2014

# BTC Project Environmental and Social Annual Report (Operations Phase)

# TABLE OF CONTENTS

# CASE STUDIES (REFER APPENDICES)

# ABBREVIATIONS

| | | |
|---|---|---|
| ADR Certificate | - | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| Ag | - | Silver |
| AGI | - | Above Ground Installation |
| AGT | - | Azerbaijan-Georgia-Turkey |
| Al | - | Aluminium |
| As | - | Arsenic |
| ASRC | - | Azerbaijan Social Review Commission |
| B | - | Boron |
| bbl | - | Barrel |
| BIL | - | BOTAŞ International Limited |
| BNB | - | Rural and Urban Development Foundation (now called BNB) |
| BOD | - | Biochemical Oxygen Demand |
| BOTAŞ | - | Boru Hatlari ile Petrol Taşima A.Ş. (Petroleum Pipeline Corporation, Turkey) |
| BPEO | - | Best Practicable Environmental Option |
| BSI | - | British Standard Institute |
| BTC Co (or BTC) | - | Baku-Tbilisi-Ceyhan Pipeline Company operated by BP (in Azerbaijan and Georgia sections of pipeline) and by BIL (in Turkey section of pipeline) |
| BTEX | - | Benzene, Toluene, Ethyl Benzene and Xylene |
| BV | - | Block Valve |
| BVT | - | Block Valve, Turkey |
| BWRA | - | Ballast Water Risk Assessment |
| C&E | - | Compliance and Environment |
| CBO | - | Community Based Organisation |
| Cd | - | Cadmium |
| CDI | - | Community Development Initiative |
| CEYDEM | - | Ceyhan Fire and Natural Disaster Training Centre |
| CEYGEM | - | Ceyhan Business Development Center |
| CIP | - | Community Investment Programme |
| Cl | - | Chloride |
| CLO | - | Community Liaison Officers |
| CCME | | Canadian Council of Ministers of the Environment |
| CMT | - | Ceyhan Marine Terminal |
| CO | - | Carbon monoxide |
| COD | - | Chemical Oxygen Demand |
| Cr | - | Chromium |
| CSR | - | Corporate Social Responsibility |

| | | |
|---|---|---|
| Cu | - | Copper |
| CWAA | - | Central Waste Accumulation Area |
| dB(A) | - | A-weighted decibels |
| DSA | - | Designated State Authority (Turkey) |
| E&S | - | Environmental and Social |
| EDDF | - | Emergency Drain Down Facility |
| EDTP | - | Enterprise Development and Training Programme |
| EIA | - | Environmental Impact Assessment |
| EIP | - | Environmental Investment Programme |
| EMS | - | Environmental Management System |
| EPF | - | Eurasia Partnership Foundation |
| EPPD | - | Export Pipelines Protection Department |
| ESAP | - | Environmental and Social Action Plan |
| ESIA | - | Environmental and Social Impact Assessment |
| ESMS | - | Environmental and Social Management System |
| EU | - | European Union |
| FCI | - | Facilities Construction and Installation |
| Fe | - | Iron |
| GHG | - | Greenhouse Gas |
| GIS | - | Geographical Information System |
| H&S | - | Health and Safety |
| H1 | - | First half of year (January – June) |
| Hg | - | Mercury |
| HSE | - | Health, Safety and Environment |
| IEC | - | Lenders' Independent Environmental Consultant |
| ISQG | | Interim Marine Sediment Quality Guidelines |
| IP | - | Implementing Partner |
| IPA | - | Intermediate Pigging Station, Azerbaijan |
| IPT | - | Intermediate Pigging Station, Turkey |
| IS | - | Industrial Symbiosis |
| ISO | - | International Standards Organisation |
| KP | - | Kilometre Point |
| KPI | - | Key Performance Indicator |
| MARPOL | - | International Convention for the Prevention of Pollution from Ships |
| LEL | | Lowest Effect Level |
| LOPC | - | Loss of Primary Containment |
| MENR | - | Ministry of Ecology and Natural Resources, Azerbaijan |
| MOC | - | Management of Change |
| MoEU | - | Ministry of Environment and Urbanization, Turkey |
| MOL | - | Main Oil Line |
| MSME | - | Micro, Small and Medium Enterprises |

| | | |
|---|---|---|
| Na | - | Sodium |
| NGO | - | Non-Governmental Organisation |
| $NH_4$ | - | Ammonium |
| Ni | - | Nickel |
| $NO_2$ | - | Nitrogen dioxide |
| $NO_x$ | - | Nitrogen oxides |
| NRC | - | National Response Company |
| OSR | - | Oil Spill Response |
| OSRB | - | Oil Spill Response Base |
| OSRP | - | Oil Spill Response Plan |
| OWS | - | Oily Water Separator |
| PAH | - | Polyaromatic hydrocarbons |
| PEL | | Probable Effect Levels |
| Pb | - | Lead |
| PCAR | - | Preventive and Corrective Action |
| PCR | - | Public and Community Relations |
| PCRE | - | Public and Community Relation Experts |
| pH | - | Potential of Hydrogen |
| PM | - | Particulate Matter |
| PSA | - | Pump Station, Azerbaijan |
| PSG | - | Pump Station, Georgia |
| PT | - | Pump Station, Turkey |
| PWHP | - | Primary Withholding Pond |
| Q1/Q2/Q3/Q4 | - | Quarter 1/Quarter 2/Quarter 3/Quarter 4 |
| RAP | - | Resettlement Action Plan |
| RDF | - | Refuse Derived Fuel |
| RISC | | Resource Information Standards Committee |
| ROW | - | Right of Way |
| RWIHC | - | Regulation on Concerning Water Intended for Human Consumption |
| SEM | | Stack Emissions Monitoring |
| SCP | - | South Caucasus Pipeline |
| SDI | - | Sustainable Development Initiative |
| Se | - | Selenium |
| Sn | - | Tin |
| $SO_2$ | - | Sulphur dioxide |
| $SO_4$ | - | Sulphate |
| SODES | - | Social Support Fund |
| $SO_x$ | - | Sulphur oxides |
| SPM | - | School of Project Management |
| SRAP | - | Social and Resettlement Action Plan |
| STP | - | Sewage Treatment Plant |

| | | |
|---|---|---|
| SWP | - | Storm Water Pond |
| TDS | - | Total Dissolved Solids |
| THC | - | Total Hydrocarbons |
| TPH | - | Total Petroleum Hydrocarbons |
| TSS | - | Total Suspended Solids |
| TTGV | - | Technology Development Foundation of Turkey |
| USAR | - | Urban Search and Rescue |
| VOC | - | Volatile Organic Compound |
| WBH | - | Water Bath Heater |
| WREP | - | Western Route Export Pipeline |
| WTN | - | Waste Transfer Notes |
| WWTP | - | Waste Water Treatment Plant |
| Zn | - | Zinc |

# EXECUTIVE SUMMARY

Baku-Tbilisi-Ceyhan Pipeline Company (hereinafter BTC) and its agents have complied in the development, construction and operation of the BTC Pipeline Project with the Environmental and Social Action Plan (ESAP), applicable environmental laws and applicable Lender environmental policies and guidelines in all material respects during the period covered by this Environmental and Social (E&S) Annual Report (Operations Phase) 2014.

There were no fines or penalties incurred for environmental or social non-compliances, and no material environmental claims against BTC during 2014.

There were no Class I, II or III Management of Change (MOC) during 2014. There were no Environmental and Social Impact Assessment (ESIA) addenda.

During 2014, there were fourteen minor uncontained material releases and no significant Health and Safety (H&S) incidents. The total amount of hydrocarbons spilt was approximately 9 barrels (bbl).

In November 2014, the International Standards Organisation (ISO) 14001 surveillance audit was conducted for the Georgia Export pipelines (BTC and SPC). There were no corrective action requests and only 3 observations made during the audit. In Turkey, the ISO surveillance audit was carried out in November 2014 at CMT, IPT2 and PTs 1 and 2. No major findings observed.

The sixteenth post-financial audit by the Lenders' Independent Environmental Consultant (IEC), acting on behalf of the Lenders, took place September 21$^{st}$ - October 3rd, 2014 to monitor compliance with BTC Pipeline Project E&S commitments. This is the second site visit (since February 2004) where no non-compliances with Project commitments have been identified. The main non-compliance with Project commitments identified over the past 2 years has been the lack of construction of a slops treatment facility at the Ceyhan Marine Terminal. This facility is now completed.

Emission and discharge monitoring for the operations phase continued and results were generally in compliance. Monitoring of gas turbine exhaust gases showed some exceedances of nitrogen oxide ($NO_x$) levels in Azerbaijan and Georgia. To compensate for the $NO_x$ exceedances, offset programmes for both countries were successfully completed in 2014. These programmes funded the implementation of renewable energy and energy efficiency projects. As part of the $NO_X$ offset programmes, solar heating systems were constructed at the Bashirli Secondary School, Gurbanzade School, and the Samukh District Kindergarten in Azerbaijan. This offset is now considered complete. An additional offset programme to compensate for the failure of *Iris acutiloba* plants to survive following replanting on the pipeline Right of Way (ROW) was modified and approved by the IEC during their 2014 monitoring visit. Works commenced in November 2014.

There were no material changes to the Oil Spill Response Plan (OSRP) in Azerbaijan, Georgia or Turkey.

BTC continues to benefit communities and Non-Governmental Organisations (NGOs) in all 3 countries through their Community Investment Programmes (CIPs) and Environmental Investment Programmes (EIPs). In 2014, over US$3,239,775 was invested in these programmes.

# 1 INTRODUCTION

June 2014 marked the eighth anniversary of the first shipment of oil at the Ceyhan terminal from the BTC Pipeline Project.

This E&S Annual Report (Operations Phase) 2014 has been prepared and structured in accordance with the requirements of Annex J of the ESAP governing construction of the BTC Pipeline Project and Annex H of the ESAP governing the operations phase of the BTC Pipeline Project. These requirements are reproduced in Appendix 1. It is the eleventh E&S Annual Report post-financing and covers the calendar year 2014[1].

# 2 ESIAS/EIA AND PERMITTING

## 2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE ESIAS[2]

### 2.1.1 Azerbaijan

There were no material modifications made to the BTC Azerbaijan ESIA in 2014.

### 2.1.2 Georgia

There were no material modifications made to the BTC Georgia ESIA in 2014.

### 2.1.3 Turkey

There were no material modifications made to the BTC ESIAs in Turkey in 2014.

## 2.2 SUMMARY OF MATERIAL PERMITS ISSUED IN 2014

### 2.2.1 Azerbaijan

There were 2 BTC Azerbaijan-related environmental permits issued in 2014 as follows:

- Relocation of Tamarisk shrubs at the following river crossings (ref.: 15/2803 dated on 8 August 2014):
  - Jeyrankechmaz River
  - Nameless Canal in Gobustan area
- Pruning of Tamarisk shrubs at the following river crossings (ref.: 15/891 dated on 27 March 2014)
  - Goychay river
  - Turianchay river

### 2.2.2 Georgia

The statutory environmental permits acquired by BTC Georgia in 2014 were as follows:

- Water Discharge Limit Approval for Emergency Drain-down Facility obtained from MoE on 13/06/2014

[1] While construction started in 2003-Q2, the financing for the project was finalised in early Q1-2004.
[2] Note that in Turkey the formal terminology is Environmental Impact Assessment (EIA).

- Authorizations on river crossing reinforcement works, which in 2014 were acquired for Sakirula,Varkhaneleand Kumiska rivers on 5/06/2014

There was also Archaeological Works Permit obtained at KP 198 during road rehabilitation works on 24/10/2014.

### 2.2.3 Turkey

According to the *The Environment Permit and License Regulation* (2010) that became effective on 1 April 2010, an integrated system for environmental permits and licenses has been applied instead of seperate permitting (WWTP discharge permits, air emission permits, etc.). As per the regulation, an Environmental Permit obtained for a site will cover all of the related environmental issues such as discharge and emission at facilities (for PTs and IPTs). An Environmental Permit and License obtained for a site will cover all of the related issues such as discharge and emissions together with the facilities which require a license (i.e. for MARPOL facility at CMT).

Environment Permits have been obtained for all operating facilities including CMT.

With the completion of the MARPOL facility, BIL will commence the environment license application process. Once this has been done and the license obtained it will be integrated into the existing CMT 'Environmental Permit and License' as per the legislation.

## 2.3 UPDATE ON FURTHER WORK

A summary of country-specific activities relating to ongoing studies or surveys as required under the ESIAs or Environmental Permits is given below.

### 2.3.1 Azerbaijan

In line with BTC Azerbaijan ESIA and Operations ESAP requirements, a groundwater monitoring programme continued in 2014. Refer Table 2.1 below.

**Table 2.1: Groundwater Monitoring Programme (Azerbaigan)**

| **Study/Survey:** Groundwater monitoring programme | **Expected Timing:** Monitor water level and quality: Ongoing |
|---|---|
| **Ref:** Q1-2004 (p5-3); Q2-2004 (p3-3); Q3-2004 (p3-2); Q4-2004 (p3-2); Q1-2005 (p3-2); Q2-2005 (p3-2); Q3-2005 (p3-2); Q4-2005 (p3-1), H1-2006 (p3-1), 2007 (p4); 2008 (p4); 2009 (p3); 2010 (p 3); 2011 (p 3); 2012 (p4). | |
| Groundwater monitoring was carried out according to ESAP requirements in May and November 2014. A summary of results is given in Section 4.2.1.5. | |
| **Completion Status:** Ongoing | |

In the BTC ESIA there was a requirement to translocate *Iris acutiloba* off the ROW prior to construction to prevent damage to this Red Data Book (RDB) plant species. This requirement was fulfilled, and monitoring of the outcome of the relocation programme continued during 2014. An offset programme has been developed to compensate for plants that did not survive. A summary of the results of this programme is provided in Table 2.2 below.

## Table 2.2: Iris Acutiloba Monitoring Programme (Azerbaigan)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| *Iris acutiloba* monitoring programme | Monitoring: Ongoing |
| **Ref:** Q1-2004 (p5-2); Q2-2004 (p3-2); Q3-2004 (p3-1); Q4-2004 (p3-2); Q1-2005 (p3-1); Q2-2005 (p3-2); Q3-2005 (p3-1); Q4-2005 (p3-1), H1-2006 (p3-1), 2007 (p5); 2008 (p4); 2009 (p3); 2010 (p3); 2011 (p3); 2012 (p4). | |

Prior to construction of the BTC Pipeline Project, approximately 32,900 individual plants, recorded as RDB species, were removed from the ROW. In total, 8,105 individuals were replanted off the ROW and 24,800 were temporarily planted in Mardakan Arboretum. In 2006, the rhizomes of the Mardakan plants were replanted on the ROW, mainly between Kilometre Point (KP) 6 and KP 28.

Field monitoring in later years showed that the program to replant *Iris acutiloba* from Mardakan to ROW was not successful. In an attempt to compensate for this, a new offset program involving 11,718 individual *Iris acutiloba* plants were translocated from Garadag Cement Plant (GCP) to the BTC/SCP ROW in 2010. Monitoring conducted in April 2014 recorded 4,723 individual specimens, indicating a survival rate of 40%. This is slightly more than the number counted in 2013 (33 %) due to favourable weather conditions (particularly rainfall).

BTC acknowledges that its original objective of re-establishing a minimum of 75% of the original population within the areas designated for translocation has not been met. To compensate for the low survival rate, BTC developed a three year offset project (2014-2016) for planting and caring of 990 trees near PSA2 in Yevlakh and 342 trees near IPA1 in Kurdamir.

In 2014 BP agreed the final scope of the offset project with the Independent Environmental Consultants (IEC) acting on behalf of the BTC/SCP Lenders Group, and successfully completed the tree planting stage. Two of the tree species planted under this project (*Platanus orientalis* and *Pinus eldarica*) are included in RDB of Azerbaijan. All of the tree seedlings were procurred from the nursery of Yevlakh Forest Protection and Restoration Enterprise. Selection and planting of tree species occurred under the supervision of a botanist from the Central Botanical Garden of National Academy of Sciences of Azerbaijan. The number and list of planted tree species is given below:

| **Tree species** | **PSA2** | **IPA1** |
|---|---|---|
| *Pinus eldarica* | 228 | 137 |
| *Platanus orientalis* | 228 | 137 |
| *Elaeagnus angustifolia* | 178 | 23 |
| *Cupressus* | 178 | 23 |
| *Fraxinus excelsior* | 178 | 22 |
| **Total** | **990** | **342** |

**Completion Status:** Plantation – completed; Aftercare – Ongoing

### 2.3.2 Georgia

Table 2.3 outlines additional ESIA studies and surveys, as specified in the Operations ESAP, which were conducted in Georgia during 2014.

**Table 2.3: Kodiana Special Project and Other Legacy Projects (Georgia)**

| **Study/Survey:** Kodiana special projects and other legacy projects | **Expected Timing: 2012-2016** Monitoring: Ongoing |
|---|---|
| **Ref:** H1-2006 (p3-2); 2007 (p-6); 2008 (p-5); 2009 (p-4); 2010 (p-4); 2011 (p-4); 2012 (p-4), 2013 (p-12) | |

Construction of PSG 2 accommodation addition is in progress. Completion is planned for 2015-Q4 with reinstatement to follow in 2016-Q2.

Construction of a new access road at PSG 1 to future accommodation and warehouse facilities started in 2014-Q3 and is planned for completion in 2015-Q1.

The design of new accommodation and warehouse facilities at PSG 1 was completed in 2014-Q4 and construction contractor bidding initiated. Construction is scheduled to start in 2015-Q3.

A new STP was installed and commissioned at EDDF in 2014-Q3.

**Completion Status:** Ongoing

### 2.3.3 Turkey

Tables 2.4 and 2.5 outline additional ESIA studies and surveys, as specified in the Operations ESAP, which were conducted in Turkey during 2014.

**Table 2.4: Landscape Plans and Monitoring for Facilities (Turkey)**

| **Study/Survey:** Landscape plans and monitoring for facilities | **Expected Timing:** Construction and Operations |
|---|---|
| **Ref: 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-4); 2005-Q4 (p3-4); 2006 (p6); 2007 (p7); 2008 (p16); 2009 (p4) ; 2010 (p5) ; 2011 (p5) ; 2012 (p5); 2013 (p13)** | |
| The status of landscaping activities implemented at all facilities by BTC Co. and handed over to BIL in late 2008 is being monitored during *ad-hoc* site visits and annual compliance audits. In parallel, BIL's ROW Monitoring and Maintenance team, supported by local site teams, monitor the condition of landscaping and take necessary action when required.<br>In 2014, assessment of the status and condition of the trees and shrubs planted at all facilities as part of previous landscaping projects was conducted. The objectives were to understand how the maintenance was being carried out, provide maintenance training if and where necessary, and update the 'As-built' Landscaping Plans to reflect the prevailing situation. The outcomes of the assessment, including updated drawings and recommendations for better maintenance, were shared with BIL for their implementation. | |

**Completion Status:** Monitoring ongoing

## Table 2.5: Marine Turtle Survey (Turkey)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Marine turtle survey | 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); 2006 (p7-8); 2007 (p7); 2008 (p16); 2009 (p5); 2010 (p5); 2011 p(5); 2012 (p5), 2013 (p13)**

The annual marine turtle survey was conducted in mid June-September 2014. As in previous years, the survey was carried out at Sugozu, Akkum, Botas and Hollanda beaches, all of which are in the vicinity of CMT jetty.

Nesting:

In 2014, a total of 162 *Chelonia mydas* (Green Turtle) nests were observed in the study area.

A summary of the number of nests observed this year compared with previous years is as follows:

| | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Chelonia Mydas* (Green Turtle) | 42 | 44 | 213 | 29 | 198 | 57 | 160 | 163 | 104 | 145 | 76 | 125 | 162 |
| *Caretta Caretta* (Loggerhead Turtle) | 18 | 3 | 3 | 7 | 0 | 1 | 1 | 4 | 1 | 3 | 1 | 5 | 0 |

As seen from the table above, the number of *Chelonia mydas* turtle nests observed fluctuate from year-to-year with no discernible trend. No nesting activity of *Caretta caretta* was observed in the 2014 nesting season.This is only the second occasion since 2002 that this has occurred.

Hatchlings:

In 2014, it was estimated that about 8,400 hatchlings reached the sea. This estimate was based on direct observations, track counts and uncovering the nests for control, and was the highest in 8 years.

A summary of the hatchling success observed this year compared to previous years is as follows:

| **Beaches** | **2007 (%)** | **2008 (%)** | **2009 (%)** | **2010 (%)** | **2011 (%)** | **2012 (%)** | **2013 (%)** | **2014 (%)** |
|---|---|---|---|---|---|---|---|---|
| Sugozu | 80.9 | 87.2 | 76.5 | 86.6 | 92.1 | 95.4 | 98.0 | **96,7** |
| Akkum | 84.5 | 86.6 | 77.1 | 87.9 | 82.8 | 93.8 | 97.7 | **99,8** |
| Botas | 44.4 | 60.7 | 83.9 | 91.2 | 72.7 | 92.1 | 92.3 | **100,0** |
| Hollanda | 44.4 | 77.0 | 80.5 | 96.0 | 68.5 | 94.2 | 89.5 | **99,8** |
| Overall | 82.3 | 82.9 | 77.8 | 89.1 | 84.7 | 94.8 | 97.0 | **99,0** |

**Completion Status:** Ongoing

## 2.4 OTHER STUDIES

### 2.4.1 Azerbaijan

There were 4 other studies/surveys carried out in Azerbaijan in 2014. Refer Tables 2.6 to 2.9 below.

**Table 2.6: Vegetation Cover (Azerbaijan)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Vegetation cover: April 2014 | Operations |

The ROW biorestoration monitoring program has been running for eight years. Percentage vegetation cover and species-diversity data have been collected from 50 transects located along the length of the ROW.

Data were collected according to the methods set out in the Biorestoration Monitoring Procedure. Vegetation cover data indicates that 46% of the ROW transects have vegetation cover equal to or greater than adjacent, undisturbed areas, within a margin of 10%. A majority of transects (88%) shown an increasing trend in vegetation cover over the eight years of monitoring. Only four transects out of fifty indicated less vegetation cover in 2014 than the previous year.

There are noticable differences in vegetation regrowth trends between different habitats. Recovery has been particularly slow in habitats where high temperatures, high soil salinity and high wind speeds prevail. It is likely that these factors have affected seedling establishment and survival. Overall, however, the trend for increasing vegetation cover on the ROW continues along most of the route, with areas identified as problematic in 2013, having largely improved, with some reaching off-ROW cover levels.

These observations emphasise the importance of monitoring long-term trends as well as having the capacity to recognise short-term departures from these trends.

**Completion Status**: Ongoing

**Table 2.7: BTC / SCP Biorestoration (Azerbaijan)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| BTC/ SCP biorestoration (prolongation of perennial species) | Monitoring Ongoing |

As described in previous Annual Reports, the biorestoration strategy is based on the need to create a stable landform in order that natural regeneration occurs without the need for further intervention. It was recognised, however, that intervention would be necessary in some instances such as in ecologically sensitive areas and areas prone to erosion. At these locations, ephemeral and perennial provenance seeds have been collected and broadcasted on the ROW.

One such location was the low fertility soils of Gobustan. In May 2013 1,500 *Artemisia lerchiana* and *Salsola nodulosa* seedlings were planted, soil-tilled and watered under the supervision of a botanical specialist from the Azerbaijan Botany Institute until the middle of summer. At the end of aftercare process in July 2013, the planted species were left without any further intervention. In April 2014, monitoring indicated that 50.8% of *Salsola nodulosa* (254 out of 500 seedlings) and 38.7% *Artemisia lerchiana* (387 out of 1000 seedlings) survived.

Further monitoring conducted at the some location in October 2014 indicated a 33% survival rate for *Salsola nodulosa* (165 out of 500 seedlings) and a 22.1 % survival rate for *Artemisia lerchiana* (221 out of 1000 seedlings).

**Completion Status:** Ongoing

**Table 2.8: Landscape Monitoring FCI-ROW (Azerbaijan)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Landscape monitoring of the Facilities Construction and Installation (FCI) ROW | Monitoring Ongoing |

Monitoring was conducted to assess changes to the landscape along BTC/SCP ROW. The Azerbaijan section of the pipeline ROW was originally divided into 3 sections to simplify the assessment of monitoring results: east, middle and west. Monitoring in previous years has shown good recovery rates in the west and middle sections. In the east however, conditions are less favourable for recovery, hence monitoring continues in this section.

In May 2014, 11 vantage points in the east section were monitored at the pre-determined locations. Results indicated the following restoration percentages: 33% at slopped ROW sites; 30% at flat at ROW sites; 33% at river crossings; and 40% at wetland areas.

Monitoring revealed no evidence of significant erosion. Some remedial works were, however, conducted in the Gobustan area of the ROW in 2014.

**Completion Status:** Ongoing

**Table 2.9: BTC / SCP Running Track Reinstatement (Azerbaijan)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| BTC and SCP running track reinstatement | Monitoring Ongoing |

The 2014 monitoring results showed that the running track continues to be used by vehicles from the Export Pipelines Protection Department (EPPD) along much of the ROW. This activity continues to restrict the recovery of vegetation at many locations.

After consultation with Lenders' IEC team and internal discussions, it was agreed to develop a deviation note to account for the use of BTC/SCP running track for operational/security and emergency reasons. The use of BTC/SCP running track will be limited to those areas of ROW where alternative WREP running track is either far away or not in usable condition.

**Completion Status:** Ongoing

## 2.4.2 Georgia

There were 6 'Other' studies/surveys carried out in Georgia in 2014. Refer Tables 2.10 to 2.16 below.

**Table 2.10: Biodiversity Monitoring of FCI-ROW (Georgia)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Biodiversity monitoring of FCI ROW | 2011-2015 |

In 2011 BTC committed to revised (reduced, sometimes referred as "second phase") five-year Biodiversity monitoring programme at off FCI-ROW locations. The scope was revised based on 2004-2009 data trend analysis and agreement with MoE.

The FCI-ROW Biodiversity monitoring that BTC conducted in 2014 is the part of this revised program.

One of the findings relates to tree-felling. This activity is managed by third parties in woodlands adjacent to the BTC/SCP ROW and appears to threaten the integrity of forest ecosystems, with degradation of forest ecosystems being observed in at least three woodland communities (*Picea orientalis, Piceetum nudum, Piceetum-hylocomiosum*).

The target animal species for the 2014 monitoring surveys were spadefoot toad (*Pelobates syriacus*), corncrake (*Crex crex*) and grey crane (*Grus grus*), caucasian black grouse (*Tetrao mlokosiewiczi*) and common otter (*Lutra lutra*).

Absence of spadefoot toad was noticed and is likely to be attributable to a dry winter adversely affecting breeding habitats, and increased levels of anthropogenic pressure, over and above impacts associated with the pipeline operation activities.

Breeding corncrakes counts were slightly higher than in previous surveys, however, no corncrakes were recorded in the pipeline corridor.

No cranes (or their calls) were recorded at the targeted monitored sites during the 2014 surveys; however, a crane was recorded near Narianis Veli wetlands, which indicates that it may return to Narianis Veli wetlands in future.

Anthropogenic pressure is increasing around monitoring areas, namely illegal hunting and animal grazing. Grazing activity has intensified, as evidenced by the significant increase in shepherds' camps since 2011. These type of continuous disturbances associated with activities of local residents is most likely one of the reasons of disappearance of nesting cranes at Narianis Veli.

The same reasons are thought to explain the lower number of Caucasian black grouse numbers at all target sites (Kodiana and Tskhratskaro passes). In addition, a Government Order which allowed hunting of species included in the Georgian Red List, has affected black grouses negatively.

The presence of the Common otter was recorded at Narianis Veli and Potskhovi I and Potskhovi II river crossings, although no signs were found at the Mtkvari I river crossing. It should be noted that an otter track was recorded at Potskhovi II crossing for the first time since 2005. Judging from the observations at the control sites, periodical deserting of individual habitats does ocurr and does not depend on the position of a site in relation to the ROW. It is very likely that the presence of this mobile animal depends on the availability of food resources (e.g. fish) and direct human-induced stress.

Floral and faunal monitoring will be continued from spring 2015.

**Completion Status:** Ongoing

### Table 2.11: Vegetation Cover Recovery (Georgia)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Vegetation Cover Recovery and Potential Erosion Risk Assessment along with species diversity evaluation within BTC & SCP ROW, 2014 | Operations |

BTC ROW vegetation cover regrowth trends and erosion risk potential are monitored annually using a combination of satellite and field data. Satellite data captured in 2014 are still being interpreted so the results presented below are based on 2014 field data only.

Over 75% of vegetation cover has been achieved at all pre-selected 18 survey locations along the ROW, except for two plots in the Alpine grassland and Xeric grassland combined with South-Eastern Sub-Mediterranean deciduous thickets.

At the Alpine grassland, the coverage of vegetation within the RoW was equal to 58% of the coverage in the corresponding plots outside of the ROW, while at the Xeric grassland vegetation coverage within the ROW was 32% of the vegetation coverage outside the ROW.

A visual assessment of erosion risk along the permanent monitoring transects revealed that all 49 sites were assigned Erosion Class 3 or lower.

The next round of vegetation cover and erosion potential assessment monitoring is scheduled to commence in April 2015. The next round of species diversity assessment is due to take place in 2016, i.e. 10th year of the monitoring programme.

**Completion Status**: Ongoing

### Table 2.12: Rare Floral Species Management Programme (Georgia)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Rare floral species management programme | Operations |

The main objective of the rare species monitoring programme was to measure the survival rates of translocated species against the objective of re-establishing a minimum of 75% of the original population within the areas designated for translocation.

This commitment was achieved in 2014 for all target species.

Monitoring of the reintroduced populations to assess survivability rates will be undertaken as part of the floral monitoring programme in 2015.

**Completion Status:** Ongoing

### Table 2.13: Control of Invasive Common Ragweed (Georgia)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Control of Invasive Common Ragweed *Ambrosia artemisifolia* and Survey of Alien/invasive Species along BTC/SCP ROW | Operations |

Ground surveys of the BTC/SCP ROW conducted over the period 2009-2014 revealed the presence of populations of 8 alien species on the ROW. Of these 8, two – Common Ragweed (*Ambrosia artemisiifolia*) and Black Locust (*Robinia pseudoacacia*) - are invasive taxa.

Most alien plant species are naturalized annuals and are common components of meadow throughout Georgia. The results of the monitoring indicate that there is no trend towards the further expansion of the distribution or range of any of the 8 species on or adjacent to the ROW.

As regards invasive taxa mentioned above, Common Ragweed has the potential to further spread over the ROW following intensification of agricultural activities on the western sections of the pipeline route (KPs 212-220) and associated soil fertilisation practices. Since 2010 different control measures have been tested to reduce the dispersal ability of Ragweed including a combined management treatment consisting of mechanical intervention (using a brush weeder) just before female flowering, followed by the application of approved, broad-spectrum herbicides. The management treatment (cutting & applying herbicide) greatly reduced cover (to 44% of controls) and height (to 22% of controls) of *Ambrosia* at all sampling sites. Thus, the number of flowering plants, flowers per plant and therefore total pollen and seed output is expected to be considerably reduced in areas where this technique has been applied. These results also increase the competitive ability of the non-invasive vegetation cover and minimize negative effects on the species diversity.

Ambrosia sites will continue to be monitored, as will the presence of alien plants and their invasion status at intersections of roads with the pipeline routes. In addition the dynamics of *Ambrosia* populations and their natural enemies (insects and pathogens) will be investigated as part of the recently launched EU-COST Action on “Sustainable management of *Ambrosia artemisiifolia* in Europe (SMARTER)”.

The control of Ragweed and monitoring of alien species will be continued in 2015.

**Completion Status:** Ongoing

**Table 2.14: Anti-Erosion Measures (Georgia)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Implementation of anti-erosion measures at erosion prone sites along AGT Pipelines ROW | Operations |

Inspection of all areas identified as Erosion Class III-IV in the 2013 erosion walkover study data report were re-assessed by Dzelkva Ltd in late October, 2014. As a result a number sites between KPs 230 and 244 were identified as requiring remedial works in order to stabilize soil, establish vegetation cover and prevent further gullying. In early November 2014, conventional grass seeding was applied to these areas (total area was 5 ha). The site will continue to be monitoried until there is evidence that the areas have stabilised.

**Completion Status:** Ongoing

**Table 2.15: Planted Tree and Shrub Survival (Georgia)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Assessment of tree and shrub survival planted at PSG 1, Secondary Containment Facilities and Emergency Drain Down Facility (EDDF) sites and along Kodiana access road | Operations |

The key objective of the planting program was to re-establish the original plant communities around the target sites in order to blend the artificially created landscapes with the local environment. This included regular care and maintenance activities during appropriate seasons. Monthly inspections were accompanied by activities such as soil cultivation, mowing (weed control), watering, pest and disease control and maturing.

In October 2014, the plantation survival/mortality rate was assessed at 8 locations by a third-party consultancy and various damaging factors/causes were identified. Average survival rates across all sites range from 70-90%.

In addition, during spring-fall 2014, 7000 saplings were planted around PSG1 and 600 at Bakuriani EDDF Staging Area, as part of the ongoing restoration effort. Further maintenance and monitoring will be undertaken in 2015.

**Completion Status:** Ongoing

**Table 2.16: Weed Management (Georgia)**

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Weed management in BTC/SCP ROW | Operations |

As a part of the ESAP commitments, continuous visual inspections for weeds and alien species have been conducted along the BTC/SCP ROW as part of the general biorestoration monitoring programme.

Weeds species, which have proved to be a problem in monitoring areas, were removed through mechanical cutting as they are considered to be a natural impediment to seasonal seed spread.

**Completion Status:** Ongoing

## 2.4.3 Turkey

There were 5 'Other' studies/surveys carried out in Turkey in 2014. Refer Tables 2.17 to 2.21 below.

### Table 2.17: Ecological Monitoring (Turkey)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Ecological monitoring (species diversity and vegetation cover) | Operations |

**Ref: 2010 Annual (p11); 2012 Annual (p11); 2013 Annual (p19)**

The 2014 field-based vegetation cover monitoring program along the Turkey section of the BTC pipeline was conducted in July 2014. Species diversity monitoring was not required in 2014; it will next be conducted in 2016.

In general, vegetation cover continues to increase in areas disturbed by the project. At a small number of locations (16 out of 119 monitoring locations) vegetation cover was observed to be declining due to overgrazing, erosion and agricultural usage. In addition, in 2013, there was very low snow precipitation in winter, and combined with unusually high summer rainfall that led to high surface runoff and contributed the surface erosion, resulted in unfavourable conditions for vegetation regeneration.

**Completion Status:** Ongoing

### Table 2.18: Marine Sediment and Ecology Survey (Turkey)

| **Study/Survey:** | **Expected Timing:** |
|---|---|
| Marine sediment and ecology survey | Operations |

**Ref:** 2006 Annual (p9-10); 2007 Annual (p11); 2008 Annual (p21); 2009 Annual (p22); 2010 Annual (p11); 2012 Annual (p11); 2013 Annual (p19)

The marine sediment survey was conducted in July 2014. The main results are summarised below.

Sediment samples were collected from 12 different locations near the BTC Marine Terminal jetty and analyzed for 9 trace metals (Cu, Sn, Zn, Cd, Pb, Hg, Al, Fe, Cr).

Concentrations of Pb, Zn, Cr, Cu, Al and Fe are lower than the natural background levels, which is in contrast to concentrations of Cd, Sn and Hg which were higher. The higher than average levels are attributable to anthropogenic activities in the area.

Despite the fact that the concentrations of some metals are above natural background, the concentration of Cd, Al, Cr, Fe, Pb and Zn have decreased since 2013. Early indications are that heavy metal levels in the area are improving when compared to data collected over the last 10 years.

Organic matter content of sediments have been observed to fluctuate throughout the monitoring period, commencing in 2006, however, results from 2014 were observed to be higher than in 2013. Seabed structure is composed of silt and fine sand and grain size diameter decreased towards offshore stations. There may be positive correlation between silt / clay structure and measured organic matter. Increased organic matter content may stem from changing grain size.

While organic matter in sediments is an important source of food for benthic fauna, an overabundance can cause reductions in species richness, abundance, and biomass due to oxygen depletion and build-up of toxic by-products (ammonia and sulphide) associated with the breakdown of these materials.

The number of species found in this study is high compared to previous years. A total of 185 species, belonging to the 9 systematic groups, shows that the biological diversity in the region remains high. The absence of known indicators of pollution such as *Capitella capitat* and, *Malacoceros fuliginosus* etc. could be indicative of a relatively heathly ecosystem.

**Completion Status:** Ongoing

### Table 2.18: Coastal Processess Survey (Turkey)

| **Study/Survey:** Coastal processes survey |
|---|
| **Ref:** 2007 Annual (p13); 2008 Annual (p23); 2009 Annual (p23); 2010 Annual (p12); 2011 Annual (p16) ; 2012 Annual (p16); 2013 Annual (p20) |
| The coastal processes survey was carried in December 2013. The results of the survey were not available for inclusion in the 2013 Annual Report, consequently, they are described below.<br>The purpose of coastal processes monitoring surveys is to explore the possible impacts of the BTC jetty on the coastal dynamics of the beaches north and south of the jetty.<br>Results of the December 2013 study indicate that there is some accretion of sediment south west of the jetty but that overall, there has been no significant, adverse effect on natural coastal development patterns in the survey area. This is consistent with the conclusions from previous studies. |
| **Completion Status:** Ongoing |

### Table 2.19: ROW Physical Monitoring (Turkey)

| **Study/Survey:** ROW physical monitoring | **Expected Timing:** Operations |
|---|---|
| **Ref: 2009 Annual (p23); 2010 Annual (p12); 2012 Annual (p12); 2013 Annual (p20)** | |
| The annual physical monitoring (patrolling) activities, were planned and performed by the Maintenance Management team. In 2014 the entire pipeline was inspected, resulting in precautionary and corrective actions at 32 locations. | |
| **Completion Status:** Ongoing | |

### Table 2.20: Ballast Water Risk Assessment Study (Turkey)

| **Study/Survey:** Ballast Water Risk Assessment (BWRA) study | **Expected Timing:** Operations |
|---|---|
| **Ref:** : 2007 Annual (p10-11); 2008 Annual (p22); 2009 Annual (p23); 2010 Annual (p24); 2011 Annual (p17); 2012 Annual (p17); 2013 Annual (p21) | |
| The last (4th) Ballast Water Risk Assessment (BWRA) study was undertaken in accordance with the IMO – GloBallast BWRA Methodology for CMT early 2013 and the results were reported in the 2013 Annaul Report. No new BWRAs were conducted in 2014. A draft strategy paper was prepared in late 2014. This document will be issued to BP Shipping and other relevant stakeholders in order to plan future activities. | |
| **Completion Status:** Ongoing | |

### Table 2.21: Waste Management BPEO Study (Turkey)

| **Study/Survey:** Waste management Best Practicable Environmental Option (BPEO) study | **Expected Timing:** Operations |
|---|---|
| **Ref:** 2009 Annual (p24); 2010 Annual (p25); 2011 Annual (p17); 2012 Annual (p17); 2013 Annual (p21) | |
| A number of existing and new recycling facilities were audited in 2014 and more will be audited within 2015. BIL is intending to prioritise recycling and reuse options based on cost as facilities meeting the local and EU standards are available. Given the number of facilities that meet the compliance requirements are increasing, a decision on whether a BPEO for recyclable and reusable nonhazardous wastes is needed. A decision will be made during 2015. | |
| **Completion Status:** Ongoing | |

# 3 CHANGES

As reported in previous E&S Annual Reports, the BTC Pipeline Project uses a management system process called Management of Change (MoC). Proposed changes with potential associated environmental or social impacts are graded by 3 Classes – I, II or III, as defined in the ESAP, where 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' IEC.

## 3.1 AZERBAIJAN

There were no Class I, II or III changes in Azerbaijan in 2014.

## 3.2 GEORGIA

There were no Class I, II or III changes in Georgia during 2014

## 3.3 TURKEY

There were no Class I, II or III changes in Turkey during 2014.

## 3.4 CROSS-COUNTRY CHANGES

There were no cross-country changes in 2014.

## 3.5 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MODIFICATION

This section outlines any material amendments, supplements, replacements or material modification to any ESIA, ESAP, Resettlement Action Plan (RAP), OSRP or the Environmental and Social Management System (ESMS).

### 3.5.1 Azerbaijan

No material amendments to the BTC Azerbaijan ESIA, ESAP or RAP were made in 2014.

### 3.5.2 Georgia

No material amendments, supplements, replacements or material modifications to an ESIA, ESAP, OSRP, RAP or Environmental Management System (EMS) were made in 2014.

### 3.5.3 Turkey

There were no material changes to the Turkey BTC EIA, ESAP or RAP during 2014.

# 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

No new non-compliances were raised by the IEC in 2014.

The status of all notices of non-compliance raised in previous years by the IEC is detailed in Appendix 2.

### 4.1.1 Azerbaijan

There were no non-compliances in Azerbaijan from the IEC in 2014.

Action relating to a non-conformance raised during the 2010 audit (refer to the 2010 Annual Report) relating to the Red Book species *Iris acutiloba* commenced with the planting of 990 trees at PSA2 and 342 trees at IPA 1 in 2014. The tree-planting offset program is described in Section 2.3.1.

No Government fines or penalties were incurred for environmental or social non-compliances, and no material environmental claims were made against BTC Azerbaijan during 2014.

### 4.1.2 Georgia

There were no Government fines or penalties incurred for environmental or social non-compliances, and no material environmental claims against BTC in Georgia during 2014.

### 4.1.3 Turkey

There were no government fines or penalties incurred for environmental or social non-compliances, and no material environmental claims were made against BTC in Turkey during 2014. With the completion of the MARPOL Facility (See Section 11.2.2), the only remaining 2013 IEC non compliance was closed by IEC in 2014.

## 4.2 MONITORING RESULTS

Actions on operational environmental monitoring arising from the BTC ESAP continued during 2014. These planned activities were implemented in accordance with the internal plans to ensure compliance with BTC Pipeline Project standards as well as to monitor, minimise and, where necessary, mitigate the environmental impact of pipeline operations.

### 4.2.1 Azerbaijan

#### 4.2.1.1 Ambient Air Quality

Ambient air quality monitoring was conducted in July-August 2014. Sampling devices were deployed at 5 locations around PSA 2. All results were within ESAP limits. Details are provided in Appendix 3.1a.

#### 4.2.1.2 Stack Emissions

Stack Emissions Monitoring (SEM) for 2014 was completed in November - December 2014 for all major combustion plants at pipeline stations. Monitoring included three PSA 2 main power generators, 4 Main Oil Line (MOL) turbines, a Water Bath Heater (WBH), and two main power generators at IPA 1. All of the stacks were sampled for NO, NO2, carbon monoxide (CO), and SO2. The monitoring results of all BTC Azerbaijan diesel generators and the WBH indicated that the NOx, CO, SO2 were below the limits specified for these plants in the BTC Azerbaijan ESIA and ESAP (and specifically the Emissions Monitoring Plan) except for the diesel generator 'A' at IPA1, where the NOx concentration of combusted gases exceeded the established limit. This was due to a recent engine overhaul on this diesel generator. Monitoring results of previous years show that, under normal operations, flue gas emissions at Diesel Generator A are in compliance with ESAP standards. The next round of SEM is planned in May 2015 and exhaust gas emissions from IPA1 Diesel Generator A will be double-checked.

Monitoring results of the BTC Azerbaijan PSA 2 MOL turbines indicated that NOx concentrations at all 4 turbines were higher than the 75mg/m3 limit specified in ESAP and less than the 125 mg/m3 limit indicated in the BTC ESIA for this plant. The CO concentrations were also higher than the 64 mg/m3 limit specified in BTC ESIA. As noted in pevious reports, an offset programme was developed and completed to compensate for the exceeded NOx emissions against ESAP requirements in 2013. In December 2014, an internal non- compliance report was raised to account for the CO exceedance at PSA2 turbines. Consequently, an Engineering Query (EXAZ-EQ-15388) was initiated to investigate the non-compliant CO emissions from turbine stacks. A summary of monitoring results is provided in Appendix 3.1b.

#### 4.2.1.3 Noise

In September and October 2014, environmental noise monitoring was conducted in accordance with ESAP requirements at 2 pre-identified receptors around PSA 2, 3 pre-identified receptors around IPA 1, and at BV 4, BV 7, BV 10, BV 11, BV 13 and BV 14, all of which are located within a 300m distance of community receptors. Results indicated compliance with the ESAP standards for all locations. A summary of monitoring results is provided in Appendix 3.1c.

#### 4.2.1.4 Effluent

BTC Azerbaijan's effluent discharges in 2014 comprised treated sewage from PSA 2, PSA 2 camp and IPA 1, as well as treated oily water from PSA2/IPA1 oily water separators (OWS).

Sewage treatment systems at PSA 2, PSA 2 camp and IPA 1 have the same design and undergo the same 3 stages of treatment: biological treatment, ultra violet disinfection, and final polishing in reed beds.

Effluent monitoring included sampling and analysis of treated effluent for parameters specified in the ESAP, and at pre-defined monitoring locations. Results are provided in Appendix 3.1d.

All results from the PSA 2 reed bed complied with the ESAP standards with the exception of total coliform bacteria. High levels of total coliform bacteria were detected in samples taken from the final polishing reed beds, primarily after rain. This is thought to be due to the high input of bird droppings carried through drainage water from PSA2 retention pond that feeds into the reed bed. Since samples of water at the inlet point of the reed bed do not contain high levels of total coliform bacteria, the Sewage Treatment Plant (STP) is considered to be functioning as designed.

Due to the observed level of coliforms at reed beds outlets, and specifically the input of coliform bacteria from uncontrolled bird sources, BTC has proposed to MENR to change the sampling point for total coliform bacteria from the outlet of the reed beds to the the outlet of RBC units (after UV treatment) at each BTC facility. This proposal only applies to total coliform bacteria and not the other compliance parameters (i.e., pH, BOD, COD Oil and Grease and TSS). MENR is currently considering the proposal. If approved, the new monitoring program will optimize the assessment of inputs from the sewage (RBC) and effluent (RP and OWS) water treatment facilities.

Treated oily water is only permitted to be discharged into the environment if pre-tested samples are shown to be within relevant ESAP limits (i.e., oil and grease parameter). If the limit is exceeded the water is either recycled back for further treatment in the OWS or transported to the Sangachal terminal CWAA.

A summary of monitoring results is provided in Appendix 3.1e.

#### 4.2.1.5 Ground and Surface Waters

Groundwater monitoring was carried out in May and November 2014. Samples were taken from 7 monitoring wells at the Karayazi aquifer and 2 monitoring wells in Aran.

Surface water samples were collected in May and November 2014 from upstream and downstream locations at IPA 1 and PSA 2.

With minor exceptions the results were below the baseline conditions. A summary of monitoring results is provided in Appendix 3.1f.

#### 4.2.1.6 Waste Management

During 2014, waste management practices were maintained and improvements undertaken to minimise waste generation through awareness sessions, toolbox talks and the like.

All wastes were handled and disposed of in accordance with the BTC AGT Regional Waste Manual and the AzExports Pipelines Waste Management Procedure. A summary of waste generated is provided in Appendix 3.1g.

### 4.2.2 Georgia

#### 4.2.2.1 Ambient Air Quality

Annual ambient air quality monitoring at PSG 1 and PSG 2 was conducted between April-May 2014 and was timed to coincide with stack emissions monitoring. Measurements were taken at 5 locations around each of the above-mentioned stations for NO2, SO2 and benzene. All results demonstrated compliance with the relevant standards. A summary of monitoring results for ambient air quality is provided in Appendix 3.2a.

#### 4.2.2.2 Stack Emissions

As noted above, annual stack emissions monitoring was conducted in April and May 2014 at relevant facilities, with the exception of PSG 1 and PSG 2 WBHs. Monitoring at these WBHs was conducted in October and November respectively.

All stacks were sampled for NOx, CO, SOx with calculations for particulate matter (PM10) performed.

Monitoring results demonstrated compliance with the standards, with the exception of NOx emissions from the turbines. These exceedances have been offset through the NOx offset program in Georgia. A summary of monitoring results is provided in Appendix 3.2b.

#### 4.2.2.3 Noise

Annual environmental noise monitoring at PSG 1 (including Area 72), PSG 1 camp, PSG 2, PSG 2 camp, Tsalka and Borjomi Oil Spill Response Bases (OSRBs) and the EDDF was conducted in October 2014.

The results at all locations indicate compliance with the standards. A summary of relevant monitoring results is provided in Appendix 3.2c.

#### 4.2.2.4 Effluent

Effluent discharge monitoring in 2014 covered treated hydrocarbon contaminated water from PSG 1 and PSG 2 retention ponds, treated sewage from PSG 1 camp, PSG 2 camp, PSG 2 site, Area 80 Permanent Accommodation and Borjomi and Tsalka OSRBs. In addition, Oily Water Separators (OWS) at PSG 1, Tsalka and Borjomi OSRBs, EDDF OWS 1 and OWS 2, PSG 1 camp, PSG 2 bore well OWS and two locations at PSG 2 camp were tested for oil-in-water content.

In accordance with the ESAP requirements, the monitoring program underwent an annual revision to decrease the frequency of monitoring for the parameters that were in compliance with the relevant standards in 2013. Heavy metals, BOD, phenol and chlorine analysis frequency was changed from quarterly to annual for PSG 1 and PSG 2 retention ponds. Total N and P, coliform, pH, TDS and COD analysis frequency was changed from monthly to quarterly for all STPs expect for coliform at Area 80 STP, which remained monthly due to noncompliance in 2013.

A new RBC type STP was installed at the EDDF and has been operating since October 2014. Since then, waste water is no longer transported to Area 80.

All measured parameters at retention ponds and STPs were in compliance with the standards expect for coliform bacteria at Area 80 STP (twice - in February and May) and EDDF (in December) and BOD at Area 80 STP and PSG 2 site (in September).

Reasons for the exceedances were determined and corrective actions implemented. Follow-up sampling confirmed that all effluent discharge standards were in compliance with the exception of BOD levels at Area 80 Camp and PSG 2 site STPs. Here, discharges were only slightly above the limit. Operations representatives were notified and a practice implemented to regularly remove sludge accumulations. Subsequent monitoring demonstrated that BOD at both locations was within the prescribed limits. A summary of monitoring results is provided in Appendix 3.2d.

#### 4.2.2.5 Ground and Surface Waters

Groundwater and surface water monitoring was conducted along the pipeline and around PSGs in two phases in 2014: June to July and October to November. Results of monitoring demonstrated full compliance with the specified Method Detection Limits (MDLs).

A summary of groundwater and surface water monitoring results is provided in Appendix 3.2e.

#### 4.2.2.6 Non-Hazardous Landfill Groundwater

Groundwater monitoring was conducted at the BTC non-hazardous landfill in Q1, Q2 and Q4. No monitoring could be completed during Q3 because all monitoring wells were found to be dry. Only monitoring wells 3 and 4 where sampled as 1, 2 and 5 were dry. Note that dry wells are not uncommon, as described in previous Annual Reports.

The results of the analysis showed general compliance with the background geo-chemistry, with some fluctuations within several parameters, such as electrical conductivity, sulphate (SO4), chloride (Cl), sodium (Na) and boron (B).

A summary of groundwater monitoring results for non-hazardous landfills is provided in Appendix 3.2e

### 4.2.2.7 Greenhouse Gas and Non-Greenhouse Gas Emissions to Air

Greenhouse Gas (GHG) and non-GHG air emission calculations were completed on a monthly basis during 2014. Calculations were based on fuel consumption data for the MOL turbines and equipment specifications and fuel used from assumed running hours for generators and WBHs. Results of the calculations show that the actual GHG emissions are lower than the forecast, as has been the case in the previous years.

A summary of GHG air emissions calculation results is provided in Appendix 3.2f.

### 4.2.2.8 Tsalka Special Section Gas Leak Monitoring

In accordance with the BTC Oil Spill Response Plan approval conditions, a special leak detection process involving sniffer dogs, trained in detection of the underground leaks on pipelines and tanks, was established on the Tsalka section of the pipeline in 2013. The purpose of this process is to supplement the existing pipeline leakage prevention measures and leak detection systems along this sensitive section of the pipeline.

Twenty-six locations were monitored in this manner on a monthly basis throughout 2014. Each location was monitored over a length of 1 km (500 m before the prescribed location and 500 m after). No leaks were detected on any ocassion.

### 4.2.2.9 Waste

The main waste generation areas are PSG 1 and PSG 2. The Central Waste Accumulation Area (CWAA) continues operations for the storage of hazardous waste that cannot be recycled or disposed of in accordance with applicable standards. All non-hazardous wastes are collected at the waste processing and recycling centre for secondary and final segregation. Recyclable waste (plastic bottles, paper/cardboard) is stored in special containers. Non-recyclable waste, after compacting, is sent to a landfill for final disposal on a monthly basis. During the 2014, 552m$^3$ of compacted non-hazardous waste was disposed to the landfill.

BTC Georgia continued using local companies for BTC waste recycling, such as: Caucasus PET Company for plastic waste; Vargi Limited for paper/cardboard; and NSM and Company for metal waste recycling. In total, 410 m$^3$ of compacted recyclable waste was sent to local companies.

To minimise stored waste volume, BTC continues usage of heave shredder, in drum compactor, lump crusher. A newly installed glycol treatment unit processed 32 m$^3$ of used/mixed glycol in to 12 m$^3$ of new product.

BTC site camps continue using food waste macerators and a dewatering system.

A summary of waste generated in 2014 is summarised in Table 4.1 below. Further details are provided in Appendix 3.2g.

**Table 4.1: Waste Generation 2014 (Georgia)**

| Type of Waste (m$^3$) | PSG 1 (Site and Camp) | PSG 2 (Site and Camp) | OSRB Tsalka | OSRB Borjomi | OSRB Rustavi | Tbilisi Office and warehouse |
|---|---|---|---|---|---|---|
| **Hazardous Waste Disposed Offsite** | | | | | | |
| **Oily solids** | 56.5 | 41.9 | 0 | 2.6 | 0.8 | 0.7 |
| **Oily liquids** | 15 | 11.6 | 0 | 5.1 | 0.4 | 0 |
| **Sewage sludge** | 310 | 119 | 0 | 0 | 0 | 0 |
| **Wax** | 1.2 | 1.4 | 0 | 0 | 0 | 0 |

| Non-hazardous Waste Recycled/Recovered Offsite | | | | | | |
|---|---|---|---|---|---|---|
| **Plastic (recycled)** | 82.3 | 22 | 3.4 | 2.9 | 7.1 | 1 |
| **Paper (recycled)** | 166 | 24 | 9.4 | 1.2 | 11 | 82 |
| **Metal (recycled)** | 27.8 | 5.4 | 0 | 2.5 | 14 | 0 |
| **Wood** | 25 | 1.8 | 0 | 0 | 0 | 0 |
| **Organic wastes (food wastes)** | 59.4 | 11.4 | 0 | 0 | 0 | 0 |
| **General** | 310 | 440 | 12.3 | 4.9 | 6.6 | 403 |
| **Other (recycled)** | 2329 | 0 | 0 | 0 | 0 | 307 |

## 4.2.3 Turkey

### 4.2.3.1 Ambient Air Quality

Ambient air quality monitoring in Turkey is undertaken only at the Ceyhan Marine Terminal (CMT). The results are presented in Appendix 3.2a. No ambient air monitoring is required at the Pump Stations (PTs) as the major sources of emissions (pump drivers and water heaters) use natural gas as a fuel.

Passive diffuser tubes were used to monitor air quality. VOCs (benzene, toluene, ethyl benzene and xylene–BTEX), SO2 and NOx are measured at 8 locations at and around CMT once in every three months.

In 2014, 4 surveys were undertaken between March and December.

The annual average of all measured parameters complied with applicable project standards and limit values.

The highest BTEX values were observed at CMT-3 Karatepe Quarter. This sampling location is adjacent to a third party crude oil loading terminal (BOTAS), and therefore impacted by associated VOC emissions. Some occasional fluctuations (increase of SO2 and NO2 at two locations during the Fall monitoring period and SO2 at one location during Spring, as per the previous year) was also observed, however in each case the emissions were below the regulatory limits and lower than previous years.

The annual average values of parameters measured in 2014 were generally lower than values of 2013, all of which were in compliance.

### 4.2.3.2 Stack Emissions

The fuel gases originating from gas fired reciprocating engines, water heaters, diesel fired generators and wax handling boilers were monitored by DOKAY in accordance with the ESAP Environmental and Emissions Management Plan.

Stack emissions monitoring results for 2014 are shown in Appendix 3.2b. Results demonstrate compliance at all facilities with the exception of the PT2 driver engine 3 which was undergoing maintenance at the time of monitoring.

### 4.2.3.3 Noise

The project standard for noise specifies a maximum of 45dBA for night time ambient noise levels at sensitive receptors or a 3dBA increase above background levels.

Noise modelling was undertaken as part of the ESIA process (Volume II, Section 7.9.4) and indicated that noise levels peaked at 40dBA at maximum of 50m from the perimeter fence at each pump station. Given that the closest residential receptor to any of the facilities is 1.5 km away, monitoring at off-site residential receptors is only undertaken in response to concerns raised by residents or if there is evidence that on-site noise is rising. Neither of these situations arose during 2014, consequently, no ambient monitoring was conducted.

#### 4.2.3.4 Aqueous Discharges

Aqueous discharges originating from project facilities, as well as downstream surface water bodies which receive the aqueous discharges, are monitored on a monthly basis. Upstream water bodies are similarly monitored to establish 'control' conditions. Aqueous discharge monitoring results for 2014 are shown in Appendix 3.2c.

A number of aqueous discharge streams did not meet project standards. In such cases effluent was re-cycled or trucked to Project approved Municipal WWTPs for further treatment.

In 2014, number of enhancements were implemented including provision of aerators for ponds and incubators for coliform kits. Further details can be found in Appendix 3.2c.

#### 4.2.3.5 Groundwater

Groundwater quality and water levels were monitored at all AGIs (except for IPT1 where there is no well) to determine the effects on groundwater during the operational phase, and to ensure the sustainable use of groundwater.

Water samples were collected for the analysis of the following parameters: pH, temperature, turbidity, electrical conductivity, salinity, Total Dissolved Solids (TDS), dissolved oxygen, total coliforms, ammonia, nitrate, nitrite, TOC and Total Petroleum Hydrocarbons (TPH). In addition, arsenic will be analysed at PT 2 and PT 3. Dissolved oxygen, electrical conductivity, salinity, Total Dissolved Solids (TDS), pH, turbidity and TOC parameters will be analysed quarterly in the samples taken from the well at PT 4.

In all facilities, groundwater wells are used to provide service water for utilities (i.e. services, firewater, etc.). In addition, other than groundwater criteria of WHO and EPA for specific parameters (e.g. pH, TDS, ammonia, turbidity, nitrite and nitrate, etc.), there are no legal limits defined for such uses in Turkey.

The 2014 groundwater monitoring report has not been finalized. Whenit is it will be shared with IEC during their next visit.

#### 4.2.3.6 Waste Management

In 2014, about 418 tonnes of solid waste was disposed off-site. Approximately 40% of the total waste generated was domestic waste sent to Antakya Municipal Landfill Site and a little over 50% was non-hazardous waste that was re-used or re-cycled. Approximately 7% was hazardous waste, of which approxmately 1% was sent to Izaydas and 6% to RDF for incineration.

Appendix 3.2d provides details of waste volumes generated.

Hazardous waste and waste oil declarations were made to Ministry of Environment and Urbanisation (MoEU) by BIL for all facilities for 2014.

For details of the Waste Management BPEO Study refer to Section 0 of the Report.

## 4.3 STATEMENT OF COMPLIANCE

BTC and its agents have complied with the ESAP, applicable environmental laws and applicable Lender E&S policies and guidelines in all material respects during 2014.

During the last IEC monitoring visit, no non-compliances with Project commitments were identified. The main non-compliance identified over the past 2 years has been the lack of construction of a slops treatment facility at the Ceyhan Marine Terminal. This has now been completed.

## 4.4 CHANGES IN APPLICABLE ENVIRONMENTAL LAW[3]

### 4.4.1 European Legislation

New and amended EU directives, regulations, and decisions announced in 2014 have been reviewed. There was one environment-related legislative change in European legislation that was relevant to BTC in 2014, namely Commission Regulation (EU) No 1357/2014, Annex III to Directive 2008/98/EC.

In particular, waste stream classification was elaborated in detail. Most important changes are:

- "Highly Flammable" as a waste label was excluded
- "Harmful" waste labelling was replaced by "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
- "Toxic" was label was replaced by "Acute Toxicity"
- H 12 waste label became labelled as "Release of an acute toxic gas"

## 4.5 CHANGE IN NATIONAL LEGISLATION

The following summary of changes in national legislation of Azerbaijan, Georgia and Turkey aims to give an overview of new legislation and highlight recent developments. Although some may have direct relevance to BTC, inclusion of specific legislation into this Report does not imply its applicability to BTC.

### 4.5.1 Azerbaijani Law

In 2014 there were no relevant environmental legislative changes in Azerbaijan. From social perspective one legislative change was recorded which is applicable to BTC operations, as summarise in Table 4.2 below.

**Table 4.2: Azerbaijani Law Changes 2014**

| Regulation Title | Regulation Topic | New/ Revision | Potential Impact on BTC Azerbaijan Operations |
|---|---|---|---|
| Decree of the president of Azerbaijan about the creation of Preservation of Cultural Heritage Government Service on behalf of Ministry of Culture and Tourism | Preservation of Culural Heritage | Baku, 18th December, 2014 | Cultural heritage plan |

### 4.5.2 Georgian Law

Table 4.3 below outlines the environment-related legislative changes which occurred in 2014 and are potentially relevant to BTC Georgia.

[3] Applicable environmental laws as defined within the Host Government Agreement and Inter-Government Agreement.

**Table 4.3: Georgian Law Changes 2014**

| Regulation Title | Regulation Topic | New/ Revision | Potential Impact on BTC Georgia Operations |
|---|---|---|---|
| Regulation Title | Regulation Topic | New/Revision | Potential Impact on BTC Georgia Operations |
| Decree of the Government of Georgia #26 on Approval of Technical Regulations of Sanitary Rules of Water Sampling (January 3, 2014) | Water sampling | New - January 3, 2014;<br>Repeals Order #15/б of the Ministry of Labor (dated January 22, 2004), Health and Social Protection on Approval of Sanitary Rules of Water Sampling | The decree applies in terms sampling, transportation, storage and conservation of water for physical, chemical, microbiological, pest and radiological analysis. |
| Order of the Government of Georgia #54 on Approval of Technical Regulations for Determination (Calculation) of Damage to the Environment (January 14, 2014) | Calculation of damage to the environment | New - January 14, 2014 | The order will apply if calculation of monetary value of damage to the environment becomes required. |
| Order #118 of the Ministry of Environment and Natural Resources Protection on Approval of Instructions of Electronic Management System of Wood Resources (April 30, 2014) | Electronic management database of wood resources | New – April 30, 2014 | The order will apply if BTC operation requires wood cutting, transportation, handover etc. |
| Decree #408 of the Government of Georgia on Approval of Technical Regulations on Calculation of Norms of Harmful Emissions to the Atmosphere (December 31, 2014) | Methodology of calculation air emission norms | New – December 31, 2013 (entered into force January 1, 2014); Repeals Order #56 of the Ministry of Environment and Natural Resources Protection (dated August 8, 2013) on Approval of Calculation Method of Harmful Emissions to the Atmosphere. | The decree applies to calculation of harmful air emission and MOE reporting. |

| Regulation Title | Regulation Topic | New/ Revision | Potential Impact on BTC Georgia Operations |
|---|---|---|---|
| Georgian Law on Environmental Impact Assessment Permit (December 26, 2007) | Environmental Impact Permit | Revision – Amendment #2996 dated December 26, 2014. | The amendment may apply to certain waste management activities. |
| Decree of the Government of Georgia #190 on approval of Georgian Red List (February 20, 2014) | Protected species | Revision - Approval of a new Red List February 20, 2014 | The decree will apply if BTC operation impacts newly designated Georgian Red list species. |
| Decree of the Government of Georgia #26 on Approval of Technical Regulations of Sanitary Rules of Water Sampling (January 3, 2014) | Water sampling | New - January 3, 2014;<br>Repeals Order #15/б of the Ministry of Labor (dated January 22, 2004), Health and Social Protection on Approval of Sanitary Rules of Water Sampling | The decree applies in terms sampling, transportation, storage and conservation of water for physical, chemical, microbiological, pest and radiological analysis. |

### 4.5.3 Turkish Law

Significant changes of national environmental regulations in 2014 that are potentially relavant are summarised in Table 4.4 below.

**Table 4.4: Turkish Law Changes 2014**

| Effective Date | Regulation On: | New / Revision | Potential Impact on BTC Turkey Operations |
|---|---|---|---|
| 10.09.2014 | Regulation on Environmental Permit and License | New | The ammendment applies to MARPOL Facility License application at CMT and future renewals of Environmental Permits |
| 17.05.2014 | Regulation on Monitoring of Greenhouse Gas Emissions | New | Applies to emissions from BTC Facilities and requires Greenhouse Gas Emissions Monitoring Plans |
| 17.05.2014 | Regulation on Industrial Air Quality Control | New | No impact. |
| 21.03.2014 | Regulation on the Control of Medical Wastes | Revision | No impact. |
| 23.12.2014 | Regulation on the Control of Used Batteries and Accumulators | Revision | No impact. |
| 30.01.2014 | Communique on Transport of Wastes on Highways | Revision | No impact. However, there are requirements for some certain 3rd party waste transport companies which may have impact on BIL waste operations. |
| 27.08.2014 | Regulation on Transport of Hazardous Materials on Highways | Revision | No impact. There are requirements for certain 3rd party hazardous material transport companies in terms of ADR issues. |
| 13.12.2014 | Regulation on the Safety Data Sheets for Hazardous Materials | New | Applies to MSDSs for hazardous materials used and stored at BTC facilities and defines local requirements for the MSDS of those materials. |

# 5 OIL SPILL RESPONSE

## 5.1 SUMMARY OF OIL SPILL RESPONSE PLANS COMPLETED, UPDATED, OR AMENDED DURING THE YEAR

In 2014 Oil Spill Contingency Plans (OSCP) for each Azerbaijan and Georgia Exports Pipelines assets (collectively Midstream Assets) have been re-written to align and conform with Group Defined Practice (GDP) 4.6-0002 Crisis & Continuity Management – Oil Spill Preparedness & Response. The following OSCPs were updated:

- Sangachal Terminal
- Az Export Pipelines
- Georgia BTC Pipeline System Oil Spill Contingency Plan
- Supsa Terminal and Offshore Operations Oil Spill Contingency Plan
- WREP Georgia Oil Spill Contingency Plan.The update of the containment site database by Oil Spill Response Contractor - NRC (previously called Seacor) was continued. The follow up actions of the external oil spill response preparedness audit, conducted by Polaris, were determined and the actions were being taken by BIL, accordingly.

## 5.2 SPILL AND REMEDIATION SUMMARIES

BTC reports any material, uncontained releases to the environment or any contained releases greater than 1 barrel. Gas releases are always classified as uncontained. All material releases (liquids, gases or solids) are internally reported and investigated. There is no minimum reportable volume for internal release reporting and investigation.

A summary of releases is provided in Table 5.1.

**Table 5.1: BTC Material Releases 2014**

| Asset | Liquid | | | Gas |
|---|---|---|---|---|
| | <1bbl | >1bbl | | |
| | Uncontained | Contained | Uncontained | |
| **BTC Azerbaijan** | 1 | 0 | 0 | 0 |
| **BTC Georgia** | 1 | 0 | 0 | 0 |
| **BTC Turkey** | 11 | 1 | 0 | 0 |

Further details on the material releases shown in Table 5.1 are provided in the following sections.

### 5.2.1 Azerbaijan

#### Uncontained

Approximately 0.2 l hydraulic oil leaked from JCB excavator fork hydraulic system located in the pipeyard.

### 5.2.2 Georgia

**Uncontained**

There was 1 minor reportable uncontained material releases during 2014. This occurred at a GC13 check valve. Approximately 4L of oil was released in a concrete pit as a result of a check valve bonnet seal failure.

### 5.2.3 Turkey

**Contained**

An estimated 8.8 bbl foam was released at PT4 in March 2014 as a result of damaged seal on a foam pump. The seal was replaced and an incident investigation conducted.

**Uncontained**

There were 11 uncontained releases during 2014 reporting period.

- Estimated 0.03 bbl diesel (CMT – January 2014)
  - The bucket on a concrete pump, containing oil, spilled on the road in front of the security door. The area was secured with safety tape and spill kits brought to the site. The area was cleaned up and all waste sent to the CWAA as hazardous waste.
- Estimated 0.01 bbl hydraulic oil (CMT – February 2014)
  - During the operation of concrete pouring at the process area a hydraulic hose at mobile concrete pump ruptured resulting in an oil leakage on compacted aggregate material. The affected area was stripped and contaminated aggregate was removed as a hazardous waste. A toolbox talk including necessary actions required for similar incidents was performed with relevant parties.
- Estimated 0.001 bbl lube oil (CMT – April 2014)
  - Small amount of lubricating oil leaked on construction road of MARPOL site during concrete pouring. The affected area was stripped and the contaminated aggregate was collected prior to disposal as hazardous waste.
- Estimated 0.01 bbl diesel (KP 1007 – June 2014)
  - During refuelling of a generator at a camp site, diesel spilled on the gravel from the ventilation valve. The work was immediately stopped and the engine turned off. Contaminated gravel removed as hazardous waste for further disposal.
- Estimated 0.03 bbl diesel (KP 1007 – June 2014)
  - Hydraulic oil spilled from hi-up crane. Contaminated gravel was removed as hazardous waste for further disposal.
- Estimated 0.01 bbl diesel (PT4 – June 2014)
  - A diesel leak from an ambulance diesel tank was observed by the driver. The leak was contained by a drip tray that was immediately placed under the leaking tank. The vehicle was repaired. Contaminated gravel removed as hazardous waste for further disposal.
- Waste water overflow (PT4 – July 2014)
  - Camp site security personnel patrolling at night observed that waste water overflow occurred at the camp site waste water inlet tank. The affected areas were disinfected. .
- Estimated 0.01 bbl diesel (KP 1007 – July 2014)

  - Diesel spilled from the loader fuel tank cap on the ground at the right of way. Contaminated gravel removed as hazardous waste for further disposal.
- Estimated 0.03 bbl crude oil (BVT39 – July 2014)
  - Oil spilled from a bypass valve. Contaminated gravel removed as hazardous waste for further disposal.
- Estimated 0.06 bbl crude oil (KP1007 – Nov 2014)
  - During the 30" lock-o-ring plug setting processes some remaining oil process water spilled out from the 2" bleeder. Oily water leakage occurred on the scaffolding and on the ground. The OSR team responded to the spillage.
- Estimated 0.01 bbl crude oil (PT4 – Nov 2014)
  - A hydraulic leak occurred on the concrete floor from the crane that was involved in wax handling exchanger maintenance. The contaminated area was cleaned-up.

#### 5.2.3.1 Illegal Taps

No illegal taps occurred in 2014.

#### 5.2.3.2 Remediation

Approximately 150 m3 of contaminated soil originating from previous illegal taps was successfully bioremediated at the CMT by BIL, as results from soil analyses showed that it conformed to relevant criteria that define non-hazardous waste (soil). The remediated soil will be transferred to the Antakya Municipal Landfill Site for disposal once all the formalities with the appropriate authorities have been completed.

In additional, the bio-remediated soil removed after BVT 24 spill will be sampled in 2Q 2015 and, depending on the results of the analysis, the soil will be disposed accordingly.

## 5.3 SUMMARY OF MATERIAL MODIFICATIONS TO THE OIL SPILL RESPONSE PLANS

The Oil Spill Contingency Plans (OSCP) for Azerbaijan and Georgia were updated in May 2014.

In order to align and conform to GDP 4.6-0002 the following amendments in the plans have been made:

- Updated and outlined a seven step approach relevant to response actions, including notification, initial assessment, strategy, site control, response, review process and termination of response
- Updated Facility Description and Risks
- Updated Oil Spill Risks and Oil Characteristics; inserted information including diagrams to provide details relevant fate of oil on land and water
- Identification of modelling scenarios
- Updated strategies and response capabilities
- Developed Tactical Response Plans (TRP); and Inserted Response Techniques decision matrix.

The Turkey OSRP was revised and updated and is awaiting approval by BIL Management. The containment site database was also updated in 2014.

# 6 ADDITIONALITY PROGRAMMING

## 6.1 SUMMARY OF ENVIRONMENTAL INVESTMENT PROGRAMME

### 6.1.1 Azerbaijan

The Azerbaijan Environmental Investment Program (EIP) ceased to exist as a separate program in 2009 when all EIP activities were integrated within the framework of the Sustainable Development Initiatives (SDIs) and Community Development Initiatives (CDIs). Refer to Section 6.2.1.

### 6.1.2 Georgia

The Georgian EIP was completed in 2013, as described in previous Annual Reports.

### 6.1.3 Turkey

Ten construction phase projects (EIP I) and seven operation phase projects (EIP 2) are complete. One of the EIP 2 projects was completed in 2014. A new project was initiated in 2014 (see Item 22 in Table 6.1). There are five on-going projects.

**Table 6.1: EIP Turkey: Summary of Activities**

| | Project | Phase | Started | Completed | BTC Funds Spent US$ |
|---|---|---|---|---|---|
| 1 | Sea Turtle Expedition | Construction (EIP 1) | 01.08.2003 | 31.12.2005 | 175,000 |
| 2 | Research on Monk Seals | Construction (EIP 1) | 01.08.2003 | 31.12.2004 | 100,000 |
| 3 | Improving the Conservation and Status of Caucasian Black Grouse in Turkey | Construction (EIP 1) | 01.08.2003 | 31.12.2005 | 230,000 |
| 4 | Important Bird Areas in the BTC Pipeline Region | Construction (EIP 1) | 01.08.2003 | 31.12.2005 | 215,000 |
| 5 | Important Plant Areas in the BTC | Construction (EIP 1) | 01.08.2003 | 31.12.2005 | 260,000 |
| 6 | Lesser Caucuses Forests Gap Analysis | Construction (EIP 1) | 01.02.2004 | 31.04.2006 | 305,000 |
| 7 | Small Investments Fund – Phase 1 | Construction (EIP 1) | 01.09.2004 | 30.04.2007 | 250,000 |
| 8 | Awareness Raising Materials on Biodiversity Along the BTC Pipeline | Construction (EIP 1) | 01.11.2004 | 30.10.2008 | 200,000 |
| 9 | Yumurtalik Lagoons Wetland Management Plan and Erzurum Marshes Conservation Zones | Construction (EIP 1) | 01.11.2004 | 31.12.2007 | 545,000 |

| | Project | Phase | Started | Completed | BTC Funds Spent US$ |
|---|---|---|---|---|---|
| 10 | Participatory Eco-System-Based Planning and Management of Ardahan-Yalnizcam Forests | Construction (EIP 1) | 01.06.2005 | 30.05.2008 | 1,110,000 |
| 11 | Eksisu Wetlands Management Project - Phase 1 | Operations (EIP 2) | 01.12.2006 | 31.05.2011 | 420,000 |
| 12 | Biogas/Fertilizer Demonstration in Kahraman Maras - Phase 1 | Operations (EIP 2) | 01.12.2006 | 31.12.2009 | 62,000 |
| 13 | Conservation Priority Analysis for Central and South BTC Region – Phase 1 | Operations (EIP 2) | 01.12.2006 | 31.12.2011 | 1,351,721 |
| 14 | Grand Kackar Project | Operations (EIP 2) | 01.12.2006 | 31.12.2010 | 50,000 |
| 15 | Small Investments Fund – Phase 2 | Operations (EIP 2) | 01.05.2007 | 31.05.2009 | 420,000 |
| 16 | Yumurtalik Wetlands Management – Implementation Phase 1 | Operations (EIP 2) | 01.12.2008 | On-going | 985,000 |
| 17 | Conservation of Commercially Important Endangered Endemic Plants in Ardahan and Kahramanmaras | Operations (EIP 2) | 01.12.2007 | 31.12.2011 | 275,000 |
| 18 | Terresterial Wildlife Rehabilitation | Operations (EIP 2) | 01.04.2010 | On-going | 395,000 |
| 19 | Marine Wildlife Rehabilitation | Operations (EIP 2) | 01.01.2011 | On-going | 350,000 |
| 20 | Eastern Anatolia Waste Management | Operations (EIP 2) | 01.01.2011 | 31.12.2014 | 240,000 |
| 21 | Integrating Biological Diversity to Forestry Management | Operations (EIP 2) | 01.01.2012 | On-going | 283,397 |
| 22 | Capacity Enhancement Remediation Management Governance | Operations (EIP 2) | 01.11.2014 | On-going | 10,000 |
| | **TOTAL** | | | | **8,232,118** |

EIP continued to promote biodiversity as well as extending the themes into the following areas:

- National environmental infrastructure (i.e. waste disposal and waste water treatment facilities)
- Wildlife care
- Regulator capacity support (awareness and experience)

#### 6.1.3.1 Project Status as of December 2014

A summary of key EIP developments in 2014 are as follows:

- Integrating Biological Diversity to Forestry Management: Conservation Investment Priority Analysis for the Central and Southern BTC Region Project was restructured under the Project on Integrating Biological Diversity to Forestry Management. The project aims to support government on biodiversity and non-timber forest products in Turkey via a biodiversity integration study in priority forest areas along the BTC pipeline. In this regard, Forest Management and Planning Guidelines are currently being developed for integrating ecological management into forest management. Climate change adaptation recommendations were integrated to a selected pilot forest management plan in Adana in 2014. Similar effort in Konya is on-going. Ecological monitoring has started in 6 sections within the pipeline region.
- Implementation of the Yumurtalik Lagoons Management Plan (Phase II): The project aims to maintain momentum towards conservation of a wetland ecosystem and reducing some of the land use complexities that the local stakeholders are facing. One key action was to support the reduction of the protection status of Yumurtalık Wetlands by one level to facilitate the attainment of defined management objectives. This proposal was approved by the relevant Ministry, however it was ruled out by the court in 2014. As a result, the approved wetland management plan was revised in 2014. Also, technical support was provided to the Ministry of Forest and Water Affairs in developing and implementing new species protection plans in Turkey.
- Terrestrial Wildlife Rehabilitation Centre Project: The project aims to establish and operate a terrestrial wildlife rehabilitation centre and an operation system with the aim of caring for sick, injured and orphaned wildlife and acclimatizing in Turkey in wildlife rehabilitation. Training on wildlife rescue and rehabilitation and oiled wildlife response was provided in November to about 100 people from a range of groups including NGOs, Government departments, Universities, and Oil Spill Contractors. Significant funding support was secured by the grantee from Government to enhance the capacity of the Kars Kafkas University Wildlife Rehabilitation Center.
- Marine Wildlife Rehabilitation Centre Project: The project aims to enhance and operate a marine wildlife rehabilitation centre, establish an operation system with the aim of caring for sick, injured and orphaned wildlife. Operational and treatment capacity of the center was enhanced through purchase and installation of sea pens in 2014. A new communication network was established for reporting injured or dead animals. Also a network of mobile equipment for transporting the injured sea turtles was developed. Seven sea turtles were rehabilitated and released back to the ocean. Nine individuals were under rehabilitation as of end of 2014.
- Eastern Anatolia Waste Management: The project aims to provide technical assistance to the Erzurum Municipality in order to enhance their municipal landfill operational procedures and practices in line with EU standards. The

technical support component has been completed. The next step involves a developing and upgrading infrastructure to meet EU criteria.

- Technical Support for Enhancing Remediation Management Capacity of Government. The Turkish Ministry of Environment and Urbanization issued a 'Regulation on Control of Soil Contamination and Sites Contaminated from Point Sources' in 2010 for protecting the sites from contamination, identifying sites that are contaminated or potentially contaminated and the sectors causing it; and, cleaning up and monitoring contaminated sites. The regulation will be effective in 2015. The EIP project aims to deliver a preparation process before implementation of this Regulation, based on activities including training, field monitoring, testing of the Regulation and development of implementation guidelines. The first of a series of workshops and a field monitoring exercise was completed in November.

### 6.1.4 Environmental Investment Programme Expenditures 2014

Table 6.2 shows the amount budgeted for the EIP and the cumulative amount spent since the inception. Table 6.3 shows the breakdown of expenditures for 2014. The difference between planned and actual figures arise from rescheduling of activities and relevant grant disbursements.

**Table 6.2: Cumulative EIP Budget and Expenditures (US$) 2003-2014**

| | Azerbaijan | Georgia | Turkey[4] | TOTAL |
|---|---|---|---|---|
| **EIP budget** | 3,467,000 | 3,000,000 | 8,532,000 | 14,999,000 |
| **Total spent-to-date (at end 2014)** | 1,697,298 | 2,877,548[5] | 8,232,118 | 12,806,964 |

**Table 6.3: Summary of EIP (Operations Phase) Expenditures (US$) 2014**

| | Azerbaijan | Georgia | Turkey | TOTAL |
|---|---|---|---|---|
| **Planned** | 0 | 300,000 | 415,000* | 715,000 |
| **Actual** | 0 | 300,000[6] | 70,000* | 370,000 |

*Incomplete activities and disbursements transferred to 2015. Also, Eastern Anatolia Waste Management underspent by $40,000

### 6.1.5 Environmental Investment Programme Budget 2015

Table 6.4 shows the breakdown of the 2015 planned budget for Georgia and Turkey. In Azerbaijan, the EIP activities were integrated to the framework of the CDI and SDI programmes, so there is no separate EIP budget. CDI and SDI programme budgets in Azerbaijan were consolidated and became part of the overall social investment budget.

**Table 6.4: EIP Budget (US$) 2015**

| | Georgia | Turkey | TOTAL |
|---|---|---|---|
| **Budget 2015** | 750,000[7] | 300,000 | 1,050,000 |

[4] Includes technical support to grantees on top of the grants awarded.
[5] Includes US$500,000 under the Agreement on Bakhmaro Resort Zone Forest Recovery and Reforestation Programme and Eco-wards Programme.
[6] Additional US$145,000 to the initially planned US$300,000 was added in 2009 for Ktsia-Tabatskuri Reserve Management implementation project.

## 6.2 SUMMARY OF COMMUNITY DEVELOPMENT INITIATIVES[8]

A 5-year strategy paper was developed for Azerbaijan, Georgia and Turkey for the years 2012 to 2016 and was been approved by BTC management and by the Implementing Partners (IPs) in 2014.

All projects designed and implemented in these 3 countries are in line with the approved strategy.

Table 6.5 summarises the projects performed across all 3 countries under the CDI programme. This is followed by an outline of project activities in each country.

[7] Includes US$450,000 from Project EIP budget. US$750,000 transfer is postponed due to the reorganisations taking place in ammendments being made to certain provisions in the relevant contract without changing the overall intent,the relevant ministries..

[8] In Azerbaijan and Turkey, the term CIP has changed to CDI.

## Table 6.5: BTC and SCP CDI and Other Investments – Visualising the Benefits (to year-end 2014)

| Investment Type | Azerbaijan | Georgia | Turkey |
|---|---|---|---|
| **Number of communities benefiting** | 99 | 97 | 330 in total |
| **Amount invested (US$)** | 17.7 million[9] | 6,800,984[10] | 34,811,631 |
| **IP/Number of local/national NGOs** | 2 local NGOs in 2014 | 2 local NGOs (5 others during previous phases) | 7 IPs (4 local and 3 national) and 4 Project Partners (national) |
| **% Women in community action groups for 2012** | 48% | 22% | Average 12% varies from 6% to 20% according to region<br>All CDIs have separate individual Small Support Fund projects targeting 100% women. In addition, 622 women/girls have applied to open school programmes. |
| **Number of medical facilities improved** | n/a | 2 | 11 (Not applicable in 2014) |
| **Number of education facilities improved** | n/a | 5 | 134 schools upgraded and 164 schools painted.<br>(Not applicable in 2014) |
| **Number of water supply systems improved** | 2<br>(Renovation of water pipes used for households and water supply to cemetery) | 61 potable, 37 irrigation | From 2003 to end 2014, 127 potable water systems including 12 electrical motor pump systems, 97 irrigation systems (drip, sprinkling and concrete channel), 180 water systems for animals. In 2014, 4 drilling works for drinking and irrigation water and 2 water system for animals. |
| **Kilometres of road upgraded** | 3<br>no new activities in 2014 | 17 km | Village roads were improved as part of reinstatement activities during the construction and reinstatement phase. However, BTC's pipeline repair contractors have upgraded some of the village roads or access roads to the fields. |
| **% Infrastructure project achieving >25% community contribution** | - | 100%<br>Contribution was average 52%[11] | 500 quick impact projects completed between 2003 and 2012. 95% of all infrastructure projects have cash or in-kind beneficiary's contribution.<br>In 2014 - All Small Support Fund projects have at least 25% cash or in-kind beneficiary's contribution as equity capital. |
| **Number of medical staff trained** | - | 0 | 401 (Not applicable in 2014) |
| **Number of people receiving direct medical support** | - | 0 | 37,963 people received general health training (over 13,000 people received reproductive health training from an EU funded project implemented by a CIP IP in Ardahan)<br>Not applicable in 2014 |

[9] Amount invested: until 31 December 2006 – accruals plus amount disbursed, from 1 January 2007 – only amount disbursed. This amount includes spend on BTC/SCP projects within SDI, but for 2011 only the amount of CDI projects added.
[10] Only BTC and SCP share.
[11] Due to the new CBO involvement contribution was lower in some of the communities

| Investment Type | Azerbaijan | Georgia | Turkey |
|---|---|---|---|
| **Number of micro-loans issued** | - | 4,589 | In line with the new CDI strategy, IPs allocate 50% of their total budget to individual entrepreneurs or institutions through a grant programme called Small Support Fund. |
| **% Repayment rate for micro-loans** | - | 100% | In 2014 – In line with the SDI Strategy local NGOs and individuals are supported with limited grants, within Small Support Fund in realizing their applicable projects without repayment. |
| **Average value of micro-loan (US$)** | - | 15,002,000 | - |
| **% Women receiving micro-loans** | - | 70 % | 31.5% |
| **Number of demonstration farms/agricultural trainers** | 23 agricultural trainers<br>24 greenhouses were constructed<br>no new activities in 2014. | 310 demonstration farms.<br>111 demonstration farming groups; 11 trainers | Between 2003 and 2012 - 2,603 demonstration farms were established in the project villages (333 agricultural trainers were trained).<br>In 2014 - 8 separate big scale (each one is 2 dekar) greenhouse was established in one parcel area as demonstration characteristic. |
| **Number of farmers trained** | 360 farmers<br>no new activities in 2014 | 13,533 | Between 2003-2012 - Over 131,199 (also 842 beekeepers)<br>In 2014 – 3777 person (including vocational and entrepreneurship trainings). |
| **Number of livestock vaccinated** | - | 828 | Between 2003 and 2012 - 1,066,804 livestock vaccinated, CIP is giving support to Cattle Breeders' Unions; 60,722 cows have been artificially inseminated.<br>In 2014 - New CDI strategy does not include this type direct intervention. However, some of the local NGOs and cattle breeder's unions supported within CDI projects continue these activities. |
| **Weight (tonnes) of high quality seed provided** | - | 48,2t | Between 2003 and 2012 - Over 1,375t (also over 63,000 units of fruits saplings and more than hundred thousand vegetable seedlings were provided).<br>Not applicable in 2014. |
| **Number of co-operatives established** | 9 youth chambers established (Eurasia Partnership Foundation (EPF) project)<br>4 milk collection points were established<br>1 community based pre-school and child development centre registered (Centre for Innovation in Education project)<br>no new activities in 2014 | 34 agricultural co-operatives and 12 social enterprise groups are established | Between 2003 and 2012 - 70 village-based organisations In total, 133 village-based organisations received support from the project since 2003 under the capacity building component of the CIP.<br>In 2014 – 3 cooperative and 1 unions were established through positive impact of project activities at the P/L routes. In 2014 CDI activities supported in total 101CBOs or local organizations). |

| Investment Type | Azerbaijan | Georgia | Turkey |
|---|---|---|---|
| **Number of people received vocational trainings** | - | 88 | Total: 1154 (in 2014 - 337 young people)<br>Career consulting to 1,847 people (in 2014 – 250 peope)<br>Workforce capacity building trainings to 1,687 employees |
| **Number of Small and Medium Enterprises (SMEs) benefited from enterprise development supports** | **In 2014**<br>245 local companies engaged in enterprise development activities;<br>28 companies completed the development process and graduated the Enterprise Development and Training Programme (EDTP), bringing the total since 2007 to 177 | 370 | Total 364 (252 in 2012 and 2013, and 112 in 2014) |
| **Number of new enterprises established** | - | 118 | 90<br>(48 in 2014 and 42 in 2012 and 2013) |

## 6.2.1 Azerbaijan

### 6.2.1.1 Sustainable Development Initiatives in Azerbaijan

In 2014, BTC spent US$462,575 on the implementation of SDIs in Azerbaijan.

#### Enterprise Development and Training Programme

Launched in 2007, the EDTP aims to support local companies in achieving international standards, to enhance their competitiveness in supplying the oil and gas sector of Azerbaijan and increase the local content of BTC contracts.

The programme covers a wide range of activities related to the development of the local supply chain such as market surveys and the identification of potential local suppliers, detailed gap analyses and implementation of tailored development plans as required. BTC spent US$$412,575 for EDTP in 2014.

Key achievements since inception of the EDTP in 2007 are as follows:

- 177 companies have successfully completed the EDTP;
- 276 business development plans (action plans) and 272 gap analyses have been produced to support participating companies in delivering improvement activities;
- Local companies have invested more than US$19 million in new capital equipment;
- EDTP clients have hired almost 2,200 new employees;
- EDTP has assisted local companies to secure contracts with local and international companies valued at more than US$542 million.

Highlights for 2014 include:

- 245 local companies engaged in EDTP activities;
- 28 companies completed the development process;
- 246 new employees hired by EDTP clients;
- EDTP clients have invested approximately US$3.75 million in new capital equipment; and
- EDTP has assisted local companies to secure contracts with local and international companies valued about US$90 million

#### School of Project Management (SPM)

The SPM was established in Khazar University with the aim to develop the project management skills of individuals working in both the private and public sectors in Azerbaijan. The project offers access to a globally-recognised, comprehensive project management programme devised by the industry leader ESI International. In 2014, BTC spent US$50,000 for the implementation of the SPM. The project will continue until 2015.

Key achievements since inception of the project are:

- Three graduation events have taken place (in June 2012, June 2013 and November 2014) during which the graduates received their Masters Certificate in Project Management from the George Washington University. The graduates represented the various business sectors including oil and gas, government, engineering and construction, marine and geology, education, banking and finance, and telecoms;

- In total, 298 representatives from 109 private and public organisations participated in the SPM in 2011. Of those, 176 qualified for Masters and 122 for Associates Certificates from the George Washington University;
- Additionally, the SPM has been awarded a contract by the Ministry of Education of Azerbaijan to provide training to a group of 30 representatives of various ministries as part of their Public Investment in Capacity Building project;
- Entire training curriculum and Project Management Term of Reference with over 800 PMI® Project Management Body of Knowledge (PMBoK®) terms were translated into Azerbaijani, enabling companies and organisations to provide the same, world-class training to their employees who do not speak English.
- On 5 March 2014, a memorandum of understanding on extension of support for the SPM until November 2015 was signed on behalf of BP co-venturers, extending the programme to 15 Streams in total.

SDI initiatives are summarised in Table 6.6.

**Table 6.6: Summary of SDIs and CDIs**

| Project | Partners | BTC and SCP Grant[12] (US$) | Partner Contribution (US$) | Total Project Funds (US$) |
|---|---|---|---|---|
| EDTP | Azerms Limited Liability Company | 412,575 | N/A | 3,000,000 |
| SPM | Khazar University, ESI International | 50,000 | N/A | 2,015,705 |
| Youth Business Leadership project | United States Agency for International Development, American Chamber of Commerce, Junior Achievement Azerbaijan | 15,000 | 100,000 | 200,000 |
| Pre-school education and female entrepreneurship | Centre for Innovation in Education | 26,407 | 268,074 | 226,224 |
| **TOTAL** | | **503,982** | **N/A** | **5,441,929** |

### 6.2.1.2 Community Development Initiatives in Azerbaijan

In 2014, BTC supported a variety of CDIs and SDIs in Azerbaijan – including projects designed to improve local education, build community-based skills and capabilities, improve access to social infrastructure and provide training and finance that local enterprises need in order to grow.

With our co-venturers, we allocated US$41,407 to CDIs in 2014.

#### Youth Business Leadership Project

The Youth Business Leadership project was financed by BTC and supported by the American Chamber of Commerce. This 2-year project is designed to support

[12] Budget of all SDI projects in Azerbaijan are divided equally between BTC, SD Ltd, AIOC and SCP Company.

professional development of the next generation of business leaders in Azerbaijan. A total of US$15,000 was spent by BTC in 2014.

Key achievements include:

- A series of information sessions held for students of Baku State University, Azerbaijan State Economic University, Qafqaz University, Azerbaijan State Oil Academy, Khazar University. Azerbaijan Diplomatic Academy, Ganja State University, Ganja Agrarian University and Ganja Technological University aimed to give detailed information about the programme and application process;
- Development of an internship program for 120 students representing 33 companies in Azerbaijan. Students were involved in a work-readiness training programme, and Business Ethics and Personal Finance courses before participating in internship/mentorship sessions in reputable local and foreign companies.
- 33 individuals who participated in the project received job offers, including 2 students who joined BP as Petro-Technical Resource Entry Programme trainees.

### Pre-school education and female entrepreneurship

In the Shamkir region in north-western Azerbaijan, BTC has been supporting a project that aims to improve the quality of pre-school education, increase the access of 5 to 6 year old children to kindergartens and create self-employment and income-generating opportunities for local women. The project began in 2012 and is being implemented by national NGO the Centre for Innovation in Education. A total of US$26,407 was spent in 2014.

Highlights for 2014 include:

- During the year, the project's child-centred pre-school methodology and step-by-step training programs were delivered to teachers working for local public kindergartens and primary schools; and
- 4 unemployed teachers selected from local communities continued to conduct pre-school trainings for 5 to 6 year old children at the centre.

## 6.2.2 Georgia

The Georgian CDI program aims to deepen the positive relationship between BP and communities along the BTC and SCP pipeline routes by promoting sustainable forms of social co-operation, improving agricultural production, and developing regional agro-businesses.

CDI 4 is the 4$^{th}$ phase of the CDI program. It was initiated in May 2012 and will continue until May 2015. The total budget of the CDI 4 is US$3,506, 386 (BTC share is US$2,693,882).

CDI 4 supports the establishment of social enterprises, which help develop business ideas promoted by community-based organisations (CBOs).

Progress within 2014 is as follows:

- 4 new CBOs added to the team, which now totals 66
- 64 members of different CBOs were trained on various capacity building topics;, making a total of 162 over the life of the program

- 13 rural infrastructure rehabilitation projects were completed during the reporting period; in total 45 rehabilitation projects have been implemented, benefitting 8,180 households
- 11 not-for-profit social enterprises were established and have already provided 1,247 services to the communities
- 3 financial and legal service groups were established, providing 127 services to the beneficiaries on financial and taxation issues
- 31 agricultural demonstration groups and 1 more individual demonstration farm were established. In total 296 demonstration farms have been established and now share a ange of new technologies to the farming community An estimated 2,500 households have adopted the new technologies
- Five new cooperatives were established, making a total of 7 since the program commenced
- 22 cooperative members were trained in professional training
- 79 new small scale businesses and 114 jobs were established; in total 168 new busineses and 238 new jobs have been created by the new businesses
- During the reporting period 92 beneficiaries were trained in business administration; in total 261 people have recieved training on business administration related topics
- 190 agricultural subsidised loans were disbursed.

### 6.2.3 Turkey

BTC Co. received two international awards with its Sustainable Development Initiative projects at the 11th Annual International Business Awards 2014. The Industrial Symbiosis Project received an award in the European Corporate Social Responsibility category and a movie titled “Changing Lives along the BTC Pipeline received an award in the PR Video category.

A summary of key projects follows.

**CDI Project in Erzurum, Kars and Ardahan, implemented by Ataturk University**

The objective of the project is to contribute to the sustainable socio-economic development in the region through supporting civil society organizations and small family businesses/agricultural enterprises via a Small Support Fund. The project,, emphasizes activities that will improve women’s socio-economic status, and supports activities that facilitates youth participation in the labour market.

Highlights from 2014 include:

- 70 people participated in 3 vocational and 1 practical entrepreneurship courses.
- Project activities were covered as news by 1 TV channel, 12 local newspapers and 95 internet news sites in 2014.

**CDI Project in Erzincan and Gümüşhane, implemented by Erzincan University**

The project aim is to develop the capacities of local organizations, individuals and entrepreneurs as well as contribute to increased employment.

Highlights from the first implementation year of this project are as follows:

- A stakeholder and need analysis was conducted
- 79 people participated in two practical entrepreneurship courses and one vocational training. Six participants of entreprenurship courses started up their own business following the training.

- Project ideas of 8 individuals and 4 organizations were funded by the Small Support Fund.

**CDI Project in Sivas and Kayseri, implemented by Cumhuriyet University**

The Sivas and Kayseri Project aims at improving the technical, financial, and management capacities of local organizations through Small Support Fund and increasing vocational and entrepreneurship skills of individuals in project region through technical assistance and trainings. The project was launched in February 2014.

Highlights during the reporting period were:

- A stakeholder and need analysis
- 78 people participated in four vocational training courses. Four participants subsequently found jobs.
- Project ideas of 12 individuals and 11 local organziations recieved funding support within SSF.

**East-Mediterranean (Kahramanmaraş, Osmaniye, Adana) Sustainable Rural Development Project, implemented by EDUSER Consultancy**

This project involves community development activities and the operation of the Ceyhan Business Center-CEYGEM. Project goal is to strengthen the capacity of local organizations and entrepreneurs in the region and to increase the service quality of CEYGEM.

Highlights from 2014 include:

- Construction of the CEYGEM facility was 95% completed by the end of 2014
- CEYGEM Ltd. Partners increased their equity capital from 500.000TL to 742.500TL
- 125 individuals received applied entrepreneurship trainings and 36 of them established their own business
- 1277 employed people received in-service training
- 250 people received career consultancy support and 10 people attended vocational courses in 2014
- US$179,000 of funding support has been provided via the Small Support Fund facility.

#### 6.2.3.1 Effective Governance and Enterprise Development

**Ceyhan Fire and Natural Disaster Training Centre (CEYDEM) – Construction and Operation Phases; implemented by Cukurova University and AKUT Search and Rescue Association.**

The CEYDEM project aims at enhamcing the capacity to manage fire and natural disaster risks in terms of human resources and physical infrastructure in the heavily industrialised İskenderun Bay area. As part of this Project, a fully equipped training centre is being constructed with simulators for hydrocarbon fires.

In 2014, technical drawings were completed according to the findings of the commissioning study conducted by Project Partners in 2013. Preparations have been initiated for meeting the construction gaps of the facility for industrial fire training simulators.

**Industrial Symbiosis (IS) Project in Iskenderun Bay – Phase II**

This Project was completed successfully in February 2014 achieving its goal of establishing a mechanism to increase the collaboration and solidarity between companies for both environmental and economic benefits through reducing waste and effective use of resources.

Project achievements and outcomes were presented at a two-day closure event held in Ankara in February 2014 with the participation of project partners, IS network members, and private and public sector representatives.

The main achievements of the project were as follows;

- Developed an active regional IS network comprising 528 people from 264 different organizations
- First application of IS successfully realized in Turkey
- Provided a model for nation-wide IS applications, with IS being initiated in two new regions in Turkey
- 19 regional agencies integrated IS in their development plans

**Credit Guarantee Fund Project**, **implemented by Credit Guarantee Fund**

This project was designed to support local Micro, Small and Medium Enterprises (MSMEs) and entrepreneurs along the pipeline route by providing loan guarantees to enable them to access bank financing. BTC signed a co-funding agreement with the Credit Guarantee Fund of Turkey in 2008. The Agricultural Bank (Ziraat Bank) and İş Bankası, 2 of the largest country-wide banks, were then engaged in the Project. In 2012, the Turkish Economy Bank became one of the partners to provide further loans.

As of end December 2014, total bank credit amount being used by 77 MSMEs has reached to US$3.3 million that corresponds to US$2.5 million guarantees. All beneficiary MSMEs are from the BTC Pipeline project regions.

### 6.2.4 Community Development Initiative Expenditure

CDI expenditure for the total operations phase and for the year 2014 is summarised in Tables 6.7 and 6.8.

**Table 6.7: Operations Phase CDI Budget and Expenditure (US$), 2006-2014 (BTC/SCP only)**

| | Azerbaijan | Georgia | Turkey | TOTAL |
|---|---|---|---|---|
| **CDI (BTC/SCP)** | 11,358,598 | 7,808,048 | 19,995,000 | 36,161,646 |
| **Total spend to the end 2014** | 10,756,580 | NA | 19,656,257 | 30,412,837 |

**Table 6.8: Summary of BTC and SCP CDI Expenditure (US$) 2014**

| | Azerbaijan | Georgia | Turkey | TOTAL |
|---|---|---|---|---|
| **Planned** | 1,106,000 | 1,007,164 | 1,800,000 | 2,808,270 |
| **Actual 2014** | 503,982 | 935,793 | 1,800,000 | 3,239,775 |

### 6.2.5 Community Development Initiative Budget 2015

The CDI budget for 2014 is presented in Table 6.9.

**Table 6.9: BTC/SCP CDI Plan (US$) 2015**

| | Azerbaijan | Georgia | Turkey | TOTAL |
|---|---|---|---|---|
| **Plan 2015** | 1,606,000[13] | 217,513 | 1,050,000 | 2,873,513 |

[13] This is planned amount, includind SCPX share.

# 7 ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME

## 7.1 INTERNAL MONITORING

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

Non-compliances against ESAP are only raised by BTC Company or BIL in certain circumstances, generally for persistent issues that need management attention. If the matter can be rectified in a timely manner through local site intervention, 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, monthly meetings, site visits and quarterly performance reviews.

Detailed summary of internal ESMS monitoring commitments completed during the year is provided in Section 4.2 and monitoring results in Appendix 3.

## 7.2 EXTERNAL MONITORING

### 7.2.1 Host Government Monitoring

#### 7.2.1.1 Azerbaijan

Ministry of Ecology and Natural Resources of Azerbaijan (MENR) continues to participate in monitoring programs. In May and November 2014, MENR representatives participated in groundwater monitoring at Karayazi.

Over the course of 2014 a number of visits of representatives of regional MENR departments to BTC/SCP river crossings were organized to monitor tree and shrub translocation activities. Such activities are required where trees and shrubs impede the implementation of bank and river bed reinforcement activities at BTC/SCP river crossings, such as Jeyrankechmez, Korchay, Ganjachay, and Tovuzchay. In total, 582 Tamarix shrubs and one fig tree were successfully translocated to adjacent areas and 78 Tamarix bushes were pruned to allow a safe access to the river crossing.

In November, 2014 MENR sent a mandatory instruction with actions to ensure all relocated trees are controlled and monitored in proper manner and in accordance with relevant legislations. In oder to demonstrate that all activities within compliance it was agreed to arrange for MENR representatives visits to the replanted areas upon request in the following year.

#### 7.2.1.2 Georgia

BTC Co maintained permanent contacts with the Georgian Oil and Gas Corporation (GOGC), and coordinated meetings with their daughter Company - Geo Gas Transportation Company (GGTC). Recurrent meetings were held with officials of the various ministries such as the Ministries of Energy, Environment, Economy and Sustainable Development, Infrastructure, Internal Affairs, GeoStandard, and different State departments and regulatory bodies.

#### 7.2.1.3 Turkey

Adana Provincial Directorate of Ministry of Environment and Urbanisation (MoEU) inspected MARPOL Facility at CMT in September 2014 in order to verify the completion of the Facility as per the Ship Waste Reception Facility Project Report and Waste Management Plan (Marpol Facility Plan) submitted by BIL and approved by MoEU. Only one gap was identified which required conversion of the existing oily water vacuum truck to a three compartment truck to handle waste oil, bilge water and sludge. The gap closure action was in progress by end of 2014. The inspection confirmed that the main Facility was in compliance with the Marpol facility Plan. Other audits conducted by MoEU are listed in Section 11.2.5.

### 7.2.2 NGO Monitoring

#### 7.2.2.1 Azerbaijan

The Azerbaijan Social Review Commission (ASRC), an independent external advisory group, was set up in 2007 to help BP-operated BTC/SCP facilities recognise and address challenges and long-term social performance activities that BP-operated BTC/SCP facilities undertakes on behalf of its joint venture partners. All ASRC reports and BP-operated BTC/SCP facilities responses can be accessed at www.bp.com/caspian. Future plans for the ASRC are still being discussed. Dissemination of the annual BP in Azerbaijan Sustainability Report includes engagement with the local civil society through a face-to-face feedback session.

#### 7.2.2.2 Georgia

Due to limited interest from NGOs towards BTC operations in Georgia, formal NGO monitoring of BTC Georgia activities stopped in 2012. BTC continues to engage with the national NGOs through its SDI projects. Additional informal activities and engagement continued in order to keep NGOs and the public informed of BTC Georgia's operations in the form of meetings when requested and through various other forums. BTC Georgia also made its Sustainability Report available to the public on www.bpgeorgia.ge. More information is provided in Section 8.3.2.

#### 7.2.2.3 Turkey

BTC Co. and BIL continued to engage both national and regional stakeholders including NGOs to discuss specific issues on an as-needed basis. Also, local NGOs take part in community development projects in Turkey both as beneficiaries and implementers.

## 7.3 TRAINING

### 7.3.1 Azerbaijan

Training for BTC operations continued to be delivered to both BTC and contractor staff through a variety of media including formal classroom training, toolbox talks and rollout sessions. Throughout the year, the following training was conducted:

- Development of an Health, Safety and Environment (HSE) compliance expectations awareness pack
- Compliance Task Manager (CTM) user
- Waste management
- Environmental aspects and impacts
- Material release reporting/non-conformance reporting procedure roll-out; and
- ISO 14001 awareness.

In 2014, 292 people participated in training and awareness sessions.

### 7.3.2 Georgia

Training for BTC Operations in 2014 was focused on ISO 14001 awareness, waste management practices and ROW ecological awareness.

Training was delivered at sites as a series of formal classroom trainings. Another key focus area was the roll-out of an updated Azerbaijan-Georgia-Turkey Region Non-conformance Reporting Procedure.

### 7.3.3 Turkey

In Turkey, BIL continued to provide environmental and social training to operations, maintenance teams, subcontractors and the like.

Environmental training topics had a wide scope and have been tailored to the departmental teams according to their roles. The topics included:

- Environmental awareness / refreshment
- Site&Role Specific Environmental Training to BIL & Contractors' Staff
- Waste management (segregation, collection and storage).

Environmental Awareness Training was given to all new staff by BIL. Environmental Refreshment Training was also given as appropriate to staff, subcontractors' staff and interns as required.

A workshop was held with BIL HSE staff and WWTP operators on operation and maintenance of the WWTPs. The scope of the workshop included: operation of WWTPs, problems faced, safe operation of the plants, usage of kits (turbidity, chlorine, glycol), evaluation of analysis results, reviewing wastewater philosophy document, instructions, checklists and forms.

BIL Public and Community Relations Experts (PCRE) provided orientation and refreshment trainings to all new employees and contractors of BIL. During 2014, 247 employees were trained on the following topics:

- Community relations (organisation and responsibilities)
- Complaints and compensation
- Employment
- Procurement
- Safety (traffic and pipeline safety)
- Land use/restrictions
- Code of conduct
- Audits (internal and external)
- Responding to media
- Sustainable Development Initiative of BTC Co.
- Refresher of Public and Community Relations (PCR) training
- Communication skills.

Social Accountability International - SAI, the internationally recognised body, provided a five-day SA8000 Introduction & Basic Auditor Training Course to 25 staff of BIL and BTC Co. from HR, Procurement and Social teams. Through this course, participants enhanced their practical knowledge on the following:

- Key concepts and background on social compliance in the supply chain and social auditing
- The elements of the SA8000 standard
- Review of common compliance problems and possible solutions
- Effective auditing techniques related to each social compliance element
- Effective methods for managing risk in a facility or across a whole supply chain.

BTC CSR team have attended individual training sessions on the following topics:

- First aid
- Social impact and risk management
- Community consultancy and stakeholder engagement
- Community safety and disturbance
- Continuous Improvement Champions
- Discover BP.

# 8 PROJECT COMMUNICATION

## 8.1 CONSULTATION APPROACH

Consultation and communication with various BTC stakeholders, from communities to government organisations, was ongoing during 2014, with the key objective being 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 in the following sections.

## 8.2 AZERBAIJAN

### 8.2.1 Project-Affected Communities

As part of the Community Consultation Programme in Azerbaijan, the Community Liaison Officers (CLOs) continued delivery of a Community Awareness Folders Project in BTC/SCP affected communities. This initiative was being conducted together with Azerbaijan Export Pipelines Operations and Regional Security team members. The purpose of the Folder Project was to promote and raise residents' awareness on restrictions concerning Pipeline Safety and Consulting zones referring to Cabinet Minister's decrees of 166-19, 167 and 191.

During 2014, the Social team has delivered about 1,700 folders (out of 4,500) to landowners and other stakeholders across pipeline route. The remaining folders will be distributed to new land users and local authorities within Project-affected communities in 2015.

The CLOs have also conducted about 280 meetings with external stakeholders operating in BTC/SCP affected regions.

In 2014, BTC continued to conduct annual community liaison audits of BTC major contractors to monitor their social performance, including Barama Ltd, Texnoloji Avadanliq and "Metal Qaynaq Sinaq" LLC (MQS). In 2014, we received about 200 requests from communities and other stakeholders on different types of activities, the majority of which related to infrastructure works on the pipeline ROW. Of those, 170 have received operator's feedback; the remainder will be considered in 2015.

#### 8.2.1.1 Complaints

In 2014, 4 complaints were received from BTC/SCP-affected communities. Two complaints have been closed.Table 8.1 gives a breakdown of complaints by category.

**Table 8.1: Summary of Complaints Received by BTC/SCP 2014 (Azerbaijan)**

| Complaint Category | Complaints Received | Complaints Closed (at end of 2014) |
|---|---|---|
| Land use | 0 | 0 |
| Compensation | 4 | 2 |
| Access roads | 0 | 0 |
| Recruitment | 0 | 0 |
| **TOTAL** | **4** | **2** |

### 8.2.2 NGOs and Technical Organisations

In 2014, regular meetings were held by the SDI team with a range of national Implementing Partners (IP) such as the Centre for Innovation in Education, Young Engineers Development Society – GencMIIB, USAID – United States Agency for International Development, Azerbaijan-UK Alumni Association, The US-Educated Azerbaijani Alumni Association and Junior Achievement Azerbaijan continue to discuss ongoing SDI/CDI projects.

### 8.2.3 Government

Communications with government during 2014 are discussed in Section 7.2.1.1.

### 8.2.4 Media

BTC issued 22 press releases and four business update reports to announce major achievements, milestones, projects and contract awards. We also provided a 24-hour media response line.

Two key reports were presented to the media:

- *BP Energy Outlook* report, with the participation of 15 local journalists on 10 July
- *Sustainability Report 2013,* with the participation of 10 local journalists on 25 July.

At least eight BP-sponsored media events, attended by about 250 journalists, were held including:

- Celebration of 10 years of the Caspian Technical Training Centre
- The Third Meet the Buyer event opening at the Caspian Oil and Gas Show
- Speeches at the event for announcement of BP as Official Partner of Baku 2015 European Games
- Speeches at the signing event for the “Partners in Education” project with UNICEF
- Speeches at the event for signing of documents on the cooperation between SOCAR and BP in the training and development of national workforce and in the human resources area
- Speeches and presentation at the celebration of the 20th anniversary of ACG and ground breaking for the Southern Gas Corridor
- Speeches and presentation of certificates at the School of Project Management graduation ceremony
- Speeches at the presentation of the Baku 2015 Games Academy.

## 8.3 GEORGIA

### 8.3.1 Project-Affected Communities

The Project continues to work with villages and communities near the pipeline and facilities on a regular basis. The Social team maintains regular contact with village communities and engages with village trustees and informal leaders, local residents, complainants, landowners, regional Governors and Gamgebelis. In total there were 443 meetings conducted in 2014.

CLOs raise awareness of BTC Georgia and its activities, discuss safety issues, and address concerns relating to land use with respective communities. To reinforce messages about pipeline safety, a community calendar containing information on safety restrictions and pipeline safety zones for 2015 was developed and circulated. In this calendar, material about easy ways of protecting environment in everyday like was also provided. In April 2014 social and human rights workshop was conducted which involved ca.70 Company employees from a wide range of functions. It aimed to deepen awareness of the impact of human rights risks (related to both employees and local communities where we operate) and their possible impact on the business. It emphasized the importance of early identification, mitigation and management of human rights.

#### 8.3.1.1 Complaints

During 2014, 15 complaints were received. All were investigated and closed. Table 8.2 gives a breakdown of 2014 complaints by category.

**Table 8.2: Complaints Log 2014**

| Complaint category | Total Number Received | Number of Complaints Resolved | Total % of Complaints Resolved | Number of Complaints Pending Resolution |
|---|---|---|---|---|
| Access restricted/abolished | 1 | 1 | 100 | 0 |
| CBO compensation | 9 | 9 | 100 | 0 |
| Household infrastructure | 2 | 2 | 100 | 0 |
| Other social issues | 3 | 3 | 100 | 0 |
| **TOTAL** | 15 | 15 | 100 | 0 |

### 8.3.2 National NGOs and Technical Organisations

In 2014, BTC continued to engage with national NGOs through a range of different initiatives. These initiatives are:

- SDI projects
- CDIs
- Different cultural heritage activities.

BTC also actively participated in different conferences and forums organised by the United Nations Global Compact Georgia Network as well as the American Chamber of Commerce Corporate Social Responsibility (CSR) Committee.

Cultural Heritage Exploration Centre (technical organization) has been involved in the monitoring of Operations-related earth moving activities in the BTC ROW.

### 8.3.3 Government Ministries and Departments

Close contacts were maintained with the Georgian Oil and Gas Corporation, the State Main Export Pipeline/WREP representative in BTC activities in the country, and various State stakeholders. Positive outcomes were achieved through an effective relationship with State bodies on a number of important issues, major gas state pipeline projects in the BTC ROW, various regulatory, permitting and legal issues, and the SCP Expansion Project.

### 8.3.4 Media

During 2014, various media activities took place in Georgia. These included:

- Certificate award ceremony was delivered for the local media within the framework of the BP funded program - “English language training for media”, implemented in cooperation with the British Council
- BP Georgia hosted a SCPX launch reception on 28 February 2014
- Interview highlighting the importance of the Southern energy corridor including benefits to Georgia was published in “Investor.ge” magazine
- BP Georgia was presented with a special recognition for “Promoting women into technical positions” at the award ceremony held by the UNDP “Gender Equality Program” attended by the government, business and media
- A speech was presented at the Georgian International Oil, Gas, Energy and Infrastructure Conference and Showcase (GIOGIE) held on 26-27th March in Tbilisi. The speech highlighted Shah Deniz Stage 2 and South Caucasus Pipeline Expansion project developments with emphasis on Georgia. 120 conference delegates including media watched a film on Shah Deniz 2 and received brochures
- Local TV and radio programs highlighed BP’s energy efficiency projects for Georgian communities
- Local TV visited a number of CDI projects and prepared 45min reportage on BP’s and its partners’ program in Georgia, and portrayed BP as a role model
- Local media has positively covered visit to the Community Development Initiative (CDI) projects, organized by the program implementing partner hosting the Minister of Agriculture for Georgia, aiming at promoting BP’s activities in the country
- Georgian National Paralympic committee organized and delivered seminar for local media under BP’s official partnership program to raise awareness on Paralympic sports and issues. More than 25 journalists and editors representing all major local media sources attended and actively engaged in the session. Seminar was followed by the positive media coverage.

### 8.3.5 Donor Organisations

BTC continued to meet with various development organisations in Georgia including the United Nations Development Programme, United States Agency for International Development, World Bank, International Finance Corporation, Millennium Challenge Commission Georgia and several national and international NGOs.

BTC and its co-venturers, in collaboration with a number of international organisations, continue to implement a number of projects in Georgia. These included the: Enabling Business Environment Project (International Finance Corporation); English Language Programme for Media (Open Society - Georgia Foundation, British Council); Road Safety Project (United States Agency for International Development, Government of Netherlands); and Support to International School of Economics (Open Society - Georgia Foundation, Swedish International Development Co-operation Agency, United States Agency for International Development, Government of Norway).

Regular talks with donor organisations and participation in different co-ordination meetings continue with the aim of defining potential areas for future engagement.

## 8.4 TURKEY

### 8.4.1 Project Affected Communities

For the Turkish section of BTC Pipeline, BIL (BOTAŞ International Limited) is the designated state authority for the operation phase. In this regard, Public and Community Relations (PCR) team of BIL carries out community relations activities.

PCR team conducted various consultations and training sessions with local stakeholders. After the local elections in Turkey in March, the list of stakeholders has changed to a great extent. Introductory meetings were conducted with the newly elected mayors and muhtars as well as other public institutions and gendarmerie. In 2014, BIL's PCR Department held 1254 stakeholder engagement meetings in total. While 685 of these meetings were held with public institutions, 434 of them were held with local communities at the directly affected villages and 135 of them were held with Gendarmeries located nearby the AGIs (Above Ground Installations). Information about the complaints management process was also reinforced with stakeholders along the pipeline route during these sessions. A common objective of these meetings is to inform stakeholders about BTC operations and also listen and address any concern or expectations that may arise.

The "safe life along the pipeline" training package including the video, which was produced as part of the awareness campaing conducted between 2012 and 2013 along the BTC Turkey section was used during the introductory sessions with the public institutions. Clear messages were given to the audiences on the land use restrictions, legal permits required for third-party crossing projects, the permit process for use of the ROW, H&S rules, emergency response action plans and expectations from local stakeholders and community safety risks and mitigation measures. BIL PCR Team conducted 38 separate sessions for this purpose with the Gendarmerie Stations with the participation of 519 gendarmeries. Similar awareness raising sessions were held at 7 public institutions with the participation of 83 public officers.

At 43 villages near where BVT fortification, landslide mitigation and river crossing enhancements works were carried out, these trainings were repeated and attracted 393 local people. As part of KP1007 Re-Route activities, the 424 schoolchildren went through "safe life along the pipeline" training.

From 2006 to 2013, 266 third-party crossing activities were registered and 7 of them cancelled by the applicants themselves. In 2014, the total number of third-party crossing was 21. Out of this 21 crossings, 9 of them related to the installation of potable water channel.

In 2014, BIL PCR Team developed and implemented a detailed plan to track and report land use violations. A summary of violations is presented in Table 8.3.

**Table 8.3: Land Use Violations 2014**

| Type | Percentage |
|---|---|
| Riprap damage risk | 2% |
| Block valve damage risk | 4% |
| Damaged line marker | 7% |
| Tree plantation | 28% |
| Third party activity[14] | 59% |

[14] There are wide variety of activities covered by this terms, all of them undertaken by third parties and requiring community relations action in the subsequent stages. Some examples: an irrigation channel crossing, a construction of a building or any suspicious signs that may be man made.

The BTC Turkey CSR team closely monitored the relationship with communities around the PTs and on the pipeline route through direct site visits to villages either with PCREs or with SDI IPs.

During 2014, the BTC Turkey CSR team conducted monitoring and evaluations studies for the whole community related activities. In addition to the monthly social reports from BIL PCREs, the BTC CSR team organised regular meetings with BIL PCREs to discuss actions and issues on a regular basis. In accordance with ESAP requirements, BTC CSR team closely monitors local employment processes of the contractors and BIL. In addition to a comprehensive CDI programme managed by BTC along the pipeline route, the BIL PCR team has responded to many community needs such as: clearance of village roads by Snow Fighting teams; provision of sewage truck services to some villages; provision of organic waste to villages for fertilizer production; and provision of materials such as scrap materials, electricity cables and stationery. In emergency cases, health services were provided to local communities at the PTs during 2014. BIL has also provided support for the primary and secondary schools along the pipeline as part of their social responsibility program

#### 8.4.1.1 Complaints

Since 2006, a grievance resolution mechanism has been in place for communities along the pipeline's route in Turkey. At the commencement of 2014 the total number of open complaints were 74 (including construction phase) and throughout the year additional 29 new complaints were received. Twenty nine complaints were closed in 2014; 74 complaints remain under the consideration. Table 8.4 provides a summary of those complaints that remained open more than 60 days at the end of the year.

The Lump Sum Turn Key Agreement (LSTKA) with BOTAŞ BTC Project Directorate expired in July 2007. Reinstatement defects started to become apparent two winters after completion of reinstatement. Therefore, a field survey study was conducted in 2008 that identified a range of complaints related to reinstatement issues. As a result, a reinstatement programme was carried out between 2009 and 2011 sorting out major reinstatement issues. New complaints were raised after 2011. As a result the CSR department conducted another site verification survey. The results of the survey lead to the development of a remedial action program. However, due to adverse weather conditions in 2014, this action program was postponed to 2015.

BIL Public and Community Relation Experts (PCREs) continue to monitor the status of land on the ROW and take additional actions where valid complaints are raised or where any risks related to erosion or geo-hazards and the like are observed, as per the commitments outlined in the ESIA, the ESAP and the RAP.

**Table 8.4: Open Complaints >60 days at year-end 2014 (Cumulative)**

| Subject | 2014 | Action Plan |
|---|---|---|
| Reinstatement | 35 | This item is subject to 2015 remediation work scope |
| Damage to land | 16 | This item is subject to 2015 remediation work scope |
| Damage to infrastructure and community assets | 10 | BTC Turkey has initiated a process regarding the resolution of the open complaints related with reinstatement and other land related complaints. The remedial work scope was approved for 2015. |
| Dust and noise | 3 | The main reason of the dust complaints was due to the low quality of the road. Necessary mitigation measures were assessed regarding dust control in the vicinity of IPT 1. |
| Damage to | 3 | Assessment studies were conducted for the necessary |

| Subject | 2014 | Action Plan |
|---|---|---|
| property | | measure |
| Payment | 2 | Investigation was initiated |
| Damage to crop | 2 | Investigation was made and necessary actions will be taken in 2015 |
| Access to land & resources | 1 | The drainage channel, which was installed during operation phase, cut the land into two. The landowner requests shorter access. |
| Other | 1 | The water processed at the WWTP at PT 1 is discharged to the creek that reaches the Söğütlükaya village. They claim that their animals get ill because of this water discharge. During the meeting it was declared that the water would be monitored on an ongoing basis; however, they maintain the belief that many cases of illness in their animals was caused by the discharged water from the WWTP of PT 1. The complainant asked if the discharging point can be shifted, arguing that if the water discharge point was changed, this perception may change among the villagers. |
| **TOTAL** | **73** | |

### 8.4.2 NGOs and Other Institutions

Engagement with NGOs and other institutions such as universities, local and regional institutions is realized through both BIL and BTC Co. social teams.

In 2014, within the scope of the awareness campaign, meetings were held in villages with related local authorities, public institutions and gendarmeries. The BIL PCR team continued to host official visitors. during 2013. These visits were held mainly at the CMT and other AGIs and included NGO representatives, media and government. Briefings were provided about various aspects of the operation of the BTC Pipeline Project. A breakdown of official visitors is presented in Table 8.5.

**Table 8.5: BIL Official Visitors**

| Official Visitors to CMT and other AGIs | | | |
|---|---|---|---|
| **Years** | **Number of Visitors** | | |
| | **National** | **International** | **Total** |
| 2006 | 133 | 30 | 163 |
| 2007 | 309 | 138 | 447 |
| 2008 | 487 | 119 | 606 |
| 2009 | 78 | 27 | 105 |
| 2010 | 68 | 60 | 128 |
| 2011 | 109 | 14 | 123 |
| 2012 | 176 | 25 | 201 |
| 2013 | 170 | 0 | 170 |
| 2014 | 152 | 0 | 152 |
| **Total** | **1,682** | **413** | **2,095** |

In parallel, BTC undertook various stakeholder meetings as part of its assurance role in Turkey. Some of the meetings were related to SDI projects. With the start of the new CDI projects in central parts of the pipeline, stakeholder consultation meetings were held. Technical consultants also visited CDI projects quarterly as part of their regular monitoring and evaluation activities. In these visits, various stakeholders as governors and sub-governors, public institutions, co-operatives and producer organisations, local NGOs, professional organisations were visited.

Social and environmental assurance issues were also covered by various departments in the Operations team. The External Affairs team also held various consultation meetings with stakeholders. A summary of meetings and other formal communications held by BTC is presented in Table 8.6. The number of meetings held does not include meetings held by the IPs at the local level.

**Table 8.6: BTC Stakeholder Meetings 2014**

| Type of Meeting | Number of Consultations* |
|---|---|
| Donor | - |
| Government | 28 |
| NGOs | 9 |
| Private companies | 2 |
| Universities | 5 |
| Media | - |
| **TOTAL** | **44** |

* In some cases, consultation can represent a series of meetings on the same subject.

### 8.4.3 Government

BIL held regular follow-up meetings with governmental instituions including provincial governors, district sub-governors, mayors, the local gendarmerie, government utility providers, and other relevant government departments, to increase the awareness of landowners on land use restrictions and to resolve reinstatement complaints along the pipeline route.

### 8.4.4 Media

BTC is managing relations with media institutions in Turkey in line with the Operating Agreement with BIL. IPs announced project accomplishments via media in the context of their communication and visibility plans.

During 2014:

- SDI and EIP projects were covered in 69 local/national media, and over 350 web news media outlets
- Several public events (protocol signature, certificate ceremonies) were organised in the project regions by SDI IPs to promote achievements in BTC financed projects.

# 9 LAND ACQUISITION AND COMPENSATION

The land acquisition, compensation, hand-back and livelihood restoration activities and processes are described in the RAP. This section summarises relevant activities conducted in 2014.

## 9.1 AZERBAIJAN

### 9.1.1 Land Acquisition and Compensation

The land acquisition, compensation, hand-back and livelihood restoration activities and processes are described in the RAP. This section summarises relevant activities conducted in 2014.

### 9.1.2 Program for 6m Access Corridor for Interim Routine ROW Access Strategy

As part of the ESIA and RAP compliance, BTC acquired a 6m land strip alongside the ROW for the temporary driving of EPPD vehicles. During 2014 there was just 1 payment for 6m access.

### 9.1.3 Others

The BTC Land team took responsibilities from the contractor Telco+ to complete the land acquisition program required for the BTC and SCP BV electrification project. It is anticipated that these activities will be concluded by the end of 2015.

## 9.2 GEORGIA

### 9.2.1 Land Acquisition and Compensation

A total of 16.5 ha was acquired for the proposed BTC Operation Camp adjacent to PSG1 (Pump Station Georgia 1) area. The BTC shared cost for compensation to obtain land was 332,700 USD.

### 9.2.2 Land Registration and Ownership

The following land registration and ownership activities occurred during 2014:

- Acquired 1 land parcel in Tsalka district
- Signed 5 servitude (easement) agreements
- Prolonged lease agreement with 1 owner for PSG 2 (Pump Station Georgia 2) camp area.

### 9.2.3 Resettlement Action Plan Fund

Total compensation in 2014 was 42,436 USD (not including 332,700 USD referred to above): $6190 for 1 land purchasing, $1,341 for 5 servitude agreements, $20,090 for 1 lease agreement prolongation and $16,155 for crop damage compensation.

### 9.2.4 Land Hand-back

As of December. 2014, 89% of all Land Use and Servitude Agreements have been completed.

## 9.3 TURKEY

### 9.3.1 Land Acquisition and Compensation

BTC Turkey continues to monitor the acquisition of land and additional parcels required for enhancement projects.

To date land usage rights for 17,612 parcels have been transferred to BTC. The usage rights of and additional 175 parcels are ready to be transferred to BTC by Boru Hatlari ile Petrol Taşima A.Ş (BOTAŞ)/Designated State Authority (DSA). This process will proceed in 2015.

Court cases are ongoing for 24 private parcels due to:

- Disputed cases occurring after cadastral surveys were conducted by the Cadastral office as part of works that they were conducting in the vicinity of the pipeline. This had a negative impact on the resolution of the ongoing court cases, which in turn delayed the BOTAŞ acquisition process from the landowners due to land ownership disputes relating to the cadastral surveys;
- Multiple ownership and absentee owners, and old cadastral records, parties (heirs of deceased owners) cannot be defined by the court in a short period of time: Article 10 of the Expropriation Law 2010 requires all shares to be present at the title deed office to complete the acquisition with consent agreements or at court to complete the process through court; and
- Some parcels have being sold during the court process, thereby requiring BOTAŞ/DSA to initiate the court process again with the new landowners.
- Particular attention is given to the management of additional land-take by contractors responsible for reinstatement, pipeline repair works and enhancement projects on behalf of BTC. The BTC CSR team and BIL Public and Community Relations (PCREs) Team are providing day-to-day support to the contractors to ensure that contractors sign Land Entry/Exit Protocols, rental agreements with the landowners/users and to ensure crop/land and asset compensation is made in line with RAP requirements prior to land entry. Where there is a need for permanent acquisition of these areas, the process is managed by BOTAŞ/DSA in line with the Host Government Agreement requirements.

### 9.3.2 Land Management during Operations

Permanent land acquisition activities are managed by BOTAŞ/DSA in line with the Host Government Agreement. BOTAŞ/DSA prepared expropriation files and submitted them to the Provincial Cadastral Directorates for their approval. BOTAŞ/DSA conducted consultation and negotiation meetings with landowners/users as well as title deed and cadastral officers in the districts in line with the RAP requirements. In cases where there is no consent agreement or a multiple/absentee ownership issue, the court process is initiated to identify the shareholders and the price for the land plots.

An Operating Agreement, in line with a Protocol signed between BOTAŞ/DSA and BIL, outlines roles and responsibilities of these parties during Operations. BTC ensures all additional land-take is managed in accordance with RAP principles. All additional land needs are approved by BTC Turkey prior to the acquisition of land plots.

Temporary land-take needed for reinstatement and enhancement projects are managed directly by the construction contractor under the supervision of BTC Turkey and BIL Social teams. BTC Site teams and BIL PCREs are involved in every land lease agreement (they also sign the Protocol between the contractor and the landowner/user as a witness).

BOTAŞ/DSA is involved in management of crop/land valuation studies, which is undertaken by the district agricultural offices along the route.

In case of dispute, the University of Ankara is engaged as an expert to cross-check the land/crop values provided by the district agricultural offices. In 2014, there were no disputes involving on land/crop values.

**Additional land acquisition needs in 2014**:

Thirty-four parcels covering 109,099m2 were rented from local landowners during 2014 to allow BTC temporary access to land in order to conduct BVT fortification works and maintenance works, as well as mitigate geohazard risks, along the pipeline. In 2014 temporary land acquisition was made in the following work locations: BVT10, BVT21, BVT22, BVT34, BVT50, KP202, KP275, KP598, KP688 and KP987. The majority of these rental contracts were made for 1 year given that the crop valuation was based on the crop amount in a single agricultural period. Within this 1-year timeframe, the construction contractor maintains a land entry permit in order to complete any reinstatement activity in case a complaint is raised.

Execution of BTC Turkey Geohazard work program including KP1007 Re-route was one of the priorities of the "2014 AGTR Midstream Turkey Exports Area Operating Plan". Land acquisition process for KP 1007 re-route activity was identified in the project plan as an area of concern work was planned and expedited in order to eliminate any delays in the process. Both temporary and permenant land acquisition was required for a total of 32 parcels covering 55,000m2 for KP1007 Re-route project implementation. These land parcels are required for a permanent 8m wide corridor and for areas temporarily required for the installation of a 1 km pipeline.

**Management of third-party crossing projects in 2014:**

BOTAŞ/DSA, BIL and BTC Turkey work closely to manage the third-party crossing projects along the BTC pipeline route in Turkey. BIL PCREs are co-ordinating dialogue between operations and other State authorities in line with the Third-Party Crossing Projects Procedure. Third-party crossing projects submitted by other State institutions, such as the State Hydraulic Works and Turkish Highways, Turkish Electricity Distribution Company, local municipalities and the like, as well as private persons, are sent to BIL for their technical review and then to BOTAŞ/DSA to manage the land issues. After approval by both BIL and BOTAŞ/DSA, these requests are submitted to BTC for their final consent. In 2014, 21 third-party crossing project requests were received. In total, 266 crossings have been registered since the start of BTC operations in 2006.

### 9.3.3 Transfer of Land Rights

Efforts to complete the transfer of land rights to BTC Turkey continued on a district basis using 2 ownership status categories official acts: private/customary owned land; and state/forest owned land. BOTAŞ/DSA is waiting for all land plots to be acquired in each district before they transfer all plots to BTC in those districts. The process will continue in 2015 for the remaining parcels. The process of transfer of land rights from BOTAŞ to BTC Turkey has no impact on communities.

### 9.3.4 RAP Monitoring

No external RAP monitoring activities were conducted in 2014 in Turkey. Internal monitoring activities did however continue with the objective of assessing BTC's social performance against social requirements agreed in the ESAP.

# 10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS

The majority of H&S targets and KPIs set at the beginning of 2014 for Operations have been met. All operational activities were conducted in a safe manner without any major incidents or fatalities, and no significant process safety-related incidents recorded during 2014. Operational activities were conducted across the 3 countries with safety performance maintained at a very high standard.

A priority for 2014 was the closure of the 2014 Safety and Operational Risk Audit action items. This was successfully accomplished.

The following is a summary of the main health, safety and emergency response activities in 2014.

**Safety**

- Quarterly review and update of midstream major risks and risk mitigation plans and barriers
- Development and implementation of the 2014 annual assurance plan
- Completion of the 2014 competency assessments and setting action plan for site H&S Leads
- Quarterly Azerbaijan and Georgia contractors safety leadership forums
- Annually Turkey contractors safety leadership forum
- Development of the BTC Pipeline Project HSE strategy, HSE plans and risk assessment
- Annual Control of Work gap analysis in Azerbaijan and Georgia
- Quarterly incident trend analysis and action plan development to address trends
- Main contractor audits in Azerbaijan, Georgia and Turkey
- Incident investigation quality review in Azerbaijan and Georgia
- Monthly midstream lessons-learned development and communication
- Office Safety Framework fully implemented in Azerbaijan and Turkey; Georgia implementation is ongoing
- Midstream non-industrial facilities safety inspection
- Midstream Operations Management System 3.7 conformance verification
- Midstream electrical safety campaign
- Midstream Control of Work compliance campaign
- Midstream fire prevention plan developed and implemented.

**Driving**

- Driving improvement plan for 2014 developed and implemented
- Road risk assessments performed for main (and some access) roads across Azerbaijan, Georgia and Turkey
- Self-driving standing instruction updated and reinforced for Azerbaijan, Georgia and Turkey
- Annual transport safety audit for BTC core contractors conducted

- Annual Driving Safety Standard audits carried out in Azerbaijan, Georgia and Turkey
- Midstream winterisation plan implemented.

**Health**

- Midstream 2014 Health Plan developed for each Area of Operations, published and closed in the health map
- BP Group Health audit was conducted in November 2014 and covered Azerbaijan and Georgia facilities; there was no major finding
- Health campaigns were delivered in accordance with Health Calendar 2014 across Azerbaijan-Georgia- Turkey Region. The programme included multiple health campaigns/promotional programmes. In general, 931 people had participated in Heart Day campaign, 848 people got flu vaccination and 846 people participated in smoking sessation campaign
- Food hygiene inspections were conducted across all AGT region facilities
- Substance Abuse screenings were conducted in accordance with agreed schedule across all Midstream facilities in Azerbaijan and Georgia
- Fitness for task assessments were conducted for BP employees across the region in 2014 completed
- Remedy Office Ergonomic Suit assessment completed for 88% display screen users across AGT Region
- One basic of industrial hygiene , one BOHS Asbestos training, 11 COSHH assessor trainings, two field monitoring specialist trainings and four manual handling assessor trainings were conducted to increase Indtustrial Hygiene capability
- All self-verification reviews accross Midtream facilities completed for 2014 year.

**Emergency Response**

- New Crisis, Continuity Management and Emergency Response (CCMER) Documents issued
- All region implemented gap closure plan against GDP 4.6-0001 (CCM) and 4.6-0002 (Oil Spill Response)
- OSR capability review conducted
- Ministry of Emergency Responseof Azerbaijan Republic/State Emergency Department of Georgia/BTC combined exercise conducted
- Exercises including cross border in line with plan completed
- Ministry of Emergency Situation has completed inspection on Azerbaijan Exports and Sangachal facilities. A summary of H&S performance during 2014 for operations activities is presented in Table 10.1 (leading indicators) and Table 10.2 (lagging indicators).

### Table 10.1: BTC Operations H&S Leading Indicators

| Operations inputs | Target | 2013 Performance | | 2014 Performance | |
|---|---|---|---|---|---|
| | | BP | BIL | BP | BIL |
| Behavioural observation safety system | N/A | 21,632 | 6,540 | 21,856 | 7,366 |
| Safety observation and conversation | N/A | 3,855 | 505 | 3,888 | 398 |
| Safety training matrix compliance (%) | >95 | NA | NA | NA | NA |

### Table 10.2: BTC Operations H&S Lagging Indicators (Actual)

| Operations Outputs | 2013 Performance | | 2014 Performance | |
|---|---|---|---|---|
| | BP* | BIL | BP | BIL |
| Man-hours | 3,063,111 | 2,201,330 | 2,881,074 | 2,629,113 |
| Fatality | 0 | 0 | 0 | 0 |
| Days away from work cases | 1 | 3 | 0 | 2 |
| Recordable injury | 1 | 6 | 1 | 7 |
| First aid case | 3 | 13 | 2 | 15 |
| High potential incident | 0 | 0 | 0 | 0 |
| Traffic vehicle accident | 4 | 16 | 3 | 9 |
| Kilometres driven | 9,231,010 | 4,446,767 | 7,222,559 | 4,552,839 |
| Near miss | 133 | 47 | 222 | 98 |

* BP operated section of BTC (Azerbaijan and Georgia) and the BTC Assurance team in Turkey.

# 11 AUDITS

## 11.1 INTERNAL REVIEWS

### 11.1.1 Azerbaijan

Internal environmental inspections, reviews and audits continued to be carried out at both AGIs and on the ROW. A full summary of internal reviews and audits is provided in Table 11.1[15]

**Table 11.1: Summary of Internal Reviews/Audits 2014 (Azerbaijan)**

| Audit/Review | Auditor | Scope | Findings and/or Recommendations |
|---|---|---|---|
| Waste management audit | Audit team consisting of Area Environmental Advisors from Azerbaijan Export Pipelines | Compliance with requirements for waste management processes through the BTC including IPA 1, PSA 2 and PSA 2 camp. | Incorrect filling of Waste Transfer Notes (WTNs).<br>Waste was stored in unlabelled waste bins and overloading of waste bins<br>**Good Practice:**<br>Staff and contractors working within BTC had a good knowledge of their roles and responsibilities associated with waste management implementation. |
| Regular environmental inspections | AGT region Area Environmental Advisors | Compliance to regulations and environment procedures and instructions at IPA 1, PSA 2, BVs. | Monthly environmental inspections were carried out at all AGIs during 2014. No major issues were identified, and all minor issues were closed-out as soon as practicable on an ongoing basis. |

### 11.1.2 Georgia

Environmental inspections and internal audits continued to be carried out at AGIs and 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 2014 (Georgia)**

| Audit/ Review | Auditor | Scope | Findings and/or Recommendations |
|---|---|---|---|
| Integrated Self-Assurance Review – ISO 14001 and Regulatory Compliance | Environmental Advisors from AGTR (other than Geo Exports Compliance &Enviroment (C&E) team) | Status of BTC/SCP readiness for ISO 14001 Surveillance audit. August 2014 | Overall all elements of ISO14001 standard are in place across Georgia operations. 17 findings of the audit were followed up by 21 Corrective Actions uploaded and tracked through the Tr@ction system. |

[15] Note: these are treated separately from environmental monitoring, which is detailed elsewhere in this Report.

| Audit/ Review | Auditor | Scope | Findings and/or Recommendations |
|---|---|---|---|
| Internal EMS and Compliance Audit | Team consisting of ISO 14001 Coordinator, HSE Compliance team-leader, Waste management advisor from Baku | Assess EMS conformance to ISO14001 and HSE Compliance to regulatory requirements. Visited areas: - Tbilisi office complex, - BTC pipeline pump station 2 (PSG2), - permanent accommodation construction for PSG2, - Emergency Drain-Down Facility (EDDF), - Area 80 facility and accommodation of SCP pipeline | In total 5 good practices highlighted, 6 findings raised, and 9 areas for improvement made. Good practices included waste and hazardous materials storages. Findings were concentrated on transfer and control of compliance requirements and awareness materials. |
| Subject Matter Audit: ESAP Ecological Management Plan – Biodiversity monitoring | Environmental Advisor (Ecology);Geo Exports C&E team | Assess conformance of biodiversity monitoring practices against Ecological Management Plan requirements: June, October 2014 | Audit scope was to understand the effectiveness and level of implementation of arrangements made to address impacts from pipeline activities related to flora, fauna and associated habitat loss in wild. Issues identified were related to external factors mostly, such as stationary field equipment theft, grazing, trampling and illegal logging. Also, the issue was field access complications caused by security dep delaying granting the permits. Further actions are to be taken to eliminate the latter. |
| Subject Matter Audit: ESAP Emission Management Plan – affluent monitoring | Environmental Advisor (Emissions);Geo Exports C&E team | Assess conformance of affluent monitoring practices against Emission Management Plan and Waste Water management procedure requirements: Dec 2014 | Purpose of the audit was to check correct implementation and to understand the effectiveness of effluent management. Main area for improvement identified is to shorten the time between sampling and sample analysis itself. Corrective action is being defined as involves sample transportation contractor mgt. |
| Subject Matter Audit - Waste Management | Environmental Advisor (Waste);Geo Exports C&E team | Assess conformance of WM against Waste Management procedure requirements: Feb, May 2014 | Audit focused on checking the conformance with maintaining WTN system. All the Operation site's records were thoroughly checked, no major gaps identified. |

| Audit/ Review | Auditor | Scope | Findings and/or Recommendations |
|---|---|---|---|
| Regular Environmental Site Inspections | Environmental Advisors, Geo Exports C&E team | Regular Environmental Inspections of PSG1 & 2; EDDF, Area 80; Camps, ROW, OSRBs | Regular environmental inspections were carried out at all AGIs and camps throughout 2014. Identified issues were tracked through inspection checklists and, where relevant, through Tr@ction, on ongoing basis. |
| Contractor Audit in Employment Practices (Engineering Service LTD) | Georgia C&EA, and HR | Assess contractor's compliance with Company Social requirements (employment / recruitment/ working conditions, human rights, fundamental worker rights) | Recommendations about improving fairness and transparency in recruitment, improving labour contracts, elaborating grievance mechanism, etc. were issued to contractor and actions were agreed. |

### 11.1.3 Turkey

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

The significant internal reviews conducted in Turkey during this reporting period are summarised in Table 11.3.

**Table 11.3: Summary of Internal Reviews/Audits 2014 (Turkey)**

| Audit/Review | Auditor | Auditee | Scope | Findings and/or Recommendations |
|---|---|---|---|---|
| Day to day field inspection (E&S assurance) and monitoring of reinstatement activities | BTC Co. | Pipeline repair Contractor | Monitoring of reinstatement/ geo-hazard works on an on-going basis by BTC Env&CSR teams | The pipeline repair contractor was monitored by BTC Co.'s Site Staff on a daily basis and Environment and CSR teams on an on-going ad-hoc basis to ensure conformance with ESIA and ESAP requirements. One NCR (non-conformance) was raised for a deviation from an established arrangement (DVR) related to the HSE requirements. The corrective and preventive actions were defined and agreed as per the Project requirements. |
| Social Compliance Reviews | BTC Co. | BIL and BTC's Direct Contractor | Social Requirements | CSR team closely monitored the relationship with communities around the PTs and on the pipeline route through direct site visits to villages either with PCREs or with community investment IPs.<br>CSR team held regular meetings with BIL PCREs to monitor activities and |

| Audit/Review | Auditor | Auditee | Scope | Findings and/or Recommendations |
|---|---|---|---|---|
| | | | | social requirements of the Operations phase as well as conducting interviews with BIL PCREs and various local stakeholders during 2014. These M&E activities mainly focused on complaint management and land use violations.<br>Monthly social reports of BIL and BTC Co.'s direct contractors served as a strong indicator to monitor actions on social requirements set in ESAP and RAP. |
| On-going CDI and EGED Projects Technical Monitoring | BTC Co. | CDI and EGED IPs (grantees) | CDI and EGED project performance indicators | In addition to monthly and quarterly progress reports submitted by IPs, CSR team and external consultants conducted several site monitoring visits to each CDI project in 2014. Team also participated in several project events; certification ceremonies, stakeholder meetings as well as small support fund evaluation committee meetings on site.<br>CSR team and Engineering Technical Consultant monitored CEYGEM and CEYDEM constructions regularly on the field. CSR external consultants spent 96 days in 2014 on site for monitoring. |
| Pre-IEC Audit and E&S Compliance Review (Facilities) | BTC Co. C&E and CSR Teams | BIL | Compliance with ESAP and ESIA | An internal environmental audit was conducted for the BTC Operations in Turkey which included documentation review, site visits, followed by interviews with BTC Co. BIL and contractor personnel. CMT, IPTs, PTs 1, 3 and 4 were visited within the scope of the Review.<br>In total, 6 Level-I non-conformances were identified at IPT2, PT3 and PT4.<br>CSR team conducted documentation review for PT3 as part of the pre-IEC Audit in 2014. |
| Pre-IEC Audit and E&S Compliance Review (RoW&Marine) | BTC Co. C&E Team | BIL | Compliance with ESAP and ESIA | An internal environmental audit was conducted for the BTC Operations in Turkey, which included documentation review, site visits, followed by interviews with BIL and contractor personnel.<br>During the environmental review no new non-conformance was identified. Actions for two Level II outstanding non-conformances were observed to be not completed.<br>CSR team conducted documentation review for CMT and major RoW issues as part of the pre-IEC Audit in 2014. |
| Financial and Contractual Audits for CDI and EGED projects | BTC Co. | CDI and EGED IPs (grantees) | Financial and contractual compliance to grant agreements | Detailed review of annual project reports has been initiated by CSR team to monitor both contractual and financial compliance. Financial and contractual audits is planned to be conducted end 2015 for the close-out of the projects by CSR, Finance, PSCM and Ethics & Compliance team representatives. |
| NRC HSE Compliance | BTC Co C&E and | NRC | Compliance with BTC Co. | There was no annual or follow-up audit conducted in 2014. The findings and |

| Audit/Review | Auditor | Auditee | Scope | Findings and/or Recommendations |
|---|---|---|---|---|
| Review | H&S Teams | | Statement Of Environmental &Social Requirements (BTC-SOR-ESM-GEN-001) | recommendations observed during the previous year audit have been closed as per the actions defined in the audit report. The progress on the environmental performance has been followed through the monthly report prepared and shared by NRC |

**Table 11.4: Audits Conducted by BIL**

| Audit/Review | Auditee | Scope | Findings and/or Recommendations |
|---|---|---|---|
| ISO 14001 Internal Audit of BIL Facilities (Integrated Audit with OHSAS and QMS) | BIL AGIs | Compliance with ISO 14001 EMS Standard | No major findings observed. Findings evaluated and PCARs were initiated by BIL as appropriate. |
| Environmental Compliance Audits of BIL Facilities | BIL AGIs | Compliance with national legal requirements | No major findings observed. |
| Environmental Compliance Audit of Third Party Waste Facilities | Adana Municipality Landfill Site | Compliance with BIL EMS | No major findings observed. |
| Environmental Compliance Audit of Third Party Waste Facilities | Yılka Recycling Facility | Compliance with BIL EMS | No major findings observed. |
| Environmental Compliance Audit of Third Party Waste Facilities | Akdösan Recycling Facility | Compliance with BIL EMS | No major findings observed. |

## 11.2 EXTERNAL REVIEWS

### 11.2.1 ISO 14001 Re-certification

BP continues to maintain ISO 14001 certification from Intertek for all of its operations in Azerbaijan and Georgia.

The Azerbaijani section of the pipeline did not have an external ISO 14001 audit in 2014. Two actions that were raised as a follow-up to the 2013 external surveillance audit observations were completed in 2014.

The Georgian section of BTC and SCP pipelines hosted an external ISO 14001 surveillance audit in November 2014, with visits to Tbilisi main office, BTC PSG2 pump station, SCP Area 80, and Emergency Drain Down Facility (EDDF). The Audit did not reveal any non-confomity to the ISO 14001 standard. Three opportunities for improvements related to Control of Work were raised. The report highlighted the Emergency Response documentation and tests, Environmental monitoring processes and records, and the 2014 Internal audit findings as being strong aspects of the Environmental Management System.

In Turkey, BIL obtained ISO 14001 certification in 2008 from BSI. Surveillance/Re-certification audits have been carried out by BSI since then. The last audit was conducted in November 2014 at CMT, IPT2 and PTs 1 and 2. No major findings were observed. In the scope of the environmental legislation, provincial directorates conduct integrated audits together with the MoEU.

There were two integrated audits conducted at PT1 and IPT2 in June 2014. No major findings were observed.

### 11.2.2 Independent Environmental Consultants (IEC)

Between 21 September and 3 October 2014, the IEC conducted their sixteenth post-financial close visit to the AGT region to monitor compliance with BTC Pipeline Project E&S commitments.[16] The following text has been extracted from the Executive Summary of that report.

“This site visit represented the eight IEC operations audit, which is an annual verification process and is a continuation of an ongoing monitoring process initiated during the construction phase. The operations audits focus on the Operations team and ongoing operations activities. The reference documents for the operations audits are the Operations ESAP and relevant management plans.

This was the second site visit (since February 2004) where no non-compliances with Project commitments were identified. The main non-compliance with Project commitments identified over the past 2 years has been the lack of construction of a slops treatment facility at the CMT where the Turkish Ministry of the Environment has fined the Project in 2011 and 2012 for not undertaking this work. The facility is now completed and as a result the IESC has deemed the issue to be closed”.

### 11.2.3 Azerbaijan

The Project focus on Health and Safety has resulted in continuous improvements noted in Azerbaijan, with an overall reduction in serious vehicle incidents (a focus area for the project) reported for 2013 and 2014. The project regularly carries out emergency exercises, with effective close-out and lessons learnt implemented as necessary.

[16] Report of the post-financial close independent environmental consultant Baku-Tbilisi-Ceyhan pipeline project fifteenth site visit, September 2013- Executive Summary

Wastewater discharge exceedances over the past several years led to the Project investigating the potential exceedance sources. At PSA2 the outcome of the investigations has resulted in the development of a range of reduction and mitigation measures, including a potential disconnection of the Retention Pond discharge line from the RBC wastewater treatment unit's discharge line, the apparent source of Total Coliforms from the Retention Pond discharge. Additionally, considering pigeons as apparent source of Total Coliforms, a trial project for pigeon control at IPA1 was framed.

There has also been an optimisation of sampling programs to increase accuracy of monitoring at the monitoring points. Once handover of PSA2 environmental laboratory to certified laboratory service provider (Azecolab) is completed, it is expected to result in significant cost savings. BTC Azerbaijan demonstrated considerable effort to ensure appropriate pipeline route reinstatement and prevent erosion, in particular at sensitive river crossings. Overall, vegetation cover along the pipelines continues to improve, while problem areas stay as the previous years (Gobustan Desert Area). While the reinstatement situation is essentially unchanged in the Gobustan area the project has reported some success from discussion with the Export Piplines Protection Department (EPPD), resulting in a reduction of EPPD driving patrols on the running track along some of the pipeline sections. The project is continuing with the reinstatement program. Regarding biodiversity, the scope of *Iris acutiloba* program has been modified since the first program was approved by the IEC in 2011. During the visit IEC approved a modification to the offset approved in 2011, involving the planting of Red Book listed trees at PSA2 and IPA1 on the condition that it will be implemented in the near future. Otherwise, it will be necessary to assign a non-compliance. The project has shared the recently approved SoW with IEC. The project will commence in November 2014.

### 11.2.4 Georgia

No non-compliances were identified during the IEC's 16th post-financial monitoring visit. The result of having a zero NCs during last four audits is to be considered as an outstanding outcome.

### 11.2.5 Turkey

The main development over the last year of BTC Project operations in Turkey is the completion of construction works in September 2014 of the Slops and Bilge Water Reception and Treatment Facility at the CMT, also known as the MARPOL Facility.

The Project was previously fined on two occasions by the Turkish Ministry of Environment and Urbanization (MoEU) for not building this facility, and expects to receive government approval of the MARPOL Facility in October/November 2014 and will operate under a temporary permit for about a one year verification period prior to receiving the Environmental License.

Regarding RoW management, erosion control areas and pipeline sections that have required major geotechnical stabilization efforts (including rerouting at KP383 and KP1007, and erosion control measures and reinstatement activities at KPs 983, 362 and 387) are well managed and regularly patrolled. Pipeline rerouting was completed at KP383 in 2013, and ongoing stability and revegetation efforts over the last 12 months appear to be successful with no stability issues reported and initial revegetation evident. Rerouting currently being undertaken at KP1007 is progressing well with HSE aspects noted to be managed effectively at the reroute area and within the site camp. Rerouting construction activities at KP1007 are expected to be complete by the end of 2014.

Ecological monitoring along the pipeline is ongoing with the Project reporting an overall general improvement both regarding vegetation coverage and diversity, which is supported by IEC observations in the field.

Regarding pollution prevention, wastewater treatment systems continue to improve, with almost all monthly discharge monitoring results of waste water treatment plants (WWTPs) and oil water separators (OWSs) within limits. The Project has identified a series of actions, and responded to IEC recommendations, through various MoCs (including process changes and purchasing additional equipment), with the objective of enhancing the existing waste water management systems, and improving processes to effectively target and reduce the level of off spec effluent across Project facilities. The CWAAs continue to be well managed, with the IEC noting that the CWAA visited at the CMT serves as a model for effective waste management. Some minor recommendations for improvement were made to Project management regarding pollution prevention during the site visit.

The ongoing Project focus on Health and Safety awareness is evident, with the continued use of the Behaviour Observation Safety System (BOSS) to track and analyse incidents, and identify where additional H&S efforts are needed. The Project reports a reduction of year on year incidents and has planned/implemented a series of actions to further minimise risks.

Turkey is the only country where social teams are dedicated exclusively to the BTC Project. In general, the overall social performance continues to be good, with an emphasis on maintaining community relations and a focus on closing out remaining complaints and increasing land users' awareness of land use restrictions on the RoW throughout 2014. A recommendation was again made by the IEC for BIL to update and publish their Social Management Plans, which is reportedly planned for late 2014. The Sustainable Development Initiative (SDI) is still in place and has now passed a critical juncture in the Project initiative (more than 10 years). The Project would benefit from an outcomes analysis as to the success of the social program and issues implemented. Tables of recommendations and actions taken are provided in Appendix 2".

### 11.2.6 Social and Resettlement Action Plan Panel

The SRAP Panel report on Turkey has not been submitted despite several inquiries to the Panel.

The results of the SRAP monitoring actions closure from previous visits are provided in Appendix 4.

Tables of recommendations are also provided in Appendix 4.

### 11.2.7 Polaris

Polaris Applied Sciences Inc. conducted OSR readiness assurance review for the BTC Pipeline Project in Turkey in May 2013. BIL then prepared a list of 49 actions that included operational, contractual, government and management issues that addressed the gaps to be closed by BIL and BTC.

Thirty actions/recommendations have been closed as of the end of 2014. Other items are scheduled to be closed in 2015 and 2016.

### 11.2.8 Turkey External Reviews/Audits

A summary of audits conducted in Turkey by external parties is provided in Table 11.5.

**Table 11.5: Audits Conducted by External Parties**

| Audit/ Review | Auditor | Auditee | Scope | Findings and/or Recommendations |
|---|---|---|---|---|
| ISO 14001 Surveillance Audits of Facilities | BSI (certification body) | BIL (PT1, IPT2, PT2, CMT) | Compliance with ISO 14001 EMS Standard | No major findings observed. Findings evaluated and PCARs were initiated by BIL as appropriate. |
| Integrated Audit of Legal Authorities | Ardahan MoEU | PT1 | Compliance with national legal requirements | No major findings observed. |
| Integrated Audit of Legal Authorities | Kars MoEU | IPT2 | Compliance with national legal requirements | No major findings observed. |
| Ship Waste Reception Facility Audit by MoEU | Adana Provincial Directorate of MoEU | CMT | MARPOL Facility compliance with national regulation | One finding noted that the existing vacuum truck for waste oil, sludge and bilge water to be modified or to be replaced with a new one which has three compartments in its tank. |
| Employment Standards Review – Follow-up | Rina Denizcilik ve Belgelendirme Ltd. Şti. | BIL and BTC Co. Contractors | Compliance with employment standards commitments | BIL and BTC Co. high management held a detailed session to assess findings and recommendations. BTC CSR and BIL PCR teams have been following up the performance against the agreed actions in 2014. |
| Social Compliance Review – Follow-up | Ankara University | BIL and BTC Co. Contractors | Social Assurance, Risk Assessment, Employment and Land Review | Remediation work scope has been prioritized in 2014 and submitted for approval. |

# APPENDICES

| | |
|---|---|
| Appendix 1 | Outline of Annual Reports |
| Appendix 2 | Close-out Status of Actions related to Non-compliances raised through IEC Monitoring |
| Appendix 3 | Environmental Monitoring Results |
| Appendix 4 | Status of Recommendations raised through SRAP Monitoring |
| Case Study 1 | Enhancing Oil Spill Preparedness and Response Capability in Azerbaijan |

# APPENDIX 1 – OUTLINE OF ANNUAL REPORTS

## ANNEX J OF THE CONSTRUCTION ESAP – OUTLINE OF PROJECT ENVIRONMENTAL AND SOCIAL ANNUAL REPORT[17]

Each E&S Annual Report will address each of the topics listed below for BTC activities conducted in Azerbaijan, Georgia and Turkey.

**EXECUTIVE SUMMARY**

**1 INTRODUCTION**

**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.

2.4 OTHER STUDIES

**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 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 LAND ACQUSITOIN AND 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 AND BOTAŞ' INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

[17] 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 ANNUAL REPORT

Each E&S Annual Report will address each of the topics listed below for BTC activities conducted in Azerbaijan, Georgia and Turkey.

**1 EXECUTIVE SUMMARY/INTRODUCTION**

**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 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 AND BIL'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

# APPENDIX 2: CLOSE-OUT STATUS OF ACTIONS RELATED TO NON-COMPLIANCES RAISED THROUGH IEC MONITORING

Appendix 2 contains BTC's responses and progress towards implementing and effectively closing out the non-compliances raised by the IEC. Items that remain open are reported in E&S Annual Reports until they have been closed. Items that have been closed do not appear in subsequent reports. In adopting this approach, the BTC Pipeline Project aims to provide transparency and assurance that measures are being taken to ensure follow-up and close-out of all actions to address non-compliances.

## APPENDIX 2A – AZERBAIJAN ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

There were no non-compliances identified by the IEC audit in 2014.

## APPENDIX 2B – GEORGIA ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

There were no non-compliances identified by the IEC audit in 2014.

## APPENDIX 2C – 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 | Responsible Party | Target Date | Closure Status |
|---|---|---|---|---|---|---|---|---|---|
| 4.3.2 | Sep 2014 | Non-Hazardous and Hazardous Waste | | Rec. | The Project should ensure that the MARPOL facility liquids at the CMT CWAA are stored in a separate storage area from the hazardous waste. | BTC Co will evaluate together with BIL whether existing chemical storage area will be sufficient after use of bulk of chemicals as part of MARPOL facility start-up. | BTC Co. | 31.12.2015 | OPEN |
| 4.3.2 | Sep 2014 | Non-Hazardous and Hazardous Waste | | Rec. | The CWAA at PT3 needs to be maintained to ensure that the ageing facility remains functional. The option of a new CWAA to be located at the proposed new PT3 accommodation camp site should be considered. | Option of a potential new CWAA is being considered as part of the permanent facilities project. The decision is awaiting the siting, scoping and design of the permanent facilities. | BTC Co. | In line with the permanent accommodation projects schedule | OPEN |
| 4.3.5 | Sep 2013/ Sep 2014 | Wastewater Management | | Repeat Rec. | Consider adding aeration systems to SWPs to improve water quality and increase the time that discharges can be allowed. This type of simple | Aerators were purchased by BIL and distributed to sites. | BIL | n/a | CLOSED |

| Ref. No. | Date of finding | Category | Description of Finding | Level of Non-Compliance | Recommendation for Improvement | Action Taken | Responsible Party | Target Date | Closure Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | system could reduce or eliminate the need for difficult and expensive off-site treatment. | | | | |
| 4.4.2 | Sep 2014 | Pollution Prevention and Environmental Monitoring | | Rec. | The Project should determine, based on year-to-year comparisons, if changes in the groundwater monitoring data are the result of project related activities, or whether the results appear to represent normal, natural conditions. | The Turbidity levels show smooth fluctuations throughout the monitoring campaign. However the Turbidity result is not reliable for determining the suitability of this groundwater as potable water since detection limit of DOKAY is 1.0 NTU. Hence results might be much lower than 1.0 NTU or might be close to 1.0 NTU. The samplings are measured once a year, and it is not enough to be able to comment about Turbidity value.<br>Note: I'd like to remind that analysis were carried out from raw water. The water obtained from the well treated so that it could be used as potable water. After the treatment process there is no problem with the turbidity value of the water.<br><br>There is no limit value for TOC in WHO Standards and RWIHC (Turkish Regulation). We compared annually these parameters. When we compared the results of 2011, 2012 and 2013, the values generally are approximately each other.<br>Note: In lender report TOC level at PT3 given as 7.7 mg/l mistakenly. It is 1.7 mg/l indeed. | BIL | 30.06.2015 | OPEN |

| Ref. No. | Date of finding | Category | Description of Finding | Level of Non-Compliance | Recommendation for Improvement | Action Taken | Responsible Party | Target Date | Closure Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total Coliform bacteria are widespread in nature. In addition to their animal intestine habitat, they occur naturally in plant material and soil. Therefore, their presence does not necessarily indicate fecal contamination. These results are normal for groundwater. Note: I'd like to remind that analysis were carried out from raw water. The water obtained from the well treated so that it could be used as potable water. After the treatment process there is no problem with the total coliform value of the water. | | | |
| 4.4.5 | Sep 2013 | Wastewater Management | | Rec. | Care needs to be made that field technicians and the HSE engineers above them have the complete training to understand the significance of field test results and react to the results to improve effluent quality – consider cross-pollination of experience. | A workshop for sharing experiences of WWTP operators conducted by BIL in July 2014. | BIL | n/a | CLOSED |
| 4.4.5 | Sep 2013 | Wastewater Management | PT-1 has a three-valve discharge system discharge whereby the operator can decide whether it is appropriate to discharge effluent to the environment, discharge to a pond or recycle the effluent through the plant. | Rec. | This setup should be evaluated for application at other PTs. | This issue was evaluated by all sites and was also discussed during workshop for WWTP operators. The approach was positive. An MoC has been initiated by BIL. | BIL | 31.12.2015 | OPEN |
| 4.4.5 | Sep 2013 | Wastewater Management | | Rec. | Go forward with the plan to line the bottoms SWPs and PWHPs. The difficulty of maintaining these ponds with gravel bottoms was recognized in Azerbaijan and Georgia and concrete lining was the solution there. | MOC-BIL-ENV-2013-004 for PWHPs and MOC-BIL-ENV-2013-006 for SWPs initiated; under review of BTC Co. All wastewater and storm water issues will go through a holistic review before any actions (incl. lining) | BIL | 31.12.2015 | OPEN |

| Ref. No. | Date of finding | Category | Description of Finding | Level of Non-Compliance | Recommendation for Improvement | Action Taken | Responsible Party | Target Date | Closure Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | concluded. | | | |
| 4.11.2 | Sep 2013 | H&S | | Rec. | BIL should review its program for driver's safety and reinforce it as appropriate. | Programme was reviewed and the outcomes were presented to IEC during 2014 audit through KPIs and case studies. | BIL (H&S) | n/a | CLOSED |
| 4.4.3 | July 2012 | Non-Hazardous and Hazardous Waste | | Rec. | IEC recommends that remaining BPEO studies for optimizing hazardous waste disposal and for the identifying sustainable options for the recycling and re-use of wastes be completed by the time of the 2013 audit. | BPEO Study Report and an Output Report prepared by BIL; under review of BTC Co. | BIL | 31.12. 2015 | OPEN |
| 4.4.7 | July 2012 | Wastewater Management | | Rec. | A quick coliform analysis kit should be purchased for each WWTP facility. | Incubators for the kits were purchased; the coliform kits themselves will be provided | BTC Co. | 31.12. 2015 | OPEN |
| 4.4.7 | July 2012 | Wastewater Management | | Rec. | It is recommended that repair works of the PWHP at PT3, including replacement of the damaged HDPE geo-membrane underlying the geo-textile coverage be carried out as soon as possible. At the same time, an ad hoc monitoring of groundwater is also recommended (repeat recommendation). | This work will be carried out during the application of ponds enhancement project.<br><br>Groundwater at PT3 is already monitored annually so far. Because of the PWHP leakage, groundwater at PT3 is being monitored twice a year. No contamination was observed in 2014. | BIL | Linked to the schedule of pond enhancement project | OPEN |
| 4.4.7 | July 2012 | Wastewater Management | The process of enhancing the performances of the WWTPs at PT2 and PT4 facilities as well as the implementation of the upgrade for SWPs, PWHPs and OWSs at all fixed facilities is progressing slowly. | Repeat Rec. | It is recommended that BIL and BTC take their own responsibility in order to speed up the implementation of the upgrading to be able to close this long-standing issue. | All wastewater and storm water issues will go through a holistic review before any actions (incl. lining option) concluded. | BIL | 31.12.2015 | OPEN |
| 4.5.2 | Sep 2014 | RoW Management, Erosion Control, Reinstatement and Biorestoration | | | The Project should verify that all facility drains are closed to the environment, or can be closed remotely in the event of a spill, and make adjustments where necessary. | The recommendation was evaluated by BIL/BTC Operations Teams and BIL/BTC Environment Teams. Since the DRA tanks are kept empty and have their own bunds, only the rainwater channel in the BVT | BIL | n/a | CLOSED |

| Ref. No. | Date of finding | Category | Description of Finding | Level of Non-Compliance | Recommendation for Improvement | Action Taken | Responsible Party | Target Date | Closure Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | connected to this pipe. Furthermore, since the facility is unmanned and it is not possible to operate a controlled valve, the check valve that eliminates the creek to flow inside of the BVT will be kept as it is due to these limitations. | | | |
| 4.8.3 | Sep 2014 | Community Investment Program and Regional Development Initiative | | | The BTC Project should provide an overall assessment of the outcomes over the past 10 years of the Sustainable Development Initiative implemented through Community Investment. The assessment would assist BIL in determining whether communities are better off, worse off or have experienced little to no change over this time period. This should be accomplished in association with an independent specialist. | An assessment study is planned to be conducted by a team of experts comprising of BTC Co. and BIL as well as external SDI Consultants particularly focusing on impacts to affected communities over the past 12 years. | BTC Co. | 31.03.2016 | OPEN |

# APPENDIX 3: ENVIRONMENTAL MONITORING RESULTS

## APPENDIX 3.1: AZERBAIJAN

Please read this section in conjunction with the commentary in Section 4.2.1.

## Appendix 3.1a – Ambient Air Quality

| Pollutant | Standard | Units | Averaging Period |
|---|---|---|---|
| $NO_2$ | 40 | $\mu g/m^3$ | Annual mean |

### PSA 2: 10 July to 13 August 2013

| ID | Pollutant | Units |
|---|---|---|
| | $NO_2$ | |
| PSA 2 S2 | 4.2 | $\mu g/m^3$ |
| PSA 2 S3 | 3.7 | $\mu g/m^3$ |
| PSA 2 S6 | 4.2 | $\mu g/m^3$ |
| PSA 2 S7 | 3.3 | $\mu g/m^3$ |
| PSA 2 S8 | 4.6 | $\mu g/m^3$ |

S – Station

## Appendix 3.1b – Stack Emissions Monitoring

| Pollutant | ESAP Standard | | | Units |
|---|---|---|---|---|
| | Emission Stream Sources | | | |
| | MOL Turbines | WBH | Generators | |
| $NO_x$ | 70-75 at 15% $O_2$, dry | 450 | 2,000 | $mg/Nm^3$ |
| CO | N/A | N/A | 650 | $mg/Nm^3$ |
| $SO_2$ | 35 | 1,000 | 1,700 | $mg/Nm^3$ |
| $PM_{10}$ | 5 | 100 | 130 | $mg/Nm^3$ |

| Pollutant | ESIA Standard | | | Units |
|---|---|---|---|---|
| | Emission Stream Sources | | | |
| | MOL Turbines | WBH | Generators | |
| $NO_x$ | 125 at 15% O2, dry | N/A | 2,000 | $mg/Nm^3$ |
| CO | 64 | N/A | NA | $mg/Nm^3$ |
| $SO_2$ | 0 | N/A | 110 | $mg/Nm^3$ |
| $PM_{10}$ | 5 | N/A | 50 | $mg/Nm^3$ |

### PSA 2/IPA 1

| Equipment | Date Tested | Load (kWth, Speed in % and Tempera-ture °C) | Fuel | Mean Stack Gas Concentrations | | | | Mass Emissions | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NOx | CO | $SO_2$ | $PM_{10}$ | NOx | CO | $SO_2$ | $PM_{10}$ |
| | | | | mg/Nm$^3$, Corrected to 15% $O_2$ | | | | g/h | | | |
| **PSA 2 Turbine 1** | 18 Nov 2014 | 87.7% kWth | Gas | 89 | 3062* | 0 | 5 | 54.3 | 1874.5 | 0.0 | 3.8 |
| **PSA 2 Turbine 2** | 13 Dec 2014 | 88.8% kWth | Gas | 91 | 2273* | 5 | 5 | 59.1 | 1434.5 | 2.3 | 3.1 |
| **PSA 2 Turbine 3** | 15 Nov 2014 | 90.7% kWth | Gas | 112** | 1765* | 0 | 5 | 72.1 | 1137.8 | 0.0 | 4.0 |
| **PSA 2 Turbine 4** | 16 Nov 2014 | 86.4% kWth | Gas | 92 | 2929* | 0 | 5 | 57.4 | 1824.1 | 0.0 | 0.6 |
| **PSA 2 Generator A** | 18 Nov 2014 | 46.6% kWth | Diesel | 515 | 195 | 0 | 50 | 46.8 | 17.8 | 0.0 | 5.6 |
| **PSA 2 Generator B** | 17 Nov 2014 | 56.8% kWth | Diesel | 568 | 148 | 0 | 50 | 15.9 | 13.2 | 0.0 | 5.6 |
| **PSA 2 Generator C** | 16 Nov 2014 | 51.5% kWth | Diesel | 503 | 197 | 0 | 50 | 44.0 | 17.3 | 0.0 | 5.4 |
| **PSA 2 WBH** | 14 Dec 2014 | 75 °C | Diesel | 240 | 613 | 20 | N/A | N/A | N/A | N/A | N/A |
| **IPA 1 Generator A** | 19 Nov 2014 | 32.3% kWth | Diesel | 3797 ** | 3 | 0 | 50 | 83.5 | 0.1 | 0.0 | 1.4 |
| **IPA 1 Generator B** | 18 Nov 2014 | 32 % kWth | Diesel | 839 | 109 | 0 | 50 | 15.9 | 2.1 | 0.0 | 1.2 |

NOTE: Figures in red indicate exceedance with project standards

** Exceedance against ESAP Standards

* Exceedance against ESIA standards

## Appendix 3.1c – Environmental Noise

| | Standard | Units | Period |
|---|---|---|---|
| **PSA 2; IPA 1 and BVs** | **55** | **dB(A)** | **Day time** |

### PSA 2

| ID | Readings | Units | Date | Duration | Comments |
|---|---|---|---|---|---|
| **PSA 2 NM 1p** | 49 | dB(A) | Sep-2014 | 5 min | Day time |
| **PSA 2 NM 2p** | 47.6 | dB(A) | Sep-2014 | 5 min | Day time |

NM – Noise Monitoring

### IPA 1

| ID | Readings | Units | Date | Duration | Comments |
|---|---|---|---|---|---|
| **NM 1p** | 46.3 | dB(A) | Oct-2014 | 5 min | Day time |
| **NM 2p** | 43.6 | dB(A) | Oct-2014 | 5 min | Day time |
| **NM 3p** | 47.6 | dB(A) | Oct-2014 | 5 min | Day time |

### BVs

| ID | Readings | Units | Date | Duration | Comments |
|---|---|---|---|---|---|
| **AB-4 NM 1p** | 44.2 | dB(A) | Oct-2014 | 5 min | Day time |
| **AB-7 NM 1p** | 49.4 | dB(A) | Sep-2014 | 5 min | Day time |
| **AB-10 NM 1p** | 47.3 | dB (A) | Sep-2014 | 5 min | Day time |
| **AB-10 NM 2p** | 45.8 | dB (A) | Sep-2014 | 5 min | Day time |
| **AB-11 NM 1p** | 48.8 | dB(A) | Sep-2014 | 5 min | Day time |
| **AB-13 NM 1p** | 52.1 | dB(A) | Sep-2014 | 5 min | Day time |
| **AB-14 NM 1p** | 45.5 | dB(A) | Oct-2014 | 5 min | Day time |

AB – Azerbaijan Block Valve

# Appendix 3.1d – Effluent Discharge Monitoring Programme

| Parameter | Standard | Units |
|---|---|---|
| **Total coliform bacteria (per 100 ml)** | <400 | MPN/100 ml |
| **pH** | 6-9 | - |
| **Total residual chlorine** | 0.2 | mg/l |
| **Biochemical Oxygen Demand (BOD)** | 25 | mg/l |
| **Chemical Oxygen Demand (COD)** | 125 | mg/l |
| **Total Suspended Solids (TSS)** | 35 | mg/l |
| **Ammonium ($NH_4$)** | 10 | mg/l |
| **Total nitrogen** | 15 | mg/l |
| **Phenols** | 0.5 | mg/l |
| **Total phosphorus** | 2.0 | mg/l |
| **Sulphides** | 1.0 | mg/l |
| **Oil and grease** | 10 | mg/l |
| **Silver (Ag)** | 0.5 | mg/l |
| **As** | 0.1 | mg/l |
| **Cd** | 0.1 | mg/l |
| **Cr, total** | 0.5 | mg/l |
| **Cu** | 0.5 | mg/l |
| **Fe** | 3.5 | mg/l |
| **Pb** | 0.1 | mg/l |
| **Hg** | 0.01 | mg/l |
| **Nickel (Ni)** | 0.5 | mg/l |
| **Selenium (Se)** | 0.1 | mg/l |
| **Zn** | 2.0 | mg/l |

# Appendix 3.1e – PSA 2 (Sample Location – PSA 2 Reed Bed)

| Parameter | Units | IPA1 | | | | PSA2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Mar 2014 | Jun 2014 | Sep 2014 (no water) | Dec 2014 | Mar 2014 | Jun 2014 | Sep 2014 | Dec 2014 |
| **Total coliform bacteria (per 100 ml)** | per 100ml | 24 | <1 | | 2420 | 575 | 220 | 31 | 1120 |
| **pH** | - | 7.26 | 7.52 | | 6.99 | 7.12 | 6.94 | 6.85 | 6.8 |
| **Total residual chlorine** | mg/l | | | | <0.02 | | | | <0.02 |
| **Biochemical Oxygen Demand (BOD)** | mg/l | | | | <1 | | | | <1 |
| **Chemical Oxygen Demand (COD)** | mg/l | 18 | 28 | | <4 | 16 | 60 | 32.2 | 6 |
| **Total Suspended Solids (TSS)** | mg/l | 6 | <4 | | <4 | 4 | <4 | <4 | <4 |
| **Ammonium ($NH_4$)** | mg/l | 3.7 | 0.02 | | 0.11 | 0.1 | 0.05 | <0.02 | 0.22 |
| **Phenols** | mg/l | | | | <0.001 | | | | 0.001 |
| **Sulphides** | mg/l | <0.005 | <0.005 | | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| **Oil and grease** | mg/l | <1.5 | <1.5 | | <1.5 | <1.5 | 1.6 | 1.7 | <1.5 |
| **Silver (Ag)** | mg/l | | | | <0.001 | | | | <0.001 |
| **As** | mg/l | | | | 0.002 | | | | 0.019 |
| **Cd** | mg/l | | | | <0.001 | | | | <0.001 |
| **Cr, total** | mg/l | | | | <0.001 | | | | <0.001 |
| **Cu** | mg/l | | | | 0.004 | | | | 0.003 |
| **Fe** | mg/l | | | | 0.002 | | | | 0.118 |
| **Pb** | mg/l | | | | <0.003 | | | | <0.003 |
| **Hg** | mg/l | | | | <0.002 | | | | <0.002 |
| **Nickel (Ni)** | mg/l | | | | 0.01 | | | | 0.008 |
| **Selenium (Se)** | mg/l | | | | <0.008 | | | | <0.008 |
| **Zn** | mg/l | | | | 0.014 | | | | 0.036 |

# Appendix 3.1f – Groundwater and Surface Water Monitoring Programme

## Groundwater Monitoring – Karayazi and PSA 2

| Date of Sampling | | May 2014 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Unit | Kar M2 | Kar M3 | Kar M5 | Kar M6 | Kar M7 | Kar M8 | Kar M10 | PSA 2 | |
| | | | | | | | | | Aran | Yaldili |
| pH | - | 6.74 | 7.09 | 7.42 | 7.13 | 7.3 | 7.3 | 6.9 | 8.8 | 9.5 |
| Temperature | °C | 16.8 | 17.9 | 18.7 | 16.6 | 15.9 | 15.8 | 17.2 | 25.5 | 24.8 |
| Conductivity | mS/cm | 4.45 | 2.69 | 9.07 | 1.3 | 0.91 | 2.17 | 11 | 1.93 | 0.58 |
| Total Hydrocarbons (THC) | µg/L | 22 | <20 | 33 | <20 | 22 | 34 | 25 | 37 | 37 |
| Polyaromatic Hydrocarbons (PAH) | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| BTEX | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |

| Date of Sampling | | Nov 2014 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Unit | Kar M2 | Kar M3 | Kar M5 | Kar M6 | Kar M7 | Kar M8 | Kar M10 | PSA 2 | |
| | | | | | | | | | Aran | Yaldili |
| pH | - | 6.94 | 7.39 | 7.29 | 7.31 | 7.3 | 7.19 | 7.12 | 8.35 | 9.4 |
| Temperature | °C | 17 | 15.6 | 16 | 15 | 15.2 | 16.3 | 16.2 | 21.9 | 21.4 |
| Conductivity | ṁS/cm | 4.59 | 2.31 | 7.89 | 1.24 | 0.86 | 2.59 | 9.98 | 1.89 | 0.54 |
| THC | µg/L | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| PAH | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| BTEX | µg/L | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |

M – monitoring

## Surface Water Monitoring PSA 2

| Date of Sampling | | May 2014 | | Nov 2014 | |
|---|---|---|---|---|---|
| **Parameter** | **Unit** | **Upstream** | **Downstream** | **Upstream** | **Downstream** |
| **pH** | - | 7.84 | 7.83 | No water | 7.36 |
| **TPH** | µg/L | <20 | <20 | | <20 |
| **PAH (sum of 16)** | µg/L | <0.01 | <0.01 | | <0.01 |
| **Benzene** | µg/L | <0.2 | <0.2 | | <0.2 |
| **Toluene** | µg/L | <0.1 | <0.1 | | <0.1 |
| **Ethylbenzene** | µg/L | <0.2 | <0.2 | | <0.2 |
| **o-Xylenes** | µg/L | <0.2 | <0.2 | | <0.2 |

## Surface Water Monitoring IPA 1

| Date of Sampling | | May 2014 | | Nov 2014 | |
|---|---|---|---|---|---|
| **Parameter** | **Unit** | **Upstream** | **Downstream** | **Upstream** | **Downstream** |
| **pH** | - | No water | 7.16 | 6.80 | 7.37 |
| **TPH** | µg/L | | <20 | <20 | <20 |
| **PAH (sum of 4)** | µg/L | | <0.01 | <0.01 | <0.01 |
| **Benzene** | µg/L | | <0.2 | <0.2 | <0.2 |
| **Toluene** | µg/L | | <0.1 | <0.1 | <0.1 |
| **Ethylbenzene** | µg/L | | <0.2 | <0.2 | <0.2 |
| **o-Xylenes** | µg/L | | <0.2 | <0.2 | <0.2 |

# Appendix 3.1g – Waste

## BTC Waste Volumes: Summary 2014

| | Main Waste Streams | Unit | Value |
|---|---|---|---|
| Non-hazardous waste | Construction rubble | t | 3 |
| | Plastic waste | t | 8.4 |
| | Domestic/office wastes | t | 85.79 |
| | Metals - scrap | t | 19.46 |
| | Oils - cooking oil | t | 1.06 |
| | Paper and cardboard | t | 3.34 |
| | Pressurized containers | t | 0.06 |
| | Toner or printer cartridges | t | 0.22 |
| | Waste electrical cables/equipment | t | 1.6 |
| | Wood | t | 1.12 |
| | Vegetation | t | 2.44 |
| | **Total non-hazardous wastes** | t | 126.49 |
| Hazardous waste | Antifreezes | t | 25.54 |
| | Batteries - wet cell | t | 21.26 |
| | Clinical waste | t | 0.04 |
| | Contaminated materials | t | 2.96 |
| | Filter bodies/media | t | 0.84 |
| | Lamps/tubes | t | 0.54 |
| | Oil delivery hose | t | 0.12 |
| | Oily rags | t | 2.42 |
| | Paints and coatings | t | 0.42 |
| | Pigging discs | t | 9.84 |
| | Pigging wax | t | 8.58 |
| | Sewage sludge | t | 47.3 |
| | Sewage - untreated | t | 184.86 |
| | Surfactants | t | 0.04 |
| | Tank bottom sludge | t | 8.92 |
| | Waste electrical and electronic equipment | t | 7.8 |
| | Water - oily | t | 259.8 |
| | Water – chemically | t | 2.82 |
| | **Total hazardous wastes** | t | 584.1 |

# APPENDIX 3.2: GEORGIA

Please read this section in conjunction with the commentary in Section 4.2.2.

## Appendix 3.2a – Ambient Air Quality

| Pollutant | Standard | Units | Averaging Period |
|---|---|---|---|
| **$NO_2$** | **40** (Annual average will reduce by 2µg/m$^3$ every year, to reach 40µg/m$^3$ by 1 January 2010) | µg/m$^3$ | Annual mean |
| **$SO_2$** | **20** (For the protection of vegetation and ecosystems) | µg/m$^3$ | Annual mean |
| **Benzene** | **5** (Annual average will reduce by 1µg/m$^3$ every year from 2006, to reach 5µg/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 |

a. * No $PM_{10}$ was measured in 2014 due to the system running on natural gas

### 2014 (between April 18 – May 20) monitoring results for NOx, SOx and Benzene (µg/m$^3$)

| ID | $NO_x$ | $SO_x$ | Benzene |
|---|---|---|---|
| **PSG 1-1** | 4.1 | 2.8 | 0.7 |
| **PSG 1-2** | 3.6 | 2.6 | 0.4 |
| **PSG 1-3** | 3.5 | 3.0 | 0.8 |
| **PSG 1-4** | 3.8 | 3.5 | 0.7 |
| **PSG 1-5** | 4.3 | 2.9 | 0.6 |
| **PSG 2-1** | 2.9 | 3.1 | 0.8 |
| **PSG 2-2** | 3.0 | 3.6 | 0.6 |
| **PSG 2-3** | 3.2 | 3.2 | 0.5 |
| **PSG 2-4** | 3.3 | 3.4 | 0.7 |
| **PSG 2-5** | 3.5 | 3.0 | 0.7 |
| **Trip blank** | <0.5 | <1.0 | <0.1 |

# Appendix 3.2b – Stack Emissions

## Annual monitoring results 2014

## 2014 Annual monitoring results

| Equipment | Date | Load | Concentration at Reference Conditions | | | | ESAP Standards | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | $NO_x$ | CO | $SO_2$ | PM | $NO_x$ | CO | $SO_2$ | PM |
| | | | *mg/m³* | | | | *mg/m³* | | | |
| **PSG 1** | | | | | | | | | | |
| **MOL Turbine 1** | 02.04.2014 | 93% | 125.55 | 981.34 | 3.33 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 2** | 03.04.2014 | 94% | 165.29 | 618.67 | 0 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 3** | 03.04.2014 | 94% | 163.84 | 486.3 | 0 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 4** | 04.04.2014 | 95% | 49.32 | 20 | 0 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 5** | 04.04.2014 | 95% | 51.25 | 6.88 | 0.06 | 5 | 75 | N/A | 35 | 5 |
| **Generator 1** | 01.04.2014 | 48% | 590.98 | 193.1 | 23.76 | 50 | 2000 | 650 | 1700 | 130 |
| **Generator 2** | 01.04.2014 | 48% | 764.43 | 106.87 | 31.19 | 50 | 2000 | 650 | 1700 | 130 |
| **Generator 3** | 03.04.2014 | 51% | 541.65 | 208.84 | 7 | 50 | 2000 | 650 | 1700 | 130 |
| **WBH** | 07.10.2014 | 35% | 212.36 | 0 | 41.46 | 62.22 | 460 | N/A | 1000 | 100 |
| **PSG 2** | | | | | | | | | | |
| **MOL Turbine 1** | 25.04.2014 | 92% | 111.2 | 1297.78 | 0 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 2** | 30.04.2014 | 95% | 93.42 | 83.92 | 3.1 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 3** | 23.04.2014 | 92% | 137 | 845.16 | 0 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 4** | 01.05.2014 | 95% | 48.23 | 12.17 | 2.53 | 5 | 75 | N/A | 35 | 5 |
| **MOL Turbine 5** | 01.05.2014 | 95% | 41.67 | 23.28 | 0 | 5 | 75 | N/A | 35 | 5 |
| **Generator 1** | 30.04.2014 | 45% | 543.05 | 201.75 | 16.95 | 50 | 2000 | 650 | 1700 | 130 |
| **Generator 2** | 24.04.2014 | 55% | 539.96 | 215.75 | 17.4 | 50 | 2000 | 650 | 1700 | 130 |
| **Generator 3** | 22.04.2014 | 50% | 571.19 | 176.94 | 19.12 | 50 | 2000 | 650 | 1700 | 130 |
| **WBH** | 11.11.2014 | 40% | 282.86 | 0 | 35.60 | 97.45 | 460 | N/A | 1000 | 100 |

# Appendix 3.2c – Environmental Noise

| Location type | Georgia | Project Specifications |
|---|---|---|
| Residential, Institutional, Educational | 55 dB(A) – day time | |
| 45 dB(A) – night time | 55 dB(A) – day time | |

## 2014 Environmental Noise Monitoring Results

| Sampling Point | Global Positioning System Co-ordinates | Date and Time | Measurement | Comments |
|---|---|---|---|---|
| PSG 1 NMP 1 | | | | |
| (including PSG 1 camp, PSG 1 OSRB) | 8513308 | | | |
| 4590138 | 30.10.2014 | | | |
| 09:05 | Leq – 48.8 | | | |
| Lmax – 69.7 | | | | |
| Lmin – 31.4 | | | | |

NMP - Noise Monitoring Point

# Appendix 3.2d – Effluent

## PSG 1 Retention Pond

| Parameters | Standards | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monthly | Mg/l | | | | | | | | | | | |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| Quarterly | | | | | | | | | | | | |
| pH | 6-9 | n/a | 8.07 | n/a | n/a | 8.35 | n/a | n/a | 8.84 | n/a | n/a | 7.63 |
| COD | 125 | n/a | 24 | n/a | n/a | 19 | n/a | n/a | 52 | n/a | n/a | 31 |
| TSS | 35 | n/a | 21 | n/a | n/a | 17 | n/a | n/a | 26 | n/a | n/a | 14 |
| NH4 | 10 | n/a | 0.72 | n/a | n/a | 0.96 | n/a | n/a | 3.07 | n/a | n/a | 0.76 |
| Sulphide | 1 | n/a | <0.005 | n/a | n/a | <0.005 | n/a | n/a | <0.005 | n/a | n/a | <0.005 |
| Annual | | | | | | | | | | | | |
| BOD | 25 | n/a | 15 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| As | 0.1 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cd | 0.1 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cr (6) | 0.1 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cr total | 0.5 | n/a | <0.0007 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cu | 0.5 | n/a | 0.084 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Fe | 3.5 | n/a | 0.108 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Pb | 0.1 | n/a | <0.003 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Hg | 0.01 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Ni | 0.5 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Se | 0.1 | n/a | <0.008 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Ag | 0.5 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Zn | 1 | n/a | 0.062 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Phenols | 0.5 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

* No discharge from Retention Pond in June

## PSG 2 Retention Pond

| Parameters | Standards | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Monthly | Mg/l | | | | | | | | | | |
| Oil and grease | 10 | n/a* | n/a* | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| Quarterly | | | | | | | | | | | |
| pH | 6-9 | n/a | n/a | 8.11 | n/a | 8.64 | n/a | n/a | 8.03 | n/a | n/a |
| COD | 125 | n/a | n/a | 37 | n/a | 37 | n/a | n/a | 27 | n/a | n/a |
| TSS | 35 | n/a | n/a | 27 | n/a | 30 | n/a | n/a | 28 | n/a | n/a |
| NH4 | 10 | n/a | n/a | 0.96 | n/a | 0.85 | n/a | n/a | 1.47 | n/a | n/a |
| Sulphide | 1 | n/a | n/a | <0.005 | n/a | <0.005 | n/a | n/a | <0.005 | n/a | n/a |
| Annual | | | | | | | | | | | |
| BOD | 25 | n/a | 23 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| As | 0.1 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cd | 0.1 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cr (6) | 0.1 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cr total | 0.5 | n/a | <0.0007 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Cu | 0.5 | n/a | 0.057 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Fe | 3.5 | n/a | 0.24 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Pb | 0.1 | n/a | <0.003 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Hg | 0.01 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Ni | 0.5 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Se | 0.1 | n/a | <0.008 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Ag | 0.5 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Zn | 1 | n/a | 0.082 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Phenols | 0.5 | n/a | <0.001 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

* Because water in retention pond in January and December 2013 was frozen, monitoring was not conducted.

## PSG 1 Camp STP via Reed Bed

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD | 25 | 14 | 13 | 16 | 22 | 13 | 18 | 24 | 15 | 23 | 16 | 21 | 14 |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | n/a | n/a |
| TSS | 35 | 12 | 26 | 21 | 31 | 25 | 20 | 29 | 23 | 27 | 31 | 18 | 27 |
| NH4 | 10 | 1.62 | 1.13 | 1.14 | 1.44 | 0.72 | 1.1 | 0.95 | 2.05 | 0.35 | 2.9 | 1.5 | 0.92 |
| Quarterly | | | | | | | | | | | | | |
| Total N | 15 | n/a | 4.8 | n/a | n/a | 3.8 | n/a | n/a | 2.4 | n/a | n/a | 3.7 | n/a |
| Total P | 2 | n/a | 1.44 | n/a | n/a | 1.04 | n/a | n/a | 0.83 | n/a | n/a | 1.63 | n/a |
| Coliform | <400 | n/a | <2 | n/a | n/a | <2 | n/a | n/a | <2 | n/a | n/a | 7 | n/a |

## PSG 2 Camp STP via Reed Bed

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD | 25 | 16 | 15 | 13 | 12 | 12 | 17 | 20 | 15 | 18 | 13 | 18 | 22 |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | n/a | n/a |
| TSS | 35 | 24 | 21 | 28 | 25 | 14 | 24 | 30 | 23 | 15 | 24 | 14 | 31 |
| NH4 | 10 | 1.15 | 0.83 | 0.44 | 0.84 | 0.48 | 2.8 | 1.85 | 2.05 | 0.88 | 2.57 | 1.71 | 2.14 |
| Quarterly | | | | | | | | | | | | | |
| Total N | 15 | n/a | 3.6 | n/a | n/a | 3.1 | n/a | n/a | 2.4 | n/a | n/a | 4.7 | n/a |
| Total P | 2 | n/a | 1.16 | n/a | n/a | 1.75 | n/a | n/a | 0.83 | n/a | n/a | 1.7 | n/a |
| Coliform | <400 | n/a | 8 | n/a | n/a | 5 | n/a | n/a | <2 | n/a | n/a | 280 | n/a |

## PSG 2 STP via Reed Bed

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD | 25 | 9 | 12 | 17 | 10 | 18 | 14 | 19 | 14 | 28 | 20 | 16 | 16 |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | n/a | n/a |
| TSS | 35 | 13 | 23 | 25 | 15 | 16 | 28 | 18 | 29 | 32 | 19 | 13 | 18 |
| NH4 | 10 | 0.75 | 0.92 | 1.94 | 1.3 | 1.72 | 1.9 | 1.6 | 1.18 | 0.81 | 0.84 | 1.75 | 1.35 |
| Quarterly | | | | | | | | | | | | | |
| Total N | 15 | n/a | 2.6 | n/a | n/a | 2.1 | n/a | n/a | 1.1 | n/a | n/a | 3.1 | n/a |
| Total P | 2 | n/a | 0.47 | n/a | n/a | 0.85 | n/a | n/a | 0.73 | n/a | n/a | 0.83 | n/a |
| Coliform | <400 | n/a | <2 | n/a | n/a | <2 | n/a | n/a | 220 | n/a | n/a | 2 | n/a |

## Area 80 STP via Reed Bed

Monitoring results placed within this report because EDDF sewage water is being treated at Area 80 Permanent Accommodation STP.

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD | 25 | 17 | 20 | 19 | 16 | 13 | 23 | 22 | 10 | 26 | 18 | 23 | 16 |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | n/a | n/a |
| TSS | 35 | 28 | 23 | 21 | 26 | 17 | 26 | 23 | 14 | 14 | 17 | 27 | 26 |
| NH4 | 10 | 0.95 | 0.54 | 0.58 | 0.95 | 0.41 | 1 | 0.48 | 0.38 | 0.38 | 0.62 | 0.84 | 1.08 |
| Coliform | <400 | <2 | 1600 | 2 | <2 | 920 | 14 | 7 | <1.5 | 7 | 14 | <2 | <2 |
| Quarterly | | | | | | | | | | | | | |
| Total N | 15 | n/a | 3.1 | n/a | n/a | 2.6 | n/a | n/a | 0.6 | n/a | n/a | 2.6 | n/a |
| Total P | 2 | n/a | 1.35 | n/a | n/a | 0.97 | n/a | n/a | 0.35 | n/a | n/a | 0.61 | n/a |

## Borjomi OSRB

Samples from Borjomi and Tsalka OSRBs cannot be collected at the reed bed final discharge points. They are collected directly from the units' final chambers.

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD | 25 | 13 | 23 | 16 | 8 | 12 | 25 | 14 | 6 | 18 | 13 | 11 | 11 |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | n/a | n/a |
| TSS | 35 | 19 | 28 | 22 | 15 | 12 | 28 | 32 | 20 | 26 | 28 | 15 | 13 |
| NH4 | 10 | 1.06 | 1.62 | 1.18 | 1.04 | 0.79 | 1.5 | 1.28 | 0.47 | 0.69 | 0.75 | 0.36 | 0.52 |
| Quarterly | | | | | | | | | | | | | |
| Total N | 15 | n/a | 3.2 | n/a | n/a | 1.6 | n/a | n/a | 1.9 | n/a | n/a | 2.9 | n/a |
| Total P | 2 | n/a | 0.86 | n/a | n/a | 0.35 | n/a | n/a | 0.52 | n/a | n/a | 0.46 | n/a |
| Coliform | <400 | n/a | <2 | n/a | n/a | 22 | n/a | n/a | 13 | n/a | n/a | 4 | n/a |

## Tsalka OSRB

(Samples from Borjomi and Tsalka OSRBs cannot be collected at the final discharge points. They are collected directly from the units)

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOD | 25 | 11 | 16 | 19 | 16 | 21 | 16 | 18 | 16 | 13 | 14 | 21 | 21 |
| Oil and grease | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | n/a | n/a |
| TSS | 35 | 18 | 17 | 32 | 23 | 27 | 31 | 26 | 14 | 17 | 20 | 30 | 24 |
| NH4 | 10 | 0.63 | 0.72 | 0.48 | 0.77 | 1.83 | 2.1 | 2.08 | 1.55 | 1.2 | 1.06 | 0.68 | 0.72 |
| Quarterly | | | | | | | | | | | | | |
| Total N | 15 | n/a | 2.1 | n/a | n/a | 1.5 | n/a | n/a | 1.06 | n/a | n/a | 2.9 | n/a |
| Total P | 2 | n/a | 0.88 | n/a | n/a | 0.64 | n/a | n/a | 0.94 | n/a | n/a | 0.6 | n/a |
| Coliform | <400 | n/a | <2 | n/a | n/a | 33 | n/a | n/a | 17 | n/a | n/a | 11 | n/a |

*No water was observed at STP final chamber in January 2013.

## Oil and Grease in OWSs

| Parameters | Standards | Jan 2013 | Feb 2013 | Mar 2013 | Apr 2013 | May 2013 | Jun 2013 | Jul 2013 | Aug 2013 | Sep 2013 | Oct 2013 | Nov 2013 | Dec 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSG1 OSRB | 10 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| PSG 1 Camp | | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| PSG 2 Camp (1) | | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| PSG 2 Camp (2) | | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| PSG 2 Camp (Water Well) | | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| EDDF 1 | | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 |
| EDDF 2 | | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | <1.5 | <1.5 | <1.5 |

# Appendix 3.2e – Groundwater and Surface water

## Reports on seasonal rounds of monitoring:

## Round 17: June to July 2014

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1µg/L | Toluene 1µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10µg/L | C13-C22 10µg/L | C23-C30 10µg/L | C31-C40 10µg/L | C10-C40 10µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSG1MW2-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW3-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW4-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW5-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW6-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1SW1-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate1-R17 | 19/05/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW9_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW10_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW11_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW12_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW13_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW15_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW18_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW3_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW4_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW5_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW6_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW7_R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW14-R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW7-R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW8-R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW9-R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate2-R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW1-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW2-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW3-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW7-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1µg/L | Toluene 1µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10µg/L | C13-C22 10µg/L | C23-C30 10µg/L | C31-C40 10µg/L | C10-C40 10µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KTMW9-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW4-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW10-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW13-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW1_R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW2_R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW8_R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 3-R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW16-R17 | 03/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW17-R17 | 04/06/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW23- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW24- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW11-R17 | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW12-R17 | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW15-R17 | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW16a | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW17-R17 | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW2- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW20- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW6- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW7- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW12- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW13- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW19- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW21- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW22- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW1- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW4- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW6- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW7- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW8- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW11- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW18- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW1- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1µg/L | Toluene 1µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10µg/L | C13-C22 10µg/L | C23-C30 10µg/L | C31-C40 10µg/L | C10-C40 10µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSW2- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW3- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW4- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW15- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW18- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW20- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG2MW1- R17 | 23.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG2SW1- R17 | 23.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW6- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW1- R17 | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW2- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW3- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW4- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW10- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW14- R17 | 18.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW5- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW3- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW4- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW5- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW8- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW9- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW10- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW11- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW5- R17 | 17.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW10- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW13- R17 | 19.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 4- R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 5- R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 6- R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG2SW3- R17 | 23.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 7- R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 8- R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 9- R17 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsite1- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1µg/L | Toluene 1µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10µg/L | C13-C22 10µg/L | C23-C30 10µg/L | C31-C40 10µg/L | C10-C40 10µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rinsite2- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsite3- R17 | 26.06.14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

## Round 18: October to November 2014

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1 µg/L | Toluene 1 µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10 µg/L | C13-C22 10 µg/L | C23-C30 10 µg/L | C31-C40 10 µg/L | C10-C40 10 µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KTMW1-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW2-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW3-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW4-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW1-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW2-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW14-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW16-R18 | 23/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW3-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW4-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW5-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW6-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW7-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW8-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW9-R18 | 26/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate1-R18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 7-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 9-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 10-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 11-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 12-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 13-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 14-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 15-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 16a-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTMW 17-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1 µg/L | Toluene 1 µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10 µg/L | C13-C22 10 µg/L | C23-C30 10 µg/L | C31-C40 10 µg/L | C10-C40 10 µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KTSW 8-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 9-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 12-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 13-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 14-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 3- R 18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 15-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 16-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 17-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| KTSW 18-R 18 | 01/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 2- R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 3- R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 4- R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 5- R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 6-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 7-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 8-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 9-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 10-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BMW 11-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW 2-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW 10-R 18 | 30/09/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| BSW 1-R 18 | 02/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 2- R 18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW2- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW3- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW4- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW5- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG1MW6- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 4- R 18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsate 1- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsate 2- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsate 3- R 18 | 07/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW13-R 18 | 16/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

| Parameters/Method Detection Limits/ Sampling Points | Date | Benzene 1 µg/L | Toluene 1 µg/L | Ethylbenzene 1µg/L | Xylenes 1µg/L | BTEX | C10-C12 10 µg/L | C13-C22 10 µg/L | C23-C30 10 µg/L | C31-C40 10 µg/L | C10-C40 10 µg/L | Naphthalene 1µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSW15-R 18 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW18-R 18 | 17/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW19-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW20-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW21-R 18 | 16/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW22-R 18 | 16/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW24-R 18 | 16/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TSW23-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG2MW1-R 18 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG2SW1-R 18 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| PSG2SW3 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 5- R 18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 6- R 18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Duplicate 7- R 18 | n/a | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsate 4- R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| Rinsate 5- R 18 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW1-R 18 | 17/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW5-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW6-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW8-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW10-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW11-R 18 | 14/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW13-R 18 | 16/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW17-R 18 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |
| TMW18-R 18 | 15/10/14 | <0.2 | <0.2 | <0.2 | <0.5 | <1 | <0.2 | <10 | <10 | <10 | <10 | <50 |

T - Tsalka

SW - Surface Water

MW - Monitoring Well (groundwater)

KT - Ktsia Tabatskuri

B - Borjomi

## Non-Hazardous Landfill Groundwater monitoring 2014

| Parameters | Units | Area Background | MW 3 Q1 | MW 4 Q1 |
|---|---|---|---|---|
| **General** | | | | |
| pH | - | 7.3 | 7.95 | 7.70 |
| Electrical conductivity | µS/cm | 2,093 | 7,040 | 5,720 |
| Bicarbonate | mg/L | 173.2 | 226 | 107 |
| Carbonate | mg/L | <0.1 | <1.5 | <1.5 |
| SO4 | mg/L | 7,800 | 3,910 | 2,655 |
| Cl | mg/L | 2251 | 515 | 252 |
| Na | mg/L | 3,201 | 1,740 | 892 |
| NH4 | mg/L | <0.02 | <0.02 | <0.02 |
| Total cyanide | mg/L | <0.03 | <0.005 | <0.005 |
| **Heavy metals** | | | | |
| As | µg/L | <5 | <0.001 | <0.001 |
| B | µg/L | 3,750 | 3,966 | 1,835 |
| Cd | µg/L | <1 | <0.001 | <0.001 |
| Cr | µg/L | <20 | <0.001 | <0.001 |
| Cu | µg/L | 30 | <0.003 | <0.003 |
| Hg | µg/L | 0.024 | <0.002 | <0.002 |
| Pb | µg/L | <10 | <0.003 | <0.003 |
| Zn | µg/L | 48 | 0.018 | 0.011 |
| Se | µg/L | 28 | 0.014 | 0.016 |
| Ni | µg/L | 20 | 0.025 | 0.029 |
| **General organics** | | | | |
| Total organic carbon | mg/L | 88.5 | 8 | 5 |
| COD | mg/L | 235.6 | 21 | <4 |
| BOD | mg/L | 3.96 | 14 | <1 |
| Phenols | µg/L | <10 | <1 | <1 |
| TPH | | | | |
| Fraction C10-C12 | µg/L | n/a | <5 | <5 |
| Fraction C13-C22 | µg/L | n/a | <5 | <5 |
| Fraction C23-C30 | µg/L | n/a | <5 | <5 |
| Fraction C31-C40 | µg/L | n/a | <10 | <10 |
| Total C10-C40 | µg/L | n/a | <MDL | <MDL |
| Pesticides | | <10 | | |
| **Chlorinated** | | | | |
| p,p'- DDT | µg/L | | <0.025 | <0.025 |
| p,p'- DDD | µg/L | | <0.016 | <0.016 |
| p,p'- DDE | µg/L | | <0.008 | <0.008 |
| a-BHC | µg/L | | <0.005 | <0.005 |
| b-BHC | µg/L | | <0.007 | <0.007 |
| g-BHC(Lindan) | µg/L | | <0.005 | <0.005 |
| d-BHC | µg/L | | <0.006 | <0.006 |
| Aldrin | µg/L | | <0.005 | <0.005 |
| Endosulfan I | µg/L | | <0.011 | <0.011 |
| Dieldrin | µg/L | | <0.007 | <0.007 |
| Endrin | µg/L | | <0.007 | <0.007 |
| Endosulfan II | µg/L | | <0.010 | <0.010 |
| Endrin aldehyde | µg/L | | <0.025 | <0.025 |
| Endosulfan sulphate | µg/L | | <0.020 | <0.020 |
| Triazine Herbicides | | <50 | | |
| Atrazine | µg/L | | <5 | <5 |
| Desisopropyl atrazine | µg/L | | <10 | <10 |
| Desethyl atrazine | µg/L | | <5 | <5 |
| Ametryn | µg/L | | <10 | <10 |

| Parameters | Units | Area Background | MW 3 Q1 | MW 4 Q1 |
|---|---|---|---|---|
| Prometon | µg/L | | <5 | <5 |
| Simazine | µg/L | | <5 | <5 |
| Propazine | µg/L | | <5 | <5 |
| Simetryn | µg/L | | <5 | <5 |
| Prometryn | µg/L | | <5 | <5 |
| Terbutryn | µg/L | | <5 | <5 |
| Cyanazine | µg/L | | <5 | <5 |
| VOCs | | <100 | | |
| Benzene | µg/L | | <0.2 | <0.2 |
| Toluene | µg/L | | <0.1 | <0.1 |
| Ethylbenzene | µg/L | | <0.2 | <0.2 |
| p-Xylene | µg/L | | <0.2 | <0.2 |
| o-Xylene | µg/L | | <0.2 | <0.2 |
| m-Xylene | µg/L | | <0.2 | <0.2 |
| Isopropylbenzene | µg/L | | <0.2 | <0.2 |
| Dichloromethane | µg/L | | <0.2 | <0.2 |
| Trichlorofluoromethane | µg/L | | <0.2 | <0.2 |
| 1,1-Dichlorethene | µg/L | | <0.5 | <0.5 |
| Chloroform | µg/L | | <0.1 | <0.1 |
| 1,1,1-Trichloroethane | µg/L | | <0.2 | <0.2 |
| 1,2-Dichlorethane | µg/L | | <0.2 | <0.2 |
| Trichloroethene | µg/L | | <0.2 | <0.2 |
| 1,2-Dichloropropane | µg/L | | <0.2 | <0.2 |
| Bromodichloromethane | µg/L | | <0.1 | <0.1 |
| trans-1,3-Dichloropropene | µg/L | | <0.2 | <0.2 |
| cis-1,3-Dichloropropene | µg/L | | <0.5 | <0.5 |
| Ethane, 1,1,2-trichloro- | µg/L | | <0.3 | <0.3 |
| Tetrachloroethylene | µg/L | | <0.1 | <0.1 |
| Benzene, chloro- | µg/L | | <0.2 | <0.2 |
| Benzene, 1,2-dichloro- | µg/L | | <0.1 | <0.1 |
| Benzene, 1,4-dichloro- | µg/L | | <0.1 | <0.1 |
| Benzene, 1,3-dichloro- | µg/L | | <0.1 | <0.1 |
| Epichlorohydrin | µg/L | | <0.2 | <0.2 |
| Vinyl chloride | µg/L | | <0.2 | <0.2 |
| SVOCs | | <100 | | |
| Acenaphthene | µg/L | | <0.07 | <0.07 |
| Acenaphthylene | µg/L | | <0.1 | <0.1 |
| Anthracene | µg/L | | <0.02 | <0.02 |
| Benz[a]anthracene | µg/L | | <0.01 | <0.01 |
| Benzo[a]pyrene | µg/L | | <0.01 | <0.01 |
| Benzo[b]fluoranthene | µg/L | | <0.02 | <0.02 |
| Benzo[k]fluoranthene | µg/L | | <0.02 | <0.02 |
| Benzo[ghi]perylene | µg/L | | <0.05 | <0.05 |
| Benzyl butyl phthalate | µg/L | | <0.1 | <0.1 |
| Bis(2-ethylhexyl) phthalate | µg/L | | <0.1 | <0.1 |
| Chrysene-d12 | µg/L | | <0.1 | <0.1 |
| Chrysene | µg/L | | <0.04 | <0.04 |
| Di-n-butyl phthalate | µg/L | | <0.1 | <0.1 |
| Di-n-octyl phthalate | µg/L | | <0.1 | <0.1 |
| Dibenz[a,h]anthracene | µg/L | | <0.03 | <0.03 |
| Diethyl phthalate | µg/L | | <0.1 | <0.1 |
| Dimethyl phthalate | µg/L | | <0.1 | <0.1 |
| Fluoranthrene | µg/L | | <0.04 | <0.04 |
| Fluorene | µg/L | | <0.1 | <0.1 |
| Indeno[1,2,3-cd]pyrene | µg/L | | <0.03 | <0.03 |
| Naphthalene | µg/L | | <0.07 | <0.07 |
| Perylene-d12 | µg/L | | <0.1 | <0.1 |

| Parameters | Units | Area Background | MW 3 Q1 | MW 4 Q1 |
|---|---|---|---|---|
| Phenanthrene-d10 | µg/L | | <0.1 | <0.1 |
| Phenanthrene | µg/L | | <0.06 | <0.06 |
| Pyrene | µg/L | | <0.1 | <0.1 |

DDT - p,p'- dichlorodiphenyltrichloroethane

DDD - p,p'- Dichlorodiphenyldichloroethane

DDE - p,p'- Dichlorodiphenyldichloroethylene

BHC - a- Benzene hexachloride

# Appendix 3.2f – GHG emissions

## GHG Emissions in 2014 (tonnes)

| GHG | BTC Actual | BTC Forecast |
|---|---|---|
| January | 18,396 | |
| February | 17,412 | |
| March | 19,001 | |
| 2014-Q1 | 54,809 | 86,819 |
| April | 19,386 | |
| May | 20,715 | |
| June | 15,803 | |
| 2014-Q2 | 55,904 | 86,819 |
| July | 18,845 | |
| August | 18,907 | |
| September | 15,921 | |
| 2014-Q3 | 53,672 | 86,819 |
| October | 17,251 | |
| November | 14,342 | |
| December | 18,825 | |
| 2014-Q4 | 50,418 | 86,819 |

# Appendix 3.2g – Waste

## A summary of waste generated in 2014 is provided in the table below

| Type of Waste ($m^3$) | PSG 1 (Site and camp) | PSG 2 (Site and camp) | BVs | NRC | | |
|---|---|---|---|---|---|---|
| | | | | Tsalka | Borjomi | Rustavi and Tbilisi office |
| **Hazardous waste disposed Off-site** | | | | | | |
| Oily solids | 56.5 | 41.9 | 0 | 2.6 | 0.8 | 0.7 |
| Oily liquids | 15 | 11.6 | 0 | 5.1 | 0.4 | 0 |
| Sewage sludge | 310 | 119 | 0 | 0 | 0 | 0 |
| Wax | 1.2 | 1.4 | 0 | 0 | 0 | 0 |
| Non-hazardous Waste Recycled/Recovered Offsite | | | | | | |
| Plastic (recycled) | 82.3 | 22 | 3.4 | 2.9 | 7.1 | 1 |
| Paper (recycled) | 166 | 24 | 9.4 | 1.2 | 11 | 82 |
| Metal (recycled) | 27.8 | 5.4 | 0 | 2.5 | 14 | 0 |
| Wood | 25 | 1.8 | 0 | 0 | 0 | 0 |
| Organic wastes (food wastes) | 59.4 | 11.4 | 0 | 0 | 0 | 0 |
| General | 310 | 440 | 12.3 | 4.9 | 6.6 | 403 |

# APPENDIX 3.2: TURKEY

## Appendix 3.2a – Ambient Air Quality

### Air Quality Standards for Ground Level Concentrations (µg/m$^3$)

| Parameter | Project Standards (Turkey) | Averaging Period |
|---|---|---|
| VOCs | Benzene: 5 | Annual average by 2010. A limit value of 10 µg/m3 (100%) must be met on 13 December 2000, reducing on 1 January 2006 and every 12 months thereafter by 1 µg/m3 to reach 0% (5 µg/m3) by 1 January 2010. |
| Oxides of Nitrogen ($NO_x$) | 40 | Annual mean. |
| $SO_2$ | 20 | 24 hour average. |

NOTE: Figures in red show non-compliance with project standards.

### Ceyhan Marine Terminal Average Measurements 2013

| No. | Monitoring Date | Average Ambient Concentrations (µg/m$^3$) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | $SO_2$ | NOx | Benzene | Toluene | Ethyl Benzene | mp-xylene | o- xylene |
| **CMT 1** | Mar-Jun-Sep-Dec 2013 | n/a | n/a | 0,05 | 0,55 | 0,09 | 0,36 | 2,20 |
| **CMT 2** | | 8,79 | 9,38 | 0,22 | 0,58 | 0,08 | 0,29 | 1,19 |
| **CMT 3** | | 8,66 | 34,12 | 0,15 | 0,65 | 0,15 | 0,46 | 1,99 |
| **CMT 3D** | | 4,55 | 6,27 | n/a | n/a | n/a | n/a | n/a |
| **CMT 4** | | n/a | n/a | 0,10 | 0,76 | 0,08 | 0,28 | 1,68 |
| **CMT 4D** | | n/a | n/a | 0,13 | 0,57 | 0,07 | 0,31 | 1,85 |
| **CMT 5** | | 13,51 | 10,78 | 0,22 | 0,57 | 0,07 | 0,26 | 1,72 |
| **CMT 7** | | n/a | n/a | 0,24 | 0,30 | 0,06 | 0,28 | 1,83 |
| **CMT 8** | | 16,71 | 17,73 | 0,10 | 0,53 | 0,07 | 0,24 | 2,26 |
| **CMT 10** | | n/a | n/a | 0,26 | 3,10 | 0,25 | 0,56 | 2,00 |

## Appendix 3.2b – Stack Emissions

### Stack Emission Standards

| Emission Stream Sources | Parameters | Project Specified Standard |
|---|---|---|
| 5 MW Reciprocating engines (gas fired) (PTs 1, 2, 3 and 4) | $NO_x$<br>$SO_2$<br>CO<br>PM | 500 mg/Nm$^3$ (5% Volumetric $O_2$)<br>60 mg/Nm$^3$ (5% Volumetric $O_2$)<br>650 mg/Nm$^3$ (5% Volumetric $O_2$)<br>130 mg/Nm$^3$ (5% Volumetric $O_2$) |
| Water Heaters (diesel fired) (Wax Handling Boilers at CMT, IPT1 and IPT2) | NOx<br>$SO_2$<br>CO<br>Soot | 460 mg/Nm$^3$ (3% Volumetric $O_2$)<br>1.000 mg/Nm$^3$ (3% Volumetric $O_2$)<br>150 mg/Nm$^3$ (3% Volumetric $O_2$)<br>2 |
| Water Heaters (gas and LPG fired) (CMT, PTs 1, 2, 3 and 4) | $NO_x$<br>$SO_2$<br>CO<br>PM | 320 mg/Nm$^3$ (3% Volumetric $O_2$)<br>100 mg/Nm$^3$ (3% Volumetric $O_2$)<br>100 mg/Nm$^3$ (3% Volumetric $O_2$)<br>10 mg/Nm$^3$ (3% Volumetric $O_2$) |
| Generators/Fire pumps (diesel fired) (monitored only if the annual run time is < 500 hrs) | $NO_x$<br>$SO_2$<br>Soot<br>CO<br>PM | 460 mg/Nm$^3$ (3% Volumetric $O_2$)<br>1.000 mg/Nm$^3$ (3% Volumetric $O_2$)<br>2<br>250 mg/Nm$^3$ (15% Volumetric $O_2$)<br>75 mg/Nm$^3$ (15% Volumetric $O_2$) |

## Stack Emission Monitoring Results for Pump Stations

| 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 |
| ***PT 1*** | | | | | | | | | |
| **Date of monitoring** | | | | | 21-22.05.2014 | | | | |
| **Monitoring result** | $NO_x$ | 225.57 | 230.14 | 251.45 | 294.94 | 282.57 | 136.28 | 177.79 | 122.89 |
| | $SO_2$ | 3.7 | 5.43 | < L.O.D. | < L.O.D. | 0 | 4.15 | < L.O.D. | 3.74 |
| | PM | 6.48 | 5.47 | 8.07 | 8.55 | 8.4 | 4.74 | 3.41 | 5.85 |
| | CO | 56.54 | 56.98 | 44.83 | 54.53 | 49.02 | 3.64 | 1.33 | 10.38 |
| ***PT 2*** | | | | | | | | | |
| **Date of monitoring** | | | | | 24-25.02.2014 | | | | |
| **Monitoring result** | $NO_x$ | 222.85 | 169.11 | - | 190.68 | | 129.25 | 133.80 | 129.42 |
| | $SO_2$ | < L.O.D. | < L.O.D. | - | < L.O.D. | | < L.O.D. | < L.O.D. | < L.O.D. |
| | PM | 8.35 | 7.32 | - | 8.5 | | 6.16 | 9.06 | 4.36 |
| | CO | 36.46 | 31.47 | - | 23.7 | | 0 | < L.O.D. | 16.73 |
| ***PT 3*** | | | | | | | | | |
| **Date of monitoring** | | | | | 26-27.05.2014 | | | | |
| **Monitoring result** | $NO_x$ | 129.08 | 293.22 | 233.29 | 227.6 | 375.78 | 111.02 | 103.22 | 107.13 |
| | $SO_2$ | < L.O.D. | < L.O.D. | < L.O.D. | < L.O.D. | < L.O.D. | < L.O.D. | < L.O.D. | < L.O.D. |
| | PM | 10.04 | 9.33 | 6.39 | 5.8 | 5.57 | 4.44 | 4.61 | 4.39 |
| | CO | 74.6 | 33.2 | 70 | 66.24 | 55.04 | 1.8 | < L.O.D. | 3.7 |
| ***PT 4*** | | | | | | | | | |
| **Date of monitoring** | | | | | 30-31.05.2015 | | | | |
| **Monitoring result** | $NO_x$ | 258.82 | 289.4 | 370.28 | 307.33 | | 129.66 | 98.61 | 162.91 |
| | $SO_2$ | < L.O.D. | < L.O.D. | < L.O.D. | < L.O.D. | | < L.O.D. | < L.O.D. | < L.O.D. |
| | PM | 6.71 | 6.89 | 7.02 | 7.21 | | 7.67 | 4.38 | 7.34 |
| | CO | 8.8 | 10.41 | 12.83 | 6.77 | | < L.O.D. | 8.41 | < L.O.D. |

## Stack Emission Monitoring Results for Intermediate Pigging and Pressure Reduction Station

| Facility | Parameter | Emission Source |
|---|---|---|
| | | Wax Handling Water Heater |
| **IPT 1** | | |
| **Date of monitoring** | | 04 Nov 2013 |
| | $NO_x$ | 141.18 |
| | $SO_2$ | < L.O.D. |
| | soot | 1 |
| **Monitoring result** | CO | < L.O.D. |
| **IPT 2** | | |
| **Date of monitoring** | | 23.05.2014 |
| | $NO_x$ | 105.26 |
| | $SO_2$ | < L.O.D. |
| | soot | 1 |
| **Monitoring result** | CO | < L.O.D. |

## Stack Emission Monitoring Results for Ceyhan Marine Terminal

| Facility | Parameter | Emission Source | | | |
|---|---|---|---|---|---|
| | | General Facilities LPG Water Heater 1 | General Facilities LPG Water Heater 2 | Housing Compound LPG Water Heater | Process Area LPG Water Heater |
| ***CMT*** | | | | | |
| **Date of monitoring** | | | **02.06.2014** | | |
| | $NO_x$ | 138.54 | 140.41 | 144.43 | 143.42 |
| | $SO_2$ | 3.16 | 1.54 | 2.91 | 2.82 |
| | PM | 5.02 | 6.15 | 4.18 | 5.56 |
| **Monitoring result** | CO | 3.41 | 2.6 | 3.18 | 4.46 |

# Appendix 3.2c – Aqueous Discharges

## Aqueous Discharge Standards

| Waste Stream Sources | Parameters | Project Specified Standard |
|---|---|---|
| Aqueous discharges to surface and marine waters from OWSs | All limits 95$^{th}$ percentiles of annual operational hours. | |
| | pH | pH |
| | Oil and grease | Oil and grease |
| | Total suspended solids | Total suspended solids |
| | *Metals* | |
| | Heavy metals, total | Heavy metals, total |
| | Cd | Cd |
| | Cr total | Cr total |
| | Cu | Cu |
| | Pb | Pb |
| | Hg | Hg |
| | Ni | Ni |
| | Zn | Zn |
| | $NH_4$ | $NH_4$ |
| | Phenols | Phenols |
| | Sulphur | Sulphur |
| Aqueous discharges to surface waters from STPs | pH | pH |
| | BOD | BOD |
| | COD | COD |
| | Oil and grease | Oil and grease |
| | Total suspended solids | Total suspended solids |
| | Chlorine, total residual | Chlorine, total residual |
| | Coliform bacteria | Coliform bacteria |

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

Table Notes:

1. When it is stated ‘not monitored’ it means that the monitoring period was missed by BIL.
2. When it is stated that there is ‘no flow’ it means that the water could not be sampled since there was no flow at the time of monitoring.
3. When it is stated ‘not in programme’ it means that the monitoring frequency was reduced to quarterly from monthly in line with the EEMP.
4. As per EEMP, for OWSs, metals, phenols and sulphur will be monitored on a quarterly basis for one year to determine compliance with project standards. If standards are exceeded on these occasions follow-up monitoring will be undertaken as necessary. During 2008 quarterly OWS monitoring, it was seen that there were some exceedances of sulphur; thus quarterly sulphur monitoring continued in 2009, 2010 and Q2 2011. Since they were compliant no further monitoring was planned for 2012.

## PT 1 Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ops WWTP (new)** | | | | | | | | | | | | |
| pH | 7,3 | Not Monitored | 7,6 | Not Monitored | 7,4 | Not Monitored | 7,1 | Not Monitored | 6,6 | Not Monitored | 8,0 | 8,8 |
| BOD (mg/l) | 4 | | 8,8 | | 4 | | 20 | | 4 | | 15 | 31 |
| COD (mg/l) | 48 | | 20,0 | | 20 | | 112 | | 38 | | 66 | 97 |
| Oil and grease (mg/l) | 5,0 | | 5,0 | | 5,0 | | 5 | | 5,0 | | 5,0 | 5,0 |
| TSS (mg/l) | 5 | | 4,0 | | 3 | | 4 | | 3 | | 5 | 7 |
| Total residual chlorine (mg/l) | 0,15 | | 0,1 | | 0,10 | | 0,12 | | 0,12 | | 0,12 | 0,11 |
| Coliform bacteria | 3 | | 0,0 | | 0 | | 0 | | 3 | | 3 | 3 |
| **SWP** | | | | | | | | | | | | |
| pH | Pond was Frozen | | | 8 | Not Monitored | | | 9 | Not Monitored | | 8,1 | Not Monitored |
| BOD (mg/l) | | | | 4 | | | | 22 | | | 24 | |
| COD (mg/l) | | | | 20,0 | | | | 118 | | | 86 | |
| Oil and grease (mg/l) | | | | 5 | | | | 5 | | | 5,0 | |
| TSS (mg/l) | | | | 4,8 | | | | 49 | | | 20 | |
| Total residual chlorine (mg/l) | | | | 0,1 | | | | 0,08 | | | 0,18 | |
| Coliform bacteria | | | | 0,0 | | | | 0 | | | 3 | |
| **OWS** | | | | | | | | | | | | |
| pH | Not Monitored | Not in Programme | 8,3 | Not in Programme | | | 8,9 | Not in Programme | | | 8,2 | Not in Programme |
| Oil and grease (mg/l) | | | 5,6 | | | | 7,8 | | | | 5,0 | |
| TSS (mg/l) | | | 17,2 | | | | 2,0 | | | | 21,2 | |

## PT 2 Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ops WWTP** | | | | | | | | | | | | |
| pH | 7,8 | 7,7 | 7,25 | 8,19 | 8,09 | 7,98 | 8,05 | 7,94 | 7,70 | 7,95 | 7,85 | 8,8 |
| BOD (mg/l) | 9,7 | 12,7 | 4,0 | 8 | 11,4 | 4 | 12,4 | 16,6 | 4 | 4,0 | 5 | 11,0 |
| COD (mg/l) | 55,8 | 42,0 | 20,0 | 20 | 50,1 | 20 | 61,8 | 100,0 | 26,7 | 20,0 | 20,0 | 35 |
| Oil and grease (mg/l) | 5 | 5 | 5,0 | 5 | 5 | 5 | 5 | 5 | 5 | 5,0 | 5,0 | 5 |
| TSS (mg/l) | 9 | 25 | 4,0 | 2 | 3 | 2 | 2 | 18 | 6 | 5,6 | 2,4 | 3 |
| Total residual chlorine (mg/l) | 0,14 | 0,14 | 0,15 | 0,11 | 0,13 | 0,11 | 0,15 | 0,14 | 1,70 | 0,05 | 0,11 | 0,11 |
| Coliform bacteria | 3 | 3 | 0 | 0 | 0 | 0 | 0,0 | 0,00 | 0 | 0 | 3 | 3 |
| **SWP** | | | | | | | | | | | | |
| pH | Pond was Frozen | | | 8,50 | 8,57 | 8,14 | 8,98 | 8,6 | 9,92 | 8,99 | 8,14 | 8,9 |
| BOD (mg/l) | | | | 26 | 33,8 | 7,6 | 24 | 16,4 | 19,2 | 5,6 | 4 | 11,7 |
| COD (mg/l) | | | | 77,3 | 152,8 | 20 | 111,2 | 88,2 | 67,5 | 20,8 | 20,0 | 32,3 |
| Oil and grease (mg/l) | | | | 5 | 5 | 5 | 5 | 5,0 | 5 | 5,0 | 5,0 | 5 |
| TSS (mg/l) | | | | 51 | 68 | 7 | 8,4 | 29,0 | 4,0 | 4 | 22,0 | 2,0 |
| Total residual chlorine (mg/l) | | | | 0,14 | 0,15 | 0,15 | 0,15 | 0 | 0,08 | 0,02 | 0,05 | 0,09 |
| Coliform bacteria | | | | 0 | 0 | 0 | 0 | 200 | 22 | 0 | 3 | 3 |
| **SWP upstream** | | | | | | | | | | | | |
| pH | No Flow | | | | | | | | | | | |
| BOD (mg/l) | | | | | | | | | | | | |
| COD (mg/l) | | | | | | | | | | | | |
| Oil and grease (mg/l) | | | | | | | | | | | | |
| TSS (mg/l) | | | | | | | | | | | | |
| Total residual chlorine (mg/l) | | | | | | | | | | | | |
| Coliform bacteria | | | | | | | | | | | | |
| **SWP downstream** | | | | | | | | | | | | |
| pH | No Flow | | | | | | | | | | | |
| BOD (mg/l) | | | | | | | | | | | | |
| COD (mg/l) | | | | | | | | | | | | |
| Oil and grease (mg/l) | | | | | | | | | | | | |
| TSS (mg/l) | | | | | | | | | | | | |
| Total residual chlorine (mg/l) | | | | | | | | | | | | |
| Coliform bacteria | | | | | | | | | | | | |
| **OWS** | | | | | | | | | | | | |
| pH | Not Monitored | Not in Programme | | 8,45 | Not in Programme | | 7,8 | Not in Programme | | | 8,3 | Not in Programme |
| Oil and grease (mg/l) | | | | 5,0 | | | 19,2 | | | | 5,0 | |
| TSS (mg/l) | | | | 11,2 | | | 6,8 | | | | 20,4 | |

## PT 3 Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ops WWTP (new)** | | | | | | | | | | | | |
| pH | 7,52 | 8 | 7,98 | 7,87 | 8,05 | 7,95 | 8,14 | 7,92 | 7,71 | 8,20 | 8,12 | 8,5 |
| BOD (mg/l) | 5 | 10 | 10 | 4 | 4 | 4 | 12,2 | 4 | 15,9 | 22,6 | 4 | 33 |
| COD (mg/l) | 34 | 39 | 40,1 | 20 | 20 | 20 | 85,3 | 40 | 67,5 | 99,6 | 20,0 | 167,0 |
| Oil and grease (mg/l) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| TSS (mg/l) | 8,4 | 6,0 | 10 | 2 | 6 | 2 | 7 | 6 | 14 | 17 | 6,0 | 38,80 |
| Total residual chlorine (mg/l) | 0,16 | 0,09 | 0,13 | 0,11 | 0,11 | 0,11 | 0,12 | 0,12 | 0,16 | 0,09 | 0,12 | 0,08 |
| Coliform bacteria | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | > 1100 | 3 | 3 |
| **SWP** | | | | | | | | | | | | |
| pH | No Flow | | | | | | | | | | 8,00 | 8,8 |
| BOD (mg/l) | | | | | | | | | | | 7 | 27,9 |
| COD (mg/l) | | | | | | | | | | | 23,8 | 150,9 |
| Oil and grease (mg/l) | | | | | | | | | | | 5,0 | 5,00 |
| TSS (mg/l) | | | | | | | | | | | 5,2 | 43,00 |
| Total residual chlorine (mg/l) | | | | | | | | | | | 0,03 | 0,13 |
| Coliform bacteria | | | | | | | | | | | 3 | 3 |
| **OWS** | | | | | | | | | | | | |
| pH | Not Monitored | Not in Programme | 8,08 | Not in Programme | | | 8,2 | Not in Programme | | | 8,14 | Not in Programme |
| Oil and grease (mg/l) | | | 5,0 | | | | 5,0 | | | | 5,0 | |
| TSS (mg/l) | | | 4,8 | | | | 8,0 | | | | 2,0 | |

## PT 4 Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ops WWTP** | | | | | | | | | | | | |
| pH | 8,0 | Not Monitored | 7,1 | Not Monitored | | | 8,98 | Not Monitored | | | 7,94 | Not Monitored |
| BOD (mg/l) | 5,4 | | 5,2 | | | | 10 | | | | 4 | |
| COD (mg/l) | 36,4 | | 37,3 | | | | 85,3 | | | | 43,6 | |
| Oil and grease (mg/l) | 5,0 | | 5,0 | | | | 5 | | | | 5,0 | |
| TSS (mg/l) | 3,2 | | 5,6 | | | | 4 | | | | 9,2 | |
| Total residual chlorine (mg/l) | 0,2 | | 0,13 | | | | 0,10 | | | | 0,11 | |
| Coliform bacteria | 0 | | 5 | | | | 3 | | | | 240 | |
| **SWP** | | | | | | | | | | | | |
| pH | Not Monitored | | 7,5 | 8,97 | 7,78 | 7,15 | 8,94 | 8,22 | 8,5 | 9,39 | 8,42 | 7,95 |
| BOD (mg/l) | | | 20,4 | 38,9 | 28,2 | 10,6 | 24,00 | 24,7 | 27,4 | 22,1 | 11 | 12,1 |
| COD (mg/l) | | | 65,9 | 117,3 | 120,2 | 67,7 | 111,2 | 138,1 | 140,0 | 82,1 | 80,3 | 57,7 |
| Oil and grease (mg/l) | | | 5,0 | 5,0 | 5 | 5 | 5 | 5 | 5 | 5 | 5,6 | 5,00 |
| TSS (mg/l) | | | 18,0 | 51 | 30 | 49 | 8,4 | 33 | 35 | 20 | 15,2 | 13,6 |
| Total residual chlorine (mg/l) | | | 0,1 | 0,12 | 0,15 | 0,13 | 0,2 | 0,13 | 0,11 | 0,04 | 0,05 | 0,1 |
| Coliform bacteria | | | 0 | 23 | 3 | 3 | 3 | 1.100 | 3 | 1.100 | 1.100 | 3 |
| **OWS** | | | | | | | | | | | | |
| pH | Not Monitored | Not in Programme | 7,8 | Not in Programme | | | 8,5 | Not in Programme | | | 8,4 | Not in Programme |
| Oil and grease (mg/l) | | | 5,0 | | | | 31,2 | | | | 5,0 | |
| TSS (mg/l) | | | 18,0 | | | | 21,0 | | | | 13,2 | |

## IPT 1 Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ops WWTP** | | | | | | | | | | | | |
| pH | 7,38 | 8 | 7,69 | 7,84 | 7,61 | 6,52 | 7,61 | 7,53 | 7,34 | 7,36 | 7,86 | 7,30 |
| BOD (mg/l) | 4 | 8 | 4 | 10 | 4 | 6,1 | 4,0 | 4 | 4 | 4 | 4 | 7 |
| COD (mg/l) | 20 | 28 | 20,0 | 20,1 | 20 | 21 | 47,1 | 40 | 55,8 | 20 | 20,0 | 32,3 |
| Oil and grease (mg/l) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5,8 | 5,00 |
| TSS (mg/l) | 2,8 | 2 | 2 | 2 | 6,8 | 14,1 | 12 | 2 | 8 | 5 | 9,2 | 2,00 |
| Coliform bacteria | 3 | 447 | 78 | > 1100 | 3 | 3 | 3 | 3 | 23 | 3 | 3 | 3 |
| **OWS** | | | | | | | | | | | | |
| pH | Not Monitored | Not in Programme | 8,0 | Not in Programme | | | 8,1 | Not in Programme | | | 8,1 | Not in Programme |
| Oil and grease (mg/l) | | | 5,0 | | | | 5,0 | | | | 5,0 | |
| TSS (mg/l) | | | 2,0 | | | | 5,0 | | | | 2,0 | |

## IPT 2 Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OWS** | | | | | | | | | | | | |
| pH | Not Monitored | | 7,8 | Not Monitored | | | 7,6 | Not Monitored | | | 8,6 | Not Monitored |
| Oil and grease (mg/l) | | | 7,0 | | | | 2,0 | | | | 5,0 | |
| TSS (mg/l) | | | 16,8 | | | | 6,0 | | | | 8,8 | |

## CMT Aqueous Discharges Monitoring Results

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ops WWTP** | | | | | | | | | | | | |
| pH | 8,1 | 7,9 | 7,7 | 7,8 | 8,3 | 6,3 | 8,2 | 7,7 | 7,27 | 7,50 | 8,0 | 8,2 |
| BOD (mg/l) | 4 | 4,0 | 4,0 | 4 | 4 | 5,5 | 4,00 | 9,4 | 14,9 | 4,8 | 4,0 | 6,6 |
| COD (mg/l) | 25 | 20,0 | 20,0 | 20 | 20 | 20 | 44,2 | 70,6 | 87,9 | 29,6 | 26,6 | 32,3 |
| Oil and grease (mg/l) | 5 | 5 | 5,0 | 5 | 5 | 5 | 5 | 5 | 5,0 | 5,0 | 5,0 | 5,00 |
| TSS (mg/l) | 2,0 | 7 | 2,0 | 4 | 5 | 3 | 2 | 8 | 12 | 4 | 4,8 | 2,00 |
| Total residual chlorine (mg/l) | 0,1 | 0,1 | 0,1 | 0,1 | 0,2 | 0,2 | 0,1 | 0,1 | 0,1 | 0,11 | 0,1 | 0,12 |
| Coliform bacteria | 3 | 3 | 3,0 | 3 | 3 | 3 | 3 | 3 | 1.100 | 23 | 3,0 | 3 |
| **Construction WWTP** | | | | | | | | | | | | |
| pH | 7,7 | 7,8 | 7,8 | 7,6 | 8,6 | 6,2 | 8,4 | 7,5 | 7,64 | 7,51 | 7,8 | 8,8 |
| BOD (mg/l) | 9 | 7 | 4,0 | 7 | 4 | 6 | 5 | 5 | 4,0 | 4,0 | 4,2 | 5,2 |
| COD (mg/l) | 36 | 31 | 20,0 | 75 | 20 | 59 | 30 | 40 | 32,5 | 20,0 | 29,5 | 26,7 |
| Oil and grease (mg/l) | 5 | 5 | 5,0 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5,0 | 5,00 |
| TSS (mg/l) | 4 | 6 | 3,2 | 2 | 2 | 3 | 9,2 | 2 | 2 | 3 | 2,0 | 6,40 |
| Total residual chlorine (mg/l) | 0,2 | 0,2 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 1,1 | 0,13 | 0,05 | 0,08 | 0,16 |
| Coliform bacteria | 3 | 3 | 3,0 | 3 | 3 | 3 | 3 | 3 | 1.100 | 3 | 3,0 | 3 |
| **SWP** | | | | | | | | | | | | |
| pH | 8,5 | Not Monitored | | | | | | | | 8,98 | Not Monitored | 8,84 |
| BOD (mg/l) | 14 | | | | | | | | | 87,8 | | 17,6 |

| | Jan 14 | Feb 14 | March 14 | April 14 | May 14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COD (mg/l) | 39 | | | | | | | | | 350,4 | | 46,4 |
| Oil and grease (mg/l) | 5 | | | | | | | | | 5,0 | | 5,00 |
| TSS (mg/l) | 2 | | | | | | | | | 124 | | 6 |
| Total residual chlorine (mg/l) | 0,1 | | | | | | | | | 0,01 | | 0,10 |
| Coliform bacteria | 1.100 | | | | | | | | | >1100 | | 23 |
| **SWP upstream** | | | | | | | | | | | | |
| pH | No Flow | | | | | | | | | | | |
| BOD (mg/l) | | | | | | | | | | | | |
| COD (mg/l) | | | | | | | | | | | | |
| Oil and grease (mg/l) | | | | | | | | | | | | |
| TSS (mg/l) | | | | | | | | | | | | |
| Total residual chlorine (mg/l) | | | | | | | | | | | | |
| Coliform bacteria | | | | | | | | | | | | |
| **SWP downstream** | | | | | | | | | | | | |
| pH | No Flow | | | | | | | | | | | |
| BOD (mg/l) | | | | | | | | | | | | |
| COD (mg/l) | | | | | | | | | | | | |
| Oil and grease (mg/l) | | | | | | | | | | | | |
| TSS (mg/l) | | | | | | | | | | | | |
| Total residual chlorine (mg/l) | | | | | | | | | | | | |
| Coliform bacteria | | | | | | | | | | | | |
| **OWS 1&2 (office and housing compounds)** | | | | | | | | | | | | |
| pH | Not Monitored | | 8,3 | Not Monitored | | | 11,0 | 9,6 | Not Monitored | 8,07 | Not Monitored | |
| Oil and grease (mg/l) | | | 5,0 | | | | 5,6 | 5,0 | | 5,6 | | |
| TSS (mg/l) | | | 3,6 | | | | 20,6 | 26,4 | | 33,6 | | |
| **OWS 3 (process area)** | | | | | | | | | | | | |
| pH | Not Monitored | | | | | | | | | | | |
| Oil and grease (mg/l) | | | | | | | | | | | | |
| TSS (mg/l) | | | | | | | | | | | | |
| **OWS 4 (tank farm)** | | | | | | | | | | | | |
| pH | 8,4 | 8,3 | 8,3 | 8,8 | 8,8 | 6,3 | 8,90 | Not Monitored | | 8,47 | Not Monitored | 8,3 |
| Oil and grease (mg/l) | 5,0 | 5,0 | 5,0 | 5,0 | 5,0 | 5,0 | 5,0 | | | 5,0 | | 5,0 |
| TSS (mg/l) | 2,0 | 2,0 | 2,0 | 2,0 | 2,0 | 2,2 | 2,0 | | | 2,80 | | 2,0 |
| **OWS 5 (metering area)** | | | | | | | | | | | | |
| pH | Not Monitored | Not in Programme | Not Monitored | Not in Programme | | | 7,7 | Not in Programme | | | Not Monitored | Not in Programme |
| Oil and grease (mg/l) | | | | | | | 5,0 | | | | | |
| TSS (mg/l) | | | | | | | 2,0 | | | | | |
| **OWS 6 (jetty 1)** | | | | | | | | | | | | |
| pH | Not Monitored | | 8,0 | Not Monitored | | | 8,1 | Not Monitored | | | 8,60 | Not Monitored |
| Oil and grease (mg/l) | | | 5 | | | | 5,0 | | | | 6,40 | |
| TSS (mg/l) | | | 2,00 | | | | 2,0 | | | | 5,00 | |
| **OWS 7 (jetty 2)** | | | | | | | | | | | | |
| pH | Not Monitored | | 7,9 | Not Monitored | | | 8,1 | Not Monitored | | | 8,52 | Not Monitored |
| Oil and grease (mg/l) | | | 5,00 | | | | 5,0 | | | | 6,60 | |
| TSS (mg/l) | | | 3,2 | | | | 8,0 | | | | 4,00 | |

# Appendix 3.2d – Waste

## Total Waste Volumes 2014 (kg)

| *All figures are in kg* | Jan 14 | Feb 14 | March 14 | April 14 | May.14 | June 14 | July 14 | Aug 14 | Sep 14 | Oct 14 | Nov 14 | Dec 14 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PT1&IPT2** | | | | | | | | | | | | | |
| Domestic waste | 892 | 1.029 | 1.634 | 904 | 1.706 | 1.398 | 1.167 | 1.164 | 1.199 | 1.262 | 1.087 | 2.417 | **15.859** |
| Food waste | 520 | 1.314 | 576 | 1.130 | 2.100 | 1.861 | 1.318 | 1.476 | 1.708 | 1.400 | 860 | 2.750 | **17.013** |
| Recyclable waste | 1.251 | 1.720 | 2.507 | 1.376 | 1.056 | 592 | 659 | 434 | 729 | 515 | 538 | 1.581 | **12.958** |
| Hazardous waste | 146 | 276 | 287 | 283 | 25 | 318 | 949 | 441 | 401 | 1.034 | 555 | 200 | **4.915** |
| **PT2** | | | | | | | | | | | | | |
| Domestic waste | 2.095 | 1.742 | 1.787 | 1.628 | 1.693 | 1.368 | 1.415 | 1.545 | 1.310 | 1.339 | 1.404 | 1.201 | **18.527** |
| Food waste | 1.967 | 1.851 | 1.726 | 1.874 | 1.429 | 1.292 | 574 | 1.474 | 1.533 | 1.604 | 1.894 | 1.525 | **18.743** |
| Recyclable waste | 685 | 537 | 497 | 512 | 661 | 514 | 439 | 461 | 197 | 528 | 759 | 523 | **6.313** |
| Hazardous waste | 58 | 138 | 292 | 59 | 101 | 95 | 55 | 4 | 155 | 170 | 245 | 105 | **1.476** |
| **PT3** | | | | | | | | | | | | | |
| Domestic waste | 836 | 990 | 1.199 | 861 | 802 | 697 | 741 | 660 | 695 | 556 | 528 | 836 | **9.401** |
| Food waste | 528 | 865 | 1.006 | 853 | 724 | 630 | 625 | 506 | 503 | 480 | 481 | 528 | **7.729** |
| Recyclable waste | 263 | 582 | 651 | 549 | 472 | 412 | 429 | 436 | 504 | 211 | 216 | 263 | **4.988** |
| Hazardous waste | 128 | 229 | 465 | 425 | 529 | 164 | 784 | 954 | 418 | 110 | 161 | 128 | **4.495** |
| **PT4** | | | | | | | | | | | | | |
| Domestic waste | 512 | 418 | 382 | 478 | 440 | 540 | 670 | 585 | 1.097 | 1.488 | 1.657 | 1.470 | **9.737** |
| Food waste | 1.040 | 800 | 850 | 1.413 | 563 | 909 | 1.229 | 743 | 957 | 1.524 | 1.168 | 1.281 | **12.477** |
| Recyclable waste | 546 | 582 | 592 | 612 | 747 | 580 | 392 | 449 | 668 | 569 | 604 | 486 | **6.827** |
| Hazardous waste | 130 | 195 | 100 | 105 | 469 | 301 | 295 | 354 | 485 | 215 | 662 | 371 | **3.682** |
| **IPT1** | | | | | | | | | | | | | |
| Domestic waste | 1.300 | 650 | 1.138 | 935 | 840 | 945 | 1.015 | 1.045 | 900 | 1.095 | 1.215 | 1.170 | **12.248** |
| Food waste | 1.480 | 1.790 | 1.625 | 1.385 | 1.515 | 2.015 | 1.530 | 1.519 | 1.435 | 1.585 | 1.355 | 1.930 | **19.164** |
| Recyclable waste | 263 | 255 | 253 | 236 | 286 | 256 | 268 | 253 | 215 | 227 | 246 | 240 | **2.998** |
| Hazardous waste | 41 | 9 | 80 | 48 | 70 | 76 | 60 | 70 | 145 | 323 | 214 | 75 | **1.211** |

| CMT | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Domestic waste | 7.300 | 7.340 | 7.810 | 8.350 | 7.540 | 8.940 | 8.030 | 7.820 | 9.320 | 8.010 | 8.170 | 9.540 | **98.170** |
| Food waste | 3.645 | 3.175 | 3.315 | 3.915 | 3.665 | 4.255 | 3.430 | 4.070 | 4.490 | 3.740 | 3.508 | 4.150 | **45.358** |
| Recyclable waste | 1.287 | 1.529 | 1.355 | 1.922 | 1.225 | 1.535 | 1.511 | 1.297 | 2.073 | 1.724 | 1.475 | 1.454 | **18.387** |
| Hazardous waste | 478 | 56 | 864 | 591 | 390 | 470 | 483 | 666 | 1.713 | 2.421 | 1.116 | 386 | **9.634** |

| **TOTAL 2014** *t)* | |
|---|---|
| Domestic waste | 163.942 |
| Food waste | 120.484 |
| Recyclable waste | 52.471 |
| Hazardous waste | 25.413 |

# APPENDIX 4: STATUS OF RECOMMENDATIONS RAISED THROUGH SRAP MONITORING

Appendix 4 contains the following for the AGT regions:

- **Status of key recommendations raised during previous SRAP Panel visits that were open at the time of the 2008 Annual E&S Report (see Table A4.1); and**
- **The tables provide a transparent mechanism to demonstrate follow-up and close-out of all actions to address recommendations. The table shows that all SRAP Panel recommendations have been closed and countries reported readiness for the SRAP Panel completion audit. In accordance with the audit scope, each country has selected a contractor to undertake the quantitative survey. After completion of the quantitative survey, the SRAP Panel undertook a qualitative survey as part of the completion audit in Q3-2009. The final report outlines performance against social commitments.**

Full reports from the SRAP audits are available at www.bp.com/caspian.

**Table A4.1: Tracking of Recommendations from Previous Reviews**

| No | Date | Recommendation | Status as of year-end 2013 |
|---|---|---|---|
| 1 | Apr 2008 | BTC to compensate landowners interested by orphan land transactions against the cost of registering the remaining piece of their land (Azerbaijan only). | Azerbaijan – Ongoing |
| 2 | Apr 2008 | SRAP Panel to re-assess effectiveness of measures to improve EPPD understanding of pipeline land use restrictions during its autumn review. | Turkey – Completed |
| 3 | Apr 2008 | Consider transferring responsibility for implementation of the Employment and Training Management Plan from the Social team to the human relations department. | Turkey – Open<br>(BTC and BIL Social teams are monitoring the Employment and Training Management Plan KPIs as part of monthly social reports. This recommendation will be fulfilled as part of MoC process for Social Management Plans of BIL which has been initiated in 2014,) |
| 4 | Apr 2008 | BTC to commission a mid-term evaluation of CIP 2 no later than Spring 2009. | Azerbaijan – Completed<br>Georgia – Completed |

| No | Date | Recommendation | Status as of year-end 2013 |
|---|---|---|---|
| 5 | Apr 2008 | BTC to update tabulations of project affected landowners and users experiencing permanent loss of land and for each affected owner/user, to define the extent of those losses relative to his or her total landholding. | Azerbaijan – Ongoing<br>Georgia – Completed<br>Turkey – Completed |
| 6 | Apr 2008 | BTC to undertake a survey of households affected by permanent loss of land in 2008 to verify whether each household has been able to restore its income or not. In the case of Georgia, a strategy should be in place by 2008. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 7 | Apr 2008 | BTC to consider additional livelihood restoration measures for permanent land losers if the survey above establishes that livelihoods are not adequately restored. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 8 | Apr 2008 | Continued vigilance is required by BTC in Georgia and Azerbaijan to ensure that the important role of the security of the pipeline is carried out in a manner that is appropriate and not antagonistic towards the communities. | Azerbaijan – Ongoing<br>Georgia – Completed<br>Turkey – Completed |
| 9 | Apr 2008 | BTC and BOTAŞ/DSA to monitor the number of outstanding compensation cases against a stable total number of parcels and to provide evidence that the number of such is under control and decreasing (Turkey only). | Turkey – Completed |
| 10 | Apr 2008 | BIL to ensure that during the early years of operations, Zilyet villages are carefully observed so that potential tensions within the villages can be managed. (Turkey only). | Turkey – Completed |
| 11 | Apr 2008 | Landowners/users whose names and second crop areas were assessed by BTC and BOTAŞ/DSA should be paid second crop compensation, unless third-party investigation by the Rural and Urban Development Foundation (now known as BNB) gives clear, reasoned alternative recommendations (Turkey only). | Turkey – Completed |
| 12 | Apr 2008 | BTC to carry out a rigorous analysis of the current situation with the communities around the CMT including Gölovasi fishermen (incorporating stakeholder dynamics assessment of power and influence inter-play both within the fishing community and outside) and develop a strategy for a way forward (Turkey only). | Turkey – Completed |
| 13 | Apr 2008 | BTC to ensure that reinstatement related issues are reflected adequately in the grievance mechanism (Turkey only). | Turkey – Completed |
| 14 | Apr 2008 | BIL to develop a formal mechanism for transfer of information to new land users on land use restrictions which would incorporate written information to be passed on to the new land user (Turkey only). | Turkey – Completed |
| 15 | Apr 2008 | BIL to complete introductory and follow-up meetings in all villages as soon as possible (Turkey only). | Turkey – Completed |

| No | Date | Recommendation | Status as of year-end 2013 |
|---|---|---|---|
| 16 | Apr 2008 | BIL to review mechanisms through which they can be reached by the community (including through telephone lines) and ensure that these are effective and functioning (Turkey only). | Turkey – Completed |
| 17 | Apr 2008 | BIL to resolve current resource constraints (personnel and vehicle) in a perspective of increasing field presence and visibility (Turkey only). | Turkey – Completed |
| 18 | Apr 2008 | BIL to refresh villagers' awareness about avenues available to lodge grievances (Turkey only). | Turkey – Completed |
| 19 | Apr 2008 | BTC with BNB as independent monitors to ensure the quality assurance of the grievance management system (Turkey only). | Turkey – Completed |
| 20 | Apr 2008 | BIL to place somewhere visible within the villages, the number of people employed in each village (Turkey only). | Turkey – Ongoing<br>(BIL states that this will raise expectations. The data is shared in case of complaints or questions asked about local employees) |
| 21 | Apr 2008 | BIL to train unskilled employees to take up semi-skilled jobs (Turkey only). | Turkey – Ongoing<br>(BIL provides skill-based and on-job trainings to its employees as part of annual training plan. In addition, BTC continues providing vocational trainings to local people along the BTC as part of its SDI program.) |
| 22 | Apr 2008 | BTC and BIL to explore and identify supply chain opportunities for local firms (Turkey only). | Turkey – Ongoing |
| 23 | Apr 2008 | BTC and BIL to provide targeted support and capacity building to local firms to take up supply chain opportunities (BTC already doing this to a certain extent but should increase efforts) (Turkey only). | Turkey – Ongoing<br>(BTC is implementing SDI projects to develop the capacity of SMEs along the BTC pipeline route- a business development centre is being established in Ceyhan to support start-up businesses and SMEs around the CMT) |
| 24 | Jun 2007 | SRAP Panel to provide a cross-country framework for livelihood restoration surveys to assure a level of consistency in approach. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 25 | Jun 2007 | BTC to undertake a survey of households affected by permanent loss of land in 2008 to verify whether each household has been able to restore its income or not. In the case of Georgia, a strategy should at least be in place by 2008 for doing this. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |

| No | Date | Recommendation | Status as of year-end 2013 |
|---|---|---|---|
| 26 | Jun 2007 | BTC to consider additional livelihood restoration measures for permanent land losers if the survey above establishes that livelihoods are not adequately restored. | Azerbaijan – Completed<br>Georgia – Completed |
| 27 | Jun 2007 | In all 3 countries, BTC to develop action plans to address/manage situations in which the landowner refuses to sign the land hand-back agreements. | Azerbaijan – Ongoing<br>Georgia – Completed<br>Turkey – Completed |
| 28 | Jun 2007 | In all 3 countries, BTC to develop a management plan that will ensure that land acquisition in Operations phase is also carried out following World Bank Group OD 4/30 principles. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 29 | Jun 2007 | Regular checks to be made on CIP 1 infrastructure to ensure that they are being properly managed and maintained. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 30 | Jun 2007 | BTC 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). | Azerbaijan – Ongoing<br>*New CDI strategy was developed and approved in 2014*<br>Georgia – Completed<br>Turkey – Ongoing |
| 31 | Jun 2007 | BTC to provide training to security force patrol staff in Georgia and Azerbaijan on conduct along the pipeline as well as general human rights issues. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 32 | Sep 2006 | BTC to make stakeholders aware of avenues available to lodge complaints during operations (carried over from previous review). | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |
| 33 | Sep 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. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed<br>Report is awaited from SRAP Panel (Action on SRAP) |
| 34 | Sep 2005 | All countries to pay particular attention to monitoring livelihood status of households affected by permanent loss of land. Annual income-expenditure surveys recommended. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed |

| No | Date | Recommendation | Status as of year-end 2013 |
|---|---|---|---|
| 35 | Sep 2005 | To avoid ad-hoc or piecemeal development assistance, BTC 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. | Azerbaijan – Completed<br>Georgia – Completed<br>Turkey – Completed<br>SDI strategy prepared for next 5 years (2012-2016). |
| 36 | Sep 2005 | BTC 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 (carried over from previous review). | Turkey – Completed<br>Azerbaijan – Completed<br>Georgia – Completed |
| 37 | Mar 2005 | BTC 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. | Azerbaijan – Completed<br>Georgia – Completed |
| 38 | Feb 2004 | BTC to continue to reinforce its anti-corruption stance with all levels of government. | Turkey – Completed<br>Azerbaijan – Completed<br>Georgia – Completed |

**Table A4.2: Recommendations (Azerbaijan and Georgia) and Initial Feedback (Turkey) of the RAP Completion Audit**

These tables show recommendations from the RAP completion audit. Most recommended actions have been closed-out by BTC, although some are ongoing. The full status of these actions will be reported once the final audit reports have been received from the SRAP Panel auditors.

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 principles |
| **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 |

**Azerbaijan**

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
|---|---|---|---|---|---|---|
| Employees of State Livestock Enterprises | Highlighted in the RAP as a vulnerable group so need to be given care and attention to ensure that livelihoods are protected.<br>Risks identified in RAP are: no direct right to compensation, yet reliant on grazing land for their livelihood (in lieu of wages). At risk of being displaced where there is a prospect of compensation. Often very poor. | According to the head s of the enterprises of Garadagh and Absheron Districts, compensation was received by the enterprises. In the case of Garadagh District this money was transferred to a bank and used to pay salaries of the employees, allocated to a pension fund and used to buy fodder crops.<br>The employees of the State Livestock Enterprises were not included in the quantitative survey as many of the questions were not appropriate to their farming practices and type of impact.<br>Nor was it possible to include them in the qualitative survey as during the time of the survey they were already in their summer pastures. | a. Undertake a qualitative survey of employees of State Livestock Enterprises to verify information from the Head of the Enterprises and assess the extent to which their livelihoods have been restored. The survey should take place in winter 2010. | BTC/SRAP Panel | Condition for RAP completion | Completed |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| Reinstatement of ROW | Reinstate to pre-Project conditions or better before land hand-back. Landowners/users signing of land hand-back documents does not mean that. | Overall the reinstatement has been good and farmers are satisfied. There was an expectation that there would be some reduction in productivity in the first few years following reinstatement and this had been taken into account in the compensation. The land hand-back documents have been signed by almost all affected farmers.<br>From the investigation for the completion audit, there are some areas where farmers are experiencing problems, related to issues such as irrigation and stones in the fields etc. It is also true to say that in some cases potential problems with reinstatement only emerge over time as the land is farmed and/or as weather conditions reveal gaps. | b. BTC should retain an experienced and respected local agricultural specialist to complete a review of reinstatement of Project affected arable land. The review should have 3 functions: (1) to identify those farms where reinstatement is incomplete or has left constraints on cultivation; (2) to assess the value of lost production or impaired yield for the period beyond 3 years after construction completion, payable to the farmer as compensation; and (3) to recommend and monitor BTC remedial measures.<br>This is necessary because as recognised by the SRAP Panel as time passes it becomes difficult to attribute problems to construction of the ROW. Equally important however is that some problems related to reinstatement only emerge with time.<br>c. A budget to be made available to carry out remedial works. | BTC | Priority | Completed |
| Access strategy | While driving on the ROW was to be prohibited per ESAP principles, a MOC has made it possible to occupy a 6m strip within the ROW, which is dedicated to driving by EPPD for the period January to December 2008.<br>The Addendum to the RAP accompanying this applies the same principles as for the main land acquisition carried out for the ROW. | Land hand-back has been carried out without reinstatement.<br>Recent communication from BTC states that 120 km are to be reinstated.<br>BP now only using horse patrol.<br>EPPD continues to use vehicle patrol.<br>BP has developed a strategy to influence EPPD to change to horse patrol only. The period over which this is to be achieved is not stated.<br>29 sections of the access track have been identified as needing reinstatement. Some of these sections have been reinstated. | d. A comprehensive status report of the access strategy with a time-bound action plan for closure to be shared with the Lenders before developing a way forward.<br>e. Check owner/user satisfaction with reinstatement of those sections of the access track that were reinstated. | BTC | High | Completed |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| BTC Social team and CLOs | Positive community engagement is essential in not only mitigating negative impacts but also ensuring protection of the pipeline. | BTC Social team and the CLOs in the field have been doing an excellent job in understanding concerns and also building a good relationship with the community. | f. BTC operations should maintain a strong field and Baku based Social team that can continue to work closely with the community as it evolves. | BTC | Medium | Completed |
| AGI affected households | Livelihood restoration for all Project-affected people. | Quantitative survey showed that 3 households out of 10 surveyed said that BTC had a small negative impact on their livelihoods. | g. Check livelihood situation of AGI households that have experienced a negative impact. | BTC | Medium | Completed |
| Chobanabdali land boundary issue | | Centre for Legal and Economic Education is carrying out some work on land certificate changes that were to be issued in March 2010. | h. The output of this work needs to be made available to the SRAP Panel as a part of RAP completion. | BTC | Medium | Completed |

## Georgia

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| ***LAND*** | | | | | | |
| Completion of land exit agreements | Use of land to be restored to former owners upon construction completion. | The Lands team has completed 83% of land use/servitude agreements. It is targeting 86% (all locatable owner/users) by mid 2010. | i. Complete outstanding land access and exit agreements with all locatable landowners by mid-2010. | BTC | High (by end of July 2010) | Completed |
| Compensation for absentees | Mechanisms for fair and transparent compensation for land acquired from private owners including for absentee owners are established. (RAP Part C, Section1.8). | BTC has made reasonable efforts to locate absentee owners, but it is likely that payments to about 480 unlocatable owner/users will be delayed until such owners/users come forward sometime in the future. See Section 2.1.6. | j. Establish a register of absentee owners to include (i) documentary evidence of the efforts that have been made to establish the whereabouts and make contact with each absentee; and, (ii) to define the compensation payable to them upon their signing of land use and servitude agreements. | BTC | High (by end of July 2010) | Completed |
| | | | k. Block funds to cover absentee payments into an interest-bearing Georgian bank account to be held in trust until such time as claimants come forward for agreement signing. | BTC | High (by end of July 2010) | Completed |
| Management of operations phase land acquisition | | A satisfactory RAP completion audit will signify the ending of RAP commitments as defined in the Construction ESAP. Some minor ongoing land acquisition is likely. BTC Georgia has prepared a draft management plan to cover future operations phase land acquisition. This needs to be finalised and adopted. | l. Complete the Georgia Land Acquisition and Economic Displacement Management Plan to cover any incidental operations phase land acquisition activities and adopted as part of the BTC E&S management framework. | BTC | High (by end of July 2010) | Completed |
| ***LIVELIHOOD RESTORATION*** | | | | | | |
| Soil reinstatement/crop yield impairment | To give Project-affected landowners and users the opportunity to fully restore or improve their livelihoods. | Agricultural expert monitoring indicates that most pipeline corridor users are close to achieving equivalent to without-project crop yields, but some cases of impaired crop yield persist. Land handed back within the last 2 years needs to continue to be monitored. | m. Extend agricultural expert monitoring for 2 more years (or not less than 3 years after latest land hand-back) and continue crop yield top-up payments as warranted by their findings. | BTC | High (Contract with experts in place by end of July 2010) | Completed |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| | | With a few exceptions, most active farmers have resumed cropping on their project affected arable lands. Some farmers have never utilised or derived livelihood from their affected land, but may choose to do so some time in the future. | n. Develop clear principles for eligibility for top-up payments, i.e. the payments need not be extended indefinitely for farmers who decide, say, in 5 years time, to start using their Project-affected land for the first time. | BTC | High (by end of July 2010) | Completed |
| ***INFRASTRUCTURE REINSTATEMENT*** | | | | | | |
| Wear and tear on village infrastructure (especially roads/farm roads) caused by BTC activities | Mitigate damage caused to community infrastructure. | BTC makes regular use of some village roads and farm roads to access its facilities. Municipal governments often do not allocate budget or resources for maintenance of such roads. Their condition can be poor. BTC may potentially become a target for claims to reinstate roads it uses due to perceptions that it has resources. | o. Identify situations where the BTC use of land, village or farm roads might reasonably be linked to some obligation to contribute to maintenance - enter into a formal agreement (BTC, villages, municipality) specifying the extent of such roads, type of BTC use and roles and responsibilities (BTC vs. village vs. municipality) for ongoing maintenance. | BTC | High (by end of 2010) | Completed |
| ***PUBLIC CONSULTATION AND DISCLOSURE*** | | | | | | |
| Effective community communications | Communities to be regularly consulted and kept fully informed about BTC activities. | There are a small number of villages where some residents cannot effectively communicate in Russian or Georgian. The Community Communications Plan does not explicitly address this situation. | p. Revise the Community Communications Plan to identify those villages where a translator (Armenian, Azeri) is necessary to effectively communicate with residents who do not speak Russian or Georgian. | BTC | High (by end of July 2010) | Completed |
| ***SOCIAL MANAGEMENT SYSTEMS AND RESOURCES*** | | | | | | |
| Social team resources | The Community Liaison team established for (BTC/SCP) Operations will consist of at least a Social Team Leader and no less than 3 field CLOs in each country Community Liaison Management Plan (See Section 3.2.1) | The Social team for BTC/SCP operations had a Social Team Leader and 2 CLOs. One of the 2 CLOs has administrative responsibilities that reduce his field presence. | q. Appoint a third floating CLO for BTC to cover regular CLO downtime and as a potential successor if a CLO incumbent moves on. | BTC | High (by end of July 2010) | Completed |

## Northern Section, Turkey

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| ***LAND*** | | | | | | |
| Understanding of land technical issues | Clear and transparent procedures for acquiring land. Robust processes for consultation and information dissemination. | In some villages (e.g. Yeniköy) where there were complex ownership issues such as village claims over Treasury lands, or *zilyet* disputes, some landowners remain confused about the status of their land. | r. BIL CLOs to develop a short list of villages where there are ongoing landowner concerns about land status for follow-up visits by the DSA or Local Cadastral Office to assist understanding. | BTC/BIL | Moderate | **CLOSED:** BTC and BOTAŞ/DSA carried out a separate field study in 2006 and 2007 on misidentified zilyet owners, prepared list of villages and affected landowners together. Then closed-out all valid complaints related with misidentification of zilyet issues by making second payments for the same parcels to the right owners. The process has been monitored by the third-party NGO. This NGO's view on effective close-out of these complaints was stated in their readiness statement sent to the SRAP Panel earlier.<br>There is no zilyet land in Yeniköy since cadastral survey was conducted long before BTC acquisition. Therefore, this comment is not understood by us. Land exit protocols signed for all parcels (in total 74) in Yeniköy during land exit process.<br>In addition, BIL CLOs and BTC E&S team visited all villages along the BTC route including Yeniköy village to discuss open complaints in 2009. Most of the complaints were related to reinstatement issues, all of which were resolved as part of reinstatement activities carried out by BTC between 2009 and 2011.<br>BTC's Social team conducted an internal audit in April and May 2010 |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| | | | | | | and checked the status of complaints in all locations through the trackers. They confirmed these complaints through interviews with complainants. No outstanding land acquisition issue was observed during this audit. |
| Temporary land for camps (PT 1, PT 2) | Return land to owners for use to minimise impact on livelihood. | In each location where BTC was renting land for camps, there were requests from landowners to know how much longer their land would be required. | s. BIL/BTC to develop firm plans about the future of camp lands and provide clear information to affected landowners about when their land will be returned to them. | BTC/BIL | High (by end of March 2010) | **CLOSED:** BIL conducted a field study in late 2009 and identified locations where they can hand-back to original owners in all camp stations. 38% of the lands in all camp locations were handed back to original landowners and new agreements signed for those parcels that will be used for the operation. BIL made payments to all landowners living in the villages. BTC offered BIL to expropriate these locations permanently. BIL is carrying out a detailed study to identify the locations where they will build permanent buildings in the future. Then the land will be expropriated in line with the RAP standards. |
| ***LAND REINSTATEMENT*** | | | | | | |
| Reinstatement | Restore land to pre-project condition upon construction completion. | Working ahead of the final reinstatement taskforce, it was clear that there were a significant number of complaints that had not been captured on the task force's defects list. There is a risk that the reinstatement task force will pass by leaving a significant number of unresolved reinstatement complaints. | t. BIL/BTC to make greater effort to notify project affected villages and landowners of the pending visit by the reinstatement task so that a complete defects list is developed prior to its arrival. | BTC/BIL | High (ongoing) | **CLOSED:** Another survey was conducted to identify additional complaints that were not in the list. A complete list was prepared by BTC and the scope was provided to the Contractor company. The company reinstated all areas in the pipeline route. In fact, the contractor completed many additional works as good will gestures when they were in the field. |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| ***PT 1 SOGUTLUKAYA*** | | | | | | |
| Disputes about landownership and entitlement for rental payments | Systematically identify landowners and determine their eligibility for compensation. | There is widespread confusion amongst Project-affected landowners about who are the rightful owners of the land under the PT 1 temporary camp. One set of landowners received rental payments from BOTAŞ during the construction period. Some different landowners are allegedly receiving rental payments for the same land from BTC, post-construction. Landowners have requested a cadastral plan to clearly show ownership. | u. Either DSA to provide a cadastral plan for land under the temporary camp and to meet with affected landowners to clarify ownership; or, the General Directorate of Title Deed and Cadastre should be approached to resurvey the area (Given the level of confusion and bitterness on the ground, the latter option is preferable). | BTC | High (by end of 2010) | **CLOSED: The** cadastral survey carried out in north-east Anatolia by the General Secretary of Cadastral office in 2008 and 2009 clarified the ownership status of the land in these villages (this is outside the scope of the BTC Pipeline Project). However, by the time of the SRAP audit there were rejections to the Cadastral survey results. Some of the landowners rejected the results at court. The court process completed. Meanwhile BIL stopped payments until resolution of court cases. When the process was completed, BIL signed the new rental agreements with the newly identified owners. This issue is resolved. |
| | | | v. Based on the outcome of the cadastral investigation, the rightful rental payment recipients should be identified and, where necessary, paid rental due. Landowners who incorrectly received rental payments should not be unduly penalised. | BTC | High (by end of 2010) | **CLOSED:** As stated above, all new landowners identified through cadastral survey received rental payment for 2010. Landowners who incorrectly received rental payments in the past are not penalised. |
| Loss of grazing land/impact on Söğütlükaya's herd carrying capacity. | Restore/improve livelihoods of Project-affected households. | Some villagers claim that BTC/the State alienated a large part of Söğütlükaya's prime grazing land for PT 1 and related works. There is limited alternative land available for lease. This has forced them to reduce their livestock herds. Others observe that active farmers are elderly. Young people are not interested in | w. BTC to obtain information on total Sogutlukaya village land resources from the Ministry of Agriculture and Rural Affairs and have a livestock expert assess the impact of the BTC Pipeline Project/PT 1 land-take on village land/grazing resources. If BTC land-take is found to be a significant factor in decline of village livestock | BTC | High (by end of July 2010) | **CLOSED:** Söğütlükaya village owns 316ha pasture lands in total. 13.4ha of land was permanently expropriated and an additional 11ha of land rented for the campsite. At PT 1 site location, 42% of the parcels is owned by the state and 58% of the parcels is owned by private people. That means not all parcels are commonly owned pasture |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| | | farming and are leaving for jobs in cities. The village population is rapidly declining. Static livestock prices and rising input costs mean returns from livestock farming are marginal. These factors also account for the villages diminishing livestock herds. | herds, an appropriate mitigation programme should be designed and implemented. | | | lands/state lands. Despite this fact, even if we consider all of these private lands as pasture land, in total 8% of the pasture land owned by Söğütlükaya is currently used for BTC operation (including camp site). Livelihood Impact assessment for all AGIs including PT 1 was already carried out by University of Ankara, Department of Agricultural Economy in 2003. In Söğütlükaya, loss of income arising from the damages for the common land owned by the Treasury but used by the villagers for grazing purposes was identified as 28.8 billion TL and this was paid to village budget from RAP Fund. In 2005, another impact assessment study was carried out for AGI affected villagers. The AGI survey report was shared with the SRAP Panel. They concluded in their report as "The overall analysis of the research results reveals that no significant impact is expected on owners or users of land expropriated, be it for land take to farmland ratio below 10% or above. The fact that there was not any significant change in agricultural and household income levels of owners and users from pre-expropriation period to post-expropriation and that the levels of the said income remained above the sufficient farm income indicate that taking any measures for impact alleviation is not necessary." In addition, in the last quantitative survey conducted by SRAP Panel |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| | | | | | | for RAP close-out audit in 2008, where AGIs affected landowners were given priority and according the statistical results there is no significant difference in the income levels of affected and unaffected households at PT 1.<br>Finally, BTC through its CIP has been supporting animal husbandry and agricultural activities through providing qualified seeds, conducting animal vaccination, artificial insemination, etc. in every village. However, priority is given to AGI affected settlements. External audits proved that CIP helped to increase villagers' income level, in addition to compensation measures mentioned above. |
| Sogutlukaya concerns about contamination of the village water supply | | Villagers expressed concern that their water supply is being contaminated by run-off/recycled water from PT 1. There were requests for water supply to be routed down an alternative stream bed upstream of PT 1. A new water pipe crossing of the BTC line was being installed by the villagers at the time of the audit. | x. BTC to monitor village concerns about water supply following completion of the new pipe installation. If warranted by continued high levels of concern, BTC to instigate regular testing of water as supplied at the village to address concerns. | BTC | High (by end of July 2010) | **CLOSED:** Building of a new domestic water pipeline was requested by the villagers of Söğütlükaya village. The reason was not the contamination of the water as reported here. It was actually because the physical life of the existing pipeline was completed. BTC delivered a new water pipeline outside the fences of PT 1.<br>No remaining complaint regarding this issue is left. Necessary tests are conducted to the samples taken by a third-party environmental organisation on monthly basis. No issue has been raised by the third-party with regard to contamination of water supply in Söğütlükaya. |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| Sogutlukaya concerns about contamination of the livestock water supply | | Villagers reported that cattle drinking from the water trough below PT 1 sometimes made their animals sick. They were concerned. | y. BTC to determine whether or not there is a risk that run-off/recycled water from PT 1 is discharged into the water supplied to livestock troughs. | BTC | High (by end of July 2010) | **CLOSED:** BIL have conducted monitoring on 11.08.2010 from the trough, site perimeter channel and the downstream point of the stream. According to the results, the Total Coliform was measured as 23 MPN/100ml at the site perimeter channel inlet point (that can be considered as the upstream of the stream and the trough) whereas measured as 460 MPN/100ml at the trough and the stream (20 times greater).<br>Ruling out any analytical errors, this can be attributed to the presence of another source of contamination affecting the trough and the stream itself which can be:<br>• On the way from the perimeter channel inlet to the stream and the trough (in other words through the perimeter channel itself); or<br>• Already existing on the stream bed and inside the trough naturally.<br>However the source of contamination cannot be clearly identified as there is not enough evidence.<br>In addition, BTC's environmental contractor (Golder) has conducted monitoring on 3 August 2010 from the trough and the site perimeter channel. No contamination was observed at both monitoring points according to the results.<br>In summary, the evaluation of the BIL's and Golder's analysis results did not provide an evidence of any |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| | | | | | | PT 1 related discharge that would justify the community complaint. |
| ***PT 2 COGENDER VILLAGE*** | | | | | | |
| Flood control | Avoid/minimise physical and economic displacement. | Following the March 2008 floods, the PT 2 access road has been raised and flood control measures installed for PT 2. No permanent measures have been designed or constructed to ameliorate flood risks and damage to up- and downstream landowners adversely affected by the BTC works. Landowners are concerned by risks and frustrated by lack of consultation and information they have received about corrective actions being taken. | z. In consultation with affected landowners, BIL/BTC to complete design and construction of permanent flood control measures to protect land, crops and structures of adjacent landowners to an immunity level equivalent to the 'without Project' condition.<br>aa. BIL/BTC to pay particular attention to ensuring that owners are consulted and kept fully informed about progress throughout the design and implementation process. | BIL/BTC | High (by end of July 2010) | **CLOSED:** BTC conducted several meetings at PT 2 village, Çöğender and completed the detailed design of PT 2 Flood permanent mitigation measures. Concerns and suggestions of the landowners and village muhtar were also considered during the design phase. BIL has now finalised the construction of PT 2 flood permanent mitigation measures.<br>**CLOSED:** Landowners participated in the site investigation on PT 2 flood permanent mitigation measures together with BTC, BIL, BOTAŞ/DSA, Gendarmerie commander. In addition, BOTAŞ/DSA informed that the expropriation of the required area for dam and main culvert construction was finalised.<br>BIL CLOs were also involved in the consultation process. BTC monitored the potential impacts of the issue and take additional measures if the design will create any unexpected problems in future. |
| Reinstatement of off-ROW spoil disposal sites | Restoration of productive land to pre-Project condition. | 4 Çöğender landowners (remote from the ROW) signed contracts with a BTC construction contractor to enable 50,000 $m^3$ of spoil to be placed on their land. Under the terms of the contract the land was to have been levelled and restored with topsoil cover. The land was not properly reinstated. It was observed to | bb. BTC to ensure that such off-ROW project affected lands are covered by the ROW Reinstatement team. The land of the 4 Cogender landowners (and any other owners who have experienced similar problems) should be restored to a fully productive condition. To the extent possible, owners should be | BTC | High (by end of July 2010) | **CLOSED:** BTC investigated the issue. Muhtar and other villagers stated that this area was rocky and dry before the BTC Pipeline Project. They stated that it was not productive and even the landowner used to cultivate the land every 3 years since he could get harvest on yearly basis. However, BTC still reinstated the land by bringing productive soil and cleaned up |

| Issue | Project Principles | Performance | Recommendations | By | Priority | Status |
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| | | be uneven, rocky with patchy topsoil cover leading to a stunted and uneven crop. | compensated for the impaired 2009 crop. | | | rocks on this land during remedial activities in 2009. |
| Pasture access and PT 2 road (livestock losses) | Adversely affected farmers to be compensated for any damage or losses incurred as a result of BTC Pipeline Project activities.<br>Project affected farmers to be facilitated to restore their livelihoods. | PT 2 road has historically been used by 100 Cogender households to access village cow pastures for 7 months of the year. 100-120mm dia. crushed rock used to line PT 2 access road side drains has led to damage to calves' legs/trotters leading to stock being put down. The village has rented alternative pasture for calves to avoid using the road (1,500L/3 months) as a temporary solution. | cc. BTC/BIL, in consultation with the Cogender farmers, to investigate permanent solution to enable farmers to resume normal access of their pasture lands.<br>dd. BTC to investigate extent of losses (calves, cost of temporary pasture) incurred by village and develop an appropriate compensation response. | BTC | High (by end of July 2010) | **CLOSED:** BTC built approximately 4 km road late 2009. It is much longer and wider than the initial path way, they used to use to access to their pasture lands.<br><br>**CLOSED:** Damage to animals were investigated but could not be proved. Therefore it is difficult to justify this claim to consider compensation. About renting an alternative road and making payment about 1,500TL/3 months: The village Muhtar and other elders committee stated that it is the first time they heard this issue. They did not rent an alternative road to access to their fields. The villagers signed a compliant close-out letter. BTC has a special CIP strategy for AGI affected villages including Çöğender. BTC has supported several projects in the village (including drinking water, village road, multi-purpose village common house, shepherd house, animal husbandry and agricultural trainings, vaccination and artificial insemination of several animals) and will continue to support these villages. |

## Southern Section, Turkey

| Issue | Project Principles | Performance | Recommendation | By | Priority | Status |
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| ***LAND*** | | | | | | |
| Payment of compensation for land affected households, where land is in multiple ownership. | Payment of compensation before land entry. | There are still a number of outstanding cases on title deeds transfer for land in multiple ownership. Thus compensation cannot be paid. Reasons vary, in some cases title deeds cannot be transferred because not everyone is available, in others some people may be unwilling or unable to pay the administrative costs. Often the amount of compensation due is very limited and the urgency to receive the compensation varies between shareholders. | ee. BIL CLOs and DSA to develop a short list of villages where there are ongoing compensation issues and to develop a time-bound strategy for resolving these. | BTC/BIL | Moderate | **CLOSED:** The list of villages where the land acquisition process is not completed is being prepared and submitted to BTC on regular basis by BOTAŞ/DSA. 98.12% of the acquisition is now completed. The remaining ones are due to ongoing court cases. However, we would like to underline the point that in all court cases (Art 27) BOTAŞ paid the value of the parcel to the bank account prior to access and shareholders will receive their parts when the shares are identified by the court. BTC even accepted to pay the legal cost of administrative tasks, transportation costs, etc from RAP fund if the multiple shareholders can come together for transfer of ownership right; however, the remaining cases are generally related with absentee owners. The issue cannot be resolved without a court decision. All shareholders will receive their shares with interest at the end of the court case. |

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| ***LAND REINSTATEMENT*** | | | | | | |
| Reinstatement | Restore land to pre-Project condition upon construction completion. | Working ahead of the final reinstatement taskforce, it was clear that there were a significant number of complaints that had not been captured on the task force's defects list. There is a risk that the reinstatement task force will pass by leaving a significant number of unresolved reinstatement complaints. | ff. BIL/BTC to make greater effort to notify project affected villages and landowners of the pending visit by the reinstatement task so that a complete defects list is developed prior to its arrival. | BTC/BIL | High (ongoing) | **CLOSED:** Another survey was conducted to identify additional complaints that were not in the list. A complete list was prepared by BTC and the scope was provided to the Contractor company. The company reinstated all areas successfully. In fact, the contractor completed many additional works as good will gestures when they were in the field. |
| Productivity problems due to problems with reinstatement | Restore land to pre-Project condition upon construction completion. | There are a number of areas where productivity has reduced substantially or farmers have not been able to farm at all. Some are enquiring whether they will be compensated further for this loss. | gg. BTC and BIL to develop a clear strategy for productivity loss due to reinstatement problems with the use of an agricultural expert. | BTC/BIL | High | **CLOSED:** BTC identified areas that needed to be reinstated though external agricultural experts and the reinstatement of those areas were completed between 2009 and 2011. |
| Reinstatement of village infrastructure | Affected village infrastructure to be restored to at least pre-Project level if not better. | There are still a number of outstanding grievances related to village infrastructure impacted during construction. For instance in Çığcık village where roads damaged during construction were reinstated but problems remain due to subsidence. | hh. A systematic appraisal should be carried out of the status of village infrastructure impacted through review of the grievance log and CLO knowledge of the area. | BTC/BIL | High | **CLOSED:** During construction, BOTAŞ Project directorate and its contractors used entry and exit protocols for village roads. All roads used by the project were reinstated however, even after 6 years, villagers expect BTC to continue reinstatement when the roads are damaged naturally. This is an issue in some other parts of the pipeline as well. BTC cannot be responsible for any damages caused after reinstatement of these roads.<br>With regard to the complaint in Çığcık village:<br>In complaints' tracker, complaints no: 597, 605, 625, 630 related to the same issue in |

| Issue | Project Principles | Performance | Recommendation | By | Priority | Status |
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| | | | | | | Yukarıçıyanlı, Yenigün, Topraktepe and Cığcık villages were defined as not legitimate. Because these roads are village roads and should be repaired by District Special Administration. However, there were other complaints No: 621, 622, 623, and 624 in Topraktepe and Cığcık villages. Complaints were assed in Lot C reinstatement Scope during the reinstatement activities in 2011. Most of these complaints were related to land roads defined as not affected by BTC. |
| ***COMMUNITY LIAISON, GRIEVANCE MANAGEMENT*** | | | | | | |
| Grievance log management | Timely acknowledgement and corrective action to address grievances | Entries in grievance log are not always correct. For example, in Akifye village a complaint checked by the SRAP Panel was found to have not only been recorded under the wrong name, but also wrongly recorded as being closed-out. | ii. A mechanism should be developed to check the grievance log. This could be a combination of | BTC/BIL | Moderate | **CLOSED:** BTC and BIL PCREs went through all of the complaints in 2009 and corrected/clarified these complaints prior to reinstatement activities. BTC also checks the list of complaints on quarterly basis through grievance log and through site visits. Moreover, monitoring of the complaints is also done through internal audits of BTC both 3-country audit and BTC Turkey internal social audit on yearly basis. |
| Information Dissemination in particular to vulnerable groups | Communities to be kept informed about project and avenues for lodging a complaint. | There are still instances of grievances from the construction phase. Some were not reported. Vulnerable groups in particular are either reluctant to make a grievance or are unclear of the avenues | jj. BIL CLOs to have clear systematic procedures in place for regular community engagement and information dissemination, paying particular attention to vulnerable groups | BTC/BIL | Moderate | **CLOSED:** BTC prepared community leaflets and distributed the CLOs contact details to every single village. In addition, village information boards were established in the villages where contact details |

| Issue | Project Principles | Performance | Recommendation | By | Priority | Status |
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| | | available. Communities also need to be aware of avenues for lodging a complaint during the operations phase. | | | | are presented. BIL PCREs are regularly visiting the villages as part of their daily work. ROW Monitoring and Maintenance teams who are working closely with PCREs are at site every day. Villagers can access to BIL if they want to. The number of complaints from various villages proves that the system is working.<br>In 2011, BTC and BIL refreshed land use restriction and third-party crossing procedures through an awareness campaign in all villages along the route. A film was produced and new brochures were distributed to landowners in all villages again.<br>In addition to complaint management mechanism, vulnerable groups are dealt within the CIP scope. Priority is given to vulnerable people in all CIP projects such as beekeeping, greenhouse, animal husbandry, etc. In case of any complaint raised by vulnerable groups to CIP IPs, these are transferred to BIL. |
| ***LONG-TERM PIPELINE PROTECTION*** | | | | | | |
| Application for third-party crossing | | The qualitative survey showed that there are very few farmers who know the procedure for making an application for a third-party crossing. | kk. BIL CLOs to develop a system of continued information refreshment and update. | BIL | Moderate | **CLOSED:** BIL PCRE's are giving information and training to all public institutions and villagers about these procedures periodically and when it is needed refreshment trainings are delivered.<br>BIL Technical team is now managing the third-party |

| Issue | Project Principles | Performance | Recommendation | By | Priority | Status |
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| | | | | | | crossings issue together with the ROW Monitoring and Maintenance team. This team is at site all the time monitoring the land use on the ROW. The decrease in the violations indicates that there is more systematic approach to third-party crossings issue. In addition, BIL and BTC initiated another awareness campaign on land use restrictions and third-party crossings in 2011. Training materials were prepared by BTC (films and brochures etc.). |
| ***CAMP IPT 1*** | | | | | | |
| Rental price for land | Landowners/users to be appropriately compensated for Project use of land | Affected farmers complained that the yearly rental price had been negotiated 5 years ago. Moreover at the time of the negotiation they had been told that the land would be rented for 1 year only. | ll. BTC/BIL to review rental agreements on land used for camp and at the same time to give clear information on duration of future use. | BTC/BIL | High | **CLOSED:** BIL have conducted a field study in late 2009 and identified locations where they can hand-back to original owners in all camp stations. 38% of the lands in all camp locations were handed back to original landowners and new agreements signed for those parcels that will be used for the operation. BIL made payments to all landowners living in the villages.<br>BTC offered BIL to expropriate these locations permanently. BIL is carrying out a detailed study to identify the locations where they will build permanent buildings in the future. Then the land will be expropriated in line with RAP standards. |

***CASE STUDY 1***

# Enhancing Oil Spill Preparedness and Response Capability in Azerbaijan

**Goal:**

The main goal was to strength Oil Spill Preparedness and Response Capability in Azerbaijan.

**Achievements/status:**

Enhancement was implemented by four main steps:

- Revision of both the Offshore and Midstream Oil Spill Contingency Plans (OSCP's) and spill planning scenrios. Underpinning the revision process was a focused effort to improve and enhance oil spill preparedness and response capability in the region, oil spill contingency plans and reference documents, and to address the requirements of the BP Oil Spill Preparedness and Response Group Defined Practice (OSPR GDP 4.6-0002).
- Implementation of an extensive OSR training and exercise program. Offshore oil spill response deployment exercise was successfully carried out by BP together with the Ministry of Emergency Situations (MES) of Azerbaijan. This exercise involved mobilization of personnel and equipment of BP, oil spill response contractor - Briggs Marine, and government (MES), for the demonstration of specific functional emergency and crisis management skills in response to a hypothetical oil spill scenario. This promoted an integrated approach between BP and MES..
- Inaugural international cross boundary Emergency Response exercise, involving the Georgian Emergency Management Department and the Azerbaijan Ministry of Emergency Situations. The chosen scenario involved a simulated rupture of the BTC pipeline. The exercise was a great success and an effective team work activity which was commended and appreciated by the Georgian Emergency Management Department of Ministry of Internal Affairs.
- Oil spill response equipment upgrade project. The project involved the purchase $ 11 million in offshore and shoreline response equipment. The purchase included offshore and shoreline containment booms and recovery systems.

International Cross boundry Emergency Response excersie

Oil Spill Response equipment upgrade project