



Addendum to Assessment Report

March 18, 2005

Since this assessment report was completed, there have been developments regarding the issues raised therein. To see the progress that has been made on the issues raised in this complaint, please consult the [Recommendation Implementation Status Tracker](http://www.cao-ombudsman.org) on CAO's website, www.cao-ombudsman.org. The tracker lists the key issues raised in each complaint, the CAO's recommendations for moving forward on those issues, and the progress with respect to implementation of these recommendations. New developments and actions by the IFC and/or sponsors are updated on the tracker as soon as CAO can confirm them.



Assessment Report

Complaint regarding the Baku-Tbilisi-Ceyhan (BTC) Pipeline Project Tba, Tsemi and Sadgeri, Georgia

October 2004

Office of the Compliance Advisor/Ombudsman
International Finance Corporation and
Multilateral Investment Guarantee Agency

TABLE OF CONTENTS

Introduction.....	1
Figure 1. Complaint Allegations	2
The Complaints	2
CAO Assessment.....	3
CAO Complaint Assessment.....	4
Conclusion.....	7
Appendix I	8
(CAO Field Assessment Report on Water Contamination at Tsemi)	
Appendix II	13
(CAO Field Assessment Report on Oil Spill Concerns)	

INTRODUCTION

On May 5, 2004, the Office of the Compliance Advisor Ombudsman (CAO) received a complaint lodged by an international NGO, regarding the Baku-Tbilisi-Ceyhan Main Oil Export Pipeline project (BTC) in Georgia. The complaint raised concerns regarding potential environmental and social effects of oil spills on the sensitive natural resources in the Borjomi region. Of concern were how pipeline construction activities and operational oil spills might negatively effect the Borjomi aquifer, the source of Borjomi mineral water—a key industry in the Georgian economy—as well as other natural resources in this tourist area, such as the Borjomi-Kharaguli National Park. This complaint also included specific allegations from project-affected people living in the Borjomi region, from the villages of Tba, Tsemi and Sadgeri.

CAO staff appraised this complaint during a field visit to Georgia on May 18 - 21, 2004. Our appraisal, based on direct communication with local people, was that the main part of the complaint was not filed by, or on behalf of, specific IFC-project-affected people. Therefore, in the absence of explicit links with people on the ground who could be negatively impacted by the BTC project, the CAO rejected the broader complaint. However, the concerns raised by the residents of the three Borjomi area villages did fulfill CAO's acceptance criteria,¹ and were acknowledged and accepted on May 26, 2004, as three individual complaints.

BACKGROUND

The Baku-Tbilisi-Ceyhan (BTC) Main Export Pipeline project involves the development, financing, construction, and operation of a dedicated crude oil pipeline system, to transport oil from the existing Sangachal oil terminal near Baku, Azerbaijan, through Georgia, to a new export terminal to be constructed at Ceyhan, Turkey, on the Mediterranean Sea. The 1,760- kilometer pipeline will be buried throughout its length as it passes through Azerbaijan (442 kilometers), Georgia (248 kilometers), and Turkey (1,070 kilometers). The planned capacity of the pipeline will accommodate current levels of production, as well as additional production from ACG, for a total capacity of 1 million barrels per day. It is projected that the pipeline will begin operation in the second quarter of 2005.

The project sponsor is BTC Co., a consortium of 11 partners, which was established in August 2002. British Petroleum (BP), the largest shareholder in the project (30.1%), will operate the pipeline. Other partners (in descending order) are SOCAR [State Oil Company of Azerbaijan] (25%), Unocal (8.9%), Statoil (8.7%), TPAO [Turkish Petroleum Corporation] (6.5%), Eni (5%), TotalFinaElf (5%), ITOCHU (3.4%), INPEX (2.5%), ConocoPhillips (2.5%), and Amerada Hess (2.3%). In its capacity as pipeline operator, BP is leading the project design and construction phases.² The total project cost is approximately US\$3.6 billion. The International Finance Corporation's (IFC's) gross investment in the project is US\$250 million, \$125 million of which is for IFC's own account (referred to as an A loan), with an additional \$125 million in syndicated loans, (or so-called B Loan program).

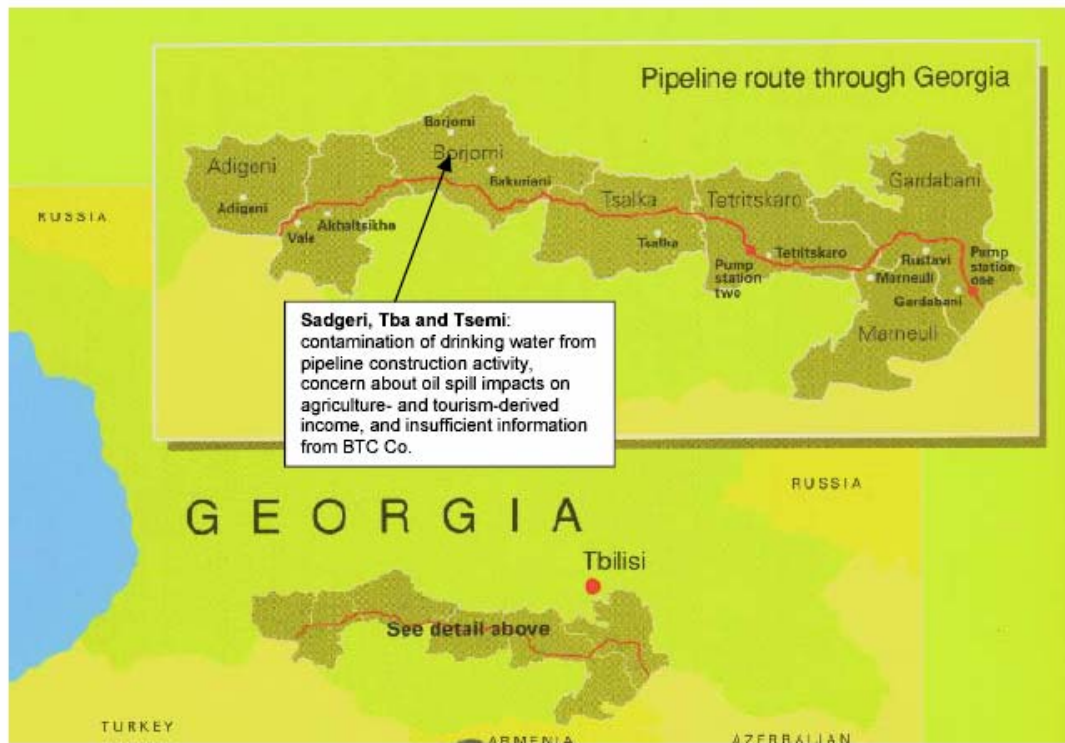
The Georgia section of the pipeline will start in Gardabani at the Azerbaijani-Georgian border and pass through seven regions of the country (see Figure 1), ending at Naokhrebi in the Akhaltiske District on the Turkish border. By a presidential edict of October 2000, the Georgian International Oil Corporation (GIOC) represents Georgia. GIOC plays the role of a government representative

¹ CAO Operational Guidelines, April 2004.

² Throughout the report, reference is made to BTC Co., including the recommendations section. In practice, BP will have lead responsibility in implementing any recommendations that it accepts, in its capacity as pipeline operator.

through which BTC Co. requests and secures issuance of rights, licenses, permits, certificates, authorization, approvals, and permissions to conduct project activities. Spie-Capag and Petrofac Joint Venture (SPJV), who were awarded the sub-contract in July 2002, are carrying out the construction work in Georgia.

Figure 1: Complaint Allegations



Source: BP brochure *Living Next Door to A Pipeline*.

THE COMPLAINTS

Three common threads run through the complaints from Sadgeri, Tba and Tsemi:

- residents' worries about pipeline construction (and eventually oil transport) effects on drinking water supplies;
- concerns about accidental oil spills and intentional pipeline sabotage on agriculture and tourism, the major means of making a living in the Borjomi region;
- and the insufficiency of communication with BTC.

The complainants also raised land rights issues, hayfield access, and land compensation, which in the first instance should be addressed through APLR and/or BTC Co. grievance mechanisms. An additional issue of access to BTC employment falls outside of the CAO's mandate.

CAO staff and an independent pipeline safety engineering consultant assessed the complaints by means of desk reviews of project and other related documents, and by a field mission to Georgia in July 2004.

CAO ASSESSMENT

Villagers are concerned about the health of their drinking water, now, during construction, and in future, when the pipeline will be operational. For Tba and Tsemi, there seems to be a much lower chance of an oil spill effecting drinking water, due to the locations of the respective springs that provide water to these villages. For Sadgeri, however, the threat of water pollution is higher, as Sadgeri's water source is directly linked to the Borjomola River, in catchments crossed by the pipeline. A positive action would be the monitoring of the water quality of all three villages by the Independent Environmental Consultant for the BTC project. It is also important for there to be independent verification of all supplies of water for these villages, as discrepancies exist between BTC's assessment and local people's assertions.

While the Borjomi region is rich in mineral springs and scenic beauty, the people who live in the region are poor and derive what income they can from agriculture and tourism. The situation in Sadgeri, Tba and Tsemi would have benefited from BTC's being more sensitive to people's perceptions of project impacts on their well being, and their levels of anxiety over project risks. In particular regarding consultation on ESIA, CAO found that a more flexible definition of affected people would have been warranted given the perceptions of off-site and downstream impacts arising from any future oil spill in the watershed.

It also seems that it is difficult for local people to contact BTC, either in person, by letter or by phone. Better targeted and more meaningful communication and information sharing by BTC, along with ongoing independent water quality and quantity monitoring, might help reduce distrust between the Complainants and BTC, as well as provide water quality data that could be trusted by both parties.

Each of the complaints are disaggregated more fully in the following table.

CAO COMPLAINT ASSESSMENT

Complaint Allegations	BTC Perspectives	CAO Conclusions and Recommendations
<p><i>The quality and turbidity of water supply at Tba and Tsemi have worsened since the start of the pipeline construction, rendering the water undrinkable and impacting negatively on tourism.</i></p>	<ul style="list-style-type: none"> • SPJV investigated claims of water contamination. They determined that all of these communities have alternative water supplies, which are not contaminated. • Residents have access to a number of sources that could be considered water sources (including sources collected at the Andezit reservoir), and the particular watercourse affected by pipeline activities does not represent the only water supply for Tba/Tsemi/Sadgeri. • Offers of filters and chlorination treatment were rejected by the communities, who insisted on a new 4km supply pipe to draw water from above the pipeline ROW. • A letter requesting the pipe was sent to SPJV in 2003 but was assumed at the time to be one of many community investment requests from a village outside the 2km zone and so this was formally rejected. • Following roadblocks by residents in June 2004, BTC Co. agreed to install a new 4km water pipe. 	<ul style="list-style-type: none"> • CAO found evidence that the water supply for Tsemi was contaminated by construction run-off (see annex 1). • CAO found some confusion about the actual sources of water supplies for Tba, Tsemi and Sadgeri, and continuing concern about possible future contamination of the water table. CAO recommends that further analysis of the water supply to the four villages (Patra Tsemi, Libani, Didi Tsemi and the small railway settlement) should be undertaken by BTC, based on the construction evidence of runoff contamination. • BTC Environmental and Social General Commitment Register have a number of specific sediment control commitments that do not appear to have been followed (in particular H14, I21, I22 as well as a number of subsequent I-series commitments). • BTC Co. has agreed to install the 4km water pipe requested by residents; work will be carried out by subcontractor IDC as soon as weather permits. The completion date is targeted for end August 2004. • CAO recommends that monitoring of the water pipe installation and communities' reactions should be carried out by the Independent Environmental Consultant (IEC) in its next report.

Complaint Allegations	BTC Perspectives	CAO Conclusions and Recommendations
<p><i>Concern about (1) adverse impacts of an oil spill on the water supply of Tba & Tsemi, including agriculture and tourism, (2) reputational implications on the Borjomi region in the event of an oil spill, even if successfully contained, (3) terrorist action against the pipeline, and (4) about pipeline safety guarantees in general.</i></p> <p><i>Lack of knowledge of or trust in BTC's studies in either the hydrological implications of an oil spillage or the oil spill response-planning process.</i></p>	<ul style="list-style-type: none"> • The BTC pipeline has been designed to meet or exceed relevant international technical, environmental and social codes and standards, in particular ASME B31.4 including: pipeline routing, hydraulic design, structural, contract specifications and leak detection. • A comprehensive oil spill response plan is nearing completion and will be signed as part of the Host Government Agreement. As part of the Plan, rigorous maintenance, surveillance and monitoring procedures will be implemented to minimize any threat of third party intervention. The villages of Tba/Tsemi/Sadgeri lie within the particularly environmentally sensitive Borjomi zone, and, according to BTC Co., an extremely comprehensive range of above- and below-ground measures are currently being finalized in order to ensure the lowest possible likelihood of successful sabotage activity. Such measures include the use of best available technology and regular patrolling of the pipeline and are being agreed with the relevant Government ministries and other state authorities. • Potential for spilled oil to contaminate ground and surface remains low. • BTC Co. has indicated that public disclosure of the security and protective measures in place was obviously inappropriate, but that the BTC Operations Community Liaison Management Plan was being finalized and would include comprehensive consultation with communities about Oil Spill Response. 	<ul style="list-style-type: none"> • CAO recommends that given the confusion (see above) about sources of water supply identified by the community, and concerns about contamination from oil spills, BTC should review the Oil Spill Response documentation with local people, and, if necessary, revise the response. • CAO understands the sensitivity of managing concerns about terrorist threats/activity and encourages BTC to continue to promote diligence and safety awareness with respect to the pipeline in an appropriate, participatory manner.

Complaint Allegations	BTC Perspectives	CAO Conclusions and Recommendations
<p><i>Lack of contact with and information from BTC Co. regarding issues of concern has generated a feeling of deep mistrust.</i></p>	<ul style="list-style-type: none"> Following the completion of the oil spill response plan, a comprehensive public disclosure process would be put in place. Tba, Tsemi, and Sadgeri have already been identified as communities showing considerable interest/concern and requiring additional consultation. 	<ul style="list-style-type: none"> Tba and Tsemi's dependency on spring fed piped water collected close to the ROW and the three villages' reliance on tourism would have warranted pro-active consultation with these villages in the planning, consultation and disclosure of the ESIA. CAO recommends monitoring by the Independent Environmental Consultant for the BTC pipeline of BTC Co.'s commitments to specifically targeting Sadgeri, Tba, and Tsemi for consultation during the upcoming public disclosure for the General Oil Spill Response Plan.

CONCLUSION

The CAO acknowledges some fear and confusion on the part of complainants about the possible risks associated with the BTC pipeline, particularly with regard to oil spills and ground water contamination. These concerns have been exacerbated by evidence that construction run-off from the pipeline has tainted some water supplies. Our assessment presents the following opportunities for resolution of the complaints that have been raised:

- BTC has already agreed to improve existing water supply infrastructure, which should eliminate any future concerns relating to construction run-off and turbidity.
- Active participation by the complainants with BTC and its contractors/consultants in a study of water sources and supplies with a view to better understanding any likelihood of ground water contamination from possible future oil spills. This process can be used to better inform the Oil Spill Response Plan.

In both cases, the success of these measures will need to be monitored collectively and openly by the communities concerned and BTC.

APPENDIX I

CAO FIELD ASSESSMENT REPORT ON WATER CONTAMINATION AT TSEMI

The Assessment team visited Complainants to investigate a complaint that the pipeline construction contaminated village water supplies, which, as a result was impacting their quality of life and also impacting summer tourism to the area. A sample of water was provided from a villager's kitchen tap. The water was discolored with colloidal matter, which did not settle during the period of the interview (approx 1 hour). They advised that the contamination occurred approximately 4 weeks previously following a period of heavy rain. They also advised that the water quality was normally sediment free, although they acknowledged that water occasionally shows turbidity after rainfall, but then only for short periods.

The Complaint guided the assessment team to the source of the Tsemi water supply (and also possibly the supply for Tba), located at Andezit (Figure 2). Water is diverted from a small stream to a concrete intake structure and then to a covered reservoir. There is a disused sedimentation type of water treatment plant adjacent to the reservoir.

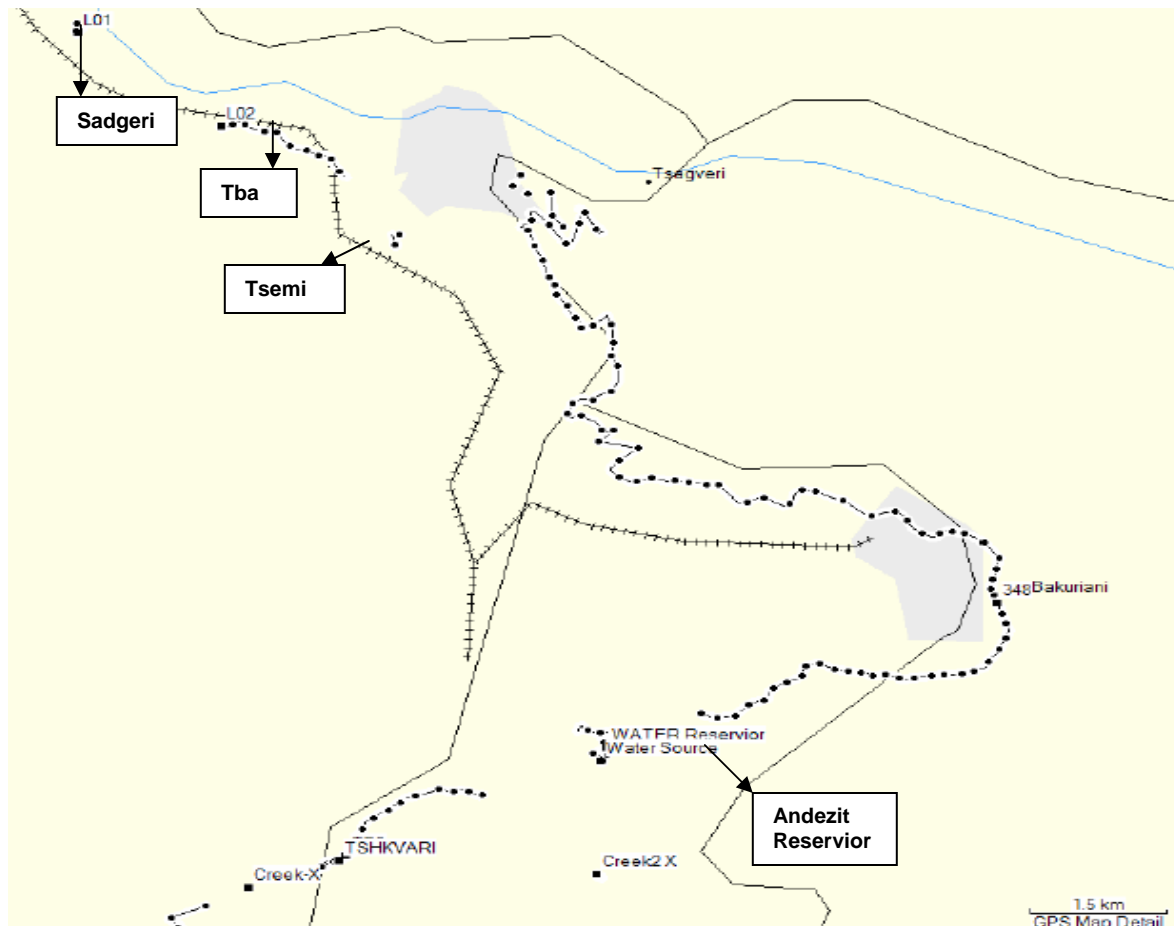


Figure 2 - Sources, reservoir and waypoints, using GPS tracks, showing Sadgeri (L01), Tsemi (L02), Andezit Reservoir and Local Source, and the Creek Crossing Upslope of Andezit Reservoir (Creek 2X)

The stream at the diversion site was discolored, and apparently similar in turbidity to the sample shown at Tsemi. Figure 3 illustrates the water turbidity at the intake.



Figure 3 - Discoloured Water in Stream Supplying Andezit Reservoir

While not clearly visible in this photograph, others taken at the site show recent clay like sediment deposits consistent with significant erosion upstream. Figure 4 shows water flowing to the reservoir intake structure. It shows sediment, and attempts to control the sediment using geotextile membrane filters.



Figure 4 - Intake Structure - Andezit Reservoir

The assessment team noted that the pipe supplying the reservoir was broken at the table drain on the west side of the road crossing (the road is used to access the BTC pipeline construction site), such that runoff from the road and surrounding areas to the table drain will contaminate the reservoir supply.

The assessment team traveled approximately 2 km from the intake structure along a road paralleling the stream to a stream-crossing constructed for the BTC pipeline (Figure 5). The crossing has no sediment controls to prevent runoff from the construction site carrying sediment into the stream. There is a relatively small flume beneath the crossing, suggesting that in heavy rainfall the access road can be overtopped. Water downstream of the crossing is discolored with sediment.



Figure 5 - Watercourse Crossing - Upstream of Andezit Reservoir

Analysis undertaken by URS for BTC as part of the Oil Spill Response planning Chapter 04 – Document 4542R/45726-021-784 – My 2003, Preliminary Study of Alternative Water Supply for the Borjomi Area identified water supplies to the villages. It identifies that:

Andezit is supplied (90%) from the river Kumiska, approximately 2 km upslope of the town site. A small spring supplies 5 families in the immediate vicinity of a small concrete reservoir. The report assesses the risk of oil contamination of these water supplies is 0.04, based on the chance of contamination assessed at 0.40.

Tskhisjvari is supplied from 4 sources upslope of the pipeline. The report assesses the risk of oil contamination of these water supplies is 0.04, based on the chance of contamination assessed at 0.20.

Sadgeri is supplied from a local spring and from a well near the Borjomula River. The report assesses the risk of oil contamination of these water supplies is 0.6, based on the chance of contamination assessed at 1.0.

Patra Tsemi, Libani, Didi Tsemi and a small railway settlement source their water from the Sakatchavi springs which are located above the Borjomula River and are supplied from an aquifer that is not in hydraulic contact with ground water which because of its elevation, could be in contact with the spillage from the pipeline. The report noted that Didi Tsemi might during summer water shortages be supplied from other sources as yet unknown. The report identifies that because of the location of the Sakatchavi Springs, supplies to these townships have zero risk of oil contamination following a pipeline spill.

Tba is supplied from a local spring, similar to the Sakatchvari spring. Tba is considered to have zero contamination risk.

While the URS report concluded that the Tsemi water supply was not connected to a catchment with the potential to be contaminated from an oil spill (or by inference, from construction runoff), the evidence is that the water was contaminated. The fact that the Complainant directed the team to the Andezit reservoir as the supply point, suggests that a water supply (possibly the one identified as “other sources as yet unknown”) is drawn from the reservoir.

Figure 1.1 to the URS report shows that the Sakatchavi springs are located south of the towns identified in 4 above, and presumably the pipeline from these springs to the towns follows the rail line

Figure 5 shows that the rail line runs to Bakuriani and to Andezit, and as such would provide a route to the Andezit reservoir. It seems possible that when the water treatment plant at this location was functional, its capacity may have been sufficient to supply such a pipeline. However, the assessment team did not determine whether such a pipeline exists. If the suggestion that 90% of the water supply to Andezit is sourced from the Kumiska River is correct, it would appear that this source bypasses the reservoir at Andezit.

In conclusion, the BTC Environmental and Social General Commitment Register has a number of specific sediment control commitments that do not appeared to have been followed, in particular H14, I21, I22 as well as a number of subsequent I series commitments.

At the time of the inspection, BTC advised that they had undertaken construction of a polyethylene pipeline between the Andezit reservoir and a source upslope of the pipeline, which will remove the possibility of local contamination. If it is permanent, it will remove the potential for the water supply to be contaminated either during the remaining BTC / SCP pipeline construction periods, or by an oil spill during the operation of the pipeline.

It is recommended that URS should be asked to undertake a further analysis of the water supply to the four villages (Patra Tsemi, Libani, Didi Tsemi and the small railway settlement) based on the construction evidence of runoff contamination, and revise the report and any associated Oil Spill Response documentation to ensure that source documents for Oil Spill Management to protect water supplies following an oil spill are accurate.

APPENDIX II

CAO FIELD ASSESSMENT REPORT ON OIL SPILL CONCERNS

Oil Spill Management

In case there is a loss of pipeline integrity (i.e. a breach or crack), oil will be discharged from the pipeline; there is a potential for major environmental and economic impact, and if the spill were to be ignited, for the safety of the community. BTC Co. has prepared a detailed oil spill response plan for the pipeline, and has commenced recruitment of operating personnel responsible for providing such response. However, oil spill response is reactive disaster management; while it is necessary to be prepared for the eventuality of a spill, it is more important for the pipeline to be properly managed so as to prevent spills in the first place.

Pipeline Integrity / Community Involvement

At the time of commissioning, pipeline integrity will have been proven by a strength proof test: hydrostatically³ testing the pipeline to a minimum pressure 25% higher than the maximum operating pressure at any point along the pipeline.

Once oil is flowing through the pipeline, threats that could compromise the pipeline's integrity include:

- Unintentional external interference (e.g. during excavation)⁴
- Corrosion
- Natural events (floods, landslides)
- Process faults
- Intentional damage (terrorism, malicious damage)

BTC Co.'s design includes a range of measures to identify the presence of threats in each of the above categories early enough to manage the threat *before* it reaches the point where the integrity of the pipeline is compromised. Because pipelines have a low failure frequency, the greatest threat to the pipeline integrity is for the Operator to become complacent and neglect to implement the controls required for the identified threats. Of concern is that the operator may fail to continually monitor changing threats through the operating life of the pipeline, and to implement additional or changed controls for the changed threats.

Other countries manage threats to pipeline safety by requiring periodic external and independent audits of the Operator's performance against commitments identified in their approved Safety and Operating (and environmental management) plan. Periodic specific audits are required to address the actual condition of the pipeline and its integrity management. Because of the potential for a containment loss to have public and environmental impacts, audit reports become public documents released by the Regulator. External auditing provides some assurance that the Operator is managing the pipeline integrity at the highest levels practicable. Furthermore, an experienced, independent audit often identifies developing issues before they become evident to the Operator.

³ The vessel is filled with a liquid and examined for leaks or permanent changes in shape. The test pressure is always considerably more than the operating pressure to give a margin for safety. Water is commonly used because it is almost incompressible, so will only expand by a very small amount should the vessel split.

⁴ It should be noted that the thickness of the BTC pipeline will prevent it from being punctured by most earthmoving equipment that exists in the Country.

Best practice recognizes that the people that live alongside the pipeline not only have a specific interest in ensuring the pipeline safety, but they are also probably the most valuable source of intelligence relating to activities along the pipeline route that have the potential to interfere with the pipeline. It is usual that the pipeline operator's lands and community awareness officer develops a personal relationship with each affected landowner/holder, visiting him at least once annually and providing a range of literature and small awareness related gifts. It is expected also that the pipeline operator establishes a single free call telephone number or direct line to the pipeline controller and through the community relations program, as well as reinforce the use of this number to report any unusual activity or concern to the person who can arrange for an immediate response, if required. In addition, a targeted pipeline awareness program developed for all parties whose normal business activities have the potential to interfere with the pipe (construction contractors and earthmoving contractors, utility owners, developers and maintenance workers, road and rail maintenance, engineering and planning departments, etc) should be developed.

Oil Spill Impacts

If all controls fail and there is an oil spill, the volume lost can vary from a few liters (a corrosion pinhole) to many cubic meters. The pipeline control system incorporates a leak detection system developed to industry standards, and will detect a rupture very quickly. However, it is likely to be incapable of identifying a pinhole leak; that is one of the tasks of the pipeline horseback patrollers. When a leak is detected, the control system permits rapid pump shutdown and closure of the pipeline sectioning valves. Once valves are closed, oil will continue to dribble from the leak until the hydraulic conditions stabilize. BTC have calculated and reported the potential spill volumes in its General Oil Spill Response Plan (GOSRP), Appendix H, although the actual volume discharge is highly location- and incident-specific.

In addition to the volume of oil discharged, the impact of a spill is highly dependent on the oil properties. The BTC OSRP (Appendix E) describes the properties of Azeri crude oil from the ACG field that will be transported in the BTC pipeline: the oil pour point lies within the range of ground temperature (summer to winter) that occurs in Georgia. In summer the daytime ambient temperature in the higher altitudes south of Borjomi will be above the pour point (spilled oil will remain fluid), while in winter the ambient temperature is below the pour point (spilled oil will solidify).

Furthermore, the oil composition includes volatile (light) components, which once exposed to the atmosphere will vaporize. As these components are lost to the atmosphere the oil viscosity increases; high viscosity fluids will not significantly penetrate the ground, won't readily flow over ground, nor will they readily move down high elevation streams nor readily disperse in ground water. In the Borjomi area, the effects combine to significantly increase the viscosity (to solidification except during summer). These factors combine to minimize the potential for spilled oil to contaminate ground and surface water.

Terrorism / Sabotage

The physical design of the pipeline appears adequate to resist threats from malicious damage sources (such as disaffected community members). The design (wall thickness, steel grade and cover) provides a high level of penetration resistance that will provide resistance to low-level terrorism threats such as small yield explosive devices placed near the pipeline. BTC Co. has indicated that public disclosure of the security and protective measures in place was obviously inappropriate, but that the BTC Operations Community Liaison Management Plan was being

finalized and would include comprehensive consultation with communities about Oil Spill Response.