BLUELAKE ENERGY

Draft Commentary on Tullow Oil Africa

Presented to

CONTENTS

Introduction & Conclusion

Ghana Overview 1

Geology 2

Reserves and Production 3

Development 4

Valuation 5

Uganda Overview 6

Geology 7

Reserves and Production 8

Development 9

Valuation 10

Introduction and Conclusion

Introduction & Conclusion

Introduction

- This document has been prepared exclusively for Fidelity between December 2008 and January 2009.
- The objective of the analysis has been to examine in detail the assets of Tullow Oil in Ghana and Uganda.
- We have carried out this analysis by carrying out an asset by asset review of all discovered fields (appraised and un appraised) and by looking at the undrilled exploration potential in both countries.
- As well as data provided by Tullow Oil we have also used the following sources extensively
  - JS Herold
  - US Geological Survey (USGS)
  - RPS
  - Ugandan Energy Ministry
  - Ghana Energy Ministry
  - Heritage Oil
  - AAPG
  - Upstream Online
  - Anadarko
  - Amerada Hess
  - BP Statistical Review
- The report is split into 2 sections on Uganda and Ghana and we have subdivided each country by:
  - Overview: Set the scene and provide background on Tullow entry
  - Geology: Provide the basis for oilfield sizes and productivity
  - Reserves and Production: establish actual volumes and productivity
  - Development: follow on from production with costs and economics
  - Valuation: Combine all the above into a p/share value

Conclusion

- Tullow was founded in Ireland in 1985 and started with its first assets in Senegal by acquiring some small scale mature onshore production. After various diversions into India and Asia Tullow came back to Africa in a material fashion in 2004 with the acquisition of Energy Africa for £311million.
- This acquisition along with that of Hardman resources in 2007 is the basis of the quite amazing discoveries that have been made by Tullow and its Partners in Uganda and Ghana since.
- Ghana has the more material discovered and appraised resources in the form of the Jubilee discovery (2007)– a world class 1200MMbbl gross discovery in which Tullow owns more than one third.
- Tullow is only just starting to understand the surrounding potential in Ghana and has more Partners to deal with. Exploration upside is probably greater than that of Uganda but is more risky at this earlier stage.
- In Uganda Tullow and Partners have been discovering oil since 2004 but it was only as recent as 2007 that Tullow and Partners began to take in the materiality of the Albertine basin with the Kingfisher (118MMbbl) and 2008 Buffalo (344MMbbl).
- In our opinion Tullow and partners have exceeded the economic threshold of discovered oil required to develop the land locked province and we expect to see more positive news from Uganda in 2009 with a low risk high impact exploration programme.
- Overall we see about 81% of the 10.39p share price valuation contributed by Ugandan and Ghanaian discoveries and by the end of 2009 it is not inconceivable that Tullow will be 100% African by selling less material assets in the UK and Asia.
- Downside risks are mostly to do with time delay – Tullow may have set an ambitious objective of first oil from Ghana by 2010 and certainly in Uganda it may be several years before the full scale export is underway – an acquisition of the entire company maybe more likely before then.

Tullow Total Valuation

Summary DCF Tullow Valuation 1/1/09

		Value (£MM)	Value (p/share)	
Europe	UK	220	30	5%
Africa	**Ghana**	**2108**	**291**	**46%**
	Uganda	**720**	**99**	**16%**
	Gabon	437	60	10%
	Ivory Coast	139	19	3%
	Equatorial Guinea	544	75	12%
	Mauritania	68	9	1%
	Congo	300	41	7%
Asia	Pakistan	9	1	0%
Financial		-443	-61	
Core Value		**£4,101MM**	**566p**	

		Value (£MM)	Value (p/share)	
Europe	UK	181	25	5%
Africa	Cote d Ivoire	41	6	1%
	Namibia	79	11	2%
	Ghana	**930**	**128**	**25%**
	Uganda	**2369**	**327**	**65%**
Asia	Bangladesh	59	8	2%
Appraisal costs		-227	-31	
Appraisal Value		**£3,433MM**	**474p**	
Total Value		**£7,534MM**	**1039p**	

		Value (£MM)	Value (p/share)		Unrisked
Africa	**Uganda**	**571**	**79**	**40%**	312
	Ghana	**677**	**93**	**47%**	481
	Mauritania	20	3	1%	27
	Tanzania	137	19	10%	57
	Gabon	6	1	0%	3
Europe	Netherlands	27	4	2%	11
Exploration Cost		-89	-12		-12
Exploration Value		**£1,350MM**	**186p**		**879p**

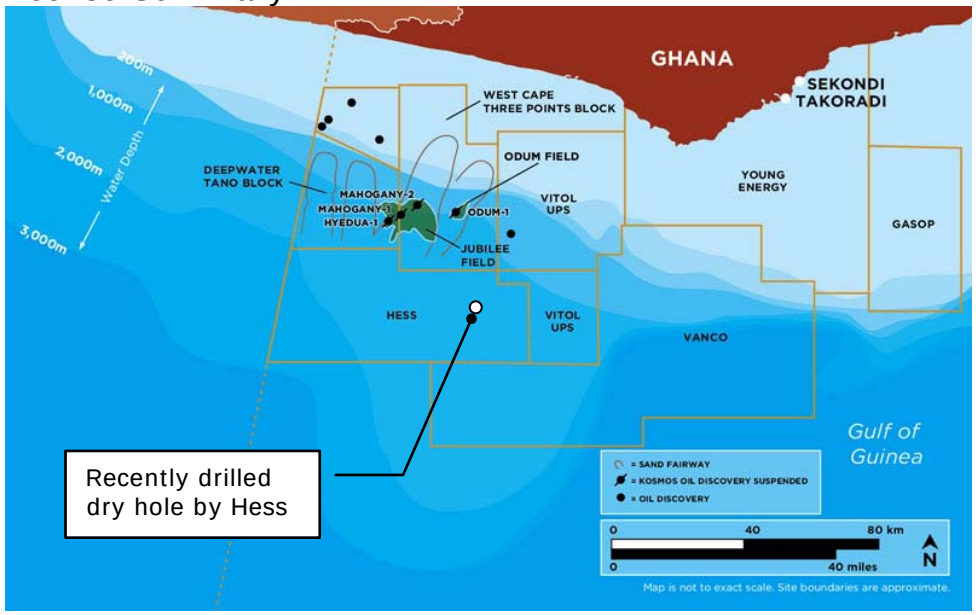
Commentary

- Our current summary valuation where the combined contribution from Ghana and Uganda Core and Appraisal value makes up 81% of our total 10.39p current value.
- We have prematurely moved Jubilee (Ghana) and Mputa (Uganda) into core value and these assets now make up 37% of our total value in core.
- But a larger proportion of value sits in discovered but as yet unappraised assets such as Buffalo (Uganda) and Jubilee upside (Ghana) where in our opinion at least 44% of total value resides.
- In our opinion Tullow has made good progress in moving particularly Ugandan reserves from exploration prospects to unappraised assets. (Jubilee upside is also included here from an extension of the field to the south east and in deeper zones).
- Although we have not focused on funding of the developments in this report, we understand that good progress is being made in securing debt finance for the development stages of these projects.
- Beyond core producing and contingent appraisal assets we have also identified a further 186p (risked) value from 2009 drilling alone, that could become 879p if all prospects are discovered and derisked. This is not as far fetched as it sounds – particularly in Uganda where recent drilling has considerably derisked certain trends.

Ghana Overview

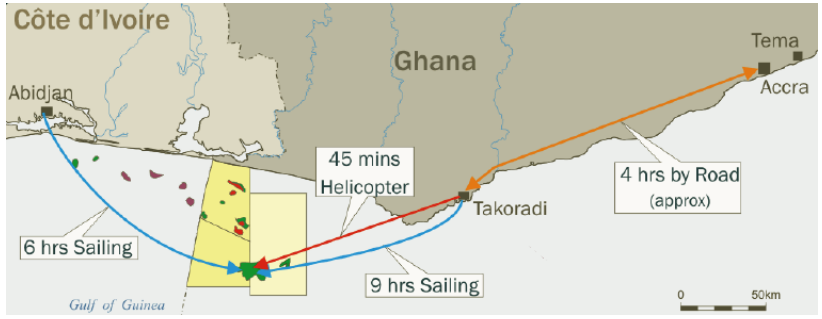
Ghana Overview

License Summary



Source: Anadarko

License Location



Source: JS Herold

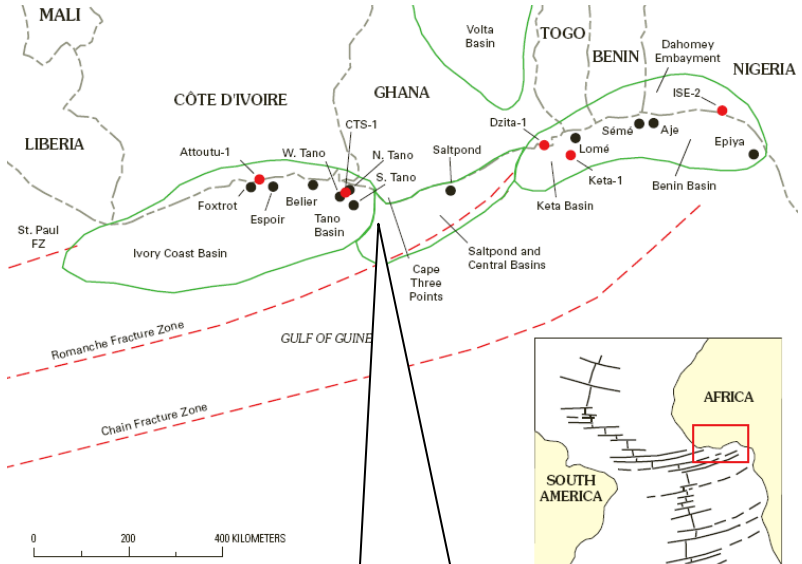
Commentary

- Tullow entered Ghana in 2004 through its acquisition of Energy Africa
- Tullow has interests in three exploration licences offshore Ghana:
  - Shallow Water Tano (31.5%)
  - Deepwater Tano (49.95%)
  - West Cape Three Points (22.9%)
- The deep water acreage consists of the West Cape Three Points and Deepwater Tano blocks. In 2007 two successful exploration wells located a substantial discovery which straddles the boundary between the two blocks and has been named the Jubilee field, with most likely gross reserves of 1200MMbbl.
- Subsequent flow testing of Mahogany wells confirmed that the Jubilee Field reservoirs are highly productive with wells expected to have capacity in excess of at least 20,000 bopd when completed for production. This recent productivity revision has been one of the major contributors to reserve increases as recovery factors have been raised.
- Tullow has ample rig capacity in the area for appraisal, development and exploration. There are four deepwater rigs - the Blackford Dolphin, Eirik Raude, Atwood Hunter and Aban Abraham have been contracted for several years.
- The Jubilee discovery has opened up a new hydrocarbon province and Tullow plans to drill further exploration wells in 2009
- The first well was drilled in February 2008 on the Odum prospect in the West Cape Three Points block. The well is considered to be a commercial discovery as it is located only 13 km from the Jubilee field. Further high impact prospects have been identified in the deepwater region and at least three of these, Teak, Tweneboa and Onyina are expected to be drilled in 2009 . Teak and Tweneboa are substantial prospects with upside potential in excess of half a billion barrels each.

Ghana Geology

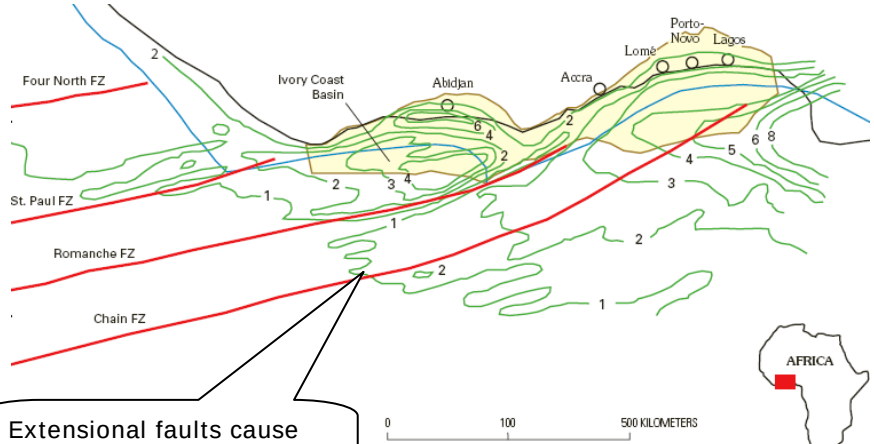
Ghana Geological Overview

US Oil to Gas Ratio



Source: USGS

Channel deposition drives reservoir quality



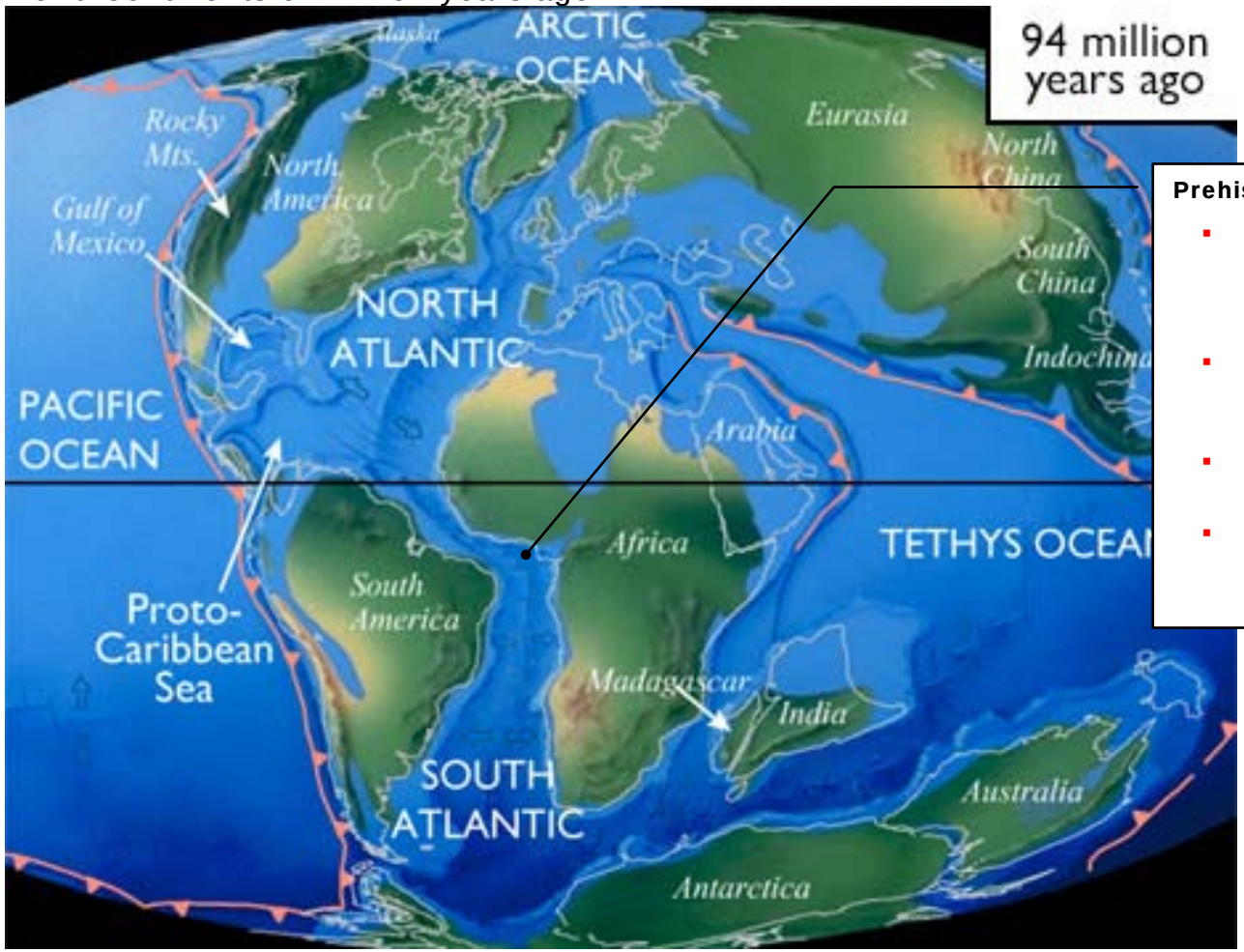
Extensional faults cause compartmentalisation

Commentary

- Most of the Tullow discoveries have been made in the Tano basin offshore Ghana/Cote d'Ivoire. The Cape Three Points basin may overlap with Tano and complicate the geological story.
- Ghanaian geology is defined by:
  - Reservoirs material laid down around 100million years ago in the late Cretaceous period as marine channels.
  - Reservoirs laid one on top of another as channel sands and then trapped between later layers of sediment and strata forming 'stratigraphic' traps.
  - Source material (oil) from earlier lacustrine (of lakes) periods filling traps.
  - Structures created by the separation of the African and South America Continents.
- Critical factors controlling oil and gas accumulations in the Gulf of Guinea Province are the:
  - presence of good reservoirs
  - quality and preservation of hydrocarbons
  - ability to produce hydrocarbons at a rate that would be economic in a deep-water setting.
- Offshore core samples and seismic data indicate that erosion on the structural highs and on the province shelf and slope is extensive, exposing the Albian rocks on the sea bed and removing potential reservoir and source rocks – clearly the Tullow discoveries are exceptional.
- The discoveries made to date in the Tano and West Cape Three Points licenses indicate:
  - Good quality porous and well connected reservoir
  - Entire structures filled with good quality oil
  - Large structures
- The current unknowns (because only a few wells have been drilled) are the connectivity of channels and the structural 'breaks' across the known reservoir structures – these factors may not limit reserves but will affect future productivity and costs (numbers of wells).
- The extent and quality of reservoir will drive the degree of commerciality of existing discoveries (Jubilee), and the range and extent of possible upside – we seek to examine these factors further in this report.

Ghana Tectonics

World Continents 94 Million years ago



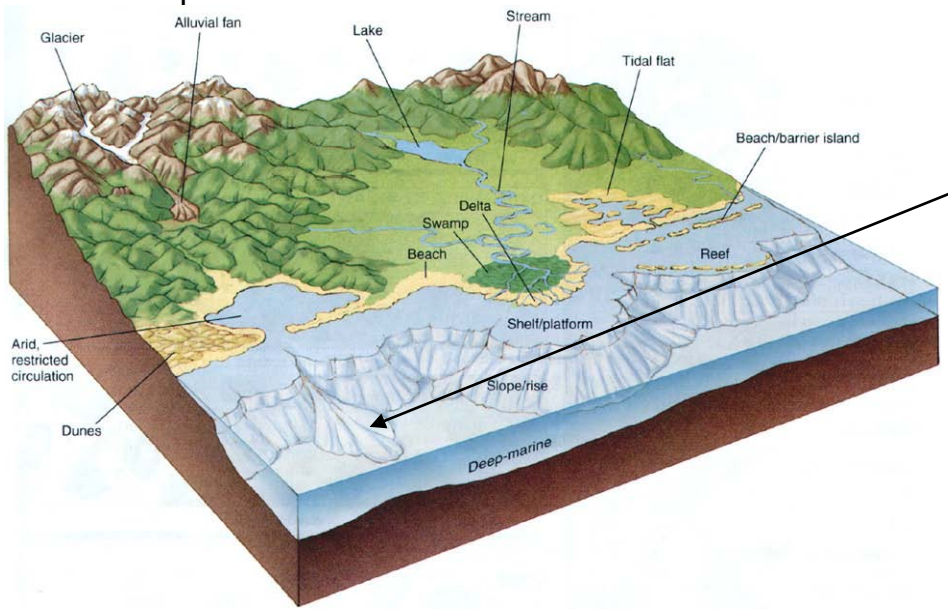
Prehistoric Ghana

- Visualizing Ghana at the time of the early creation of today's oilfields helps us understand the size and potential value of these fields today.
- Note Africa and South America pulling apart creating the structures that will later create traps to hold migrating oil.
- The oil is derived from organic material being swept offshore from a river delta.
- The good quality sandstone reservoirs are created from the sand particles washed down the ancient rivers.

Source: AAPG, 2007

Ghana Depositional Environment

Generic Depositional Environment

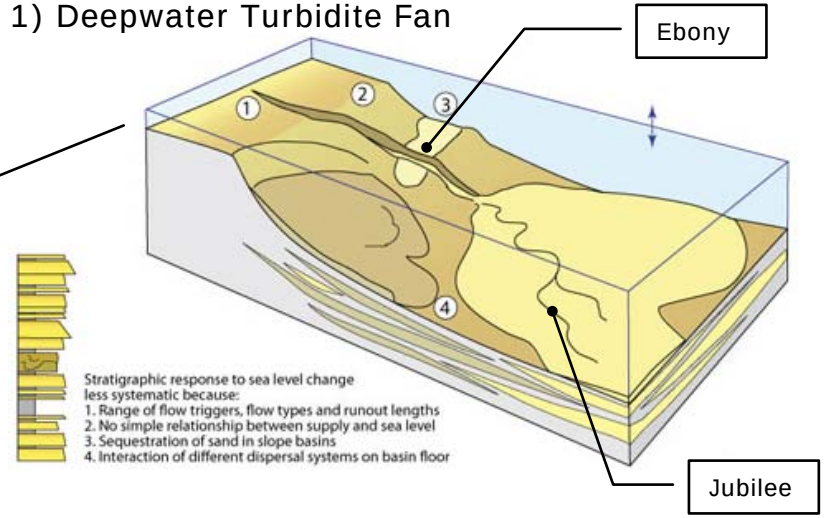


Source: Jones, 2001, Laboratory Manual for Physical Geology, 3rd edition

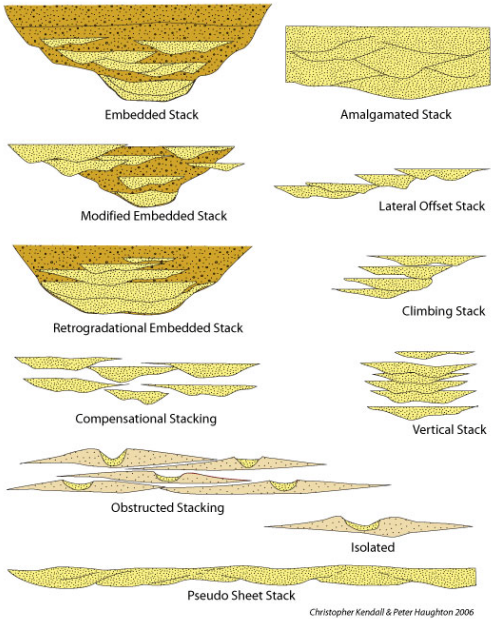
Commentary

- An understanding of the depositional environment of the Tano and West Cape Three Points licenses is important in determining the size and type of oil reservoir present.
- The Generic environment above should be imagined as the state of the Ghana coast line in the Cretaceous 94 million years ago.
- Sand is being deposited from a high energy onshore delta that continues to drive sand particles out into the ocean and off the continental shelf into deep water.
- The effect of this drive is for the sand to blast out onto the ocean floor in a 'turbidite' and settle into a reservoir, as shown in 1) right.
- Over time channels of sand stack up on top of one another as depicted in 2); the connection of the channels in Jubilee will determine the continuity of the oilfield and this is currently not fully understood.

1) Deepwater Turbidite Fan

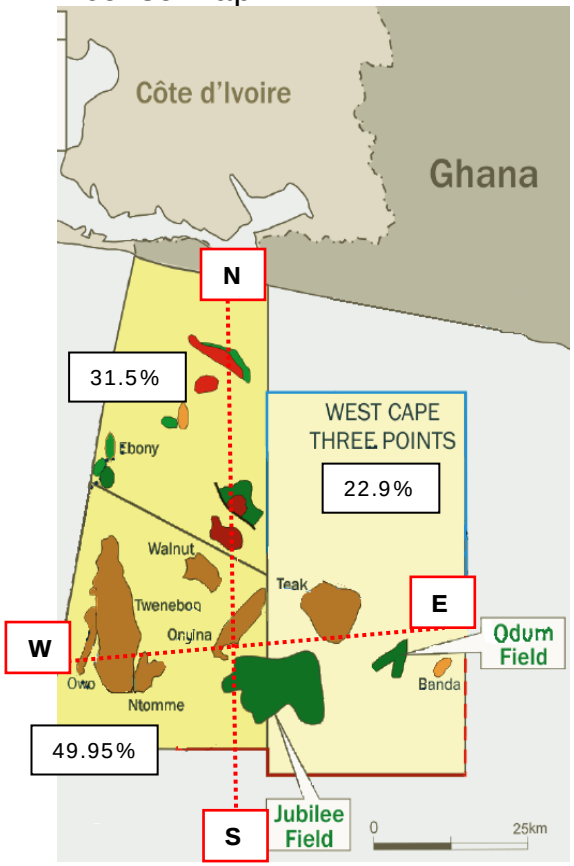


2) Channel Sand Stacked Types



Ghana Stratigraphy

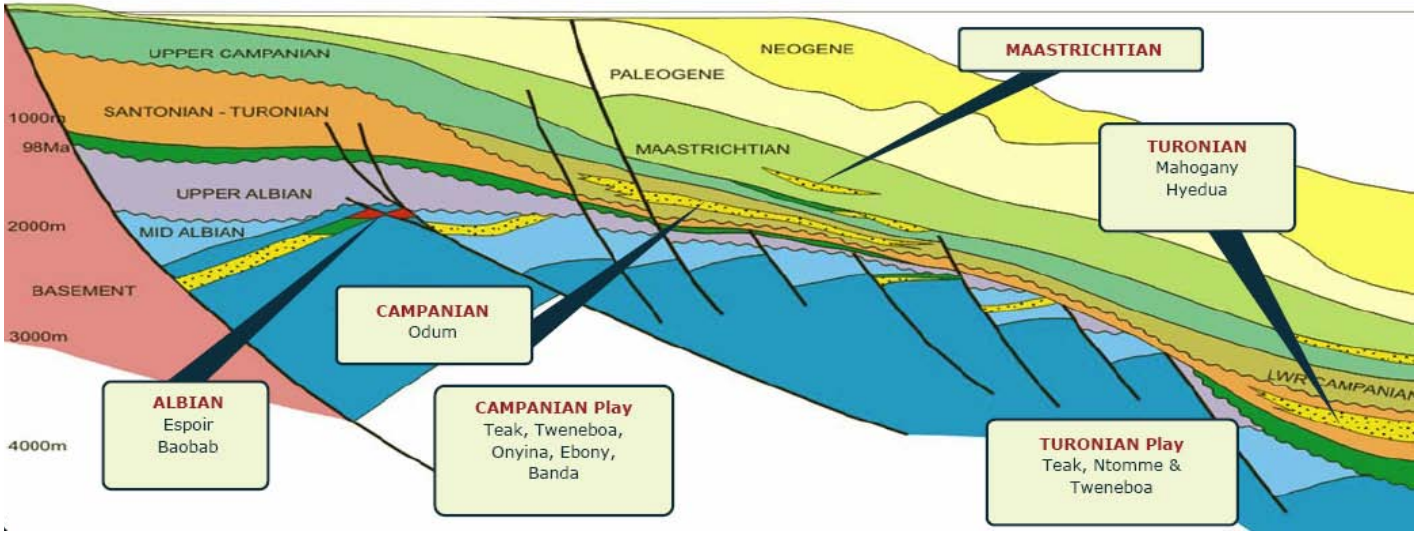
License Map



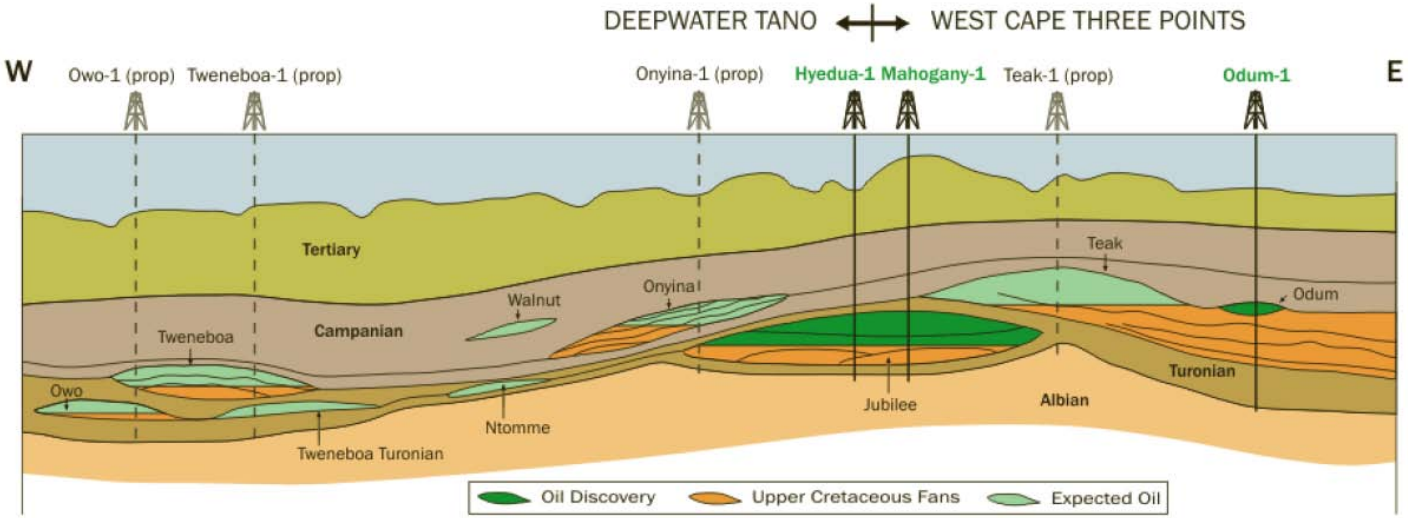
In Order of depth within the Cretaceous:

- **Campanian (thicker)**
  Odum,Tweneboa, Teak, Onyina, Walnut, Banda, Ebony
- **Turonian (thinner)**
  Jubilee, Teak, Owo, Ntomme
- **Albanian**
  Espoir, Baobab (Cote d'Ivoire)

Geological section N-S



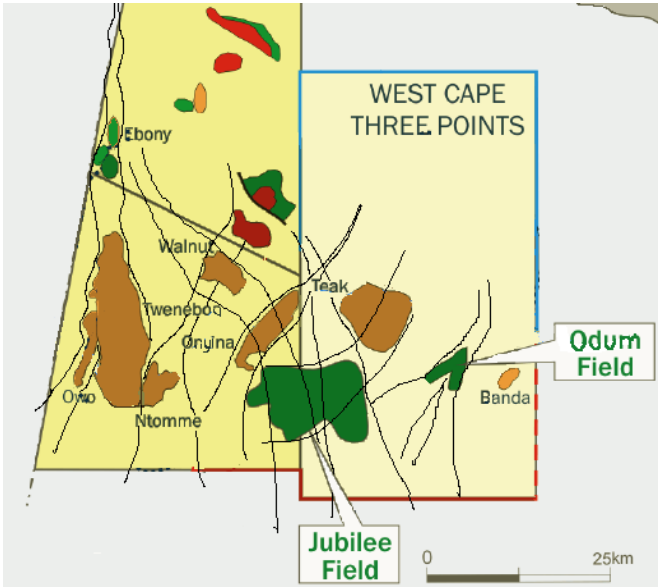
Geological Section W-E



Source: Tulllow Oil, 2008

Drilling Summary

Ghana Licenses Channel Visualization



Source: Tullow Oil, Hulf Hamilton

Well Data

Jubilee (36% derived from unitization across licenses)

- The Jubilee discovery was made in June 2007 with the Mahogany-1 well – gross 1200MMbbl
- The discovery was unexpected as most of the potential reservoir in the area was previously though to have been eroded, plus the fact that the prospect was a stratigraphic trap.
- Subsequent drilling has shown the Jubilee field to be extensive (area of greater London).

Odum (22.9%)

- The next discovery was a smaller prospect to the east of Jubilee but importantly the well discovered oil in deeper Campanian formations – Gross 50MMbbl, 55% CoS
- This opened up similar prospectivity in the west in other identified prospects from seismic.

Ebony (31.5%)

- Discovered in October 2008 was a lower cost well drilled in shallow waters on the Shallow water Tano block – Gross 35MMbbl, 55% CoS.
- This discovery demonstrated an exploration strategy Tullow may be pursuing in the region where channel systems are predicted from seismic and drilling data.
- The next exploration well to be drilled will be Tweneboa in February 2009.

Ghana Drilling Data

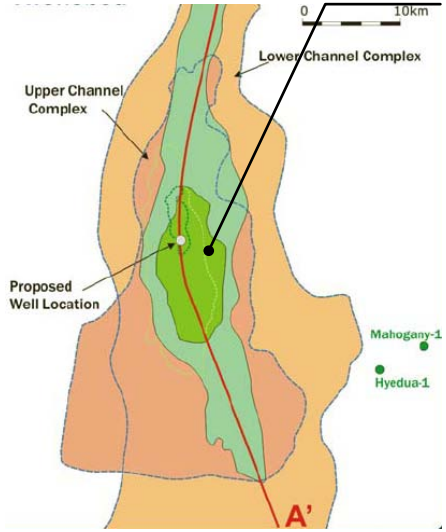
	Date Drilled	Work Int (%)	License	Well	Prospective Reserves (Mmboe)	Risk Factor (%)	Water Depth (m)	Reservoir	Drill Depth (m)	Gross Pay (m)	Net Pay (m)	Oil Gravity (API)	Flow Rate (b/d)	Flow Rate (mmcf/d)
Un-Drilled	2010	22.90%	West Cape 3 points	Banda		NA	900							
	2010	49.95%	Deepwater Tano	Walnut		NA	600							
	4Q09	49.95%	Deepwater Tano	Ntomme-1	120	10%	1600	Turonian						
	3Q09	22.37%	CI-105	CI-105-1	150	15%	1000	Albanian						
	3Q09	49.95%	Deepwater Tano	Owo-1	200	10%	1500	Turonian						
	3Q09	49.95%	Deepwater Tano	Onyina-1	200	25%	1000	Campanian						
	2Q09	22.90%	West Cape 3 points	Mahogany-4		60%	1200	Turonian	4000					
	1Q09	22.90%	West Cape 3 points	Teak-1	750	25%	500	Campanian						
	Q109	49.95%	Deepwater Tano	Tweneboa-1	500	20%	1000	Turonian						
Drilled	01-Nov-08	22.90%	West Cape 3 points	Mahogany-3	200	100%	1236	Turonian	4028		33			
	11-Dec-08	49.95%	Deepwater Tano	Hyedua-2		100%	1246	Turonian	3663	120	55	37 API	16750	
	22-Oct-08	31.50%	Shallowwater Tano	Ebony-1	35	100%	86	Campanian	2640		6			
	27-Aug-08	49.95%	Deepwater Tano	Hyedua-1		100%	1530	Turonian	4002	202	41			
	06-May-08	22.90%	West Cape 3 points	Mahogany-2		100%	1080	Turonian	3443	243	50	36 API	5200	5.1
	01-Feb-08	22.90%	West Cape 3 points	Odum-1	50	100%	955	Campanian	3387	60	22	29 API		
	09-Oct-07	31.50%	Shallowwater Tano	1N-3X		100%		Albanian						
	18-Jun-07	22.90%	West Cape 3 points	Mahogany-1		100%	1320	Turonian	3683	270	95			

Recent Hyedua-2 well test result confirms productivity.

Source: Tullow Oil

Ghana Exploration Summary

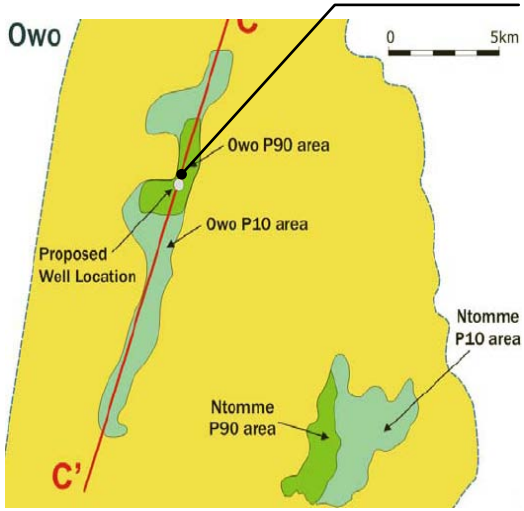
Tweneboa



Tweneboa (49.95%)

- Dual channel sand structure
  - Campanian (primary)
  - Turonian (secondary)
- Large 585km2 structure.
- Mid case gross reserve potential of 500MMbbl (that we carry).
- Up dip Odum discovery derisks oil charge.
- Structural risk as stragigraphic prospect may not be clearly defined by seismic.
- We would allocate a 20% chance of success.

Owo & Ntomme



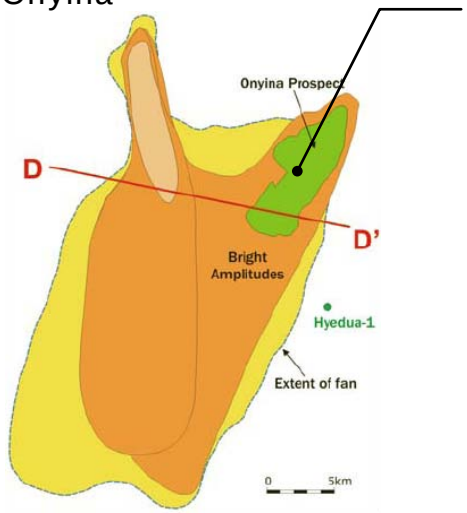
Owo (49.95%)

- Thin marine channel with complex Turonian stratigraphic prospect.
- High risk (10%), contingent on Tweneboa discovery (would reduce to 40%).
- 200MMbbl gross prospect

Ntomme (49.95%)

- Turonian structural/stratigraphic trap.
- Very deep water (expensive well) vs. smallish 120MMbbl prospect makes this a marginal well – 10% CoS

Onyina

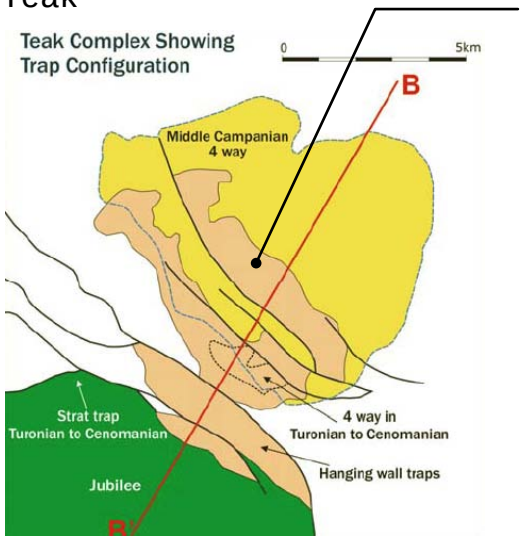


Source: Tullow Oil, Hulf Hamilton

Onyina (49.95%)

- Dual channel sand structure
  - Campanian (primary)
- Close to Jubilee so covered by good quality 3D seismic.
- Mid case gross reserve potential of 200MMbbl (that we carry).
- Structural risk as stragigraphic prospect.
- We would allocate a 25% chance of success.

Teak



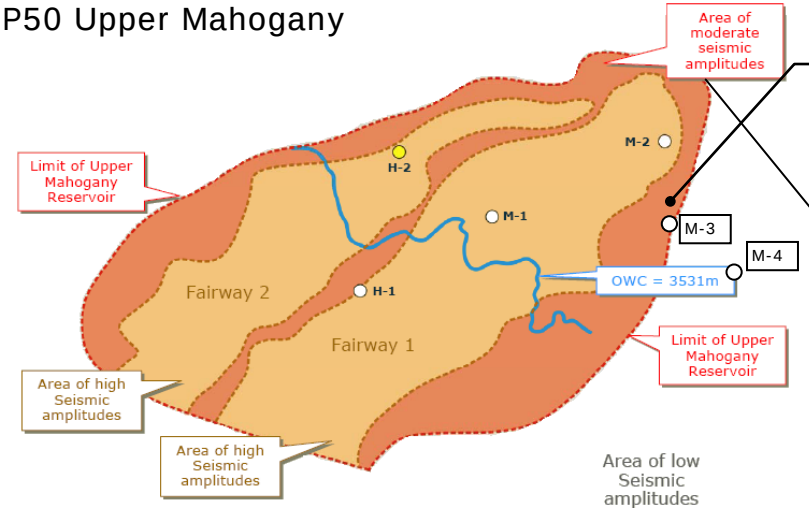
Teak (22.9%)

- Large stacked channel sands from Turonian to Campanian.
- Up-dip of Jubilee – 750MMbbl gross prospect
- Structural and stratigraphic trap but 3D seismic coverage is potentially very good.
- Oil should have migrated updip of Jubilee but there may be risk that Jubilee depleted the source.
- Also risk of stratigraphic pinchout (same as for other prospects) – 25% CoS

Ghana Reserves

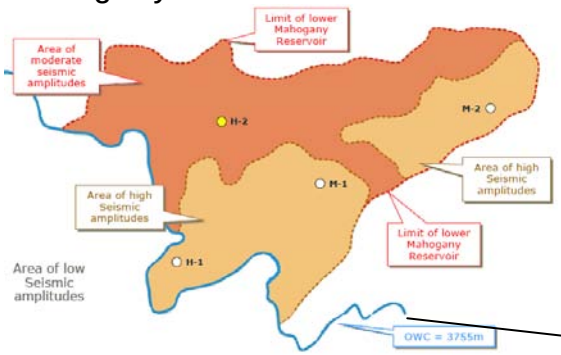
Jubilee Reserves

P50 Upper Mahogany



Source: Tullow Oil

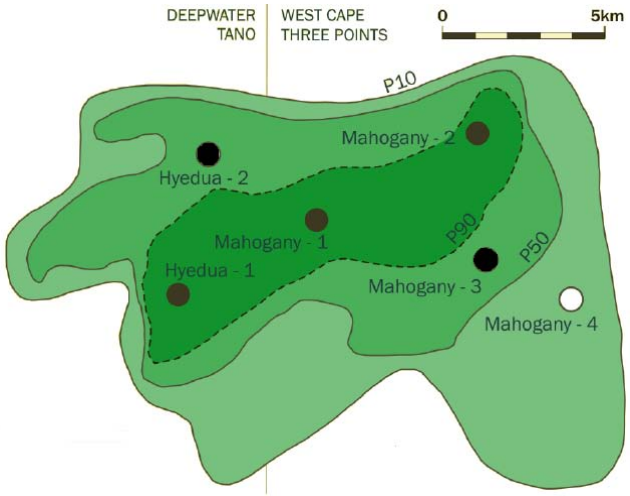
P50 Lower Mahogany



Mahogany-3

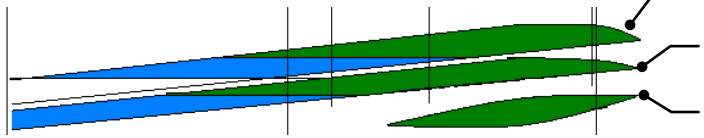
- Latest well was appraising upper Mahogany and found net pay of 16m
- This will increase P50 reserves from 1000MMbbl to 1200MMbbl by pushing out the reservoir volume in the upper formation further to the South East (e.g. some P10 reserves have moved into P50).
- In addition the well penetrated 17m of net pay in a deeper exploration target known as Mahogany deep.
- Unofficial guidance for this accumulation is currently 200MMbbl, subject to further appraisal and well testing.

P50 Upper/Lower Mahogany Combined



- Diagram shows the Upper Mahogany superimposed on the Lower.
- Previous reserve guidance was:
  P90: 500MMbbl
  P50: 1000MMbbl
  P10: 1800MMbbl
- New unofficial guidance following M-3 is now:
  P90 600MMbbl
  P50 1200MMbbl
  P10 1800MMbbl

Schematic Jubilee Cross-section



Source: Hulf Hamilton

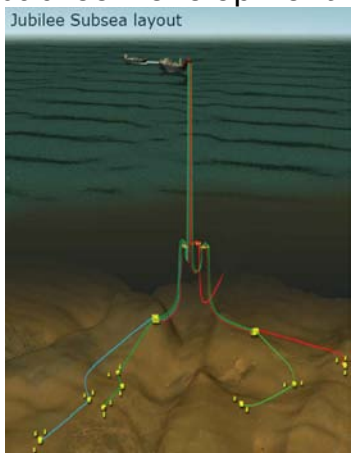
- Upper Mahogany
- Lower Mahogany
- Mahogany Deep

Mahogany deep.
We note that Hyedua-1 was drilled to 400m and did not penetrate the deeper reservoir and so we have interpreted this new discovery as likely underlying the eastern portion of the field and so 200MMbbl with a 55% risk appears appropriate at this stage.

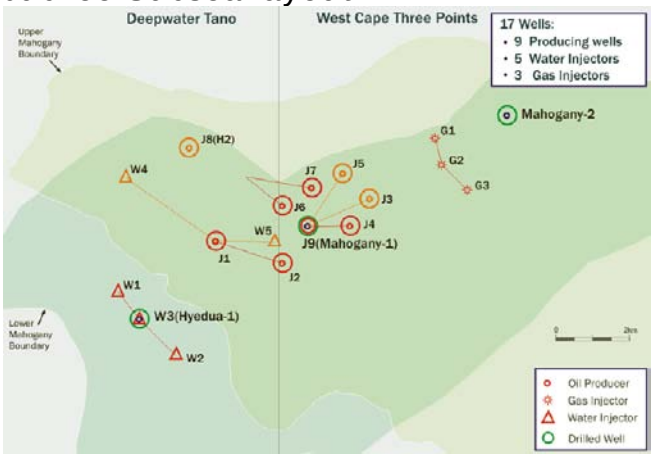
Ghana Development

Jubilee Phase Development

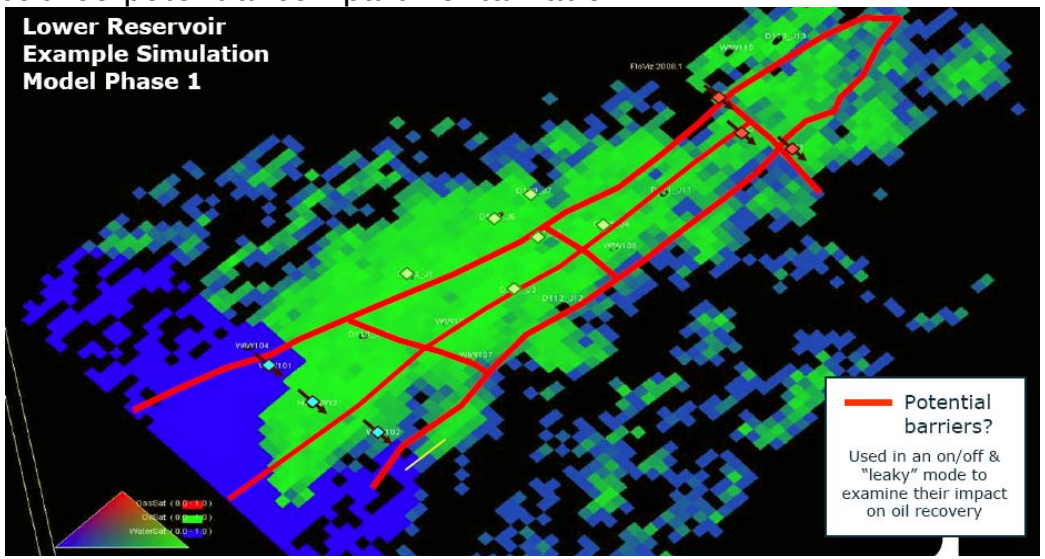
Jubilee Development



Jubilee Subsea layout



Jubilee potential compartmentalization



Source: Tullow Oil

Commentary

Phase 1

- The Phase 1 development currently underway envisages
  - 9 producers
  - 5 water injectors
  - 3 Gas injectors
- The development is based on subsea templates tied back to an initially leased FPSO, with the option to purchase later on. Our valuation assumes a continued lease.
- The subsea items represent the critical path for project timing.
- The FPSO has a 120kbd oil capacity and 160MMcfd of gas and additional water and gas injection capability. FPSO should be onsite 2Q2010, initial (short) plateau is also 120,000b/d
- Water is injected into the south western flanks and the number of producers is based on a fairly conservative compartmentalization scenario, as shown below left.
- The initial development is clustered around Hyedua-1 and Mahogany-1/2 in the centre (p90) zone of the field.
- The gross Phase one cost estimate is $3100MM ($8.56/bbl) split:
  - $1500MM wells
  - $1000MM Fabrications
  - £600MM pre commissioning and contingency
- Assumed Opex is $7/bbl including FPSO lease (reasonable)
- Base Case recoverable reserves are:
  - 362MMbbl base case (27.5% RF) – 17 wells compartmentalized
  - 487MMbbl base case (37% RF) – 22 wells compartmentalized
  - 592MMbbl base case (45% RF) – 34 wells compartmentalized
  - 556MMbbl (42.2% RF) – 17 wells no compartments
- The 362MMbbl case therefore assumes 40MMbbl drainage per production well.
- We have assumed the 362MMbbl development for the first 2 years building up to the 1200MMbbl new P50 base case thereafter, assuming the same compartmentalized reservoir.

Jubilee Project Costs

Africa Project Comparisons

Country	Field	Oil Reserve (MMbbl)	Peak Oil (000 b/d)	Cost Year	Original Capex ($MM)	Adjusted Capex [1] ($MM)	Unit Capex ($/boe)	Project Cost Commentary
Ghana	Jubilee	1200	120	2008	5338.6	5338.56	4.45	Based on data provided by Tullow in recent Analsys update, October 2008.
Angola	Kizomba B	1000	250	2004	3500	3863	3.86	Costs were estimated in Exxon's 2004 Financial and Operating Review.
Angola	Kizomba A	1000	250	2003	3400	3847	3.85	ExxonMobil reported project costs of $3.4 billion in its 2003 Financial and Operating Review, up from the original estimate of $3.1 billion.
Angola	Dalia	1000	240	2007	4000	4100	4.10	In its press release announcing the inauguration of the project, Total said the costs were more than $4 billion. This is up from the original estimate of $3.0 B from Exxon's 2000 Financial and Operating Review. The FID year for this project was 2003.
Nigeria	Agbami	900	250	2007	5400	5535	6.15	In March 2008, Chevron estimated the cost and expenditures for Agbami to be $5.4 billion. In the 2006 Chevron Annual Report Supplement, Chevron states the total cost at $5.2 billion.
Angola	Girassol	700	200	1998	2800	3584	5.12	According to a Total press release in January 2007, the total cost of the project is US$2.8 billion.
Angola	Greater Plutonio	700	240	2004	4000	4415	6.31	Offshore Technologies reported that the estimated development costs were US$4 billion.
Nigeria	Akpo	600	180	2007	5000	5125	8.54	In a presentation for 2005 mid-year review, Total announced that Akpo would cost approximately $5 billion to develop.
Angola	Kizomba C	590	200	2005	3700	3984	6.75	ENI reported in 2005 that Kizomba C had expected project costs of around $3.7 billion($1.8 billion for development of Mondo, and $1.89 billion for development for Saxi/Batuque). This was slightly lower than the ExxonMobil's 2002 estimate of $3.8 billion.
Nigeria	Erha & Erha North	500	240	2006	3500	3677	7.35	ExxonMobil reported in a 2006 press release that the project costs were $3.5 billion.
Nigeria	Usan	500	180	2008	9000	9000	18.00	Nexen indicated in its first quarter 2008 earnings report that it had a capital investment in the range of US$1.6-2.0 billion (US$8-10 billion gross) for the development, with a 2008 commitment of US$300 million.
Angola	BBLT	460	200	2008	2500	2500	5.43	In March 2008, Chevron estimated the cost & expenditure of this project to be $2.5 billion dollars. In its 2005 Annual Report Supplement, Chevron estimated the development cost at $2.3 billion, a figure echoed by Eni in its 2005 Factbook.
Nigeria	Yoho	440	160	2006	1300	1366	3.10	According to a 2006 ExxonMobil report, the Yoho field cost an estimated $1.3 billion to develop.
Congo	Moho-Bilondo Phase 1	230	90	2006	1800	1891	8.22	Phase 1 of the Moho-Bilondo project is estimated to cost $1.8 billion to develop according to a 2006 presentation from Chevron.
Cote d'Ivoire	Baobab	200	61	2007	614	629	3.15	According to Canadian Natural, prior to sand screen problems reported in August of 2006, total development costs of the project were C$566 million (US$359.82 million).
Weighted Average, working interest based							**$5.87/bbl**	

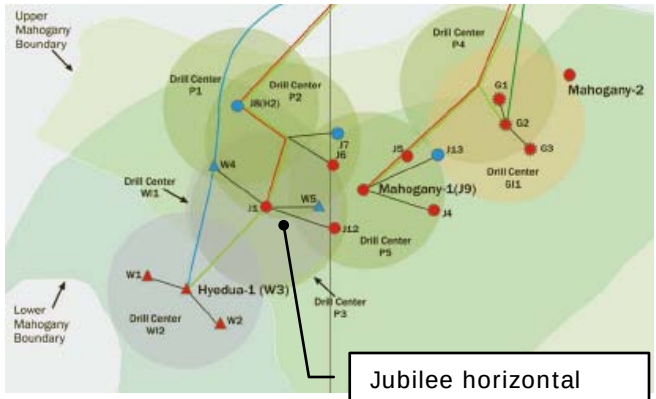
[1] Inflation adjusted (2.5%)

Commentary

- As shown previously Phase 1 capex is projected to be $3.1billion ($8.56/bbl), and we will show later how the P50 capex is ($4.45/bbl)
- Comparable project capital costs for Jubilee compare favorably with other recent projects (adjusted to 2008) – in our opinion Jubilee capex projections are reasonable.

Horizontal Well Modelling

Horizontal wells in Jubilee Field



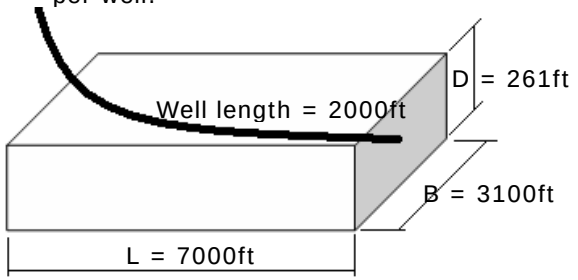
Source: Tullow Oil

Commentary

- We have carried out our own horizontal well rate analysis using established linear flow equations.
- Well production data to date derives from Mahogany-2 that flowed at a restricted rate of 5,200b/d and Hydua-2 at 16,750b/d.
- We then take a reduced 100psi drawdown pressure and measured reservoir information and calculate the equivalent horizontal flow rate using several different methods.
- 'Drawdown' is a measure of how much the well is allowed to flow and this is reduced so as not to draw up water or produce too much sand.
- We calculate a maximum theoretical horizontal flow rate of 27,351b/d
- On a higher 200psi drawdown the well initial rates could be as high as 54,700b/d.

Horizontal Well Model

- We assume the horizontal well drains from the following volume in one of the Mahogany formations
- This assumes the compartmentalized 362MMbbl reserve case draining 40MMbbl per well.



Horizontal Well Input Data

Reservoir Parameters		
Porosity	ø (frac)	0.2
Connate Water Saturation	Swc (frac)	0.1
Residual Oil Saturation	Sor (frac)	0.9
Oil Boundary Radius		2628
X direction Permeability	Kx (mD)	200
Y direction Permeability	Ky (mD)	200
Horizontal Permeability	Kh (mD)	200.0
Vertical Permeability	Kz (mD)	66.7
Fluid Parameters		
Oil Density	þo (g/cc)	0.84476
Water Density	þw (g/cc)	1
Oil Viscosity	µo (cP)	0.3
Oil F.V.F.	Bo	1.1
Endpoint Mobility Ratio	M	9.1
Well Parameters		
Wellbore Radius	Rw (ft)	0.25
Production Control		
Maximum drawdown	dP (psi)	100

Reservoir Size		
Block Length // to Well	2Xe	7000
Block Length perpendicular to well	2Ye	3100
Water Zone Thickness	Hw (ft)	31
Oil Zone thickness	Ho (ft)	230
Reservoir thickness	h (ft)	261
Oil in Place	OIP (stb)	145.5
Ratio Kv Kh		0.3
Drainage area from block size :	A (acres)	498.2
Equivalent drainage radius from block size	Re (ft)	2628.2

Horizontal Well Output Data

METHOD	Rw' (ft)	S	PI	Flowrate
Borisov [1]	139.04	-6.32	358.97	35,897
Giger	263.39	-6.96	451.44	45,144
Giger,Reiss & Jourdan [1]	142.74	-6.35	362.02	36,202
Joshi [1]	107.31	-6.06	331.44	33,144
Van der Vlis et al [2]	144.11	-6.36	363.14	36,314
Ozkan,Raghaven & Joshi [1] [2]	38.27	-5.03	253.93	25,393
Joshi [1] [2]	91.90	-5.91	316.90	31,690
Sparlin & Hagen [3]	0.00	28.29	29.67	2,967
Karcher et al [1] [2]	79.64	-5.76	304.56	30,456
Besson [1] [2]	57.97	-5.45	280.34	28,034
Renard & Dupuy [1] [3]	0.00	11.36	53.83	5,383
Odeh & Babu			175.89	17,589
Average				**27,351**

Conclusion

The reservoirs are thick and good quality and are at decent pressures of 5000psi+ therefore we would expect high potential flow rates from Jubilee wells. But there is a risk that the water could be 'sucked' into the producing oil wells so we must assume a reduced drawdown (degree that the well is opened at the surface). On this basis wells could produce at initial rates of 27,351b/d but we have assumed the company guidance figure of 15,000b/d from 9 wells to get the 120,00b/d initial rates and this appears to be perfectly reasonable.

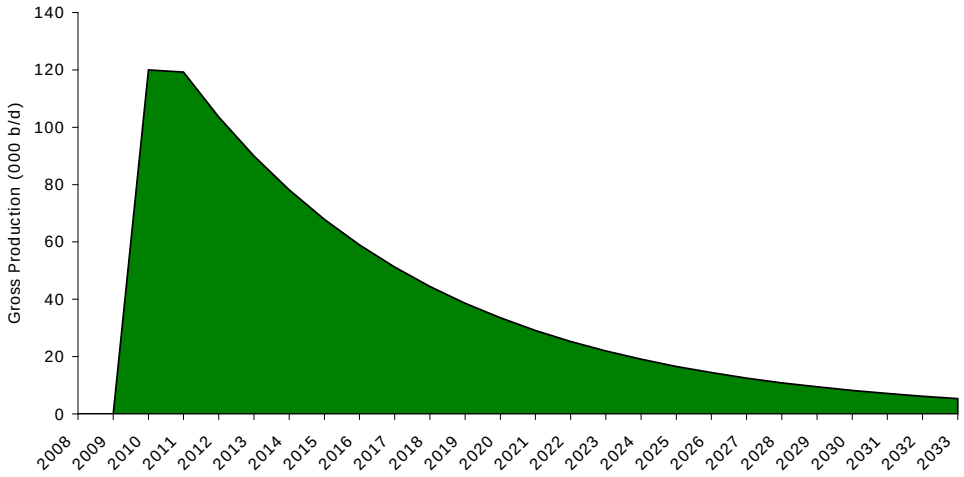
Jubilee Phase 1 Development

Phase 1 Production Assumptions

- Our valuation is based on the potential flowrates and well drainage from the previous pages.
- So we assume 15,000b/d initial rates (27,351b/d max potential) with 9 production wells, 8 on-stream in 2010 and 1 in 2011, well cost assumed $50MM
- The recoverable reserves produced over 25 years are 362MMbbl with a production peak of 120,000b/d

Well rate	15kbd
Decline	14%
Res	362MMbbl
Well cost	$50MM

	Totals	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
No wells	9	0	0	8	1	0	0																				
Capex	450	0	0	400	50	0	0	0																			
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				120.00	104.23	90.53	78.64	68.30	59.33	51.53	44.76	38.88	33.77	29.33	25.48	22.13	19.22	16.69	14.50	12.60	10.94	9.50	8.25	7.17	6.23	5.41	4.70
					15.00	13.03	11.32	9.83	8.54	7.42	6.44	5.59	4.86	4.22	3.67	3.18	2.77	2.40	2.09	1.81	1.57	1.37	1.19	1.03	0.90	0.78	0.68
						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	120.00	119.23	103.56	89.95	78.13	67.86	58.95	51.20	44.47	38.63	33.55	29.14	25.31	21.99	19.10	16.59	14.41	12.51	10.87	9.44	8.20	7.12	6.19	5.37



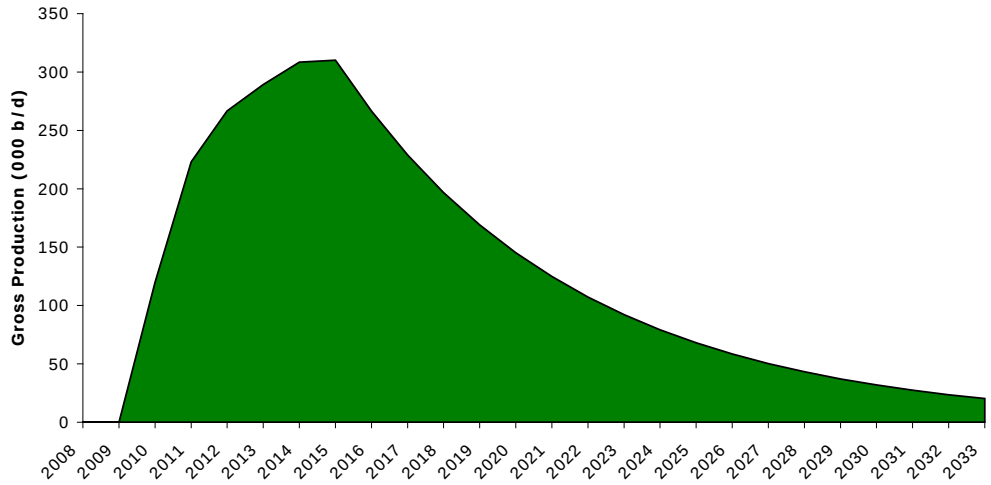
Jubilee Full P50 Development

Phase 1 Production Assumptions

- Now assume extend the Phase 1 development after 2011 to full field development (1200MMbbl) by drilling more wells (same compartmentalized case)
- So we assume 15,000b/d initial rates (27,351b/d max potential) with 32 production wells, phased as shown below; well cost assumed $50MM
- The recoverable reserves produced over 25 years is 1200MMbbl with a production peak of 310,000b/d – a second or larger FPSO would be needed.

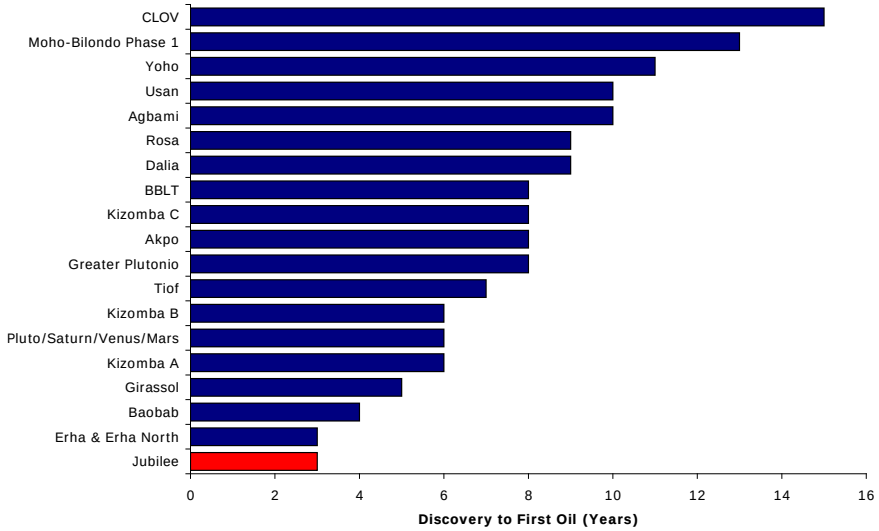
Well rate	15kbd
Decline	15%
Res	1200MMbbl
Well cost	$50MM

	Totals	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
No wells	32	0	0	8	8	5	4	4	3																		
Capex	1600	0	0	400	400	250	200	200	150																		
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				120.00	103.11	88.60	76.14	65.42	56.22	48.31	41.51	35.67	30.65	26.34	22.63	19.45	16.71	14.36	12.34	10.60	9.11	7.83	6.73	5.78	4.97	4.27	3.67
					120.00	103.11	88.60	76.14	65.42	56.22	48.31	41.51	35.67	30.65	26.34	22.63	19.45	16.71	14.36	12.34	10.60	9.11	7.83	6.73	5.78	4.97	4.27
						75.00	64.45	55.38	47.59	40.89	35.14	30.19	25.94	22.29	19.16	16.46	14.14	12.15	10.44	8.97	7.71	6.63	5.69	4.89	4.20	3.61	3.10
							60.00	51.56	44.30	38.07	32.71	28.11	24.15	20.75	17.83	15.32	13.17	11.32	9.72	8.36	7.18	6.17	5.30	4.56	3.91	3.36	2.89
								60.00	51.56	44.30	38.07	32.71	28.11	24.15	20.75	17.83	15.32	13.17	11.32	9.72	8.36	7.18	6.17	5.30	4.56	3.91	3.36
									45.00	38.67	33.23	28.55	24.53	21.08	18.12	15.57	13.38	11.49	9.88	8.49	7.29	6.27	5.38	4.63	3.98	3.42	2.94
		0.00	0.00	120	223	267	289	308	310	266	229	197	169	145	125	107	92	79	68	58	50	43	37	32	27	24	20



Jubilee Project Timing

Africa Projects Discovery - Production



Country	Field	Operator	Oil Reserve (MMbbl)	Disc. Year	Prod Start	Year Dev	Prod Peak
Ghana	Jubilee	Anadarko	1028	2007	2010	3	2012
Nigeria	Erha & Erha North	Exxon (56%)	500	2003	2006	3	2007
Cote d'Ivoire	Baobab	CNRL (58%)	200	2001	2005	4	2009
Angola	Girassol	Total S.A.(40%)	700	1996	2001	5	2003
Angola	Kizomba A	Exxon (40%)	1000	1998	2004	6	2006
Angola	Pluto/Saturn/Venus/Mars	BP plc (27%)	500	2005	2011	6	2012
Angola	Kizomba B	Exxon (40%)	1000	1999	2005	6	2006
Mauritania	Tiof	Petronas (54%)	287	2003	2010	7	2011
Angola	Greater Plutonio	BP plc(50%)	700	1999	2007	8	2009
Nigeria	Akpo	Total S.A.(24%)	600	2000	2008	8	2009
Angola	Kizomba C	Exxon (40%)	590	2000	2008	8	2010
Angola	BBLT	Chevron (31%)	460	1998	2006	8	2008
Angola	Dalia	Total S.A.(40%)	1000	1997	2006	9	2008
Angola	Rosa	Total S.A.(40%)	370	1998	2007	9	2008
Nigeria	Agbami	Chevron (68%)	900	1998	2008	10	2009
Nigeria	Usan	Total S.A.(20%)	500	2002	2012	10	2013
Nigeria	Yoho	Exxon (40%)	440	1991	2002	11	2006
Congo	Moho-Bilondo Phase 1	Total S.A.(54%)	230	1995	2008	13	2009
Angola	CLOV	Total S.A.(40%)	500	1998	2013	15	2014
						8	

Source: JS Herold

Commentary

- Our valuation assumes a 2010 start-up for phase 1 with a build up to the P50 development scenario from 2011 onwards.
- This may be optimistic.
- In Tullows recent Capital markets day, Analysts were shown comparable data of a number of African projects to compare time to first oil from discovery.
- The data provided by Tullow split out the project execution time within the discovery to production data.
- We have researched the same projects from an independent source (JS Herold) but we were not able to split out actual execution time within the overall time from discovery to first oil.
- Nevertheless, we believe the project timing (i.e. first oil by 2H09) looks very bullish when compared to other West African projects.
- In our opinion it may be worthwhile running a number of sensitivities around first oil to reflect this uncertainty in the overall Tullow valuation.

Ghana Valuation

Ghana Valuation

Jubilee Core

- Single component is Jubilee P50.

Ghana Contingent

- Multiple Components:
  - Jubilee P50-P10 increment
  - Jubilee Deep
  - Ebony discovery
  - Odum Discovery
- We base valuations on risked volumetrics using the $7.40/bbl benchmark from Jubilee

Ghana Exploration

- Multiple components:
  - Tweneboa
  - Owo
  - Ntomme
  - Onyina
  - Teak
  - CI 105 (Cote d'Ivoire)

Core

Project	
Tullow Net Working Interest	36.00%
P50 Gross Reserves	1200MMbbl
P50 Net Reserves	432MMbbl
Gross Capex	$5194MM
	$4.3/bbl
Gross Opex (life of field)	$6554MM
	$5.5/bbl
FPSO rate	$500000/day
Abandonment provision	10%
Financial	
$/£ exchange	1.52
Long term Brent:	$0.3/bbl
Ghana Royalty	5%
Ghana State Petroleum Tax	20%
Ghana Income tax	35%
Discount rate	10%

Ghana Net to Tullow NPV10	**£2,108MM**	**291p**
	$3,204MM	
	$7.4/bbl	

Contingent

	Gross	Net	Risk	Value	
Jubilee P50	1200MMbbl	432MMbbl			
Jubilee P10	1800MMbbl	648MMbbl			
Jubilee P50-P10	600MMbbl	216MMbbl	65%	$1041MM	
Jubilee Deep	200MMbbl	72MMbbl	55%	$294MM	
Jubilee Contingent	800MMbbl	288MMbbl	63%	$1335MM	121p
Ebony Resource	35MMbbl	8MMbbl	55%	$33MM	3p
Odum Resource	50MMbbl	11MMbbl	55%	$47MM	4p
Contingent Total	885MMbbl	307MMbbl		$1414MM	128p

Ghana Net to Tullow Contingent	**£930MM**	**128p**
	$1,414MM	
	$4.6/bbl	

Upside

	Gross	Net	Risk	Value	
Tweneboa	500MMbbl	250MMbbl	20%	$370MM	34p
Owo	200MMbbl	100MMbbl	10%	$74MM	7p
Ntomme	120MMbbl	60MMbbl	10%	$44MM	4p
Onyina	200MMbbl	100MMbbl	25%	$185MM	17p
Teak	750MMbbl	172MMbbl	25%	$318MM	29p
CI 105	150MMbbl	34MMbbl	15%	$37MM	3p
Exploration Total	1920MMbbl	714MMbbl		$1029MM	93p

Ghana Net to Tullow Exploration	**£677MM**	**93p**
	$1,029MM	
	$1.4/bbl	

Uganda Overview

Uganda History

Regional History

- An oil seepage near Kibiro on Lake Albert was known to the indigenous people who lived in the area. In the 1920's E. J Wayland, a Government geologist, documented 52 hydrocarbon occurrences in the Albertine Graben.
- Oil exploration continued intermittently through the 1930's, but came to a halt during the second world war.
- Serious exploration work commenced again in early 1980's with the acquisition of aeromagnetic data across the entire Graben and subsequent follow up of ground geophysical and geological work in the late 1980's and 1990's.
- The acquisition of seismic data in 1998 and 2001 eventually led to the drilling of exploratory wells in 2002 and 2003 by Energy Africa and Hardman Resources (both later acquired by Tullow).
- The principal prospective area for petroleum in Uganda is the Albertine Graben, which forms the northern most part of the western arm of the East African Rift System. It stretches from the border with Sudan in the north to Lake Edward in the south, a distance of over 500km. Although of variable width, the Graben is commonly 45 km wide and extends into the Democratic Republic of Congo in some parts. An agreement of co-operation for exploration and exploitation of any common fields between the two countries is in place.

Tullow Entrance

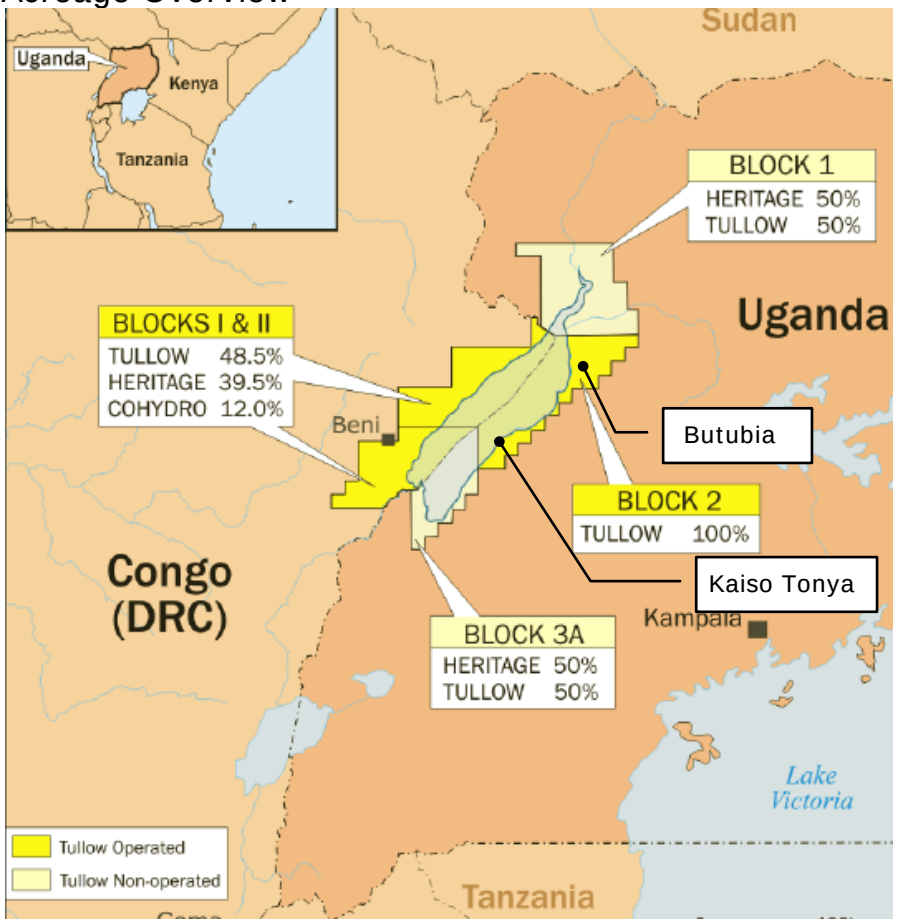
- Tullow entered the region indirectly in 2004 when it acquired Energy Africa (EA) for £311MM; EA owned 50% of Blocks 2 and 3A.
- Later in 2004 Tullow also farmed into a 50% interest in Block 1 (Heritage Operator with other 50%)
- In 2007 Tullow closed a second acquisition of a company called Hardman Resources that owned the other 50% of Block 2 giving Tullow 100% of that license.
- So now Tullow is Operator of Blocks 2 and 3A.
- The province had been unpromising up to that point with inconclusive gas/CO2 discoveries in Block 3A in the south of Lake Albert.
- It wasn't until the drilling up of oil seepage areas further north in Lake Albert that the play began to open up with the Mputu and Waranga discoveries.
- The development of the acreage is shown below.

	2001	2002	2003	2004	2005	2006	2007	2008
Exploration spend	**$3.4MM**	**$3.4MM**	**$5.5MM**	**$17.0MM**	**$11.1MM**	**$44.6MM**	**$130.0MM**	**$200MM?**
Block 1				Block 1 signed			Seismic commenced	Warthog-1 discovery Buffalo-1 discovery Giraffe commenced
Block 2	Farm-in	2D seismic acquired		2D over Kaiso-Tonya	Waranga-1 discovery Mputu-1 discovery	Nzizi-1 discovery Mputu-2 discovery	Nzizi-2 discovery Mputu-3/4 discoveries Ngassa discovery	Taita-1 discovery Ngege-1 discovery Karuka-1 discovery Kasamene-1 discovery Kigogole-1 discovery
Block 3	Farm-in	Turaco-1 inconclusive	Turaco-2 gas discovery	Turaco CO_2 discovery		Kingfisher-1 discovery	Kingfisher tested More seismic	Kingfisher-2 discovery

Green shading shows point of Tullow entry into Uganda

Uganda Overview

Acreage Overview



Source: Tullow Oil

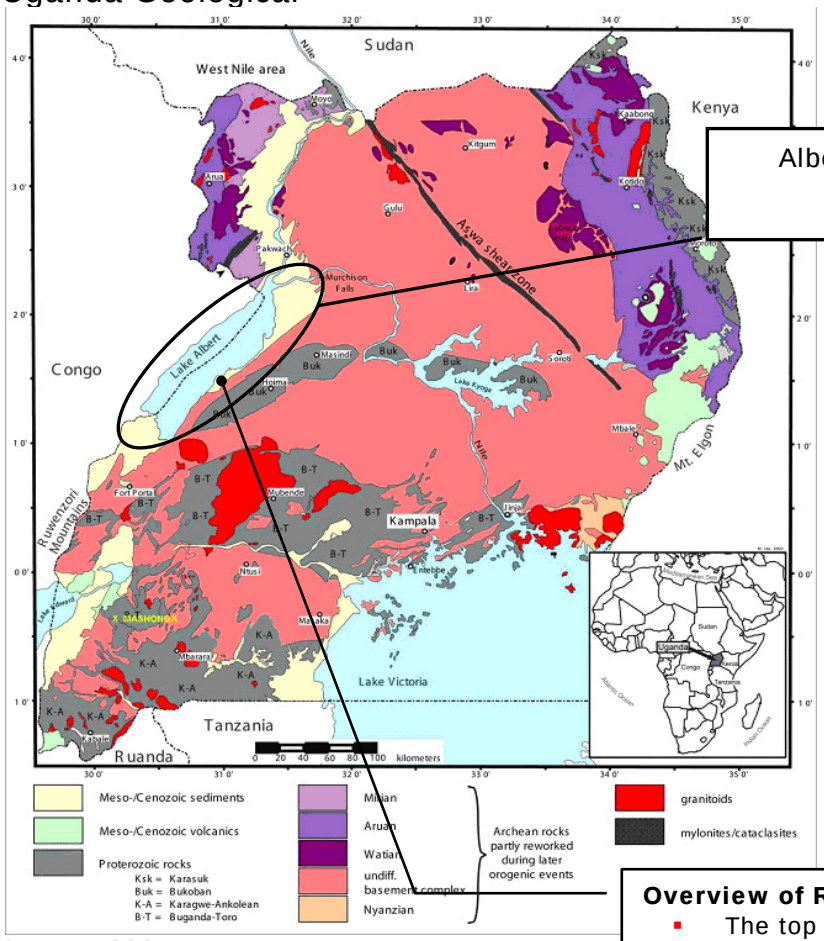
Commentary

- Tullow entered Uganda in 2004 through its Energy Africa acquisition then consolidated its position in 2007 with the Hardman acquisition.
- Tullow holds interests in three licences on the Ugandan side of the Lake Albert Rift Basin:
  - Block 1 (50%)
  - Block 2 (100%
  - Block 3A (50%)
- Since In the Butiaba region of Blocks 1 and 2, six successful oil wells have been drilled during 2008. The discoveries at Kasamene and Warthog are of a significant size and have de-risked the remaining prospectivity in the region.
- An early oil project is being pursued on Kaiso Tonya to test out early project economics and first oil is expected later in 2009.
- The Buffalo discovery at the end of 2008 may be substantial and Giraffe is currently drilling.
- In Block 3A, the Kingfisher-2 well, which lies north of the Kingfisher 1 discovery, was completed in August 2008. This well was flow tested at a combined rate of over 14,000 bopd from three reservoir zones, proving Kingfisher to be a significant discovery. A third appraisal well, Kingfisher-3 also proved productivity but failed to find oil in deeper zones. The rig will then move to drill the Ngassa-2, a near shore prospect in Block 2 that we have less confidence in.
- An extensive seismic programme, of mainly 2D, is continuing in Block 2 covering onshore, lake transition and offshore areas. Several 3D datasets over the Kaiso-Tonya and Kingfisher/Pelican complexes are being evaluated to assess further prospectivity in the lake and around known discoveries.

Uganda Geology

Uganda Petroleum Basin

Uganda Geological



Source: USGS

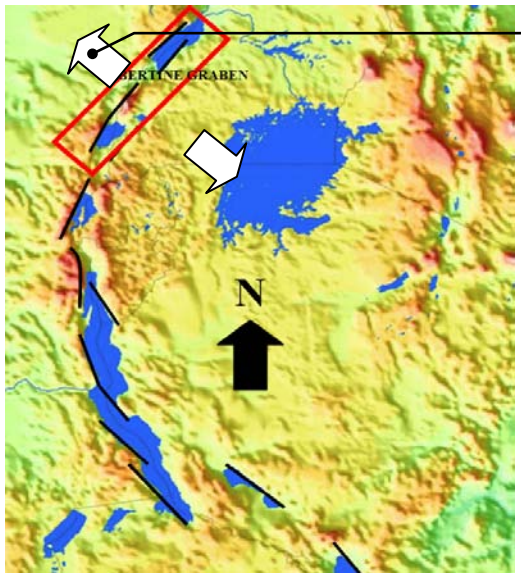
Uganda Political

Overview of Regional Rocks

- The top left map shows the areas of Meso-Cenzoic rocks that have been found to contain hydrocarbons.
- The rock layers appear to coincide with those areas that Tullow and Heritage have discovered oil.
- Note the pink basement area that could also contain hydrocarbons, although Tullow has not yet investigated this potential in the area.

Geological Play Types

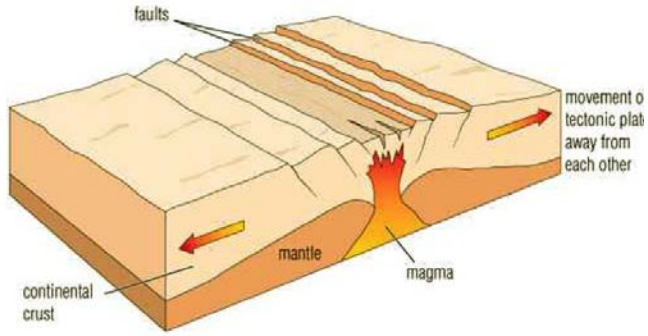
East African Rift Basin



Source: Ministry of Energy Uganda

Commentary

Section through active rift play



Geological Summary

Source

- Proven source rock from lacustrine to marine on the north east side of Lake Albert (see lower left).
- Shallow accumulations maybe biodegraded (heavier less valuable oil),

Structure / Trap

- Created by tectonic movements of the East African rift – vary from fault bound to basement play (see following page).

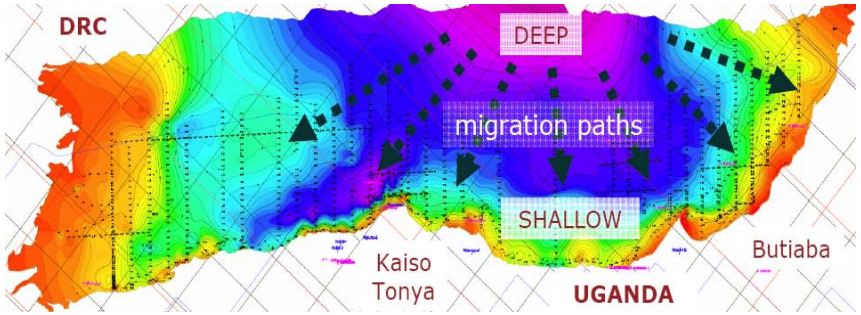
Reservoir

- Good quality sandstone reservoir formed from exposed areas of eroded basement, porosity 22%, Permeability 200mD-8000mD is excellent and we would expect very high flowrates from these reservoirs.

Seal

- Laterally extensive clay seal of 30m thick

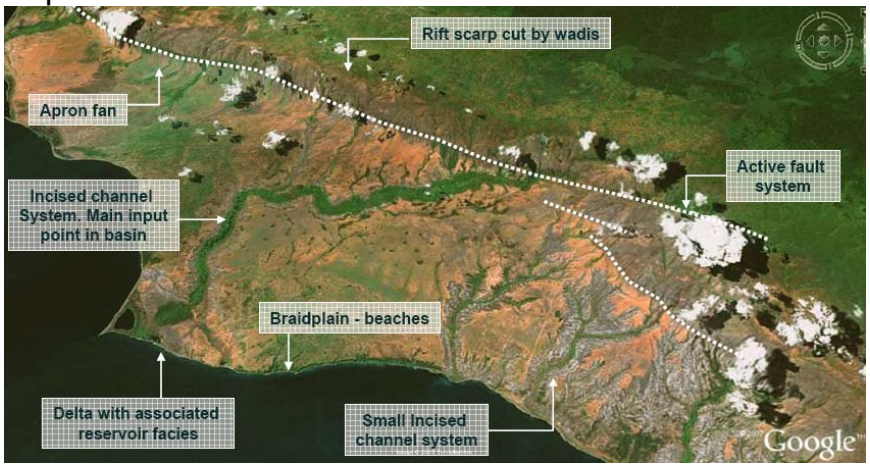
Source Rocks



Source: Tullow Oil

- Source rocks are buried deep on the North East side of Lake Albert and migrate into the structural traps created by the Rift.

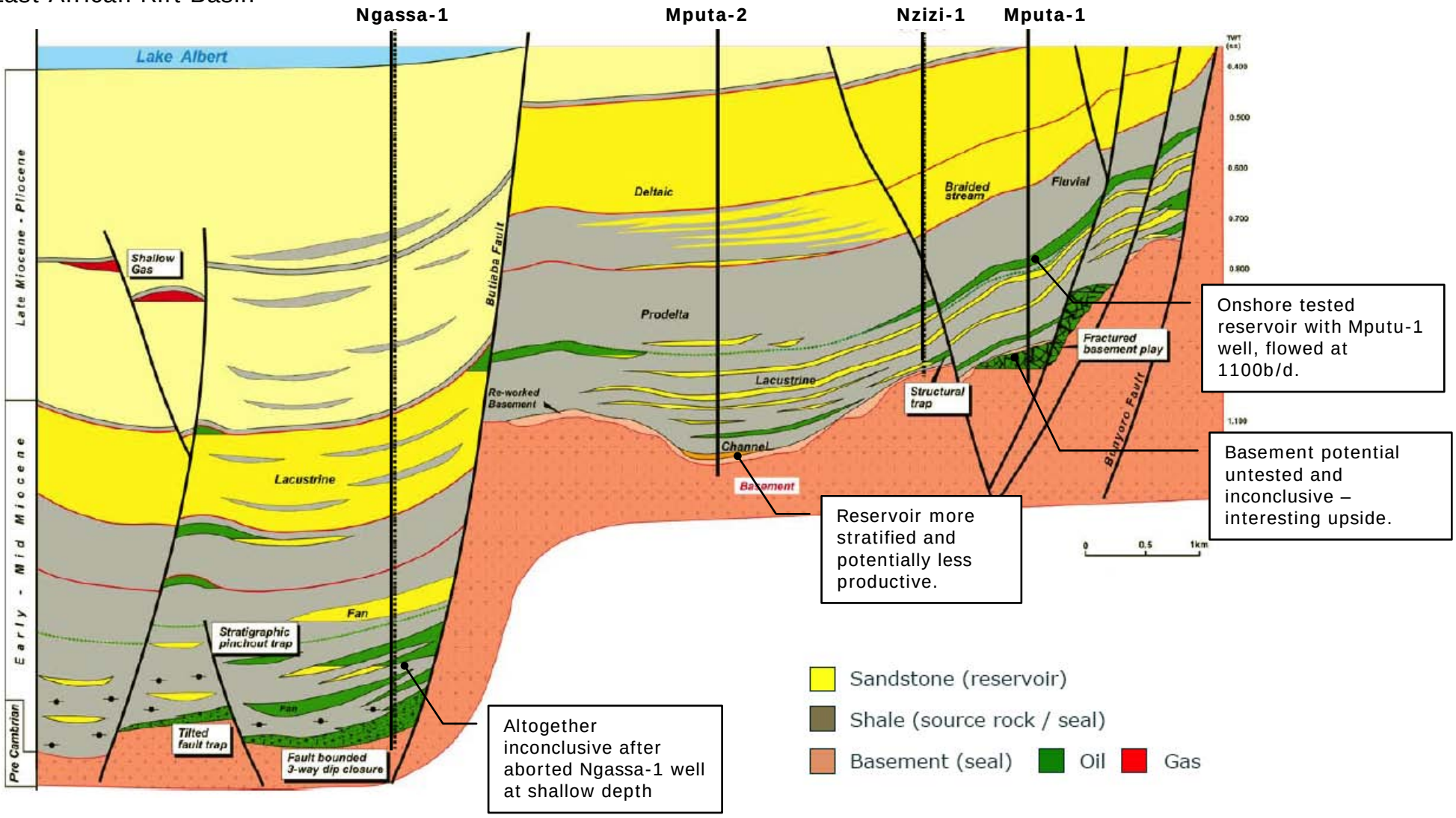
Depositional Environment



- Varied depositional environment produces multiple reservoir types from fluvial (rivers), to marine (sea) – this may result in variable reservoir quality (risk).

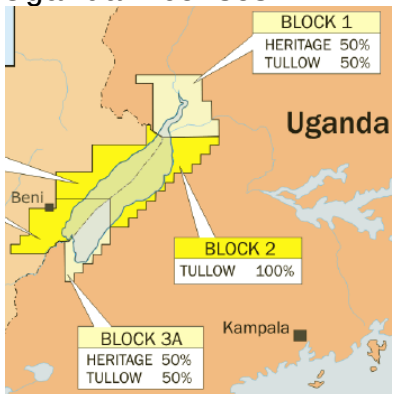
Geological Play Types Block 2

East African Rift Basin



Uganda Drilling Summary

Uganda Licenses



Source: Tullow Oil, Hulf Hamilton

Well Data

Block 1 (50%)

- Heritage operated – Buffalo discovery (324MMbbl?) made late 2008 – newest trend in region.

Block 2 (100%)

- Tullow operated – Mputa, Nzizi and Waranga first commercial discoveries made in 2007.

Block 3A (50%)

- Heritage operated, originally a 'dud' block following unsuccessful exploration in the far south – now become interesting with Kingfisher discovery adjacent to Block 2.

The data below shows reserves as stated by Tullow and Heritage in most cases – for some assets Hulf Hamilton has substituted own best estimates (Ngassa).

Uganda Drilling Data

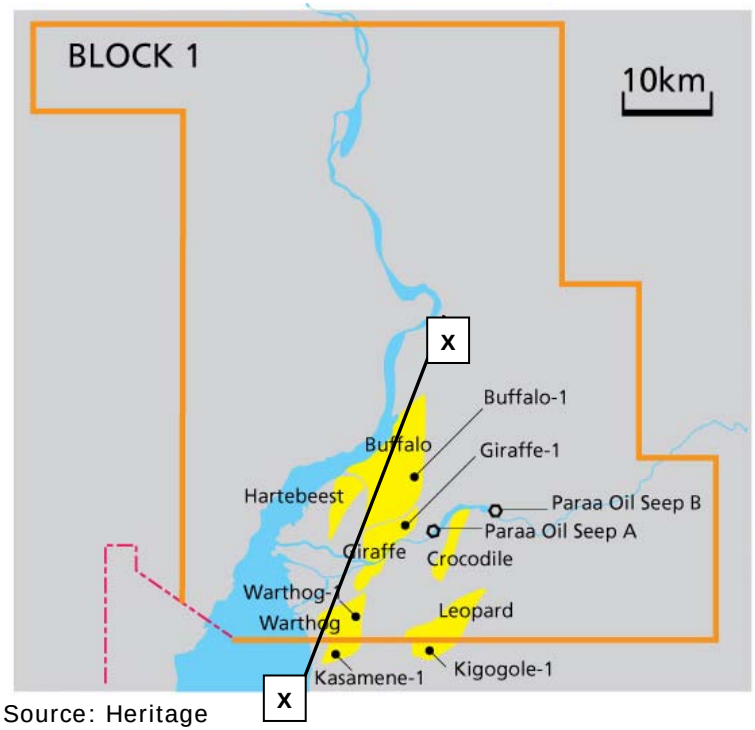
	Date Drilled	Work Int (%)	License	Well	Prospective Reserves (Mmboe)	Risk Factor (%)	Water Depth (m)	Reservoir	Drill Depth (m)	Gross Pay (m)	Net Pay (m)	Oil Gravity (API)	Flow Rate (b/d)	Flow Rate (mmcf/d)	
Un-Drilled	4Q09	50.00%	Block 3A	Pelican-1	193	10%									Offshore extension of Kingfisher trend
	4Q09	50.00%	Block-1	Leopard	80	50%									Kigogole extensioon play therefore lower risk
	3Q09	50.00%	Block-1	Hartebeest	24	50%									Butubia infill
	2Q09	50.00%	Block1	Crocodile	31	50%									Butubia infill
	1Q09	100.00%	Block 2	Ngassa-2	200	10%									Kingfisher analog first step out into Lake Albert
	1Q09	50.00%	Block-1	Giraffe	76	55%									Currently Drilling
Drilled	16/12/2008	50.00%	Block 1	Buffalo-1	344	100%				123	28				Significant up-dip oil/gas discovery
	11/12/2008	50.00%	Block 3A	Kingfisher-3		100%			2860	110	40		14000		three zone test
	30/06/2008	100.00%	Block 2	Karuka	20	100%			853						Victoria Nile delta play
	15/08/2008	100.00%	Block 2	Kasamene	30	100%			957		31	33 API			Victoria Nile delta play
	09/09/2008	100.00%	Block 2	Kigogole-1	50	100%			616		10				Victoria Nile delta play
	01/09/2008	50.00%	Block 1	Warthog-1	50	100%									First Butiaba campaign well
	24/06/2008	100.00%	Block2	Ngege-1	30	100%			640		5	32 API			Second Ngassa well
	01/03/2008	50.00%	Block 3A	Kingfisher-2		100%		Miocene	3906	100	37		14364		Cumulative test rate from 3 intervals, 2250mD
	05/05/2006	50.00%	Block 3A	Kingfisher-1		100%							9773		Cumulative test rate from 3 intervals
	13/05/2008	100.00%	Block 2	Taitai-1	10	100%			1006		5	30 API			First Block 2 Ngassa well campaign
	01/05/2007	100.00%	Block 3	Nzizi-1		100%									Muputu adjacent discovery
	01/05/2006	100.00%	Block 2	Nzizi-2		100%									Muputu adjacent discovery
	05/02/2006	100.00%	Block 2	Waranga-2		100%									North Block-2 discovery
	01/06/2005	100.00%	Block 2	Waranga-1		100%									North Block-2 discovery
	01/10/2007	100.00%	Block-2	Ngassa-1		10%			4900						First well abandoned at 1635m after problems
	01/05/2007	100.00%	Block 2	Muputu-4		100%							1100		Fouth well confirms commerciality for pilot productio
	01/05/2007	100.00%	Block 2	Muputu-3		100%									Third onshore discoveryin Kasio Tonya play
	01/05/2006	100.00%	Block 2	Muputu-2		100%									Second onshore discoveryin Kasio Tonya play
	01/05/2005	100.00%	Block 2	Muputu-1		100%									First onshore discoveryin Kasio Tonya play
	17/09/2002	50.00%	Block 3A	Turaco-1		100%			2487						Mostly gas shows, some oil
	03/10/2003	50.00%	Block 3A	Turaco-2		100%			2967						Inconclusive with mechanical difficulties
	05/11/2004	50.00%	Block 3A	Turaco-3		100%									Flowed C)2, probably because of volcanic effects

Source: Hulf Hamilton

Uganda Reserves

Block 1 (50%)

Block 1 License



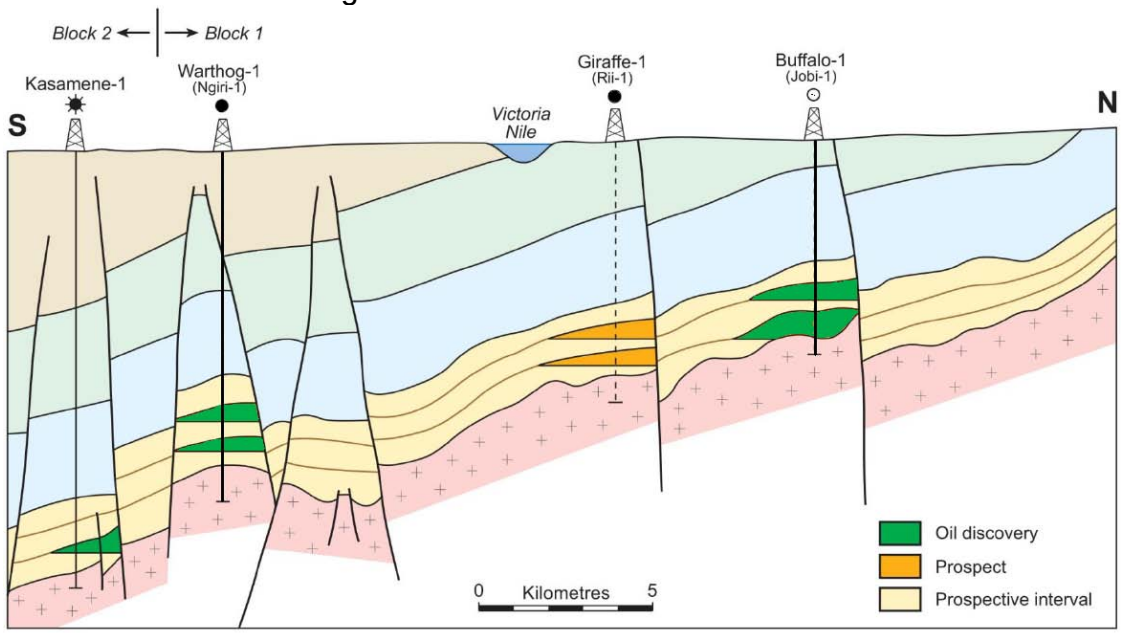
Source: Heritage

Commentary

- A seismic survey comprising approximately 670km of 2D data was completed in Block 1 in February 2008 and following this work a 3 well exploration programme commenced in September 2008 with the Warthog-1 prospect.
- On 21 October 2008 Heritage announced the successful Warthog-1 discovery which had a gross hydrocarbon-bearing interval of approximately 150 metres with 46 metres of net hydrocarbon pay. Wireline logging and formation pressure measurements indicate 31 metres of net oil pay in the principal oil-bearing reservoir section, overlain by 15 metres of additional net hydrocarbon pay comprising, most probably, volatile oil, condensate and wet gas. The well was drilled to a total depth of 911 metres.
- Prospects in Block 1 de-risked significantly following the successful Kasamene-1 and Kigogole-1 wells: Kasamene-1 drilled in the northern part of Block 2, approximately 2.5 km from the boundary with Block 1, discovered a 31 metre oil column
- Kigogole-1, also in the northern part of Block 2, 2 km from the boundary with Block 1, discovered two oil zones with net pay of 10 metres
- On 16 December 2008 Heritage announced the successful Buffalo-1 discovery which had a gross hydrocarbon-bearing interval of approximately 123 metres, with approximately 43 metres of net hydrocarbon pay. Wireline logging and formation pressure measurements indicate 28 metres of net oil pay in the principal oil-bearing reservoir section, overlain by 15 metres of additional net hydrocarbon pay containing gas. Downhole pressure testing and sampling has confirmed the presence of moveable oil that has been recovered to surface, and log interpretation indicates that reservoir quality in all pay zones appears to be excellent.
- The gross oil and gas columns seen in the Buffalo-1 well are 75 metres and 48 metres respectively and there is potential for the gross oil column to be significantly larger than reported because no oil-water contact was encountered in the well. Based on seismic interpretation, further exploration and appraisal drilling could prove up a very substantial accumulation of oil, giving Buffalo the potential to be the largest oil field in Uganda. Initial gross reserve estimates are 344MMbbl.
- The drilling of the Giraffe-1 exploration well commenced on 30 December 2008. It is expected to take approximately three weeks to drill and complete and so drilling results maybe imminent.
- There are many other prospects mapped within Block 1 from over 600 kilometres of seismic data acquired in the license during the past 18 months. All are characterised by similarly encouraging amplitude anomalies as seen over the Buffalo and Warthog prospects, and all represent additional prospects and leads which constitute additional multiple drilling targets.

Block 1 (50%)

Section on X-X through Block-1



Source: Heritage Oil, Hulf Hamilton

Commentary

- 2 wells have been drilled on Block 1 to date and the third is currently drilling,
- The potential reserves are thought to be in the range:

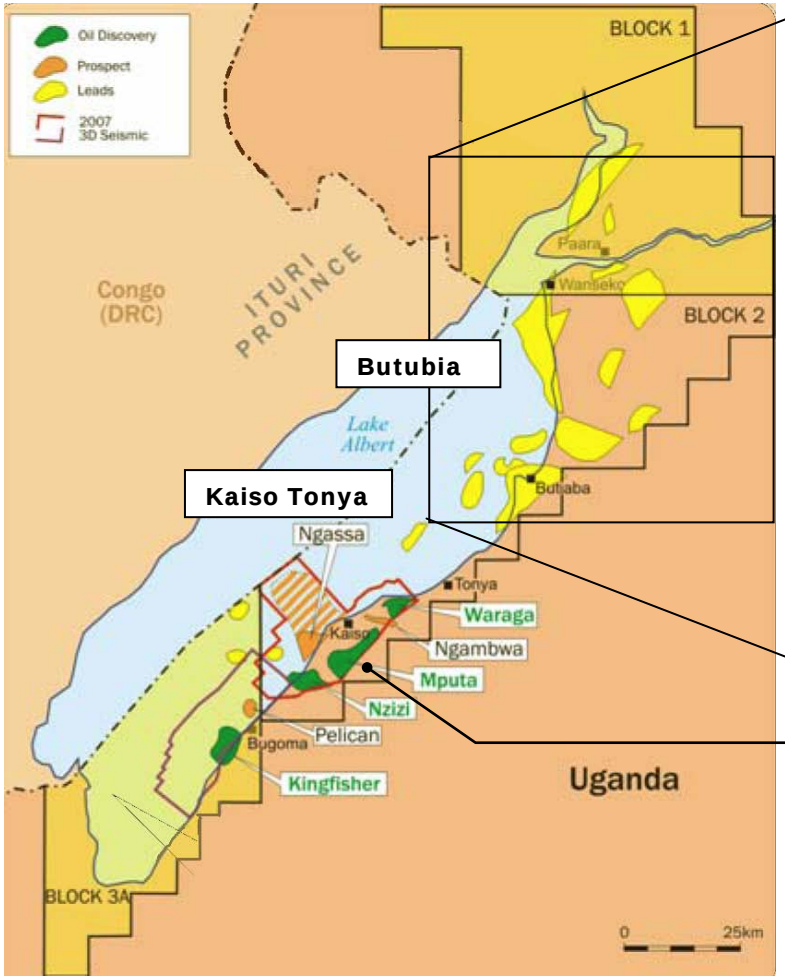
	P90 (MMbbl)	P50 (MMbbl)	P10 (MMbbl)
Warthog	**20**	**50**	**100**
Buffalo	**111**	**344**	**826**
Giraffe	35	76	161
Crocodile	16	31	57
Hartebeest	8	24	64

Source: RPS Energy, Hulf Hamilton

- Significantly Warthog and Buffalo have been confirmed as oil discoveries.
- Because Buffalo is up-dip of the other prospects it is more likely that Giraffe, Crocodile and Leopard will be discoveries.
- Giraffe is currently drilling and we believe there is more than a 50% chance of an oil discovery.

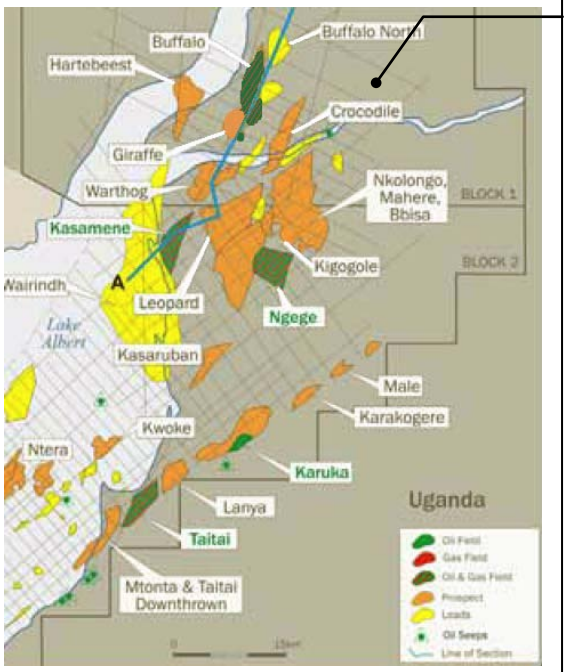
Block 2 (100%)

Block-2 assets



Source: Heritage Oil, Hulf Hamilton

Butubia



Butubia Assets
Subject of 2008 drilling campaign - 1000MMbbl potential? Unlikely given small discoveries to date.

Discoveries
- **Taitai (10MMbbl)**
- **Ngege (30MMbbl)**
- **Karuka (20MMbbl**
- **Kasamene (30MMbbl) derisks Buffalo trend North.**
- **Kigogole (10MMbbl)**

Prospects
- Leopard (300MMbbl?) on 2009 drilling programe
- Nkolongo/Mahere/Bbisa (300MMbbl)
- Karakogere
- Male
- Lanya
- Mtonta & Taitai downthrown
- Kasaruban
- Kwoke
- Ntera

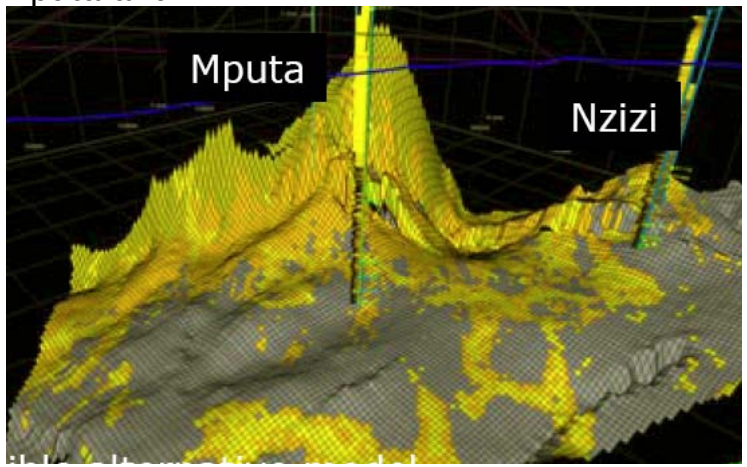
Kaiso Tonya Assets
Mputa, Nzizi and Wranga were the first commercial discoveries in the basin and the first two are subject of an early stage development programme for local power and oil use.

Discoveries
- Mputu (50MMbbl) Early stage producer
- Nzizi (40MMbbl) twinned with Mputu
- Waranga (25MMbbl) Unclear if this is included in early stage production.

Prospects
- Ngassa (600MMbbl) guidance reserve potential by Tullow appears inflated. The first well drilled at the end of 2007 was abandoned after wellbore instability problems. Deep target at 4000m+. We have our doubts about this target and thus carry a 10% chance of geological success only.

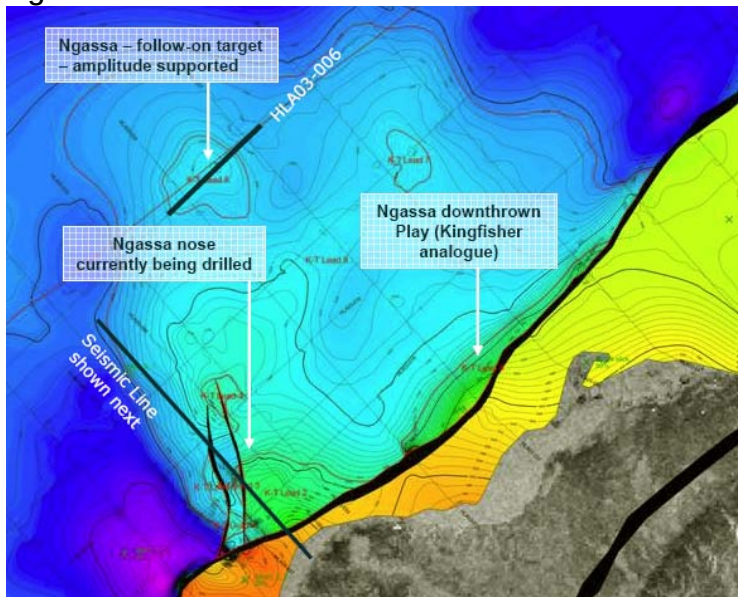
Block 2 (100%)

Mputa and Nzizi



Source: Tullow Oil

Ngassa



Source: Tullow Oil

Commentary

Mputa & Nzizi

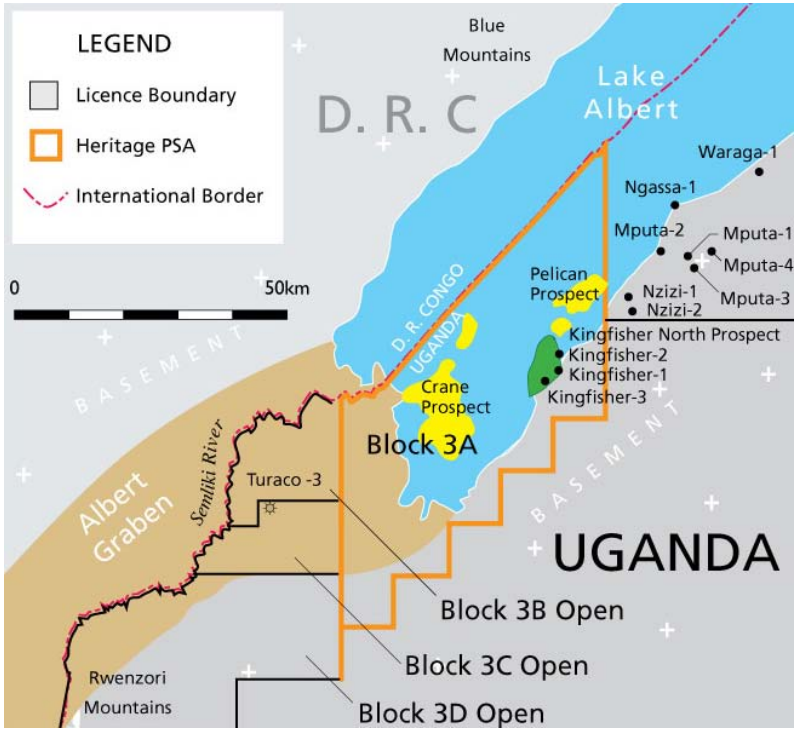
- After 4 wells on Mputa and 2 on Nzizi Tullow has built up a fairly good picture of the type and size of oilfield they are dealing with.
- Before drilling the prognosis was for 2 fields with combined reserves of 35MMbbl because it was thought that the reservoir type was highly distributed and of mediocre quality.
- Post drill combined reserves have been upgraded to 100MMbbl and the reservoirs have now been found to be:
  - Alluvial fans
  - Stacked channel sands

Ngassa

- First well (Ngassa-1) drilled at the end of 2007 and was abandoned early 2008 after encountering well instabilities (well collapsing).
- The well was eventually abandoned.
- Ngassa-2 is drilling 1H2009 and whilst we recognize a number of risk mitigants (Mputa reservoir sands present updip, Kingfisher clay seal nearby, ubiquitous oil source), we regard the migration/fill risk as significant, following Kingfisher 3 deep.
- Reserve potential of upto 600MMbbl has been mentioned by Tullow for the Ngassa drilling campaign but we estimate that only one third of this is likely to be an identified prospect with the remaining volumes categorized as high risk leads.

Block 3A (50%)

Block 3A license



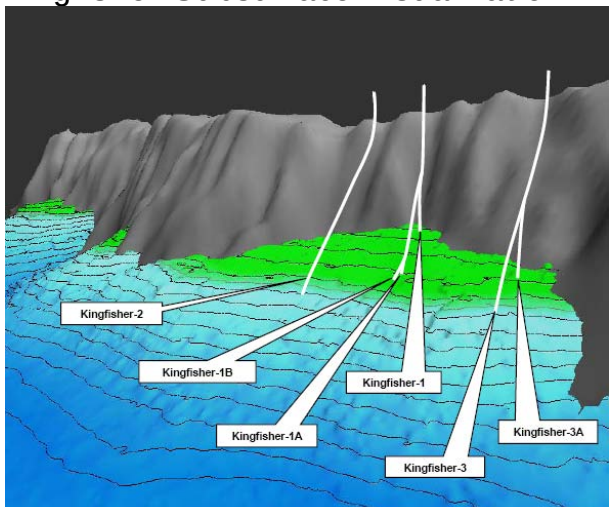
Source: Heritage Oil

Commentary

- The Kingfisher-1 well in Block 3A was drilled in 2006/2007 to a total depth of 3,195 metres after sidetracking twice for geological reasons. Hydrocarbons were encountered in Tertiary-age reservoir sandstones and four intervals were tested, resulting in an overall cumulative maximum flow rate of 13,893 bopd through a one inch choke over a total net productive thickness of 54 metres.
- The Kingfisher-2 appraisal well was spudded on 26 April 2008. This drilled to a total depth of 3,906 metres (3,197 true vertical depth). Three zones were tested and resulted in a cumulative flow rate of 14,364 bopd, almost 50% greater than the equivalent zones which were tested in Kingfisher-1.
- The tested oil in Block 3A has been good quality, of light to medium gravity and sweet, with a low gas-oil ratio and some associated wax. Flow data from the tests have indicated that the sandstone reservoirs have an extremely high permeability of up to 3,000 milliDarcies- very good quality.
- The Kingfisher-3 well was spudded at the end of September 2008 and on the 11 December 2008 it was announced that the Kingfisher-3 well had encountered oil in all three reservoir intervals with a gross hydrocarbon bearing interval of 110 metres and net oil pay of up to 40 metres. It was found that the south-west part of the field is structurally higher than anticipated, thereby extending the field boundaries which will result in an upgrade to the Kingfisher field reserves.
- The geological sidetrack Kingfisher-3A will be drilled to an anticipated measured depth of approximately 2,860 metres, which is expected to be completed by late January or early February 2009.
- During 2007/08 Heritage acquired two seismic surveys in Block 3A; an approximately 325 square kilometres 3D programme over the Kingfisher and Pelican structures and an approximately 530 kilometres 2D infill survey on Lake Albert. These have helped to identify a number of prospects in the lake, including the large Crane prospect. Plans are progressing for a Lake Albert drilling programme which is expected to commence in the second half of 2009.

Kingfisher

Kingfisher Subsurface Visualization

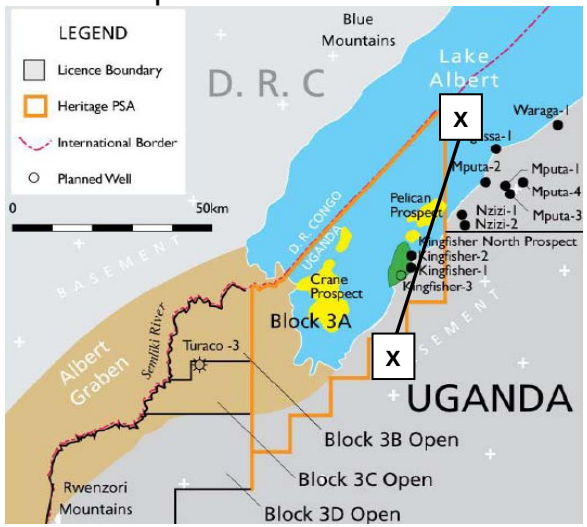


Source: Heritage

Commentary

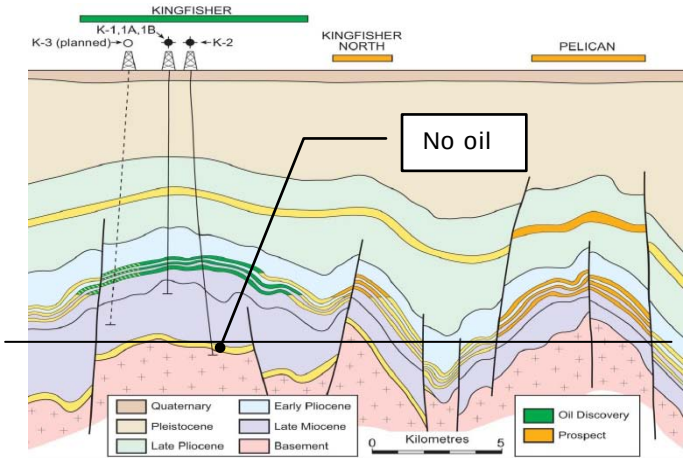
- Three zones in Kingfisher-2 flowed 30-32º API oil at 14,364 bopd. Equivalent zones in Kingfisher-1 flowed at 9,773 bopd.
- The well had some downside as the deeper tested zones did not contain hydrocarbons as the reservoir target was shown to be below the source. This makes the adjacent Ngassa target look more risky as it is at a similar depth.
- Both wells suspended as future producers
- Reservoirs highly permeable (over 3000 milliDarcies) and extended well test showed no pressure depletion or significant boundaries
- Rig now moving to drill the Kingfisher-3 appraisal well to the south of Kingfisher-1 and 2
- Kingfisher-3 will appraise the southern limits of the field, gather critical reservoir data and be suspended as a future producer
- Operator (Heritage) gross reserve potential for Kingfisher is:
  - P90 17MMbbl **P50 118MMbbl** P10 494MMbbl
  We carry the P50 reserve

Block 3 Upside



Source: Heritage Oil

Section on X-X



Upside Opinion

- Heritage Oil believes there may be upside on Block 3 as follows (gross):

	P90 (MMbbl)	P50 (MMbbl)	P10 (MMbbl)
Kingfisher North	4	32	97
Pelican	38	193	769
Crane Upper?	68	372	1338
Crane Deep?	28	177	1012

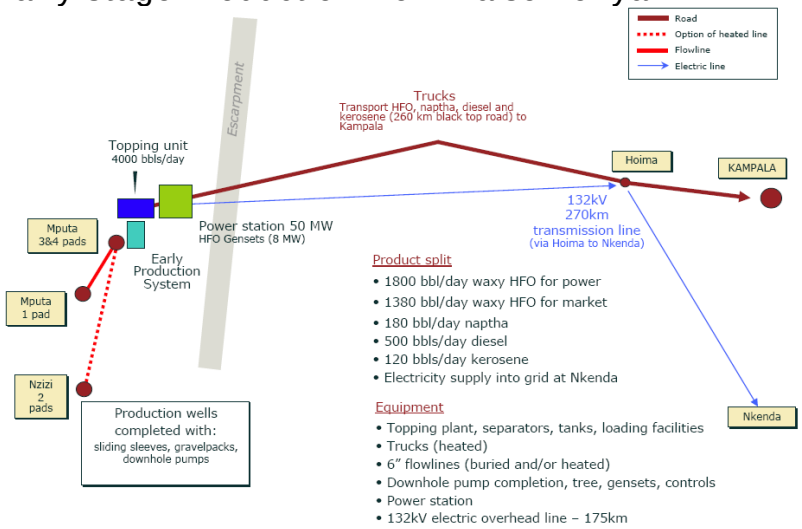
Source: RPS Energy

- In our opinion the Kingfisher North and Pelican potential maybe worth considering but given the previous failure of Turaco, Crane maybe speculative
- The Turaco drilling campaign encountered gas and CO2 as an indication of volcanic action.

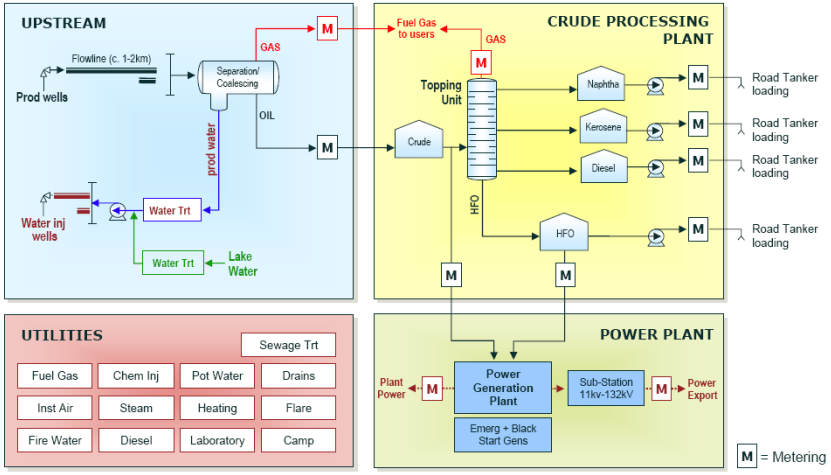
Uganda Development

Pilot Production

Early stage Production from Kaiso Tonya



Processing Plant configuration



Source: Tullow Oil

Commentary

Initial development for early cash flow and 'gentle break-in' for regional oil production (in area of natural beauty). Plus gives reservoir performance indications before large scale investment.
Total gross reserves for development assumed 100MMbbl

Phase 1 – oil sales 2009

- Sale to local refinery with product splits shown left
- Facility designed for 4,000bopd capacity
- Oil production initially limited to ~2,000bopd
- Products evacuated by road tanker

Phase 2 - power sales 2010

- Sanction 1H 2008
- 50MW of local power generation, possible upgrade to 85MW
- Transmission line upgraded
- Local demand sufficient

Phase 3 – potential facilities upgrade

- Need to develop non-spec HFO market
- Reservoir delivery potential to be assessed

Kasio Tonya Production terms

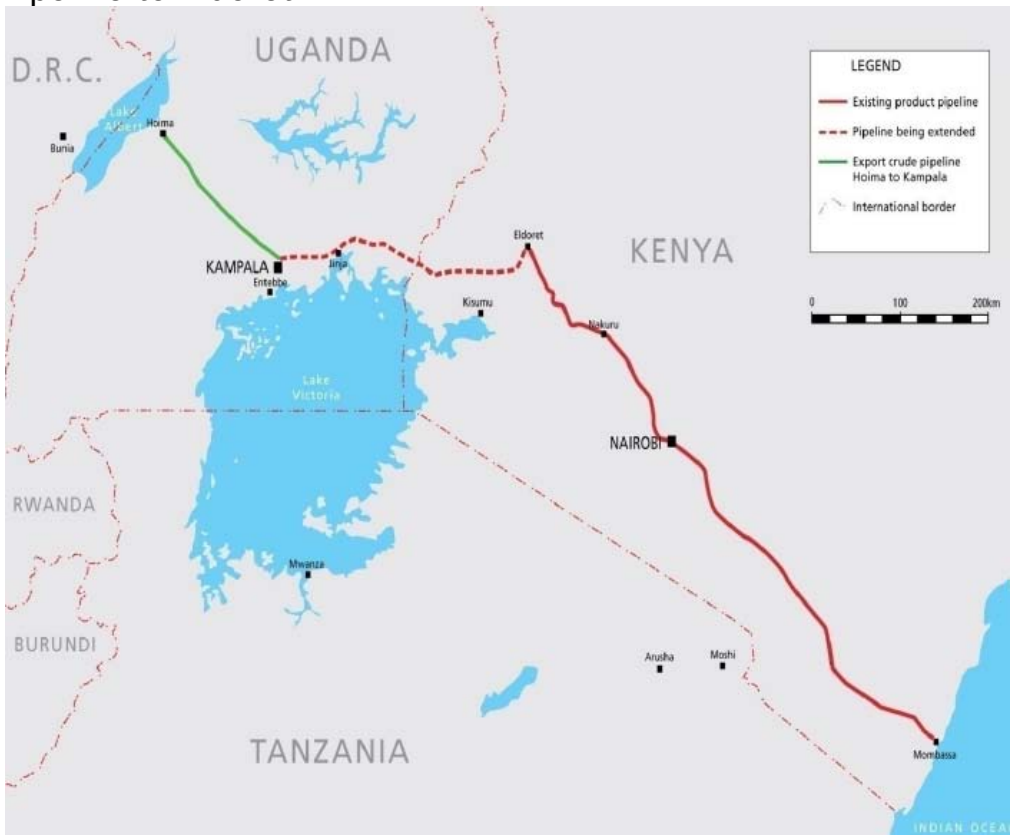
- Production Sharing Agreement based on the following rates:

Royalty rate	10%
Cost Recovery	60%
Gov't profit oil	41%
Tax rate	30%
CA Rate	25%

- Also assumes 15% government back-in.
- Production profiles shown on following page
- Total gross capex $480MM ($4.80/bbl)
- Life of field opex $700MM (7.00/bbl)
- Initial production 4000b/d, building to 40,000b/d in 2011 with additional capex investment in local pipeline and road facilities.

Main Pipeline

Pipeline to Eldoret



Source: Heritage Oil

Commentary

- Threshold for major export ~ 300-440MMbbls
  Reported (gross) discoveries to date include:
  - Kingfisher 118MMbbl
  - Mputa/Nzizi 100MMbbl
  - Buffalo 344MMbbl
  - Taita 10MMbbl
  - Ngege 30MMbbl
  - Karuka 20MMbbl
  - Kasamene 30MMbbl
  - Kigole 50MMbbl
  - Warthog 50MMbbl

  Total Uganda 752MMbbl
- In our opinion a 150kbd capacity pipeline would need to be installed to handle a full area development.
- Project will involve a 1,300km pipeline to Mombasa although the Eldoret-Mombasa stretch is already in place but will need substantial upgrading.
- Regional power and refining requirements need to be considered
- Upstream development is likely to require onshore and offshore wells in Blocks 1,2 and 3A
- Block 2 is natural gathering point for export from Lake Albert and there will have to be significant pipeline infrastructure and pumping stations around Lake Albert.
- Uganda need the oil sales but this will have to be balanced against the needs of the local environment given the natural beauty of the area and likely protests from environmental groups.
- Lake development drilling feasibility study and high level development planning underway but this will take at least until 2010.
- Stabilised crude will be gathered into common export pipeline

Uganda Valuation

BLUELAKE ENERGY

Uganda Valuation

Kaiso Tonya Core

- Single component is Mputa/Nzizi P50 100MMbbl development

Uganda Contingent

- Multiple Components:
  - 8 unappraised discoveries on Blocks 1/2/3A
- We base valuations on risked volumetrics using the $15.20/bbl benchmark from Jubilee.
- Projects relatively insensitive to capex changes because of cost recovery mechanism.

Uganda Exploration

- Multiple components based on 2009 drilling campaign only, as shown below.
- Many projects derisked because of 2008 drilling on Blocks 1 and 2.

Core

Project - Mputa/Nzizi		
Tullow Net Working Interest	85.00%	
P50 Gross Reserves	100MMbbl	
P50 Net Reserves	85MMbbl	
Gross Capex	-$480MM	
	-$4.8/bbl	
Gross Opex (life of field)	-$700MM	
	-$7.0/bbl	
Abandonment provision	10%	
Financial		
$/£ exchange	1.52	
Long term Brent:	$80.0/bbl	
Uganda Royalty	10%	
Cost Recovery	60%	
Gov't profit oil	41%	
Tax rate	30%	
CA Rate	25%	
Discount rate	10%	
Uganda Net to Tullow NPV10	**£720MM**	**99p**
	$1,288MM	
	$15.2/bbl	

Contingent

	Gross	Net	Risk	Value	
Buffalo-1	344MMbbl	172MMbbl	60%	$1564MM	142p
Kingfisher	118MMbbl	59MMbbl	60%	$537MM	49p
Karuka	20MMbbl	20MMbbl	60%	$182MM	17p
Kasamene	30MMbbl	30MMbbl	60%	$273MM	25p
Kigogole-1	50MMbbl	50MMbbl	60%	$455MM	41p
Warthog-1	50MMbbl	25MMbbl	60%	$227MM	21p
Ngege-1	30MMbbl	30MMbbl	60%	$273MM	25p
Taitai-1	10MMbbl	10MMbbl	60%	$91MM	8p
Contingent Total	652MMbbl	396MMbbl		3601MMbbl	327p
Uganda Net to Tullow Contingent				**£2,369MM**	**327p**
				$3,601MM	
				$9.1/bbl	

Upside

	Gross	Net	Risk	Value	
Pelican-1	193MMbbl	96MMbbl	10%	$146MM	13p
Leopard	80MMbbl	40MMbbl	50%	$303MM	27p
Hartebeest	24MMbbl	12MMbbl	50%	$91MM	8p
Crocodile	31MMbbl	15MMbbl	50%	$117MM	11p
Ngassa-2	200MMbbl	46MMbbl	10%	$69MM	6p
Giraffe	76MMbbl	17MMbbl	55%	$142MM	13p
Exploration Total	604MMbbl	227MMbbl		$868MM	79p
Uganda Net to Tullow Exploration				**£571MM**	**79p**
				$868MM	
				$3.8/bbl	