



## CURRICULUM VITAE

**Angus Marshall McKay** PhD CEng CSci MCSM MIMMM

**Date of Birth:** 17 April 1971 **Nationality:** British

**Qualifications:**

2005:	Attained Chartered Scientist status.
2003:	Attained Chartered Engineer status.
1993 – 1999:	Camborne School of Mines, University of Exeter, Ph.D. Geomechanics.
1990 – 1993:	Camborne School of Mines, University of Exeter, B.Eng. 2(i) (Hons) – Mining Engineering.

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**Contact Details:** Springbok Drilling Ltd.  
Ladenhar, Inverurie, Aberdeenshire, AB51 8QT, United Kingdom.  
+44 (0) 7855 507 328.  
[angus.mckay@springbok-drilling.com](mailto:angus.mckay@springbok-drilling.com)  
[www.springbok-drilling.com](http://www.springbok-drilling.com)

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### CAREER HISTORY:

**Feb 05 - Present** **Contract Drilling Engineer**

**Aug 10 – Current** **Lead Operations Drilling Engineer – BG UK – Jackdaw uHPHT appraisal well.**  
On completion of the Mandarin P&A program, return once more to the BG Aberdeen office as Lead Operations Drilling Engineer on the final Jackdaw appraisal well. Due to reservoir entry and site survey constraints, this well was also a 20° well through the reservoir. The primary objective for this well was to carry out a DST. As of February 2011, the reservoir has been drilled and operations are continuing.

**Aug 09 – Aug 10** **(Lead) Drilling Engineer – BG Norge - Mandarin uHPHT exploration well.**  
Initially Operations & then Lead Drilling Engineer (Lead DE left team during drilling) for BG Norge's first eHPHT exploration well. Mandarin was an S-shaped well to evaluate a large un-explored HPHT structure in the Norwegian Southern North Sea just inside the Norwegian territorial waters. As with all HPHT drilling, there were a number of challenges during the drilling and subsequent dry hole abandonment.

**Apr 08 – Aug 09** **Lead Drilling Engineer – BG Norge - Bream NPNT multi-sidetrack appraisal wells.**  
Returned back to Norway to help with planning & execution of the Bream appraisal well. Due to initial success of the appraisal (fastest well to TD in Norway in this category) and sidetrack, an additional side track was drilled. This resulted in all appraisal objectives being met for the field and ability to go directly to development sanction with no further drilling requirements.

**May 08 – Apr 08** **Lead Drilling Engineer – BG Group – Jackdaw Appraisal**  
Returned to UK for the Jackdaw sidetrack project which was an Ultra HPHT well side track to evaluate the original discovery. This involved a very short notice programme to drill the well. The well kicked off below the 20" shoe and held a 22° inclination to 20,500ft MD. A lost BHA resulted in a rapid side track around the fish to complete the well objectives. Responsibilities included all the usual HPHT Drilling Engineer's duties.

**Nov 06 – May 08**

**Lead Drilling Engineer – BG Norge – Exploration wells**

Seconded to the BG Norge office to support the final planning and operational duties for the Orange and Pi North wells in the Norwegian sector. Responsibilities include:

- Liaising with 3<sup>rd</sup> party service providers, both before and during the well,
- Writing of the drilling programmes,
- Visiting the rig for pre-spud presentations and as operationally required,
- Working within the NORSOK drilling regulations and ensuring compliance with both the NORSOK regulations and the BG Value Assurance Framework (VAF) and BG Well Engineering Management System (WEMS) systems,
- Working within and ensuring compliance with both the BG Value Assurance Framework (VAF) & the BG Well Engineering Management System (WEMS),
- Operational support for the rig during the drilling phase,
- Compilation and editing of the end of well report,
- Working with the BG Logistics team to ensure appropriate equipment scheduling,
- Offset data reviewing for relevant wells,
- Reporting on a regular basis as required,
- Support for the BG Norge office as requested.

**Mar 06 – Nov 06**

**Drilling Engineer – BG Group – Outer Moray Firth Exploration Campaign**

Involved in the detailed design and drilling of four exploration wells as a part of a three-man team (Wells Team Leader and two Lead Drilling Engineers). Three of the wells were a sequence of Outer Moray Firth stratigraphic trap wells, and the fourth a Central North Sea stratigraphic trap well. Responsibilities included:

- Liaising with 3<sup>rd</sup> party service providers, both before and during the well,
- Modelling of drilling hydraulics,
- Writing of the drilling programmes,
- Visiting the rig for pre-spud presentations,
- Support for the offshore supervision when the Night DSV required to return onshore for health reasons,
- Compilation of risked WCE using proprietary software (Peak P1 system),
- Working within and ensuring compliance with both the BG Value Assurance Framework (VAF) & the BG Well Engineering Management System (WEMS),
- Writing and co-presenting well progress updates to the BG Head Office,
- Operational support for the rig during the drilling phase,
- Compilation and editing of the end of well report,
- Working with the BG Logistics team to ensure appropriate equipment scheduling,
- Offset data reviewing for relevant wells,
- Reporting to the HSE on a weekly basis,
- Communication on a regular basis with the Well Examiner,
- Raising PO requisitions for equipment and services negotiating with 3<sup>rd</sup> party suppliers.

**Feb 05 - Present**

**Operations Drilling Engineer – BG Group – Calloway HPHT Exploration**

Initially involved in the detailed design of three wells and a re-entry to complete. As other teams became available, the workload was re-defined and I concentrated solely on BG's near HPHT Calloway well as part of the dedicated team. This was a deep (>17,700ft) vertical well with prognosed BHST in excess of 380°F. Responsibilities included:

- Liaising with 3<sup>rd</sup> party service providers, both before and during the well,
- Working with the Senior DE to develop the well specific well control guidelines and fingerprinting schedules,
- Modelling of drilling hydraulics for drill string selection,
- Development of the drilling programme,
- Assisting in the risked AFE development using proprietary software (Peak P1 system),

- Working within and ensuring compliance with both the BG Value Assurance Framework (VAF) & the BG Well Engineering Management System (WEMS),
- Assisting other BG personnel in understanding the VAF process,
- Writing and co-presenting well progress updates to the BG Head Office in TVP, Reading,
- Operational support for the rig during the drilling phase,
- Compilation and editing of the end of well report,
- Working with the BG Logistics team to ensure appropriate equipment scheduling,
- Offset data reviewing for relevant wells,
- Reporting to the HSE on a weekly basis,
- Communication on a regular basis with the Well Examiner,
- Raising PO requisitions for equipment and services negotiating with 3<sup>rd</sup> party suppliers.

**Aug 00 – Feb 05      Applied Drilling Technology International (ADTI)**

**Oct 04 – Feb 05      Drilling Engineer (AFE Estimation – Tullow Oil & Ingen/Focus Energy)**

Position involved the preparation of detailed AFE estimates for various projects ranging from new drill wells through to investigative work on shut-in wells with potential for side tracking. Responsibilities included:

- Liaising with client to establish design requirements,
- Review of available offset information for data gathering,
- Identification of potential hazards and developing mitigation options,
- Liaising with service companies to obtain detailed quotes,
- Generation of AFE quality bids and estimates for presentation to the client.

**Jan 03 – Oct 04      Drilling Engineer (Tuscan Energy)**

Drilling Engineer for the Tuscan Energy Ltd turnkey project to drill & complete three wells under the guidance of the Senior Drilling Engineer. Responsibilities included:

- Checking of drilling programme and HSE Notifications written by Operations Engineer,
- Working with new Operations Engineer to ensure continued standards of cost tracking and invoice logging,
- Liaising with Service Companies to ensure availability & timely delivery of equipment,
- Writing & presenting the Pre-Spud presentations both onshore and offshore,
- Organisation of Pre-Spud meetings,
- Support for Offshore Team.
- Cost tracking with aim of being within 3% of invoiced cost at end of project,
- Production of Contract Briefs and associated paperwork for submission to Accounts to raise invoices for turnkey phases,
- Writing Drilling Programmes,
- NPT tracking,
- Communication with Service Companies,
- Tracking of lessons learnt in the ADTI database,
- Monitoring well progress and ensuring all relevant information is tracked,
- Writing weekly reports for submission to HSE,
- Bit selection,
- Support for Senior Drilling Engineer, Senior Completions Engineer & Senior Subsea Engineer,
- Support for the offshore team,
- Working in association with the Logistics Personnel & signing off on invoices.

**Oct 01 – Dec 03      Offshore Drilling Engineer (Armada Phase II)**

Night shift Drilling Engineer for BG-Group on board the Galaxy III over the Armada platform. BG-Group did not use Night Company Men and the Drilling Engineer was expected to cover this role during the majority of the project. The initial project of Phase II wells to extend the Armada's production life. Responsibilities included:

- Writing morning reports,
- Writing & issuing 5 day look ahead,
- Maintaining EOWR daily summary,
- Updating well files, e.g. TVD monitoring, general well files, etc,
- Casing / liner tallies & space outs,
- Cement, displacement & test volume calculations,
- Witnessing pressure tests,
- Hydraulics and torque & drag modelling / analyses (Drilling Office),
- Toolbox safety meetings,
- Implementing Drilling Supervisor's daily work instructions,
- General assistance to Drilling Supervisor & Logistics Co-ordinator,
- Working with rig crews & service providers to expedite project in a safe manner.

**Jan 01 – Sep 01**

**Offshore Drilling Engineer (South Everest Phase II & Arbroath)**

Seconded to BP as offshore/onshore drilling engineer for the South Everest Phase II development on board the Galaxy III, and continuing onboard for the Arbroath Infill & Workover project, working a 2-2-2 rotation. Offshore responsibilities included:

- Writing morning reports,
- Performance analysis & NPT tracking,
- Maintaining EOWR daily summary,
- Updating general well files,
- Casing / liner tallies,
- Cement, displacement & test volume calculations,
- Hydraulics and torque & drag modelling / analyses (Well Plan),
- Witnessing pressure tests & leak off tests,
- Implementing Drilling Supervisor's daily work instructions,
- Working with rig crews & service providers to ensure expedite project tasks.

Onshore responsibilities included:

- Daily support for Snr. Drilling Engineer, e.g. writing & distributing action items & minutes for team meetings & co-ordination meetings with the rig,
- Writing basic programme amendments under guidance of Snr. Drilling Engineer,
- Following up actions from weekly group meetings / discussions and ensuring they are checked and signed off ready for issue to all concerned,
- Compile and write End Of Well Report.

**Aug 00 – Jan 01**

**Trainee Well Engineer**

Initially assigned to the Santa Fe Monarch as deck crew gaining offshore experience from the Drilling Contractor's perspective. Responsibilities as Roustabout included:

- Banksman,
- Assisting with service providers where possible,
- Assisting with layout of casing & completion tubulars,
- Developing an understanding of the deck crew's role on a rig,
- Ensuring the rig was kept clean & tidy.

Three week trip in Invergordon as part of a two-man team controlling logistics and cost tracking for the initiation of a ship-yard project working on a 24-hours basis. Responsibilities included:

- Logistics planning in conjunction with rig based logistics co-ordinator,
- Arranging & tracking personnel & equipment transportation to & from rig,
- Setting up cost tracking spread sheet for entire operation,
- Conducting cost tracking for entire operation,
- Liasing with shore service providers for work requests from rig,
- Tracking progress of onshore work / operations,
- Liasing with Harbour authorities & emergency services for two medical evacuations from rig – one by boat, one by helicopter.

Project on guidelines for bolting of flanges on Santa Fe installations as a follow up to the H&SE Safety Notice 2/2000. Completed in a three-week period.

**Sep 97 – Aug 00      CORPRO SYSTEMS LTD**  
**Field & Operations Engineer**

*World Wide Locations of Experience:*

Three years with Corpro Systems Ltd, saw work in the following regions:

- First experience of a drilling rig was on a land-based job in Ukraine,
- A four-month placement in Singapore during which time worked in India, Malaysia, Bangladesh, and two jobs in Indonesia; hydrothermal & under-balanced cores,
- A three-month period based in Saudi Arabia involved a number of land-based jobs. Undertook first solo core job, consisting of two core runs in 8½” hole with a 60 foot core barrel. Another two solo jobs followed, on one of which I had a Trainee Engineer who had no previous experience of coring.
- On return to the United Kingdom, regularly worked offshore both in the UK and Dutch sectors. One job was on the West Elgin HPHT field and involved cutting 216m of core in five runs with a recovery of 215m. The well was an H<sub>2</sub>S well.

My final 12 months of employment with Corpro Systems Ltd saw me working both in the office full time and in a field position when required. This resulted in travelling to Abu Dhabi and Sudan for extended periods of time. Both of these positions were as a senior member of a team of core engineers providing a full suite of coring services. Responsibilities in the office included:

- Visiting clients from a wide range of Operators to present coring services,
- Writing financial and technical proposals for potential coring contracts,
- Working with Warehouse Staff to co-ordinate timely equipment loadout,
- Answering Operator’s questions and providing daily shore support for coring operations to Operators & field engineers,
- On call for duty rota,
- Involved in the design & construction of a novel sidewall coring system,
- Area of responsibility covered most of West Europe and part of North Africa.

*Details of Rig Experience:*

- Responsible for liasing with the Company Man, Tool Pusher, Geologist, through to the Roustabouts during the various aspects of the coring operation,
- Directing the floor crew from Driller to Roughneck,
- Toolbox safety meetings and risk assessments,
- Answering any questions any of the crew may have,
- Optimisation of coring parameters during the core run,
- H<sub>2</sub>S experience on three wells; an under balanced well in Indonesia using nitrified diesel, the West Elgin field, where one run filled a 240ft core barrel, requiring 2½ hours to recover the core at surface, & Abu Dhabi where a false alarm prompted evacuation of the rig site.

**TRAINING COURSES ATTENDED:**

Advanced Safety Auditing – *GSF*,  
Basic Oilfield Calculations - *Santa Fe, Well Engineering*,  
Communication Skills – *Bell Amethyst*,  
DIMS for Windows – *Landmark EAME, Halliburton*,  
Drilling & Petroleum Geology - *Stag Geological Services*,  
Drilling Practices I – *Prentice Training*,  
FOCUS Training I – *Randy Smith Training Solutions*,  
GMDSS Short Range Radio Certificate – *RYA*,  
I.Mech.E. Day course – *Santa Fe, Well Engineering*,  
IWCF Subsea Supervisor – *GSF*,  
Mud Logging & Well Site Geology - *Stag Geological Services*,  
Report Writing – *FI Training*,  
Stress Check – *Landmark EAME, Halliburton*,  
Well Plan for Windows – *Landmark EAME, Halliburton*,  
Well Plan I – *Prentice Training*,  
Well Plan II - *Prentice Training*,  
NORSOK Regulations,  
Compass Directional Well Planning.

**PUBLICATIONS:**

SPE/IADC Conference, Abu Dhabi 1999; wrote and presented a paper on a novel sidewall coring system.  
Paper No. 57554,  
Project on bolting of pressurised flanges. Internal publication within Santa Fe TechServ (North Sea) Ltd.  
PhD Thesis on fracture mechanics.

**PRE GLOBALSANTAFE COURSES ATTENDED:**

Basic Rig Crew – Advanced Drilling International

**REFERENCES:**

Full contact details available on request.

Martyn Ferguson	HPHT Drilling Superintendent
Fred Hardinges	HPHT Well Team Leader
Sigve Næsheim	HPHT Drilling Superintendent

**CERTIFICATION:**

IWCF Subsea Supervisor	March 2010
Offshore Survival	June 2010 (inc. Norway)
Medical	May 2011 (inc. Norway)
DaWinci	50 54 52
Vantage	0175924