that water requirements for contractor activities could be sourced from local sources or from groundwater abstraction, previously obtaining the necessary permits from the local authorities (Section 7.0 of the EMP). Water consumption during drilling activities has been estimated to be 40 to 50 m^3/day sourced by local suppliers and/or supplemented by saline water from the MPT.

Domestic drinking water during the construction phase will be supplied from groundwater/packaged water or water transported via tankers to the construction site (Section 4.4.3.4 of the EIA).

Observations:

The current Project needs for water include industrial water used for the civil work, dust abatement activities, and portable toilets, and domestic water used for drinking purposes. According to the information provided, at the Bhagyam field IOTL and L&T are the contractors with the most need for industrial water. IOTL industrial water uses include cement production at their site batching plant, filling of portable toilets, and dust abatement at the WPs and along the field access roads. Water consumption averaged about 15,000 liters per day (15KL/day) in October, 20 KL/day in November, and 24 KL/day through the middle of December (last available data) indicating the significant intensification of major civil work at the WPs. Water required for portable toilets, dislocated at WPs where work is ongoing, averages 0.5 KL/day while dust abatement activities use an average of 2-2.5 KL/day. As described in the October 2010 report, industrial water is sourced from local suppliers as the Project's continued efforts to provide opportunities to nearby business although CEIL has the capability of meeting its needs through the Reverse Osmosis (RO) plant located at the MPT. LT consumption of industrial water at their fabrication yard has been reported to average 0.6 KL/day and is supplied via an underground pipe from a nearby borehole belonging to the landowner from whom the site is rented.

Each contractor has its own drinking water arrangements and supplier. Bottle water is supplied by different vendors to KPTL, CEIL, and IOTL, staff field offices while water for camps and yards comes from local suppliers. Drinking water for KPTL, PL, and LT labor camps comes from boreholes located in the Bhadka village while PL staff and labor camp are supplied by a borehole from the Gave Gaon village that is then processed by an on-site RO. It should be noted that drinking water at WPs is transported to site by tankers and stored in plastic containers provided with spigots. Chlorinated tablets are regularly added to the on site drinking water tanks and chlorination is regularly checked with a portable kit. Drinking water samples are collected at the source and/or at user end-points (spigots) and tested for a complete set of parameters to ensure water is within drinking quality standards (see Section 3.4).

IFC Policy Action and/or ESIA/EMP Actions Items
Nil

Recommendations for Improvement:

a. The Project should work in concert with CSR to gradually phase out local supply of industrial water and replace it with other sustainable initiative for the local businesses (*Repeated*).

3.4 MONITORING

Project Strategy:

Monitoring of key environmental parameters is both a Project commitment and an IFC requirement. The Project EIA and EMP clearly outline CEIL's Environmental Monitoring program to cover both the construction, the drilling, and operational phases of the Project. Monitoring shall include direct measurements and recording of quantitative information of physical and chemical indicators to characterize ambient environmental quality in the Project areas. Monitoring should be designed and implemented to ensure that Project commitments are met and to verify compliance with statutory and corporate requirements. In particular, the Project has developed specific parameters and monitoring schedules to be carried out during the construction phase. These parameters and schedules are outlined in Table 6.1,

Section 6.2.2.1 of the EIA and Table 2, Section 10 of the EMP and are summarized in Table 3.1 of this report. Monitoring reports should include legislative, Project specific, and IFC limits for each parameter.

Observations:

CEIL continues its monitoring program with monthly analysis of ambient air (see Section 3.2), noise, and drinking water quality at the Bhagyam field. It should be noted that J.M. Environet, a CEIL contractor, performed monitoring during the early stages of work at this field while Nakshatra Enviro Services, an IOTL contractor, took over monitoring starting September 2010.

Review of the data collected for September 2010 and November 2010 through January 2011 indicates that drinking water tests on collected samples from several WPs and from the IOTL fabrication yard and batching plant sites are generally within the national permissible limits with few exceptions. Fluoride concentrations range from 2.0 to 4.0 mg/l, a value slightly above the 1.5 mg/l national limit while Chloride concentrations are usually very close to the limit (1000 mg/l) with some excursion detected slightly above (December 2011 campaign: WP12 at 1099.5 mg/l and WP4 at 1124.6 mg/l). In addition water turbidity at the IOTL batching plant site was detected well above the 10 NTU national limit in the September, November and December 2010 samples (values ranging from 33 to 35 NTU); however, the January 2011 sample collected at this location showed turbidity values (2.0 NTU) back within the limit. It should be noted that of the Project complete list of analytes for water listed in Table 3.1 (Project commitments), only a reduced set is currently tested.

Ambient noise at the Bhagyam field currently includes monitoring point located at the gate of WPs where work is on-going (WP1, 2, 3, and 15 for the September, November, and December 2010 campaigns; WP4, 5, 12, and 13 for the January 2011 campaign) and at the gate of the IOTL fabrication yard. Measured values at all locations did not exceed the National Ambient Air Quality and IFC standards for industrial areas of 75 and 70 dBA respectively. Because work in the Project area is carried out only during the daytime hours and noise sources are limited to diesel generators provided with enclosure and silencers, monitoring is carried out on an hourly basis for an 8 hour period during the daytime hours.

As part of the drilling activities, soil tests were conducted at WP4 and 5, located in the Bhagyam field, during the January 2011 campaigns. None of the analytes (pH, electron conductivity, moisture, zinc, iron, copper, chromium, nitrogen, phosphate, potassium, sodium, and oil & grease) was found in abnormal concentrations.

Table 3.1: Monitoring Parameters

Project Phase	Medium	Parameter	Frequency
Construction	Ambient Air	SPM, RPM, SO_2, NO_x, CO, Pb	Monthly
	DG Emissions	SO_2, NO_x, CO, Hydrocarbons	Periodic
	Noise	L_{eq} L_{dn}, L_n	Monthly/Quarterly
	Water	Physical characteristics, TDS, Ca, Mg, Cl, B, SO_4, F, NO_3, Na, K, C_6H_5OH, CN, Cd, As, Cu, Pb, Mn, Fe,Cr^{+6}, Se, Zn, Al, Hg, Pesticides, E-coli, Total Coliform	Periodic
Drilling	Ambient Air	SPM, RPM, SO_2, NO_x, CO	Once
	Noise	L_{eq} L_{dn}, L_n	Once
	Soil	Physical characteristics, P, K, Mg, Na, Cl, SO_4, C, Al, Fe, Mn, Zn, B.	Pre and post Drilling
	Water	Physical characteristics, TDS, Ca, Mg, Cl, B, SO_4, F, NO_3, Na, K, C_6H_5OH, CN, Cd, As, Cu, Pb, Mn, Fe,Cr^{+6}, Se, Zn, Al, Hg, Pesticides, E-coli, Total Coliform	Pre and post Drilling

IFC and/or ESIA/EMP Action Items	
M3.3	Of the Project list concerning water analytes, only a reduced set is currently tested.

Recommendations for Improvement:

a. Monitoring reports should include legislative, Project specific, and IFC limits for each parameter, highlight anomalies and proposed answer/investigation and/or mitigating actions.

3.5 RECLAMATION, REVEGETATION, AND TOPSOIL MANAGEMENT

Project Strategy:

The Project EIA and EMP define general measures to prevent and mitigate the impacts on soil resources. Potential impacts of concern include reduction of topsoil fertility and increased erosion due to surface disturbance, vegetation removal, and inadequate reclamation. CEIL is committed to implement actions for the protection and preservation of topsoil in the RoU along the pipeline and at WPs. Preserved topsoil should then be used during site reclamation. Erosion minimization through temporary and permanent erosion control measures in disturbed areas is also part of the Project strategies. Revegetation and the development of greenbelt areas around permanent facilities (WPs and along access roads) are other Project commitments. As per EIA outline, a minimum 10 m wide greenbelt will be planted around all Project facilities.

Reinstatement and top soil management will be done with due regard for local development plans and compatible with the surrounding land use. Restoration will be carried out so that the site will be returned to near original conditions. As part of the reinstatement process, the Project recognizes the importance of the correct management and preservation of topsoil during construction activities. Topsoil stripped during site clearance should be properly stored to preserve its physico-chemical characteristics and to avoid loss due to erosion.

The Project recognizes the particular value of vegetation in the arid climate of the region and has made a strong commitment for the revegetation and the development of greenbelts around permanent facilities. During the construction phase, particular care will be taken to minimize flora disturbance and tree cutting. Also, the Project proposed the development and maintenance of a nursery to facilitate the revegetation process. The greenbelt programme and revegetation activities should be concomitant with site clearing activities and, as per Project commitments, the number of trees replanted should be at least twice the number of the trees cut during site preparation. Furthermore, the greenbelt extension should be no less than 25% of the total area covered by the permanent facility.

Observations:

As described in the October 2010 report, soil assessment studies of the Bhagyam area have been carried out indicating that soil is characterized by low fertility and productivity. A similar assessment for the Aishwariya field was not submitted to ECMG for review. The Project only provided a table indicating that one soil sample was collected at five (5) different locations (Naya Nagar, Kagau, Adel, Nimbal Kot, and Rampura) on July 2010. These samples were tested for key elements to determine soil characteristics but a report assessing the overall soil fertility and productivity in the area was not been submitted for review.

CEIL has outlined an overall approach to greenbelt development identifying the number and types of species (39 were selected) that best suit the Project area arid environment and that have some aesthetic values but with medium water requirements (46%). In addition, the Project has already determined the total number of trees (48.7% of the total number to be planted), fruit trees and shrubs (10.3%), ornamental shrubs and low tree species (12.8%), and desert shrubs (28.2%) that will plant at each WP and along the access roads. The beginning of plantation at each site will strictly depend on construction completion and on the favorable monsoon season. Since work at the Bhagyam field is gearing toward completion, the Project should start developing a detailed strategy for the greenbelt implementation by identifying local partners and define overall roles and responsibilities.

To date, no tree has been cut during the clearing of the WPs, access roads, and infield RoU at the Bhagyam field or during the clearance along the trunk pipe RoU.

Top soil, although very limited, has been observed to have been properly stripped and piled along the trunk pipeline RoU.

IFC and ESIA/EMP Policy Action Items	
M2.1	The Project should start developing a details strategy on greenbelt implementation at the Bhagyam field by identifying local partners, and define overall roles and responsibilities (**Modified**).
M3.4	For the Aishwariya field the Project should prepare a report assessing the overall soil fertility and productivity in the area.

Recommendations for Improvement:

a. The Project should start developing a detailed greenbelt development plan, similar to the one developed for the Bhagyam field, for the Aishwariya field.

3.6 WASTE MANAGEMENT

Project Strategy:

According to the Project EIA and EMP:

- "The solid wastes such as paints, lubricants, oil diesel containers or any other non-biodegradable wastes that have leaching characteristics will be disposed at landfill site proposed to be constructed near Mangala terminal";
- "A waste management plan will be prepared before the commissioning of activity……";
- "The waste, such as sanitary wastes will be treated in a septic tanks followed by soak pits of appropriate size and technology";
- "Use of municipal or external wastewater/sewage treatment facility shall only be considered as last option";
- "Workshop areas for the maintenance of vehicles, drilling rigs, DG set locations and fuel storage areas would be surrounded by drains…..";
- "All oil handling and storage areas will be provided with concrete paving and secondary containment"; and
- "A Central Waste Accumulation (CWA) area shall be demarcated and all the non-perishable segregated wastes shall be accumulated…..".

A general Waste Management Plan (WMP) has been developed at the corporate level, by CEIL. This plan includes minimum requirements for the management of hazardous and non-hazardous wastes generated during the construction phase at all CEIL projects. A Waste Management Procedure, developed for other CEIL projects, providing general requirements for the waste identification, segregation and storage, record keeping, and final disposal is available. A general action plan with activities, waste generation locations, actions to be undertaken and responsibilities/accountabilities for final disposal are included in the document as well as an example of a waste disposal register. According to these procedures, Project contractors are required to develop and implement specific waste management programs that include the proper identification, classification, temporary storage, and final disposal strategies. A waste management strategy, calling for segregation at source of the different types of wastes, will be implemented at all Project locations. According to the plan, the collected materials will be transferred to a central waste collection yard and all recyclable items will be sent to authorized/licensed waste handlers. The use of a common integrated engineered landfill and incinerator, located within the MPT boundaries, for the disposal of hazardous waste is foreseen.

Observation:

As described in the October 2010 audit report, CEIL and IOTL have developed a comprehensive WMP, consistent with Project requirements, and are carrying out adequate implementation in the field. All new contractors that have mobilized in the field (LT, PL, and KPTL) have submitted their own WMPs that are consistent with CEIL requirements and specific contractor's tasks.

In general, the plans call for segregation of recyclable waste at the source. A CWA area, as observed in the field, has been established at all contractors' yards and camps (IOTL at their batching plant; LT and KPTL at their fabrication yards; PL at their pipe yard). Waste streams are reported to be registered through a waste tracking sheet by all contractors, and all recyclable waste (paper, plastic, timber, etc) is regularly picked up twice per week, or on as needed basis, by a licensed recycler. CEIL conducted audits of two recycling enterprises: Friends Suppliers and Shree Ram Enterprises, both located in Barmer. Audits took place on December 14th, 2010 and found that both enterprises' facilities and operations are in line with Project and IFC standards. According to the information provided, at present all recyclable waste streams, which include plastic, paper, timber and metal scarps, and glass, are regularly picked up and sent to Shree Ram Enterprises, which in turns sells to bigger scrap dealers or directly to reprocessing units in Gujarat. Oil contaminated materials (rags, contaminated PPE) and biomedical waste, waste streams produced in very small quantities, are now reportedly sent to the newly commissioned MPT landfill and incinerator facilities and were observed to be temporarily stored in the new storage shed. The Project should continue its segregation of all contaminated material, incinerate it, and dispose it in compliance to the waste management plan, applicable regulatory requirement, and IFC standards, including the use of the MPT landfill and incinerator facilities. Food waste is reported to be processed at the composting facility located at the MPT.

Working areas, WPs, and contractors' yards/camps are all provided with toilet facilities. At Contractor's yards and camps, wastewater is either processed through septic tank - soak pit systems or is collected in septic tanks. Portable toilets have been placed at each WP where a workforce is present and along sections of the infield and trunk line pipeline where work is on-going. According to field personnel, all Project wastewater from septic tanks and portable toilets is now transported to the Sewage Treatment Plant located at the MPT.

ESA/EMP and IFC Policy Action Items
Nil

Recommendations for Improvement:

Nil

3.7 HAZARDOUS MATERIALS MANAGEMENT AND POLLUTION PREVENTION

Project Strategy:

The Project strategy for the management of hazardous materials is outlined in the relevant EIA and EMP as follows:

- "Workshop areas for the maintenance of vehicles, drilling rigs, DG set locations and fuel storage areas would be surrounded by drains…..";
- "All oil handling and storage areas will be provided with concrete paving and secondary containment";
- "Material Safety Data Sheets (MSDS) have to be maintained for all hazardous chemicals and the storage and handling points"; and

– "All hazardous material storage areas, fuels storage areas, DG set installations shall be paved with bermes and collection pit for spills and contaminated run-off. These facilities will be within a dedicated enclosure with roofing and side cladding to prevent rain water ingress. Closed storage areas will be well lit with adequate ventilation……..".

Observations:

All contractors have established a hazardous and chemical storage area at their field sites. These areas have been observed to be properly constructed with a paved floor and berms and provided with sufficient ventilation. The diesel storage room at IOTL batch plant site has been provided with a cement step outside the entrance to ensure containment in case of a spill and the roof has been raised and side openings added to improve aeration. All DGs observed in the field have secondary containment as they were placed on concrete skids or plastic sheeting and provided with earth berms. Material Safety Data Sheets are present at all visited sites and were observed to be posted/available near hazardous material storage areas.

IFC and/or ESIA/EMP Compliance Action Items
Nil

Recommendations for Improvement:

Nil

4 HEALTH AND SAFETY

4.1 HEALTH AND SAFETY MANAGEMENT AND OCCUPATIONAL HEALTH

Project Strategy:

CEIL has adopted a Corporate Responsibility Management System that incorporates heath, safety, environment, security and corporate social responsibility. The system includes well defined performance standards, procedures and guidelines, and key performance indicators (e.g. lost time incidents, total recordable incidents etc.), which are used to track compliance with annual HS targets.

Observations:

As described in the October 2010 audit report, CEIL has fully adapted available health and safety plans to the specific Project. In addition, Project contractors have developed their own EHS plan, job safety analysis, work tasks risk evaluation, and specific SOPs that have been approved by CEIL.

EHS inductions and training of all workforces is well implemented throughout the Project and all employees undergo medical and security screening at the time of hiring. About 800 people are currently working in the field with over 2,100 people having received basic EHS training. The high number of trained people in comparison to the current work force is due to the high turn-over of unskilled workers. In addition to basic EHS inductions, over 700 workers have been reported receiving task specific training (excavation, environmental awareness, working at heights, rigging, electrical safety, etc.) with workers involved in specialist jobs undergoing competency checks. Workshops on managing EHS have been organized for construction leadership teams and over 300 supervisors have attended a Hazardous Observation training. Site supervisors are reported to conduct regular toolbox meetings and EHS awareness shows (Road Show), using pictures and examples, have been delivered by CEIL personnel at various work sites on a monthly basis. Near misses are reported regularly as part of the daily EHS activities.

CEIL is conducting regular site audits and inspections. So far CEIL has performed eight internal audits in the field. As reported by field personnel, CEIL also performs monthly audits at selected sites and weekly sites inspections. Finding of new issues and resolution of old problems are complied in detailed report following the audits and inspections. Specific equipment inspections are also carried out on a regular basis with over 1,100 pieces of equipment and/or machinery already checked. A sticker is applied to all inspected equipment and each site where open issues and/or faulty equipment were found is responsible for taking action for closing the issues. However, wrong wire rope clipping was observed on several rigging equipment employed in the field. The CEIL personnel quickly responded by fixing what observed in the field and reported that further inspection will be conducted to verify that other rigs do not have a similar problem. Scaffolding and shuttering are erected under CEIL supervision and a tagging system is implemented to ensure safety. Specific plans for heavy materials lifting and loading/unloading have been introduced and only competent riggers are used for critical lifting operations.

Required PPE has been observed to be fully implemented at all work sites. Special equipment (blasting hoods, half masks for spray painting, etc.) have been procured and used in the field. Housekeeping has been observed to be generally good at all visited sites. EHS warning signs are posted near critical area throughout the Project. Portable toilets have been placed at all WPs where work is on-going and along infield and trunk pipeline sections where workers are present.

First aid rooms, staffed with paramedics, have been set up at most field camps and, for those sites located away from the Barmer village, ambulances are present on-site. At WPs where civil work is on-going an emergency vehicle is kept at the gate should transportation of injured personnel be necessary and a medical car is deployed along the trunk pipeline where workers are present. Medical supplies have been observed to be sufficient for the workforce present at each visited site, and well stocked first aid kits are available at WPs and fabrication yards. No major incidents have been reported since the start of the Project and only 34 minor incidents, with no injuries, have been logged to date.

According to field personnel, five HS drills (evacuation, rescue drill, etc.) have been conducted at work sites while a drill with the participation of local authorities (e.g. hospitals, fire fighting, etc.) is planned for the future.

Fences/barricades have been deployed where excavations are present; however, along the trunk pipeline, several long section of welded pipeline were observed to be missing end-caps. According to field personnel, welding of the pipe end-caps is on-going.

PL labor camp was found to be in acceptable conditions with the exception of smoke detectors missing in the workers rooms.

IFC and/or ESIA/EMP Compliance Action Items	
M3.5	Wrong wire rope clipping was observed on several rigging equipments employed in the field (resolution already started).
M3.6	Welded pipeline should be provided with end caps.
M3.7	PL labor camp rooms should be provided with smoke detectors.

Recommendations for Improvement:

a. CEIL should plan to conduct in the near future at least one EHS drill with the participation of local authorities.

5 SOCIAL ISSUES

5.1 SOCIAL MANAGEMENT

The social aspects of the Project are managed by the Cairn Corporate Social Responsibility (CSR) department. CSR is part of the general Cairn Corporate Responsibility Management Plan that also includes Environment, Health and Safety and Security.

The CSR staff for the Upstream Project (including the Bhagyam and the Aishwariya fields' development Project) has recently been increased and restructured. It now comprises of ten field officers, three of them women, based in Barmer. A CSR manager, based in Gurgaon, coordinates and supervises the team.

In 2008, a Corporate Social Responsibility Policy, a framework Public Consultation and Disclosure Plan (PCDP) and a framework Land Acquisition and Compensation Plan (LACP) were issued by CEIL followed by more specific PCDP and LACP for the Rajasthan Block Project. A Rapid Environmental Impact Assessment (REIA) for the Bhagyam field was published in November 2007. The REIA assesses as insignificant or minimal the nuisances and negative impacts on neighboring communities and evaluate as positive the impact on employment and overall socio-economic development in the area. However, no monitoring system was recommended to follow up the social impacts of the Project. The REIA also presents the proceedings of the Public Hearing held in Barmer on October 10th, 2007 where the concerns expressed were associated to potential pollution, land acquisition; sources of water supplied by local distributors and expected socio-economic development programs. These concerns and expectations were addressed in the last version of the REIA as relevant.

CEIL prepared a draft of a Community Development Framework (CDF) for the Mangala Development Pipeline Project.

Observations:

The organization of the CSR in the Upstream Project has been redefined. Each staff member has been given responsibilities according to his/her experience and specific fields of expertise (including health and nutrition, education, income generating activities development, micro-finance, skills development, micro-enterprises development and land acquisition issues), but also following the geographical distribution of the Project in the field. The new CSR staff members met by the ECMG team appear qualified and experienced.

ECMG commends the increase in the number of CSR members and the new organization of their tasks; however, some concern remains on the overall coordination of the team in Barmer.

At present, coordination is ensured by the CSR manager based in Gurgaon, who also coordinates the activities of the Enterprise Center in Barmer since a new manager has not been appointed yet. ECMG is of the opinion that a CSR coordinating manager based in Barmer is needed. He/she could be selected among the existing staff, or the responsibility given to the EC manager who should be named as soon as possible.

ECMG received and reviewed a draft of a comprehensive Community Development Framework, prepared for CEIL by a consultant, for the Mangala Development Pipeline Project. The document is a comprehensive scoping document that synthesizes most of CEIL policies and practices and gives sound recommendations, including best practices and methodologies. The next step is transform this scoping document into a Corporate document (CEIL Community Development Strategy) that outlines the Company's objectives with reference to community investment, approach, methodology and actions for implementation (drawing from already existing practices that have been successful and new proposed ones), project time lines, budget etc. The document should reflect Cairn's commitments to Community Investment and the model that Cairn will adopt for successful project outcomes that are appropriate to the local context and meet project requirements. A specific CSR Action Plan for the Bhagyam and Aishwariya Project should be prepared.

According to ECMG, CEIL should improve reporting on CSR and communication activities. The various meetings and interactions are properly logged, but no quarterly report is regularly prepared, as established by the framework PCDP ("*Preparation of brief quarterly progress and compliance reports for JV, and other external stakeholders on the grievance redressal, public consultation and progress update on the community development programmes*" Section 4.3.1).

IFC and/or ESIA/EMP Compliance Action Items
M3.8 M3.9 CEIL should regularly prepare quarterly and annual CSR and public consultations reports.

Recommendations for Improvement:

a. CEIL should expedite the recruitment of the Enterprise Center manager.

5.2 STAKEHOLDERS ENGAGEMENT

Project Strategy:

Public Consultation and Communication

The communication program for the Bhagyam and Aishwariya fields is implemented in the frame of the PCDP for the Rajasthan operations (Upstream project). A specific PCDP for the Satellites Project has been prepared.

Since 2003, CEIL has been interacting with the District administration officials, in the frame of the land acquisition process, to plan and implement socio-economic development measures on a long term basis. A Barmer Development Forum, chaired by the District Collector and Magistrate and including representation from the other Departments of the District administration (education, health, forest, etc.), was set up to discuss the possible synergy and convergence of the public programs with CEIL interventions. According to Project's staff, the forum is no longer functional because it is considered no more relevant given the tight and continuous collaboration with the District administration on many development programs.

The interactions with the communities are carried out by three teams, with different tasks: the CSR team, dealing mainly with development programs; the land team, managing the land acquisition activities; and the Stakeholder Relations Team (SRT). The SRT tasks are midway between communication with stakeholders (both authorities and communities) and security. According to CEIL management, SRT has a short term scope, mostly linked to security issues (road blocks, work stoppages, assaults to Project's staff, thefts of Project's properties, etc.) that have arisen particularly in the Upstream project and another of CEIL on-going projects, the Bhogat to Salaya pipeline extension.. The SRT maintains a dialogue approach using the experience of the team members (all former local policemen) and ensures the respect of the laws in the framework of the company's policies (including the PCDP). The SRT coordinates with CSR, land and security teams in order to manage stakeholders. The head-of the SRT gives overall direction to the consultation process and guides the teams in the implementation of the PCDP.

Development Programs

The CSR activities for the Bhagyam and Aishwariya fields are implemented as part of the general CSR program for the Rajasthan operations (Upstream project). From the beginning of its presence in Rajasthan, CEIL has been supporting various development initiatives either directly and/or in collaboration with local NGOs. Also, public investments are sponsored by CEIL following the request of local authorities and communities affected by land acquisition.

Since 2007 CEIL, in partnership with IFC, has also supported an Enterprise Center (EC), which provides technical assistance and training. The EC organizes training for micro and small enterprise as well as local vendor development. A specific program has been developed by ICECD for rural women in affected villages, engaging them in home-based handicraft linked to market through textile contractors and key exporters. In addition, the EC activities included EHS induction for CEIL and contractors' staff during the Project construction phase. Organization of women into in Self-Help Groups and entrepreneurship development training for women is also provided. Another initiative has been to start a training program in agriculture, teaching farmers to grow new cash crops.

In December 2010, the joint funding IFC-CEIL to the EC has ended. The EC has been transformed in a non-profit entity directly managed by CEIL through a board comprising of eleven members from CEIL management. The Center has become the hub around which all CSR activities are organized. The training program has been revised with attention to quality and links to the technical institutes present in the

District. Among the projects to be launched three are: courses of basic and advanced computer for college students carried out by reputed institutions; course of spoken English in collaboration with the BBC; advanced welding training in collaboration with a reputed specialized training center in Kolkata. In the mean time, the EC continues the on-going programs, including development of local vendors and small enterprises. CSR staff is carrying out participatory needs assessment and resource mapping in communities to identify other opportunities of training and activities.

At the moment, CSR activities in the Bhagyam and Aishwariya fields are focused on projects related to health and education, implemented in collaboration with NGOs and the relevant local government. Health camps, which offer free of charge diagnostic health care and medicines, chaired by specialized doctors in the area of pediatrics, gynecology, orthopedic, ophthalmology and others, are regularly held in the Project area. A Mobile Health Van program, which includes a doctor, a pharmacist, and a social worker, who visit 14 villages once a week; and an awareness program on malaria and other health issues using magic shows, skit plays, quiz competitions, and puppet shows are also on-going. With respect to education, the focus is on improving the quality by motivating teachers and students through: school infrastructure renovation; reading rooms (in 25 schools, 4 in Bhagyam area); Science Van (three visits organized so far), and English relay training (in 10 schools). The Project is considering new programs related to girls' schooling, such as dedicated tuition support, parents' sensitization and scholarships.

CEIL CSR also finances health awareness communication material and organizes sponsorship of special events and Continuous Medical Education workshops for Barmer doctors in collaboration with government programs and relevant institutions. Of particular notice is the collaboration with UNICEF for the health and education programs.

Observations:

ECMG noticed that the Project's engagement with communities and land owners has slowed down in the last year, due to the insufficient number of CSR officers, some of whom left or were redeployed. The effects of this slowdown were apparent in the field visits: members of the communities and land owners complained the irregularity of visits and the delay of feedback.

In the area of Aishwariya the engagement has been even less. Very few CSR activities are going on in the area and affected communities have been visited only by the land team for land acquisition. The Project's explanation is that works there have just started. However, tensions were evident particularly with land owners. Incidents were reported in Project's logs and witnessed by the ECMG team: in some cases, works along the trunk line were stopped by land owners upset looking for employment; in other cases the villagers tried to organize road blocks to stop the team's car. The tense situation is acknowledged by the Project that has strengthened the security in the area. During this visit the ECMG team was escorted by security personnel.

At the end of 2010, new CSR officers have been appointed (see also Section 5.1) and villagers acknowledged the fact that visits from Project's people have been more frequent in the last month. However, it is clear that the Project has some lost ground to cover and should definitely reinforce their engagement activities with stakeholders throughout the construction area.

Given the tense situation, ECMG is also concerned that in Bhagyam a community liaison has been established only at PL trunk pipeline camp. The Project should expedite the establishment of this function at all construction sites both by CEIL and the contractor and clarify the coordination with the CSR, SRT, and the security team.

Land owners' expectations, in term of employment with the Project, appear to be the main issue. Given that the construction works for the WPs and the trunk line are less labor intensive than the previous construction phase at MPT, there is a problem of conflict between the affected land owners because of competition for employment with the company. ECMG recommend that the Project establish a clear and transparent employment procedure in concert with the affected communities, giving employment to the different affected villages by percentage or in turns (see also Section 5.2).

ECMG has also concerns about the long term livelihood opportunities for the most affected villagers. In Bhagyam, some of them lost a considerable amount of land (some reported all their land was acquired), also because they were impacted by other projects as well (a mining project and a steel factory project). Many of these land losers mainly invested their compensation in vehicles with the hope to be hired by

CEIL and do not seem to have a long term alternative livelihood strategy. However, they acknowledge that CEIL is the only project to visit them and taking interest in their future, and they recognize that the establishment of the Project brought economic development to the district. They also understand that the construction period will be short and hope to find other employment and contract opportunities with other projects in the area.

ECMG recognizes that the Project has developed a good offer of development activities in its area of intervention, and acknowledges the effort in fine-tuning the strategy. ECMG recommends that the villages affected by the Satellites Project and particularly in the Aishwariya area are rapidly included in development activities, particularly those offering alternative livelihood opportunities.

During the visit, the ECMG team once again received a positive feedback from the villagers in the Bhagyam area about the on-going CSR activities, mainly those involving health (Health Camps, Health Van) and education (Room to Read and Science Van). As already planned by the Project's team and the implementing organizations, the health initiatives will be revised following the feedback from communities. The initiatives in local primary schools seem very popular and effective in increasing the interest in education. However, some villagers asked for support to secondary education, especially for girls.

IFC and/or ESIA/EMP Compliance Action Items

M1.12 Contractors should establish a liaison person for community interactions and grievances at each campsite. This person should speak the local languages and be introduced to communities, authorities and land-losers. All interactions should be recorded. Contractors should be briefed on CEIL's policies and approach practices. All interactions should be documented and regularly updates provided to CEIL on issues that arise (**Modified**)

M1.14 Establish regular information meetings with the affected communities including information on Project's progress, grievance procedure and liaison persons in charge, employment and business opportunities, with time and number limits, and HSE awareness (**Modified**).

M1.15 Prepare a Community Development Plan for the Bhagyam-Aishwariya Project in the frame of the general Community Development Framework (**Modified**).

Recommendations for Improvement:

a. The Project should intensify the engagement with affected communities: make frequent visits to villages and expedite the start of CSR programs, particularly those linked to economic development and girls' education.

5.3 LAND ACQUISITION

Project Strategy:

According to the REIA, the Bhagyam field development will include 15 WPs and related flow lines to and from the MPT. The land requirement for each WP is about 4.4 ha, for a total of about 66 ha, spread over several land parcels in Bhagyam field area. The land required for the infield pipelines will consist of a 30 m wide corridors running about 40 km to the MPT. The land is permanently acquired in accordance with the Land Acquisition Act. Crop and land compensation is paid as determined by the revenue officials and the land will be reinstated to its original condition once the pipeline is laid. According to the REIA, the locations of the proposed WPs are away from settlements and at a safe distance from public utilities. No resettlement or displacement of people is expected.

The National Land Acquisition Act procedure has been used for the acquisition of the land needed for all the Upstream projects, as detailed in the Rajasthan LACP. The Government of Rajasthan has nominated the nodal official, namely the Land Acquisition Officer (LAO) based in Barmer, to ensure that all due processes as required under the law are carried out for the proposed land acquisition. The price for the land

is determined by the LAO according to Government parameters, which CEIL increased substantially. According to local authorities and CEIL staff, the sums given for compensations have been generally much higher than market value and no construction was started before compensation for the land was paid.

For the Rajasthan project, a Grievances Redress Committee has been formed that includes representatives of the local administration, CEIL, and the LAO. A log of grievances is kept by LAO and Cairn.

A complete census of all land-losers (including the Satellites Project) has been completed.

O*bservations:*

As discussed in Section 5.2, the relation between the Project and the land owners is generally tense, mainly because of the employment and contracts expectations of affected villagers. No issue pertaining specifically to the land acquisition process has been raised by the affected land owners met by the ECMG team. They all stated that the process was fair and without problems. In one case, however, the Project did not take the mitigation measures it did commit to: the digging of a pond for one village that lost a water catchment because of the land acquisition. The appropriate corrective measures should be taken in a timely way.

The Project should still prepare a revision of the Rajasthan framework LACP for the Bhagyam and Aishwariya fields (including: summary of the REIA; update of the grievance redressal mechanism).

IFC and/or ESIA/EMP Compliance Action Items	
M1.16	Prepare a Land Acquisition and Compensation Plan (LACP) for the Bhagyam-Aishwariya project. Brief LAO and staff on LACP/PCDP and IFC PSs and maintain a copy in the local languages, at each local office.

Recommendations for Improvement:

a. The Project should engage continuously with land-losers and ensure quick reaction to complaints; and

b. The project should take the appropriate corrective measures in the case of the water catchment destroyed during construction of WP11.

5.4 COMMUNITY HEALTH, SAFETY AND SECURITY

Project Strategy:

The EHS system is expected to prevent and minimize air and water pollution, noise, and risks of accidents (see Sections 3 and 4). A community health awareness program on malaria and a health and safety awareness program specific to gas pipeline projects are implemented in the frame of CSR activities in Rajasthan. An AIDS awareness camp has been carried out in one village close to Aishwariya field.

CEIL has developed a draft corporate document, *HSE, Security & CSR Procedures E5 – Security guidelines*, specifically covering security issues. The document provides general security guidelines, policies, and procedures as a framework for the development of detailed security management plans for CEIL operations. No Project security plans were provided for review.

Observations:

Communities living close to the construction site did not raise any major issue concerning the impact of works on-going. The villagers appreciate the watering of the roads near the settlement but asked for more frequent watering, specifically along the road running close the Bothia school. In the same village, women do not feel at ease as the presence of workers hinders their privacy (most houses do not have toilets). Women members of the Project's staff should investigate and work with the local women to find some solution. CEIL should developing CSR initiatives to raise awareness on sanitation and promote the use of latrines in the village.

Only one awareness meeting on AIDS has been held on the World AIDS Day. Although AIDS is not a major concern in the communities affected by the project, ECMG suggests coordinating with the National Aids Control Program at District level to increase the Project's engagement on this topic. Moreover, ECMG again recommends sensitizing communities, and particularly children in schools, on road safety issues.

CEIL corporate draft document on security covers most of the principles and guidelines outlined in IFC PS4 and the United Nations Voluntary Principles on Security and Human Rights. However, the document should expand and better detail Section 14 (*Guards and Guard Management*) to incorporate CEIL policies and procedures when private and/or governmental security forces are directly hired by CEIL. In addition, CEIL should clearly specify what are the responsibilities of each party (CEIL, private or governmental agency) and outline the underlying principles, standards, and procedures that should regulate any agreement with private and/or governmental security forces. Furthermore, contrary to what stated in Section 15 (*Weapons/Firearms & Use of Force*), CEIL is ultimately responsible for the actions of security forces directly hired by the Company.

With respect to the Satellite Project, no specific information on security has been provided to ECMG. Overall, CEIL should develop a site specific risk assessment and relative comprehensive security plan, as specified in Section 11 of the E5 document. The security plan should be shared with all Project contractors with all field supervisors briefed on security issues and how to respond (line of communications, type of action, etc.) to potential problems in the field.

IFC and/or ESIA/EMP Compliance Action Items	
M1.18	Include awareness programs on H&S, environment and HIV-AIDS (IFC PS 4).
M1.19	Use school programs to build construction safety awareness amongst children.
M3.9	CEIL draft corporate security document (E5) expand and better detail Section 14 (Guards and Guard Management) to incorporate CEIL policies and procedures when private and/or governmental security forces are directly hired by CEIL.
M3.10	CEIL should develop a site specific risk assessment and relative comprehensive security plan.

Recommendations for Improvement:

a. The Project should expand the AIDS and Sexually Transmitted Diseases campaign in collaboration with the National Aids Control Program;

b. The women members of the CSR team should visit women in communities both for specific CSR programs and for mitigating possible impacts of works; and

c. The Project should increase the frequency of road watering close to schools and houses. See Issue M1.7 and M3.1).

5.5 EMPLOYMENT AND WORKING CONDITIONS

Project Strategy:

Cairn has a human resources policy, which is in compliance with Indian law, core International Labor Organization conventions, and IFC PS 2. The Human Resources policy and procedures are documented in many ways throughout the organization and are available on the Cairn portal. Any new policy, directive, and/or procedure is communicated to all employees through individual emails and announced on the Cairn intranet portal.

During construction, the works will be assigned to contractors who have an agreement with CEIL to recruit the majority of the local workforce, for unskilled tasks, from local communities if available. In addition, the contractor is bound to make the best efforts to source skilled workers preferably from the Rajasthan State. Among local candidates, members of land-losers families will be prioritized. Wages for unskilled workers are calculated on the basis of national minimum wages. Wages are given each month in the presence of a CEIL administrative person.

The contractors have also to comply with Cairn guidelines for workers' accommodation.

CEIL is developing a number of initiatives to ensure that its operations offer the maximum benefit to the local population in terms of contracts and employment. These initiatives will also allow the Project to track the employment offer and the impact on communities.

A Local Content Policy has been issued that mandates the engagement of minimum 60% locals (i.e. from local District), when available, with priority to land-losers and long term residents. CEIL also decided to impose a financial deterrent (5% of contract value withholding of bank guarantee or final payment) and monthly reporting to ensure local employment by contractors and establish compliance with original commitment. To guarantee that all upcoming contracts comply with the policy, the Project has introduced the Local Content Policy to contractors at pre-bid meetings.

A local vendor database is being developed and a system will check whether "genuine" local vendors and land-losers are engaged. The Enterprise Center in Barmer is the center for local vendor development activities, including dedicated workshops, and monitoring.

Observations:

At the time of the ECMG visit, around 800 persons were reported to be working on site. In the Bhagyam field, of the current 546 total workers, 543 are from Barmer out of which158 are land losers; all rented vehicles (90) came from local suppliers, 49 of which from land-losers. In the Bhagyam trunk pipeline project, 50 on 73 unskilled or semi-skilled workers are local (including all drivers), and 24 small contracts for renting vehicles have been awarded to local people.

About 136 non-local workers working for PL on the Bhagyam trunk pipeline are accommodated in a brick building, a former college located in Barmer. The accommodation is overall adequate; however, as the Project is expecting more workers and will have to rent more accommodations, ECMG recommends to re-distribute the workers so to avoid bunk beds and empty the central rooms of the building that have no windows and can be too hot in the warm season. A formal grievance mechanism for workers should be established at this labor camp in Barmer.

Logs of local workers according to provenance are well kept at the construction sites visited by ECMG (Bhagyam). However, PL should keep record of workers according to the land-loser status as well.

In Bhagyam, affected villagers have set up a Village Committee that has successfully collaborated with the Project and solved some issues like grievances, employment distribution, wages, and local contracts. However, during the ECMG meetings with land losers, the fairness of the Committee's work has been questioned by some villagers. As already discussed in Section 5.2, it is important that the Project develops a transparent procedure for local employment and that it communicates and explains this procedure to all stakeholders. In particular, competition for employment between villages along the trunk pipeline should be solved finding a negotiated solution with villagers, for example employment in percentage or in turns.

ECMG commends the Local Content Policy and the other initiatives aimed at ensuring the maximum benefit to local population and land losers in term of employment and other economic opportunities.

IFC and/or ESIA/EMP Compliance Action Items

M1.22 Develop a transparent procedure for recruitment of land-losers and local workers and transparent communication on criteria for wages.

M1.23 Ensure adequate grievance procedure for workers and keep record of grievances.

Recommendations for Improvement:

a. The project should find a negotiated solution for distribution of employment between affected villagers, for example employment in percentage or in turns;

b. PL (and all contractors) should keep records of local workers according to provenance and land-loser status; and

c. PL should establish a Workers' Grievance Committee in the Barmer labor camp.

D'APPOLONIA

ECMG

ANNEX A

TRIP SUMMARY- 3RD MISSION BY D'APPOLONIA FOR THE BHAGYAM AND AISHWARIYA FIELD DEVELOPMENT PROJECT, JANUARY 2011

For the third mission, two EHS team members and one Social specialist visited the Bhagyam and Aishwariya Project, and associated facilities. The Project is currently in the construction phase.

Field:

January 15 – Barmer: The EHS and Social team travel to Barmer.

January 16 – Barmer: The EHS and Social team held a kick off meeting at CEIL field office. In the afternoon the EHS team visited: the IOTL cement batch plant and field offices area; sections of the Bhagyam infield pipelines corridors and WPs 3, 5, 8, 9, 13, and 15; the LT fabrication yard; and IOTL fabrication yard. The social team attended a Science on Wheel event and visited the school library in Bothia, then held a meeting with land-losers. In the afternoon, the social team attended two more meetings with land losers and groups of women at Sutaro Ki Basti and Junejo Mehr Kibasti villages.

January 17 – Barmer: The EHS team visited: sections of the trunk pipeline corridor connecting WP15 to the MPT, KPTL workforce accommodations and small yard; PL pipe yard and offices and separate labor camp; WPs 2 and 6 in the Aishwariya Field as well as the main access road corridor. The social team visited the Punj-Lloyd camp for the trunk pipeline, discussed with the liaison officer, and then held meetings with land-losers at the villages of Rohili and Gaokeidi. In the afternoon, the social team met the new CSR staff. In the afternoon, an informal close out meeting for the Bhagyam and Aishwariya Project was held at MPT.

January 18 – The EHS and Social team traveled to Delhi

Gurgaon:

January 19 – Gurgaon: The EHS and Social team reviewed available documents collected in the field, held meeting with key CEIL EHS management personnel, and prepared the close out meeting

January 20 – Gurgaon: In the afternoon, a close out presentation was held by the ECMG at Cairn offices with the participation of Cairn management and high level staff.

January 21 – Gurgaon: The team departed from New Delhi.