

**BTC Project
Environmental and Social Annual
Report (Operations Phase)
2006**

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ABBREVIATIONS

ACG	- Azeri, Chirag, Gunashli (offshore oil fields)
AGI	- Above Ground Installation
APLR	- Association for the Protection of Landowners Rights
ASA	- Advanced Safety Audit
AzSPU	- Azerbaijan Strategic Performance Unit
bbl	- Barrel
BIL	- Botaş International Ltd
BNB	- See RUDF
BOD	- Biochemical Oxygen Demand
BTC	- Baku-Tbilisi-Ceyhan Pipeline
BTEX	- Benzene, Toluene, Ethyl Benzene and Xylene
CARE	- CARE International NGO
CAS	- Centre for Archaeological Studies, Georgia
CBG	- Caucasian Black Grouse
CBO	- Community Base Organization
CCIC	- Consolidated Contractors International Company
CDAP	- Caspian Development Advisory Panel
CIP	- Community Investment Programme
CLO	- Community Liaison Officer
CMAS	- Competency Management and Assessment System
CMT	- Ceyhan Marine Terminal
CO ₂	- Carbon dioxide
COD	- Chemical Oxygen Demand
COPE	- Conflict Prevention through Environmental Awareness for Youth
CWAA	- Central Waste Accumulation Area
DAFWC(F)	- Days Away From Work Cases (Frequency)
dB	- Decibel
DRC	- Development Resource Centre
DSA	- Designated State Authority (Turkey)
E&S	- Environmental and Social
EBRD	- European Bank of Reconstruction and Development
EDDF	- Emergency Drain Down Facility
EHC	- Environmental Health Criteria
EIA	- Environmental Impact Assessment
EIP	- Environmental Investment Programme
EMS	- Environmental Management System
ERM	- Consulting Company Environmental Resource Management Ltd
ESA	- Ecologically Sensitive Area
ESAP	- Environmental and Social Action Plan
ESD	- Emergency Shutdown
ESER	- Environmental and Social Evaluation Report
ESIA	- Environmental and Social Impact Assessment

EU	- European Union
GEF	- Global Environmental Facility
GIOC	- Georgian International Oil Company
GIS	- Geographical Information System
GTZ	- Deutsche Gesellschaft für Technische Zusammenarbeit (NGO)
H&S	- Health and Safety
H1	- First half of year (January – June)
H2	- Second half of year (July – December)
HGA	- Host Government Agreement
HiPo(f)	- High Potential Incident (frequency)
HIV	- Human Immunodeficiency Virus
HSE	- Health, Safety and Environment
HSSE	- Health, Safety, Social and Environment
IBA	- Important Bird Area
IBC	- International Blue Crescent
IEC	- Lenders' Independent Environmental Consultant
IFC	- International Finance Corporation
IFI	- International Finance Institution
IGA	- Inter Government Agreement
IMC	- International Medical Corps
IMS	- Incident Management System
IoAE	- Azerbaijan Institute of Archaeology and Ethnography
IoB	- Azerbaijan Institute of Botany
IP	- Implementing Partners
IPA	- Important Plant Area
IPLOCA	- International Pipeline and Offshore Contractors Association
IPT	- Intermediate Pigging Station (Turkey)
ISO	- International Standards Organisation
ISP	- Improved Schools Project
IUCN	- International Union for Conservation of Nature and Natural Resources
KP	- Kilometre Point
KPI	- Key Performance Indicator
LLC	- Limited Liability Company
LP	- Low pressure
MENR	- Ministry of Ecology and Natural Resources (of Azerbaijan)
MOC	- Management of Change
MoE	- Ministry of Environment (Georgia)
MOL	- Main Oil Line
NACRES	- Noah's Ark Centre for Recovery of Endangered Species (NGO)
NDVI	- Normalised Difference Vegetation Index
NGO	- Non-Governmental Organisation
NOx	- Nitrogen Oxides
OSI	- Open Society Institute (Azerbaijan)

OSR	- Oil Spill Response
OSRP	- Oil Spill Response Plan
PAC	- Provisional Acceptance
PM	- Particulate Matter
PSA	- Pump Station, Azerbaijan
PSG	- Pump Station, Georgia
PT	- Pump Station, Turkey
PTW	- Permit to Work
Q1/Q2/Q3/Q4	- Quarter 1 / Quarter 2 / Quarter 3 / Quarter 4
QIP	- Quick Impact Project
RAP	- Resettlement Action Plan
RDI	- Regional Development Initiative
RINJ	- Recordable Injuries
ROW	- Right of Way
RUDF	- Rural and Urban Development Foundation (now called BNB)
SARMS	- Special Area Reinstatement Method Statement
SCP	- South Caucasus Pipeline
SES	- Seacor Environmental Services
SESMeke	- Joint Venture between SES and Meke Marine,
SIF	- Small Investments Fund
SLAP	- Supplementary Land Acquisition Programme
SLCC	- State Land and Cartography Committee
SME	- Small and Medium Enterprises
SO ₂	- Sulphur Dioxide
SPJV	- (Amec) Spie Petrofac Joint Venture
SPPD	- State Pipeline Protection Department (Georgia)
SRAP	- Social and Resettlement Action Plan
SSPS	- Special State Protection Services (Azerbaijan)
STP	- Sewage Treatment Plant
TOC	- Total Organic Compound
TPH	- Total Petroleum Hydrocarbons
TVA(R)	- Traffic Vehicle Accident (Rate)
UN	- United Nations
UNDP	- United Nations Development Programme
VOC	- Volatile Organic Compound
VPI	- Vulnerable People Initiative
WHO	- World Health Organisation
WWTP	- Waste Water Treatment Plant

1 EXECUTIVE SUMMARY

BTC Co. and its agents have complied in the development, construction and operation of the BTC Project with the ESAP, applicable Environmental Laws and applicable Lender Environmental Policies and Guidelines in all material respects during the period covered by this report. All non-compliances that have been identified during IEC and SRAP audits in 2006 are detailed in the 2006-H1 BTC E&S Report and the Appendices of this report. Information is also given on the actions developed and implemented to address these.

There were no fines or penalties incurred for environmental or social non-compliances, and no material environmental claims against BTC Co. during 2006.

Several ESIA addendum documents have been prepared during 2006. In Azerbaijan regulatory approval was received in November 2006 for an ESIA addendum relating to a change to treated waste water discharge at IPA1 and PSA2. In Georgia, regulatory approval was received for Secondary Containment Facilities and for the Emergency Drain Down Tank, both of which are additional facilities required by the Government of Georgia in the Kodiana region.

Two Class III changes were accepted during the year relating to the Kodiana Emergency Drain Down Facility and the treatment of Sewage Sludge at Gardabani Sewage Treatment Works in Georgia. Drafts of a further two Class III changes concerning waste management in Georgia were sent to the Lenders for comment.

The internal and external audit and monitoring programme has continued as planned and included audits by the Independent Environmental Consultant to the Lenders and the Social and Resettlement Action Plan Panel. The second phase of monitoring by NGOs continued in both Azerbaijan and Georgia. In addition a range of internal audits were carried out, ranging from ISO14001 preparedness to waste management. All issues raised as a result of both internal and external monitoring are carefully monitored to ensure adequate corrective actions are implemented.

Emissions monitoring for the operations phase continued in Azerbaijan and Georgia and results were generally in compliance. There were some issues with treated waste water which are being addressed. Operations phase emissions monitoring in the form of ambient air emissions, noise, stack emissions and aqueous discharges commenced in Turkey.

Auditing of oil spill response capability took place in Azerbaijan and Georgia in 2006 and review of the Oil Spill Response Plans commenced, ready for update in 2007. Eight minor uncontained hydrocarbon (crude, diesel and lube oil) releases were reported in 2006.

The construction phase Community Investment Programme (CIP) continued to bring substantial benefits to communities along the pipeline route in all three countries. Final evaluations of the programme in Georgia and Turkey produced considerable positive feedback. The final evaluation in Azerbaijan will take place in 2007. The operations phase CIP (CIP II) commenced and recommendations from the final evaluation were considered. The Environmental Investment Programme (EIP) continued in all three countries.

It is with regret that we report a Project Reportable fatality on the BTC project in 2006. The incident occurred on 3rd January during linefill operations at Block Valve Station 8 in Turkey. Eyüp Taş, a 37 year old Turkish vehicle driver, employed by Botaş as part of the line fill crew, was fatally injured when he fell approximately 60cms from the back of a truck. Cause of death was head injuries sustained in the fall. A full investigation was carried out to understand the causes of this tragic accident and to ensure that all actions were taken to prevent any recurrence.

2 INTRODUCTION

The Baku-Tbilisi-Ceyhan (BTC) pipeline transports crude oil from the Azerbaijan sector of the Caspian Sea to international markets. Approximately 1,768km in length, BTC runs through Azerbaijan and Georgia to Ceyhan on the Turkish Mediterranean coast.

The main construction activities of BTC pipeline were divided into 2 phases, Phase 1 for lower transit volumes (up to 600,000bpd) and Phase 2 which required additional pumps and associated facilities necessary for full capacity flow (1mbpd). Phase 1 was completed in 2006. Work on Phase II is ongoing.

The staged linefill of BTC with oil commenced from Sangachal Terminal near Baku on 18th May 2005, and crossed the Georgian Turkish border on 18th November 2005. Oil reached Ceyhan Marine Terminal on 28th May 2006. A total of 10 million barrels of oil, from the Azeri-Chirag-Gunashli (ACG) fields in the Azerbaijani sector of the Caspian Sea, was required to fill the pipeline. The first shipment of oil sailed away from the Mediterranean coast in the British Hawthorn tanker on 4th June 2006.

During 2006 the transition from the construction 'Project' team to the Operations team occurred.

- In Azerbaijan, the transition started in May 2006. Completion reports were issued for each subject area by the Project team. Where construction issues, such as bioremediation, erosion control were ongoing, transition agreements were drawn up and formally handed over to the Operations team in November 2006.
- In Georgia, the transition commenced in mid-2006. However, since the Project organisation has remained in place to complete any legacy tasks arising from the demobilisation of the construction contractor and other outstanding work, the transition only took effect for the Environmental/Cultural Heritage, Social and Land/Regulatory Affairs Teams. These teams have been embedded in the operations organisation but resourced adequately to cope with any additional workload from the Project team.
- In Turkey, Botaş assumed responsibility for the operation of the pipeline until Provisional Acceptance (PAC) on 28th July 2006. From 29th July 2006 onwards, Botaş International Ltd (BIL), the Designated Operator in Turkey assumed responsibility with BTC Co. continuing to maintain an overall assurance role.

This BTC Annual Environmental and Social (E&S) Report is a combined report covering both the Construction and Operations phases of BTC. As such the report has been prepared and structured in accordance with the requirements of Annex J of the Environmental and Social Action Plan (ESAP) governing construction of BTC and Annex H of the ESAP governing the operations phase of BTC. These requirements are reproduced in Appendix 1.

It is the third Annual E&S Report post-financing and covers the calendar year 2006¹.

This Annual Report is complemented by an Environmental & Social Report for the first half of 2006 (2006-H1), to fulfil ESAP requirements of more regular reports during the construction period. The 2006-H1 report covers mostly construction issues, but also addresses the handover to Operations.

This 2006-H1 report contains detailed information on many of the issues specified in Annex H to the construction ESAP and was also disclosed to the public on the www.bp.com/caspian. Rather than repeat the information in the 2006-H1 Report the approach has been to provide relevant cross references to this report.

There are no requirements during operations to produce reports other than annually.

¹ While construction started in 2003-Q2, the financing for the project was finalised in early 2004-Q1.

3 ESIAs / EIA AND PERMITTING

3.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE ESIA²

3.1.1 Azerbaijan

3.1.1.1 Treated Waste Water Discharge at PSA2 and IPA1

An addendum to the BTC Azerbaijan ESIA was required for a change to treated waste water discharge at IPA1 and PSA2 from that originally described in the ESIA. The new package consists of a modified potable water treatment package, oil water separator, Rotating Biological Contactors unit for sewage water treatment, modified retention pond and reed bed polishing system.

Once treated to EU standards, water will be discharged to existing drainage ditches originally designed for drainage of the adjacent arable lands. Ministry of Ecology and Natural Resources (MENR) representatives visited both sites and granted the permit to discharge in November 2006.

3.1.2 Georgia

Additional pipeline associated facilities were specified by the Georgian government in the Kodiana Section of the pipeline to facilitate more comprehensive security coverage of the pipeline and to provide additional protection in the unlikely event of a spill. Environmental and Social Evaluation Reports (ESER) are required for these projects. The ESERs are addendums to the BTC Georgia ESIA and therefore do not require separate environmental permits, but still need to undergo the review and approval process by the Georgian government. More detail on the Kodiana Projects is given in 2005-Q2 and 2006-H1 reports.

3.1.2.1 Secondary Containment

A separate ESER for the secondary containment facilities was prepared and submitted to the Government of Georgia in December 2005 as an addendum to the BTC Georgia ESIA. A permit was issued in February 2006 approving the project, however BTC has reviewed the basis of design with the Government of Georgia throughout 2006 to improve the effectiveness of the structures and optimise the design. A revised ESER based on these changes will be finalised in early 2007. Construction of the secondary containments is scheduled to commence in the spring of 2007.

3.1.2.2 Emergency Drain Down Facility (EDDF)

BTC agreed with the Georgian government that an ESER would be prepared for the EDDF, as an addendum to the BTC Georgia ESIA. The ESER for the EDDF was submitted to the Georgian government in May 2006 and approved in September 2006.

3.1.3 Turkey

There were no material modifications to the EIA to report in 2006.

3.2 SUMMARY OF MATERIAL PERMITS ISSUED IN 2006

In Azerbaijan the following permits were issued by Azerbaijani government:

- Approval of treated waste water discharge at PSA2 and IPA1 (Section 3.1.1);
- Approval of the updated Oil Spill Response Plan (Section 6.3); and
- Approval to import certain grass species into Azerbaijan for biorestitution of the ROW, on the condition that the Institute of Botany will participate in the implementation of biorestitution and the organisation of monitoring.

² Environmental and Social Impact Assessment. Note that in Turkey the formal terminology is EIA (Environmental Impact Assessment).

A summary of Statutory Environmental Permits acquired by BTC Georgia in 2006 is as follows:

- A Tree Felling Agreement for the construction of the Kodiana Projects (EDDF, Secondary Containment sites, GB18 extension etc.);
- The Air Emissions Limit permit for PSG1 and PSG2 was issued; and
- The Water Discharge Limit permit for PSG1 and PSG2 was issued.

During 2006 the following activity took place with respect to material permits in Turkey:

- Application was made for Building Use Permits for Residency Elements of Pump Stations, although the permit has not yet been issued. The permit for Ceyhan Marine Terminal was received in 2005;
- Building Construction Permit for Residency Elements was received for PT3 in July 2006. Construction permits for other facilities had been received in 2004;
- Procedure for Establishing a Customs Warehouse was issued in May 2006;
- Opening and Operation Permit (Non-Hygienic Establishments), a temporary permit was extended until August 2007. Application for a permanent permit is ongoing;
- Preliminary Emissions Permits for Fuel Burning Plants: The preliminary permit is the EIA for one year from the commencement of operations. Application for permanent permits is ongoing; and
- Jetty Opening and Operation Permit was issued in January 2006.

3.3 UPDATE ON STATUS OF PROJECT SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIA^s OR PERMITS

A summary of country-specific activities relating to ongoing studies or surveys as required under the ESIA^s or permits is summarised below. Studies or surveys noted as completed in the 2005 Annual report will not be shown in this report. References given for background information are for the 2004 and 2005 Quarterly and 2006-H1 E&S Reports to Lenders.

Oil spill response planning as required in the 'Additional ESIA Studies and Surveys' Section of the ESAP³ has been completed, and all progress / changes with respect Oil Spill Response Plans and planning is reported in Chapter 6.

3.3.1 Azerbaijan

The only 'Additional ESIA Study and Survey' as specified in the Operations ESAP relates to groundwater monitoring programme.

Study/Survey: Groundwater Monitoring Programme	Expected Timing: Monitor water level and quality: Ongoing
Ref: 2004-Q1 (p3-3); 2004-Q2 (p3-3); 2004-Q3 (p3-2); 2004-Q4 (p3-2); 2005-Q1 (p3-2); 2005-Q2 (p3-2); 2005-Q3 (p3-2); 2005-Q4 (p3-1), 2006-H1 (p3-1)	
Groundwater monitoring was carried out in 2006-Q3. A summary of results is given in Section 5.2.1 and the data sheets are given in Appendix 2.1	
Completion Status: ONGOING	

In the Construction ESAP there was a requirement to translocate *Iris acutiloba* off the ROW prior to construction. This requirement was fulfilled, however monitoring and re-location of the plants back on to the ROW was ongoing during 2006. Similarly, the Cultural Heritage Phase III (Data Recovery) was also a requirement in the Construction ESAP which has been fulfilled, but Phase V (Analysis and Reporting) was ongoing during 2006. For the sake of completeness, details of both these surveys are given below:

³ Section 3.1.2 of the Construction Phase ESAP

Study/Survey: <i>Iris acutiloba</i> Monitoring Programme	Expected Timing: Monitoring: Ongoing Relocation to ROW: Post-construction
Ref: 2004-Q1 (p5-2); 2004-Q2 (p3-2); 2004-Q3 (p3-1); 2004-Q4 (p3-2); 2005-Q1 (p3-1); 2005-Q2 (p3-2); 2005-Q3 (p3-1); 2005-Q4 (p3-1), 2006-H1 (p3-1)	
BTC and the Institute of Botany (IoB) undertook survival rate monitoring of the irises at the Mardakan Arboretum which indicated that the rhizomes are healthy, with an estimated 44,000 are viable for re-introduction (i.e. double the number of irises taken from Gobustan during construction). 8,105 rhizomes were removed off the ROW before construction, and these will be left in-situ as they have demonstrated good growth off ROW. 24,000 <i>Iris acutiloba</i> rhizomes were re-translocated to the ROW from the Mardakan Arboretum and planted within the 44 metre pipeline corridor in August-September 2006. Further to monitoring, a decision has been made that the 8,105 rhizomes removed off the ROW before construction will be left in-situ as they have demonstrated good growth off ROW.	
Completion Status: ONGOING	

Study/Survey: Cultural Heritage – Archaeology Phase IV (Excavation of Late Finds) Phase V (Analysis and Reporting)	Expected Timing: Phase IV: Complete Phase V: Not started
Ref: 2004-Q3 (p3-2); 2004-Q4 (p3-2); 2005-Q1 (p3-2), 2005-Q2 (p3-2); 2005-Q3 (p3-2); 2005-Q4 (p3-1); 2006-H1 (p3-1)	
Phase IV: Complete. Phase V: The contract with the Institute of Archaeology and Ethnography was signed and work commenced on preparation of detailed excavation reports. More details on Analysis and Reporting are given in Case Study 3.1.	
Completion Status: ONGOING	

3.3.2 Georgia

The only 'Additional ESIA Study and Survey' specified in the Operations ESAP relates to groundwater monitoring programme.

Study/Survey: Aquifer Monitoring Wells	Expected Timing: Monitoring: Ongoing
Ref: 2004-Q1 (p5-7); 2004-Q2 (p3-5); 2004-Q3 (p3-4); 2004-Q4 (p3-4); 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-3); 2005-Q4 (p3-3); 2006-H1 (p3-2)	
Drilling and installation of wells for groundwater testing began in 2005-Q2 and sampling was carried out in 2005-Q3 and again in 2006-Q2. More details are given in Section 5.2.2 and Appendix 2.2 of this report. Discussions are ongoing with the Georgian government regarding the long term monitoring regime.	
Completion Status: ONGOING	

In the Construction ESAP there was a requirement to translocate Red Data Book species off the ROW prior to construction. This requirement was fulfilled, however monitoring and re-location of the plants back on to the ROW was ongoing during 2006. Similarly, the Cultural Heritage Phase III (Data Recovery) was also a requirement in the Construction ESAP which has been fulfilled, but Phase V (Analysis and Reporting) was ongoing during 2006. For the sake of completeness, details of both these surveys are given below:

Study/Survey: Monitoring of Translocated of Red Data Book Species	Expected Timing: Operations
Ref: 2004-Q1 (p5-5); 2004-Q2 (p3-4); 2004-Q3 (p3-3); 2004-Q4 (p3-3); 2005-Q1 (p3-3); 2005-Q2 (p3-3); 2005-Q3 (p3-3); 2005-Q4 (p3-2); 2006-H1 (p3-2)	
BTC committed to undertake the necessary steps to protect, conserve and encourage the growth of seven identified endangered populations through <i>ex-situ</i> conservation of threatened plant populations and their subsequent reintroduction into the wild during reinstatement. Activities in 2006 included routine maintenance and plant cultivation. Results continue to indicate a high survival rate for translocated plants.	
Completion Status: ONGOING	

Study/Survey: Cultural Heritage Phase IV: Archaeological Late Finds Phase V: Analysis and Reporting	Expected Timing: Phase IV: Complete Phase V: Ongoing (approximately 85% complete)
Ref: 2004-Q2 (p3-5); 2004-Q3 (p3-4); 2004-Q4 (p3-3); 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-3); 2005-Q4 (p3-2); 2006-H1 (p3-2)	
Some post-construction compensatory excavations associated with ROW sites and temporary use areas are under negotiation. Work on analysis and reporting by the Institute of Archaeology (formerly CAS) under the management of BTC is ongoing. Similar Late Finds procedures to those used during mainline construction are being applied to construction of the Kodiana Projects.	
Completion Status: ONGOING	

3.3.3 Turkey

Five 'Additional Studies and Surveys' as required in the Construction ESAP were underway in 2006. Two of these (Marine Turtle Survey and Marine Biological Environment) are also required in the Operations ESAP 'Additional Studies and Surveys' Section.

Study/Survey: Operations Wastewater Discharge Environmental and Social Impact Evaluation	Expected Timing: Prior to Operations for permanent facilities
Ref: 2005-Q3 (3-5), 2005-Q4 (p3-4), 2006-H1 (p3-4)	
The environmental risk assessment reports for operations phase wastewater discharge at all AGIs were finalised and resubmitted to BTC Co.	
Completion Status: COMPLETED	

Study/Survey: Special Area Reinstatement Method Statement (SARMS) and associated surveys	Expected Timing: Construction
Ref: 2004-Q1 (p5-9); 2004-Q2 (p3-6/7); 2004-Q3 (p3-5); 2004-Q4 (p3-5). 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-4); 2005-Q4 (p3-4).	
As reported in 2005-Q4, all SARMS have been completed. Reviews of steep slopes and side slopes were ongoing in late 2005 and these reviews are now complete. All recommendations of the Nursery and Seed Stock assessment have been completed. In the lead-up to Provisional Acceptance BTC Co. completed reinstatement 'punchlists' of the ROW which included the Special Areas on and off the ROW. Actions are on-going to close punchlist items prior to work completion. All closures are verified by BTC Co.	
Completion Status: Plans COMPLETED, Monitoring ONGOING	

Study/Survey: Landscape Plans and Monitoring for Facilities	Expected Timing: Ongoing. Landscape Plans completed – Landscape monitoring ongoing until planting is accepted by BTC Co.
Ref: 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-4); 2005-Q4 (p3-4).	
All landscape surveys and plans for each facility, including Ceyhan Marine Terminal (CMT), have been completed. BTC Co. completed an initial review of landscape planting with reference to the approved Plans at all facilities and will forward comments and survey findings to Botaş in early 2007.	
Completion Status: Plans COMPLETED, Landscaping Monitoring ONGOING	

Study/Survey: Water Supply Sustainability Studies For Groundwater and Surface Water Supplies for Temporary and Permanent Facilities	Expected Timing: Studies completed for temporary and permanent facilities. Monitoring ongoing (additional studies may be required depending upon actual water draw demand and results of monitoring).
Ref: 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-4); 2005-Q4 (p3-4); 2006-H1 (p3-3)	
Groundwater sustainability studies for operational water supply needs for all AGIs have been completed. The studies indicated that the aquifers could sustain the EIA predicted water supply demands. All stations are within the EIA predicted water draw amounts, however at CMT the levels have been exceeded. Additional sustainability studies are being undertaken to address the increase in water take. A water conservation programme will be undertaken and water supply will continue to be monitored. BIL and BTC Co. are currently developing a strategy for monitoring groundwater.	
Completion Status: ONGOING	

Study/Survey: Marine Turtle Survey	Expected Timing: Operations																		
Ref: 2004-Q1 (p5-10); 2004-Q2 (p3-8); 2004-Q3 (p3-6); 2004-Q4 (p3-5); 2005-Q1 (p3-5); 2005-Q2 (p3-6); 2005-Q3 (p3-6); 2005-Q4 (p3-5); 2006-H1 (p3-4)																			
The annual marine turtle survey was conducted by Botaş between June and October 2006. As previously the survey was carried out on 4 small beaches near CMT. A total of 198 sea turtle nests were found in the study area and 171 non-nesting observations of green turtles were recorded. No <i>Caretta caretta</i> (Loggerhead Turtle) nests or tracks were observed. A summary of the number of nests observed this year compared to previous years is as follows:																			
	<table border="1"> <thead> <tr> <th></th> <th>2002</th> <th>2003</th> <th>2004</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Green Turtle</td> <td>42</td> <td>44</td> <td>118</td> <td>36</td> <td>198</td> </tr> <tr> <td>Loggerhead</td> <td>18</td> <td>3</td> <td>3</td> <td>7</td> <td>0</td> </tr> </tbody> </table>		2002	2003	2004	2005	2006	Green Turtle	42	44	118	36	198	Loggerhead	18	3	3	7	0
	2002	2003	2004	2005	2006														
Green Turtle	42	44	118	36	198														
Loggerhead	18	3	3	7	0														
The results of the survey proved that the region is an important nesting area for Green Turtle (<i>Chelonia mydas</i>), although there is no clear pattern of nesting over the years. Nest numbers observed in 2006 are similar to the results from 2004 supporting the theory that the low number of nests observed in 2005 was related to the biological cycle of the Green Turtle, rather than external environmental factors. As per previous study results, the main factor affecting the success of the hatchlings reaching the sea in 2006 was predation, however in 2006 marten and fox predation increased, whereas previously dog and crab predation was more prevalent. No significant disorientation of hatchlings from the presence of artificial lights from industrial plants in the area (including CMT) was observed, however it will continue to be monitored.																			
Completion Status: ONGOING																			

Study/Survey: Marine Ecological Study	Expected Timing: Construction and Operations
-------------------------------------------------	--------------------------------------------------------

A marine ecological study was completed by Botaş in August 2005 but was not reported previously. The results of the study are therefore reported below. The purpose of the study was to assess the diversity of marine fauna in the area surrounding CMT, including sessile, motile, benthic and water column species. The survey used various methods to assess the marine fauna including grab samples, mid water and sea bottom 'trawling' and a remotely operated camera to study the sea floor at different depths. The sea bed around CMT is predominantly a soft muddy substrate. The nature of the substrate does not provide a suitable habitat for many benthic species, therefore the benthic diversity is low. Polychaete annelids are the most predominant benthic fauna species which is indicative of a disturbed habitat. Despite the unproductive sea bottom, most commercially important fish and prawn species inhabit the area. Out of the 40 fish species caught during the survey 13 belonged to the Lessepsian species which is a fish that originates in the Red Sea (i.e. it is an immigrant species). The third and fourth most common fish caught were native species. 12 out of the 17 invertebrate species caught during trawling were also Red Sea species. Phytoplankton analysis indicates that the phytoplankton structure in the area is poor. Diversity and quantity of zooplankton is comparable to other nutrient poor marine waters. The presence of ichthyoplankton species is indicative that the area is an important fish breeding area. The next survey will be undertaken by BIL in Summer 2007.

Completion Status: ONGOING

3.4 OTHER STUDIES

Three other studies (all in Turkey) were carried out in 2006.

Study/Survey: Fauna Survey (Caucasian Black Grouse) at ESA1	Expected Timing: Until 2008
Ref: 2005-Q3 (p3-8), 2005-Q4 (p3-6), 2006-H1 (p3-5)	

Further monitoring field visits were carried out monthly from April 2006 onwards. The original purpose of the monitoring⁴ was to better understand breeding dynamics during the project identified seasonal constraint period, however the scope of the study has been expanded to cover and general behaviour dynamics of the local Black Grouse population. Use of radio telemetry equipment has improved the quality of the monitoring programme. Currently it is too early to report on any definitive findings. The surveys will continue until mid-2008.

Completion Status: ONGOING

Study/Survey: Vegetation Cover and Diversity Surveys	Expected Timing: Operations
----------------------------------------------------------------	---------------------------------------

The Turkey Vegetation Cover Assessment involved the collection and analysis of high resolution satellite imagery to measure vegetation cover and field surveys to both calibrate the satellite data and to measure species diversity.

From KP	To KP	Length (km)	Data Source
0	185	185	Satellite
345	627	282	Satellite + Ground Survey
898	994	96	Satellite

Vegetation Cover Assessment

QuickBird satellite data was acquired over three areas of interest timed to coincide as far as possible with peak growing season. This data was processed to generate a Normalised Difference Vegetation Index (NDVI) at a resolution of 2.4m. The NDVI analysis is a common remote sensing technique used to map vegetation cover and is not an intrinsic physical quantity but a measure of reflectance over a scale of -1 to +1. It is therefore necessary to calibrate NDVI values using data collected in the field.

⁴ The first phase of the Fauna Survey (Caucasian Black Grouse) at ESA1 was completed in 2005.

To collect this field data, a stratified random sampling approach was used to locate 40 transects across the areas of interest. Percentage vegetation cover was then measured along these transects using a set of quadrates, at approximately the same time as the satellite data was acquired.

Data from the quadrates and corresponding NDVI values was then used to develop a regression model which in turn was used to develop vegetation cover thresholds that matched the re-growth targets contained in the project commitments. These thresholds effectively establish the first set of criteria against which the compliance of a given area (2.4m x 2.4m minimum) is determined. A second set of qualifying criteria then required consideration, specifically slope, rainfall, flooding and soil nutrients. These were then added to the primary criteria to form a decision model, against which each 2.4 x 2.4 pixel that make up the satellite image were compared.

Species Diversity Assessment

The primary method for determining species diversity was through field sampling. Sampling locations were initially determined randomly, although a proportional representation approach was adopted to ensure appropriate inclusion of all habitats and sensitive areas. The assessment involved the collection of data from 110 transects along the entire pipeline length in Turkey.

The number of sampling sites is being reviewed based on an assessment of the first year's data, specifically in terms of species variability as this is the key factor when relating sample size and statistical significance (i.e. the greater the variability of the object being measured, the greater the number of samples needed to achieve a given level of statistical significance).

Results

The result was a set of vegetation cover maps for the three areas of interest, generated from the calibrated NDVI data together with ground survey data acquired for a portion of Lot B. This sample includes the data sets that formed the decision model (slope, rainfall, original vegetation cover etc.) and hence the 'target' vegetation cover that each pixel had to meet in order to be deemed 'compliant'.

The data set used to generate the maps can be analysed in greater detail to get a better understanding of the underlying issues affecting a particular site. This serves as a useful aid for devising relevant and effective corrective action measures.

Completion Status: ONGOING

Study/Survey:

Sediment Quality Survey

Expected Timing:

Construction and Operations

The annual sediment quality survey was conducted by Botaş in August 2006. As previously 12 sediment samples were taken and analysed for Total Petroleum Hydrocarbons (TPH), trace metals, benthic populations and other chemical and physical properties. Data sets between 2001 and 2006 do not show any definite patterns. Results at each of the stations vary between the years. Results of the primary laboratory (in Canada) were verified at a second laboratory (in Turkey). Results between the two laboratories show discrepancies in the data, however results from the second laboratory are taken to be the more accurate for reasons discussed below. Key results are as follows:

- Both sets of results indicated a considerable decrease in Total Organic Compound (TOC) levels in sediments since last year;
- Results from primary laboratory indicated an increase in TPH whereas the second laboratory indicated a decrease. TOC and TPH results are usually correlated, therefore the second laboratory's analysis results are taken to be the more accurate. In addition TPH results from the primary laboratory in 2006 showed at least a five-fold increase in TPH levels since last year at all but one of the 12 sampling locations. This does not seem likely due to the decrease in marine traffic at this time in the study area (i.e. construction traffic had decreased and only a limited number of tankers had been received by the BTC terminal at this time);
- A small increase in Lead, Iron and Copper and a greater increase in Cadmium. The trend since the beginning of the survey indicates that these metals are increasing in the bay. This can be attributed to increased industry generally in the area;
- Comparison of 2006 results with previous years for Aluminium, Zinc and Chromium levels do not indicate a clear pattern of increase or decrease - results vary across the sites and years;
- Tin levels decreased significantly since the previous survey;

- Polychaetes are commonly used as an indicator of pollution and the abundance and number of these species in the sample area suggests that the area is affected by organic pollution and anthropogenic disturbance. This is consistent with findings from previous years. In 2006 however there was an increase in benthic fauna diversity at all but two of the stations; and
- There was no significant difference in the physical properties of the marine water since last year. There was a reduction in water pH since 2005 which may be caused by industrial discharge in the area.

Completion Status: ONGOING

4 CHANGES

The BTC Project uses a management system process called “Management of Change”. Proposed changes with potential associated environmental or social impacts are graded by three Classes – I, II or III, as defined in the ESAP. Class III changes are the most significant. Changes are subject to a process of review and approval by BTC, including review and approval by the Lenders for Class III changes. Class I and II changes do not require direct approval by the Lenders, but are assessed as part of the in-country monitoring process by the Lenders’ Independent Environmental Consultant. The following sections summarise BTC approved changes with an environmental and social impact during 2006.

4.1 AZERBAIJAN

There were two changes relating to BTC Azerbaijan in 2006.

Asset	Class	Approved Internally	Description of Change
BTC	II	May 2006	<p>Discharge of Rainwater from PSA2 Retention Pond</p> <p>The change related to discharge from the Retention Pond at PSA2 that was full with rainwater (waste water discharge from the Sewage Treatment Plan had been stopped the previous month). Results of water analysis demonstrated general compliance although Total Suspended Solids were over the limit, but this was not deemed to be critical, and the water was discharged to the environment. Further monitoring undertaken upstream and downstream of the discharge showed no adverse effects on the drainage ditch water quality.</p>
BTC/ SCP	II	July 2006	<p>Treated Waste Water discharge at PSA2 and IPA1</p> <p>An addendum to the BTC Azerbaijan ESIA was required for treated waste water discharge process from IPA1 and PSA2 that originally described in the ESIA. Waste water treatment systems modifications for the AGIs required the installation of the reed-bed effluent polishing systems and the acquisition of additional land plots. See Section 3.1.1.</p>

A Class III MOC concerning a change in ROW Access Strategy is being drafted, for submission in 2007.

4.2 GEORGIA

A summary of Class I and II changes during 2006 with an environmental and social impact is given below.

Asset	Class	Approved Internally	Description of Change
BTC	I	June 2006	<p>Access Road Upgrade</p> <p>Upgrade the existing construction access track from the public road to KP181 and along the existing ROW to KP184 where the ROW crosses an existing village track. This temporary access road will be required until the end of 2007 to accommodate vehicle movements related to the construction of Kodiana Special Projects. On completion of construction, the temporary access road and all associated infrastructure will be removed from the ROW and fully reinstated. The main impacts associated with these construction activities are related to heavy construction traffic and large loads specifically in and around Tsikhisjvari village.</p>
BTC/ SCP	II	July 2006	<p>PSG1 and PSG2 Construction Camps</p> <p>This change is for the purchase and extension in the operation of the existing construction camps (capacity 30 people) at PSG1 and PSG2 until the end of 2007, when they will be demobilised and reinstated in accordance with requirements. This is due to delays in completing work and outstanding construction scope placing more demand on the existing onsite accommodation than planned thus requiring additional accommodation. The camps also offer an interim solution for waste water treatment at PSG1 and PSG2 until a permanent solution is in place.</p>
BTC/ SCP	I	October 2006	<p>Dismantling of Marneuli, Tsalka and Akhaltsikhe Camps</p> <p>This change is to allow for the dismantling of the Marneuli, Tsalka camps for sale to the BP Egypt Business Unit. The Akhaltsikhe camp will also be sold once it is demobilised. Reinstatement of the camps will be carried out using local contractors following requirements under supervision of the environmental department.</p>
BTC/ SCP	II	October 2006	<p>Akhaltsikhe Construction Camp</p> <p>Akhaltsikhe construction camp (formerly BTC/SCP) was due to be demobilised and reinstated in late 2006, however in the absence of accommodation at Area 80 (SCP) and due to greater than planned manning levels needed to commission and start up the facility, accommodation was need for longer. Continued operation of the Akhaltsikhe construction camp to support SCP was therefore requested. It is anticipated the camp will remain open until the end of 2008, at which time it will be demobilised and reinstated in accordance with requirements.</p>

There were two Class III changes submitted in 2006. Full details are given below:

Class: III

Identifier: AGT002-2004-PM-DCN-00066

Status: Approved Internally In May 2006. Approved by Lenders in June 2006

Kodiana Emergency Drain Down Facility

One of the conditions of approval of the BTC Oil Spill Response Plan by the Georgian government was that BTC Co. is required to construct an underground Emergency Drain Down Facility (EDDF) at the lowest point of the Tskhratskaro – Kodiana sector of BTC at KP184 for use in the unlikely event of a pipeline leak. More details about this is given in Section 3.1.2.

Class: III**Identifier:** AGT002-2003-OP-DCN-00007**Status:** Approved Internally In May 2006. Approved by Lenders in June 2006 subject to Conditions**Sewage Sludge to Gardabani Sewage Treatment Works**

Sewage sludge resulting from the on site waste water treatment systems at PSG1 and PSG2 Pump Station Sewage Treatment Plants (STP) and Camp STPs is to be trucked to Gardabani Sewage Treatment Works for sludge solids stabilisation and permanent storage in sludge beds. This is expected to be a permanent solution, although BTC will be evaluating other options in the future.

The liquid sludge will be discharged into the inlet of the primary settlement tanks and the solids settled and stored in sludge ponds. The load from BTC/SCP is relatively small as the facility services the Tbilisi municipality (maximum BTC/SCP sludge volumes are approximately 50kg/day compared to the overall facility volume of approximately 1,320kg/day).

This change was submitted to the Lenders and reviewed in June 2006. The change was accepted "as long as it is linked with execution of a specific audit / site visit to finalise a list of mitigation actions in agreement with the contractor and to demonstrate the willingness of the Project and Contractor to operate in the direction and spirit of ESAP requirements". These comments are being addressed and an update on progress will be resubmitted to the Lenders in 2007.

Two Class III MOCs relating to the continued use of Iagluja Landfill and the potential future use of a local incinerator for the incineration of medical waste were sent to the Lenders for review. Their comments are now being considered and the MOCs will be resubmitted in 2007.

4.3 TURKEY

There were no approved changes with a significant bearing on E&S management during 2006. However, an extensive vegetation cover assessment was undertaken and will be used in the preparation of a Management of Change submission in 2007.

4.4 CROSS-COUNTRY

Various MOCs were prepared in 2006 that are due for submission in early 2007 relating to:

- Delivery of the Environmental Investment and Offset Programmes; and
- An update of the Operations Environmental and Social Action Plan (ESAP) in view of the completion of the first year of Operations. Changes will include clarification of certain commitments and adjustments to reflect more accurately the realities of operations.

4.5 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MATERIAL MODIFICATION TO AN ESIA, ESAP, THE RAP, THE ESMS, OR ANY OSRP

Material amendments to the ESIA's are described in Section 3.1. A detailed description of Oil Spill Response Plans and preparedness is provided in Chapter 6.

There was no material amendment to the RAP during 2006. Development of the ESMS was ongoing.

5 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW

5.1 SUMMARY OF ANY NOTICES OF NON-COMPLIANCE, REMEDIAL ACTION, ANY FINES OR PENALTIES PAID AND FINAL DISPOSITION OF ANY REGULATORY PROCEEDINGS.

All notices of non-compliance served by the IEC are detailed in Appendix 3 of this report.

There were no fines or penalties incurred for environmental or social non-compliances, and no material environmental claims against BTC Co. during 2006.

5.2 MONITORING RESULTS

During 2006 environmental monitoring of the operation of the BTC Pipeline continued in accordance with the BTC Emissions Management Plans to ensure compliance with the standards outlined in source documents as well as to monitor, minimise and where necessary mitigate the environmental impact of pipeline operations.

5.2.1 Azerbaijan

5.2.1.1 Ambient Air Quality

Ambient air quality monitoring was carried out at four locations around PSA2 and two locations around IPA1 in October and November 2006. Results are given in Appendix 2.1a and show full compliance with project standards.

5.2.1.2 Stack Emissions

Stack emissions monitoring was not carried out during 2006 for BTC as the Turbines and the water bath heater (WBH) at PSA2 will only become operational in 2007 with the commissioning and operation of Phase II (increased throughput of BTC). Stack emissions monitoring of the generators is pending correct installation of sampling ports. Stack emissions monitoring will commence, to include the Turbines and WBH at PSA2 and the generators at both IPA1 and PSA2, in 2007.

5.2.1.3 Noise

Environmental noise monitoring took place at pre-identified receptors around PSA2 and IPA1. Results showed compliance and are given in Appendix 2.1b.

Monitoring also took place at two Block Valve stations where community complaints were received about noise. Preventive measures have been identified for those locations where noise exceeded project standards and the complaints have been resolved.

5.2.1.4 Effluent

Effluent discharge monitoring took place at PSA2 from January to April, and again in September and December 2006. At IPA1 effluent discharge monitoring took place from January to April and again in June.

Non compliances for project standards were observed in January to April with respect total coliforms and e-coli largely due to the Sewage Treatment Plant being overcapacity. From April discharge to the environment of effluent discharge was stopped and it was instead trucked to BP approved municipal Waste Water Treatment Facilities. Work was ongoing during 2006 to upgrade the Sewage Treatment Plants including the installation of reed beds (see Section 3.1.1.1).

In September and December an MOC (see Section 4.1) was approved to discharge rainwater collected in Retention Pond. Analysis was undertaken and results demonstrated compliance with project standards and no impact to the receiving water.

5.2.1.5 Ground and Surface Waters

In 2006-Q3, 3 surface water monitoring locations at PSA2 and 2 locations at IPA1 were sampled. Results showed no exceedance of the historic background concentrations.

Groundwater monitoring took place at 9 monitoring wells around the aquifer area in Karayazi at 9 monitoring wells and at 2 borewells around PSA2. Results are shown in Appendix 2.1d.

5.2.1.6 Waste Management

Waste management practices on site were maintained and improvements undertaken to increase awareness of site personnel on waste minimisation and segregation issues. A summary of waste generated is given in Appendix 2.1e. Non-hazardous waste was disposed of at a BP dedicated cell at Sumgait Landfill. Hazardous waste was disposed of according to BP waste management strategy.

5.2.2 Georgia

5.2.2.1 Ambient Air Quality

Measurements were taken at 5 locations around PSG1 and at 5 locations around PSG2 in both August and December 2006. Assessment demonstrated general compliance with BTC standards with minimal exceedance of SO₂ at one location at PSG1, which was attributed to the close proximity upwind of the PSG1 camp generator to the sampling point. A summary of monitoring results is provided in Appendix 2.2a.

5.2.2.2 Stack Emissions

Due to the absence of permanent sample ports on stacks of PSG1 and PSG2, a temporary sample port had been installed on one of the turbines at PSG2 to provide some monitoring data of the turbine whilst it was operating on diesel fuel to produce a comparison with future monitoring of the turbines once they are switched to run on natural gas in early 2007. The results of monitoring are given in the Appendix 2.2b.

5.2.2.3 Noise

Monitoring was carried out at 8 locations around PSG1 and at 6 locations around PSG2. The monitoring demonstrated compliance with BTC standards. A summary of monitoring results is provided in Appendix 2.2c.

In addition, 4 rounds of monitoring were also taken at 5 locations around Tsalka Hotel (used extensively by BTC staff) in response to a complaint from the resident of the building next-door. Recommendations were subsequently made to the hotel operators to reduce noise levels to within BTC standards.

5.2.2.4 Effluent

A summary of monitoring results for effluent discharges at PSG1 and PSG2 is provided in Appendix 2.2d.

Data for 4 months is absent for April and October as samples were no longer valid for analysis due to the delays in custom clearance at Georgia-Azerbaijan border and samples for November and December were not taken due to frost at both Pump Stations.

Treated waste water samples were taken from the reed beds at PSG1 and PSG2 prior to discharge to the drainage channels and assessed. Some parameters slightly exceeded the background environmental concentrations, and therefore a programme is in place to upgrade the on-site wastewater treatment system. The non-compliant parameters are generally nitrogen and phosphorus, which are a concern for standing water only (there is no standing water at PSG1 and PSG2). Coliform at PSG1 were also non-compliant and to resolve this, additional UV lamps will be installed in early 2007 to reduce levels. Monitoring shows that the receiving water has an even higher count of coliform bacteria therefore no additional burden has been placed on the stream by the water discharged from the reed beds.

5.2.2.5 Ground and Surface Waters

A summary of monitoring results for Ground and Surface Waters in the vicinity of facilities and along the sensitive sections of the ROW is provided in Appendix 2.2e. The monitoring demonstrated compliance with BTC standards although several monitoring points were not accessible during the winter due to poor weather conditions.

5.2.2.6 Waste

A summary of waste generated in 2006 is given in Appendix 2.2f. The main waste generation areas are at PSG1 and PSG2. The Central Waste Accumulation Area (CWAA) continued to be utilised by Operations for the management of materials that cannot be recycled or disposed of to appropriate standards. It is planned that these materials will be exported to EU compliant facilities outside of Georgia in 2007.

Considerable work to upgrade the CWAA took place in 2006 including:

- Improvement of site road access;
- Bunding and secondary containment improvements;
- Delivery of packaging to repackage materials in degraded containers; and
- Training for all personnel.

Case Study 5.1 provides a detailed look at how hazardous waste from cleaning of the turbines was treated and disposed of at PSG1 and PSG2.

5.2.3 TURKEY

Provisional Acceptance (PAC) of the facilities in Turkey occurred on 28 July 2006 and Botaş International Ltd (BIL) became responsible for Operations of BTC Turkey. All emission monitoring before PAC was conducted by Botaş's monitoring sub-contractor Çinar. Since BIL became responsible for the environmental management of the facilities, their monitoring sub-contractor Dokay conducted all monitoring activities.

5.2.3.1 Ambient Air Quality

Ambient air quality is undertaken at Ceyhan Marine Terminal (CMT). The results are presented in Appendix 2.3a. No ambient air monitoring is required at the other Above Ground Installations (AGIs) as the major source of emissions (the pump drivers) are run on natural gas and there is little impact on ambient air quality.

Monitoring at CMT was carried out through the deployment of passive diffuser tubes. PM₁₀, VOCs (benzene, toluene, ethyl benzene and xylene - BTEX), SO₂ and NO_x is measured at 10 locations at and around CMT.

3 surveys were undertaken by Botaş between December 2005 and July 2006. After PAC, BIL carried out 2 surveys (in October/November and December/January 2007). The results of the last survey will be reported in 2007. A summary of the average results from the 4 rounds of monitoring in 2006 is as follows:

- PM₁₀ results were higher than project standards at all but one sampling location. Results are at higher levels due to agricultural burning of residual crop stubble (farmers in this area undertake up to 3 crop rotations a year). PM₁₀ monitoring was a requirement in and around CMT during construction due to considerable construction-related traffic. During Operations PM sources are limited to the diesel engines on site which in 2006 had a total run-time of 340 hours. CMT facility emissions are not believed to be a significant contributory factor to the PM quality in the area;
- SO₂ and NO_x results were in compliance;

- Ethyl benzene results were at levels typical for rural areas (EHC⁵ <2 µg/m³);
- Toluene levels were at levels typical for rural areas (WHO⁶ <2 µg/m³) except at one location due to a high average reading over the December 05/January 06 monitoring period. At this time and location the toluene level was more typical for urban areas (WHO 5-150 µg/m³);
- O-xylene and m/p xylene results were at levels typical for rural areas (EHC⁷ <2 µg/m³ o-xylene and <4 µg/m³ m/p-xylene); and
- Since tanker loading commenced in July 2006 there has been no significant increase in BTEX levels or other ambient air quality parameters.

5.2.3.2 Stack Emissions

Çinar conducted stack emissions monitoring on behalf of Botaş to meet their pre-Provisional Acceptance commitments and Dokay undertook monitoring on behalf of BIL to meet Operations monitoring commitments. The monitoring results are provided in Appendix 2.3b. The results are generally in compliance, and the few exceedances above project standards are being addressed through maintenance.

5.2.3.3 Noise

Due to the distance of the receptors to the Above Ground Facilities, environmental noise at the nearest residential receptors is well within World Bank night time noise limits, and therefore no environmental noise monitoring is carried out. Occupational noise (for on-site staff) is outside of the scope of the ESAP but is addressed by Health and Safety Department.

However, underwater noise monitoring was carried out by BTC during tanker operations at the CMT jetty in August 2006. Noise levels were measured during tanker approach, loading and departure and the average noise levels respectively were: 165.5; 170.3; and 174.4 dB (see Appendix 2.3c). Behavioural changes in fish are generally observed at around 180 dB⁸. Evidence shows that fish readily and rapidly return to their former ranges after the noisy activities cease. It has been observed that of their own accord, fish frequently shelter under moored vessels, even if engines are running.

The area is not known to support a substantial population of resident or migrant populations of cetaceans, however marine turtles are known to use the area for nesting. Results of studies have shown however that marine mammals acclimatise to changes in noise levels and marine turtles will have acclimatised to the current level of marine activity. The results of the survey proved that the region is an important nesting area for Green Turtle (*Chelonia mydas*), although there is no clear pattern of nesting over the years. Further details about Marine Turtle monitoring are given in Section 3.3.3.

⁵ Environmental health Criteria (EHC) is prepared by the collaboration of International Programme on Chemical Safety (IPCS) and the Canadian Centre for Occupational health and Safety – WHO does not provide a typical rural level for Ethyl Benzene, but provides an urban level of 1-100 µg/m³. In all cases Ethyl Benzene levels were <1 µg/m³ at CMT during 2006.

⁶ WHO Guidelines for Air Quality, Geneva, 2000.

⁷ WHO does not provide a typical rural level for o- and m/p-xylene, but sets an urban area level of between 1-100 µg/m³ for total xylene. Total xylene levels (o- and m/p-xylene together) were in most cases throughout the year <1 µg/m³ and on 13 occasions at different locations in different survey periods the total xylene exceeded 2 µg/m³. However there was no pattern to these exceedances. On only one occasion did the total xylene limit exceed 2 µg/m³. This was at a village located 3.5km north of the facility (location CMT1). This was due to one peak reading of m/p-xylene (7.02 µg/m³ during one of the 12 day survey periods). Wind direction during this period was equally blowing from the south and the north. At this time the BTC oil had not yet reached the terminal although the tanks had been commissioned using one tanker load of oil from Supsa Terminal. However it is not likely that this caused the elevation as there were no other peaks shown at this time at sampling locations in the vicinity of the tank farm (principally CMT8 which is located north of the tank farm in the general direction of the village).

⁸ See EIA

Given that traffic will be slow moving and is at levels below that associated with observed behavioural changes in fish, it is expected that operational marine noise will cause minor to negligible impact on fish, turtles and marine mammals. No further underwater noise monitoring will be undertaken.

See Appendix 2.3c for a summary of results.

5.2.3.4 Aqueous Discharges

Aqueous discharge monitoring results for 2006 are shown in Appendix 2.3d. Data shows monitoring results from the site discharge point to the environment. Where there was no discharge from the site, monitoring could not be undertaken at this location and is represented as 'no discharge' in the monitoring results table. Discharge to the environment may not occur either because the water level in the holding pond is not high enough to enable discharge or because it has been manually prevented due to above project specification results. When there is no discharge from the site to the environment the storm water pond water is monitored to determine if pond water can be discharged. If the water is non-compliant and the volume of the waste water is at risk of being exceeded, waste water is taken to the nearest project approved Municipal Waste Water Treatment Facility for treatment.

In 2007 a waste water feasibility study will be conducted by BTC Co. on behalf of BIL to determine the design changes required to ensure continual improvement.

5.2.3.5 Ground and Surface Waters

Baseline monitoring was conducted for the EIA from wells on 4 major plains (Pasinler Erzurum, Goksun and Ceyhan Plains). Sampling was undertaken at 19 groundwater wells located close to the pipeline route.

The full groundwater and surface water monitoring programme for operations is being developed and will commence in 2007.

5.2.3.6 Waste Management

The main waste generation areas are at Pump Stations and CMT. Waste is collected and segregated at the on-site (temporary) CWAAs. Waste is reused where possible, for example food waste and garden clippings are used by villagers for animal feed. Recycling of wastes is also undertaken wherever possible, and glass, metals, battery and other wastes are sent to Project approved recycling facilities. Non-hazardous and hazardous wastes are transported to Izaydas Waste Facility in Izmir (to date the only waste hazardous waste and landfill site which meets BTC requirements in Turkey). Appendix 2.3e provides details of waste volumes generated.

5.3 STATEMENT OF COMPLIANCE

BTC Co. and its agents have complied in the development, construction and operation of the BTC Project with the ESAP, applicable Environmental Laws and Applicable Lender Environmental and Social Policies and Guidelines in all material respects during the period covered by this report. All non-compliances with emissions that have been identified in 2006 are summarised in Chapter 5 and shown in Appendix 2. Non-compliances relating to other audits are given in Chapter 11 (and detailed in Appendices 3 and 4). For all non-compliances identified, corrective actions have been developed and implemented.

5.4 CHANGES IN APPLICABLE ENVIRONMENTAL LAW

The Intergovernmental and Host Governmental Agreements (IGA and HGAs) have been incorporated into national law in each project state as appropriate. Contained within the BTC and SCP IGAs and HGAs are various commitments to abide by certain EU standards with respect the environment. The project is also required to comply with applicable national legislation in each project state to the extent that the legislation does not conflict with the requirements of the IGA and HGAs.

Considerable work has been undertaken during 2006 to continue to assess BTC environmental requirements with respect both national and EU legislation.

5.4.1 EU Legislation

Changes in EU regulations in 2006 are being reviewed together with their applicability to BTC Operations. Potential implications will be considered in 2007 as part of the BP HSSE Compliance Enhancement Programme.

5.4.2 Azerbaijani Law

Significant changes in 2006 in Azerbaijani legislation with relevance to BTC were:

- Presidential Decree No. 375 of February 28, 2006 with regards establishing the activities of the Emergency Ministry and Presidential Decree No. 482 of November 29, 2006 about the amendments to the "Security of export oil and gas pipelines" Presidential Decree No. 685 dated 15 April 2002. A special militarised security service was established under the Emergency Ministry the purpose of which is to provide security for the export oil and gas pipelines and their infrastructure; and
- Amendment No. 2 endorsed by Presidential Decree No. 510 of December 29, 2006, which introduced a new list of activities for which special permits (licenses) are required. The list includes: disposal and mitigation of toxic wastes; construction; maintenance; and refurbishment of lifting installations.

5.4.3 Georgian Law

The only national environmental legislation passed in 2006 with significant relevance to BTC, was the Resolution of the Government of Georgia No. 26/184 of February 3, 2006, on entering amendments and additions to Regulations "On Terms and Conditions of Issuance of Environment Impact Permit", Adopted by Resolution No 154 of the Government of Georgia, dated September 1, 2005. This amendment to Georgian Law reduces the number of activities/facilities that require EIA approval by the Government.

5.4.4 Turkish Law

In Turkey, three significant pieces of national environmental legislation were passed in 2006 affecting BTC as follows:

- Regulation on Control of Air Pollution from Industrial Facilities (July 2006): Revised legislation does not require monitoring of back-up and emergency engines which run for less than 500 hours per year;
- Regulation on Enforcement of the Law upon the Essentials of Emergency Response, and Compensation of Losses in Case of Sea Pollution Due to Oil or Other Hazardous Materials (October 2006): Law requires preparation of a "Coastal Facility Emergency Response Plan" and insurance against losses in the case of such an emergency. It is likely BIL already meets the legal requirements through the Oil Spill Response Plan and Project insurance arrangements. Confirmation of this with regulatory authorities is ongoing; and
- Ceyhan Harbour Regulation (Replaces Botaş - Ceyhan - Harbour Regulation November 2006): Revised plan requires liaison with local fishermen on the Project security and operating zone restrictions. Steps have already been taken to meet this legal requirement. Liaison will continue in 2007.

6 OIL SPILL RESPONSE

6.1 SUMMARY OF OSRPs COMPLETED, UPDATED OR AMENDED DURING YEAR

Audits to verify compliance against the Oil Spill Response Plans were carried out in Azerbaijan and Georgia in November 2006. A similar audit is planned in Turkey for January 2007. An update of the OSRPs has been planned and resourced to commence in January 2007 and the findings from these audits (see Chapter 11) will be considered in the update of the OSRPs.

6.2 SPILL AND REMEDIATION SUMMARIES

There were a number of small spills recorded during the year, most of which involved very small quantities of oil. In such cases there was either no or negligible environmental impact. Details of remediation in the case of uncontained hydrocarbon spills is given below. Work is ongoing to develop a cross country remediation strategy. BTC reports any material release that reaches the environment (i.e. is uncontained) or that is greater than 1 barrel, even though it maybe contained. Gas releases are always classified as uncontained. A summary of these releases is given in Table 6.1.

Table 6.1: BTC Material Releases in 2006

Asset	Liquid			Gas
	< 1 bbl	> 1 bbl		
	Uncontained	Contained	Uncontained	
BTC Azerbaijan	0	0	0	1
BTC Georgia	1	1	1	1
BTC Turkey	6	7	1	0

Further detail on the material releases shown in Table 6.1 are as follows:

6.2.1 Azerbaijan

There was one reportable release recorded for BTC Azerbaijan during 2006:

- **CO₂ gas release (PSA2 - December 2006)**

During commissioning activities of the turbines as PSA2 the accidental activation of the suppression system was caused due to the solenoids left activated from the previous day. As a result 15 m³ of CO₂ was released.

6.2.2 Georgia

6.2.2.1 Contained

The following spill was greater than 1bbl, but fully contained:

- **Estimated 6.3 bbls lube oil (PSG1 - January 2006)**

A lube oil leak was found to have occurred in the pump skid, draining a volume of around 1,000 litres of lube oil in to the Drip Pan in the base of the pump enclosure. The spill was contained within the MOL enclosure and drained to the closed drain system.

6.2.2.2 Uncontained (released to the environment)

- **Minor diesel spills to ground (various Block Valve Stations - February 2006)**

Diesel generators and drums of diesel located at block valves to power manned security huts were observed without a drip tray / secondary containment at several block valve stations. Minor diesel spills / staining observed. Removal and relocation of contaminated soil to the PSG1 CWA was undertaken.

- **Estimated 200lb CO₂ (PSG1 - April 2006)**

The CO₂ system of MOL pump 2 was activated and discharged the contents of the 2 main supply cylinders. The manual release wire was accidentally pulled. The control room on receipt of the alarm manually actuated the site fire alarm at which all on site personnel went to their emergency response muster stations.

- **Estimated 1.2bbls crude oil (Block Valve GB9 - May 2006)**

Failure of an intermediate 1" ball valve caused the spillage of 1.2bbls of crude. The pipeline was shut down and the release of oil was halted. Seacor (OSR Contractor) was mobilised and offsite impact was contained within the surrounding area. Details of remediation are given below.

6.2.2.3 Remediation

Soil contaminated by the minor staining / spills observed at block valve stations described in Section 6.2.2.2 was removed and taken to the PSG1 Central Waste Accumulation Area for storage before final disposal.

The second uncontained spill detailed in Section 6.2.2.2 was the release of 1.2 bbls at block valve GB9. As soon as the spill was reported the Incident Management Team and Seacor were mobilised. Once the leakage was stopped, the removal of oil from standing pools using skimmers and absorbents and the removal of oil from ground surfaces commenced. The contaminated solid waste was bagged and transported to the CWAA for disposal. Oily water was taken to PSG2 for disposal through the Oily Water Separator system.

A final validation sampling and evaluation was conducted by an independent consultant who concluded:

"Trace concentrations of hydrocarbons have been detected in the soils in the vicinity of the spill area of GB9 characterised by heavy end, low toxicity aliphatic hydrocarbons. Sediments in road drains both up and down topographic gradient of the spill site contain trace concentrations of both aromatic and aliphatic hydrocarbons. None of the compounds analysed are suggested to pose a risk to human health.

Groundwater and surface water monitoring points present in the vicinity of the spill site indicate no hydrocarbon or polycyclic aromatic hydrocarbon impact post spill.

In summary, the concentrations detected in residual soils at the oil spill site are not suggested to pose a significant risk to human health or the environment. Low hydrocarbon concentrations were detected in both up and down gradient locations, at comparable concentrations. This minor impact is likely attributable to regional road drainage quality. It is considered that the minor contamination observed in the soils sampled is unlikely to be a result of the residual impact of the spill event".

Since the incident lessons learned have been drawn up by both the OSR contractor and BTC including a full review and corrective actions taken for similar valves to ensure continual improvement in oil spill containment and response.

6.2.3 Turkey

6.2.3.1 Contained

The following spills were greater than 1bbl, but were fully contained:

- **Estimated 12 bbls crude oil (PT1 – February 2006)**

Due to a broken transmitter pocket tube on one of the MOL pumps.

- **Estimated 3.8 bbls crude oil (PT3 – March 2006)**

During the filling of the relief tank, approximately 600 litres of oil was released from the vent line on pressure gauge onto the concrete floor. This was caused by Operator error when the vent line was left open after venting the relief header.

- **Estimated 1.6 bbls gearbox oil (PT1 – March 2006)**

A gear box oil container was punctured by a Project JCB operator whilst it was being transported to the gates of the Pump House.

- **Estimated 2.5 bbls crude oil (PT3 – March 2006)**

Oil was spilled from the relief facility instrument needle valves and/or connections on the LP surge valve skids when the pressure in the pipes was increased.

- **Estimated 6 bbls crude oil (PT3 – June 2006)**

Oil was spilled from the globe valve (PT3 outlet ESD by-pass valve) during a pressure equalization operation. The valve was immediately closed by operators.

- **Estimated 50 bbls crude oil (CMT – June 2006)**

Oil spilled from the back connection of the flow meter at the Metering Station.

- **Estimated 7.6 bbls crude oil (PT1 – August 2006)**

A leak from a valve on one of the MOL Pumps occurred as a maintenance crew was carrying out a repair whilst the inlet ESD valve was being tested during a pipeline shutdown.

6.2.3.2 Uncontained (released to the environment)

All uncontained material releases in 2006 are reported below:

- **Estimated 0.9 bbls diesel (CMT – February 2006)**

0.9 bbls (150 litres) of diesel leaked from fire water pump fuel feeding line. 100 litres was contained in a drip tray, however 50 litres overflowed to the surrounding ground. Contaminated soil was recovered and removed from site.

- **Estimated 5 bbls (only partly uncontained) foam release (CMT – March 2006)**

Around 5 bbls (800 litres) of fire fighting foam solution was spilled onto the loading platform berth 1 during maintenance. 500 litres were recovered using a sump pump, however c. 300 litres of foam remained on deck. This was washed down with water which accumulated in the deck sumps and was then pumped into the oily water separator, which discharges to the sea.

- **Estimated 0.6 bbls crude oil (ROW – August 2006)**

Released to ground due to an illegal tap. Contaminated soil was recovered and removed from site.

- **Estimated 0.2 bbls crude oil release (ROW – September 2006)**

Released to ground due to an illegal tap. Contaminated soil was recovered and removed from site.

- **Estimated 0.1 bbls crude oil release (ROW – September 2006)**

Released to ground due to an illegal tap. Contaminated soil was recovered and removed from site.

- **Estimated 0.1 bbls crude oil release (ROW – October 2006)**

Released to ground due to an illegal tap. Contaminated soil was recovered and removed from site.

- **Estimated 0.1 bbls crude oil release (ROW – December 2006)**

Released to ground due to an illegal tap. Contaminated soil was recovered and removed from site.

Details on remediation are given in Section 6.2.3.4.

6.2.3.3 Illegal Taps

In accordance with the Turkey HGA, the State Security forces, i.e. the Jandarma, provide patrolling teams to monitor the pipeline ROW and other facilities. BIL has also established ROW technical patrol teams who walk the ROW to monitor for environmental, integrity, land use restriction and security issues.

In 2006, 14 illegal taps were discovered along the BTC pipeline in Turkey. None of the taps were leaking to the environment at the time they were discovered, although in 5 cases small spills had occurred while the tap was being made (see Section 6.2.3.2).

The Jandarma discovered 8 of the 14 illegal taps and a further 5 were identified by the Pipeline Leak Detection System through suspicious pressure transients. One was discovered by the BIL ROW patrol team.

BIL has appointed an internationally recognised sub-contractor to undertake the repairs of the illegal taps and at the end of December 2006 all had been repaired with the exception of one which is secure, but repair is ongoing.

The Turkish government is drafting a new law to enable changes to be made to the existing Petroleum Market Law. In the past, illegal taps were recognised as 'theft'. However, the amendment to the law now recognises illegal tapping activity as organised smuggling and enables the Security forces to use a broader range of surveillance measures to prevent such an occurrence. Stiffer penalties have also been enforced.

6.2.3.4 Remediation

The uncontained spills at CMT referred to in Section 6.2.3.2 were responded to and cleaned by the on-site spill response teams. These teams are trained in spill response, chemical handling and waste management. All recovered chemical and soil were stored in accordance with hazardous waste management procedures.

Other uncontained spills occurred on the ROW in relation to illegal taps. The procedure to respond to illegal taps is as follows:

- Once an illegal tap has been confirmed by the Jandarma or the BIL ROW patrolling teams, the BIL HSE Department is notified and the Oil Spill Response Contractor (SESMeke) and the repair teams are mobilised. The BIL Emergency Response Department mobilises SESMeke and together with the pipeline repair teams they undertake an initial assessment of the site.
- After (and/or during) the initial assessment, Environmental and Social (E&S) representatives are also mobilised to site to undertake an E&S risk assessment of the tap and its subsequent repair. The E&S risk assessment feeds into the overarching illegal tap repair method statement. The assessment includes the following:
 - Identification of nearest containment sites;
 - Identification of environmentally sensitive receptors (water courses, groundwater, sensitive habitats etc);
 - Adjacent landowners and land use;
 - Nearest villages and contact numbers of the Muhtar;
 - Necessary land-owner permission required to access the location;
 - Any downstream villages (if relevant); and
 - On-site mitigation measures.

- SESMeke have been trained in BIL Waste Management requirements and commence clean-up of the site immediately. BIL HSE Engineers will generally oversee this work if possible, but this will not delay clean-up if SESMeke arrive on site first. All oily wastes, such as contaminated soil, is stored and transported in accordance with the BIL Waste Management Plan (i.e. taken to the nearest BTC Above Ground Installation for temporary storage prior to final disposal to the Izaydas hazardous waste facility).
- Prior to repair, BIL Public and Community Relations staff meet with relevant Muhtar(s) and/or villagers to discuss issues that could be impacted by the repair, such as access, village infrastructure, emergency response and crop damage.
- During the repair, SESMeke will be present at site on stand-by, together with BIL HSE Engineer and BIL Public and Community Relations staff. After completion of the repair, land is reinstated in accordance with the EIA and landowner compensation for crops and any other damage is addressed.

6.3 SUMMARY OF MATERIAL MODIFICATIONS TO THE OSRPs

An update of the Oil Spill Response Plans is scheduled for 2007. Details of the only change to OSRPs during 2006 is as follows:

The BTC Azerbaijan Oil Spill Response Plan (OSRP) and its associated Containment Manual were approved by the Ministry of the Environment and Natural Resources in May 2005 subject to various conditions. The OSRP and Containment Manual was therefore resubmitted in December 2005 for final approval. The principle changes were the addition of a Special Spill Response Plan for Karayazi Aquifer and revised protocols on In-Situ Burning and Decanting spill response. Approval was received on 30th January 2006 and confirmed that all the requirements set by the MENR in May 2005 had been addressed.

7 CIP AND EIP PROGRAMMING

The implementation of the BTC Additionality programmes is carried out through a series of regional and community-based projects, designed to conserve biodiversity, to deliver local and long term benefits, and to empower local communities to resolve issues for themselves. The Additionality Programmes were formalised into an Environmental Investment Programme (EIP) and a Community Investment Programme (CIP). CIP and EIP are jointly and equally funded by BTC and SCP in Azerbaijan and Georgia. In Turkey these programmes are 100% funded by BTC.

Details of the projects were presented in previous Annual and Quarterly reports for 2005 and 2004, so information below focuses on new initiatives and significant milestones during 2006. Case Studies 7.1 and 7.2 provide more detail on selected EIP and CIP Projects in Azerbaijan and Georgia respectively.

7.1 SUMMARY OF EIP PROGRAMMING

7.1.1 Azerbaijan

A delay in implementation of Phase 1 Projects led to a revised strategy in 2004 with the focus moving away from large scale biodiversity projects (Phase 1) and focusing towards smaller scale, community focused projects addressing local environmental needs (Phase 2). Both Phases are funded from BTC/SCP construction budget.

Progress on outstanding **Phase 1** EIP⁹ projects during 2006 is as follows:

⁹ Note that the Cultural Heritage Management Plan for Gobustan National Park previously shown in this report is an offset programme, and not managed or funded by EIP and therefore has been excluded.

- **Tougay Forest Conservation and Restoration:** Tree planting activities were completed on a 12 hectare pilot area. Forest protection proposals were received from local NGOs and are being assessed. The Project is being run by the BP Azerbaijan Central HSSE Team on behalf of several BP assets.
- **Spur-thighed tortoise *Testudo graeca* conservation management:** This species is listed by IUCN and is included in the red data book of Azerbaijan. A breeding and conservation programme has been undertaken at Sangachal Terminal, jointly funded by BTC, SCP and two other BP Azerbaijan assets. When the terminal expansion is completed half the tortoises will be released to the wild and monitored.

A summary of **Phase 2** EIP activities during 2006 is as follows:

- **Environmental Awareness and Improvement Programme (also used CIP funds):** Implemented by local NGO Hayat for biodiversity enhancement to raise environmental awareness and provide grants for communities to resolve local environmental issues. 30 grants were awarded in 2006 and 29 of them were implemented. See Case Study 7.1 for more information.
- **The Green Pack:** Implemented by the Regional Environmental Centre to raise environmental awareness. Teaching materials in the form of a teachers' handbook and other texts were developed and printed. An educational CD-ROM is being finalised.
- **Support to Environmental and Energy Initiatives – Energy Bus Phase II (also used CIP funds):** Implemented by NGO Umid to provide information about alternative energy sources and help communities find cost effective and environmentally friendly solutions. Consultations have been held with communities and 23 project proposals were assessed in 2006. The top 12 will be selected for implementation.

A strategy for **Phase 3** EIP (the operations phase) is currently under development and will commence implementation in 2007 after consultation with the MENR.

7.1.2 EIP in Georgia

There were three construction phase EIP projects that continued from 2005 and were completed by end of 2006¹⁰. Highlights are as follows:

- **Ecosystems and Species Conservation in Georgia: The Brown Bear** implemented by NACRES. Project data was compiled into a species status report and action plan for distribution to key stakeholders. The project was completed in June 2006.
- **Management of the Small Grants Programme for NGO Capacity Building** along the SCP and BTC ROW implemented by Save the Children in partnership with NACRES. Second and third round grants were disbursed to a total of 22 national NGOs. Independent evaluation found that the project had achieved most of its environmental and social objectives, and yielded satisfactory benefits with only minor shortcomings.
- **Enhancement of Environmental Education**, conducted by CARE, in conjunction with the CIP-Improved Schools Project (see Section 7.2.2.1) to deliver extra-curricular training to adolescents on environmental issues and environment conservation.

Three new projects were initiated in 2006 funded under the construction phase EIP budget. Work in 2006 concentrated on issuing requests for proposals and refinement of project proposals. A summary of the projects is as follows:

¹⁰ In addition, EIP Staff also managed the Environmentally Sound Livestock Farming Programme, implemented by CARE, although the funds used are from the offset budget. During 2006, 17 manure storage facilities constructed and training on environmental conservation principles was provided to 28 demonstration farmers.

- **Caucasian Black Grouse Conservation in Georgia (Phase 2)** Implemented by Georgian Centre for the Conservation of Wildlife. The project goal is to initiate and promote implementation of the Caucasian Grouse National Action Plan developed during Phase 1 of the project to ensure the bird population does not decline.
- **Conflict Prevention through Environmental Awareness for Youth (COPE)** implemented by CARE, and co-funded with BTC, SCP, the Austrian Development Agency and CARE Austria. The object of this 1 year project is to empower youth to contribute to the social and environmental development of their communities by increasing their peace building capacities and environmental awareness. A new Nature Club was established in Tsalka and training was given to 28 teachers and 49 students. Five grants were awarded to small-scale environmental conservation projects.
- **Development of a Management Plan for Ktsia-Tabatskuri Managed Reserve** implemented by The World Conservation Union (IUCN). This is jointly funded by both EIP funds and separate offset funds¹¹, with the goals of:
 - 1) Developing a management plan for Ktsia-Tabatskuri Managed Reserve that is endorsed by all stakeholders; and
 - 2) Enhancing capacity at site and national levels to implement this management plan.

The project will be completed in mid-2008.

Further programmes are being developed for 2007 and will be funded by the construction phase EIP budget, which is forecast to run until the end of 2008. A strategy for the operations phase EIP in Georgia is under development.

7.1.3 EIP in Turkey

Four new grant agreements have been signed in 2006, all of which have in-kind contributions by the implementing organisations:

- **Ekşisu Marshes:** Wetlands management and conservation implemented by Doğa Derneği (Nature Association) in partnership with SÜRKAL and DHKD.
- **Biogas and Fertiliser Generation:** Implemented by Kahramanmaraş Chamber of Industry and Commerce.
- **Conservation Priority Analysis for the Eastern Mediterranean and Eastern Anatolian Ecoregions (Phase 1):** Identify key biodiversity values and priority conservation areas for investment. Implemented by DKM.
- **Kaçkar Mountains Forest Conservation and Sustainable Rural Development:** This is a continuation of the Lesser Caucasus Forest Gap Analysis Project. The purpose is to demonstrate ecologically-sound development. Implemented by the Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats. In addition to the BTC contribution, \$1,800,000 was donated by the EU to fund this project.

¹¹ In addition to the Georgia EIP budget of US\$3 million, an additional US\$1.3 million was designated for Offset Programmes. To take advantage of synergies with EIP, offset money spent on Ktsia Tabatskuri Managed Reserve is managed under the EIP. EIP Staff also managed an Environmentally Sound Livestock Farming Programme, implemented by CARE, although funded exclusively from the offset budget and therefore not reported in this section.

A summary of key EIP developments in 2006 are as follows:

- **Small Investments Fund (SIF):** Eight small grants projects are in their completion phase:
 - (1) Birdwatching Tourism Development Project in Kırmitlı Wetland for Rural Development to conserve the area as a “bird paradise” and raise income through tourism;
 - (2) Ecological Fishery Project for Antakya Samandağ Meydan Village: Established a new cooperative for local fishermen to sell fish at a higher price with a guarantee that the habitat of the monk seal is not being damaged. The SIF part of the project is complete, but further funding has been awarded GEF-UNDP;
 - (3) Wildlife Protection Liksor Valley, Şenkaya: Training to raise environmental awareness. Positive change noted in attitude of hunters who have assisted in conservation agenda;
 - (4) Building Wildlife Protection Network in Lesser Caucasus. This project has similar outputs as Project (3) above;
 - (5) Introduction of sustainable fishing in Lake Çıldır. The project has increased awareness of sustainable fishing practices;
 - (6) Documentary Video Project: Environmental Awareness. A draft film has been produced on the wildlife of two provinces in north-east Turkey;
 - (7) Impact on Uzundere Sarıçam (*Pinus silvestris*) Forests from grazing of goats. Some erosion control practices introduced and some income generation activities for those who rely on animal husbandry; and
 - (8) Natural wastewater treatment for Karaorgan Village: Installation of a sewage network and waste water treatment system is ongoing.
- **Ecological planning and management of Ardahan-Yalnizcam Forests:** The forest management plan has been drafted and a consultation programme developed to get feedback on the plan. The project villages were awarded US\$700,000 of EU funds in addition to a \$35,000 grant from the Small Grants Programme of Global Environmental Facility managed by UNDP. Three projects have commenced.
- **Improving public awareness in ecologically and economically sustainable use of natural resources:** Drafts of 2 books and one video were produced for two wetlands and are currently under review by stakeholders.
- **Developing Yumurtalık Lagoons Wetland Management Plan and identifying Erzurum Marshes Conservation Zones:** A local project office was opened and a stakeholder consultation exercise commenced.
- **Important Bird Areas (Completed in 2006):** The IBA book, called ‘Key Biodiversity Areas of Turkey’ has been published.
- **Improving the conservation status of the Caucasian Black Grouse (CBG) in Turkey (Completed in 2006):** As a result of the extensive research carried out, the conservation status of the species is likely to change in Turkey in 2007.
- **Lesser Caucasus Gap Analysis (Completed in 2006):** Priority areas for conservation were identified. Follow-on effects of this project include the submission of a proposal by the Implementing Partner to the EU for the highest priority conservation area which was subsequently awarded c.US\$2 million. The Ministry of Environment is also planning to use project outputs and match it with similar programmes in other areas in Turkey.
- **Sea Turtle Expedition Project (Completed in 2006):** Two new nesting beaches have been discovered and conservation techniques tested. The Ministry of Environment and Forest and other stakeholders were provided with all project output data. The Ministry will review and determine appropriate follow-up.
- **Sea Turtle Expedition Project (Completed in 2006):** BTC and the Implementing

Partner are following up various actions recommended as part of the project outputs. The fisheries project (see SIF above) is an example of follow on conservation initiatives from this Project.

In addition to the above, EIP staff also managed the Important Plant Areas Programme funded from the Offset budget¹².

7.1.4 EIP Expenditures, 2006

A sum of US\$9.1¹³ million was put aside for the Environmental Investment Programmes (EIP) during the construction phase of BTC and SCP.

Table 7.1 shows the amount budgeted for the EIP and the cumulative amount spent since the inception of the EIP, whilst Table 7.2 shows the breakdown of expenditures in 2006.

Table 7.1: Construction Phase EIP Budget and Expenditures 2003-2006 (\$)

	Azerbaijan	Georgia	Turkey	TOTAL
EIP Budget	2,700,000	3,000,000	3,450,000	9,150,000
Total Spent to date (at end 2006)	947,578 ¹⁴	1,790,000	2,375,000	5,112,578

Table 7.2: Summary of EIP (Construction Phase) Expenditures (\$), 2006

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	580,000	657,350	585,000	1,822,350
Actual	613,367	577,226	600,000	1,790,593

7.1.5 EIP Budget, 2007

Details of the budget for 2007 are given in Table 7.3. Money outstanding from the construction phase EIP will be transferred to the Operations organisation through the Management of Change Process in 2007. The EIP under the existing budget (shown in Table 7.1) is scheduled to run until the end of 2008.

Azerbaijan and Georgia planned spend for 2007 is funded from the remaining construction phase budget. Turkey planned spend for 2007 includes US\$650,000 outstanding from construction phase, plus an additional US\$1,200,000 new funds secured for the operations phase.

Table 7.3: BTC/SCP EIP Budget (\$), 2007

	Azerbaijan	Georgia	Turkey	TOTAL
Budget 2007	1,100,000	450,000	1,850,000	3,400,000

¹² In addition to the Turkey EIP budget of US\$3.45 million, an additional budget was designated for Offset Programmes. To take advantage of synergies with EIP, the Important Plant Areas (IPA) Project was managed by EIP staff, although this project (costing US\$200,000) was exclusively funded from the offset budget and therefore not reported in this section.

¹³ Misreported previously as US\$9.3 million. US\$200,000 offset funds used for the IPA project in Turkey had been reported as part of the EIP budget in error (see note 12 above).

¹⁴ Amount underreported in previous reports. The total spent to date is US\$947,578. In addition to this, a further sum of US\$260,000 has been committed to the Tugai Forest Project and the Spur-thighed tortoise Project (see Section 7.1.1).

7.2 SUMMARY OF CIP PROGRAMMING

The construction phase CIP commenced in 2003 and was completed in 2006. Table 7.4 shows a summary of the key achievements over the 3 years. The table is intended to simplify the results of the CIP, rather than compare it across the countries, as each country has a different emphasis, most notably in Turkey which has an extensive agricultural component to its CIP.

In the 3 years since the inception of the CIP accomplishments include: improvement of 80 medical facilities; medical support to over 220,000 people; distribution of 1,200 tonnes of seed; training to over 50,000 farmers; and vaccination of over 500,000 livestock. In addition to this are country specific achievements (e.g. the installation of 25 electrical transformers in Azerbaijan) that are mentioned in more detailed CIP reports. It is also important to note that many of the key benefits of the CIP are less tangible and include community empowerment, awareness raising and capacity building.

Specific achievements during 2006 include the upgrading of over 50km of road in Azerbaijan, the improvement of 44 education facilities along the pipeline route; the training of 1,300 farmers in Georgia and 16,000 in Turkey and the vaccination of over 210,000 heads of livestock in Turkey.

The original agreement for construction phase CIP was that it be funded up to July 2006. Feedback throughout the construction phase CIP highlighted that CIP appeared to be achieving both sustainable development goals and, as a result, business value in terms of creating goodwill and support among communities along the pipelines route. A further programme (CIP II¹⁵) has therefore been developed to cover the period 2006 - 2008 and details of this are also given below.

¹⁵ BTC/SCP Operations Phase CIP (CIP II) was to be renamed Future Communities Programme (FCP) (and is referred to as such in some documentation dating from 2005/2006). The name FCP is now redundant, and has reverted to CIP II.

Table 7.4: Construction Phase CIP and Other Investments¹⁶ - Visualising the Benefits (up to end 2006)

Investment Type	AZERBAIJAN	GEORGIA	TURKEY
Number of communities benefiting	117	84	331
Amount of money invested (US\$)	\$7.8 million	\$8 million	\$8.9 million
Implementing Partners (IP)/ Number of local/national NGOs	6 IPs and 1 NGO assisting (a further 3 IPs and 22 NGOs have completed their CIP)	2 IPs and 5 NGOs assisting	5 IPs (all national) and many local NGOs/cooperatives assisting
% Women in Community Action Groups	37,5% ^{*17}	CIP - 15% Improved Schools Project - 71%	Varies from 5% to 50% according to region. (All CIPs have programmes targeting women)
Number of medical facilities improved	38	33	11
Number of education facilities improved	51 (in addition 13 schools have received computers)	91	94 (in addition 622 students applied to open school programme)
Number of water supply systems improved	65 (potable and irrigation)	34 potable, 8 irrigation	120 potable water 13 irrigation
Km of road upgraded	197.5km	38km	Quick Impact Projects (QIP) completed and all related to infrastructure rehabilitation
% Infrastructure project achieving >25% community contribution	85%	97%	95%
Number of medical staff trained	320	608	399
Number of people receiving direct medical support	183,970	7,031	Over 34,000 (also over 13,000 people received Reproductive Health training from an EU funded project implemented by a CIP IP)
Number of micro loans issued	15,739	12,800	337
% Repayment rate for micro-loans	99%	96.5%	Only G&G (Kahramanmaraş, Osmaniye and Adana) started micro-credit element by 2006. Repayment rates are not available yet
Average value of micro-loan (US\$)	364	600	840
% Women receiving micro-loans	49%	62%	Not available yet
Number of demonstration farms / agricultural trainers	48 agricultural trainers and 48 demonstration fields	297 demonstration farms / 17 trainers	541 demonstration farms
Number of farmers trained	2,697	3,870	Over 37,000 (also 404 beekeepers)
Number of livestock vaccinated	n/a	2,517	Over 500,000
Weight of high quality seed provided	14.8 tonnes	242 tonnes	1,011 tonnes
Number of co-operatives established	1 Development Resource Centre, 2 Agricultural Service Centres 6 Water Purification LLC's	17 co-operatives and 51 legally registered Community Based Organisations (CBO)	69 (including cooperatives, Village Development Associations and informal CBOs) 24 existing cooperatives also included in capacity building programme.

¹⁶ Total of US\$25 million allocated for BTC and SCP Construction Phase CIP and other community investments for the period 2003 to 2006

¹⁷ From 1 January to 31 December 2006

7.2.1 Azerbaijan

7.2.1.1 Construction Phase CIP

As part of construction phase CIP the following activities of note took place in 2006:

- Save the Children Foundation (SC) completed the **Community Development and Infrastructure Rehabilitation Programme** along the western part of the ROW which involved getting communities who had performed well in the first 2 years of the CIP (Star communities) to mentor those that performed less well (Nascent communities);
- Umid continued the **Potable Water Provision Programme**;
- Madad continued with the **School Connectivity and Global Citizenship Programme** providing schools with internet and giving basic computer literacy training;
- **Yevlakh Development Resource Centre** (DRC) provided English language and computer courses. Profit from the DRC machinery hire business, has provided approximately \$1,000 profit to date and has been used to support community development projects; and
- International Medical Corps continued the **Emergency Medicine Development Initiative** to improve the quality of ambulance care and hospital emergency medical services.

The final evaluation of the construction phase CIP Azerbaijan is planned for 2007.

7.2.1.2 Operations Phase CIP (CIP II)

The tender process for operations phase CIP was ongoing during 2006. New grant agreements are as follows (with name of the Implementing Partner in brackets):

- A **Community Development and Infrastructure Rehabilitation** in the eastern part of the ROW. Survey visits were carried out in 36 communities to assess potential Star and Nascent communities (Save the Children);
- The second phase of a **School Connectivity and Global Citizenship programme** (Madad);
- A **Rural Inclusive Education** Project in Yevlakh to assist children with developmental disabilities, 12 children with disabilities were selected for further mainstreaming into primary schools. Workshops were held with relevant parties and 2 children's books on disability were printed (IMC);
- A **Community Economics Education** programme (JAA); and
- A **Potable Water Provision** Programme. In 2006, plans were developed to install water purification facilities in 5 new communities (Umid).

7.2.2 Georgia

7.2.2.1 Construction Phase CIP

The construction phase CIP budget was split between investments in villages and investment in towns (Improved Schools Project only) near the ROW. Both programmes were implemented by Mercy Corps in the eastern ROW and CARE in the western ROW.

A final evaluation of CIP and ISP was carried out by a team of external reviewers in June 2006 with the purpose of assessing whether the programmes had achieved their primary development objectives and had been a successful vehicle for fostering positive relationships between BTC/SCP and communities. Findings showed that:

- CIP delivered tangible benefits to communities in great need, and thereby delivered business value for BTC/SCP;
- The most successful interventions were in infrastructure rehabilitation and agriculture; and
- ISP was arguably the most successful component of community investment. Schools became dynamic institutions within communities, which have provided fertile ground on which to build.

Case Study 7.2 provides more detail on selected programmes.

7.2.2.2 Operations Phase CIP (CIP II)

In early 2006, the tender process began for award of the operations phase of the BTC/SCP CIP (CIP II). Based on review of concept papers by both BP staff and representatives of the CIP Advisory Board, CARE, working with a consortium of 4 local NGOs, was asked to develop a full project proposal, drawing on lessons learned and recommendations made in the final evaluation of CIP.

CIP II was launched in August 2006 with the goal of enhancing positive relations between BP and communities along the BTC/SCP pipeline route through sustainable socio-economic development. Specific objectives are to improve livelihood security and employment and to strengthen civil society. Project themes to be carried out in 2007 are:

- Community mobilisation;
- Infrastructure rehabilitation;
- Economic development, including agricultural development, support for business start up and provision of micro credit; and
- Education and youth empowerment.

7.2.3 Turkey

7.2.3.1 Construction Phase CIP

The CIP Implementing Partners (IP) continued to engage local communities and local authorities in project activities. Through this engagement US\$9.3 million of additional funds were raised from other donors (EU, UN, government funds) which was put towards agricultural support in project villages.

IPs launched small grants projects funded by CIP for local associations and cooperatives in Kars and Erzurum. Based on the successful outcomes of these initiatives other IPs plan to launch similar small grant projects in 2007, as these projects have been shown to enhance local capacity and attract other funds to the region.

A final evaluation of the construction phase CIP was conducted in late 2006 by external reviewers that concluded the CIP projects were on track in terms of design, relevance, efficiency, effectiveness, impact and sustainability and were delivering additional benefits to the communities as intended. It was also noted the IPs have successfully leveraged additional funds from other bodies. The evaluation recommended continuing with all but one of the IPs during the operations phase of CIP. Discussions were held with the IPs to discuss the recommendations to determine the strategy for 2007 and 2008. It was decided during these discussions that CIP implementation in 2007-2008 will mainly focus on income generation/marketing and capacity development to ensure sustained results.

7.2.3.2 Operations Phase CIP (CIP II)

Several of the projects that had been funded during the construction phase were extended in 2006-Q3 due to positive feedback received during CIP evaluations. These were funded by the new CIP II operations phase budget. Progress achieved is as follows:

- **Ardahan:** IP International Blue Crescent Foundation (IBC) worked in 38 villages. Achievements included: over 23,000 animals vaccinated; 1,400 farmers trained; 7 tonnes of seed distributed; 51 fodder crop farms established; and 12 schools, 1 health clinic and 2 community centres improved. A proposal for a municipality sewage system and waste water treatment plant was developed by IBC which was approved for EU funds;
- **Kars:** IP SÜRKAL worked in 26 villages. Achievements include: over 3,000 farmers trained; 5,000 animals vaccinated; 98 tonnes of seeds distributed; 5 quick impact projects (small scale infrastructure) completed; 5 informal organisations were developed into formal village development associations and two project proposals, developed with technical assistance by the IP were submitted to the EU and funding has subsequently been granted;
- **Erzurum:** IP Ataturk University worked in 63 villages. Achievements include: over 90,000 animals vaccinated; c. 3,000 artificial inseminations carried out; 26 tonnes of seeds distributed; over 15,000 farmers trained; 20 strawberry farms established; 231 demonstration farms established; and 13 quick impact projects completed. Two projects were submitted to EU with the technical assistance of Ataturk University and funding granted; and
- **Erzincan and Gumushane:** IP Par Consulting worked in 49 villages. Achievements include: training of 825 farmers; 2,500 animals vaccinated; 15 tons of seeds distributed; 10 PC labs established; and 2,750 children received dental check-ups and dental care packs. 5 projects submitted by cooperatives with the technical assistance of the IP were approved by the EU, the Social Risk Mitigation Fund of World Bank and the Turkish government.

7.2.4 CIP Expenditures, 2006

At the start of the BTC and SCP projects, a sum of \$25m was put aside for Community Investment Programmes comprising: US\$8 million for both Azerbaijan and Georgia (each split 50% BTC and 50% SCP) and US\$9 million for Turkey (100% BTC). Expenditures for 2006 are summarised in Tables 7.5 and 7.6, together with original budget information, and the total spent to date from the CIP construction phase budget.

Table 7.5: Construction Phase CIP Budget and Expenditures (\$), 2003 - 2006

	Azerbaijan	Georgia	Turkey	TOTAL
CIP Budget	8,000,000	8,000,000	9,000,000	25,000,000
Total Spend to date (at end 2006)	7,800,000	8,000,000	8,927,712	24,727,512

Table 7.6: Summary of Construction Phase CIP Expenditures (\$), 2006

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	1,180,000	1,360,000	4,448,213	6,988,213
Actual	1,180,000	1,520,000 ¹⁸	4,188,694	6,888,694

¹⁸ Money was carried over from 2005 (where the budget had been under spent), although this underspend was not shown in the 2005 Annual Report (the 2005 figures showed what had been committed, not spent).

The original construction phase CIP agreement was for funding up to July 2006. In Georgia and Turkey, the final evaluation of the construction phase CIP highlighted that it was achieving its goals and, as a result, business value in terms of creating goodwill and support among communities along the pipelines route. A further programme (CIP II) was therefore drawn up to cover the period 2006 - 2008. US\$8.25 million was allocated for Azerbaijan, US\$4.9 million for Georgia and US\$6.2 million for Turkey. An increase to the Turkey budget is currently being considered.

Table 7.7 shows the amount from the CIP II budget spent in 2006. Note this is in addition to the expenditure from the construction phase budget in shown in Table 7.6.

Table 7.7: Summary of BTC/SCP CIP II Expenditures (\$), 2006

	Azerbaijan	Georgia	Turkey	TOTAL
Actual 2006	206,524	1,148,952	896,039	2,251,515

7.2.5 CIP II Budget, 2007

The budget for BTC/SCP CIP II in 2007 is US\$2.04 million in Azerbaijan, US\$1.33 million in Georgia and US\$3.5 million for BTC Turkey (from the new operations phase CIP II funds).

8 PROJECT COMMUNICATION

8.1 CONSULTATION APPROACH

Consultation and communication with various Project stakeholders, from communities to Government organisations, was ongoing.

A key objective of Project consultation is to avoid situations that could lead to complaints. Where complaints do arise, as is inevitable for a project of this size and complexity, effort is made to ensure they are resolved promptly. Information on complaints raised by project affected communities is detailed below.

Across the Project, significant efforts are also made to engage other Project stakeholders, such as national NGOs, government ministries and the local and national media. Information on meetings held with key stakeholders in 2006 is provided below.

8.2 AZERBAIJAN

8.2.1 Project Affected Communities

BTC and CCIC (the construction contractor) Community Liaison teams continued to work closely together in the field as construction activities came to a close. CCIC Community Liaison Officers (CLO) focused on closing out all open complaints and on issues around reinstatement. BTC CLOs focused on operational issues, such as informing communities of land use restrictions during Operations (which included the distribution of a land use restrictions pamphlet to all land-owners and users).

A drawing competition was held for children living in the communities alongside the pipelines. Over 200 entries were submitted of which 14 entries were selected for display in the Azerbaijan Pipelines 2007 calendar. The calendar contains key messages on pipelines safety, security, land use restriction as well as contact details of CLOs. The calendar is being distributed both externally (community members, schools, local executive authorities, SSPS etc.) and internally (CLOs, Pipeline technicians, Security and Horse Patrol staff).

The Social Team initiated monthly stakeholder meetings along the pipeline route with the participation of BP security, local law enforcement, CLOs, SSPS, pipeline technicians, and municipal government and village representatives. These will cover a broad spectrum of pipeline issues. Regular meetings will start in January 2007.

Interagency meetings were held with SSPS, police and municipalities. The main purpose of the meetings is to increase awareness on pipeline security as well as update on joint activities planned with local law enforcement structures.

8.2.1.1 Complaints

The CLOs that used to work for Construction Team now work for Operations, thus capitalising on their long term relationships with Project Affected Communities. Their presence and experience means that in many instances, issues are successfully resolved before becoming a formal complaint.

During 2006, 107 new complaints were received, most of which related to irrigation, damage to infrastructure and land issues. At the end of the reporting period, 7 of these 107 complaints remain unresolved (see Table 8.1).

Table 8.1: Summary of Complaints (received by BTC/SCP and the Contractor), 2006

Complaint Category	Complaints received	Complaints open at end of 2006
Land issues	19	4
Land compensation	12	3
Damage to property	8	1
Irrigation	37	5
Damage to infrastructure	27	5
Reinstatement	7	3
Human Rights Breach	1	0
Employment	7	0
Access Roads	1	0
Waste	1	0
Construction (ops)	1	0
TOTAL	121	21

Complaints management was transferred from the Construction Social Team to the Operations Social Team on 1st September 2006. Included in this handover of complaints were 14 complaints that were open at the end of 2006, but are not shown in Table 8.1, as they were received before 2006. Of these 14 complaints, 6 relate to irrigation, 7 to infrastructure damage and 1 relates to damage to property. Four of these complaints are on course to be resolved in early 2007. The Operations Social Team recognises that extra resources are needed to expedite resolution of these complaints and a strategy and task team has been drawn up to address them. Several of the complaints have complex issues involving other parties beyond the complainant and BTC/SCP, which were inherited by BTC/SCP from the CCIC complaints log on 1st September 2006.

CLOs and land acquisition teams continued to resolve concerns and/or complaints. If the land team were unable to satisfy the query, the complainant was requested to submit a formal letter outlining their concerns.

The Centre for Legal and Economic Education (CLEE), a legal NGO, continued to provide legal assistance to individual complainants and monitoring of the additional compensation payment process in banks during the Supplementary Land Acquisition Programme.

8.2.2 NGOs and Technical Organisations

During 2006, meetings were held with a broad range of national (Madad, Hayat, Umid) and international NGOs (International Medical Corps, International Rescue Committee, Counterpart International, Save the Children) to discuss community projects. Meetings were also held with OSI to follow up on NGO monitoring and audits.

8.2.3 Government

Dialogue continued with government ministries including the Ministry of Ecology and Natural Resources (MENR) and Ministry of Agriculture on subjects ranging from bio restoration to treated water disposal.

A meeting was held with the Ministry of Education, members of the National Parliament including the Chairman of the Parliamentarian Commission on Education and Science, rectors of 4 national universities to present innovations on human development and sustainable income generation projects.

The 5th Biodiversity Competition award took place in December 2006. 82 applications were submitted in two categories: The Best Biodiversity Project and The Best Biodiversity Article and Video Material. The award presentation ceremony was attended by a large group of representatives of all relevant organisations, government authorities, NGOs and the media.

8.3 GEORGIA

8.3.1 Project Affected Communities

BTC and SPJV (the construction contractor) Community Liaison teams continued to work closely together in the field as construction activities came to a close. SPJV CLOs focused on closing out all open complaints and on issues around reinstatement. BTC CLOs focused more attention on operational issues, including informing communities of land use restrictions during operations. In addition to regular liaison activities, communication with the communities included:

- A 2006 calendar focusing on land use restrictions was distributed to all villages along the ROW;
- Distribution of a pamphlet explaining land hand back and land use;
- Two project updates: In April/May information on current project status and continued land use restriction information. In November, the focus was on project completion, exit of SPJV CLOs, and information on how to continue to contact BP during operations;
- A project update delivered to those villages affected by the Kodiana projects to provide a construction update and to explain the programme of roads repairs that will take place; and
- A drawing competition for selected schools along the ROW. Students were asked to draw pictures representing various land use restrictions. The drawings will be used in the 2007 safety and restrictions calendar.

8.3.1.1 Complaints

The construction contractor (SPJV) complaints logs were amalgamated and consolidated with BTC/SCP complaints logs during 2006-H1. All associated records have also been handed over from SPJV to BTC/SCP. One log containing all complaints is now held centrally by BTC/SCP.

In November 2006 the consolidated project complaint log was archived and all open complaints transferred into a new BP operations complaint log for resolution. Open complaints and those complaints received after November 2006 are considered Operations complaints and are now dealt with directly by BP.

Table 8.2 presents resolution status of complaints as of the project (construction phase) log close out date (17th November 2006). The total number of complaints received until the close out of the logs was 3,641 of which 250 were received during 2006. At the time of transfer, 26 complaints remained open. Note that the variance in complaint numbers from earlier reporting is a result of this integration.

Table 8.2: Project Phase Complaints Log Statistics at Closure (17 November 2006)

	Total number received to date	Number of complaints resolved	Total % of complaints resolved	Number of complaints pending
Additional land occupied by construction (access roads and construction corridor)	883	873	95%	10
Bees	273	273	100%	0
Community Based Organisation compensation	17	17	100%	0
Cracked houses	198	198	100%	0
Damage to community infrastructure (roads, electricity, etc.)	79	73	92%	6
Damage to household infrastructure and assets (walls, fences, livestock)	94	94	100%	0
Employment	46	46	100%	0
Informal user	5	5	100%	0
Inventory disagreement/re-inventory request / compensation calculation	82	82	100%	0
Irrigation channels	216	215	99%	1
Land Handback	20	17	85%	3
Miscellaneous	64	64	100%	0
Nuisance (dust, noise, etc.)	48	47	98%	1
Orphan land	670	667	99%	3
Other land issues	845	843	99%	2
Parcel ownership or size (including lessees)	101	101	100%	0
TOTAL	3,641	3,615	99%	26

Table 8.3 shows the status of complaints registered in the new operations complaints log, and includes the 26 open complaints inherited from the project. In addition, 9 new complaints were received.

Table 8.3: Operations Phase Complaints Log Statistics (at end December 2006)

	Total number received to date	Number of complaints resolved	Total % of complaints resolved	Number of complaints pending
LAND				
Additional Land	11	2	18%	9
Irrigation	2	1	50%	1
Land Handback	4	0	0%	4
Orphan Land	4	1	25%	3
Other Land Issues	1	0	0%	3
Parcel Ownership or Size	3	1	33%	0
TOTAL	25	5	20%	20
SOCIAL				
CBO Compensation	1	1	100%	0
Community Infrastructure	6	1	17%	5
Employment	1	1	100%	0
Household Infrastructure	1	1	100%	0
Nuisance	1	0	0%	1
TOTAL	10	4	40%	6

Approximately 70% of Operations staff have received social awareness training, which includes information on how to handle a third party complaint, should any staff receive one.

8.3.2 National NGOs and Technical Organisations

The second cycle of monitoring and auditing by Georgian NGOs (facilitated by Eurasia Foundation) has been completed. Four NGO working groups (for Waste Management, Reinstatement, Oil Spill Response, Cultural Heritage) prepared the monitoring reports, which were reviewed by BP, who provided their comments and responses.

HIV programmes were also active in target villages and provided a conduit of information between BP and communities.

8.3.3 Government Ministries and Departments

Cooperation with Government of Georgia continued through regular weekly meetings and monthly management meetings with GIOC discussing issues ranging from Construction Rights Agreements to Safety Zones. In addition there were a number of meetings with different government bodies to discuss ongoing issues.

BTC continued supporting the government in solving social issues along the pipeline and co-funded Akhaltsikhe local government's potable water project.

BTC has also maintained dialogue with the Ministry of the Environment (MoE) and Tbilisi Municipality on the plans for development and upgrade of the Iagluja landfill, and for the design and construction of new waste facilities.

BTC continues to hold discussions with the Centre for Archaeological Studies (CAS) regarding the completion of the Project archaeological work programme.

During 2006, the government of Georgia received another portion of the BTC Grants Programme Agreement with the Government of Georgia in October 2004. During 2006-H2, a total of US\$15 million was disbursed, bringing the total disbursed to US\$24 million of the US\$40 million grant. Use of grant funds is restricted to broad themes aimed at poverty reduction and is to be reported publicly.

8.3.4 Media

During 2006, various media activities took place in Georgia including:

- A media round table arranged for local media covered a general BP Business and social projects update;
- TV interviews during BP Georgia General Manager's visit to a school together with the Minister of Education and Science to mark successful implementation of schools computerisation project under BP's Grant Programme;
- The 4th BP Biodiversity Competition award ceremony was held, with participation of BP/BTC management, Government, scientists, local NGOs and media;
- A press conference was held marking BP's 10 year anniversary in Georgia;
- Print and television interviews given as part of a SME Policy Development Project was launched (RDI/IFC financed) and another SME support project in Borjomi (in partnership with GTZ, a development agency owned by the German government)¹⁹;
- Opening ceremonies for three branches of the ProCredit bank (RDI/EBRD financed); and
- An opening ceremony for St. George's Church (part of Tadzrisi Monastery), renovated using a grant from BTC/SCP was covered by local and national media.

8.3.5 Donor Organisations

BTC continued to meet with various development organizations in Georgia including: UNDP; USAID; World Bank; IFC, Millennium Challenge Commission Georgia; and several national and international NGOs.

BTC, in collaboration with number of international organizations continues implementation of number of projects in Georgia, including: solid waste management programme as part of the Greater Borjomi Initiative¹⁹ implemented by GTZ; SME Policy Project in partnership with the IFC; and support to SME in partnership with EBRD.

8.4 TURKEY

Prior to Provisional Acceptance (PAC) on 28th July, BTC Project Directorate (Botaş) was primarily responsible for Project communications, although BIL also had a limited role relating to their own business communications. From 29th July onwards, Botaş International Ltd (BIL), the Operator in Turkey assumed primary responsibility, although Botaş continued to have a role in relation to land-exit, closing out construction related complaints etc.

8.4.1 Project Affected Communities – Pre-Provisional Acceptance

8.4.1.1 Botaş

In 2006, prior to Provisional Acceptance, Botaş and contractor community liaison staff visited:

- 126 communities along the ROW;
- A village around Ceyhan Marine Terminal for the final monthly meetings; and
- 15 project-affected villages in the vicinity of the pump stations.

During the meetings CLOs, took the opportunity to underline the implications of linefill, including the importance of land use restrictions and security. More details are given in the 2006-H1 report.

¹⁹ The Greater Borjomi Initiative (GBI) was set up by BP under the Regional Development Initiative in 2004, and allocated a budget of approximately US\$4 million. The GBI aims to contribute towards the socio-economic development of the Borjomi region.

8.4.1.2 BIL

BIL consultation activities until provisional acceptance focused on the area around Ceyhan Marine Terminal (where the BIL administration centre is located) and employment issues. Seven community meetings were held in four of the villages in the vicinity of the terminal. The subject of the meetings included local employment and procurement expectations and marine terminal restrictions. In July 2006, BIL carried out 30 meetings in villages to assist the sub-contractors to fill unskilled positions at the pump stations, IPT1 and CMT.

8.4.2 Project Affected Communities – Post-Provisional Acceptance

A breakdown of meetings held by BIL from PAC to the end of 2006 is shown in Table 8.4.

Table 8.4: BIL Community Meetings, (29th July - 31st December 2006)

BIL Community Meetings	No. of Village Meetings
Introductory meetings	215
Local employment meetings at facility villages	29
Consultation about restrictions on Ceyhan Harbour area	2
Consultation with the fishermen	2
Other (Women's, OSR Drill, Traffic Safety, Land Use)	4
TOTAL	252

In addition to the meetings shown in Table 8.4 Botaş Community Relations Officers and DSA held community meetings relating to land-exit as well as 748 individual meetings to obtain amicable land exit protocols.

8.4.3 Project Affected Village Complaints

8.4.3.1 Botaş

The majority of complaints received in 2006 by Botaş related to the land-exit process. During meetings with landowners and users to determine their satisfaction with the land-exit process, concerns were raised relating to reinstatement, outstanding payments for damages or land rental, disagreements about land borders etc. These issues have been recorded and verification of satisfactory close-out has been checked as far as possible by BNB who have replaced the Rural and Urban Development Foundation referenced in previous reports (see also Section 9.3.6) and BTC Co. This process led to a considerable increase in complaints during 2006 (see Table 8.5). However, as at end 2006, there were only 5 open complaints which related to infrastructure damage and reinstatement.

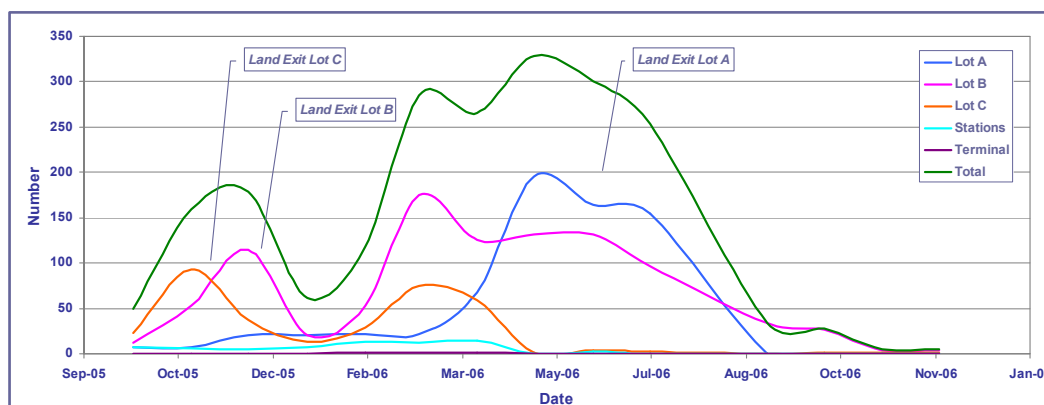
Table 8.5: Botaş Complaints: Total Number Open at the end of every month, 2006

Location	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Lot A	21	22	22	67	196	164	154	0	0	0	0	0
Lot B	21	53	175	125	131	131	96	29	34	27	4	4
Lot C	13	29	75	59	1	4	3	0	0	1	1	1
Stations	7	13	12	14	0	2	0	0	0	0	0	0
Terminal	0	1	1	1	0	0	0	0	0	0	0	0
TOTAL	62	118	285	266	328	301	253	29	34	28	5	5

Delay in the closure of complaints during 2006-Q1 and 2006-Q2 was due to the fact many complaints related to reinstatement in areas that were inaccessible for investigation until snow melt, which in some areas did not occur until June.

Figure 8.6 shows the correlation between the start of the land exit process when reinstatement teams commenced work on addressing complaints and the number of open complaints.

Figure 8.6: Relationship between Land Exit and Cumulative Open Complaints



After the follow-up teams have completed the second stage of follow-up meetings (i.e. following up on more recently held land exit meetings and previously unresolved cases) BNB, with the assistance of BTC E&S assurance field staff and additional resources from Ankara University, will verify that the complaints have been closed satisfactorily.

8.4.3.2 BIL

During 2006 BIL received 52 complaints during 2006, 24 of which related to employment. The number of employment complaints is due to high expectations amongst those formerly employed during construction and is being addressed by BIL by community consultation, especially near the major AGIs where this issue is most prevalent. The consultation is to advise communities of the number of unskilled positions in the pump stations and from which village unskilled employees are selected and why. BIL also held meetings in AGI project affected villages with the contractors to fill unskilled positions. The 12 complaints relating to reinstatement (in relation to the land exit process) were recorded by BIL and passed onto Botaş for resolution (who in turn notify BIL when the complaint has been resolved).

A breakdown of the complaints received by BIL by category is provided in Table 8.7. All operations related complaints were closed. 20 of the complaints listed in Table 8.7 were received by BIL, but passed on to Botaş as these related to construction phase issues. BIL are awaiting confirmation of closure status from Botaş.

Table 8.7: Total Number and Category of Operation Complaints received, 2006

Subject	Number
Employment	24
Reinstatement (related to Construction)	12
Access to land and other resources	2
Damage to property and land	2
Damage to infrastructure and community assets	3
Dust	1
Payment to service provider	5
Local Procurement	3
TOTAL	52

8.4.4 Stakeholder Meetings

8.4.4.1 BTC Co.

During 2006, BTC Co. held 98 meetings with stakeholders in Turkey (see Table 8.8).

Table 8.8: BTC Co. Stakeholder Meetings, 2006

Type of Meeting	No. of Meetings
Donor	11
Focus Group	2
Government (Related to E&S Activities)	21
Implementing Partner	43
Internal	8
Lender	5
Media (Related to E&S Activities)	2
NGO	6
TOTAL	98

In addition to those shown in Table 8.5, BIL held 46 introductory stakeholder meetings in 2006 (See Table 8.9).

Table 8.9: BIL Stakeholder Meetings, 2006

Province	Stakeholders
Adana	<ul style="list-style-type: none"> • Union of Governors; • 5 Municipalities (Kurtkulagi, Kosreli, Mustafabeyli, Ceyhan, Yumurtalik); • Mustafabeyli Irrigation Union; • State Hydraulic Works; • Provincial Private Administration; • 2 Business Associations (Adana and Eastern Mediterranean); • Sub-governors (Ceyhan and Yumurtalik); and • CIP partners in Yumurtalik.
Osmaniye	<ul style="list-style-type: none"> • Kadirli sub-governor; • Provincial Private Administration; • Kadirli Gendarme; and • Kadirli Police Department.
Kahramanmaraş	<ul style="list-style-type: none"> • G&G Consulting Company (CIP implementing partner); and • 3 Gendarmes (Geben, Goksun, Tahirbey).
Sivas	<ul style="list-style-type: none"> • Altinyayla National Education Branch; • 2 Sub-governors (Altinyayla and Ulas); • Local media; • Ulas National Education Branch; • Ulas Health Group Branch; • Ulas General Directorate of Agricultural Enterprise; • Sivas governor; • Sivas Provincial Branch of the Ministry of Culture; • Sivas Provincial Branch of the Ministry of Education; and • Gendarme (Zara and Imranli).
Erzincan	<ul style="list-style-type: none"> • Yaylakent Gendarme.
Erzurum	<ul style="list-style-type: none"> • Karaorgan Gendarme; • Erzurum DSA Office; • Erzurum Governor; and • 2 Gendarmes (Gaziler and PT2).
Ardahan	<ul style="list-style-type: none"> • 5 Gendarmes (Camlicatak, Ardahan Centre, Damal, Hanak, Sogutlukaya); and • Damal Municipality.

9 LAND ACQUISITION AND COMPENSATION

The land acquisition and compensation process, land hand-back and livelihood restoration activities are described in the Resettlement Action Plan (RAP). This Chapter of the report gives a summary of the process at the end of 2006.

9.1 AZERBAIJAN

9.1.1 Acquisition and Compensation

Construction of the pipelines is complete, with reinstatement of the ROW and most of the off ROW facilities (borrow pits, etc.) nearing completion. The pipeline ROW primary land acquisition and compensation process in Azerbaijan is substantially complete.

As construction and reinstatement work was not completed by December 2005, the end date of previous land agreements, the Project initiated a Supplementary Land Acquisition Programme (SLAP) in January 2006. Agreements were extended until the end of June 2006 for the whole length of ROW (SLAP 1) and further until December 2006 for the area from KP0 to KP243.5 (SLAP 2). Full details of this process are given in 2006-H1 report.

Actual payment of compensation for the first phase was completed in January and for the second phase in June. Compensation has been calculated using the same rates as described in the original RAP, plus an inflation based increase.

Table 9.1: Land Acquisition Statistics and Data (cumulative up to 31st December 2006)

Event/Activity	Status	% of Total
Primary Land Acquisition:		
Payments made to owners / users (% of total number of owners / users)	Bank accounts have been established for all people, in all districts, except for 9 unavailable landowners (compensation for these owners has been retained until such time as they are located).	99%
Supplementary Land Acquisition Programs:		
• Notification Letters Sent	SLAP 1: 4,753 parcels (from a total of 4,838 ²⁰)	98.3%
• Land Use Agreements Extended	SLAP 2: 1,355 parcels (from a total of 1,370)	98.9%
• Compensation Paid		
Number of lots reinstated and handed back to owners/users		
	Land Hand back to landowners, as documented by Exit Agreements, has almost been completed. 6,574 land plots were handed back to the land owners/users.	97.5%

Some post agreement cases attributed to technical errors (e.g. errors in formal District Land Distribution Maps used as a basis for Land Acquisition Programme which only became apparent when land clearance activities commenced) are ongoing.

There are 27 landowners that due to permanent land acquisition for Above Ground Installations (AGI) had a greater amount of land affected than what they were actually compensated for. There were several possible reasons for this, e.g. the remaining land plot was so small that it was not cost effective for farming, or problems with irrigation due to the siting of the AGI. In accordance with SRAP recommendations, the

²⁰ This is all land parcels except municipality and state owned parcels which were dealt with centrally by the Head of Municipality or District Executive Power.

Project prepared a mitigation plan for compensation of such cases. BTC/SCP have reviewed the claims and inspection of the affected areas was carried out with the involvement of external experts from State Land Cartography Committee (SLCC) and State Melioration Committee. The basis for compensation was the same as applied during the Land Acquisition Programme. Resolution status of these 27 owners of orphan land is as follows:

- Complaints by 3 owners of orphan land (block valve AB15) were resolved by restoring irrigation (they all had rejected the offer of permanent sale);
- Additional purchase agreements and compensation payment for owners of 14 orphan land parcels has been prepared for signature in January 2007;
- 5 agreements with owners of orphan land are due to be signed in February 2007 once the correct legal documents (e.g. valid claimant ID) are submitted;
- The decision on claims of 3 owners of orphan land (block valves AB06 and AB22) are under consideration by the Project and the final decision is expected in February 2007;
- 1 agreement with a landowner was not signed (block valve AB10) as the land was not proved to be orphan land; and another agreement with landowner was not signed (block valve AB16) as the landowner refuses to sell the affected land due to non-availability of other land parcels for purchase in the area. These cases are under consideration at present.

9.1.2 Land Hand Back

The Contractor will close out the Land Exit Agreements when the relevant land has been returned to the specified standard, and will obtain the landowner's or land user's signature on the Exit Agreement that the required work and reinstatement is completed. Outstanding cases often relate to more complex issues such as orphaned land, land-owners that cannot be traced, areas awaiting additional reinstatement work and refusals to sign because of complaints relating to matters such as disturbed irrigation or damage to infrastructure (see Section 8.2.1.1). Work continues to resolve these issues.

9.1.3 Additional Land Acquisition

A change from the access strategy to the ROW during operations is being drafted. This may involve some additional land-take and in this case the Land acquisition process will follow RAP principles.

9.2 GEORGIA

9.2.1 Acquisition and Compensation

All construction activities on BTC and SCP Pipelines are 100% complete, with reinstatement of the ROW and many off ROW facilities (borrow pits, etc.) nearing completion. A summary of land parcels for which compensation has been paid is shown in Table 9.2.

Table 9.2: Number of Land Parcels for which compensation has been paid (to end December 2006)

District	Private land		High Mountain Village Land		State Leased land	
	Required	Actual	Required	Actual	Required	Actual
Total	3,585	3527	204	204	234	223
% Complete		98%		100%		95%

9.2.2 Land Registration and Ownership

BTC has registered no additional cases of disputed ownership through the complaint system. Four new cases have gone directly to court in 2006-H1. The largest issue on this subject continues to be a case of privatisation of 78 land parcels which were State Owned and were allocated to the Project by the district Authorities

The Association for the Protection of Landowner Rights (APLR) has provided information on 17 cases where they believe the ownership information provided by the State about private parcels may have been incorrect. The situation has been resolved in favour of 10 of the owners and 7 remain outstanding. State confirmation and/or Court decisions will be required to resolve the outstanding cases.

9.2.3 RAP Fund

The RAP Fund activities in Georgia are now complete, with the end of the Vulnerable People's Initiative (VPI) in December 2005. Evaluation reports from both implementing partners (CARE VPI-West and Mercy Corps VPI-East) are summarised in the 2006-H1 Report.

As per the recommendation of the September SRAP visit, BTC CLOs will continue to watch for impacts on particularly vulnerable people, but with land handback beginning shortly, BTC expects that any impacts on vulnerable people have been mitigated.

9.2.4 Land Use Return

The agreed strategy for the hand back of land use to the original owners and for acquisition of use restrictions within the protection zone is being implemented.

The process has continued in Tetrtskaro, Tsalka and Borjomi Districts, with the appropriate information packages and offers distributed to a total of 1,894 landowners (approximately 55% of total for entire route). Follow up meetings have taken place, with 1,586 (96%) owners agreeing the offers. A total of 991 (52% of distributed agreements and 28% overall) owners have completed the necessary formal documentation and received payment. The process will continue during 2007.

9.3 TURKEY

9.3.1 Acquisition and Compensation

The initial land acquisition and payment process is near completion. Outstanding issues to finalise the initial land acquisition process relate to Article 10 cases and misidentification of customary land owners (see 2006-H1 and previous reports). Table 9.3 provides a status update at the end of 2006.

Cadastral surveys of the 37 villages have been completed. The Cadastral Office has since disclosed their findings to affected land users in each village. An evaluation has been completed which describes how payments received by villagers compares to what is now owed to landowners by DSA. BNB, on behalf of BTC, has been involved in the monitoring of this process to ensure an appropriate compensation procedure is developed. Compensation will be carried out in 2007.

Table 9.3: Land Acquisition and Compensation Progress (December 2006)

Indicators	Information Provided by Botaş DSA ²¹ (DSA Monthly Report: December 2006)		
	Total	Current	% Complete
Title Deed Registration	9,470	9,222	97.38%
Resolution of Article 10 Cases	3,116	2,977	95.54%
Overall Land Acquisition (Excluding item iv and v)	13,369	12,912	96.58%

²¹ BTC Co. have not yet verified the accuracy of this data

Indicators	Information Provided by Botaş DSA ²¹ (DSA Monthly Report: December 2006)		
	Total	Current	% Complete
Title Deed Registration for Power lines	3,377	2,882	85.34%
Additional Land Acquisition (Installation Tolerance)	1,095	471	43.01%
Transfer or Rights to Land Status (Note. Number represents parcels acquired. Those subject to transfer, owing to different configurations, are c. 18,200)	16,835	0	0.00%

Botaş/DSA are acquiring additional land in response to as-built survey results and installation tolerance requirements. By the end of 2006, 43% of additional land had been acquired. BTC Co. will continue to monitor this process closely. BNB have not reported any non-compliance with RAP and World Bank O.D. 4.30 principles.

9.3.2 Land Management during Operations

BIL and Botaş/DSA have developed a Land Management Plan which outlines future roles and responsibilities between DSA and BIL.

9.3.3 Land Exit

There are 12,499 land parcels that will be subject to land exit agreements (more details on land exit process in 2006-H1).

As at end 2006 land exit negotiation meetings had been held with landowners and users of 8,212 land parcels, and land exit is 64% complete. During these meetings agreements have been signed on 7,972 parcels (97% of negotiated parcels). Agreements were not reached during negotiations for 330 land parcels for various reasons relating to disagreement on how the land has been reinstated, perception of an unfulfilled commitment, an unclosed construction impact etc. The breakdown of these reasons by Lot is provided in Table 9.4.

Table 9.4: Reasons for Non-agreements by Lot

	Lot A	Lot B	Lot C
Total Agreements signed	2,880	3,370	1,622
Reason for non-agreement:	0	0	0
• Reinstatement	52	21	1
• Land Compensation	239	1	1
• Outstanding complaint/commitment	6	4	0
• Unresolved construction impact	0	2	0
• No reason provided	0	3	0
TOTAL	297	31	2

Follow up meetings with the landowners/users to resolve the issues identified in Table 9.4 are ongoing.

BTC aims to monitor 100% of the first round land exit meetings through the BTC E&S Assurance Officers, BNB and additional resources from the Agricultural Department of Ankara University.

9.3.4 Transfer of Land Rights

A pilot exercise was conducted to test mechanisms for the transfer of rights in Sariz District in 2006-Q3. A due diligence report was prepared by BTC and given to Botaş DSA. The report identified a number of non-compliances (punch list items) which the DSA have used to communicate to other regional offices to resolve prior to further due diligence activity. Transfer of Rights activity will be conducted on a District basis, with due diligence reviews immediately preceding Transfer of Rights to Land using two Official Acts: 1) private/customary owned land; and 2) state/forest owned land.

9.3.5 RAP Monitoring

9.3.6 Internal Monitoring

BNB (formerly RUDF)

BNB continued to monitor both the land acquisition process and construction impacts on communities.

In 2006 BNB visited 188 villages to observe the land exit process, complaints, additional land acquisition and misidentified customary ownership consultation. Generally the BNB findings from the monitoring of the land exit process were positive.

In 2006 BNB staff investigated 37 complaints in Lot C and 118 in Lot B. During land exit monitoring in Lot A, 155 complaints were observed by BNB which were recorded and logged into the Project complaints system. A further 252 complaints were investigated in February relating to customary ownership. Following the completion of the Priority Cadastral Works notification, a more comprehensive consultation exercise was conducted between BNB and DSA in July 2006. This consultation programme reviewed c. 400 complaint situations. The compensation plan referred to in Section 9.3.1 was developed as an outcome of the consultation programme.

Household income surveys by Ankara University

Full details of the Household Income Surveys report carried out by Ankara University are given in 2006-H1. This is the first annual replicate household income survey on almost a third of all affected villages.

Fishermen Monitoring

The final monitoring survey was undertaken in Golovasi in March 2006. The results from this study are reported in the 2006-H1 report.

A decision was made to not undertake any additional formal monitoring and evaluation activity in 2006 due to the on-going court cases (refer to the next section) as some fishermen appear to be purposefully providing mis-information regarding fish catch, income etc. to support their court case. Consultation with Golovasi fishermen is ongoing and the Golovasi Fishing Cooperative and Muhtar are taking an active role in CIP implementation which may help to resolve conflicts in the area.

Status of Yumurtalik and Golovasi Fishermen Lawsuit

The fishermen from Yumurtalik and Golovasi have applied to the courts with a claim that Project impacts on local fishing grounds has resulted in a 100% decrease in income, for which they have not been fully compensated by the Project. A court hearing was held on 28th December but due to the absence of the Judge on the day and a request from BTC Co. lawyers for a time extension it has been postponed until the 22nd February 2007. The Plaintiff's claims are summarised as follows:

- The construction phase of the terminal caused a fall in the number of fish species in the vicinity of the terminal;
- The area is affected by pollution, some of which is arising from the BTC Project; and
- Fishermen are affected by the BTC Co. and Botaş Security and Operating Zones.

10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS

There are two sets of health and safety statistics in 2006: those relating to the BTC construction phase and those relating to BTC operations phase. This reflects the fact that whilst some areas of BTC were under the control of operations, simultaneously work by the construction team was ongoing (mostly in Turkey). This Chapter of the report is divided into two accordingly.

Whether construction or operations related, H&S performance is reviewed on an ongoing basis and monthly reports are produced for both management and partners

Work carried out by the construction team was limited, especially during the second half of 2006. A summary of Health and Safety Performance is given in Table 10.1.

Table 10.1: Comparison of BTC and International Industry Safety Performance

	BTC Statistics for 2004	BTC Statistics for 2005	BTC Statistics for 2006	IPLOCA Statistics for 2004
Contractors submitting data	11	9	5	56
Total man-hours	63,784,499	23,477,749	3,407,082	650,123,559
Project Reportable Fatality	6	1	1	34
DAFWC	30	13	1	2,247
DAFWCf rate	0.10	0.11	0.06	0.69

Notes: IPLOCA – International Pipeline and Offshore Constructors Association
200,000 man hours is used to calculate DAFWC frequency

10.1 H&S OUTPUTS (CONSTRUCTION)

The health and safety statistics information presented in the 2006-H1 report were partially incorrect, and only shared what is termed 'Project reportable' incidents. Project reportable is a term used to define those events over which BP has direct control, and therefore does not include Botaş and BIL incidents. This led to the unintentional omission of reporting a fatality of a Botaş member of staff in January 2006. This occurred on the evening of 3rd January while linefill work was being undertaken at Block Valve Station 8 (KP 94.5) in Turkey. Eyüp Taş a 37 year old Turkish vehicle driver, employed by Botaş as part of the linefill crew, was fatally injured when he fell approximately 60 cms from the back of a Ural truck. Cause of death was head injuries sustained in the fall.

The incident happened whilst plans, involving all crew members, were made to move to a new monitoring point. However Eyup entered the rear of the vehicle, apparently to collect some food, without informing the truck driver or supervisor of his intentions. He was exiting the back of the truck carrying food in both hands, as the truck started to move, and fell the short distance to the ground, sustaining fatal head injuries. No safety device was installed to alert the driver that the rear door of the vehicle was open.

An extensive investigation was carried out and key lessons learned were that: even a fall from a small height can prove fatal; that the 'One hand on the handrails at all times' philosophy within the workforce should be emphasised; and the 'buddy system' to be aware of where work colleagues are should be reinforced.

A corrected version of the 2006-H1 H&S Chapter will be placed on www.bp.com/caspian.

A summary of the Health and Safety performance for construction during 2006 is shown in Table 10.2.

Table 10.2: Project Performance Outputs, 2006

Project Performance Outputs	Year to Date	Project to Date
Man-hours	3,407,082	110,389,902
Kilometres Driven	5,281,218	211,776,623
Vehicle Accidents	4	414
Fatalities	1	10
DAFWC	1	56
Medical Treatment and Restricted Work	2	277
Recordable Illnesses	0	287
Total Recordables	4	630
First Aid Cases	9	1,263
Near Misses	29	815

Details of the three other significant incidents (recordables) that occurred during 2006 are as follows²²:

- A DAWFC occurred at PT4, whilst a Botas employee was transporting valves with a forklift truck and the forklift slid and turned onto its left side. This resulted in the broken rib of the employee. After stopping the work, a preliminary check was carried out by the site doctor and the injured person was sent to hospital for treatment.
- A Medical Treatment case when a Contractor (Bilen) employee was travelling to Sivas in a private bus (Dadas Turizm, not related to the Project). The bus driver lost control of the bus due to icy road conditions and the bus slid onto its right side in an embankment near Imranli. The incident resulted in one passenger receiving medical treatment for a broken toe.
- A medical treatment case when a minibus at Kova Camp reversed into a BTC Project employee standing behind the bus. The employee suffered abrasion on his knees and hands but no other injury. The vehicle's reverse alarm was working, but was not loud enough to be heard from 3 meters.

10.2 H&S INPUTS (CONSTRUCTION)

Inputs such as STOP observation cards and ASAs far exceeded the target, whilst safety training hours were below target, although given the stage of the project and recruitment activity it was always anticipated that it would be difficult to sustain this target since the vast majority of workers had received their H&S training in earlier year/s.

Table 10.3: BTC Health and Safety Performance against 2006 Targets (Construction Phase)

Performance Indicator	2006 Target	2006 Actual
Inputs		
Advanced Safety Audit (ASA)	600	1,828
STOP Observation	3,000	3,345
Safety Training Hours	4,000	2,902

²² This supercedes information given in the 2006-H1 report

10.3 H&S STATISTICS (OPERATIONS)

During the reporting period, BTC Operations recorded zero recordable injuries which is a significant achievement taking into consideration that the number of man-hours increased twofold in 2006 and that all H&S targets were increased.

Table 10.4: BTC Health and Safety Performance in 2006 (Operations Phase)

Performance Indicator	2005 Target	2005 Performance		2006 Target	2006 Performance	
		BP	BIL		BP	BIL
Man-hours	n/a	605,971	1,342,040	n/a	1,244,352	1,958,959
Km Driven	n/a	2,446,826	507,070	n/a	6,029,156	3,568,746
Outputs						
Fatality	0	0	n/a	0	0	0
DAFWC frequency	0.06	0	n/a	0.02	0	0
RINJ frequency	0.46	0.99	n/a	0.35	0	0
High Potential Incident (HiPo) frequency	0.08	0	n/a	0.01	0	0.10
Traffic Vehicle Accident Rate (TVAR)	1.49	1.23	n/a	0.50	0.995	0.56
TVA	n/a	3	n/a	n/a	6	2

Red figures = above target; Green figures = below target

BP = BP operated section of BTC (Azerbaijan & Georgia) and the BTC Assurance Team in Turkey

One HiPo incident in Turkey and 8 Traffic Vehicle Accidents (TVA) were recorded. The frequency of TVAs was an improvement on 2005 taking into consideration considerable increase in number of km driven. BTC continue to strive to improve driving standards and road safety through training and awareness of the drivers, passengers and the community alike. Regular driving safety audits are undertaken to ensure that standards of vehicle, driver training and certification, and general compliance with BTC standards are maintained.

BTC Operations has achieved many of its H&S targets in 2006. Safety inputs across BP in Azerbaijan, Georgia and Turkey have exceeded expectation. BIL safety inputs were below target and work continues to improve inputs. BP continue to influence BIL with H&S development by sharing information, provision of consultancy services and performance monitoring.

11 E&S MONITORING PROGRAMME

Work continues on development of the Operations ESMS. Valuable feedback was provided from the ISO14001 Health Check Audits during 2006 (more details given below) and work continues on implementing the recommendations made. A further ESMS Health Check Audit is planned for 2007, with a view to having an official ISO14001 Pre-certification Audit in late 2007. Details of some key elements of the ESMS, monitoring and training as well as incident and non-conformance reporting are detailed below. Information on other key elements of the ESMS such as legal compliance is given in other chapters of this report.

11.1 INTERNAL MONITORING

Internal monitoring takes place as necessary on a daily basis or through theme audits and reviews. In some cases the review might result in actions and recommendations for implementation.

Non-compliances are only raised by BTC or BIL in certain circumstances i.e. for persistent issues that need management attention. If the matter can be rectified in a timely manner through local site intervention, a non-compliance is not generally raised. The status of all internal non-compliances raised is given in the relevant country sections in this Chapter.

BTC has also developed a set of tools to assist in the management of E&S issues including detailed monthly reports and quarterly performance reviews.

11.1.1 Azerbaijan

Informal environmental inspections continued to be carried out at both permanent and temporary sites along the ROW. A full summary of internal reviews and audits is given in Table 11.1.

Table 11.1: Summary of Internal Reviews/Audits, Azerbaijan, 2006

Audit / Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Air Emissions	BTC Georgia / Sangachal Terminal	BTC	Implementation of ESAP requirements	Actions raised concerning cross country air monitoring techniques and methodologies. These were mainly related to the refinement of the monitoring methodologies, alignment and accuracy of the environmental data collection
Reinstatement	BTC	CCIC	Status of reinstatement along ROW	Good standard of reinstatement has been achieved in the Western section of the pipeline, resulting in high levels of natural re-vegetation. In places it is already difficult to distinguish the pipeline route from the surrounding area. The areas which have not been well vegetated have been assessed for reseeded. Borrow pits have been closed out.
Waste Audit	BTC & AzSPU	BTC	Compliance with Waste Management standards	Findings included a need to improve integrity of bunded area, repackage leaky containers and continue improvement of HSE standards.
Winterisation Review	BTC/SCP	BTC/SCP	To assess: <ul style="list-style-type: none"> • Risk for erosion of the ROW & facilities due to spring thaw or heavy winter rain. • Secondary risks imposed by erosion on pipeline integrity & environmental damage 	The review identified 7 areas that needed monitoring during the winter and 3 that required attention before the approach of winter.
Landscape Monitoring				See Case Study 11.1.

Audit / Review	Auditor	Auditee	Scope	Findings and/or Recommendations
OSR Audit	BTC	BTC/ Seacor	Compliance with OSRP	Recommendations included: update the Oil Spill Response Plans and Containment Site Manuals; increase training to Incident Management Teams; Create a 2 year drill plan; improve implementation of Wildlife Response Plan; review the winter mobilisation strategy; and improve contractor assurance process.
Regulatory compliance Audit	BTC/SCP	CCIC	Status of regulatory compliance of CCIC environmental management	Generally, environmental permit and approval requirements are being met by CCIC. However 12 Corrective Action Requests have been raised in areas of site reinstatement, monitoring and record keeping
ISO14001 Health Check Audit	Lead by ERM / With auditors from other (non Az Pipelines) AzSPU assets	BTC/ SCP	Status of BTC/SCP readiness for pre-certification	The management review process, the environmental data management and the level of operator's awareness of the EMS were commended. Areas for improvement were the process of implementation of engineering modifications related to significant environmental aspects, the necessity for ESMS to be integrated within existing systems such as Maximo, CMAS, PTW, necessity to share BTC good practice cross BP AzSPU, capacity building and development of internal environmental resources.

There was 1 non-compliance raised by BTC during 2006 concerning poor segregation of non-hazardous waste. Corrective actions were implemented.

One Level III²³ Incident notification was raised during the decommissioning of Tovuz Camp, when a number of local villagers were observed removing various redundant items from the site. CCIC were requested to return security to the site immediately to prevent further access. An EIA was been produced for the landfill site where CCIC transports inactive waste from Tovuz Camp.

11.1.2 Georgia

Informal environmental inspections continued to be carried out at both permanent and temporary sites along the ROW. A full summary of significant internal reviews and audits is given in Table 11.2.

Table 11.2: Summary of Internal Reviews/Audits, Georgia, 2006

Audit / Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Nurseries Monitoring	BTC	Bakuriani, Tetrtskharo and Andezit	Compliance with Method Statement	Recommendations included an increase in the level of pest control and weed control in some cases. Tree sizes found to be correct.
Vegetation Cover Monitoring (KP0 to KP27)	BTC	SPJV	Compliance with Performance Indicator after 1 year	Results found satisfactory (average above 70%). Weed control is required for certain sections of ROW.

²³ Incidents are classified from 1 to 5 in severity, with Level 5 being the least serious.

Audit / Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Landscaping Monitoring	BTC	SPJV	Compliance with Landscaping Management Plan	Results found satisfactory for the first 71km of the ROW. To continue with next sections once reinstatement completed.
Over Flight Monitoring of ROW	BTC	SPJV	Compliance with ESIA & Reinstatement Specification	Findings showed: several washouts to remove (KP98, 189, 205, 208); increased protection measures at some of the river crossings was necessary; and the need to find new permanent rock disposal sites (at KP140 and KP176).
CIP and ISP Final Evaluation	Team led by ERM	Implementing Partners (CARE and Mercy Corps)	Success of CIP and ISP in meeting stated goals and objectives	See Section 7.2.2.1
Audits of JV Complaint logs	BTC	SPJV	Compliance with Complaint Procedure	A number of complaints need further actions to bring them to closure.
OSR Audit	BTC	BTC / Seacor	Compliance with OSRP	Findings included; the Oil Spill Response Plans and Containment Site Manuals required their annual update; a special response plan should be developed for Ktsia – Tabatskuri; increase training to Incident Management Teams; Create a 2 year drill plan; winter mobilisation strategy should be reviewed; and improve contractor assurance process.
ISO14001 Health Check	ERM	BTC/SCP	Assess level of compliance / readiness for ISO 14001 certification.	A good foundation for EMS has been developed, however improvement required for planning, implementation and operations, and monitoring and measuring.
Winterisation Review	BTC/SCP	BTC/SCP	To assess: <ul style="list-style-type: none"> Risk for erosion of the ROW & facilities due to spring thaw or heavy winter rain. Secondary risks imposed by erosion on pipeline integrity & environmental damage 	Reinstatement has been completed to a very high standard and therefore no additional work was required before the start of winter. However, 50 sites and off the ROW were recommended for monitoring during the winter.
Waste Audit	BTC & AzSPU	CWAA – SPJV & Sanitary Ltd	Compliance with Waste Management standards	Findings included a need to improve integrity of banded area, repackaging leaky containers and continue improvement of HSE standards.

Audit / Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Air Emissions	BTC Azerbaijan	BTC	Implementation of ESAP requirements	Actions raised concerning cross country air monitoring techniques and methodologies. These were mainly related to the refinement of the monitoring methodologies, alignment and accuracy of the environmental data collection.

As part of day to day field environmental inspection and monitoring, 3 internal level II²⁴ non-compliances were raised: 1 concerning rock disposal; 1 regarding road maintenance; and 1 concerning exploitation of borrow pits. The first non-compliance has been closed. Work continues to close out the remaining two. No social non-compliances were raised.

One Environmental Incident was recorded during September when during ROW inspection by a member of BTC/SCP Horse Patrol man discovered a hay fire at KP196. The fire spread onto erosion control matting and the horse patrol immediately notified ROW supervisor. The horse patrol together with State Pipeline Protection Department (SPPD) officers removed part of the matting and made a fire breaker to contain the fire and the Georgia Incident Management Team was mobilised. Corrective measures put in place include roll out of the incident details with horse patrol teams and SPPD to increase vigilance and the development of a vegetation removal strategy near certain BTC facilities to take into consideration seasonal risks. Erosion control matting has been repaired. No Social Incidents were reported.

11.1.3 Turkey

Informal environmental inspections continued to be carried out at both permanent and temporary sites along the ROW. A list of environmental and social audits is given in Tables 11.3, 11.4 and 11.5 below.

Table 11.3: Internal Audits Conducted by BTC Co.

Audit / Review	Scope	Findings and/or Recommendations
Pre-Lender Audit - PT2 and PT3 and ROW May 2006	<ul style="list-style-type: none"> To follow up on any previously identified IEC findings. Verify closure of these items where appropriate. Determine the current situation with regards E&S performance on site. Last assessment of E&S performance before PAC and to feed into PAC punchlists. 	BTC had 27 observations with corresponding corrective actions. Observations and corresponding subject areas are as follows: 2 E&S management; 1 construction camp management; 3 waste management, 14 emissions management, 3 reinstatement at the stations; and four community complaints and land exit
E&S Audit of BIL performance (Nov 2006)	Emissions and waste management as well as local procurement, employment, community relations and land management at each of the major AGIs, including CMT and also at the BIL administration centre. The focus of the social element of the audit was at a management level.	The audit resulted in 67 Level I non-conformance and 8 Level II non-conformances. The Level II non-conformances related to: Waste Management at CMT (1), IPT2 (1) and PT1 (2); Sewage Treatment and / or Waste Water at CMT (1), IPT1 (1); PT2 (1) and PT4 (1); and storage of fuel at PT3 (1) An additional 119 recommendations were made in relation to observations.

²⁴ Non-Compliances are ranked by Level (I to III with Level III automatically recorded as an incident). Level II is a non compliant situation that has not yet resulted in clearly identified damage or irreversible impact to a sensitive important resource, but requires expeditious corrective action and site specific attention to prevent such effects.

Audit / Review	Scope	Findings and/or Recommendations
ISO14001 Health Check (BTC Georgia and ERM) December 2006	To determine status of BIL ESMS and determine if the nine month schedule was feasible	The report determined that although BIL may be able to meet the nine month commitment, it would be a considerable challenge to achieve this date. It recommended that BIL senior management review the certification schedule. Key challenges identified as: <ul style="list-style-type: none"> • Resolution of punch list and enhancement items for controls related to environmental aspects; • The ability to focus the environmental group resources on the ISO14001 effort and not have them diverted to other issues; and • Integration of elements of the management system into other functional groups within BIL, e.g. training, maintenance, operations and quality.
Landscape Monitoring	Review of the landscaping against the approved Botaş landscaping plans at each of the AGIs	Botaş completed landscaping in Spring/Autumn 2006. BTC Co. undertook an initial review of the landscaping at each of the AGIs in October/November 2006. Preliminary findings were submitted to Botaş for their review and actions.
Winterisation Review	To assess: <ul style="list-style-type: none"> • Risk for erosion of the ROW & facilities due to spring thaw or heavy winter rain. • Secondary risks imposed by erosion on pipeline integrity & environmental damage 	Lot A: Repairs post 2005 winter have been implemented. No critical outstanding items. Lot B: Remedial work programme scheduled for completion end October 2006. Certain water courses and off ROW areas highlighted as requiring extra attention. Lot C: Reinstatement of Lot C completed 2004. Relatively few issues. All repairs from previous inspection programme implemented. Facilities: Two facilities required slope stabilisation and monitoring of slopes at PT1, PT2, PT3 and the restored stock piles at PT2 and PT3. BIL to provide detail on erosion monitoring of high risk areas. BTC also to conduct assurance monitoring.
CIP Internal Evaluation	See Section 7.2.3.1	

Table 11.4: Internal Audits Conducted by Botaş

Audit / Review	Auditee	Scope	Findings and/or Recommendations
Waste recycling Companies compliance audit	Multiple recycling companies along pipeline	Project environmental standards	The facilities were compliant with Project HSE standards.
Municipality waste water treatment plants compliance audit	Kayseri, Erzincan and Osmaniye municipality WWTPs	Project environmental standards	The facilities were compliant with Project environmental standards.

Table 11.5: Internal Audits Conducted by BIL

Audit / Review	Auditee	Scope	Findings and/or Recommendations
EU compliance waste facility audits	Municipality waste facilities at Erzincan and Antakya, and Izaydas hazardous waste facility at Izmit	Compliance with EU Landfill Directive and at Izaydas (additionally compliance with EU Hazardous Waste Directive and Waste Incineration Directive	It was determined that Erzincan waste facility did not comply with EU standards. It will not be used to dispose of Operations waste. The Antakya facility was not yet operating but the design and construction of the facility was compliant with EU standards. The facility will be re-audited once it commences operation to determine management of facility is in accordance with standards prior to Project approval for disposal of BIL operational wastes. The Izaydas facility was compliant and will therefore continue to be used for the disposal of all Operational wastes.
Waste recycling Companies compliance audit	Multiple recycling companies along pipeline	Project environmental standards	The facilities were compliant with Project HSE standards.
Municipality waste water treatment plants compliance audit	Kayseri, Erzincan and Osmaniye municipality WWTPs	Project environmental standards	The facilities were compliant with Project environmental standards.
Environmental laboratories	Hifzısıhha Institute (Adana), Agriculture City Control Laboratory (Sivas), City Public Health Laboratory (Sivas), Hifzısıhha Institute Directorate, Water Chemistry and Research Laboratory (Erzurum), Çukurova University Environmental Engineering Department (Adana)	Lab and analysis management , qualifications of staff, standard and calibration of equipment	All laboratories were deemed suitable for use by BIL. Verification by BTC Co. of these laboratories is ongoing.

No E&S non-compliances were raised on BTC during 2006, outside those raised during the audits listed above.

Five Environmental Incidents were raised in 2006. Three occurred in September at PT1, PT3 and Ceyhan Marine Terminal where storm water was discharged from site, despite being over the Project threshold for coliform and other waste water parameters. The discharge from the ponds was prevented and waste water re-circulated at PT1 and PT3. Actions are being taken to address the contaminated ponds. At Ceyhan the storm water from the contaminated pond is being carried to construction phase WWTP to keep the water level below the discharge point. The fourth Environmental Incident was recorded in October when a large storm caused erosion at Ceyhan Marine Terminal. Sediment was washed into the storm water pond resulting in high amounts of suspended solids and discharge from the storm water pond was allowed (where it had previously been blocked due to the incident in September) so as to prevent the pond from overflowing (see also Section 5.2.3.4). BTC have been notified of fifth incident relating to waste management at Kars Camp in October 2006. Botaş Project Directorate have produced a draft incident report, finalisation of which is pending owing to ongoing investigative work. The final report is expected in 2007-Q2.

11.2 EXTERNAL MONITORING

11.2.1 Independent Environmental Consultants

The IEC visit reports document non-compliances against the ESAP and assigns them a level of importance (Level I, II or III, with III being most significant). The IEC also verifies closure of BTC's responses to non-compliances as part of subsequent monitoring visits.

The IEC visited in June 2006 and a total of 15 non-compliances were raised. Three of the non-compliances (all Level I) were raised in Azerbaijan, three (all Level II) were raised in Georgia, and nine in Turkey (3 Level I²⁵ and 6 Level II). No Level III non-compliances were raised. A further monitoring visit was carried out in October 2006 concentrating on reinstatement in Georgia and one Level I non-compliance was raised. Appendix 3 contains details of this non-compliance and the status of non-compliances from previous reviews that were not shown as closed in 2006-H1 report. Full reports are given on www.bp.com/caspian.

11.2.2 Social and Resettlement Action Plan (SRAP) Panel

SRAP monitoring aims to provide practical guidance and advice to the Projects' management team on the land acquisition and resettlement process and the management of other social issues, as well as monitoring compliance.

Visits were carried out in March and September 2006. The reports from these visits are available on www.bp.com/caspian. The results of the March 2006 monitoring programme are given in Appendix 3 of the 2006-H1 Report. Results of the September 2006 SRAP visit is given in Appendix 4 of this report.

A summary of findings from both visits in 2006 are given in Table 11.6 below.

Table 11.6 Summary of SRAP Findings, 2006

Areas of Good / Improved Performance	Areas for Continued Focus
March 2006	
<ul style="list-style-type: none"> Complaint Resolution Community Investment Programme (CIP) Engagement with NGOs 	<ul style="list-style-type: none"> Vulnerable Project Affected People during land hand back Construction Impacts on Infrastructure Decommissioning and reinstatement of Off-ROW facilities
September 2006	
<ul style="list-style-type: none"> Consolidation of Complaints logs and transfer to Operations Team Return of Use/Land Use Restrictions Community Investment Programme for Operations 	<ul style="list-style-type: none"> Transition to Operations Land hand-back (outstanding issues)

11.2.3 Caspian Development Advisory Panel (CDAP)

The panel, established by BP to provide independent advice on its projects in the region, focuses on the social, environmental and economic impacts of its activities. It is part of an unprecedented degree of public consultation that has characterised the development of the BTC Project.

The environmental advisor of the CDAP panel visited the region in August 2006 for a preliminary assessment prior to the visit of the CDAP representatives in 2006-Q4. The panel is due to release its final public report in 2007, which will present recommendations arising from BTC activities in 2006 and draws some broader conclusions based on CDAP involvement in the BTC Project over the past four years. The full report will be available on www.bp.com/caspian.

²⁵ Reported previously as 5 Level I non-compliances.

2006 was the last full year of CDAPs mandate to monitor during the construction phase of BTC. Discussions are ongoing to develop a plan for a similar level of monitoring during operations.

11.2.4 Host Government Monitoring

11.2.4.1 Azerbaijan

Ministry of Ecology and Natural Resources (MENR) of Azerbaijan Republic visited IPA1 and PSA2 in November 2006 to verify the on-site arrangements for waste water discharge prior to issuing a permit (see Section 3.1.1). The second visit was in December 2006 within the planned MENR inspection schedule of BTC/SCP to examine: ROW reinstatement; Kura West River crossing micro-tunnel reinstatement; Hassansu River erosion control; and waste management.

11.2.4.2 Georgia

BTC has held ongoing intensive consultation and discussions with the Government of Georgia regarding requirements for planning and implementing a series of associated projects in the Kodiana region (see Section 3.1.2). The main focus of these discussions included the development and agreement of the Emergency Drain Down Facility (EDDF) design and the Secondary Containment Project design.

11.2.4.3 Turkey

In the later part of 2006 regulatory authorities visited the CMT to undertake a review of the site. The authorities provided BIL with guidelines on regulatory requirements to enable BIL to receive discharge and emission permits. This process will continue at the CMT and the pump stations during 2007 as part of the environmental permitting process. In addition BIL and BTC Co. will proactively engage the Turkish regulatory authorities by holding regular meetings and/or providing project information during the operations phase.

11.2.5 NGO MONITORING

BTC is facilitating national NGO involvement in the Project in all three countries, although the method of involvement differs between Azerbaijan / Georgia and Turkey.

The background and objectives were described fully in the 2004-Q2 and 2004-Q3 reports. The current status of the NGO programmes in each country is given below. All reports are published on www.bp.com/caspian.

11.2.5.1 Azerbaijan

The second round of monitoring, initiated at the end of 2005, continued in 2006 and focused on audit techniques and capacity-building. Further details on the monitoring are given in the 2006-H1 report.

BP received the reports in June, and following a review period, held final dialogue sessions with the audit groups in September. A public event, for NGOs to formally disclose and discuss the reports, was hosted by OSI on 15th November.

11.2.5.2 Georgia

The second cycle of monitoring and auditing by Georgian NGOs (facilitated by Eurasia Foundation) has been completed. More details are given in Section 8.2.1.2 of the 2006-H1 report). Four NGO working groups (Waste Management, Reinstatement, Oil Spill Response, Cultural Heritage) prepared the monitoring reports, which were reviewed by BP/BTC, who have provided their comments and responses. The reports have been published and are available on the website.

11.2.5.3 Turkey

In Turkey a facilitating/capacity building organisation is not being used as many national NGOs are already involved in the Project, their experience is generally greater, and there was a lack of demand for a facilitated scheme. There were no formal, bi-annual stakeholder meetings held in 2006. However, BTC and Botaş / BIL continued to engage both national and regional stakeholders to discuss specific issues on an as needed basis

11.3 TRAINING

11.3.1 Azerbaijan and Georgia

In both Azerbaijan and Georgia, training for BTC Operations focused around ESMS and ISO14001 awareness to Operations staff. Training was also given on key issues such as waste management and emissions management. Environmental awareness continued to be a component of the induction process for all new staff.

Training in both countries was delivered through a variety of medium ranging from formal classroom training to toolbox talks. Computer based training modules have also been developed for certain subjects, such as ISO14001 awareness. External trainers were contracted for longer courses which during 2006 included a waste management course and lead auditor training for environmental staff.

11.3.2 Turkey

In Turkey, Botaş continued to provide staff at Ceyhan Marine Terminal and the Pump Stations with social and environmental awareness training. Prior to linefill at each of the facilities, SESMeke (the oil spill response contractor) provided on-site spill response training to Botaş and BIL linefill and pigging staff.

All BIL staff have received general E&S induction training. In 2006 role specific training was provided to 145 BIL staff members and 181 contractor staff, focusing on each staff member's interface with E&S aspects and their ability to control and impact to the environment and communities through good practice.

The BIL Environmental team also provided training to BIL and contractor staff on a wide range of topics including: Environmental Incident reporting; waste collection, segregation and storage of solid waste; environmental awareness in the laboratory; and ISO14001 site specific aspects/impacts.

The BIL Public and Community Relations department developed a training module which covered topics ranging from: community relations; complaints and compensation; employment and procurement; land use / restrictions; code of conduct; and Community Investment Programme. This training has been given to over 170 BIL and contractor staff. This will continue in 2007.

In addition, members of the BIL Environmental Team received training in the following subjects in 2006: ISO 9001 Internal Auditor Course; OHSAS 18001 Lead Auditor Course; Oil Pollution Preparedness, Response and Cooperation – IMO Level 3 and Incident Command Systems Training.

APPENDIX 1

Annex J of the Construction ESAP – Outline of Project Environmental and Social Monitoring Annual Report²⁶

Each annual report will address each of the topics listed below for BTC Co. activities conducted in Azerbaijan, Georgia and Turkey.

- 1 EXECUTIVE SUMMARY**
- 2 ESIAS / EIA AND PERMITTING**
 - 2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE AZERBAIJANI, GEORGIAN AND TURKISH ESIAS DURING THE YEAR.
 - 2.2 SUMMARY OF MATERIAL PERMITS ISSUED DURING THE YEAR AND ANY APPLICABLE CONDITIONS.
 - 2.3 UPDATE ON STATUS OF PROJECT STATE SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIAS OR PERMITS.
- 3 CHANGES**
 - 3.1 DESCRIPTION OF ANY CHANGES TO AN ESIA DURING THE PERIOD TO REFLECT A CLASS I, II OR III CHANGE.
 - 3.2 SUMMARY OF THE TYPE OF CLASS I CHANGES IMPLEMENTED DURING THE PERIOD, OR A CONFIRMATION OF NO SUCH CHANGE.
 - 3.3 LIST OF ALL CLASS II CHANGES NOTIFIED DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.4 SUMMARY OF ALL CLASS III CHANGES DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.5 UPDATE ON CONSTRUCTION STATUS IN A CHANGE AREA INCLUDING DESCRIPTION OF ANY IMPACTS OR MITIGATION MEASURES.
 - 3.6 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MATERIAL MODIFICATION TO AN ESIA, THIS ESAP, THE RAP, THE ESMS, OR ANY OSRP.
- 4 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW**
 - 4.1 SUMMARY OF ANY NOTICES OF NON-COMPLIANCE, REMEDIAL ACTION, ANY FINES OR PENALTIES PAID AND FINAL DISPOSITION OF ANY REGULATORY PROCEEDINGS.
 - 4.2 SUMMARY OF AIR EMISSIONS.
 - 4.3 SUMMARY OF ENVIRONMENTAL DISCHARGES.
 - 4.4 STATEMENT INDICATING WHETHER BTC CO. AND ITS AGENTS HAVE COMPLIED IN THE DEVELOPMENT, CONSTRUCTION AND OPERATION OF THE BTC PROJECT WITH THIS ESAP, APPLICABLE ENVIRONMENTAL LAWS AND APPLICABLE LENDER ENVIRONMENTAL AND SOCIAL POLICIES AND GUIDELINES IN ALL MATERIAL RESPECTS AND SUMMARY OF ANY (I) MATERIAL NON-COMPLIANCE AND THE STEPS BEING TAKEN TO REMEDY IT AND (II) MATERIAL MODIFICATIONS OF ESIAS, PLANS OR PROGRAMMES MATERIALLY IN CONTRAVENTION OF THE OPERATIONAL POLICIES AND DIRECTIVES LISTED IN THIS ESAP.
 - 4.5 UPDATE ON SIGNIFICANT CHANGES IN APPLICABLE LAW, IF ANY.
- 5 OIL SPILL RESPONSE**
 - 5.1 SUMMARY OF OSRPS COMPLETED, UPDATED OR AMENDED DURING YEAR (AS DESCRIBED IN THIS ESAP).
 - 5.2 SPILL SUMMARIES (AZERBAIJAN, GEORGIA AND TURKEY).
 - 5.3 SPILL RESPONSE AND REMEDIATION SUMMARIES.
 - 5.4 SUMMARY OF MATERIAL MODIFICATIONS TO THE OSRPS DESCRIBED IN THIS ESAP.
- 6 CIP AND EIP PROGRAMMING**
 - 6.1 SUMMARY OF PROGRAMMING FOR THE PAST YEAR.
 - 6.1 COMPARISON OF ACTUAL TOTAL EXPENDITURES AND BUDGETED TOTAL EXPENDITURES.
 - 6.3 DESCRIPTION OF EXPECTED BUDGET AND PROGRAMMING FOR THE COMING YEAR.
- 7 ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME**
 - 7.1 SUMMARY OF ESMS MONITORING COMMITMENTS COMPLETED DURING THE YEAR, INCLUDING SUMMARY OF RESULTS, COMPARISON OF ENVIRONMENTAL PERFORMANCE TO APPLICABLE ENVIRONMENTAL STANDARDS AND SUMMARY OF PERFORMANCE AGAINST KPIS.
 - 7.2 SUMMARY OF ENVIRONMENTAL AND SOCIAL TRAINING.
- 8 PROJECT COMMUNICATION**
 - 8.1 UPDATE OF ONGOING COMMUNICATION WITH EXTERNAL STAKEHOLDERS.
 - 8.2 UPDATE OF COMMUNITY LIAISON ACTIVITIES.
- 9 SUMMARY OF RESULTS OF RAP MONITORING**
- 10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS**
 - 10.1 DAYS AWAY FROM WORK CASES.
 - 10.2 INJURIES.
 - 10.3 FATALITIES.
- 11 AUDITS**
 - 11.1 SUMMARY OF THE RESULTS OF BTC CO. AND BOTAŞ'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

²⁶ Following completion of construction, the annual report will not cover items that are relevant only to construction. In addition, if matters are covered in the Operations ESAP that are not reflected in the contents for the annual report, this Annex will be amended as appropriate to cover these matters.

Annex H of the Operations ESAP – Outline of Project Environmental and Social Monitoring Annual Report

Each annual report will address each of the topics listed below for BTC Co. activities conducted in Azerbaijan, Georgia and Turkey.

- 1 EXECUTIVE SUMMARY**
- 2 ESIAS / EIA AND PERMITTING**
 - 2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE AZERBAIJANI, GEORGIAN AND TURKISH ESIAS DURING THE YEAR.
 - 2.2 SUMMARY OF MATERIAL PERMITS ISSUED DURING THE YEAR AND ANY APPLICABLE CONDITIONS.
 - 2.3 UPDATE ON STATUS OF PROJECT STATE SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIAS OR PERMITS.
- 3 CHANGES**
 - 3.1 DESCRIPTION OF ANY CHANGES TO AN ESIA DURING THE PERIOD TO REFLECT A CLASS I, II OR III CHANGE.
 - 3.2 SUMMARY OF THE TYPE OF CLASS I CHANGES IMPLEMENTED DURING THE PERIOD, OR A CONFIRMATION OF NO SUCH CHANGE.
 - 3.3 LIST OF ALL CLASS II CHANGES NOTIFIED DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.4 SUMMARY OF ALL CLASS III CHANGES DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.5 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MATERIAL MODIFICATION TO AN ESIA, THIS ESAP, THE RAP, THE ESMS, OR ANY OSRP.
- 4 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW**
 - 4.1 SUMMARY OF ANY NOTICES OF NON-COMPLIANCE, REMEDIAL ACTION, ANY FINES OR PENALTIES PAID AND FINAL DISPOSITION OF ANY REGULATORY PROCEEDINGS.
 - 4.2 SUMMARY OF AIR EMISSIONS.
 - 4.3 SUMMARY OF ENVIRONMENTAL DISCHARGES.
 - 4.4 STATEMENT INDICATING WHETHER BTC CO. AND ITS AGENTS HAVE COMPLIED IN THE DEVELOPMENT, CONSTRUCTION AND OPERATION OF THE BTC PROJECT WITH THIS ESAP, APPLICABLE ENVIRONMENTAL LAWS AND APPLICABLE LENDER ENVIRONMENTAL AND SOCIAL POLICIES AND GUIDELINES IN ALL MATERIAL RESPECTS AND SUMMARY OF ANY (I) MATERIAL NON-COMPLIANCE AND THE STEPS BEING TAKEN TO REMEDY IT AND (II) MATERIAL MODIFICATIONS OF ESIAS, PLANS OR PROGRAMMES MATERIALLY IN CONTRAVENTION OF THE OPERATIONAL POLICIES AND DIRECTIVES LISTED IN THIS ESAP.
 - 4.5 UPDATE ON SIGNIFICANT CHANGES IN APPLICABLE LAW, IF ANY.
- 5 OIL SPILL RESPONSE**
 - 5.1 SUMMARY OF OSRPS COMPLETED, UPDATED OR AMENDED DURING YEAR (AS DESCRIBED IN THIS ESAP).
 - 5.2 SPILL SUMMARIES (AZERBAIJAN, GEORGIA AND TURKEY).
 - 5.3 SPILL RESPONSE AND REMEDIATION SUMMARIES.
 - 5.4 SUMMARY OF MATERIAL MODIFICATIONS TO THE OSRPS DESCRIBED IN THIS ESAP.
- 6 ADDITIONALITY PROGRAMMING**
 - 6.1 SUMMARY OF PROGRAMMING FOR THE PAST YEAR.
 - 6.2 COMPARISON OF ACTUAL TOTAL EXPENDITURES AND BUDGETED TOTAL EXPENDITURES.
 - 6.3 DESCRIPTION OF EXPECTED BUDGET AND PROGRAMMING FOR THE COMING YEAR.
- 7 ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME**
 - 7.1 SUMMARY OF ESMS MONITORING COMMITMENTS COMPLETED DURING THE YEAR, INCLUDING SUMMARY OF RESULTS, COMPARISON OF ENVIRONMENTAL PERFORMANCE TO APPLICABLE ENVIRONMENTAL STANDARDS AND SUMMARY OF PERFORMANCE AGAINST KPIS.
 - 7.2 SUMMARY OF ENVIRONMENTAL AND SOCIAL TRAINING.
- 8 PROJECT COMMUNICATION**
 - 8.1 UPDATE OF ONGOING COMMUNICATION WITH EXTERNAL STAKEHOLDERS.
 - 8.2 UPDATE OF COMMUNITY LIAISON ACTIVITIES.
- 9 SUMMARY OF RESULTS OF RAP MONITORING (AS APPLICABLE)**
- 10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS**
 - 10.1 DAYS AWAY FROM WORK CASES.
 - 10.2 INJURIES.
 - 10.3 FATALITIES.
- 11 AUDITS**
 - 11.1 SUMMARY OF THE RESULTS OF BTC CO. AND BIL'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

APPENDIX 2: ENVIRONMENTAL MONITORING RESULTS

APPENDIX 2.1: AZERBAIJAN

Please read this section in conjunction with the commentary in Section 5.2.1.

Appendix 2.1a – Ambient Air Quality

Pollutant	Standard	Units	Averaging Period
NO ₂	40 (Annual average will reduce by 2 µg/m ³ every year, to reach 40 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
SO ₂	20	µg/m ³	Annual mean
Benzene	5 (Annual average will reduce by 1 µg/m ³ every year from 2006, to reach 5 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
PM ₁₀	20 (30 on 1 January 2005, reducing every 12 months thereafter by equal annual percentages to reach 20 by 1 January 2010)	µg/m ³	Annual mean

PSA2

ID	NO ₂	SO ₂	Benzene	Units	Date	Duration
PSA 2 AQ 1p	17	1.9	L	µg/m ³	Oct/Nov2006	1 month
PSA 2 AQ 2p	20	7.3	1.1	µg/m ³	Oct/Nov2006	1 month
PSA 2 AQ 3p	23	1.1	1.2	µg/m ³	Oct/Nov2006	1 month
PSA 2 AQ 4p	19	3	0.94	µg/m ³	Oct/Nov2006	1 month



IPA1

ID	NO ₂	SO ₂	Benzene	Units	Date	Duration
IPA 1 AQ 1p	13	2.1	NR	µg/m ³	Oct/Nov2006	1 month
IPA 1 AQ 2p	14	2.1	NR	µg/m ³	Oct/Nov2006	1 month

NOTES: Baseline for PSA2 shown in Appendix 2.1a of 2005 Annual Report
 NR - Not required by ESAP
 PM₁₀ results not published as interpretation and investigation of methodology is ongoing

Appendix 2.1b – Environmental Noise

	Standard	Units	Period
PSA2 & IPA1	55	dB (A)	Daytime
	45	dB (A)	Night-time

PSA2

ID	Readings	Units	Date	Time	Duration	Comments
PSA 2 NM 1p	41.4	dB (A)	Apr-2006	12:00	2 min	daytime
PSA 2 NM 2p	40.2	dB (A)	Apr-2006	12:40	2 min	daytime

IPA1

ID	Readings	Units	Date	Time	Duration	Comments
IPA 1 NM 1p	44,6	dB (A)	Apr-2006	12:15	2 min	daytime
IPA 1 NM 2p	42,3	dB (A)	Apr-2006	11:50	2 min	daytime
IPA 1 NM 3p	43,8	dB (A)	Apr-2006	11:30	2 min	daytime

NOTE: Baseline for PSA2 shown in Appendix 2.1b of 2005 Annual Report

Appendix 2.1c – Effluent Discharge Monitoring Programme

Parameter	Standard	Units	Parameter	Standard	Units
Total coliform bacteria (per 100ml)	<400	MPN/100ml	Ag	0.5	mg/l
pH	6-9		As	0.1	mg/l
Total residual chlorine	0.2	mg/l	Cd	0.1	mg/l
BOD	25	mg/l	Cr (total)	0.5	mg/l
COD	125	mg/l	Cu	0.5	mg/l
Total suspended solids	35	mg/l	Fe	3.5	mg/l
Ammonia NH ₄	10	mg/l	Pb	0.1	mg/l
Total Nitrogen	15	mg/l	Hg	0.01	mg/l
Phenols	0.5	mg/l	Ni	0.5	mg/l
Total Phosphorus	2.0	mg/l	Se	0.1	mg/l
Sulphides	1.0	mg/l	Zn	2.0	mg/l
Oil and grease	10	mg/l			

IPA1 (Sample Location – IPA1 Retention Pond)

Parameter	Sample ID			
	6602-01 14-Jan-06	6602-02 6-Feb-06	6602-05 28-Apr-06	6602-06 6-Jun-06
Total coliform bacteria (per 100ml)	1.3x10 ⁵	685	7.4x10 ⁴	2.0 x 10 ⁵
pH	9	8.4	8.8	9.9
Total residual chlorine	0.14	0.02	0.04	0.17
BOD	15	4	8.7	13
COD	26	18	15	65
Total suspended solids	32	10	16	15
Ammonia NH ₄	2	7.2	0.08	0.08
Total Nitrogen*	17	10	3.6	2.4
Phenols	NA	0.03	0.03	0.03
Total Phosphorus**	0.2	0.8	0.1	0.1
Sulphides	<0.02	<0.02	<0.02	<0.02
Oil and grease	<5	<5	<5	<5
Ag	<0.001	<0.001	<0.001	<0.001
As	<0.005	<0.005	<0.005	<0.005
Cd	<0.001	<0.001	<0.001	<0.001
Cr (total)	<0.01	0.02	<0.01	<0.01
Cu	0.03	0.03	<0.01	<0.01
Fe	0.06	0.3	0.25	0.4
Pb	<0.01	<0.01	<0.01	<0.01
Hg	<0.00001	<0.00001	<0.00001	<0.00001
Ni	<0.01	<0.01	<0.01	<0.01
Se	<0.005	<0.005	<0.005	<0.005
Zn	0.04	0.04	0.02	0.02

NOTE: Red figures show non-compliance with project standards

PSA2 (Sample Location – PSA2 Retention Pond)

Parameter	Sample ID					
	6602-01 14-Jan-06	6602-02 6-Feb-06	6602-03 7-Mar-06	6602-04 6-Apr-06	6606-1 20-Sep-06	6608-1 6-Dec-06
Total coliform bacteria (per 100ml)	1.5x10 ⁵	9.1x10 ⁴	NA	152	>160	16
pH	9	9.6	7.8	10.9	9.51	8.47
Total residual chlorine	0.04	0.04	0.08	<0.02	NA	NA
BOD	19	<4	13	<4	NA	NA
COD	69	68	50	66	144.5	58
Total suspended solids	36	29	66	100	13.5	2
Ammonia NH ₄	10	7.5	7.5	0.1	NA	0.485
Total Nitrogen*	22	15	11	1.4	19	7
Phenols	NA	0.04	0.03	0.03	NA	NA
Total Phosphorus**	1.9	1.2	0.8	0.1	0.11	0.14
Sulphides	<0.02	<0.02	NA	<0.02	<0.02	<0.02

Parameter	Sample ID					
	6602-01 14-Jan-06	6602-02 6-Feb-06	6602-03 7-Mar-06	6602-04 6-Apr-06	6606-1 20-Sep-06	6608-1 6-Dec-06
Oil and grease	<5	5	<5	<5	<5	<5
Ag	<0.001	<0.001	<0.001	<0.001	<0.005	NA
As	<0.005	<0.005	<0.005	<0.005	NA	NA
Cd	<0.001	<0.001	0.01	<0.001	<0.02	<0.02
Cr (total)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.03
Cu	0.02	0.02	<0.01	<0.01	0.24	NA
Fe	0.04	0.2	0.19	0.14	0.07	0.06
Pb	<0.01	<0.01	<0.01	<0.01	<0.2	0.05
Hg	<0.00001	<0.00001	<0.00001	<0.00001	NA	NA
Ni	<0.01	<0.01	<0.01	<0.01	<0.007	<0.007
Se	<0.005	<0.005	<0.05	<0.005	NA	NA
Zn	0.07	0.07	0.07	0.01	0.04	0.04

NOTES: NA - Not applicable (only rainwater discharge)

* For Total Nitrogen based on the 91/271/EEC no level limits for less than 10,000 population if the receiving water is not "sensitive". No limit below 12°C when 50 mg/l drinking water nitrate limit applies.

** Phosphorus limit applies only if the receiving water is sensitive and eutrophic and accumulating phosphorus.

Appendix 2.1d – Groundwater & Surface water Monitoring Programme

Groundwater Monitoring – Karayazi & Around PSA2

Date of sampling		Oct-06	Oct-06	Oct-06	Oct-06	Oct-06	Oct-06	Oct-06	Oct-06
Parameter	Unit	KarM1	KarM2	KarM3	KarM5	KarM8	KarM10	PSA 2	
								Aran	Yaldili
TPH	µg/L	70	38	62	94	<20	47	<20	<20
BTEX	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
PAHs	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(a)pyrene	µg/L	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
pH		7.3	6.9	7.4	7.6	7.2	7.2	9	9.6
Conductivity	mS/cm	1.5	4.04	2.95	7.28	3.1	10.28	1.8	0.5
Temperature	°C	16.6	17.2	18.3	7.6	19.1	19.5	20.5	24.5

NOTE: DRO & GRO are not mentioned if PAH and BTEX are within limits

KarM4 & KarM6 were dry. KarM7 was destroyed by third party and rebuilding is underway

Surface Water Monitoring – Around IPA1 and PSA2

Date of sampling		29-Oct-06	29-Oct-06	29-Oct-06	29-Oct-06
Parameter	Unit	IPA 1 SW 1	IPA 1 SW 2	PSA 2 SW 1	PSA 2 SW 3
		TPH	µg/L	<20	33
PAHs (sum of 4)	µg/L	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	µg/L	<0.010	<0.010	<0.010	<0.010
BTEX	µg/L	<0.020	<0.020	<0.020	<0.020
pH		7.5	7.1	8.2	4.2
Conductivity	mS/cm	0.58	0.52	1.07	2.6
Temperature	°C	18	17.8	19.4	18.3

Appendix 2.1e – Waste

Waste Volumes: Summary – 2006

	Unit	IPA1	PSA2
Hazardous Waste Disposed Offsite			
Oily solids	m ³	6.7	41.4
Oily liquids	m ³	456.5	166
Sewage water/sludge	m ³	701.3	4,186
Wax	m ³	14.6	N/A
Non-hazardous waste disposed offsite			
	m ³	13	270
Non-hazardous waste recycled/recovered offsite			
Paper	m ³	0.1	61
Wood	m ³	0	38
Metal	m ³	0	11

APPENDIX 2.2: GEORGIA

Please read this section in conjunction with the commentary in Section 5.2.2.

Appendix 2.2a – Ambient Air Quality

Pollutant	Standard	Units	Averaging Period
NO ₂	40 (Annual average will reduce by 2 µg/m ³ every year, to reach 40 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
SO ₂	20	µg/m ³	Annual mean
Benzene	5 (Annual average will reduce by 1 µg/m ³ every year from 2006, to reach 5 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
PM ₁₀	20 (30 on 1 January 2005, reducing every 12 months thereafter by equal annual percentages to reach 20 by 1 January 2010)	µg/m ³	Annual mean

PSG1 and PSG2 (August 2006)

Pump Station Location Ref	Start date / End date (NO ₂ , SO ₂ , Benzene)	Concentration (µg/m ³)			Concentration (µg/m ³)	
		NO ₂	SO ₂	Benzene	Sampling Date (PM ₁₀)	PM ₁₀
PSG1-1	03/08/06 - 04/09/06	5	5.87	0.4	03/08/06	<10
PSG1-2	03/08/06 - 04/09/06	11	9.36	0.4	03/08/06	<10
PSG1-3	03/08/06 - 04/09/06	14	36.47	0.4	03/08/06	<10
PSG1-4	03/08/06 - 04/09/06	10	7.77	0.4	03/08/06	<10
PSG1-5	03/08/06 - 04/09/06	12	10.15	0.4	03/08/06	<10
PSG2-1	03/08/06 - 04/09/06	N/A*	N/A*	N/A*	04/08/06	<10
PSG2-2	03/08/06 - 04/09/06	5	2	N/A*	04/08/06	<10
PSG2-3	03/08/06 - 04/09/06	N/A*	2.15	N/A*	04/08/06	<10
PSG2-4	03/08/06 - 04/09/06	8	2.31	0.3	04/08/06	<10
PSG2-5	03/08/06 - 04/09/06	5	3.23	0.4	04/08/06	<10

NOTE: Red figures show non-compliance with project standards
*Tubes displaced

PSG1 and PSG2 (December 2006)

Pump Station Location Ref	Start date / End date (NO ₂ , SO ₂ , Benzene)	Concentration (µg/m ³)			Concentration (µg/m ³)	
		NO ₂	SO ₂	Benzene	Sampling Date (PM ₁₀)	PM ₁₀
PSG1-1	13/12/06 - 15/01/07	7	4.06	4.17	13/12/06	0.04
PSG1-2	13/12/06 - 15/01/07	11	5.44	4.36	13/12/06	0.04
PSG1-3	13/12/06 - 15/01/07	14	8.3	3.69	13/12/06	0.04
PSG1-4	13/12/06 - 15/01/07	7	3.49	1.3	13/12/06	0.04
PSG1-5	13/12/06 - 15/01/07	11	2.51	2.81	13/12/06	0.04
PSG2-1	13/12/06 - 15/01/07	3	2.58	3.68	14/12/06	0.02
PSG2-2	13/12/06 - 15/01/07	4	3.13	N/A**	14/12/06	0.01
PSG2-3	13/12/06 - 15/01/07	<1	2.53	0.45	14/12/06	0.02
PSG2-4	13/12/06 - 15/01/07	2	6.48	3.55	14/12/06	<0.02
PSG2-5	13/12/06 - 15/01/07	5	15.31	0.39	14/12/06	<0.02

NOTE: ** Tubes damaged

Appendix 2.2b – Stack Emissions

Equipment	Date tested	Load	Concentration at ref conditions			Standards			Mass emissions		
			NO _x mg/m ³	CO mg/m ³	SO ₂ mg/m ³	NO _x mg/m ³	CO mg/m ³	SO ₂ mg/m ³	NO _x g/h	CO g/h	SO ₂ g/h
MOL Turbine No 2	12/12/06	90%	92.83	930.33	23.40	165	10,000	1700	849.94	8517.97	111.66

NOTES: MOL Turbines No 4 & 5 were not operational in 2006.

Monitoring ports had not been correctly installed on the stacks of MOL Turbines No 1, 3, 4 & 5, Water Bath Heater, Crude Topping Unit and Generators, therefore no stack monitoring was carried out.

Appendix 2.2c – Noise

	Standard	Units	Period
PSG1	70	dB (A)	Day and Night-time
PSG2	55	dB (A)	Daytime
	45	dB (A)	Night-time

Location	Monitoring point	Date and Time	Noise Readings in dBA	Background noise
PSG1	PSG1P1	13.12.06 13:00	Average 58.2 Peak 58.5	People, vehicles
	PSG1P2	13.12.06 13:20	Average 53.4 Peak 54.2	
	PSG1P3	13.12.06 13:35	Average 47 Peak 47.2	Light breeze
	PSG1P4	13.12.06 13:45	Average 47.3 Peak 48	Vehicles at camp, 4 camp generators
	PSG1P5	13.12.06 14:05	Average 56.3 Peak 66.9	Passing track, 4 camp generators, people, dog
	PSG1P6	13.12.06 14:25	Average 49.5 Peak 50	
	PSG1P8	13.12.06 14:50	Average 55.9 Peak 56.2	Passing track at main road to PSG1
	PSG1NV	13.12.06 15:40	Average 39 Peak 42.2	Birds, breeze, noise from village
PSG2	PSG2P1	14.12.06 15:30	Average 54.6 Peak 55	People
	PSG2P2	14.12.06 14:25	Average 52 Peak 53.2	Breeze
	PSG2P3	14.12.06 14:50	Average 45.7 Peak 46.7	Breeze, traffic
	PSG2P4	14.12.06 14:35	Average 46.8 Peak 47.1	Breeze
	PSG2P5	14.12.06 13:30	Average 53.7 Peak 60.6	Breeze, plane
	PSG2P6	14.12.06 12:50	Average 46.3 Peak 45.7	Breeze
	PSG2P7	14.12.06 13:15	Average 43.9 Peak 44.8	Breeze

NOTE: PSG1P7 was not monitored because the area was fenced and locked. Selection of a new site is underway.

Appendix 2.2d – Effluent

PSG1

Parameters	Standards	Jan	Feb	Mar	May	Jun	Jul	Aug	Sep
Monthly									
pH	6-9	7.5	7.8	7.4	7.6	7.2	7.2	7.6	7
COD	125	17	20	23	13	40	30	22	20
Oil and grease	10	5	5	5	5	5	5	5	5
TSS	35	<2	2	4.1	2	5	2.7	5.3	<2
Total N*	15	22	6.9	6.2	20	8	7.1	4	6.7
NH4	10	1	3.6	3	3	6.4	6	0.7	<0.01
Total P**	2	4	2	2.8	2.6	2.2	3.9	1.9	3.9
Sulphide	1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Coliform bacteria	<400	110	80	500	130	1986.3	900	1600	13

Parameters	Standards	Jan	Feb	Mar	May	Jun	Jul	Aug	Sep
Quarterly									
BOD	25	12	<3		6	5.3	<3	7	<2
Heavy metals	10	0.054	0.11		0.0620	0.0228	0.398		
As	0.1	<0.005	<0.005		<0.005	<0.005	<0.005		
Cd	0.1	<0.001	<0.001		<0.001	<0.001	0.001		
Cr (6)	0.1	<0.01	<0.01		<0.01	<0.01	<0.01		
Cr total	0.5	<0.01	<0.01		<0.01	<0.001	<0.01		
Cu	0.5	0.009	0.01		<0.01	<0.001	0.001		
Fe	3.5	0.03	0.1		<0.01	0.18	0.37		
Pb	0.1	<0.01	<0.01		<0.01	0.011	0.008		
Hg	0.01	<0.00001	<0.00001		<0.00001	<0.00001	<0.00001		
Ni	0.5	<0.01	<0.01		<0.01	0.004	0.006		
Se	0.1	0.005	<0.005		<0.005	0.006	0.005		
Ag	0.5	<0.001	<0.001		<0.001	<0.001	<0.001		
Zn	1	0.01	<0.01		<0.01	0.027	0.007		
Phenols	0.5	<0.03	<0.03		0.04	0.03	0.04		
Chlorine	0.2	0.1	0.1		0.1	0.1	0.1		

NOTE: * For Total Nitrogen based on the 91/271/EEC no level limits for less than 10,000 population if the receiving water is not "sensitive". No limit below 12°C when 50 mg/l drinking water nitrate limit applies.

** Phosphorus limit applies only if the receiving water is sensitive and eutrophic and is accumulating phosphorus. Therefore neither parameters are shown here.

PSG2

Parameters	Standards	Jan	Feb	Mar	May	Jun	Jul	Aug	Sep
Monthly									
pH	6-9	7.8	7.5	7.9	7.5	7.5	7.6	7.6	7.3
COD	125	31	30	21	19	25	15	11	39
Oil and grease	10	5	5	5	5	5	5	5	5
TSS	35	2	8	7.4	<2	<2	<2	<2	<2
Total N*	15	26	14	12	4.9	18	5.6	11	16
NH4	10	1.8	4	4.3	3.3	4.4	4.2	0.7	0.03
Total P**	2	4	3	2.7	2.2	4	3.7	3.9	5.2
Sulphide	1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Coliform bacteria	<400	30	26	4	13	N/A***	140	280	110
Quarterly									
BOD	25	11	7.8		6	9	6	<4	<2
Heavy metals	10	0.042	2.62		0.01	0.092	0.064		
As	0.1	<0.005	<0.005		<0.005	<0.005	<0.005		
Cd	0.1	<0.001	<0.001		<0.001	<0.001	0.002		
Cr (6)	0.1	<0.01	<0.01		<0.01	<0.01	<0.01		
Cr total	0.5	<0.01	<0.01		<0.01	<0.001	<0.01		
Cu	0.5	0.012	0.01		0.01	0.007	0.003		
Fe	3.5	0.01	2.6		<0.01	0.03	0.02		
Pb	0.1	<0.01	<0.01		<0.01	0.01	0.01		
Hg	0.01	<0.00001	<0.00001		<0.00001	<0.00001	<0.00001		
Ni	0.5	<0.01	<0.01		<0.01	0.008	0.006		
Se	0.1	<0.005	<0.005		<0.005	0.005	0.006		
Ag	0.5	<0.001	<0.001		<0.001	<0.001	<0.001		
Zn	1	0.02	0.01		<0.01	0.032	0.017		
Phenols	0.5	<0.03	<0.03		<0.03	0.04	<0.03		

NOTE: * For Total Nitrogen based on the 91/271/EEC no level limits for less than 10,000 population if the receiving water is not "sensitive". No limit below 12°C when 50 mg/l drinking water nitrate limit applies.

** Phosphorus limit applies only if the receiving water is sensitive and eutrophic and is accumulating phosphorus.

*** June Coliform is not available as the bottle had been sent to Baku by mistake instead of being left in the Cito lab in Tbilisi

Appendix 2.2e – Ground and Surface Waters

Round 1, June – July 2006 and Round 2, September – October 2006

LOCATION		KEY																				
SAMPLE TYPE		DRY Location dry at time of sampling																				
SAMPLING DATES		< Less than method detection limit																				
SAMPLING ROUND		NA Not analysed																				
Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	BMW1	BMW1	BMW1	BMW2	BMW2	BMW2	BMW3	BMW3	BMW3	BMW4	BMW4	BMW4	BMW5	BMW5	BMW5	BMW6	BMW6	BMW6		
			Baseline 29/09/05	Round 1 21/07/06	Round 2 22/10/06	Baseline 15/08/05	Round 1 21/07/06	Round 2 22/10/06	Baseline 15/08/05	Round 1 21/07/06	Round 2 22/10/06	Baseline 15/08/05	Round 1 21/07/06	Round 2 22/10/06	Baseline 14/08/05	Round 1 18/06/06	Round 2 22/10/06	Baseline 02/09/05	Round 1 19/06/06	Round 2 22/10/06	Baseline 03/09/05	Round 1 22/06/06
GRO (C4-C12)	10	ug/l	DRY	DRY	DRY	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	DRY	DRY	DRY	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a)pyrene	0.01	ug/l	DRY	DRY	DRY	<0.01	NA	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH 16 Total	0.01	ug/l	DRY	DRY	DRY	<0.01	NA	<0.01	<0.01	NA	<0.01	0.846	<0.01	0.103	<0.01	<0.01	<0.01	<0.01	0.478	<0.01	<0.01	<0.01
BTEX																						
Benzene	1	ug/l	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	1	ug/l	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
Ethylbenzene	1	ug/l	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p/m-Xylene	1	ug/l	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	1	ug/l	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
ADDITIONAL																						
Calcium Dissolved	5	ug/l	DRY	DRY	DRY	36270	4820	40900	insufficient sample	5320	52650	34680	37010	39570	31180	41850	44190	61560	67500	61090		
Magnesium Dissolved	5	ug/l	DRY	DRY	DRY	4682	640	5946	insufficient sample	971	9632	8593	8698	9085	3902	3982	4964	13560	14780	15870		
Manganese Dissolved	1	ug/l	DRY	DRY	DRY	6	<1	<1	insufficient sample	<1	<1	374	888	364	152	1	3	1744	2097	2035		
Iron Total (HNO ₃ Digest)	5	ug/l	DRY	DRY	DRY	2173000	1653000	875700	insufficient sample	417300	158900	26860	16860	88810	40680	3594	46920	15300	27690	71610		
Total Alkalinity as CaCO ₃	2	mg/l	DRY	DRY	DRY	285	230	205	insufficient sample	305	210	180	225	200	120	140	135	335	310	355		
Potassium Dissolved	0.2	mg/l	DRY	DRY	DRY	0.2	0.2	0.2	insufficient sample	0.5	0.6	0.3	0.3	0.3	0.5	0.2	0.3	0.6	0.3	0.3		
Sodium Dissolved	0.2	mg/l	DRY	DRY	DRY	12.6	12.5	11.9	insufficient sample	14.3	18.8	10.8	10.1	11.1	7.1	4.8	6.2	36.8	36.8	34.5		
Nitrate as NO ₃	0.3	mg/l	DRY	DRY	DRY	1.4	1.7	1.7	insufficient sample	3.2	3.9	<0.3	0.4	<0.3	2.7	2.4	20.0	0.3	1.1	0.5		
Sulphate (soluble)	3	mg/l	DRY	DRY	DRY	<3	<3	<3	insufficient sample	<3	<3	5	3	5	<3	<3	10	6	13	4		
Chloride	1	mg/l	DRY	DRY	DRY	1	<1	1	insufficient sample	<1	1	<1.00	1	<1	<1.00	1	3	2	2	1		
pH Value	1	pH units	DRY	DRY	DRY	8.13	8.42	8.25	insufficient sample	8.25	8.35	8.63	8.07	8.53	8	8.01	8.39	8.03	7.29	8.73		

Borjomi Groundwater continued																						
Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	BMW7	BMW7	BMW7	BMW8	BMW8	BMW8	BMW9	BMW9	BMW9	BMW10	BMW10	BMW10	BMW11	BMW11	BMW11					
			Baseline 02/09/05	Round 1 25/06/06	Round 2 24/10/06	Baseline 02/09/05	Round 1 19/06/06	Round 2 24/10/06	Baseline 08/09/05	Round 1 21/06/06	Round 2 25/10/06	Baseline 06/09/05	Round 1 21/07/06	Round 2 25/10/06	Baseline 06/09/05	Round 1 21/06/06	Round 2 25/10/06					
GRO (C4-C12)	10	ug/l	<10	<10	No Access	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10					
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	No Access	<10	<10	<10	<10	<10	<10	18	<10	<10	<10	<10	<10					
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	No Access	<0.01	<0.01	<0.01	0.203	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					
PAH 16 Total	0.01	ug/l	<0.01	<0.01	No Access	<0.01	<0.01	<0.01	2.553	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					
BTEX																						
Benzene	1	ug/l	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
Toluene	1	ug/l	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
Ethylbenzene	1	ug/l	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
p/m-Xylene	1	ug/l	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
o-Xylene	1	ug/l	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1					
ADDITIONAL																						
Calcium Dissolved	5	ug/l	45870	55840	No Access	38330	43260	30410	112500	96160	90010	27860	30680	43990	5204	4291	6249					
Magnesium Dissolved	5	ug/l	6783	9380	No Access	8208	10400	7883	22360	20490	20320	24	5956	12630	1175	977	1137					
Manganese Dissolved	1	ug/l	248	947	No Access	130	27	78	598	487	426	<1	11	76	9	6	8					
Iron Total (HNO ₃ Digest)	5	ug/l	13870	335400	No Access	14120	8239	268800	2241	15000	2101	810	110100	486200	336600	140700	285600					
Total Alkalinity as CaCO ₃	2	mg/l	205	305	No Access	275	950	410	410	400	370	230	270	805	515	325	295					
Potassium Dissolved	0.2	mg/l	1.1	0.6	No Access	2.3	1.7	3.0	0.8	1.4	1.4	2.1	3.3	8.3	48.0	33.8	2.9					
Sodium Dissolved	0.2	mg/l	30.8	30.0	No Access	72.0	84.0	108.8	35.8	37.5	35.3	81.0	45.0	46.5	75.0	73.5	78					
Nitrate as NO ₃	0.3	mg/l	<0.3	0.6	No Access	<0.3	1.8	<0.3	<0.3	0.5	<0.3	<0.3	0.3	<0.3	<0.3	0.5	<0.3					
Sulphate (soluble)	3	mg/l	20	7	No Access	19	26	37	17	15	16	12	15	16	17	15	12					
Chloride	1	mg/l	7	17	No Access	3	2	2	1	2	1	1	<1	<1	1	<1.00	<1					
pH Value	1	pH units	8.48	7.99	No Access	8.07	8.27	8.54	7.86	7.34	8.12	11.47	8.50	8.33	8.94	9.08	9.09					

LOCATION	Borjomi
SAMPLE TYPE	Surface Water
SAMPLING DATES	Oct - Nov 2006
SAMPLING ROUND	Round 2

KEY

DRY Location dry at time of sampling
 < Less than method detection limit
 NA Not analysed

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	BSW1	BSW1	BSW1	BSW2	BSW2	BSW2	BSW3	BSW3	BSW3	BSW4	BSW4	BSW4	BSW5	BSW5	BSW5
			Baseline 06/09/05	Round 1 17/06/06	Round 2 26/10/06	Baseline 08/09/05	Round 1 17/06/06	Round 2 22/10/06	Baseline 01/09/05	Round 1 17/06/06	Round 2 21/10/06	Baseline 15/08/05	Round 1 17/06/06	Round 2 21/10/06	Baseline 05/09/05	Round 1 17/06/06	Round 2 21/10/06
GRO (C4-C12)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EPH (DRO) (C10-C40)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH 16 Total	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.119	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX																	
Benzene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p/m-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Borjomi Surface Water continued

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	BSW6	BSW6	BSW6	BSW7	BSW7	BSW7	BSW8	BSW8	BSW8	BSW9	BSW9	BSW9
			Baseline 15/08/05	Round 1 17/06/06	Round 2 26/10/06	Baseline 11/09/05	Round 1 17/06/06	Round 2 26/10/06	Baseline 11/09/05	Round 1 17/06/06	Round 2 26/10/06	Baseline 05/09/05	Round 1 17/06/06	Round 2 21/10/06
GRO (C4-C12)	10	ug/l	<10	<10	<10	<10	No Access	No Access	<10	No Access	No Access	<10	<10	<10
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	68	<10	No Access	No Access	<10	No Access	No Access	<10	<10	<10
EPH (DRO) (C10-C40)	10	ug/l	<10	<10	<10	<10	No Access	No Access	<10	No Access	No Access	<10	<10	<10
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	No Access	No Access	<0.01	No Access	No Access	<0.01	<0.01	<0.01
PAH 16 Total	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	No Access	No Access	1.106	No Access	No Access	<0.01	<0.01	<0.01
BTEX														
Benzene	1	ug/l	<1	<1	<1	<1	No Access	No Access	<1	No Access	No Access	<1	<1	<1
Toluene	1	ug/l	<1	<1	<1	<1	No Access	No Access	<1	No Access	No Access	<1	<1	<1
Ethylbenzene	1	ug/l	<1	<1	<1	<1	No Access	No Access	<1	No Access	No Access	<1	<1	<1
p/m-Xylene	1	ug/l	<1	<1	<1	<1	No Access	No Access	<1	No Access	No Access	<1	<1	<1
o-Xylene	1	ug/l	<1	<1	<1	<1	No Access	No Access	<1	No Access	No Access	<1	<1	<1

LOCATION		Ktisa / Tabatskuri																																								
SAMPLE TYPE		Groundwater																																								
SAMPLING DATES		Oct - Nov 2006																																								
SAMPLING ROUND		Round 2																																								
Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	KTMMW1	KTMMW1	KTMMW1	KTMMW2	KTMMW2	KTMMW2	KTMMW3	KTMMW3	KTMMW3	KTMMW4	KTMMW4	KTMMW4	KTMMW5	KTMMW5	KTMMW5	KTMMW6	KTMMW6	KTMMW6	KTMMW7	KTMMW7	KTMMW7	KTMMW8	KTMMW8	KTMMW8	KTMMW9	KTMMW9	KTMMW9													
			Baseline 21/09/05	Round 1 27/06/06	Round 2 31/10/06	Baseline 09/09/05	Round 1 27/06/06	Round 2 31/10/06	Baseline 22/09/05	Round 1 20/07/06	Round 2 31/10/06	Baseline 25/09/05	Round 1 27/06/06	Round 2 31/10/06	Baseline 25/09/05	Round 1 28/06/06	Round 2 31/10/06	Baseline 25/09/05	Round 1 28/06/06	Round 2 31/10/06	Baseline 25/09/05	Round 1 28/06/06	Round 2 01/11/06	Baseline 25/09/05	Round 1 28/06/06	Round 2 01/11/06	Baseline 25/09/05	Round 1 28/06/06	Round 2 01/11/06	Baseline 25/09/05	Round 1 28/06/06	Round 2 01/11/06										
GRO (C4-C12)	10	ug/l	<10	<10	Dry	<10	No Access	<10	<10	<10	<10	<10	<10	<10	No Access	<10	<10	<10	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	DRY	No Access
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	Dry	<10	No Access	<10	<10	<10	<10	<10	<10	<10	No Access	<10	<10	<10	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	DRY	No Access
EPH (DRO) (C10-C40)	10	ug/l	<10	233	Dry	<10	No Access	<10	<10	<10	<10	<10	<10	<10	No Access	<10	<10	<10	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	<10	No Access	<10	DRY	No Access
Benzofluorene	0.01	ug/l	<0.01	<0.01	Dry	<0.01	No Access	NDP	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	DRY	No Access
PAH 16 Total	0.01	ug/l	2.248	<0.01	Dry	<0.01	No Access	NDP	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	<0.01	DRY	No Access
BTEX																																										
Benzene	1	ug/l	<1	<1	Dry	<1	No Access	<1	<1	<1	<1	2	<1	No Access	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	DRY	No Access	
Toluene	1	ug/l	<1	<1	Dry	<1	No Access	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	DRY	No Access	
Ethylbenzene	1	ug/l	<1	<1	Dry	<1	No Access	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	DRY	No Access	
p/m-Xylene	1	ug/l	<1	<1	Dry	<1	No Access	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	DRY	No Access	
o-Xylene	1	ug/l	<1	<1	Dry	<1	No Access	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	<1	No Access	<1	DRY	No Access	
ADDITIONAL																																										
Calcium Dissolved	5	ug/l	38860	37590	Dry	61710	No Access	61110	43670	4247	51590	59250	45140	No Access	34810	33080	26730	13870	14280	No Access	84750	47670	No Access	56870	No Access	No Access	55220	DRY	No Access	No Access	8636	DRY	No Access	No Access	8636	DRY	No Access	No Access				
Magnesium Dissolved	5	ug/l	11010	10860	Dry	14370	No Access	10450	8195	829	8578	16960	17130	No Access	5349	6147	4017	4003	3269	No Access	16900	11790	No Access	12060	No Access	No Access	8636	DRY	No Access	No Access	8636	DRY	No Access	No Access	8636	DRY	No Access	No Access				
Manganese Dissolved	1	ug/l	462	2714	Dry	282	No Access	402	498	498	1049	1613	No Access	74	311	126	158	331	No Access	255	16	No Access	811	No Access	No Access	736	DRY	No Access	No Access	736	DRY	No Access	No Access	736	DRY	No Access	No Access					
Iron Total (HNO3 Digest)	5	ug/l	109500	8652	Dry	34900	No Access	84130	-	179500	108600	29620	55540	No Access	34160	43510	6155	40400	774900	No Access	19750	261800	No Access	446	No Access	No Access	23270	DRY	No Access	No Access	23270	DRY	No Access	No Access	23270	DRY	No Access	No Access				
Total Alkalinity as CaCO3	2	mg/l	4000	165	Dry	305	No Access	225	125	145	110	230	145	No Access	115	175	100	120	335	No Access	300	110	No Access	225	No Access	No Access	220	DRY	No Access	No Access	220	DRY	No Access	No Access	220	DRY	No Access	No Access				
Potassium Dissolved	0.2	mg/l	0.2	1.7	Dry	4.5	No Access	1.5	1.5	1.5	1.7	2.3	1.5	No Access	1.8	1.7	2.3	3.2	4.1	No Access	1.8	1.5	No Access	3.0	No Access	No Access	3.2	DRY	No Access	No Access	3.2	DRY	No Access	No Access	3.2	DRY	No Access	No Access				
Sodium Dissolved	0.2	mg/l	6.6	7.1	Dry	11.4	No Access	9.3	15.8	17.3	19.5	18.0	10.7	No Access	6.0	5.1	5.1	4.5	5.3	No Access	30.0	13.4	No Access	18.0	No Access	No Access	42.8	DRY	No Access	No Access	42.8	DRY	No Access	No Access	42.8	DRY	No Access	No Access				
Nitrate as NO3	0.3	mg/l	<0.3	0.3	Dry	<0.3	No Access	0.6	<0.3	<0.3	0.4	<0.3	<0.3	No Access	3.2	2.3	3.0	8.0	6.8	No Access	1.1	1.1	No Access	0.4	No Access	No Access	6.7	DRY	No Access	No Access	6.7	DRY	No Access	No Access	6.7	DRY	No Access	No Access				
Sulphate (soluble)	3	mg/l	3	<3	Dry	7	No Access	5	20	23	21	39	<3	No Access	5	4	3	4	4	No Access	191	5	No Access	6	No Access	No Access	104	DRY	No Access	No Access	104	DRY	No Access	No Access	104	DRY	No Access	No Access				
Chloride	1	mg/l	1	<1	Dry	1	No Access	<1	78	70	71	16	<1	No Access	4	3	3	2	1	No Access	2	<1	No Access	7	No Access	No Access	10	DRY	No Access	No Access	10	DRY	No Access	No Access	10	DRY	No Access	No Access				
pH Value	1	pH units	7.77	8.06	Dry	8.43	No Access	8.44	8.16	8.26	8.29	8.59	8.63	No Access	8.35	8.00	8.29	7.62	8.05	No Access	8.41	8.38	No Access	8.64	No Access	No Access	7.76	DRY	No Access	No Access	7.76	DRY	No Access	No Access	7.76	DRY	No Access	No Access				

Ktisa / Tabatskuri Groundwater continued

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	KTMMW10	KTMMW10	KTMMW10a	KTMMW10	KTMMW11	KTMMW11	KTMMW11	KTMMW12	KTMMW12	KTMMW13	KTMMW13	KTMMW13	KTMMW14	KTMMW14	KTMMW15	KTMMW15	KTMMW15	KTMMW16a	KTMMW16a	KTMMW16a	KTMMW17	KTMMW17	KTMMW17				
			Baseline 28/09/05	Round 1 16/07/06	Round 1 24/07/06	Round 2 01/11/06	Baseline 21/09/05	Round 1 20/07/06	Round 2 01/11/06	Baseline 21/09/05	Round 1 20/07/06	Round 2 01/11/06	Baseline 25/09/05	Round 1 16/07/06	Round 2 01/11/06	Baseline 22/09/05	Round 1 16/07/06	Round 2 01/11/06	Baseline 22/09/05	Round 1 29/06/06	Round 2 01/11/06	Baseline 27/09/05	Round 1 17/07/06	Round 2 02/11/06	Baseline 27/09/05	Round 1 17/07/06	Round 2 02/11/06		
GRO (C4-C12)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	No Access	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	No Access	<10	No Access	No Access			
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	<10	27	<10	<10	<10	<10	<10	<10	<10	12	<10	<10	33	<10	<10	<10	<10	<10	<10	<10	<10	No Access	No Access		
EPH (DRO) (C10-C40)	10	ug/l	<10	<10	<10	<10	<10	NDP	<10	NDP	<10	<10	<10	<10	<10	<10	NDP	<10	<10	<10	<10	<10	<10	<10	<10	No Access	No Access		
Benzofluorene	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NDP	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NDP	0.154	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	No Access		
PAH 16 Total	0.01	ug/l	<0.01	1.033	2.84	<0.01	<0.01	<0.01	NDP	<0.01	No Access	<0.01	<0.01	<0.01	<0.01	<0.01	NDP	2.686	<0.01	0.24	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	No Access		
BTEX																													
Benzene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	No Access	
Toluene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	No Access	
Ethylbenzene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	No Access	
p/m-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	No Access	
o-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	No Access	
ADDITIONAL																													
Calcium Dissolved	5	ug/l	43680	50020	44430	38110	24330	2135	23530	37570	No Access	27490	62460	17400	28670	69570	65260	29260	9608	8964	4521	44490	32580	30820	32470	No Access	No Access		
Magnesium Dissolved	5	ug/l	7672	7604	7444	5531	3181	262	2804	7022	No Access	5379	3612	1033	1169	10130	9066	7961	2318	2028	870	16560	8281	7921	9018	No Access	No Access		
Manganese Dissolved	1	ug/l	877	229	155	117	49	<1	<1	497	No Access	373	246	<1	4	133	<1	<1	75	14	85	<1	2	189	No Access	No Access			
Iron Total (HNO3 Digest)	5	ug/l	22880	8938	52860	12550	-	9965	326500	-	No Access	25220	17740	22670	43390	-	31170	646900	-	138200	165000	5102	15150	41430	2300	No Access	No Access		
Total Alkalinity as CaCO3	2	mg/l	190	175	225	160	105	85	105	130	No Access	125	175	60	10														



LOCATION		Ktsia / Tabatskuri																		
SAMPLE TYPE		Surface Water																		
SAMPLING DATES		Oct - Nov 2006																		
SAMPLING ROUND		Round 2																		
Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	KTWS1	KTWS1	KTWS1	KTWS2	KTWS2	KTWS2	KTWS3	KTWS3	KTWS3	KTWS4	KTWS4	KTWS4	KTWS5	KTWS5	KTWS5	KTWS6	KTWS6	KTWS6
			Baseline 21/09/05	Round 1 27/06/06	Round 2 29/10/06	Baseline 21/09/05	Round 1 19/07/06	Round 2 29/10/06	Baseline 28/09/05	Round 1 19/07/06	Round 2 29/10/06	Baseline 10/09/05	Round 1 26/06/06	Round 2 29/10/06	Baseline 10/09/05	Round 1 26/06/06	Round 2 29/10/06	Baseline 10/09/05	Round 1 26/06/06	Round 2 29/10/06
GRO (C4-C12)	10	ug/l	<10	<10	<10	<10	<10	<10	DRY	DRY	DRY	insufficient sample	<10	<10	<10	<10	<10	DRY	<10	DRY
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	<10	<10	<10	<10	DRY	DRY	DRY	insufficient sample	insufficient sample	<10	<10	<10	<10	DRY	11	DRY
EPH (DRO) (C10-C40)	10	ug/l	<10	<10	<10	<10	<10	<10	DRY	DRY	DRY	insufficient sample	insufficient sample	<10	<10	<10	<10	DRY	<10	DRY
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	DRY	DRY	DRY	insufficient sample	insufficient sample	<0.01	<0.01	<0.01	<0.01	DRY	<0.01	DRY
PAH 16 Total	0.01	ug/l	<0.01	<0.01	0.217	<0.01	<0.01	<0.01	DRY	DRY	DRY	insufficient sample	insufficient sample	<0.01	<0.01	<0.01	<0.01	DRY	<0.01	DRY
BTEX																				
Benzene	1	ug/l	<1	<1	<1	<1	<1	<1	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	DRY	<1	DRY
Toluene	1	ug/l	<1	<1	<1	<1	<1	<1	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	DRY	<1	DRY
Ethylbenzene	1	ug/l	<1	<1	<1	<1	<1	<1	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	DRY	<1	DRY
p/m-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	DRY	<1	DRY
o-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	DRY	DRY	DRY	<1	<1	<1	<1	<1	<1	DRY	<1	DRY

Ktsia / Tabatskuri Surface Water continued (1)

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	KTWS7	KTWS7	KTWS7	KTWS8	KTWS8	KTWS8	KTWS9	KTWS9	KTWS9	KTWS10	KTWS10	KTWS10	KTWS11	KTWS11	KTWS11
			Baseline 28/09/05	Round 1 26/06/06	Round 2 29/10/06	Baseline 25/09/05	Round 1 26/06/06	Round 2 29/10/06	Baseline 22/09/05	Round 1 15/07/06	Round 2 29/10/06	Baseline 27/09/05	Round 1 15/07/06	Round 2 28/10/06	Baseline 27/09/05	Round 1 15/07/06	Round 2 28/10/06
GRO (C4-C12)	10	ug/l	DRY	<10	<10	<10	<10	<10	<10	<10	<10	DRY	<10	<10	<10	<10	<10
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	DRY	10	<10	<10	<10	<10	<10	<10	<10	DRY	<10	<10	<10	<10	<10
EPH (DRO) (C10-C40)	10	ug/l	DRY	<10	<10	<10	161	<10	<10	<10	<10	DRY	<10	<10	<10	<10	<10
Benzo(a)pyrene	0.01	ug/l	DRY	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	DRY	<0.01	<0.01	<0.01	<0.01	<0.01
PAH 16 Total	0.01	ug/l	DRY	<0.01	<0.01	<0.01	0.237	<0.01	<0.01	<0.01	<0.01	DRY	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX																	
Benzene	1	ug/l	DRY	<1	<1	<1	<1	<1	<1	<1	<1	DRY	<1	<1	<1	<1	<1
Toluene	1	ug/l	DRY	<1	<1	<1	<1	<1	<1	<1	<1	DRY	<1	<1	<1	<1	<1
Ethylbenzene	1	ug/l	DRY	<1	<1	<1	<1	<1	<1	<1	<1	DRY	<1	<1	<1	<1	<1
p/m-Xylene	1	ug/l	DRY	<1	<1	<1	<1	<1	<1	<1	<1	DRY	<1	<1	<1	<1	<1
o-Xylene	1	ug/l	DRY	<1	<1	<1	<1	<1	<1	<1	<1	DRY	<1	<1	<1	<1	<1

Ktsia / Tabatskuri Surface Water continued (2)

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	KTWS12	KTWS12	KTWS12	KTWS13	KTWS13	KTWS13	KTWS14	KTWS14	KTWS14	KTWS15	KTWS15	KTWS15	KTWS16	KTWS16	KTWS16
			Baseline 29/09/05	Round 1 17/07/06	Round 2 29/10/06	Baseline 28/09/05	Round 1 17/07/06	Round 2 28/10/06	Baseline 27/09/05	Round 1 17/07/06	Round 2 28/10/06	Baseline 09/09/05	Round 1 17/07/06	Round 2 28/10/06	Baseline 10/09/05	Round 1 17/07/06	Round 2 28/10/06
GRO (C4-C12)	10	ug/l	<10	<10	<10	DRY	DRY	<10	Sample Broken	<10	<10	<10	insufficient sample	<10	<10	<10	<10
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	<10	DRY	DRY	<10	Sample Broken	<10	<10	<10	insufficient sample	<10	<10	<10	<10
EPH (DRO) (C10-C40)	10	ug/l	<10	<10	<10	DRY	DRY	<10	Sample Broken	<10	<10	<10	insufficient sample	<10	<10	<10	<10
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	<0.01	DRY	DRY	<0.01	Sample Broken	<0.01	<0.01	<0.01	insufficient sample	<0.01	<0.01	<0.01	<0.01
PAH 16 Total	0.01	ug/l	<0.01	<0.01	<0.01	DRY	DRY	<0.01	Sample Broken	<0.01	<0.01	<0.01	insufficient sample	<0.01	<0.01	<0.01	<0.01
BTEX																	
Benzene	1	ug/l	<1	<1	<1	DRY	DRY	<1	Sample Broken	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	1	ug/l	<1	<1	<1	DRY	DRY	<1	Sample Broken	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	1	ug/l	<1	<1	<1	DRY	DRY	<1	Sample Broken	<1	<1	<1	<1	<1	<1	<1	<1
p/m-Xylene	1	ug/l	<1	<1	<1	DRY	DRY	<1	Sample Broken	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	1	ug/l	<1	<1	<1	DRY	DRY	<1	Sample Broken	<1	<1	<1	<1	<1	<1	<1	<1



Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	TSW1			TSW2			TSW3			TSW4			TSW5			TSW6			TSW7					
			Baseline 16/08/2005	Round 1 08/07/06	Round 2 09/11/06	Baseline 19/08/05	Round 1 12/07/06	Round 2 06/11/06	Baseline 17/08/05	Round 1 10/07/06	Round 2 06/11/06	Baseline 17/08/05	Round 1 10/07/06	Round 2 06/11/06	Baseline 17/08/05	Round 1 14/07/06	Round 2 05/11/06	Baseline 24/08/05	Round 1 10/07/06	Round 2 05/11/06	Baseline 18/08/05	Round 1 10/07/06	Round 2 09/11/06			
GRO (C4-C12)	10	ug/l	DRY	<10	<10	<10	<10	<10	<10	No Access	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10			
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	DRY	<10	52	<10	<10	<10	No Access	<10	<10	<10	<10	<10	<10	<10	38	10	<10	Insufficient Sample	<10	<10	51			
EPH (DRO) (C10-C40)	10	ug/l	DRY	<10	<10	<10	<10	<10	No Access	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10			
Benzo(a)pyrene	0.01	ug/l	DRY	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			
PAH 16 Total	0.01	ug/l	DRY	<0.01	<0.01	0.101	<0.01	<0.01	No Access	<0.01	<0.01	0.129	<0.01	<0.01	<0.01	<0.01	<0.01	0.299	<0.01	0.031	0.106	<0.01	<0.01			
BTEX																										
Benzene	1	ug/l	DRY	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			
Toluene	1	ug/l	DRY	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			
Ethylbenzene	1	ug/l	DRY	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			
p/m-Xylene	1	ug/l	DRY	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			
o-Xylene	1	ug/l	DRY	<1	<1	<1	<1	<1	No Access	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			

Tsalka Surface Water continued (1)

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	TSW9			TSW10			TSW11			TSW12			TSW13			TSW14			TSW16					
			Baseline 25/08/05	Round 1 07/07/06	Round 2 11/11/06	Baseline 25/08/05	Round 1 07/07/06	Round 2 11/11/06	Baseline 25/08/05	Round 1 07/07/06	Round 2 11/11/06	Baseline 31/08/05	Round 1 14/07/06	Round 2 11/11/06	Baseline 01/09/05	Round 1 14/07/06	Round 2 11/11/06	Baseline 01/09/05	Round 1 14/07/06	Round 2 11/11/06	Baseline 27/08/05	Round 1 07/07/06	Round 2 11/11/06			
GRO (C4-C12)	10	ug/l	DRY	<10	No Access	<10	<10	No Access	DRY	<10	No Access	<10	<10	No Access	<10	<10	No Access	DRY	DRY	No Access	<10	<10	No Access			
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	DRY	<10	No Access	<10	<10	No Access	DRY	<10	No Access	<10	<10	No Access	<10	<10	No Access	DRY	DRY	No Access	<10	<10	No Access			
EPH (DRO) (C10-C40)	10	ug/l	DRY	362	No Access	<10	<10	No Access	DRY	<10	No Access	<10	<10	No Access	<10	<10	No Access	DRY	DRY	No Access	<10	<10	No Access			
Benzo(a)pyrene	0.01	ug/l	DRY	<0.01	No Access	<0.01	<0.01	No Access	DRY	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	DRY	DRY	No Access	<0.01	<0.01	No Access			
PAH 16 Total	0.01	ug/l	DRY	<0.01	No Access	<0.01	<0.01	No Access	DRY	<0.01	No Access	<0.01	<0.01	No Access	<0.01	<0.01	No Access	DRY	DRY	No Access	<0.01	<0.01	No Access			
BTEX																										
Benzene	1	ug/l	DRY	<1	No Access	<1	<1	No Access	DRY	<1	No Access	<1	<1	No Access	<1	<1	No Access	DRY	DRY	No Access	<1	<1	No Access			
Toluene	1	ug/l	DRY	<1	No Access	<1	<1	No Access	DRY	<1	No Access	<1	<1	No Access	<1	<1	No Access	DRY	DRY	No Access	<1	<1	No Access			
Ethylbenzene	1	ug/l	DRY	<1	No Access	<1	<1	No Access	DRY	<1	No Access	<1	<1	No Access	<1	<1	No Access	DRY	DRY	No Access	<1	<1	No Access			
p/m-Xylene	1	ug/l	DRY	<1	No Access	<1	<1	No Access	DRY	<1	No Access	<1	<1	No Access	<1	<1	No Access	DRY	DRY	No Access	<1	<1	No Access			
o-Xylene	1	ug/l	DRY	<1	No Access	<1	<1	No Access	DRY	<1	No Access	<1	<1	No Access	<1	<1	No Access	DRY	DRY	No Access	<1	<1	No Access			

Tsalka Surface Water continued (2)

Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	TSW17			TSW18			TSW19			TSW20			TSW21			TSW22		
			Baseline 25/08/05	Round 1 12/07/06	Round 2 06/11/06	Baseline 17/08/2005	Round 1 08/07/06	Round 2 06/11/06	Baseline 24/08/05	Round 1 09/07/06	Round 2 09/11/06	Baseline 24/08/05	Round 1 12/07/06	Round 2 09/11/06	Baseline 25/08/05	Round 1 13/07/06	Round 2 11/11/06	Baseline 30/08/2005	Round 1 13/07/06	Round 2 11/11/06
GRO (C4-C12)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	No Access	<10	<10	No Access	
TPH (Aliphatics and Aromatics C5-C35)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	15	<10	<10	13	<10	<10	No Access	<10	<10	No Access	
EPH (DRO) (C10-C40)	10	ug/l	<10	<10	<10	<10	<10	<10	202	<10	1137	<10	<10	<10	<10	No Access	<10	<10	No Access	
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	NA	No Access	
PAH 16 Total	0.01	ug/l	<0.01	<0.01	<0.01	0.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	No Access	<0.01	NA	No Access	
BTEX																				
Benzene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	
Toluene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	9	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	
Ethylbenzene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	
p/m-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	
o-Xylene	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	No Access	<1	<1	No Access	

LOCATION	PSG1																				
SAMPLE TYPE	Groundwater & Surface Water																				
SAMPLING DATES	Oct - Dec 2006																				
SAMPLING ROUND	Round 2																				
Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	KEY																		
			PSG1MW1	PSG1MW1	PSG1MW1	PSG1MW2	PSG1MW2	PSG1MW2	PSG1MW3	PSG1MW3	PSG1MW3	PSG1MW4	PSG1MW4	PSG1MW4	PSG1MW5	PSG1MW5	PSG1MW5	PSG1SW1	PSG1SW1	PSG1SW1	
			Baseline 09/07/05	Round 1 13/06/06	Round 2 17/11/06	Baseline 09/07/05	Round 1 13/06/06	Round 2 17/11/06	Baseline 09/07/05	Round 1 13/06/06	Round 2 17/11/06	Baseline 09/07/05	Round 1 12/06/06	Round 2 07/12/06	Baseline 09/07/05	Round 1 12/06/06	Round 2 17/11/06	Baseline 09/07/05	Round 1 12/06/06	Round 2 17/11/06	
METALS																					
Arsenic Dissolved	1	ug/l	<1	3	1	2	3	3	2	7	2	<1	3	<1	2	5	2	<1	NA	NA	
Barium Dissolved	1	ug/l	3	32	19	13	21	19	13	18	15	1	44	34	20	42	34	1	NA	NA	
Boron Dissolved	10	ug/l	145	851	903	656	1309	1115	939	1517	1476	108	750	666	267	718	632	<10	NA	NA	
Cadmium Dissolved	0.4	ug/l	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA	
Calcium Dissolved	5	ug/l	29,020	228,600	220,100	201,600	290,000	208,100	295,900	349,800	314,900	13,130	606,800	533,800	340,900	615,400	571,000	9,363	NA	NA	
Chromium Dissolved	1	ug/l	<1	2	<1	<1	<1	<1	<1	4	3	<1	3	<1	2	3	<1	<1	NA	NA	
Copper Dissolved	1	ug/l	<1	6	<1	3	4	<1	4	4	2	2	2	<1	2	1	4	<1	NA	NA	
Iron Dissolved	5	ug/l	35	NA	NA	14	NA	NA	24	NA	NA	152	NA	NA	47	NA	NA	48	NA	NA	
Iron Total (HNO3 Digest)	5	ug/l	NA	<835	8279	NA	12250	119500	NA	10880	2181	NA	<10	164	NA	<10	111	NA	NA	NA	
Lead Dissolved	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	NA	NA	
Magnesium Dissolved	5	ug/l	5,146	40740	41910	36,330	50160	38,980	56,320	60880	60,120	2,229	97790	90,700	61,950	104300	96,360	1,321	NA	NA	
Manganese Dissolved	1	ug/l	162	5	5	1010	144	222	468	18	42	4	2	<1	<1	3	1	<1	NA	NA	
Nickel Dissolved	1	ug/l	2	4	8	6	4	7	10	5	69	<1	7	3	5	5	7	<1	NA	NA	
Selenium Dissolved	1	ug/l	5	18	12	18	29	25	26	40	32	3	39	34	22	47	36	<1	NA	NA	
Mercury Dissolved	0.05	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	
Total Alkalinity as CaCO3	2	mg/l	485	1110	300	210	355	535	175	170	220	70	185	145	160	165	160	170	NA	NA	
Potassium Dissolved	0.2	mg/l	6	4.5	4.5	8.1	6.2	7.8	9.3	7.2	7.2	4.5	7.2	7.4	7.4	7.7	7.1	2.3	NA	NA	
Sodium Dissolved	0.2	mg/l	285	258.0	258.8	607.5	510	465	750	615	585	127.5	367.5	341.3	382.5	382.5	333.8	48.0	NA	NA	
Sodium Total	0.2	mg/l	360	NA	NA	442.5	NA	NA	67.5	NA	89.7	240	NA	NA	25.5	NA	NA	25.5	NA	NA	
Nitrate as NO3	0.3	mg/l	<0.3	29.4	34.0	1.7	34.4	51.7	1.1	28	89.7	21	7.6	3.5	0.4	6.1	21.6	7.0	NA	NA	
Sulphate (soluble)	3	mg/l	864	800	755	1793	1405	1198	2260	1743	1594	285	1899	1808	2031	2056	1838	259	NA	NA	
Chloride	1	mg/l	173	155	197	302	243	213	354	279	300	87	322	280	331	334	294	42	NA	NA	
Total Cyanide	0.05	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	
Free Cyanide	0.05	mg/l	<0.05	NA	NA	<0.05	NA	NA	<0.05	NA	NA	<0.05	NA	NA	<0.05	NA	NA	<0.05	NA	NA	
pH Value	1	pH Units	7.87	7.93	7.83	8.07	8.01	8.08	8.15	8.00	8.11	7.9	8.29	8.24	8.3	8.31	8.32	8.54	NA	NA	
PETROLEUM HYDROCARBONS																					
GRO (C4-C12)	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Benzene	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Toluene	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Ethyl benzene	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
m & p Xylene	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
o Xylene	10	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
TPH (Total C5-C35)	10	ug/l	<10	54	<10	<10	<10	<10	<10	<10	95	<10	12	Insufficient sample	<10	<10	<10	<10	<10	<10	
EPH (DRO) (C10-C40)	10	ug/l	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
POLYCYCLIC AROMATIC HYDROCARBONS																					
Benzo(a)pyrene	0.01	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
PAH 16 Total	0.01	ug/l	<0.01	<0.01	<0.01	0.769	0.615	<10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
SEMI-VOLATILE ORGANIC COMPOUNDS																					
Phenols: 2-Chlorophenol; 2-Methylphenol; 2-Nitrophenol; 2,4-Dichlorophenol; 2,4-Dimethylphenol; 2,4,5-Trichlorophenol; 2,4,6-Trichlorophenol; 4-Chloro-3-methylphenol; 4-Methylphenol; 4-Nitrophenol; Pentachlorophenol; Phenol																					
ALL PARAMETERS	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Phthalates: Bis(2-ethylhexyl) phthalate; Butylbenzyl phthalate; Di-n-butyl phthalate; Diethyl phthalate; Dimethyl phthalate																					
ALL PARAMETERS	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Other Semi-volatiles: 1,2-Dichlorobenzene; 1,2,4-Trichlorobenzene; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; 2-Nitroaniline; 2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 3-Nitroaniline; 4-Bromophenylphenylether; 4-Chloroaniline; 4-Chlorophenylphenylether; 4-Nitroaniline; Azobenzene; Bis(2-chloroethoxy)methane; Bis(2-chloroethyl)ether; Carbazole; Dibenzofuran; Hexachlorobenzene; Hexachlorobutadiene; Hexachlorocyclopentadiene; Hexachloroethane; Isophorone; N-nitrosodi-n-propylamine; Nitrobenzene																					
ALL PARAMETERS	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
VOLATILE ORGANIC COMPOUNDS																					
Dichlorodifluoromethane; Chloromethane; Vinyl Chloride; Bromomethane; Chloroethane; Trichlorofluoromethane; trans-1,2-Dichloroethene; Dichloromethane; Carbon Disulphide; 1,1-Dichloroethene; 1,1-Dichloroethane; Methyl Tertiary Butyl Ether; cis-1,2-Dichloroethene; Bromochloromethane; Chloroform; 2,2-Dichloropropane; 1,2-Dichloroethane; 1,1,1-Trichloroethane; 1,1-Dichloropropane; Benzene; Carbontetrachloride; Dibromomethane; 1,2-Dichloropropane; Bromodichloromethane; Trichloroethene; cis-1,3-Dichloropropane; trans-1,3-Dichloropropane; 1,1,2-Trichloroethane; Toluene; 1,3-Dichloropropane; Dibromochloromethane; 1,2-Dibromoethane; Tetrachloroethane; Chlorobenzene; Ethylbenzene; p/m-Xylene; Bromoform; Styrene; 1,1,1,2-Tetrachloroethane; o-Xylene; 1,2,3-Trichloropropane; Isopropylbenzene; Bromobenzene; 2-Chlorotoluene; Propylbenzene; 4-Chlorotoluene; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene; 1,2-Dichlorobenzene; 1,4-Dichlorobenzene; sec-Butylbenzene; 1,3-Dichlorobenzene; n-Butylbenzene; 1,2-Dibromo-3-chloropropane; 1,2,4-Trichlorobenzene; Naphthalene; 1,2,3-Trichlorobenzene; Hexachlorobutadiene																					
ALL PARAMETERS	1	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	

LOCATION		PSG2									
SAMPLE TYPE		Groundwater & Surface Water									
SAMPLING DATES		Oct - Dec 2006									
SAMPLING ROUND		Round 2									
		KEY < Less than method detection limit NA Not analysed									
Analyte	Method Detection Limit	Sample Reference Date Sampled / Units	PSG2SW1	PSG2SW1	PSG2SW1	PSG2SW2	PSG2SW2	PSG2SW2a	PSG2SW3	PSG2SW3	PSG2SW3
			Baseline 10/07/05	Round 1 14/06/06	Round 2 16/11/06	Baseline	Round 1	Round 2 16/11/06	Baseline	Round 1 14/06/06	Round 2 16/11/06
METALS											
Arsenic Dissolved	1	ug/l	<1	NA	NA	DRY	NA	NA	No Access	NA	NA
Barium Dissolved	1	ug/l	3	NA	NA	DRY	NA	NA	No Access	NA	NA
Boron Dissolved	10	ug/l	<10	NA	NA	DRY	NA	NA	No Access	NA	NA
Cadmium Dissolved	0.4	ug/l	<0.4	NA	NA	DRY	NA	NA	No Access	NA	NA
Calcium Dissolved	5	ug/l	8903	NA	NA	DRY	NA	NA	No Access	NA	NA
Chromium Dissolved	1	ug/l	<1	NA	NA	DRY	NA	NA	No Access	NA	NA
Copper Dissolved	1	ug/l	1	NA	NA	DRY	NA	NA	No Access	NA	NA
Iron Dissolved	5	ug/l	16	NA	NA	DRY	NA	NA	No Access	NA	NA
Iron Total (HNO3 Digest)	5	ug/l	NA	NA	NA	DRY	NA	NA	No Access	NA	NA
Lead Dissolved	1	ug/l	<1	NA	NA	DRY	NA	NA	No Access	NA	NA
Magnesium Dissolved	5	ug/l	1209	NA	NA	DRY	NA	NA	No Access	NA	NA
Manganese Dissolved	1	ug/l	<1	NA	NA	DRY	NA	NA	No Access	NA	NA
Nickel Dissolved	1	ug/l	<1	NA	NA	DRY	NA	NA	No Access	NA	NA
Selenium Dissolved	1	ug/l	<1	NA	NA	DRY	NA	NA	No Access	NA	NA
Mercury Dissolved	0.05	ug/l	<0.05	NA	NA	DRY	NA	NA	No Access	NA	NA
Total Alkalinity as CaCO3	2	mg/l	160	NA	NA	DRY	NA	NA	No Access	NA	NA
Potassium Dissolved	0.2	mg/l	1.4	NA	NA	DRY	NA	NA	No Access	NA	NA
Sodium Dissolved	0.2	mg/l	9.9	NA	NA	DRY	NA	NA	No Access	NA	NA
Sodium Total	0.2	mg/l	5.1	NA	NA	DRY	NA	NA	No Access	NA	NA
Nitrate as NO3	0.3	mg/l	3.3	NA	NA	DRY	NA	NA	No Access	NA	NA
Sulphate (soluble)	3	mg/l	7	NA	NA	DRY	NA	NA	No Access	NA	NA
Chloride	1	mg/l	2	NA	NA	DRY	NA	NA	No Access	NA	NA
Total Cyanide	0.05	mg/l	<0.05	NA	NA	DRY	NA	NA	No Access	NA	NA
Free Cyanide	0.05	mg/l	<0.05	NA	NA	DRY	NA	NA	No Access	NA	NA
pH Value	1	pH Units	8.65	NA	NA	DRY	NA	NA	No Access	NA	NA
PETROLEUM HYDROCARBONS											
GRO (C4-C12)	10	ug/l	<10	<10	<10	DRY	DRY	<10	No Access	<10	<10
Benzene; Toluene; Ethyl benzene; m & p Xylene; o Xylene; TPH (Aliphatics and Aromatics C5-C35); EPH (DRO) (C10-C40)											
ALL PARAMETERS	10	ug/l	<10	<10	<10	DRY	DRY	<10	No Access	<10	<10
POLYCYCLIC AROMATIC HYDROCARBONS											
Benzo(a)pyrene; PAH 16 Total											
ALL PARAMETERS	0.01 (<1)	ug/l	<0.01	<0.01	<1	DRY	DRY	<1	No Access	<0.01	<1
SEMI-VOLATILE ORGANIC COMPOUNDS:											
Phenols: 2-Chlorophenol; 2-Methylphenol; 2-Nitrophenol; 2,4-Dichlorophenol; 2,4-Dimethylphenol; 2,4,5-Trichlorophenol; 2,4,6-Trichlorophenol; 4-Chloro-3-methylphenol; 4-Methylphenol; 4-Nitrophenol; Pentachlorophenol; Phenol; Phthalates: Bis(2-ethylhexyl) phthalate; Butylbenzyl phthalate; Di-n-butyl phthalate; Di-n-Octyl phthalate; Diethyl phthalate; Dimethyl phthalate.											
ALL PARAMETERS	1	ug/l	<1	<1	<1	DRY	DRY	<1	No Access	<1	<1
Other Semi-volatiles: 1,2-Dichlorobenzene; 1,2,4-Trichlorobenzene; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; 2-Nitroaniline; 2,4-Dinitrotoluene; 2,6-Dinitrotoluene; 3-Nitroaniline; 4-Bromophenylphenylether; 4-Chloroaniline; 4-Chlorophenylphenylether; 4-Nitroaniline; Azobenzene; Bis(2-chloroethoxy)methane; Bis(2-chloroethyl)ether; Carbazole; Dibenzofuran; Hexachlorobenzene; Hexachlorobutadiene; Hexachloroethane; Isophorone; N-nitrosodi-n-propylamine; Nitrobenzene.											
ALL PARAMETERS	1	ug/l	<1	<1	<1	DRY	DRY	<1	No Access	<1	<1
Hexachlorocyclopentadiene	1	ug/l	<1	<1	<2	DRY	DRY	<2	No Access	<1	<2
VOLATILE ORGANIC COMPOUNDS											
Dichlorodifluoromethane; Chloromethane; Vinyl Chloride; Bromomethane; Chloroethane; Trichlorofluoromethane; trans-1,2-Dichloroethene; Dichloromethane; Carbon Disulphide; 1,1-Dichloroethene; 1,1-Dichloroethane; Methyl Tertiary Butyl Ether; cis-1,2-Dichloroethene; Bromochloromethane; Chloroform; 2,2-Dichloropropane; 1,2-Dichloroethane; 1,1,1-Trichloroethane; 1,1-Dichloropropene; Benzene; Carbon tetrachloride; Dibromomethane; 1,2-Dichloropropane; Bromodichloromethane; Trichloroethene; cis-1,3-Dichloropropene; trans-1,3-Dichloropropene; 1,1,2-Trichloroethane; Toluene; 1,3-Dichloropropane; Dibromochloromethane; 1,2-Dibromoethane; Tetrachloroethene; 1,1,1,2-Tetrachloroethane; Chlorobenzene; Ethylbenzene; p/m-Xylene; Bromoform; Styrene; 1,1,2,2-Tetrachloroethane; o-Xylene; 1,2,3-Trichloropropane; Isopropylbenzene; Bromobenzene; 2-Chlorotoluene; Propylbenzene; 4-Chlorotoluene; 1,2,4-Trimethylbenzene; 4-Isopropyltoluene; 1,3,5-Trimethylbenzene; 1,2-Dichlorobenzene; 1,4-Dichlorobenzene; sec-Butylbenzene; tert-Butylbenzene; 1,3-Dichlorobenzene; n-Butylbenzene; 1,2-Dibromo-3-chloropropane; 1,2,4-Trichlorobenzene; Naphthalene; 1,2,3-Trichlorobenzene; Hexachlorobutadiene; Dichlorodifluoromethane											
ALL PARAMETERS	1	ug/l	<1	<1	<1	DRY	DRY	<1	No Access	<1	<1

Appendix 2.2f – Waste

Total Figures, 2006

TYPE OF WASTE (m ³)	PSG1 (site and camp)	PSG2 (site and camp)	SES Tsalka	SES Borjomi	BVs	SES Rustavi and Tbilisi Office
Hazardous waste disposed offsite						
Oily solids	9.84	9.1	1.6	1.65	1.17	0.95
Oily liquids	3.6	5.3	0	0	7.5	0
Sewage sludge	313.5	32	0	0	0	0
Wax	0.8	4.2	0	0	0	0
Other	68.6	24.7	0.1	1.5	0	4.1
Non-hazardous waste disposed offsite						
Glass	0	0	0	0	0	0
Plastic	0	0.1	0	1.7	0	0.2
Paper	0	0.1	0.6	0	0	0
Metal / (Concrete)	2.1	16.2	0	0	0	0
Organic Wastes (food wastes)	26.8	58.6	0	0	0	0
General	474.6	310.7	23.7	22.7	149.81	36.5
Non-hazardous waste re-cycled/recovered offsite						
Glass	0	0.3	0	0	0	0
Plastic (stored)	20	24.3	0.2	0	0	0
Paper	26.7	31.8	0.15	0	0	1
Metal (stored)	0.4	0.03	0	0	0	0
Timber (stored)	4.1	4.1	0	0	0	0

APPENDIX 2.3: TURKEY

Please read this section in conjunction with the commentary in Section 5.2.3.

Appendix 2.3a – Ambient Air Quality

Air Quality Standards for Ground Level Concentrations (µg/m³)

Parameter	Project Standards (Turkey)	Averaging Period
VOCs	Benzene: 5	Annual average by 2010 (Note: A limit value of 10 µg/m ³ (100%) must be met on 13 December 2000, reducing on 1 January 2006 and every 12 months thereafter by 1 µg/m ³ to reach 0% (5 µg/m ³) by 1 January 2010).
Oxides of Nitrogen (NO _x)	40	Annual average by 2010
Sulphur Dioxide (SO ₂)	20*	Annual mean
	125	24 hour average or 95%
Particulate Matter (PM ₁₀)	20	Annual average by 2010 (Note: A limit value of 30 µg/m ³ (50%) must be met on 1 January 2005, reducing every 12 months thereafter by equal annual percentages to reach 0% (20 µg/m ³) by 1 January 2010.)

Ceyhan Marine Terminal - Averages of 2006 Measurements

No.	Monitoring Date	Average Ambient Concentrations ($\mu\text{g}/\text{m}^3$)							
		PM ₁₀	SO ₂	NOx	Benzene	Toluene	Ethyl Benzene	o-xylene	m/p xylene
CMT 1	Jan-Apr-July-Sep-Dec 2006	22,60	6,62	16,24	1,64	6,99	0,42	0,43	0,91
CMT 2		35,22	6,67	17,14	1,28	1,49	0,37	0,29	0,55
CMT 3		22,59	6,46	13,65	1,21	2,82	0,30	0,36	0,58
CMT 4		32,75	5,31	14,46	1,17	1,24	0,27	0,25	0,52
CMT 5		20,14	9,62	19,69	1,19	1,40	0,34	0,35	0,50
CMT 6		18,65	7,90	14,22	1,24	1,49	0,33	0,29	0,47
CMT 7		21,54	4,92	14,57	1,10	1,35	0,30	0,36	0,46
CMT 8		27,38	6,41	14,99	0,86	1,19	0,23	0,27	0,38
CMT 9		20,97	5,73	15,76	1,14	2,70	0,44	0,56	1,19
CMT 10		23,92	6,75	13,32	1,32	1,33	0,36	0,33	0,59

NOTE: Figures in red show non-compliance with BTC standards

Appendix 2.3b – Stack Emissions

Stack Emission Standards

Emission stream sources	Parameters	Project Specified Standard
5 MW Reciprocating engines (gas fired) PT1, 2, 3 and 4	Nox	200 mg/Nm ³
	SO ₂	100 mg/Nm ³
	PM ₁₀	10mg/Nm ³
	CO	100 mg/Nm ³
Diesel Generators at PT1, 2, 3 and 4 and IPT1 and IPT2 and CMT	Nox	2,000 mg/Nm ³
	SO ₂	1,000 mg/Nm ³
	PM ₁₀	130 mg/Nm ³
	CO	650 mg/Nm ³
Water Bath Heater	Nox	460 mg/Nm ³
	SO ₂	1,000 mg/Nm ³
	PM ₁₀	100 mg/Nm ³
Backup Engine for firewater pumps (diesel fired)	Nox	460 mg/Nm ³
	SO ₂	1,000 mg/Nm ³
	PM ₁₀	100 mg/Nm ³

Stack Emission Monitoring Results for Pump Stations and Intermediate Piggung Stations 1 & 2

Facility	Parameter	Emission Source								
		Driver Engine 1	Driver Engine 2	Driver Engine 3	Driver Engine 4	Driver Engine 5	Water Heater 1	Water Heater 2	Water Heater 3	Diesel generator
PT1										
Date of last monitoring by BIL (Dokay)		n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	Oct '06	Oct '06	Oct '06	Oct '06
Monitoring result	NOx	n/a	n/a	n/a	n/a	n/a	131	124	133	1663
	SO ₂	n/a	n/a	n/a	n/a	n/a	29	8	2	56
	CO	n/a	n/a	n/a	n/a	n/a	0	3	0	17
	PM	n/a	n/a	n/a	n/a	n/a	0	18,2	2,7	29,19
Date of previous monitoring by Botaş (Çinar)		July '06	July '06	July '06	July '06	July '06	July '06	July '06	July '06	May '05
Monitoring result	NOx	0,6	1,7	0	n/a	1,8	1,1	1,9	0,8	264
	SO ₂	0	0	0	n/a	0	2	0	0	0
	CO	74	57	54	n/a	92	0	1	5	136
	PM	5,25	52,98	8,83	n/a	4,29	7,9	1,55	1,86	n/a
PT2										
Date of last monitoring by BIL (Dokay)		n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	not existing	Oct '06	Oct '06	Oct '06	Oct '06
Monitoring result	NOx	n/a	n/a	n/a	n/a		149	128	146	936
	SO ₂	n/a	n/a	n/a	n/a		0	0	0	140
	CO	n/a	n/a	n/a	n/a		0	0	0	127
	PM	n/a	n/a	n/a	n/a		2,1	1,27	3,39	38,75
Date of previous monitoring by Botaş (Çinar)		n/a (not operational)	n/a (not operational)	n/a (not operational)	n/a (not operational)		July '06	July '06	July '06	July '06
Monitoring result	NOx	n/a	n/a	n/a	n/a		2,2	2,8	1,4	3,5
	SO ₂	n/a	n/a	n/a	n/a		0	3	0	0
	CO	n/a	n/a	n/a	n/a		1	1	0	612
	PM	n/a	n/a	n/a	n/a		4,09	5,06	4,65	22,01
PT3										
Date of last monitoring by BIL (Dokay)		n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	Oct '06	Oct '06	Oct '06	Oct '06
Monitoring result	NOx	n/a	n/a	n/a	n/a	n/a	n/a	136	148	403
	SO ₂	n/a	n/a	n/a	n/a	n/a	n/a	0	0	330
	CO	n/a	n/a	n/a	n/a	n/a	n/a	0	2	1809
	PM	n/a	n/a	n/a	n/a	n/a	n/a	11,8	1,62	25,5
Date of previous monitoring by Botaş (Çinar)		n/a (not operational)	July '06	July '06	July '06	July '06	July '06	July '06	July '06	July '06
Monitoring result	NOx	n/a	0	75,5	8,3	338,9	0,5	0,3	1	8,7
	SO ₂	n/a	0	0	0	0	0	0	0	0
	CO	n/a	65	45	61	24	6	4	3	9
	PM	n/a	6,96	12,3	13,78	9,06	4,36	5,46	3,51	20,67

Facility	Parameter	Emission Source								
		Driver Engine 1	Driver Engine 2	Driver Engine 3	Driver Engine 4	Driver Engine 5	Water Heater 1	Water Heater 2	Water Heater 3	Diesel generator
PT4										
Date of last monitoring by BIL (Dokay)		n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	n/a (not in programme)	not existing	n/a (not operational)	Oct '06	Oct '06	Oct '06
Monitoring result	NOx	n/a	n/a	n/a	n/a		n/a	125	103	484
	SO ₂	n/a	n/a	n/a	n/a		n/a	17	2	225
	CO	n/a	n/a	n/a	n/a		n/a	0	0	774
	PM	n/a	n/a	n/a	n/a		n/a	2,71	3,22	35,13
Date of previous monitoring by Botaş (Çinar)		n/a (not operational)	n/a (not operational)	n/a (not operational)	n/a (not operational)		July '06	July '06	July '06	July '06
Monitoring result	NOx	n/a	n/a	n/a	n/a		0,9	0,2	0,2	17,8
	SO ₂	n/a	n/a	n/a	n/a		0	0	2,0	17
	CO	n/a	n/a	n/a	n/a		2	42	0	665
	PM	n/a	n/a	n/a	n/a		5,48	6,04	3,64	13,84
IPT1										
Date of last monitoring by BIL (Dokay)		n/a (no driver engines on IPT1)				Oct '06	Only one water heater on IPT1			Oct '06
Monitoring result	NOx					46				779
	SO ₂					19				212
	CO					0				71
	PM					2,11				37,95
Date of previous monitoring by Botaş (Çinar)						n/a (not operational)				July '06
Monitoring result	NOx					n/a				2,5
	SO ₂					n/a				0
	CO					n/a				491
	PM					n/a				42,54
IPT2										
Date of last monitoring by BIL (Dokay)		n/a (no driver engines on IPT2)				n/a (not operational)	Only one water heater on IPT2			Oct '06
Monitoring result	NOx					n/a				423
	SO ₂					n/a				191
	CO					n/a				632
	PM					n/a				34,91
Date of previous monitoring by Botaş (Çinar)						n/a (not operational)				July '06
Monitoring result	NOx					n/a				57
	SO ₂					n/a				0
	CO					n/a				849
	PM					n/a				45,04

Stack Emission Monitoring Results for Ceyhan Marine Terminal

Facility	Parameter	Emission Source					
		Process Area Wax Handling Boiler (diesel)	Metering Wax Handling Boiler (diesel)	General Facilities Water Heater 1 (LPG)	General Facilities Water Heater 2 (LPG)	Housing Compound Water Heater (LPG)	Process Area Water Heater (LPG)
CMT							
Date of last monitoring by BIL		n/a (not operational)	n/a (not operational)	Nov '06	Nov '06	Nov '06	Nov '06
Monitoring result	NOx	n/a	n/a	7	148	156	131
	SO ₂	n/a	n/a	0	37	13	14
	CO	n/a	n/a	882	6	0	0
	PM	n/a	n/a	0	0	0	0
Date of previous monitoring by Botaş		July '06	July '06	July '06	July '06	July '06	July '06
Monitoring result	NOx	0,9	0	75,9	0	0	0
	SO ₂	10	51	0	0	0	0
	CO	1	11	2.706	2	1	1
	PM	9,27	138,77	2,76	2,51	1,96	1,66

Appendix 2.3c – Noise

Ceyhan Marine Terminal underwater noise measurement results

Measurement	Measurement Point	Measurement Date and Time	Total Sound Pressure Level, SPL
			dB ref.1-µPa
Baseline	Stern of the tug boat	24.08.2006; 06:30	160.1
During tanker approaching	Waist of the tug boat	24.08.2006; 07:00	162.5
	Stern of the tug boat	24.08.2006; 07:15	166.8
	Stern of the tug boat (Motor of water pressure tank not working)	24.08.2006; 07:30	167.3
	Stern of the tug boat	25.08.2006; 17:30	170.5
During tanker loading	Stern of the tug boat (Closer to the tanker)	25.08.2006; 17:45	170.0
During tanker departure after loading	Stern of the tug boat	26.08.2006; 06:00	174.4

Appendix 2.3d – Aqueous Discharges

Aqueous Discharge Standards

Waste stream sources	Parameters	Project Specified Standard
Aqueous discharge to surface waters from oily water separators, sewage treatment plants and fosseptic tanks in all facilities.	All limits 95 th percentiles of annual operational hours.	
	pH	6–9
	BOD	25mg/l
	COD	125mg/l
	Oil and grease	10mg/l
	Total suspended solids	35mg/l
	<i>Metals</i>	
	Heavy metals, total	10mg/l
	Cd	0.05mg/l
	Cr total	0.5mg/l
	Cu	0.5mg/l
	Pb	0.5mg/l
	Hg	0.01mg/l
	Ni	0.5mg/l
	Zn	2.0mg/l
	Total Nitrogen	10-15mg/l
	NH ₄	10mg/l
	Chlorine, total residual	0.2mg/l
	Phenols	0.5mg/l
	Total Phosphorus	1-2.0mg/l
	Sulphur	1.0mg/l
Coliform bacteria	<400MPN/100ml	
Discharges to marine environment from Oily Water Separator on Marine Terminal Jetty, metering station, sewage treatment and oily water treatment plant on Housing Compound and General Facilities.	For marine outfall	
	pH	5–9
	BOD	25mg/l
	COD	125mg/l
	Oil and grease	10mg/l
	Total suspended solids	35mg/l
	<i>Metals</i>	
	Heavy metals, total	10mg/l
	Cd	0.05mg/l
	Cr total	0.5mg/l
	Cu	0.5mg/l
	Pb	0.5mg/l
	Hg	0.01mg/l
	Ni	0.5mg/l
	Zn	2.0mg/l
	Total Nitrogen	10-15mg/l
	NH ₄	0.02mg/l
	Chlorine, total residual	0.2mg/l
	Phenols	5.0mg/l
	Total Phosphorus	1-2.0mg/l
	Sulphur	1.0mg/l
Coliform bacteria	<200MPN/100ml	

PT1 Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06
Ops WWTP												
BOD (mg/l)									15			
COD (mg/l)									44,5			
TSS (mg/l)									21,6			
Chlorine (mg/l)	No data					No discharge			0,29	No discharge		
Coliform bacteria									0			
Oil and grease (mg/l)									4,5			
pH									7,92			
Construction WWTP												
BOD (mg/l)									Not operational			
COD (mg/l)												
TSS (mg/l)												
Chlorine (mg/l)	No discharge											
Coliform bacteria												
Oil and grease (mg/l)												
pH												
Storm Water Pond (SWP)												
BOD (mg/l)									No discharge			
COD (mg/l)												
TSS (mg/l)												
Chlorine (mg/l)	No data											
Coliform bacteria												
Oil and grease (mg/l)												
pH												
OWS												
TSS (mg/l)									4	8,8	No discharge	
Oil and grease (mg/l)	No data					No discharge			1,4	4,4		
pH									7,39	6,91		

PT2 Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	
Ops WWTP													
BOD (mg/l)							25				10		
COD (mg/l)							60				15,24		
TSS (mg/l)							2				2		
Chlorine (mg/l)	No data		No discharge				No data	No discharge			0	No discharge	
Coliform bacteria							0				0		
Oil and grease (mg/l)							6,2				4		
pH							7,86				8,75		
Construction WWTP													
BOD (mg/l)								No discharge					
COD (mg/l)													
TSS (mg/l)													
Chlorine (mg/l)	No discharge					No data							
Coliform bacteria													
Oil and grease (mg/l)													
pH													

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06
Storm Water Pond (SWP)												
BOD (mg/l)												
COD (mg/l)												
TSS (mg/l)												
Chlorine (mg/l)	No data						No discharge					
Coliform bacteria												
Oil and grease (mg/l)												
pH												
OWS												
TSS (mg/l)							7					
Oil and grease (mg/l)	No data						1,2		No discharge			
pH							8,17					

PT3 Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06
Ops WWTP												
BOD (mg/l)						No discharge		24				
COD (mg/l)								80				
TSS (mg/l)								0,01				
Chlorine (mg/l)	No data					No discharge		0	No discharge			
Coliform bacteria								0				
Oil and grease (mg/l)								1,17				
pH								7,97				
Construction WWTP												
BOD (mg/l)				25				Not operational				
COD (mg/l)				114								
TSS (mg/l)				24								
Chlorine (mg/l)	No discharge			0,1	No discharge							
Coliform bacteria				0								
Oil and grease (mg/l)				8								
pH				8,03								
Storm Water Pond (SWP)												
BOD (mg/l)												
COD (mg/l)												
TSS (mg/l)												
Chlorine (mg/l)	No data						No discharge					
Coliform bacteria												
Oil and grease (mg/l)												
pH												
OWS												
TSS (mg/l)							11,4	5,2	30,4	No discharge		11,6
Oil and grease (mg/l)	No data						1,2	0,8	6,8			5
pH							8,26	8,06	6,91			6,92

PT4 Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06				
Ops WWTP																
BOD (mg/l)	No data			No discharge			20	No discharge			5					
COD (mg/l)							108,64				22,1					
TSS (mg/l)							10,83				8					
Chlorine (mg/l)							0				0,13					
Coliform bacteria							0				2					
Oil and grease (mg/l)							4,2				8,8					
pH							7,46				7,09					
Construction WWTP																
BOD (mg/l)	No discharge			16,7	22,2	No discharge			Not operational		No discharge		Not operational		No Discharge	
COD (mg/l)				47,04	74,48											
TSS (mg/l)				31,6	32,6											
Chlorine (mg/l)				0,1	0,2											
Coliform bacteria				5	5											
Oil and grease (mg/l)				9,8	9,67											
pH				8,23	8,3											
Storm Water Pond (SWP)																
BOD (mg/l)	No data						No discharge				22,78					
COD (mg/l)											57,6					
TSS (mg/l)											8					
Chlorine (mg/l)											0,01					
Coliform bacteria											25					
Oil and grease (mg/l)											7					
pH											8,31					
OWS																
TSS (mg/l)	No data						No discharge		20,4	No discharge		15,6	7,6			
Oil and grease (mg/l)									2,2			3,8	6			
pH									7,85			7,27	8,07			

IPT1 Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06
OWS												
TSS (mg/l)	No data						No discharge					
Oil and grease (mg/l)												
pH												

IPT2 Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06
OWS												
TSS (mg/l)	No data						No discharge					
Oil and grease (mg/l)												
pH												

CMT Aqueous Discharges Monitoring Results

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06
Storm Water Pond (SWP)												
BOD (mg/l)							No discharge				3	1
COD (mg/l)							No discharge				16.6	36.6
TSS (mg/l)							No discharge				14.4	15.2
Chlorine (mg/l)	No data						No discharge				0.2	0.18
Coliform bacteria											0	0
Oil and grease (mg/l)											3.4	4.6
pH											7.67	7.87
Construction WWTP downstream												
BOD (mg/l)							n/a				No discharge	
COD (mg/l)							n/a				No discharge	
TSS (mg/l)							n/a				No discharge	
Chlorine (mg/l)							n/a				No discharge	
Coliform bacteria							n/a				No discharge	
Oil and grease (mg/l)							n/a				No discharge	
pH							n/a				No discharge	
OWS 3 (process area)												
TSS (mg/l)							2.00		No discharge	No data	No discharge	
Oil and grease (mg/l)	No data						2.00					
pH							8.20					
OWS 4 (tank farm)												
TSS (mg/l)							No data				No discharge	
Oil and grease (mg/l)							No data				No discharge	
pH											No discharge	
OWS 5 (metering area)												
TSS (mg/l)							2.00		No discharge			
Oil and grease (mg/l)	No data						2.00					
pH							7.70					
OWS 6 (jetty 1)												
TSS (mg/l)							No data				No discharge	
Oil and grease (mg/l)							No data				No discharge	
pH											No discharge	
OWS 7 (jetty 2)												
TSS (mg/l)							No data				No discharge	
Oil and grease (mg/l)							No data				No discharge	
pH											No discharge	

Appendix 2.3e – Waste

Total Waste Volumes (Construction and Operations), 2006 (tonnes)

	Jan 06	Feb 06	March 06	April 06	May 06	June 06	July 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	TOTAL
Hazardous waste disposed	0.07	0.05	11.47	16.56	5.84	1.59	10.10	2.52	0.52	1.78	5.83	10.83	67.16
Non-hazardous waste disposed offsite	14.50	7.48	8.10	8.5	6.30	5.92	8.10	6.01	7.35	4.34	7.22	18.60	102.42
Non-hazardous waste recovered/ recycled offsite	16.85	20.26	29.19	51.68	196.87	87.94	36.13	3.58	9.26	11.23	7.74	10.07	480.8

APPENDIX 3: CLOSE OUT STATUS OF ACTIONS RELATED TO NON-COMPLIANCES RAISED THROUGH IEC MONITORING

Appendix 3 contains BTC's response and progress towards implementing and effectively closing out the non-compliances raised by IEC. Items that remain open are reported in the BTC E&S Reports until they have been closed. Items that have been closed do not appear in subsequent reports. In adopting this approach, the Project aims to provide the transparency and assurance that measures are being taken to ensure follow-up and close out of all actions to address the non-compliances.

Sections below contains:

- An update on all previous non-compliances which were still open in the 2006-H1 report; and
- The one new non-compliance raised by the IEC during their October 2006 monitoring visit (in Georgia only).

APPENDIX 3A – AZERBAIJAN ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
2.4.1	June 2006	Waste Management	During the visit at the Temirmash facility the empty paint cans storage area was not properly maintained and poor housekeeping was observed.	I	Enhancement actions should be implemented as soon as practical in order to achieve an acceptable storage solution.	Housekeeping was been looked at and improved. The facility has now been decommissioned and waste temporarily stored at BP Serenja Site until a suitable disposal route is identified.	CLOSED
2.4.3	June 2006	Waste Management	Sewage from PSA2 and IPA1, currently trucked to the Sahil Municipal Plant, will be switched to the Mingechevir Municipal Plant, neither of which is fully compliant.	I	Although both Sahil and Mingechevir Municipal Plants are reported to be temporary solution for sewage disposal, BTC needs to make additional efforts to speed up the construction of the new WWTPs planned at PSA2 and IPA1.	BTC has committed significant resources to the upgrade of the entire WWTP system at PSA2 and IPA1 and a Plan is in place and being implemented to achieve this. Upon completion of the upgrade works the discharge to the Municipal facilities will be stopped.	OPEN

APPENDIX 3B – GEORGIA ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
	October 2005	Archaeological Late Finds Protocol	Construction outside of the ROW (borrow pits; access roads) has not been treated with the same degree of study and treatment as the ROW. A Middle Bronze Age kurgan located on the main access between Tetrtskaro and Tsalka near Access KP 102 was bisected during road improvements and that compensatory excavations have not been undertaken. A similar situation is reported to exist on the access between Tsalka and Tabatskuri. It was reported that the BTC archaeologists did not have contractual responsibility to work at non-ROW locations. This situation is a significant non-compliance as the "Late Finds Protocol" is intended to cover the ROW or other project construction areas.	II	An assessment of the damage significant at the locations under responsibility of SPJV is not possible until there is compensatory excavation. The issue will be investigated by the IEC during the next visit.	BTC has assumed responsibility of any off-ROW SPJV related cultural heritage damage and is managing all SPJV legacy sites as per the Late Finds Protocol.	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
3.2.1	June 2006	Construction Camps	PSG2 camp, kitchen and office taps where low levels of coliforms (1-3 MPN total coliforms/100 ml) have been persistently detected throughout 2006.	II	Determine the origin of the low levels of total coliforms at PSG2; fix the problem; and verify that the problem has been resolved.	Corrective actions have been taken and recent test data demonstrates full compliance with WHO potable water standards.	CLOSED
3.3.1	June 2006	Waste Management	The Central Waste Accumulation Area (CWAA) at PSG1 was visited during this mission. The condition of this facility was found to be deteriorated from previous visits.	II	BTC should implement ASAP planned improvements at the CWAA at PSG1.	Closed during October 2006 audit as the designed and planned improvements are ongoing with proper resources and budgets available.	CLOSED
2.2.1	October 2006	Procurement and Supply	The IEC visited the Atskuri gravel pit managed by a subcontractor of GeoEngineering. Few non-compliant conditions were observed at the fuelling area with absence of paved and bunded areas, poor waste oil management practices, absence of oil spill kits, and limited or absent pollution prevention measures.	I	Strengthen the management of the subcontractors throughout proper auditing, training and continuous monitoring.	Extraction activities at this location have ended. The site has been reinstated and a close out report is under preparation.	CLOSED

APPENDIX 3C – TURKEY ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.4.2	October 2004	Waste Management	Uncontrolled dumping of a variety of Project waste at the Narlik inert material disposal site for the Ceyhan Marine Terminal. (Observation made in June 2005).	II (repeat)	The Project supplied IEC with documentation in response to a Level II finding in June 2005. IEC considers that the updated documents provided by the Project do not adequately address concerns about potential liability at the Narlik site and requests further supporting evidence that only inert waste was disposed of at this location.	An Environmental Assessment Report for Inert Materials Storage at the Narlik site has been prepared by Tekfen. Additional details have been requested by IEC. BTC Co has requested data from Botaş. This item has been captured in the Provisional Acceptance punch-list that details outstanding work. Punch-list items are currently being worked through.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.6.1	October 2005	Reinstatement	Particularly in some high elevation areas with fragile and thin topsoil, topsoil has been stored for more than 2 years and, from a visual assessment, its fertility appears to be significantly reduced. Fertility conditions have not been assessed by the Project	II (repeat)	Note that BTC will initiate an assessment of reinstatement success in high elevation areas in the summer of 2006.	Botaş will prepare a corrective action plan for dealing with areas where revegetation is non-compliant with project revegetation and erosion performance requirements. This will include soil nutrient testing together with possible methods for soil amelioration, and the timing for such action. The Level II Non-Compliance has been downgraded to Level I on this basis. Corrective action plans are outstanding. This item has been captured in the Provisional Acceptance punch-list that details outstanding work. Punch-list items are currently being worked through	OPEN
4.6.3	October 2005	Reinstatement	Reinstatement of existing access roads	II (repeat)	The situation with regard to existing access roads, and in particular expansion of existing access roads, is not clear, especially in Lot B. The Project should clarify a position with regard to the commitment that all existing roads shall be reinstated.	Requirements for reinstatement of access roads have been captured in punch-lists that detail outstanding work. Punch-list items are currently being worked through.	OPEN
4.4.1	June 2006	Waste Management	The CWAA at CMT, operated by Tekfen, was found in poor condition.	II	The construction CWAA site should be cleaned up and a commitment to operate according to past standards should be made	An agreement has been reached between BTC and Botaş, to construct a new CWAA at the Terminal. The final scope and specification for this work is ongoing. The Tekfen CWAA is being operated by BIL and considerable improvements have been made to the facility to bring it in line with project waste storage requirements.	OPEN
4.4.1	June 2006	Waste Management	Housekeeping at the PT2 CWAA was found to need improvement.	I	The Project should undertake a review of waste management operations across all Project facilities to make certain that disposal measures continue to comply with Project practices and standards, especially at construction camps still in use	The CWAA at PT2 is now under BIL management. All Construction related wastes have been removed, and the site has been cleaned up and is again compliant with Project requirements.	OPEN
4.4.4	June 2006	Emissions	Four of six measurements taken since January 2006, at the new CMT WWTP have been non-compliant for BOD5 and coliforms	II	The Project should take immediate action to ensure that this facility complies with BOD5 and coliform discharge standards	System performance evaluation is ongoing. Design modifications are under consideration. Discharge from the storm water pond is prevented if it does not meet project standards.	OPEN
4.5.1	June 2006	Emissions	The available analytical results for oil and grease at three of the CMT OWS were non compliant during the first round of sampling in April 2006, but are reported to comply with the Project standards in May 2006.	I	The Project should evaluate the systems, as built, and their actual capacity to ensure proper treatment. The full list of parameters indicated in the Operations ESAP should be consistently monitored during the start up period	The OWS treatment systems are being evaluated at each of the AGIs. Monitoring is on-going.	OPEN

APPENDIX 4: STATUS OF RECOMMENDATIONS RAISED THROUGH SRAP MONITORING

Appendix 4 contains the following for Azerbaijan, Georgia and Turkey:

- Status of key recommendations raised during previous SRAP visits that were open at the time of the 2006-H1 report (see Table A4.1); and
- All new recommendations raised by SRAP in their September 2006 monitoring visit (see Table A4.2).

It is hoped that this provides a transparent mechanism to demonstrate follow-up and close out of all actions to address the recommendations.

Table A4.1 shows recommendations from Part A (all three countries) of the SRAP Audit report. This table shows all actions from previous SRAP reviews that were shown as open in the 2006-H1 report. Full reports from the SRAP audits are available on www.bp.com/caspian.

Table A4.1: Tracking of Recommendations from Previous Reviews

No	Date	Recommendation	Status as of end December 2006
1	March 2006	BTC Co. to update impact tables of the three respective RAPs to reflect final actual impacts on land and population resulting from project construction, using a format similar to that below in each of the three countries.	Replaced by Sept 06 recommendation
2	March 2006	BTC Co. to hold in Azerbaijan and Georgia a formal review of outstanding cases with CLEE and APLR respectively on a six-monthly basis, to monitor the total number of outstanding land compensation cases on a six-monthly basis and get this number approved by CLEE and APLR respectively.	Georgia – Ongoing Azerbaijan – To do
3	March 2006	In Azerbaijan and Georgia, BTC Co. land teams to prepare for roll-over of pending compensation cases to Operations, including associated budgetary arrangements and transfer of files.	Completed
4	March 2006	Azerbaijan to circulate its lessons learned from the Tovuz camp decommissioning to the other country teams.	Completed
5	March 2006	In all three countries, BTC Co. to pay special attention to vulnerable groups during the land exit process.	Ongoing – Replaced by September 2006 recommendation
6	March 2006	In all three countries, BTC Co. to review resources required for on-going land administration at Operations phase.	Ongoing – Replaced by September 2006 recommendation
7	March 2006	In Georgia, BTC Co. to identify landowners in the vicinity of Above-Ground Installations that may have been affected by more significant and permanent land impacts, and to monitor all of them for livelihood restoration.	Ongoing
8	March 2006	Third party agricultural specialists to be used in assessing reasons for any crop impairment, advising on remedial measures and in valuing any crop reduction or loss (and in case of Turkey, to continue to be used).	Ongoing – Replaced by September 2006 recommendation

No	Date	Recommendation	Status as of end December 2006
9	March 2006	BTC Project to develop clear and documented procedures to: <ul style="list-style-type: none"> • Survey & delimit extent of project damaged roads • Agree reinstatement strategy, roles and responsibilities (contractor versus government authorities) • Conduct final inspection and community/ authority acceptance. 	Georgia and Azerbaijan – Ongoing Turkey – Completed as part of Land Exit
10	March 2006	BTC Project to take all reasonable measures to ensure that commitments to reinstate project affected roads are delivered in a timely manner, either directly through construction contractors or, through agreements with responsible government authorities.	Georgia and Turkey – Ongoing Azerbaijan – Completed
11	March 2006	BTC Co. (all countries) to establish grievance task forces with Contractors to resolve as many grievances as possible before Contractors pull out, to consolidate and reconcile grievance logs (Georgia), to identify and deal with the backlog of grievances left pending by the Contractor, and to plan the roll-over of these into Operations.	Georgia and Turkey – Ongoing
12	March 2006	BTC Co. to make stakeholders aware of avenues available to lodge complaints during Operations.	Ongoing – Replaced by September 2006 recommendation
13	March 2006	BTC Co. to undertake independent final evaluations of the CIP in all three countries.	Georgia and Turkey – Completed Azerbaijan – Ongoing
14	March 2006	BTC Co. to identify areas where continued support is needed (health insurance scheme in Azerbaijan for example), and to make provisions in the Operations CIP for such support.	Replaced by September 2006 recommendation Turkey – Completed
15	March 2006	BTC Co. to undertake a pragmatic social risk assessment for the Operations phase, and to design within the Operations CIP proactive measures to address identified risks, particularly in communities located near permanent installations such as pumping stations and terminals.	Ongoing – Replaced by September 2006 recommendation
16	March 2006	For future CIP extension, BTC Co. to look at procurement approaches that ensure continuity of implementing partners, where appropriate.	Azerbaijan – Ongoing
17	March 2006	BTC Co. and Botaş to consider a repeat of the “linefill” exercise during the summer in Turkey to mitigate the poor attendance of the first one.	Completed
18	March 2006	BTC Co. (with BIL in Turkey) to develop Operations consultation plans for each of the three countries.	Replaced by September 2006 recommendation
19	September 2005	Where land exit will not occur by 31 December 2005, project affected people need to be informed as early as possible before the end of the year.	Azerbaijan – Completed In Georgia agreements with leasees are effective until 31 December 2006. Land Exit in Turkey is ongoing.

No	Date	Recommendation	Status as of end December 2006
20	September 2005	The three countries to adopt a common approach on acceptable reinstatement and condition at hand-back of contractor-acquired lands such as pipe dumps, construction camps, borrow areas, access roads and the like.	IEC will sign off-ROW reinstatement as part of completion audit
21	September 2005	BTC Co. to ensure that it receives from its contractor's inventories of all additional land utilized for the project, with clear documentation and record keeping covering lease agreements, condition at time of hand-back and hand-back acceptance by owner/leaseholder.	Azerbaijan – Completed Georgia and Turkey – Ongoing
22	September 2005	Annual replicate income-expenditure surveys to be superseded by a one-off income-expenditure survey to be designed and overseen by the SRAP Panel, and conducted as part of the resettlement completion audit.	Ongoing (Action on SRAP)
23	September 2005	All countries to pay particular attention to monitoring livelihood status of households affected by permanent loss of land. Annual income-expenditure surveys recommended.	Ongoing
24	September 2005	BTC Project (all countries) to take all reasonable measures to ensure that commitments to reinstate project affected roads are delivered in a timely manner, either directly through construction contractors or, through agreements with responsible government authorities.	Replaced by September 2006 recommendation
25	September 2005	BTC Co. to consider establishing grievance task forces in each country to work along the right of way and close-out all complaints ahead of land hand-back.	Replaced by March 2006 recommendation
26	September 2005	Construction teams to roll-over grievance logs (including records of grievances yet to be resolved) to the Operations teams, with associated budget provision.	Azerbaijan – Completed Georgia and Turkey – Ongoing
27	September 2005	Operations personnel (including pipeline patrols) to receive training in grievance recording & management.	Ongoing – Replaced by September 2006 recommendation
28	September 2005	To avoid ad hoc or piecemeal development assistance, BP Business Unit to look at designing the CIP strategy within a broader framework such as national poverty strategies (to the extent that these provide clear direction), or within a context of district or sub-district development plans.	Ongoing
29	September 2005	BTC Co. to avoid excessive delays in the CIP extension so that benefits of construction phase community mobilization and empowerment are not lost.	Completed
30	September 2005	BTC Co. / Botaş to establish a clear policy on accessing the pipeline and how they will compensate for any resultant damage to in-ground crops.	Completed
31	September 2005	BTC Co. to give consideration to adopting a labour standard based on an internationally recognized code or standard, to be applicable to all supply chain contracts with regular monitoring of compliance.	Ongoing

No	Date	Recommendation	Status as of end December 2006
32	September 2005	BTC to adopt a systematic approach and develop guidelines and capacity to monitor, audit and otherwise address supply chain labour and employment standards.	Ongoing
33	September 2005	BTC Co. to monitor outcomes of project related arrests, convictions and incarcerations.	Azerbaijan and Georgia – Completed Turkey – Ongoing
34	March 2005	Monitoring Plans for reinstatement and bio-restoration to be finalized prior to the SRAP September 2005 review.	Completed
35	March 2005	BTC Co. to look at avenues to incorporate small scale procurement and supply opportunities (e.g. incentives or quotas fostering village level content, re-bundling of procurement contracts) for villages in Georgia and Azerbaijan as part of its Operations Phase procurement strategy.	Ongoing
36	February 2004	BTC Co. to continue to reinforce its anti-corruption stance with all levels of government.	Ongoing
37	February 2004	BTC Co. to develop strategies for timely delivery of information to communities about pipeline safety, restrictions on use, hand back of land use, activities to be undertaken during commissioning and activities to occur during the operations phase, and the impacts of these (if any) on pipeline neighbours.	Completed
38	February 2004	As early as possible after Operations Team mobilization, BTC Co. to review pipeline and pump station operations and identify opportunities for village people to be recruited or to provide goods and services through outsourcing.	Ongoing
39	February 2004	BTC Co. to explore opportunities for construction phase CIP small enterprise development initiatives to facilitate villager involvement in bidding for operations phase local procurement tenders.	Georgia – Completed Azerbaijan and Turkey – Ongoing
40	August 2003	Closer to the return of use of the corridor, BTC Co. to undertake an information dissemination campaign in all three countries to reiterate the procedures that will be followed for returning the use of land, and to remind households of the restrictions that will apply.	Completed
41	August 2003	BTC Co. to look at measures to improve Contractors' performance with respect to local procurement.	Georgia – Completed Azerbaijan and Turkey – Ongoing

Table A4.2: Recommendations of the September 2006 Review

Key recommendations arising from the September 2006 SRAP review of the BTC project are tabulated below. Recommendations are prioritised as follows:

High	Actions that are critical to ensure compliance with commitments contained in the RAP, ESAP or World Bank OD 4.30
Medium	Actions desirable to comply with social or resettlement good practice or to address actual or potential areas of social risk
Low	Important actions that are less time critical

Issue	Project Principles	Performance	Recommendation	By	Priority
LAND ACQUISITION					
Land hand back and restrictions of use	Land to be reinstated to original condition Land use restrictions to be applied to the pipeline corridor to ensure integrity of pipeline and for public safety	All three countries have fully developed information material. Special care needs to be taken to ensure that all groups are fully informed.	a. BTC Co. to update impact tables of the three respective RAPs to reflect final actual impacts on land and population resulting from project construction, using a format similar to that below in each of the three countries (carried over from previous review).	BTC Co.	Medium
			b. BTC Co. to carry out a final check and review of additional land acquisition in terms of meeting RAP process and principles.	BTC Co.	Medium
			c. In all three countries, BTC Co. to pay special attention to vulnerable groups during the land exit process (this is a recommendation repeated from previous review).	BTC Co.	High
			d. BTC Co. to reiterate avenues for contacting the Project and making a complaint after the land exit agreement has been signed.	BTC Co.	Medium
			e. In all three countries, BTC Co. to review resources required for on-going land administration at Operations phase (carried over from previous review). This is already being carried out in Georgia.	BTC Co./ BP	Medium
LIVELIHOOD RESTORATION					
Reinstatement monitoring	To restore livelihoods of project affected households to at least pre-project levels.	Quality of reinstatement can only be fully assessed after the first harvest post-reinstatement.	f. Third party agricultural specialists to be used on an as-needed basis in assessing reasons for any crop impairment, advising on remedial measures and in valuing any crop reduction or loss (carried over from previous review).	BTC Co./ BP	Medium
			g. Country livelihood restoration assessments to pay particular attention to the situation of vulnerable and marginalised groups.	BTC Co./ BP	High

Issue	Project Principles	Performance	Recommendation	By	Priority
CONSTRUCTION IMPACTS					
Damage to village infrastructure	Damage to infrastructure to be repaired in a timely fashion and to agreed standards.	Villages across all three countries have expressed concern about damaged infrastructure (especially roads) being satisfactorily repaired upon construction completion.	h. BTC Co. to carry out a village by village review of status of community infrastructure as a part of completion of Constructions.	BTC Co.	High
GRIEVANCES					
Grievances	Project affected people to provided with avenues for lodging a complaint. Complaints to be addressed in a timely manner.	Grievances are being managed satisfactorily. Grievance systems need to be transferred to Operations.	i. BTC Co., BP and Botaş/BIL to make sure that Operations phase staff have a good understanding of how to receive and record a complaint, and manage the grievance system.	BTC Co. BP, Botaş, BIL	Medium
			j. BTC Co. to make stakeholders aware of avenues available to lodge complaints during Operations (carried over from previous review).	BTC Co. BP, Botaş, BIL	Medium
COMMUNITY INVESTMENT PROGRAMME					
CIP transfer to Operations Phase	Provide benefit sharing opportunities for project affected communities	The CIP needs to be maintained beyond construction for benefits to communities to become sustainable.	k. BTC Co., BP to explore avenues for more widely disseminating experience of the CIP.	BTC Co. BP	Low
			l. BTC Co. to identify areas where continued support is needed (health insurance scheme in Azerbaijan for example), and to make provisions in the Operations CIP for such support. (carried over from previous review).	BTC Co. BP	Low
			m. BTC Co. to undertake a pragmatic social risk assessment for the Operations phase, and to design within the Operations CIP, proactive measures to address identified risks, particularly – but not only – in communities located near permanent installations such as pumping stations and terminals (carried over from previous review).	BTC Co./ BP	Low
COMMUNITY CONSULTATION AND PUBLIC ENGAGEMENT					
Consultation Plans	Effective information dissemination to the community	Operations phase consultation strategy is being developed for Turkey	n. BTC Co. to develop Operations consultation plans for Georgia and Azerbaijan.	BTC Co. BP	Medium

Issue	Project Principles	Performance	Recommendation	By	Priority
SECURITY OF PIPELINE					
Security	Reputational risk management	Some complaints received in Georgia about requests from security forces for demonstration of I.D.	o. BP to provide refresher training to be given to security forces in Georgia and Azerbaijan on conduct along the pipeline as well as general human rights issues. BP to explore providing such training to relevant gendarmerie in Turkey.	BP	
TRANSFER TO OPERATIONS					
Transfer to Operations	Change Management	Mechanisms for transfer to Operations are being developed in all three countries	p. BTC Co., BP and Botaş/BIL to review over the next few months, adequacy of resources to complete RAP compliance requirements and to address ongoing social program demands.	BTC Co. BP, Botaş/ BIL	Medium
			q. BTC Co. and Botaş to consider mechanisms to retain institutional knowledge developed during Construction Phase so that it is available for Operations Phase.	BTC Co. BP, Botaş/ BIL	Medium
			r. BP and BIL to ensure that Operations Phase staff have the right training and skills to carry out village level interactions.	BTC Co. BP, Botaş/ BIL	Medium