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**Evaluation of QGEP Hydrocarbon Resources
and Economic Potential, Offshore Brazil
As of December 31, 2009**

Prepared for

Queiroz Galvão Exploração e Produção

October 28, 2010



Gaffney, Cline & Associates Inc.
Technical and Management Advisers to the Petroleum Industry Internationally Since 1962

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CG/RW/C1887.00/LT1953a¹

October 28, 2010

Mr. Lincoln R. Guardado
Diretor de Exploração
Queiroz Galvão Exploração e Produção S.A.
Av. Presidente Antonio Carlos 51 / 5º andar
20029-010 Rio de Janeiro, RJ, Brasil

Dear Mr. Guardado:

**Evaluation of QGEP Hydrocarbon Resources
And Economic Potential, Offshore Brazil
As of December 31, 2009**

As requested, Gaffney, Cline & Associates (GCA) has prepared an evaluation of the hydrocarbon interests of Queiroz Galvão Exploração e Produção S.A. (QGEP) in eight petroleum license blocks, offshore Brazil. These interests include oil and gas discoveries and exploration prospects. The evaluation work undertaken by GCA incorporates:

- Statements of Contingent Resources and Prospective Resources;
- Assessments of geologic risk in respect of each exploration prospect;
- An audit of QGEP's assessment of the commerciality threshold and likelihood of being able to commercialize any future discoveries;
- Cash flows associated with a success case for each discovery and exploration prospect;
- Net Present Values of the upside case for each discovery;
- Net Present Values for both an assumed success case and a case adjusted for certain risks on each exploration prospect; and
- Net Present Values for an alternate case that assumes Jequitinhonha 1 and 2, and Santos 4 discover oil rather than gas, with a further sensitivity that Santos 4 is developed through an integrated development of Santos 2 and Santos 4.

The participation interests of QGEP, along with the identified discoveries and prospects, are:

¹ Reissue of original letter of same date to correct typographic error in Alternative Prospective Resources table on bottom of page 11.

QGEP Hydrocarbon License Interests and Prospect Listing

Block	Basin	QGOG Interest	Field / Prospect	Fluid
Discoveries				
BCAM-40	Camamú	45%	Camarão Norte	Gas-Oil
BM-CAL-5		22.50%	Copaíba	Oil
		27.50%	Jequitibá	Gas
BM-S-12	Santos	30%	Santos 1	Gas
Exploration Prospects				
BM-CAL-12	Camamú	20%	CAM-1	Oil
BM-J-2	Jequitinhonha	100%	JEQ-1	Gas
		100%	JEQ-2	Gas
BM-S-12	Santos	30%	Santos 1 UCR1	Gas
			Santos 1 UCR2	Gas
			Santos 1 UCR3	Gas
			Santos 1 UCR4	Gas
			Santos 2	Oil
			Santos 3	Oil
			Santos 4	Gas
BM-S-75/76/77		20%	Santos 5	Oil
			Santos 6	Oil
			Santos 7	Gas
			Santos 8	Oil
			Santos 9	Oil

Contingent Resources

On the basis of technical and other information made available to GCA, and its independent examination and audit of such information, GCA has estimated Contingent Resources of Oil and Condensate (expressed in thousands of cubic meters, Mm³) and Natural Gas (expressed in billions of cubic meters, Bcm), net to QGEP, from the four discoveries at the 1C, 2C, and 3C confidence levels (see Appendix II for definitions).

**Contingent Resources Net to QGEP's Interest
As of December 31, 2009**

Discovery	1C		2C		3C	
	Oil/Cond Mm ³	Gas Bcm	Oil/Cond Mm ³	Gas Bcm	Oil/Cond Mm ³	Gas Bcm
Camarão Norte	---	0.4	226	0.3	333	0.4
Copaiba	652	0.1	1,353	0.2	2,546	0.3
Jequitiba	28	0.6	65	1.3	130	2.6
Santos 1	2	0.1	6	0.2	12	0.4

Note: The 2C resource category volume is inclusive of the 1C volume (these are not additive).
Similarly the 3C volume is inclusive of the 2C volume.

Prospective Resources

On the basis of technical and other information made available to GCA, and its independent examination and audit of such information, GCA has prepared Low, Base and High estimates of Prospective Resources of Oil/Condensate and Natural Gas net to QGEP for each of the identified prospects.

**Prospective Resources Net to QGEP's Interest
As of December 31, 2009**

Prospect	GCOS %	Low Estimate		Best Estimate		Mean Estimate		High Estimate	
		Oil/Cond Mm3	Gas Bcm	Oil/Cond Mm3	Gas Bcm	Oil/Cond Mm3	Gas Bcm	Oil/Cond Mm3	Gas Bcm
Camamú 1	31%	4,150	0.4	9,659	1.0	11,231	1.1	20,496	2.0
Jequitinhonha 1	29%	490	12.3	1,208	30.2	1,351	33.8	2,432	60.8
Jequitinhonha 2	24%	387	7.7	965	19.3	1,091	21.8	1,968	39.4
Santos 1 UCR1	30%	9	0.3	40	1.4	55	1.9	124	4.3
Santos 1 UCR2	30%	3	0.1	9	0.3	12	0.4	26	0.9
Santos1 UCR3	30%	6	0.2	25	0.9	33	1.2	72	2.5
Santos 1 UCR4	30%	2	0.1	7	0.2	9	0.3	17	0.6
Santos 2	39%	3,834	0.7	13,478	2.5	17,963	3.3	37,946	6.9
Santos 3	19%	1,737	0.3	5,088	0.9	6,303	1.2	12,434	2.3
Santos 4	40%	894	13.4	2,501	37.5	2,935	44.0	5,533	83.0
Santos 5	18%	2,036	0.3	9,919	1.5	14,469	2.2	32,993	4.9
Santos 6	18%	895	0.1	1,923	0.3	2,230	0.3	3,972	0.6
Santos 7	11%	121	2.4	277	5.5	329	6.6	608	12.2
Santos 8	23%	1,227	0.1	3,142	0.3	3,712	0.4	7,002	0.7
Santos 9	20%	548	0	1,353	0.2	1,597	0.2	3,024	0.4

Note: The Best Estimate resource category volume is inclusive of the Low Estimate volume (these are not additive).
Similarly the High Estimate volume is inclusive of the Best Estimate volume.

Alongside preparing the Prospective Resource estimates, QGEP has also requested GCA to provide an estimate of the perceived Geological Chance of Success (GCOS) for each of the prospects.

The assignment of a GCOS to a prospect is routinely undertaken within the oil and gas industry as one of the steps in assessing whether or not a prospect is worthy of drilling. While there are systematic procedures for such estimation, the process nonetheless essentially remains one of judgment. The GCOS estimate is the product of the estimated individual probabilities that contribute to geologic success:

- The presence of a trap and seal.
- The presence of reservoir of acceptable quality.
- The availability of a hydrocarbon source and migration path.
- Appropriate timing with respect to the formation of trap and seal, and hydrocarbon generation and migration.

The presence of numerous other oil and gas fields near to QGEP's exploratory blocks, along with wells where the targeted reservoir formations can be seen to exist, suggests that the risks associated with hydrocarbon generation, hydrocarbon migration and the presence of reservoir are all relatively small. Nevertheless, because of the complex structural and stratigraphic configuration of many of the identified targets, as well as the role of the salt (the presence or lack thereof), as a key component in the effectiveness of the migration pathways, the risk on individual identified prospects is considered to somewhat higher.

It should be understood that the GCOS is the estimated probability of making a discovery. Even if a prospect is drilled and a discovery is made there is no certainty that it will prove to be commercial and a development result. The resource volumes associated with each prospect are not adjusted for this risk, which is estimated separately.

GCA considers it possible that the Jequitinhonha 1 and 2, and Santos 4 prospects could be oil prone. This possibility has not been incorporated in the resource statements and economic evaluation contained herein, which presume that any discovery resulting will be gas. The evaluation of this case has been included as an alternative in this report.

Resource Estimation Standards

The resource estimates for both Contingent Resources and Prospective Resources provided herein have been prepared by GCA in accordance with the resources definitions contained in the Petroleum Resources Management System (PRMS) approved by the Society of Petroleum Engineers, the World Petroleum Council, the American Association of Petroleum Geologists and the Society of Petroleum Evaluation Engineers in March 2007, and attached as Appendix III.

This assessment has been conducted within the context of GCA's understanding of QGEP's petroleum property rights, as represented by QGEP management. GCA is not in a position to attest to property title, financial interest relationships or encumbrances thereon for any part of the appraised properties or interests.

There are numerous uncertainties inherent in estimating resources, and in projecting future production, development expenditures, operating expenses and cash flows. The volume of an oil or gas accumulation cannot be measured directly. Oil and gas resources are estimated by a series of indirect measurements and inferences, and any resource estimate is a function of the quality of the available data, engineering and geological interpretation, and judgment. Even though prepared by persons experienced in such work, estimates of oil and gas resources may differ between parties, sometimes materially.

Results of drilling, testing and production that post-date the preparation of the estimates may justify revisions, some or all of which may be material. Accordingly, resource estimates are often different from the quantities of oil and gas that are ultimately recovered and the timing and cost of those volumes that are recovered, if any, may vary from that assumed in the estimate.

A detailed description of the volume estimation for each discovery and prospect for which resources have been estimated is presented in Appendix I.

Economic Evaluation

In addition to the estimation of resource volumes and the GCOS, QGEP also requested GCA to prepare an economic evaluation of certain Contingent Resources and Prospective Resources cases.

An economic evaluation is not a valuation. The valuation of petroleum properties typically involves the consideration of multiple approaches which ideally, though in practice not that frequently, yield similar results. Rarely is there a third-party transaction involving the subject property that is sufficiently similar in nature and time that allows a direct measure of market value. Occasionally there will be transactions offset in either or both of proximity and time, or ones that are not third-party transactions, that may assist as value indicators. In the absence of such direct indicators, a commonly used approach is to estimate the future cash flow generating potential of a property, adjusting this for risk and the time value of money, and assess value by rationalizing the results with such other approaches as may be available.

Results from the auction of leases of petroleum rights, including those that have been auctioned in Brazil, show considerable variation in the bids made by different companies or consortia for the same lease, with the highest bid potentially being several times the lowest. These variations may result from a number of factors, including perceptions of risks, the volume of hydrocarbons that may eventually be produced if exploration and exploitation are successful, the costs of exploration and development, the future price of oil and gas, the impact of taxes and government regulation, and the competition for capital from other parts of the world. The key observation is that different companies frequently have considerably different perceptions of the value of the same asset.

It should be noted that the economic cases evaluated herein represent only a partial view of many economic cases and scenarios that might be considered in a full valuation exercise, and that the NPVs presented herein, alone or in combination, should not be taken to represent a market valuation of the petroleum interests of QGEP.

Economic Evaluation Approach

QGEP prepared a development scenario for each existing discovery and prospect, assuming the latter subsequently proved to be a discovery. GCA has audited these development scenarios, along with the associated estimates of capital expenditure and operating expense and is satisfied that QGEP estimates are sufficient to produce the volumes under consideration.

GCA's audit of the capital costs included the cost of exploration wells, development wells, floating production system (FPSO), plants, gathering system, pipelines, and other components of the development plans. In GCA's opinion QGEP may be conservative in some of its capital cost estimates (estimating higher costs than may eventually be required) when compared to costs currently being estimated for similar developments in Brazil and elsewhere. The audit of operating expenses included the cost of supply boats, helicopter services, FPSO, plants, compression systems, workover operations, mobilization costs, well abandonment costs, and other components of the field operation. In general the estimated operating expenses appear in line with industry averages.

While the approach taken by QGEP is that which is typically employed in the economic evaluation of resources, it should be noted that each of the development cases, and associated capital costs and operating expenditures, is hypothetical as no firm development plan currently exists for any of the discoveries and, in the case of the prospects, no discovery may ever be made or developed. Even if discoveries are made and developments proceed, there is no certainty that the development approach will be in line with that assumed by QGEP, or that timing or other factors will not influence costs and different from those assumed. The economic evaluation has been based on the resource volumes estimated by GCA, and the production profiles, development scenarios and timing are as provided by QGEP.

QGEP requested GCA to prepare its economic evaluation using a range of oil and gas prices (identified as Low, Base and High) and to use discount rates of 8%, 10%, and 12%:

Year	Oil (US\$/Bbl)			Gas (US\$/MMBtu)		
	Low	Base	High	Low	Base	High
2010	70.00	80.00	90.00	5.00	6.00	7.00
2011	71.75	82.00	92.25	5.13	6.15	7.18
2012	73.54	85.00	94.56	5.25	6.30	7.35
2013	75.38	87.00	96.92	5.38	6.46	7.54
2014	77.27	88.00	99.34	5.52	6.62	7.73
2015+	+ 2.5% per annum					

Condensate is assumed to trade at a 10% premium to oil price. All costs were assumed to inflate by 2.5% per annum, starting in 2011, and estimates of royalty, Special Participation, PIS/COFINS and corporation tax payable were calculated in GCA's economic model and applied as appropriate to each case.

Economic Evaluation of Contingent Resources

QGEP requested GCA to prepare cash flow analyses assuming development of three of the four discoveries (Camarão Norte, Copaiba and Jequitibá). When presenting such analyses, it is usual to present either just the middle case (typically the best estimate or mean; in this case the 2C Contingent Resources), or to present each of the low side, best estimate and upside cases (1C, 2C and 3C Contingent Resources) such that the range of expected potential outcomes can be seen. In this instance QGEP has only prepared a development scenario for the 3C, or upside resource estimate for each discovery. It is therefore important to recognize that the economic evaluations provided herein also represent upside NPVs, and that no low side or best estimate case has been evaluated.

The cash flow of the full field (100% interest) development is presented in Appendix II, with the Net Present Values (NPVs) net to QGEP of the resulting cases tabulated below.

The fourth discovery, Santos 1, is not considered to be sufficiently large even in the 3C case to develop on its own and its evaluation has been incorporated along with the evaluation of the Prospective Resources.

Net Present Value (US\$MM) of 3C Contingent Resource Case Net to QGEP Interest As of December 31, 2009

Prospects	Low Price Case			Base Price Case			High Price Case		
	8%	10%	12%	8%	10%	12%	8%	10%	12%
Camarão Norte	83	68	57	99	82	68	117	97	80
Copaiba	247	196	155	300	239	191	355	285	229
Jequitibá	0	0	0	18	3	0	49	27	11
Santos 1	Evaluated within Prospective Resources								

Economic Evaluation of Prospective Resources

QGEP requested GCA to prepare cash flow analyses of the development of discoveries assumed to result from the successful exploration of the various prospects. In each case the discovery was assumed to be the mean size resulting from the estimates of Prospective Resources prepared by GCA.

Two sets of NPVs were requested, the first of which assumes exploration success. The cash flow of the full field (100% interest) successful development is presented in Appendix II, with the NPVs net to QGEP's interest in the tables below.

**Net Present Value (US\$MM) of Mean Prospective Resource Case Net to QGEP Interest
As of December 31, 2009**

Success Case

Prospects	Low Price Case			Base Price Case			High Price Case		
	8%	10%	12%	8%	10%	12%	8%	10%	12%
Camamú 1	923	696	521	1,132	865	660	1,352	1,043	805
Jequitinhonha 1	1,141	842	617	1,523	1,152	872	1,906	1,463	1,127
Jequitinhonha 2	1,002	779	609	1,256	985	778	1,512	1,192	948
Santos 1	87	61	43	129	95	70	172	129	97
Santos 2	1,365	1,006	731	1,706	1,283	958	2,065	1,575	1,197
Santos 3	549	419	318	687	533	412	833	654	512
Santos 4	1,010	645	386	1,398	944	621	1,787	1,246	857
Santos 5	893	603	392	1,134	793	544	1,387	992	703
Santos 6	140	97	64	188	137	97	239	178	131
Santos 7	54	25	5	122	78	47	190	132	89
Santos 8	344	266	205	420	329	257	501	394	311
Santos 9	78	50	28	113	78	51	149	107	75

The second set of cases requested by QGEP involves incorporating into the NPVs a risk adjustment to take account of the QGEP's assumed Commercial Chance of Success (CCOS). This has been defined by QGEP as the product of the GCOS, the assessed probability of exceeding a Commercial Threshold and, where applicable, a dependency factor where the commercial success of a discovery is dependent upon the success of one or more other discoveries.

QGEP estimated the Commercial Threshold for each prospect, which is the smallest discovery size that it estimated could be developed commercially in a particular area. Commerciality was defined as the discovery being able to achieve at least a 10% Internal Rate of Return (the same as having an NPV discounted at 10% of at least zero). This NPV was estimated using development plans scaled to this smallest discovery size. GCA audited the methodology utilized and assumptions incorporated and considers the results obtained by QGEP to be reasonable.

The Commercial Threshold probability was computed from the distribution of potential discovery sizes arising from the Prospective Resource estimate for each prospect and the proportion of size outcomes that exceed the Commerciality Threshold. GCA does note, however, that this approach does not incorporate consideration of other, exogenous, factors that might also impact the chance of developing a discovery.

The development of some prospects would be dependent upon one or more other discoveries being made. In general, this would be the case where a prospect has to use facilities put in place to develop another prospect. The development of the prospects Santos 1, Santos 3, Santos 6, Santos 7, Santos 8, and Santos 9 are dependent on the successful development of any of prospects Santos 2, Santos 4, or Santos 5. If any of these latter three

prospects is successful, it would require the construction of a gas pipeline into which discoveries of any of the six smaller discoveries could be tied. QGEP has assumed a dependency factor of 70% for each of the six prospects (which is the same as the probability of geological success of at least one of Santos 2, 4, or 5, assuming all three are drilled, based on the GCA estimated GCOS).

Prospect	GCOS	Probability of Exceeding Commercial Threshold	CCOS
Camamú 1	31%	99%	30.7%
Jequitinhonha 1	29%	94%	27.3%
Jequitinhonha 2	24%	96%	23.0%
Santos 1 *	30%	99%	20.8%
Santos 2	39%	93%	36.3%
Santos 3 *	19%	93%	12.4%
Santos 4	40%	92%	36.8%
Santos 5	18%	92%	16.6%
Santos 6 *	18%	96%	12.1%
Santos 7 *	11%	92%	7.1%
Santos 8 *	23%	95%	15.3%
Santos 9 *	20%	91%	12.7%

*CCOS further adjusted by 70% dependency factor

The risk-adjusted NPVs have been calculated by multiplying the Success Case NPVs by the CCOS, with a further downward adjustment to reflect the fact that the cost of at least one exploration well will be incurred in each case regardless of outcome.

**Net Present Value (US\$MM) of Mean Prospective Resource Case Net to QGEP Interest
As of December 31, 2009**

Risk – Adjusted Case

Prospects	Low Price Case			Base Price Case			High Price Case		
	8%	10%	12%	8%	10%	12%	8%	10%	12%
Camamú 1	277	207	154	341	259	196	409	314	241
Jequitinhonha 1	272	191	131	376	276	200	481	361	270
Jequitinhonha 2	185	135	97	243	182	136	302	230	175
Santos 1	8	3	0	17	10	5	25	17	11
Santos 2	481	352	252	605	452	335	736	558	421
Santos 3	49	33	22	66	48	33	84	63	46
Santos 4	354	221	126	497	331	212	640	442	299
Santos 5	136	88	54	176	120	79	218	153	105
Santos 6	5	0	0	11	5	1	17	10	5
Santos 7	0	0	0	0	0	0	0	0	0
Santos 8	42	31	22	54	40	30	66	51	38
Santos 9	0	0	0	3	0	0	8	3	0

Summary of Economic Evaluation

At QGEP's request, GCA has provided a summation, by simple mathematical addition, of the NPVs for each of the oil and gas price and discount rate cases for Contingent Resources and the positive risk-adjusted Prospective Resource cases. The risks and attributes associated with Contingent Resources and Prospective Resources are very different, and the combining together of NPVs from these two resource classifications should not be undertaken without a proper understanding of such matters and other considerations outlined herein.

**Summation of 3C Contingent Resource Case (US\$MM)
Assuming Development of Camarão Norte,
Copaiba, and Jequitibá Discoveries
As of December 31, 2009**

Oil Price	Discount Rate		
	8%	10%	12%
Low Price Case	330	264	212
Base Price Case	417	324	260
High Price Case	521	409	321

Although the total provided above is the sum of the NPVs of the 3C resource volume cash flows for three of the four discoveries, there is no certainty that any of the discoveries will be developed nor, if any are developed, all three will be developed, or they will be developed at the size and in the manner contemplated in the cases presented herein.

**Summation of Prospective Resource
 Risk-Adjusted Cases (US\$MM)
 Assuming Drilling of all Prospects
 As of December 31, 2009**

Oil Price	Discount Rate		
	8%	10%	12%
Low Price Case	1,809	1,261	857
Base Price Case	2,389	1,723	1,227
High Price Case	2,985	2,200	1,611

The summation of the risk-adjusted NPVs of the individual prospects eliminates the negative risk-adjusted NPVs (the presumption being that, under such a scenario, a prospect would not be drilled), and assumes that all prospects identified with positive risk-adjusted NPVs are drilled. However there is no certainty that all will be drilled, any discoveries will result or subsequent developments will occur or, if they do occur, that they will be developed at the size and in the manner contemplated in the cases presented herein.

Alternative Oil Case

The Prospective Resources assigned to the Jequitinhonha 1 and 2, and Santos 4 prospects and the ensuing economic evaluation assume that, if a discovery were to result, it would be of gas with small volumes of associated condensate. There is, however, a chance that if a discovery were to be made it could be of oil with small volumes of associated gas. QGEP has requested GCA to evaluate the resource volumes that would apply should each of these prospects result in a discovery that is predominantly oil, rather than gas, and how this would impact the economic analysis. The oil and associated gas volumes, and net present values, assuming a discovery of oil are therefore an alternative to the volumes and net present values quoted previously, and are not additive to the volumes and net present values previously quoted.

**Alternative Prospective Resources Net to QGEP's Interest
 As of December 31, 2009**

Prospect	GCOS %	Mean Estimate	
		Oil/Cond Mm3	Gas Bcm
Jequitinhonha 1	29%	30,000	2.3
Jequitinhonha 2	24%	18,000	1.4
Santos 4	40%	21,720	1.7

**Net Present Value (US\$MM) of Mean Alternative Prospective Resource Case Net to QGEP Interest
As of December 31, 2009**

Success Case (Oil Discovery)

Prospects	Low Price Case			Base Price Case			High Price Case		
	8%	10%	12%	8%	10%	12%	8%	10%	12%
Jequitinhonha 1	3,139	2,607	2,174	3,754	3,127	2,617	4,402	3,675	3,084
Jequitinhonha 2	1,927	1,623	1,372	2,305	1,945	1,648	2,703	2,284	1,939
Santos 4	1,561	1,169	868	1,925	1,464	1,108	2,309	1,774	1,361

**Net Present Value (US\$MM) of Mean Prospective Resource Case Net to QGEP Interest
As of December 31, 2009**

Alternative Risk – Adjusted Case

Prospects	Low Price Case			Base Price Case			High Price Case		
	8%	10%	12%	8%	10%	12%	8%	10%	12%
Jequitinhonha 1	820	676	559	988	818	680	1,165	968	807
Jequitinhonha 2	398	329	272	484	403	336	576	481	403
Santos 4	557	413	303	691	522	391	832	636	484

If incorporated in the summation, the resultant risk-adjusted net present values generally range some US\$ 700-900 million higher than if, as expected, gas is discovered in these three prospects.

**Summation of Prospective Resource
Alternative Risk-Adjusted Cases (US\$MM)
Assuming Drilling of all Prospects
As of December 31, 2009**

Oil Price	Discount Rate		
	8%	10%	12%
Low Price Case	2,773	2,133	1,638
Base Price Case	3,436	2,677	2,086
High Price Case	4,136	3,253	2,562

There is potential for increasing these risk-adjusted net present values by a further US\$ 100 million or so if development integration occurs between Santos 2 and Santos 4. The same cautions as previously noted apply to all risk-adjusted net present values as these assume that

all prospects identified are drilled, even though there is no certainty that this will be the case, or that any discoveries will result or subsequent developments will occur or, if they do occur, that they will be developed at the size and in the manner contemplated in the cases presented herein.

For this assignment, GCA served as an independent Resource auditor/evaluator. The firm's officers and employees have no direct or indirect interest holdings in the properties evaluated. GCA's remuneration was not in any way contingent on the reported resource estimates or NPVs computed.

GCA reserves its right to approve, in advance, the use and context of the use of any results, statements or opinions expressed in this report. Such approval shall include, but not be limited to, statements or references in documents of a public or semi-public nature such as loan agreements, prospectuses, resource statements, press releases etc.

This report has been prepared for QGEP and should not be used for purposes other than those for which it is intended.

Very truly yours,

GAFFNEY, CLINE & ASSOCIATES, INC.



César Guzzetti
Southern Cone Regional Manager

Attachments

- | | | |
|------------|------|--|
| Appendices | I | Technical Discussion |
| | II: | Summary Cashflows |
| | III: | Petroleum Resources Management System Definitions and Guidelines |

APPENDICES

APPENDIX I:
Technical Discussion

TECHNICAL DISCUSSION

QGEP has interest in certain blocks located in the Camamú, the Jequitinhonha, and the Santos basins in the Brazilian South Atlantic margins.

The **Camamú Basin** is located in the southern portion of the coast of Bahia State, and extends onto the coastal plain, covering a total area of 16,500 km². It is bounded to the north by the Jacuípe and Recôncavo basins across the transfer zones of Itapoã and Barra, respectively. The Itacare High separates the Almada and Camamú basins. A few oil and gas discovery wells have been drilled in the Camamú Basin by Petrobras and others, of which two are onshore (Morro do Barro/gas and Jiribatuba/oil), and another two offshore (1-BAS-64/oil and the 1-BAS-97/gas).

In the Camamú basin, QGEP has interest in the Manati and Camarão Norte fields, and two exploration blocks: BM-CAL-5 and BM-CAL-12. In block BM-CAL-5 two discovery wells have been drilled and are currently under evaluation.

The **Jequitinhonha Basin** is located in the northeast portion of the East Brazilian margin, on the southern Bahian coast opposite the mouth of the Jequitinhonha River. The Olivenca High defines the northern boundary with the Camamú-Almada Basin and the volcanic Royal Charlotte Bank marks the southern boundary with the Cumuraxitiba Basin. It occupies an area of 10,100 km², of which 9,500 km² is offshore (7,000 km² to a water depth of 1,000m and 2,500 km² between 1,000 and 2,000m). The drilling of 33 exploration wells in the basin, by Petrobras and others has resulted in one discovery in the area of the well 1-BAS-37.

In the Jequitinhonha Basin QGEP has interest in block BM-J-2, where two prospects have been identified.

The **Santos Basin** is one of the largest sedimentary basins in Brazil. It is located on the southeast portion of the Brazilian continental margin, offshore from Rio de Janeiro, Sao Paulo, Parana and Santa Catarina States. The southern boundary with Pelotas Basin is Florianopolis High and the northern boundary with the Campos Basin is Cabo Frio High. The basin covers a total area of 352,260 km² and has up to 3,000m isobath, and the most extensive of Brazil's coastal basins. Exploration activities in the Santos basin commenced in the 1960s. There have been a few discoveries including the Merluza gas field, and the Caravela and Coral oil fields until the last few years, when a sequence of important discoveries were made: this discovery cycle started with Lagosta, Mexilhão, Tambaú and Uruguá and is ongoing with giant pre-salt discoveries of Tupi, Carioca, Caramba, Parati, Guará, Bem-Te-Vi, Júpiter and Lara. Today the Santos basin is considered the most important of the offshore Brazil.

QGEP has interest in four Santos Basin Blocks: BM-S-12, BM-S-75, BM-S-76, and BM-S-77. 1-SCS13 well was drilled in block BM-S-12 in 2004. The well's main target was the pre-salt microbiolite reservoirs with secondary targets in the Albian and Oligocene. The well was abandoned because of a gas kick and subsequent mechanical problems while drilling the top of the Late Albian sandstones. The primary pre-salt target was never reached.

Regional Petroleum Geology

The formation of the South Atlantic basin commenced during the Jurassic Period when rifting began in the Atlantic Ocean. Alluvial red beds and shales filled the rift basin comprising the source rock for this petroleum system. Concurrently to the sag period an evaporate

sequence was deposited during the Aptian geologic time. The depositional distribution of the Aptian salt in the South Atlantic area played a key role in trapping hydrocarbons sourced from the syn-rift successions. The Atlantic Ocean opened, and the drift phase started with continental shelf sedimentation of extensive shallow marine carbonates with a restricted fauna, probably controlled by high salinities, and clastic fan deltas. Further offshore, marls and shales were deposited on the continental slope. Sea levels continued to rise and a series of sands and shales were deposited. In the Cenomanian an anoxic event occurred and produced black shales with high total organic matter levels. These black shales are better developed on the African margin than they are in the Brazilian margin. During this transgressive open marine sequence, Cenomanian turbiditic sandstones were deposited along most of the Brazilian margin, which locally can be high quality reservoirs (common in the Campos Basin). From Campanian to Santonian times oxic conditions were widespread. The onset of the progradation varies along the margin from the Turonian times in the Santos Basin to Eocene age in the Sergipe-Alagoas Basin, north of the Camamú basin. Large turbidite fans from Albian to Early Miocene age, poured into the southern basins during low sea level stands and periods of tectonic movement.

Source and Migration

In general, mature source rocks are present along most of the Brazilian Atlantic margin and began generating hydrocarbons in Late Cretaceous-Tertiary times. The pre-salt lacustrine shales are considered to be the most important source is the South Atlantic Brazilian basins. Additional source rocks are found in open marine shales of mid-late Cretaceous age.

Salt movement, or halokinesis, played a particularly important role in determining directions of migration. Thick Aptian evaporates create a perfect seal for pre-salt generated hydrocarbons, but can also cause problems in their migration from the pre-salt source rocks into the post-salt reservoirs. Due to halokinesis openings and thinning occurred along the regional salt seal that allowed migration to the post-salt reservoirs, either directly or via welds and faults which are common in thin salt beds due to dissolution and mechanical salt withdrawal. Growth faults also developed above the salt due to gravity sliding and oil can migrated up these faults into post-salt reservoirs.

In addition to creating migration pathways, salt movement created localized depositional changes that enhanced reservoir quality on and around the growing salt structures, including the distribution of turbidites, and in other locations provided structural reliefs conducive to the entrapment of hydrocarbons.

Reservoirs

In the Brazilian margin hydrocarbons are found in a variety of reservoirs from the pre-salt fractured basement to Miocene turbidites, in a succession of sand rich clastic sediments, carbonates, and shales. The thick shales deposits in between the clastics and the carbonates create good top seal to those reservoirs.

Pre-salt reservoirs are comprised by a variety of deposits depending on the rift phase and the depositional environment. The initial depocenters were filled with coarse continental clastics that occasionally contain interbedded volcanic. Further pull apart created horsts and grabens, generally parallel to the coastline. Erosion of the horsts provided thick sequences of fluvio-clastic sediments that were deposited in the adjoining grabens. Locally source rocks have been developed, as well as reservoirs of secondary regional importance. In contrast, carbonates were deposited around lacustrine shales that can provide good reservoirs.

Following the deposition of the Aptian evaporites, continuing deepening of the South Atlantic resulted in the deposition of the Albian carbonates, followed by shale and sandstone sequences. This trend continued in the late Cretaceous and Tertiary, while salt movement resulted to a complex structural configuration of the sediments. In the Oligocene withdrawal of the sea led to the development of erosional channels which subsequently filled with marine channel sands and turbidites related to the late drift phase.

Contingent and Prospective Resources Estimate

Petrobras has drilled three wells in two of the blocks that QGEP has interest in: two of them are located in the BM-CAL-5 block one in the Copaíba and the other in the Jequitibá accumulation in the Camamú Basin. The third well was drilled in Block BM-S-12 block in the Santos Basin. All three of these wells demonstrate the existence of hydrocarbons in the zones they penetrated, establishing a discovery and a basis for development consideration. As the operators have not established specific plans to develop these discoveries the estimated recoverable volumes are classified by GCA as Contingent Resources.

In addition to these, QGEP has identified one more prospect in the Camamú Basin, the Cam-01 in the BM-CAL-12 Block, and 9 more opportunities in the Santos Basin.

Available data

QGEP provided GCA with data and information regarding each prospect. This included:

- Several seismic sections of 3D seismic data with QGEP's stratigraphic and structural interpretation.
- Structural depth maps on key horizons related with each play.
- Isopach maps for several of the plays.
- Composite well logs used and derived petrophysical parameters.
- Studies and analysis regarding source maturation and geologic timing relevant to the plays.
- Additional reports and supporting analyses used in the estimation of additional parameters such as Formation Volume Factor, Recovery Factors and Gas Oil Ratios, where available.

Data Review

GCA reviewed the provided data and QGEP's interpretations and found that they were in general reasonable. Seismic data were fair to good in most cases, enough to support given interpretations. Derived structural and isopach maps seem to tie well tops where available. The quality of the seismic data in most areas offers high confidence in the mapping. However uncertainties still exist for the accuracy of the structural interpretations since well data are not available to accurately calibrate the seismic data.

Similarly, porosity and water saturation parameters derived by QGEP from the logs were easily confirmed in the provided data. GCA also validated the estimate of Formation Volume Factors if data were available. If data were not available for the estimate of Formation Volume Factors, GCA accepted QGEP's estimates, since they appeared reasonable.

Resource Estimate Methodology

The estimation of the Recoverable Volumes was based on the volumetric estimate method:

$$EUR = A * H * \phi * Sh * (1/FVF) * RF$$

Where:

- EUR** Estimated Ultimate Recovery of hydrocarbons.
- A** Area of accumulation derived from the structure maps down to defined depth, varying by case based on lowest known hydrocarbons, hydrocarbon water contact, or structural spill point.
- H** Average Net Thickness derived as an average value from net pay maps. If net pay maps were not available this value was derived from the structure maps and the net to gross value that resulted from well logs that penetrated the corresponding reservoir.
- ϕ** Average Porosity; derived as an average value from available log information.
- Sw** Average hydrocarbon saturation derived as an average value from available log information.
- FVF** Formation volume factor calculated based on reservoir depth and expected hydrocarbon properties.
- RF** Recovery Factor estimated based on reservoir characteristics.

The EURs for oil and gas were calculated probabilistically using Monte Carlo simulations. The input parameters were determined for low, most likely, and high cases and were input as the P90, P50, and P10 percentiles respectively in triangular distributions. In few exceptions, the area low and high were input in the triangular distribution as minimum and maximum, mainly in accumulations where the areal extent was limited to the block limits and not to the limits of the mapped geological features (noted if applicable on the input parameter table of the relevant prospects).

Within the Monte Carlo simulations some parameters were assumed to be dependent in order to eliminate unrealistic scenarios as follows:

Independent Variable	Dependant Variable	Correlation Coefficient
H	ϕ	0.5
H	RF	0.5
ϕ	Sh	0.7

Geologic Chance of Success

In addition to the volumetric estimate of QGEP's prospective resources in the Brazilian margin, QGEP also requested from GCA to provide an estimate of the Geological Chance of Success (GCOS) for each of the prospects.

The assignment of a GCOS to a prospect is routinely undertaken within the industry as one of the steps in assessing whether or not a prospect is worthy of drilling. While there are systematic procedures for estimating GCOS, the process nonetheless essentially remains one of judgment. The GCOS estimate is an aggregate of individual probabilities that contribute to geologic success such as:

- Trap and Seal;
- Reservoir presence and quality;
- Source and Migration; and

- Geologic Timing.

In general it can be said that because of the presence of numerous other oil and gas fields near to QGEP's exploratory blocks, and some wells where the potential reservoir formations can be seen to exist suggest that the risks associated with hydrocarbon generation and hydrocarbon migration and with the presence of reservoir are all relatively small. Nevertheless, because of the complex structural and stratigraphic configuration of many of the identified targets as well as the role of the salt presence and lack of as a key component in the effectiveness of the migration pathways careful consideration needs to be taken in estimating the GCOS for each prospect.

CONTINGENT RESOURCES

Camamú Basin - Block BM-CAL-5

Copaíba Contingent Resources

The Copaíba accumulation was drilled by the 1-BRSA-637D-BAS well. The target is a lacustrine lower cretaceous turbidite channel, stratigraphic in nature. The well tested 1000-2000 Bbl/day. Further evaluation is pending before proceeding in additional drilling. The evaluated low and high areal extensions are limited to the immediate vicinity of the well penetration. Seismic amplitude mapping indicates this channel feature may extend to the North. However, additional data are necessary to further evaluate any additional potential.

Copaíba Field - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	4.6	17	18	70	1.115
Most Likely	7.7	19	21	80	
High	11.5	22	24	90	

Jequitibá Contingent Resources

The Jequitibá accumulation was drilled by the 1-BAS-144 well and found the top of the Jurassic (pre-rift section) Sergi sandstone formation gas productive in it's A, B, C, D and top of E intervals. A Gas/Water Contact (GWC) was identified a few meters below the top of the "E" sandstone of the Sergi. The seismic data show the reservoir compartmentalized into three main fault blocks. The well penetrated the structurally highest fault block. Average porosities and hydrocarbon saturations were derived from the well log. Areal extension for the low case includes only the penetrated fault block, while the high case includes all three blocks down to the GWC.

Jequitibá Field - Original Gas in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	1.2*	30	10	70	290
Most Likely	4.5	45	13	75	295
High	9.0**	60	18	80	300

*Minimum input in triangular distribution

**Maximum input in triangular distribution

Santos Basin - Block BM-S-12

In this block, the well 1-SCS-13 was drilled in 2004. The main target of the well was the Aptian pre-salt microbiolite sequence. Secondary targets of the well included the Albian sandstones and carbonates and the shallow Oligocene sandstones. The well encountered 3 meters of pay at a depth of about 2,600 m in the Oligocene sandstones and had gas shows in the mud log. This reservoir is the equivalent of the reservoirs producing gas in the adjacent fields of Tiro, Sidon, and Piracuca.

The well was further drilled down to more than 5,000 m where it encountered a gas kick. Additional mechanical problems resulted in the abandonment of the well without reaching the main target.

Based on the logs seen from this well, GCA considers that the 1-SCS-13 well discovered the Oligocene gas reservoir, which can be considered for development by the operator. Therefore, volumes associated with this accumulation can be considered as contingent resources.

Santos 01 – Discovered Resources Areal Extents

Vertically, the well found only 3 m of a gas sand. Below those 3 m, there are about 3 m of shale on top of a very thin, 1 m, sand which appears wet. Thus, a GWC was inferred to exist somewhere in between the two sands. No additional pressures or other data exist to confirm a GWC at that level. However, for the purpose of assigning Contingent Resources, GCA considered a depth of -2,625 m sub-sea as highest known water, and the limit of the reservoir.

As far as the areal extents are concerned, GCA considered a low estimation of 3 km² represented by strong seismic amplitudes seen around the well. The high estimate area was based on the structure map down to the HKW level of -2625 in the vicinity of the well, as mapped by Petrobras.

Santos 01 Discovered Resources- Original Gas in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	3	3	25	55	190
Most Likely	5	4	27	60	210
High	12	6	30	65	220

Petrobras and QGEP seismic amplitude studies show that even brighter amplitudes can be mapped regionally at the same interval. GCA considered this interpretation but because of the thin sands encountered in the well and the discontinuities seen on the amplitude map it concluded that any areas away from the ones associated with the 1-SCS-13 well can still be considered as Prospective Resources since there is no strong evidence of a GWC in the well. These resources will be discussed later in this report.

PROSPECTIVE RESOURCES

Camamú Basin - Block BM-CAL-12 - CAM-01 Prospect

The target reservoirs in this prospect are marine upper cretaceous turbidites. This reservoir has been seen in the wells close to the block. The Bas-126 drilled north of the block has over 250 m of good quality reservoir, and the Bas-102 well drilled south of the block has over 100 m of good quality reservoir. GCA found the provided Petrobras structure map to be reasonable and verified the input parameters used by QGEP in the volumetric estimate for this prospect as follows:

CAM-01 Prospect - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	12*	20	16	65	1.100
Most Likely	30	40	21	70	1.200
High	80**	60	25	75	1.300

*Minimum input in triangular distribution

**Maximum input in triangular distribution

According to the geochemical studies in the area oil is expected to be the predominant hydrocarbon if present. The GCA estimated Geologic Chance of Success for this prospect is 31%.

Jequitinhonha Basin

Block BM-J-2: JEQ-01 and JEQ-02 Prospects

The target reservoirs in this pre-salt structural play are Albian to Tertiary fractured siliciclastics and carbonates. The trap is a pre-salt structural high that is expected to be similar to producing structures found in the Campos Basin.

In this configuration, two prospects have been identified in close proximity to each other. The seismic data at this depth is somewhat poor and even though the structural high can be seen at the base of salt, the resolution of the data below the salt offers low confidence in the mapping of the structure. QGEP used the mapping of the base of the salt to identify the best expression for each prospect. Based on regional geochemical studies the expected hydrocarbon in this area and reservoir is gas.

GCA found QGEP's analysis reasonable, verified the input parameters used for the volumetric estimate and assessed the Geologic Chance of Success for each of the prospects obtaining 29% for JEQ-01 and 24% for JEQ-02.

JEQ-01 Prospect - Original Gas in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	12	60	10	60	250
Most Likely	25	75	12	70	270
High	41	90	15	80	285

JEQ-02 Prospect - Original Gas in Place Input Parameters

	Area (km²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	7	60	10	60	285
Most Likely	15	75	12	70	297
High	24	90	15	80	310

Santos Basin**BM-S-12 - Santos-01 Prospective Resources**

As discussed earlier, GCA found one part of this prospect to be discovered by the 1-SCS-13 well. Based on the Petrobras/QGEP amplitude map, there are indications that the reservoir encountered by 1-SCS-13 well may be part of a regionally extensive channel system which is seen in this map as bright amplitudes.

These amplitudes however are not continuous and distinct lateral breaks can be identified, as it has been mapped by Petrobras/QGEP. Based on the Petrobras/QGEP map, GCA evaluated this play as 4 prospects, additional to the contingent resources assigned to the 1-SCS-13 well area.

Original Gas in Place Input Parameters**Santos-01-UCR-01 Prospect**

	Area (km²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	7	3	25	55	190
Most Likely	23	6	27	60	210
High	57	14	30	65	220

Santos-01-UCR-02 Prospect

	Area (km²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	3	3	25	55	190
Most Likely	7	6	27	60	210
High	11	14	30	65	220

Santos-01-UCR-03 Prospect

	Area (km²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	7	3	25	55	190
Most Likely	14	6	27	60	210
High	33*	14	30	65	220

* Limited inside the block; additional 25 km² for the high case are outside the block

Santos-01-UCR-04 Prospect

	Area (km²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	3	3	25	55	190
Most Likely	5	6	27	60	210
High	7	14	30	65	220

GCA finds all of these prospects to have a similar Geologic Chance of Success of 30%.

BM-S-12 - Santos-02

The reservoir for this prospect pertains to the Late Albian sandstones, with regional distribution in the Brazilian margin. This reservoir was penetrated by the 1-SCS-13 well before the well failed. At 5,032 m MD the mudloggers observed oil in the shale shakers. Soon after, problems started developing at the well location, including a gas kick. The drillers changed the water base mud to oil base mud in one of the attempts to control the well. Therefore, all samples below that interval are contaminated and inconclusive. Based on the geochemical studies in the area, oil is more likely to be present in these reservoirs than gas.

Post-well, Petrobras carried-out a study on the Santos-02 prospect, including AVO analysis in an attempt to identify Direct Hydrocarbon Indicators (DHI). AVO was not responsive in this reservoir. GCA analyzed all the inputs and found the Petrobras/QGEP low case map to be optimistic. It is GCA's estimate that Petrobras/QGEP low case map would better represent the most likely case. For the low case, GCA believes that the area should be restricted at East of the fault to the West of the 1-SCS-13 well. For the remaining parameters GCA agreed with QGEP.

Santos-02 Prospect - Original Oil in Place Input Parameters, Limited to Block Outline

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	30*	12	10	50	1.500
Most Likely	153**	20	12	60	1.650
High	346***	44	14	70	2.100

*Minimum input in triangular distribution; P90 projected at 91 km²

**From Petrobras P90 map; area limited at Block outline

***Maximum input in triangular distribution limited at Block perimeter; maximum area on Petrobras interpretation extends to 655 km²

GCA estimated for this prospect a Geologic Chance of Success of 39%.

BM-S-12 - Santos-03

The reservoir rocks in this prospect are the Albian saccaroidal dolomites. In general, the trap configuration is stratigraphic and the presence and ability for these reservoirs to be charged includes some uncertainty. Regardless, in this block the seismic data are good quality and reveal an event that can be easily tracked and mapped. GCA has found QGEP analysis and interpretation reasonable.

Santos-03 Prospect - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	40	15	7	55	1.400
Most Likely	60	25	9	60	1.600
High	125	35	12	65	1.800

GCA estimated for this prospect a Geologic Chance of Success of 19%.

BM-S-12 - Santos-04

This prospect is targeting pre-salt Aptian Microbiolitic reservoirs.

The block is located at the edge of the pre-salt ring fence, however according to QGEP analysis, source pods possibly exist in the area of the Block. In that case major faults in the pre-salt sequence can facilitate migration. Regional geochemical studies suggest the Aptian

microbiolites at this depth of 6,400 m are more likely to contain gas than oil. Structurally there are two parallel highs in the bottom of the salt, in which the microbiolite reservoir may be better developed.

GCA verified the input parameters used by QGEP, found them reasonable and proceeded in the volumetric estimation with the following input parameters:

Santos-04 Prospect - Original Gas in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	56	30	9	60	400
Most Likely	110	50	10	70	430
High	189	70	12	80	500

GCA estimated for this prospect a Geologic Chance of Success of 40%.

BM-S-75, BM-S-76 and BM-S-77 - Santos-05, Santos-06, and Santos-07

These three prospects are all stratigraphic plays targeting late Cretaceous sandstone reservoirs. These sands are regionally distributed, and even though the closest well that encountered this type of sands is the Chev-1 well, about 50km to the NE, prospects are possibly located in a regional trend of upper cretaceous sandstones. Fields like Mexilhao and Merluza produced from similar stratigraphic traps and reservoirs. Geochemical regional studies suggest that the predominant hydrocarbon is oil for prospects Santos-05 and Santos-06 and gas for the Santos-07 prospect. All three of the accumulations related to these prospects have been mapped to extend beyond the block limits, in the probabilistic distributions. However measured areas have been limited to the Block limits. GCOS estimates vary for each prospect based on its setting in the basin.

Santos-05 Prospect - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	27	20	9	60	1.500
Most Likely	80	30	11	65	1.600
High	179	75	15	75	1.700

Santos-06 Prospect - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	7*	25	10	60	1.500
Most Likely	20	30	11	65	1.600
High	42**	45	13	75	1.700

*Minimum input in triangular distribution; P90 projected at 14 km²

**Maximum input in triangular distribution limited to Block outline; potential accumulation may extend beyond Block outline (15 km² more for the high case area, based on QGEP mapping)

GCA estimated for prospects Santos-05 and Santos-06 similar Geologic Chance of Success of 18%.

Santos-07 Prospect - Original Gas in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	Sg (%)	1/Bg (v/v)
Low	15*	30	10	65	280
Most Likely	25	35	13	70	290
High	60**	75	16	75	300

*Minimum input in triangular distribution; P90 projected at 22 km²

**Maximum input in triangular distribution limited to Block outline

GCA estimated for this prospect a Geologic Chance of Success of 11%.

BM-S-76 and BM-S-77 - Santos-08

This prospect targets Oligocene sandstones in a stratigraphic play. These sandstones have been found oil productive in the Tiro and Sidon fields no more than 20 km² from the blocks. Although the accumulation extends well beyond the block limits, the volumetric estimated area has been limited to the block outlines.

GCA found QGEP's input parameters for this prospect reasonable:

Santos-08 Prospect - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	10*	10	17	60	1.100
Most Likely	30	15	20	70	1.200
High	56*	22	25	80	1.300

*Minimum input in triangular distribution; P90 projected at 20 km²

**Maximum input in triangular distribution limited at Blocks outline; additional potential may exist outside Blocks in which QGEP participates

GCA estimated for this prospect a Geologic Chance of Success of 23%.

BM-S-77 - Santos-09

This prospect was mapped as a small elongated three way closure, trapped to the north by an east-west trending fault. In this very small elongated geological feature, mapping can be very sensitive to small velocity variations. Trap depends highly on the sealing fault to the north. The target reservoirs are the Santonian sandstones. The area of the accumulation extends beyond the block to the west. Based on QGEP analysis the input to the volumetric estimate is as follows:

Santos-09 Prospect - Original Oil in Place Input Parameters

	Area (km ²)	Net H (m)	Phi (%)	So (%)	Bo (v/v)
Low	4*	20	20	60	1.100
Most Likely	7	30	22	65	1.200
High	11**	45	25	75	1.300

*Minimum input in triangular distribution; P90 projected at 5.5 km²

**Maximum input in triangular distribution limited to Block outline; potential accumulation may extend beyond Block outline (6 km² more for the high case area, based on QGEP mapping)

GCA estimated for this prospect a Geologic Chance of Success of 20%.

**Contingent Hydrocarbon Resources Statement
As of December 31, 2009
Properties Offshore Brazil**

Gross and Net to QGEP's Interest

Category	Field	Oil / Condensate				Natural Gas			
		Gross (100%) Field		Net to QGOG's		Gross (100%) Field		Net to QGOG's	
		(MMBbl)	(Mm ³)	(MMBbl)	(Mm ³)	(Bcf)	(Bcm)	(Bcf)	(Bcm)
1C									
	North Camarao	---	---	---	---	57	1.6	15	0.4
	Copaiba	18.2	2,897	4.1	652	12	0.3	3	0.1
	Jequitibá	0.6	102	0.2	28	72	2.0	20	0.6
	Santos #1	0.0	7	0.0	2	9	0.3	3	0.1
2C									
	North Camarao	6.3	1,003	1.4	226	53	1.5	12	0.3
	Copaiba	37.8	6,015	8.5	1,353	25	0.7	6	0.2
	Jequitibá	1.5	235	0.4	65	166	4.7	46	1.3
	Santos #1	0.1	19	0.0	6	23	0.7	7	0.2
3C									
	North Camarao	9.3	1,482	2.1	333	61	1.7	14	0.4
	Copaiba	71.2	11,317	16.0	2,546	48	1.4	11	0.3
	Jequitibá	3.0	472	0.8	130	334	9.4	92	2.6
	Santos #1	0.3	41	0.1	12	51	1.4	15	0.4

**Prospective Hydrocarbon Resources Statement
As of December 31, 2009
Properties Offshore Brazil**

Gross and Net to QGEP's Interest

Estimate	Prospect	Oil / Condensate				Natural Gas				Risk
		Gross (100%) Field Volumes		Net to QGOG's Interest Volumes		Gross (100%) Field Volumes		Net to QGOG's Interest Volumes		Factor
		(MMBbl)	(Mm ³)	(MMBbl)	(Mm ³)	(Bcf)	(Bcm)	(Bcf)	(Bcm)	%
Low (P90 Probabilistic Estimate)										
	CAM 01	130.5	20,751	26.1	4,150	73	2	15	0	31%
	JEQ #1	3.1	490	3.1	490	433	12	433	12	29%
	JEQ #2	2.4	387	2.4	387	273	8	273	8	24%
	Santos #1 UCR1	0.2	29	0.1	9	35	1	11	0	30%
	Santos #1 UCR2	0.1	8	0.0	3	10	0	3	0	30%
	Santos #1 UCR3	0.1	20	0.0	6	25	1	8	0	30%
	Santos #1 UCR4	0.0	7	0.0	2	9	0	3	0	30%
	Santos #2	80.4	12,781	24.1	3,834	83	2	25	1	39%
	Santos #3	36.4	5,789	10.9	1,737	37	1	11	0	19%
	Santos #4	18.7	2,979	5.6	894	1578	45	473	13	40%
	Santos #5	64.0	10,181	12.8	2,036	54	2	11	0	18%
	Santos #6	28.2	4,477	5.6	895	24	1	5	0	18%
	Santos #7	3.8	604	0.8	121	427	12	85	2	11%
	Santos #8	38.6	6,134	7.7	1,227	22	1	4	0	23%
	Santos #9	17.2	2,738	3.4	548	13	0	3	0	20%
Best (P50 Probabilistic Estimate)										
	CAM 01	303.8	48,294	60.8	9,659	171	4.8	34	1.0	31%
	JEQ #1	7.6	1,208	7.6	1,208	1,067	30.2	1,067	30.2	29%
	JEQ #2	6.1	965	6.1	965	681	19.3	681	19.3	24%
	Santos #1 UCR1	0.8	134	0.3	40	165	4.7	50	1.4	30%
	Santos #1 UCR2	0.2	31	0.1	9	39	1.1	12	0.3	30%
	Santos #1 UCR3	0.5	82	0.2	25	101	2.9	30	0.9	30%
	Santos #1 UCR4	0.1	23	0.0	7	29	0.8	9	0.2	30%
	Santos #2	282.6	44,928	84.8	13,478	290	8.2	87	2.5	39%
	Santos #3	106.7	16,961	32.0	5,088	110	3.1	33	0.9	19%
	Santos #4	52.4	8,338	15.7	2,501	4,416	125.1	1,325	37.5	40%
	Santos #5	311.9	49,594	62.4	9,919	263	7.4	53	1.5	18%
	Santos #6	60.5	9,613	12.1	1,923	51	1.4	10	0.3	18%
	Santos #7	8.7	1,385	1.7	277	978	27.7	196	5.5	11%
	Santos #8	98.8	15,708	19.8	3,142	55	1.6	11	0.3	23%
	Santos #9	42.6	6,767	8.5	1,353	31	0.9	6	0.2	20%
High (P10 Probabilistic Estimate)										
	CAM 01	644.6	102,479	128.9	20,496	362	10.2	72	2.0	31%
	JEQ #1	15.3	2,432	15.3	2,432	2,147	60.8	2,147	60.8	29%
	JEQ #2	12.4	1,968	12.4	1,968	1,390	39.4	1,390	39.4	24%
	Santos #1 UCR1	2.6	414	0.8	124	511	14.5	153	4.3	30%
	Santos #1 UCR2	0.5	85	0.2	26	105	3.0	32	0.9	30%
	Santos #1 UCR3	1.5	240	0.5	72	297	8.4	89	2.5	30%
	Santos #1 UCR4	0.4	58	0.1	17	72	2.0	22	0.6	30%
	Santos #2	795.6	126,486	238.7	37,946	818	23.1	245	6.9	39%
	Santos #3	260.7	41,445	78.2	12,434	268	7.6	80	2.3	19%
	Santos #4	116.0	18,444	34.8	5,533	9,769	276.7	2,931	83.0	40%
	Santos #5	1,037.6	164,966	207.5	32,993	874	24.7	175	4.9	18%
	Santos #6	124.9	19,859	25.0	3,972	105	3.0	21	0.6	18%
	Santos #7	19.1	3,041	3.8	608	2,148	60.8	430	12.2	11%
	Santos #8	220.2	35,009	44.0	7,002	124	3.5	25	0.7	23%
	Santos #9	95.1	15,119	19.0	3,024	69	2.0	14	0.4	20%

**Prospective Hydrocarbon Resources Statement
As of December 31, 2010
Properties Offshore Brazil**

Gross and Net to QGEP's Interest

Estimate	Prospect	Oil / Condensate				Natural Gas				Risk
		Gross (100%) Field		Net to QGOG's		Gross (100%) Field		Net to QGOG's		Factor
		(MMBbl)	(Mm ³)	(MMBbl)	(Mm ³)	(Bcf)	(Bcm)	(Bcf)	(Bcm)	%
Mean Values										
	CAM 01	353.2	56,156	70.6	11,231	198	6	40	1	31%
	JEQ #1	8.5	1,351	8.5	1,351	1193	34	1193	34	29%
	JEQ #2	6.9	1,091	6.9	1,091	770	22	770	22	24%
	Santos #1 UCR1	1.2	185	0.3	55	228	6	69	2	30%
	Santos #1 UCR2	0.3	40	0.1	12	50	1	15	0	30%
	Santos #1 UCR3	0.7	110	0.2	33	137	4	41	1	30%
	Santos #1 UCR4	0.2	29	0.1	9	36	1	11	0	30%
	Santos #2	376.6	59,877	113.0	17,963	387	11	116	3	39%
	Santos #3	132.2	21,010	39.6	6,303	136	4	41	1	19%
	Santos #4	61.5	9,784	18.5	2,935	5182	147	1555	44	40%
	Santos #5	455.1	72,346	91.0	14,469	383	11	77	2	18%
	Santos #6	70.1	11,151	14.0	2,230	59	2	12	0	18%
	Santos #7	10.3	1,646	2.1	329	1162	33	232	7	11%
	Santos #8	116.7	18,558	23.3	3,712	66	2	13	0	23%
	Santos #9	50.2	7,983	10.0	1597	37	1	7	0	20%

APPENDIX II:
Summary Cashflows
As of December 31, 2009

3C Contingent Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Camarao Norte Discovery

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50											
2013				87.00	6.46	95.70											
2014				88.00	6.62	96.80											
2015				90.20	6.79	99.22											
2016		34	29	92.46	6.96	101.70		8	19	27	2	4		45	3	(45)	
2017		137	118	94.77	7.13	104.24		34	77	112	8	7			14	82	
2018		137	118	97.14	7.31	106.85		35	79	114	9	7			14	84	
2019		137	118	99.56	7.49	109.52		36	81	117	9	8			14	86	
2020		137	118	102.05	7.68	112.26		37	83	120	9	8			15	89	
2021		119	103	104.60	7.87	115.06		33	74	107	8	8			13	78	
2022		80	69	107.22	8.07	117.94		23	51	74	6	7			9	53	
2023		50	43	109.90	8.27	120.89		14	32	47	4	7			5	31	
2024		23	20	112.65	8.48	123.91		7	16	23	2	6			2	13	
2025		7	6	115.46	8.69	127.01		2	5	7	1	3			1	3	
2026				118.35	8.91	130.19							4			(4)	
2027				121.31	9.13	133.44											
2028				124.34	9.36	136.78											
2029				127.45	9.59	140.20											
2030				130.64	9.83	143.70											
2031				133.90	10.08	147.29											
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total		860	740					231	517	748	56	63	4	45	89	491	

GCA Auditor: RW Approved: DKM

3C Contingent Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Copaiba Discovery

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50											
2013				87.00	6.46	95.70											
2014				88.00	6.62	96.80											
2015				90.20	6.79	99.22											
2016				92.46	6.96	101.70											
2017	1,217			94.77	7.13	104.24	725			725	73	30					
2018	2,433			97.14	7.31	106.85	1,487			1,487	149	62					
2019	1,895			99.56	7.49	109.52	1,187			1,187	119	95					
2020	1,480			102.05	7.68	112.26	950			950	95	66					
2021	1,149			104.60	7.87	115.06	756			756	76	54					
2022	895			107.22	8.07	117.94	604			604	60	89					
2023	697			109.90	8.27	120.89	482			482	48	57					
2024	544			112.65	8.48	123.91	386			386	39	46					
2025	423			115.46	8.69	127.01	307			307	31	84					
2026	329			118.35	8.91	130.19	245			245	25	49					
2027	256			121.31	9.13	133.44	196			196	20	50					
2028				124.34	9.36	136.78							62				
2029				127.45	9.59	140.20											
2030				130.64	9.83	143.70											
2031				133.90	10.08	147.29											
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	11,319						7,324			7,324	732	682	62	741	1,757	3,349	

GCA Auditor: RW Approved: DKM

3C Contingent Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Jequitiba Discovery

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									124		(124)
2013				87.00	6.46	95.70									127		(127)
2014				88.00	6.62	96.80									130		(130)
2015		365	18	90.20	6.79	99.22		87	11	99	10	37		133	11	(92)	
2016		732	37	92.46	6.96	101.70		180	23	203	20	76			23	84	
2017		730	37	94.77	7.13	104.24		184	24	208	21	78			24	86	
2018		730	37	97.14	7.31	106.85		188	25	213	21	80			24	87	
2019		730	37	99.56	7.49	109.52		193	25	218	22	82			25	89	
2020		623	31	102.05	7.68	112.26		169	22	191	19	75			21	75	
2021		513	26	104.60	7.87	115.06		143	19	161	16	63			18	64	
2022		513	26	107.22	8.07	117.94		146	19	165	17	64			19	65	
2023		513	26	109.90	8.27	120.89		150	20	169	17	66			20	67	
2024		515	26	112.65	8.48	123.91		154	20	174	17	68			21	68	
2025		437	22	115.46	8.69	127.01		134	17	152	15	63			17	57	
2026		361	18	118.35	8.91	130.19		113	15	128	13	52			15	48	
2027		361	18	121.31	9.13	133.44		116	15	131	13	54			15	49	
2028		362	18	124.34	9.36	136.78		120	16	135	14	55			16	51	
2029		361	18	127.45	9.59	140.20		122	16	138	14	56			16	52	
2030		307	15	130.64	9.83	143.70		107	14	121	12	52			13	43	
2031		254	13	133.90	10.08	147.29		90	12	102	10	44			12	36	
2032		254	13	137.25	10.33	150.97		93	12	105	10	45			12	37	
2033		254	13	140.68	10.59	154.75		95	12	107	11	46			12	38	
2034		254	13	144.20	10.85	158.62		97	13	110	11	47			13	39	
2035		216	11	147.80	11.12	162.58		85	11	96	10	44			10	32	
2036				151.50	11.40	166.65							54			(54)	
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total		9,384	469					2,767	360	3,127	313	1,247	54	513	358	642	

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Jequitinhonha 1

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20								62		(62)	
2012				85.00	6.30	93.50											
2013				87.00	6.46	95.70								363		(363)	
2014				88.00	6.62	96.80								372		(372)	
2015	1,460	58		90.20	6.79	99.22		350	36	386	39	13	382	97	(144)		
2016	2,928	117		92.46	6.96	101.70		719	75	794	79	27		197	484		
2017	2,920	117		94.77	7.13	104.24		735	77	812	81	27		196	482		
2018	2,920	117		97.14	7.31	106.85		754	78	832	83	28		196	482		
2019	2,920	117		99.56	7.49	109.52		773	80	853	85	29		201	493		
2020	2,928	117		102.05	7.68	112.26		794	83	877	88	29		208	505		
2021	2,207	88		104.60	7.87	115.06		613	64	677	68	30		161	390		
2022	1,493	60		107.22	8.07	117.94		425	44	470	47	25		114	273		
2023	1,493	60		109.90	8.27	120.89		436	45	482	48	25		117	279		
2024	1,497	60		112.65	8.48	123.91		448	47	495	49	26		121	287		
2025	1,493	60		115.46	8.69	127.01		458	48	506	51	27		124	293		
2026	1,493	60		118.35	8.91	130.19		470	49	519	52	27		108	262		
2027	1,128	45		121.31	9.13	133.44		364	38	402	40	28		100	234		
2028	766	31		124.34	9.36	136.78		253	26	279	28	23		69	160		
2029	764	31		127.45	9.59	140.20		259	27	286	29	23		70	163		
2030	764	31		130.64	9.83	143.70		265	28	293	29	24		72	167		
2031	764	31		133.90	10.08	147.29		272	28	300	30	25		74	171		
2032	766	31		137.25	10.33	150.97		279	29	308	31	94		53	130		
2033	577	23		140.68	10.59	154.75		216	22	238	24	26		57	131		
2034	436	17		144.20	10.85	158.62		167	17	185	18	21		44	101		
2035	436	17		147.80	11.12	162.58		171	18	189	19	22		45	103		
2036	437	17		151.50	11.40	166.65		176	18	194	19	22		47	106		
2037	436	17		155.29	11.69	170.81		180	19	199	20	23		48	108		
2038	436	17		159.17	11.98	175.08		184	19	204	20	23		49	111		
2039	436	17		163.15	12.28	179.46		189	20	209	21	24		51	113		
2040				167	13	184							127		(127)		
Total		33,899	1,355					9,952	1,036	10,987	1,099	255	750	127	1,179	2,620	4,958

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Jequitinhonha 2

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20								67		(67)	
2012				85.00	6.30	93.50											
2013				87.00	6.46	95.70								115		(115)	
2014				88.00	6.62	96.80								118		(118)	
2015		913	46	90.20	6.79	99.22		219	29	247	25		6	121	68	28	
2016		1,830	92	92.46	6.96	101.70		450	59	508	51		11		140	306	
2017		1,825	91	94.77	7.13	104.24		460	60	519	52		12		143	313	
2018		1,825	91	97.14	7.31	106.85		471	61	532	53	20	12		140	307	
2019		1,825	91	99.56	7.49	109.52		483	63	546	55	21	12		144	314	
2020		1,830	92	102.05	7.68	112.26		496	65	561	56	21	13		148	323	
2021		1,403	70	104.60	7.87	115.06		390	51	441	44	10	13		118	256	
2022		981	49	107.22	8.07	117.94		279	36	316	32		11		87	187	
2023		981	49	109.90	8.27	120.89		286	37	324	32		11		89	192	
2024		983	49	112.65	8.48	123.91		294	38	333	33		11		92	197	
2025		981	49	115.46	8.69	127.01		301	39	340	34		11		94	201	
2026		981	49	118.35	8.91	130.19		308	40	349	35		12		96	206	
2027		754	38	121.31	9.13	133.44		243	32	275	27		12		75	160	
2028		529	26	124.34	9.36	136.78		175	23	197	20		10		54	114	
2029		527	26	127.45	9.59	140.20		179	23	202	20		10		55	117	
2030		527	26	130.64	9.83	143.70		183	24	207	21		10		56	120	
2031		527	26	133.90	10.08	147.29		188	24	212	21		78		35	78	
2032		529	26	137.25	10.33	150.97		193	25	218	22		11		60	126	
2033		405	20	140.68	10.59	154.75		151	20	171	17		11		46	97	
2034		283	14	144.20	10.85	158.62		109	14	123	12		9		33	69	
2035		283	14	147.80	11.12	162.58		111	14	126	13		9		33	70	
2036		284	14	151.50	11.40	166.65		114	15	129	13		10		34	72	
2037		283	14	155.29	11.69	170.81		117	15	132	13		10		35	74	
2038		283	14	159.17	11.98	175.08		120	16	135	14		10		36	76	
2039		283	14	163.15	12.28	179.46		123	16	139	14		10		37	78	
2040				167	13	184								40		(40)	
Total		21,854	1,094					6,442	839	7,282	728	73	333	40	420	1,947	3,740

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Camamu 1

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									51		(51)
2012				85.00	6.30	93.50									47		(47)
2013				87.00	6.46	95.70									990		(990)
2014				88.00	6.62	96.80									1,015		(1,015)
2015				90.20	6.79	99.22									1,040		(1,040)
2016				92.46	6.96	101.70									1,066		(1,066)
2017	4,681	468		94.77	7.13	104.24	2,790	118		2,908	291		88			740	1,788
2018	9,362	936		97.14	7.31	106.85	5,720	242		5,961	596	613	181			1,316	3,256
2019	7,709	771		99.56	7.49	109.52	4,828	204		5,032	503	524	173			1,106	2,725
2020	6,366	637		102.05	7.68	112.26	4,086	173		4,259	426	482	218			903	2,230
2021	5,228	523		104.60	7.87	115.06	3,440	145		3,585	359	322	162			799	1,943
2022	4,305	431		107.22	8.07	117.94	2,903	123		3,026	303	210	187			681	1,645
2023	3,545	355		109.90	8.27	120.89	2,451	104		2,554	255	134	130			601	1,433
2024	2,928	293		112.65	8.48	123.91	2,074	88		2,162	216	82	185			496	1,183
2025	2,404	240		115.46	8.69	127.01	1,746	74		1,820	182	56	106			441	1,036
2026	1,980	198		118.35	8.91	130.19	1,474	62		1,536	154	29	164			354	836
2027	1,630	163		121.31	9.13	133.44	1,244	53		1,297	130		104			320	743
2028	1,346	135		124.34	9.36	136.78	1,053	44		1,097	110		166			245	577
2029	1,106	111		127.45	9.59	140.20	886	37		924	92		85			225	521
2030	910	91		130.64	9.83	143.70	748	32		780	78		151			164	387
2031	750	75		133.90	10.08	147.29	632	27		658	66		86			153	353
2032	619	62		137.25	10.33	150.97	534	23		557	56		156			102	244
2033	508	51		140.68	10.59	154.75	450	19		469	47		71			106	244
2034	419	42		144.20	10.85	158.62	380	16		396	40		144			61	151
2035	345	34		147.80	11.12	162.58	321	14		334	33		73			69	159
2036				151.50	11.40	166.65									419		(419)
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	56,142	5,614					37,761	1,595		39,356	3,936	2,452	2,631	419	4,210	8,883	16,825

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 1

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									53		(53)
2013				87.00	6.46	95.70									60		(60)
2014				88.00	6.62	96.80									62		(62)
2015				90.20	6.79	99.22									63		(63)
2016				92.46	6.96	101.70									65		(65)
2017	803	23		94.77	7.13	104.24		202	15	217	22		59			41	96
2018	1,606	46		97.14	7.31	106.85		415	31	445	45	33	121			72	174
2019	1,606	46		99.56	7.49	109.52		425	31	456	46	35	124			74	178
2020	1,610	46		102.05	7.68	112.26		437	32	469	47	40	127			75	180
2021	1,258	36		104.60	7.87	115.06		350	26	376	38	25	102			63	148
2022	911	26		107.22	8.07	117.94		259	19	279	28	15	76			48	113
2023	911	26		109.90	8.27	120.89		266	20	286	29	11	78			51	118
2024	913	26		112.65	8.48	123.91		273	20	294	29	9	80			53	123
2025	713	20		115.46	8.69	127.01		219	16	235	24	5	64			43	99
2026	516	15		118.35	8.91	130.19		162	12	174	17	3	47			33	74
2027	516	15		121.31	9.13	133.44		166	12	179	18		49			34	78
2028	518	15		124.34	9.36	136.78		171	13	184	18		50			35	80
2029	405	12		127.45	9.59	140.20		137	10	147	15		40			28	64
2030	293	8		130.64	9.83	143.70		102	8	109	11		30			21	47
2031	293	8		133.90	10.08	147.29		104	8	112	11		64			10	26
2032	294	8		137.25	10.33	150.97		107	8	115	12		31			22	50
2033	229	7		140.68	10.59	154.75		86	6	92	9		25			18	40
2034	166	5		144.20	10.85	158.62		64	5	68	7		19			13	30
2035	166	5		147.80	11.12	162.58		65	5	70	7		19			14	30
2036	166	5		151.50	11.40	166.65		67	5	72	7		20			14	31
2037	130	4		155.29	11.69	170.81		54	4	58	6		16			11	25
2038				159.17	11.98	175.08									27		(27)
2039				163.15	12.28	179.46											
Total		14,023	399					4,131	306	4,437	444	176	1,238	27	302	774	1,476

The Santos 1 Cashflow includes the 3C Contingent Resources and the Pmean Prospective Resources. 3C Resources are not enough to be developed by themselves.

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 2

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									82		(82)
2012				85.00	6.30	93.50									158		(158)
2013				87.00	6.46	95.70									1,220		(1,220)
2014				88.00	6.62	96.80									1,250		(1,250)
2015				90.20	6.79	99.22									1,281		(1,281)
2016				92.46	6.96	101.70									1,314		(1,314)
2017	5,120	937		94.77	7.13	104.24	3,052	236		3,288	329	49	120			794	1,995
2018	10,239	1,874		97.14	7.31	106.85	6,256	484		6,740	674	847	246			1,383	3,590
2019	8,377	1,533		99.56	7.49	109.52	5,246	406		5,652	565	700	226			1,163	2,998
2020	6,873	1,258		102.05	7.68	112.26	4,412	341		4,753	475	624	210			964	2,480
2021	5,608	1,026		104.60	7.87	115.06	3,690	285		3,975	397	419	196			838	2,124
2022	4,588	840		107.22	8.07	117.94	3,094	239		3,333	333	261	210			722	1,807
2023	3,754	687		109.90	8.27	120.89	2,595	201		2,795	280	177	154			630	1,555
2024	3,079	564		112.65	8.48	123.91	2,182	169		2,351	235	100	196			526	1,293
2025	2,513	460		115.46	8.69	127.01	1,825	141		1,966	197	69	141			455	1,105
2026	2,056	376		118.35	8.91	130.19	1,530	118		1,649	165	39	189			365	890
2027	1,682	308		121.31	9.13	133.44	1,283	99		1,383	138	19	134			321	771
2028	1,380	253		124.34	9.36	136.78	1,079	83		1,163	116		187			251	609
2029	1,126	206		127.45	9.59	140.20	903	70		972	97		109			227	540
2030	921	169		130.64	9.83	143.70	757	59		815	82		165			166	403
2031	754	138		133.90	10.08	147.29	635	49		684	68		107			150	358
2032	618	113		137.25	10.33	150.97	534	41		575	58		167			100	250
2033	504	92		140.68	10.59	154.75	446	35		481	48		88			102	243
2034	413	76		144.20	10.85	158.62	374	29		403	40		152			59	152
2035	338	62		147.80	11.12	162.58	314	24		338	34		89			63	152
2036				151.50	11.40	166.65								517			(517)
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	59,941	10,969					40,207	3,109		43,315	4,332	3,303	3,085	517	5,305	9,279	17,495

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 3

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									89		(89)
2013				87.00	6.46	95.70									447		(447)
2014				88.00	6.62	96.80									458		(458)
2015				90.20	6.79	99.22									469		(469)
2016				92.46	6.96	101.70									481		(481)
2017	2,170	397		94.77	7.13	104.24	1,294	100		1,394	139		70			334	850
2018	4,340	794		97.14	7.31	106.85	2,652	205		2,857	286	56	143			670	1,702
2019	3,390	620		99.56	7.49	109.52	2,123	164		2,287	229	56	133			529	1,341
2020	2,656	486		102.05	7.68	112.26	1,705	132		1,837	184	67	126			413	1,047
2021	2,069	379		104.60	7.87	115.06	1,361	105		1,466	147	35	155			319	811
2022	1,616	296		107.22	8.07	117.94	1,090	84		1,174	117	13	98			271	675
2023	1,262	231		109.90	8.27	120.89	873	67		940	94		95			216	535
2024	989	181		112.65	8.48	123.91	701	54		755	75		134			154	391
2025	770	141		115.46	8.69	127.01	559	43		603	60		76			134	332
2026	602	110		118.35	8.91	130.19	448	35		483	48		75			103	256
2027	470	86		121.31	9.13	133.44	359	28		386	39		122			62	164
2028	368	67		124.34	9.36	136.78	288	22		310	31		61			63	155
2029	287	52		127.45	9.59	140.20	230	18		248	25		61			46	116
2030				130.64	9.83	143.70								163			(163)
2031				133.90	10.08	147.29											
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	20,990	3,841					13,682	1,058		14,739	1,474	226	1,352	163	1,944	3,313	6,267

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
 Gross Field Resources - Base Case Price Scenario
 Prospect Santos 4

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									103		(103)
2012				85.00	6.30	93.50									189		(189)
2013				87.00	6.46	95.70									1,145		(1,145)
2014				88.00	6.62	96.80									1,173		(1,173)
2015				90.20	6.79	99.22									1,203		(1,203)
2016				92.46	6.96	101.70									1,233		(1,233)
2017		5,475	365	94.77	7.13	104.24		1,379	239	1,618	162	21	74			399	962
2018		10,950	730	97.14	7.31	106.85		2,827	490	3,317	332	402	152			699	1,732
2019		10,950	730	99.56	7.49	109.52		2,897	503	3,400	340	516	156			684	1,704
2020		10,980	732	102.05	7.68	112.26		2,978	517	3,494	349	640	160			669	1,676
2021		10,950	730	104.60	7.87	115.06		3,044	528	3,572	357	655	164			687	1,709
2022		10,950	730	107.22	8.07	117.94		3,120	541	3,661	366	674	168			706	1,747
2023		10,950	730	109.90	8.27	120.89		3,198	555	3,753	375	693	172			726	1,786
2024		10,980	732	112.65	8.48	123.91		3,287	570	3,857	386	700	240			732	1,799
2025		7,842	523	115.46	8.69	127.01		2,406	418	2,824	282	387	181			579	1,394
2026		4,734	316	118.35	8.91	130.19		1,489	258	1,747	175	128	148			385	911
2027		4,734	316	121.31	9.13	133.44		1,526	265	1,791	179	132	152			396	932
2028		4,747	316	124.34	9.36	136.78		1,569	272	1,841	184	129	226			387	914
2029		4,734	316	127.45	9.59	140.20		1,603	278	1,882	188	139	160			419	975
2030		4,734	316	130.64	9.83	143.70		1,643	285	1,929	193	143	164			430	998
2031		4,734	316	133.90	10.08	147.29		1,684	292	1,977	198	147	168			442	1,022
2032		4,747	316	137.25	10.33	150.97		1,731	300	2,032	203	144	250			432	1,002
2033		3,390	226	140.68	10.59	154.75		1,267	220	1,487	149	63	176			334	765
2034		2,047	136	144.20	10.85	158.62		784	136	920	92	17	145			203	464
2035		2,047	136	147.80	11.12	162.58		804	139	943	94	17	148			209	475
2036		2,052	137	151.50	11.40	166.65		826	143	970	97	15	238			187	433
2037		2,047	136	155.29	11.69	170.81		845	147	991	99	18	156			220	498
2038		2,047	136	159.17	11.98	175.08		866	150	1,016	102	19	160			226	510
2039		2,047	136	163.15	12.28	179.46		887	154	1,041	104	19	164			233	522
2040		2,052	137	167.23	12.59	183.95		912	158	1,070	107	20	168			240	536
2041		1,466	98	171.41	12.90	188.55		668	116	783	78		172			164	369
2042		885	59	175.69	13.22	193.26		413	72	485	48		176			78	182
2043		885	59	180.08	13.55	198.09		423	73	497	50		181			80	186
2044		887	59	184.59	13.89	203.04		435	76	511	51		185			83	192
2045		885	59	189.20	14.24	208.12		445	77	522	52		190			85	195
2046		885	59	193.93	14.60	213.32		456	79	535	54		195			87	200
2047				198.78	14.96	218.66											(636)
Total		146,810	9,785					46,412	8,054	54,466	5,447	5,838	5,188	636	5,045	11,202	21,110

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 5

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									82		(82)
2012				85.00	6.30	93.50									158		(158)
2013				87.00	6.46	95.70									1,438		(1,438)
2014				88.00	6.62	96.80									1,474		(1,474)
2015				90.20	6.79	99.22									1,511		(1,511)
2016				92.46	6.96	101.70									1,549		(1,549)
2017	3,990	599		94.77	7.13	104.24	2,378	151		2,529	253	57	93			607	1,520
2018	7,980	1,197		97.14	7.31	106.85	4,876	309		5,185	518	588	190			1,089	2,799
2019	7,125	1,069		99.56	7.49	109.52	4,462	283		4,745	474	594	229			964	2,483
2020	6,379	957		102.05	7.68	112.26	4,095	259		4,354	435	605	181			879	2,254
2021	5,680	852		104.60	7.87	115.06	3,737	237		3,974	397	487	223			809	2,058
2022	5,071	761		107.22	8.07	117.94	3,420	217		3,637	364	409	174			767	1,924
2023	4,528	679		109.90	8.27	120.89	3,130	198		3,328	333	323	219			702	1,751
2024	4,054	608		112.65	8.48	123.91	2,872	182		3,054	305	267	146			676	1,660
2025	3,609	541		115.46	8.69	127.01	2,621	166		2,787	279	215	194			609	1,491
2026	3,223	483		118.35	8.91	130.19	2,399	152		2,551	255	179	142			578	1,398
2027	2,877	432		121.31	9.13	133.44	2,195	139		2,335	233	136	194			518	1,253
2028	2,576	386		124.34	9.36	136.78	2,015	128		2,142	214	107	140			496	1,185
2029	2,294	344		127.45	9.59	140.20	1,839	117		1,955	196	87	195			436	1,042
2030	2,048	307		130.64	9.83	143.70	1,683	107		1,789	179	77	117			422	995
2031	1,828	274		133.90	10.08	147.29	1,540	98		1,638	164	60	175			368	871
2032	1,637	246		137.25	10.33	150.97	1,413	90		1,503	150	50	116			355	830
2033	1,457	219		140.68	10.59	154.75	1,290	82		1,371	137	35	178			305	716
2034	1,301	195		144.20	10.85	158.62	1,180	75		1,255	126	26	117			297	689
2035	1,162	174		147.80	11.12	162.58	1,080	68		1,149	115	15	182			251	586
2036	1,040	156		151.50	11.40	166.65	991	63		1,054	105		98			259	592
2037	926	139		155.29	11.69	170.81	905	57		962	96		167			211	488
2038	827	124		159.17	11.98	175.08	828	52		880	88		99			212	482
2039	827	124		163.15	12.28	179.46	849	54		902	90		102			217	493
2040				167	13	184								672			(672)
Total	72,439	10,866					51,797	3,283		55,080	5,508	4,319	3,669	672	6,212	12,026	22,673

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 6

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									84		(84)
2013				87.00	6.46	95.70									314		(314)
2014				88.00	6.62	96.80									322		(322)
2015				90.20	6.79	99.22									330		(330)
2016				92.46	6.96	101.70									338		(338)
2017	927	139		94.77	7.13	104.24	553	35		588	59		40			127	362
2018	1,854	278		97.14	7.31	106.85	1,133	72		1,204	120		82			262	740
2019	1,614	242		99.56	7.49	109.52	1,011	64		1,075	107		125			218	624
2020	1,409	211		102.05	7.68	112.26	904	57		961	96	22	81			200	563
2021	1,223	183		104.60	7.87	115.06	805	51		856	86	13	81			178	498
2022	1,064	160		107.22	8.07	117.94	718	45		763	76	6	81			159	441
2023	927	139		109.90	8.27	120.89	641	41		681	68		67			146	399
2024	809	121		112.65	8.48	123.91	573	36		609	61		117			112	319
2025	702	105		115.46	8.69	127.01	510	32		542	54		68			113	307
2026	611	92		118.35	8.91	130.19	455	29		484	48		68			99	268
2027				121.31	9.13	133.44								106			(106)
2028				124.34	9.36	136.78											
2029				127.45	9.59	140.20											
2030				130.64	9.83	143.70											
2031				133.90	10.08	147.29											
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	11,139	1,671					7,301	463		7,764	776	40	812	106	1,388	1,614	3,027

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
 Gross Field Resources - Base Case Price Scenario
 Prospect Santos 7

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									95		(95)
2013				87.00	6.46	95.70									223		(223)
2014				88.00	6.62	96.80									229		(229)
2015				90.20	6.79	99.22									234		(234)
2016				92.46	6.96	101.70									240		(240)
2017		1,460	73	94.77	7.13	104.24		368	48	416	42		142			64	169
2018		2,920	146	97.14	7.31	106.85		754	98	852	85	5	290			130	342
2019		2,920	146	99.56	7.49	109.52		773	101	873	87	17	298			129	342
2020		2,928	146	102.05	7.68	112.26		794	103	897	90	30	306			130	343
2021		2,466	123	104.60	7.87	115.06		686	89	775	77	21	276			110	290
2022		2,013	101	107.22	8.07	117.94		573	75	648	65	14	245			89	235
2023		2,013	101	109.90	8.27	120.89		588	77	664	66	15	251			92	240
2024		2,018	101	112.65	8.48	123.91		604	79	683	68	15	258			95	247
2025		1,700	85	115.46	8.69	127.01		522	68	589	59	10	236			79	206
2026		1,387	69	118.35	8.91	130.19		436	57	493	49	6	196			68	175
2027		1,387	69	121.31	9.13	133.44		447	58	505	51	6	201			70	179
2028		1,391	70	124.34	9.36	136.78		460	60	519	52	6	206			72	183
2029		1,172	59	127.45	9.59	140.20		397	52	448	45	1	246			41	116
2030		956	48	130.64	9.83	143.70		332	43	375	38		173			46	119
2031		956	48	133.90	10.08	147.29		340	44	385	38		177			47	122
2032		959	48	137.25	10.33	150.97		350	46	395	40		182			49	125
2033		808	40	140.68	10.59	154.75		302	39	341	34		231			17	58
2034		659	33	144.20	10.85	158.62		253	33	285	29		141			33	84
2035		659	33	147.80	11.12	162.58		259	34	293	29		144			34	86
2036		661	33	151.50	11.40	166.65		266	35	301	30		148			35	88
2037		557	28	155.29	11.69	170.81		230	30	260	26		139			26	68
2038		454	23	159.17	11.98	175.08		192	25	217	22		130			17	48
2039		454	23	163.15	12.28	179.46		197	26	223	22		133			18	49
2040				167	13	184								104			(104)
Total		32,897	1,645					10,120	1,318	11,438	1,144	146	4,746	104	1,021	1,490	2,787

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 8

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									74		(74)
2013				87.00	6.46	95.70									310		(310)
2014				88.00	6.62	96.80									318		(318)
2015				90.20	6.79	99.22									326		(326)
2016				92.46	6.96	101.70									334		(334)
2017	1,756	176		94.77	7.13	104.24	1,047	44		1,091	109		44			275	663
2018	3,512	351		97.14	7.31	106.85	2,145	91		2,236	224	53	91			547	1,321
2019	2,817	282		99.56	7.49	109.52	1,764	75		1,839	184	61	88			442	1,064
2020	2,266	227		102.05	7.68	112.26	1,455	61		1,516	152	68	86			355	856
2021	1,813	181		104.60	7.87	115.06	1,193	50		1,243	124	45	70			296	708
2022	1,455	145		107.22	8.07	117.94	981	41		1,023	102	26	69			244	581
2023	1,167	117		109.90	8.27	120.89	807	34		841	84	9	96			192	459
2024	939	94		112.65	8.48	123.91	665	28		693	69		56			170	398
2025	751	75		115.46	8.69	127.01	546	23		569	57		56			136	320
2026	603	60		118.35	8.91	130.19	449	19		468	47		86			99	236
2027	484	48		121.31	9.13	133.44	369	16		385	38		56			86	203
2028	389	39		124.34	9.36	136.78	304	13		317	32		46			72	168
2029	311	31		127.45	9.59	140.20	249	11		260	26		78			45	110
2030	250	25		130.64	9.83	143.70	205	9		214	21		47			43	102
2031				133.90	10.08	147.29									116		(116)
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	18,512	1,851					12,180	515		12,694	1,269	262	970	116	1,362	3,003	5,712

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Prospect Santos 9

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20											
2012				85.00	6.30	93.50									79		(79)
2013				87.00	6.46	95.70									249		(249)
2014				88.00	6.62	96.80									255		(255)
2015				90.20	6.79	99.22									262		(262)
2016				92.46	6.96	101.70									268		(268)
2017	644	84		94.77	7.13	104.24	384	21		405	40		31			83	251
2018	1,288	167		97.14	7.31	106.85	787	43		830	83		63			171	512
2019	1,116	145		99.56	7.49	109.52	699	38		737	74		63			151	449
2020	969	126		102.05	7.68	112.26	622	34		656	66		63			133	394
2021	837	109		104.60	7.87	115.06	551	30		581	58		109			101	313
2022	725	94		107.22	8.07	117.94	489	27		516	52		64			102	299
2023	628	82		109.90	8.27	120.89	434	24		458	46		53			92	267
2024	546	71		112.65	8.48	123.91	387	21		408	41		53			81	233
2025	471	61		115.46	8.69	127.01	342	19		361	36		104			53	168
2026	408	53		118.35	8.91	130.19	304	17		321	32		54			60	174
2027	354	46		121.31	9.13	133.44	270	15		285	28		45			55	156
2028				124.34	9.36	136.78								87			(87)
2029				127.45	9.59	140.20											
2030				130.64	9.83	143.70											
2031				133.90	10.08	147.29											
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
Total	7,986	1,038					5,269	289		5,558	556		701	87	1,114	1,084	2,017

GCA Auditor: RW Approved: DKM

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Upside Case. Oil Bearing Prospect Jequitinhonha 1

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									56		(56)
2012				85.00	6.30	93.50											
2013				87.00	6.46	95.70									407		(407)
2014				88.00	6.62	96.80									417		(417)
2015	2,888	231		90.20	6.79	99.22	1,638	55		1,694	169		59		428	453	585
2016	4,741	379		92.46	6.96	101.70	2,757	93		2,850	285	116	121			717	1,612
2017	3,871	310		94.77	7.13	104.24	2,308	78		2,386	239	114	124			588	1,321
2018	3,170	254		97.14	7.31	106.85	1,937	65		2,002	200	111	163			469	1,058
2019	2,595	208		99.56	7.49	109.52	1,625	55		1,680	168	77	130			403	903
2020	2,130	170		102.05	7.68	112.26	1,368	46		1,414	141	51	133			336	752
2021	1,739	139		104.60	7.87	115.06	1,144	39		1,183	118	27	176			266	597
2022	1,424	114		107.22	8.07	117.94	960	32		993	99	10	112			240	532
2023	1,166	93		109.90	8.27	120.89	806	27		833	83		115			198	438
2024	957	77		112.65	8.48	123.91	678	23		701	70		160			145	326
2025	782	63		115.46	8.69	127.01	568	19		587	59		96			134	297
2026	640	51		118.35	8.91	130.19	476	16		492	49		99			107	237
2027	524	42		121.31	9.13	133.44	400	14		413	41		101			84	187
2028	430	34		124.34	9.36	136.78	336	11		348	35		104			64	145
2029	351	28		127.45	9.59	140.20	282	10		291	29		106			47	108
2030	288	23		130.64	9.83	143.70	236	8		244	24		109			33	78
2031	235	19		133.90	10.08	147.29	198	7		205	20		112			21	52
2032	193	15		137.25	10.33	150.97	167	6		172	17		114			11	30
2033				140.68	10.59	154.75									120		(120)
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
2040				167	13	184											
Total	28,125	2,250					17,885	604		18,489	1,849	506	2,132	120	1,308	4,316	8,258

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Upside Case. Oil Bearing Prospect Jequitinhonha 2

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total	+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow	
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									67		(67)
2012				85.00	6.30	93.50											
2013				87.00	6.46	95.70									199		(199)
2014				88.00	6.62	96.80									204		(204)
2015	1,935	155		90.20	6.79	99.22	1,098	37		1,135	113		43		209	306	464
2016	3,083	247		92.46	6.96	101.70	1,793	61		1,853	185	26	88			485	1,069
2017	2,443	195		94.77	7.13	104.24	1,456	49		1,505	151	36	90			384	845
2018	1,941	155		97.14	7.31	106.85	1,186	40		1,226	123	44	117			293	649
2019	1,542	123		99.56	7.49	109.52	966	33		998	100	23	94			244	537
2020	1,229	98		102.05	7.68	112.26	789	27		815	82	6	97			197	434
2021	973	78		104.60	7.87	115.06	640	22		662	66		126			146	324
2022	773	62		107.22	8.07	117.94	522	18		539	54		81			126	277
2023	615	49		109.90	8.27	120.89	425	14		439	44		83			97	214
2024	490	39		112.65	8.48	123.91	347	12		359	36		86			74	163
2025	388	31		115.46	8.69	127.01	282	10		291	29		88			54	121
2026	308	25		118.35	8.91	130.19	229	8		237	24		90			38	86
2027	245	20		121.31	9.13	133.44	187	6		193	19		92			24	57
2028	195	16		124.34	9.36	136.78	153	5		158	16		94			13	34
2029	155	12		127.45	9.59	140.20	124	4		128	13		97			4	14
2030	123	10		130.64	9.83	143.70	101	3		104	10		99				(5)
2031				133.90	10.08	147.29									56		(56)
2032				137.25	10.33	150.97											
2033				140.68	10.59	154.75											
2034				144.20	10.85	158.62											
2035				147.80	11.12	162.58											
2036				151.50	11.40	166.65											
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
2040				167	13	184											
Total	16,436	1,315					10,296	348		10,644	1,064	135	1,464	56	679	2,486	4,760

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Upside Case. Oil Bearing Prospect Santos 4

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total		+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									103		(103)
2012				85.00	6.30	93.50									189		(189)
2013				87.00	6.46	95.70									1,103		(1,103)
2014				88.00	6.62	96.80									1,130		(1,130)
2015				90.20	6.79	99.22									1,159		(1,159)
2016				92.46	6.96	101.70									1,188		(1,188)
2017	5,089	407		94.77	7.13	104.24	3,034	103		3,136	314	45	109			785	1,883
2018	10,178	814		97.14	7.31	106.85	6,219	210		6,429	643	817	223			1,369	3,376
2019	10,178	814		99.56	7.49	109.52	6,374	215		6,590	659	1,027	285			1,326	3,292
2020	8,306	664		102.05	7.68	112.26	5,332	180		5,512	551	846	235			1,120	2,760
2021	6,741	539		104.60	7.87	115.06	4,436	150		4,585	459	541	240			976	2,369
2022	5,486	439		107.22	8.07	117.94	3,700	125		3,825	383	321	307			826	1,989
2023	4,465	357		109.90	8.27	120.89	3,086	104		3,191	319	197	253			716	1,705
2024	3,644	291		112.65	8.48	123.91	2,582	87		2,669	267	107	259			605	1,431
2025	2,957	237		115.46	8.69	127.01	2,148	73		2,220	222	61	330			475	1,131
2026	2,407	193		118.35	8.91	130.19	1,792	61		1,852	185	29	218			425	995
2027	1,959	157		121.31	9.13	133.44	1,495	51		1,545	155		223			350	818
2028	1,598	128		124.34	9.36	136.78	1,250	42		1,292	129		299			256	609
2029	1,297	104		127.45	9.59	140.20	1,040	35		1,075	108		234			218	515
2030	1,056	84		130.64	9.83	143.70	868	29		897	90		240			167	400
2031	859	69		133.90	10.08	147.29	724	24		748	75		322			99	253
2032	701	56		137.25	10.33	150.97	605	20		626	63		202			106	255
2033	569	46		140.68	10.59	154.75	504	17		521	52		161			91	216
2034	463	37		144.20	10.85	158.62	420	14		434	43		129			78	184
2035	377	30		147.80	11.12	162.58	350	12		362	36		103			67	156
2036	308	25		151.50	11.40	166.65	293	10		303	30		83			57	133
2037	250	20		155.29	11.69	170.81	244	8		252	25		66			49	112
2038	203	16		159.17	11.98	175.08	203	7		210	21		53			41	95
2039				163.15	12.28	179.46								503			(503)
2040				167.23	12.59	183.95											
2041				171.41	12.90	188.55											
2042				175.69	13.22	193.26											
2043				180.08	13.55	198.09											
2044				184.59	13.89	203.04											
2045				189.20	14.24	208.12											
2046				193.93	14.60	213.32											
2047				198.78	14.96	218.66											
Total	69,092	5,527					46,697	1,578		48,275	4,827	3,992	4,574	503	4,871	10,204	19,304

Mean Estimated Prospective Resources as of December 31, 2009
Gross Field Resources - Base Case Price Scenario
Upside Case. Oil Bearing Prospect. Santos 2 and Santos 4 Integrated Development

Year	Production Profile			Prices			Revenue				Royalty	Special Part.	Operating	Aband	Capital	Income Tax	After Tax
	Oil	Gas	Condensate	Oil	Gas	Condensate	Oil	Gas	Condensate	Total		+ P&D Tax	Expense	Cost	Expenditures	Social Contr.	Net Cash Flow
	Mm ³	MMm ³	Mm ³	US\$/Bbl	US\$/MMBtu	US\$/Bbl	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM	US\$MM
2010				80.00	6.00	88.00											
2011				82.00	6.15	90.20									103		(103)
2012				85.00	6.30	93.50									189		(189)
2013				87.00	6.46	95.70									2,323		(2,323)
2014				88.00	6.62	96.80									2,381		(2,381)
2015				90.20	6.79	99.22									2,440		(2,440)
2016				92.46	6.96	101.70									2,501		(2,501)
2017	10,209	1,344		94.77	7.13	104.24	6,085	338		6,424	642	94	229			1,586	3,872
2018	20,417	2,688		97.14	7.31	106.85	12,475	694		13,169	1,317	1,664	469			2,765	6,953
2019	18,556	2,347		99.56	7.49	109.52	11,621	621		12,242	1,224	1,727	511			2,497	6,282
2020	15,179	1,922		102.05	7.68	112.26	9,743	521		10,265	1,026	1,470	444			2,091	5,233
2021	12,349	1,565		104.60	7.87	115.06	8,125	435		8,560	856	960	437			1,820	4,488
2022	10,074	1,278		107.22	8.07	117.94	6,794	364		7,158	716	582	517			1,552	3,792
2023	8,219	1,044		109.90	8.27	120.89	5,681	305		5,986	599	374	406			1,350	3,257
2024	6,723	855		112.65	8.48	123.91	4,764	256		5,020	502	207	455			1,134	2,722
2025	5,470	696		115.46	8.69	127.01	3,973	214		4,186	419	129	472			933	2,234
2026	4,462	569		118.35	8.91	130.19	3,322	179		3,501	350	69	406			792	1,883
2027	3,641	464		121.31	9.13	133.44	2,778	150		2,928	293	19	357			672	1,587
2028	2,978	380		124.34	9.36	136.78	2,329	126		2,455	245		485			508	1,216
2029	2,423	310		127.45	9.59	140.20	1,943	105		2,047	205		343			446	1,054
2030	1,977	253		130.64	9.83	143.70	1,624	88		1,712	171		405			334	802
2031	1,613	207		133.90	10.08	147.29	1,358	74		1,432	143		429			250	610
2032	1,319	169		137.25	10.33	150.97	1,139	62		1,201	120		369			207	504
2033	1,074	138		140.68	10.59	154.75	950	52		1,001	100		249			193	459
2034	876	113		144.20	10.85	158.62	794	43		838	84		281			138	335
2035	715	92		147.80	11.12	162.58	664	36		700	70		192			130	308
2036				151.50	11.40	166.65							83	517			(599)
2037				155.29	11.69	170.81											
2038				159.17	11.98	175.08											
2039				163.15	12.28	179.46											
2040				167.23	12.59	183.95											
2041				171.41	12.90	188.55											
2042				175.69	13.22	193.26											
2043				180.08	13.55	198.09											
2044				184.59	13.89	203.04											
2045				189.20	14.24	208.12											
2046				193.93	14.60	213.32											
2047				198.78	14.96	218.66											
Total	128,273	16,436					86,163	4,662		90,825	9,082	7,295	7,540	517	9,936	19,398	37,056

APPENDIX III:

Resource and Reserve Definitions

**Production Resource Management System
(PRMS)
SPE-WPC-AAPG-SPEE
March 2007**

**Society of Petroleum Engineers, World Petroleum Council, American Association of Petroleum Geologists and Society of Petroleum Evaluation Engineers
Petroleum Resources Management System
Definitions and Guidelines ⁽²⁾
March 2007**

Preamble

Petroleum resources are the estimated quantities of hydrocarbons naturally occurring on or within the Earth's crust. Resource assessments estimate total quantities in known and yet-to-be-discovered accumulations; resources evaluations are focused on those quantities that can potentially be recovered and marketed by commercial projects. A petroleum resources management system provides a consistent approach to estimating petroleum quantities, evaluating development projects, and presenting results within a comprehensive classification framework.

International efforts to standardize the definition of petroleum resources and how they are estimated began in the 1930s. Early guidance focused on Proved Reserves. Building on work initiated by the Society of Petroleum Evaluation Engineers (SPEE), SPE published definitions for all Reserves categories in 1987. In the same year, the World Petroleum Council (WPC, then known as the World Petroleum Congress), working independently, published Reserves definitions that were strikingly similar. In 1997, the two organizations jointly released a single set of definitions for Reserves that could be used worldwide. In 2000, the American Association of Petroleum Geologists (AAPG), SPE and WPC jointly developed a classification system for all petroleum resources. This was followed by additional supporting documents: supplemental application evaluation guidelines (2001) and a glossary of terms utilized in Resources definitions (2005). SPE also published standards for estimating and auditing reserves information (revised 2007).

These definitions and the related classification system are now in common use internationally within the petroleum industry. They provide a measure of comparability and reduce the subjective nature of resources estimation. However, the technologies employed in petroleum exploration, development, production and processing continue to evolve and improve. The SPE Oil and Gas Reserves Committee works closely with other organizations to maintain the definitions and issues periodic revisions to keep current with evolving technologies and changing commercial opportunities.

The SPE PRMS document consolidates, builds on, and replaces guidance previously contained in the 1997 Petroleum Reserves Definitions, the 2000 Petroleum Resources Classification and Definitions publications, and the 2001 "Guidelines for the Evaluation of Petroleum Reserves and Resources"; the latter document remains a valuable source of more detailed background information.

These definitions and guidelines are designed to provide a common reference for the international petroleum industry, including national reporting and regulatory disclosure agencies, and to support petroleum project and portfolio management requirements. They are intended to improve clarity in global communications regarding petroleum resources. It is expected that SPE PRMS will be supplemented with industry education programs and application guides addressing their implementation in a wide spectrum of technical and/or commercial settings.

It is understood that these definitions and guidelines allow flexibility for users and agencies to tailor application for their particular needs; however, any modifications to the guidance contained herein should be clearly identified. The definitions and guidelines contained in this document must not be construed as modifying the interpretation or application of any existing regulatory reporting requirements.

The full text of the SPE PRMS Definitions and Guidelines can be viewed at:

www.spe.org/specma/binary/files/6859916Petroleum_Resources_Management_System_2007.pdf

² These Definitions and Guidelines are extracted from the Society of Petroleum Engineers / World Petroleum Council / American Association of Petroleum Geologists / Society of Petroleum Evaluation Engineers (SPE/WPC/AAPG/SPEE) Petroleum Resources Management System document ("SPE PRMS"), approved in March 2007.

RESERVES

Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions.

Reserves must satisfy four criteria: they must be discovered, recoverable, commercial, and remaining based on the development project(s) applied. Reserves are further subdivided in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their development and production status. To be included in the Reserves class, a project must be sufficiently defined to establish its commercial viability. There must be a reasonable expectation that all required internal and external approvals will be forthcoming, and there is evidence of firm intention to proceed with development within a reasonable time frame. A reasonable time frame for the initiation of development depends on the specific circumstances and varies according to the scope of the project. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. In all cases, the justification for classification as Reserves should be clearly documented. To be included in the Reserves class, there must be a high confidence in the commercial producibility of the reservoir as supported by actual production or formation tests. In certain cases, Reserves may be assigned on the basis of well logs and/or core analysis that indicate that the subject reservoir is hydrocarbon-bearing and is analogous to reservoirs in the same area that are producing or have demonstrated the ability to produce on formation tests.

On Production

The development project is currently producing and selling petroleum to market.

The key criterion is that the project is receiving income from sales, rather than the approved development project necessarily being complete. This is the point at which the project “chance of commerciality” can be said to be 100%. The project “decision gate” is the decision to initiate commercial production from the project.

Approved for Development

A discovered accumulation where project activities are ongoing to justify commercial development in the foreseeable future.

At this point, it must be certain that the development project is going ahead. The project must not be subject to any contingencies such as outstanding regulatory approvals or sales contracts. Forecast capital expenditures should be included in the reporting entity’s current or following year’s approved budget. The project “decision gate” is the decision to start investing capital in the construction of production facilities and/or drilling development wells.

Justified for Development

Implementation of the development project is justified on the basis of reasonable forecast commercial conditions at the time of reporting, and there are reasonable expectations that all necessary approvals/contracts will be obtained.

In order to move to this level of project maturity, and hence have reserves associated with it, the development project must be commercially viable at the time of reporting, based on the reporting entity’s assumptions of future prices, costs, etc. (“forecast case”) and the specific circumstances of the project. Evidence of a firm intention to proceed with development within a reasonable time frame will be sufficient to demonstrate commerciality. There should be a development plan in sufficient detail to support the assessment of commerciality and a reasonable expectation that any regulatory approvals or sales contracts required prior to project implementation will be forthcoming. Other than such approvals/contracts, there should be no known contingencies that could preclude the development from proceeding within a reasonable timeframe (see Reserves class). The project “decision gate” is the decision by the reporting entity and its partners, if any, that the project has reached a level of technical and commercial maturity sufficient to justify proceeding with development at that point in time.

Proved Reserves

Proved Reserves are those quantities of petroleum, which by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operating methods, and government regulations.

If deterministic methods are used, the term reasonable certainty is intended to express a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. The area of the reservoir considered as Proved includes:

- (1) the area delineated by drilling and defined by fluid contacts, if any, and
- (2) adjacent undrilled portions of the reservoir that can reasonably be judged as continuous with it and commercially productive on the basis of available geoscience and engineering data.

In the absence of data on fluid contacts, Proved quantities in a reservoir are limited by the lowest known hydrocarbon (LKH) as seen in a well penetration unless otherwise indicated by definitive geoscience, engineering, or performance data. Such definitive information may include pressure gradient analysis and seismic indicators. Seismic data alone may not be sufficient to define fluid contacts for Proved reserves (see "2001 Supplemental Guidelines," Chapter 8). Reserves in undeveloped locations may be classified as Proved provided that the locations are in undrilled areas of the reservoir that can be judged with reasonable certainty to be commercially productive. Interpretations of available geoscience and engineering data indicate with reasonable certainty that the objective formation is laterally continuous with drilled Proved locations. For Proved Reserves, the recovery efficiency applied to these reservoirs should be defined based on a range of possibilities supported by analogs and sound engineering judgment considering the characteristics of the Proved area and the applied development program.

Probable Reserves

Probable Reserves are those additional Reserves which analysis of geoscience and engineering data indicate are less likely to be recovered than Proved Reserves but more certain to be recovered than Possible Reserves.

It is equally likely that actual remaining quantities recovered will be greater than or less than the sum of the estimated Proved plus Probable Reserves (2P). In this context, when probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the 2P estimate. Probable Reserves may be assigned to areas of a reservoir adjacent to Proved where data control or interpretations of available data are less certain. The interpreted reservoir continuity may not meet the reasonable certainty criteria. Probable estimates also include incremental recoveries associated with project recovery efficiencies beyond that assumed for Proved.

Possible Reserves

Possible Reserves are those additional reserves which analysis of geoscience and engineering data indicate are less likely to be recoverable than Probable Reserves.

The total quantities ultimately recovered from the project have a low probability to exceed the sum of Proved plus Probable plus Possible (3P), which is equivalent to the high estimate scenario. When probabilistic methods are used, there should be at least a 10% probability that the actual quantities recovered will equal or exceed the 3P estimate. Possible Reserves may be assigned to areas of a reservoir adjacent to Probable where data control and interpretations of available data are progressively less certain. Frequently, this may be in areas where geoscience and engineering data are unable to clearly define the area and vertical reservoir limits of commercial production from the reservoir by a defined project. Possible estimates also include incremental quantities associated with project recovery efficiencies beyond that assumed for Probable.

Probable and Possible Reserves

(See above for separate criteria for Probable Reserves and Possible Reserves.)

The 2P and 3P estimates may be based on reasonable alternative technical and commercial interpretations within the reservoir and/or subject project that are clearly documented, including comparisons to results in successful similar projects. In conventional accumulations, Probable and/or Possible Reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from Proved areas by minor faulting or other geological discontinuities and have not been penetrated by a wellbore but are interpreted to be in communication with the known (Proved) reservoir. Probable or Possible Reserves may be assigned to areas that are structurally higher than the Proved area. Possible (and in some cases, Probable) Reserves may be assigned to areas that are structurally lower than the adjacent Proved or 2P area. Caution should be exercised in assigning Reserves to adjacent reservoirs isolated by major, potentially sealing, faults until this reservoir is penetrated and evaluated as commercially productive. Justification for assigning Reserves in such cases should be clearly documented. Reserves should not be assigned to areas that are clearly separated from a known accumulation by non-productive reservoir (i.e., absence of reservoir, structurally low reservoir, or negative test results); such areas may contain Prospective Resources. In conventional accumulations, where drilling has defined a highest known oil (HKO) elevation and there exists the potential for an associated gas cap, Proved oil Reserves should only be assigned in the structurally higher portions of the reservoir if there is reasonable certainty that such portions are initially above bubble point pressure based on documented engineering analyses. Reservoir portions that do not meet this certainty may be assigned as Probable and Possible oil and/or gas based on reservoir fluid properties and pressure gradient interpretations.

Developed Reserves

Developed Reserves are expected quantities to be recovered from existing wells and facilities.

Reserves are considered developed only after the necessary equipment has been installed, or when the costs to do so are relatively minor compared to the cost of a well. Where required facilities become unavailable, it may be necessary to reclassify Developed Reserves as Undeveloped. Developed Reserves may be further sub-classified as Producing or Non-Producing.

Developed Producing Reserves

Developed Producing Reserves are expected to be recovered from completion intervals that are open and producing at the time of the estimate.

Improved recovery reserves are considered producing only after the improved recovery project is in operation.

Developed Non-Producing Reserves

Developed Non-Producing Reserves include shut-in and behind-pipe Reserves.

Shut-in Reserves are expected to be recovered from:

- (1) completion intervals which are open at the time of the estimate but which have not yet started producing,
- (2) wells which were shut-in for market conditions or pipeline connections, or
- (3) wells not capable of production for mechanical reasons.

Behind-pipe Reserves are expected to be recovered from zones in existing wells which will require additional completion work or future re-completion prior to start of production. In all cases, production can be initiated or restored with relatively low expenditure compared to the cost of drilling a new well.

Undeveloped Reserves

Undeveloped Reserves are quantities expected to be recovered through future investments:

- (1) from new wells on undrilled acreage in known accumulations,
- (2) from deepening existing wells to a different (but known) reservoir,
- (3) from infill wells that will increase recovery, or
- (4) where a relatively large expenditure (e.g. when compared to the cost of drilling a new well) is required to:
 - (a) recomplete an existing well, or
 - (b) install production or transportation facilities for primary or improved recovery projects.

CONTINGENT RESOURCES

Those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable due to one or more contingencies.

Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

Development Pending

A discovered accumulation where project activities are ongoing to justify commercial development in the foreseeable future.

The project is seen to have reasonable potential for eventual commercial development, to the extent that further data acquisition (e.g. drilling, seismic data) and/or evaluations are currently ongoing with a view to confirming that the project is commercially viable and providing the basis for selection of an appropriate development plan. The critical contingencies have been identified and are reasonably expected to be resolved within a reasonable time frame. Note that disappointing appraisal/evaluation results could lead to a re-classification of the project to "On Hold" or "Not Viable" status. The project "decision gate" is the decision to undertake further data acquisition and/or studies designed to move the project to a level of technical and commercial maturity at which a decision can be made to proceed with development and production.

Development Unclarified or on Hold

A discovered accumulation where project activities are on hold and/or where justification as a commercial development may be subject to significant delay.

The project is seen to have potential for eventual commercial development, but further appraisal/evaluation activities are on hold pending the removal of significant contingencies external to the project, or substantial further appraisal/evaluation activities are required to clarify the potential for eventual commercial development. Development may be subject to a significant time delay. Note that a change in circumstances, such that there is no longer a reasonable expectation that a critical contingency can be removed in the foreseeable future, for example, could lead to a reclassification of the project to "Not Viable" status. The project "decision gate" is the decision to either proceed with additional evaluation designed to clarify the potential for eventual commercial development or to temporarily suspend or delay further activities pending resolution of external contingencies.

Development Not Viable

A discovered accumulation for which there are no current plans to develop or to acquire additional data at the time due to limited production potential.

The project is not seen to have potential for eventual commercial development at the time of reporting, but the theoretically recoverable quantities are recorded so that the potential opportunity will be recognized in the event of a major change in technology or commercial conditions. The project "decision gate" is the decision not to undertake any further data acquisition or studies on the project for the foreseeable future.

PROSPECTIVE RESOURCES

Those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.

Potential accumulations are evaluated according to their chance of discovery and, assuming a discovery, the estimated quantities that would be recoverable under defined development projects. It is recognized that the development programs will be of significantly less detail and depend more heavily on analog developments in the earlier phases of exploration.

Prospect

A project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target.

Project activities are focused on assessing the chance of discovery and, assuming discovery, the range of potential recoverable quantities under a commercial development program.

Lead

A project associated with a potential accumulation that is currently poorly defined and requires more data acquisition and/or evaluation in order to be classified as a prospect.

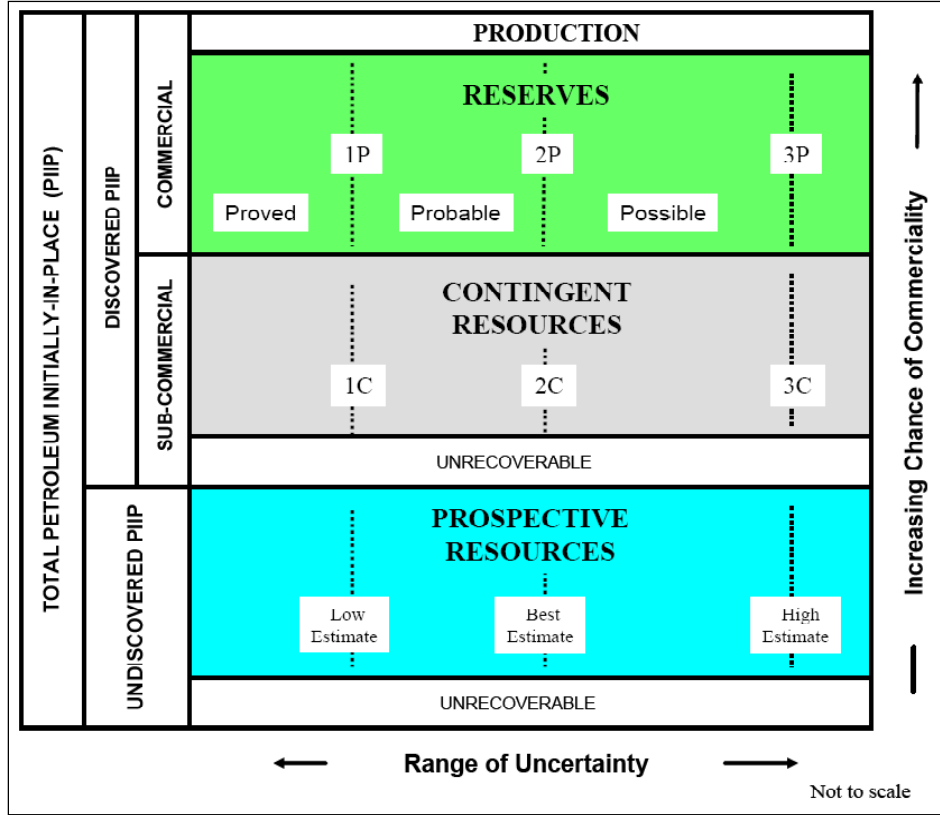
Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to confirm whether or not the lead can be matured into a prospect. Such evaluation includes the assessment of the chance of discovery and, assuming discovery, the range of potential recovery under feasible development scenarios.

Play

A project associated with a prospective trend of potential prospects, but which requires more data acquisition and/or evaluation in order to define specific leads or prospects.

Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to define specific leads or prospects for more detailed analysis of their chance of discovery and, assuming discovery, the range of potential recovery under hypothetical development scenarios.

RESOURCES CLASSIFICATION



PROJECT MATURITY

