



Roundtable for Unconventional Gas Projects in South Australia

Exhibition Hall, National Wine Centre

Friday, 15 March 2013

Minutes

Attendees: See attached attendee register

Apologies: See attached apologies listing

Minutes: Allison Harris (DMITRE)

Breakout Session 1: Sharing Crews / Rigs – Paper #6

Discussion commenced: 9.40am

Discussion Leaders: David Cockshell (DMITRE), Dominic Pepicelli

1. What will make multi-client seismic surveys attractive to both venders and licence holders?

a. Number of years confidentiality

DC: DMITRE (DC)– New regulations under the Petroleum & Geothermal Energy Act come into operation today, which will increase the confidentiality period to 15 years.

KD: This change will have a significant impact on the number of surveys that will be shot and adds a huge amount of data to the data set.

John ? – Never seen it work well in more mature areas. It will only work if operators work together, to work out which zone they want to hone in on. The result will be a hybrid, different cable links, shot hole depths. More seismic lines will be put into a very fragile environment, so we should be very careful of this development.

DC: One of the key issues is the commerciality. You need to get a return from spending multi millions of dollars on a seismic survey in order to make it viable. If it is not viable the surveys will not happen.

KD: They may not meet everyone's needs but they will set their parameters to be appropriate to the people that are going to buy the surveys.

DC: The benefit of increasing the confidentiality period is that it will result in a large set of consistent high quality data. A large part of the Cooper Basin is already covered by a 3D survey. There is a fine balance between what makes it commercial and what makes sense.

- DS: Is the solution a group shoot rather than a multi client approach? There needs to be an effective way to cover vast amounts of acreage across multiple licences.
- DC: Associated Activity Licences are available to expand out the survey area.
- DS: The problem will exacerbate, you will need greater offsets, bigger surveys - data well outside your block for it to be useful.
- KD: The unintended consequence is, as the block sizes get smaller, you'll be locking out smaller companies that cannot get access to the seismic surveys.
- BW: Why isn't DMITRE the client, to on sell to prospective companies?
- DC: The cost is substantive; Government does not have the budget to spend \$10m to undertake one survey.
- AD: Would thermal imaging be appropriate for some of this?
- DC: There is a fair bit of thermal imaging around, satellite imagery of varying types. It is part of the toolkit.

2. What should be done to make efficient use of seismic crews?

- DC: At the moment there are two seismic crews operating in the Cooper Basin, the possibility of several others is being mooted. For some years there's only been one crew. Competition can drive benefits to the explorers.
- KD: The more crews the better. There needs to be a good work program available, currently programs are only discussed through scout meetings. Information sharing not as active as it once was, this needs improving. Seismic contactors need to know they can keep the crew for long periods. There is no continuity of work at the moment.
- SM: The issue is about tenement security. It's not just the seismic crews, it is the ancillary activity (camp facilities, transport, work area clearances) that determines the time frames. It's a limiting factor.
- KD: Do geophysicists get together regularly to share information?
- DC: An action could be to set up a forum if one does not already exist?
- SM: Information exchange is usually done informally. Who is the onus on to get continuity?
- KD: One meeting would produce a lot of knowledge in terms of how to plan future activities.
- DC: A timeframe chart would enable people to see where the slots are, but may be inhibited by a company's willingness to share that information.

Action item: Develop better scheduling coordination between companies.

3. What should be done to make efficient use of drilling rigs, work-over rigs and other types of rigs?

- DP: The market will be the main driver of the efficient use of rigs.
- BW: It should be up to the operators to talk to one another, which isn't happening a lot at the moment.
- IM: Sharing Fitness For Purpose information would be beneficial. Currently, assessments are having to be re-done by each operator. A lot of time and money could be saved if the assessments didn't have to keep being repeated. It would also help DMITRE to manage the rigs to a certain standard.

- DP: This is especially true with the increasing number of rigs coming in.
- MM: Sharing FFP information is a commercial issue and should be left to the operators to sort out between themselves.
- DP: DMITRE is attempting to make it more consistent by developing FFP guidelines. The guidelines are not prescriptive, but may help with the inconsistencies.
- CT: The onus is on operators, because they have the duty of care and are the ones that are responsible. You should not rely on the rig contractors in this regard.
- DC: It would be beneficial to come up with a Basin wide approach to sharing rigs.
- SM: Senex and Beach have a good arrangement sharing information and crews, it is possible.
- DB: Multi spread in the Basin at the moment, there have been the same crews in the Basin for several years. But there are still significant gaps in the drilling schedule. Crews can be stagnant for a 3rd of the year waiting for jobs. Better communication is needed - Perhaps something could be organised at the end of the Drillsearch conference?

Closed: 10.40am



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Presentation 1

Santos

Presented by Craig Stallon

The East Coast domestic gas market will triple in demand in the next couple of years. The supply side may not keep up with demand – resulting in a tight market place.

Santos currently running 4-6 rigs in the Cooper Basin; and has 300-400 wells which translate to 4000-6000 fracs. Compare this to 9-15 drill rigs running in 5 years, which will require 700-1000 new people in the industry. Can the industry be grown at a rate that will mean it is sustainable and economic?

Santos see 3 main issues that need to be dealt with:

1. Resources

There is a need to grow the right resources for the region, a need to make SA the centre of excellence for onshore types of development.

There is a need to invest in SA – for example an industry hub at Tonsely Park, which would be linked with TAFE/Universities. A hub like this will assist increasing the number of skilled people that will be needed down the track. Exchange programs will be required to obtain experience, and it would be beneficial to open the borders to bring in experience from the US. Need to start this process today or it won't be done in time.

2. Roads Infrastructure

Currently, when bringing a new rig into Australia, companies are spending 12-18 months retrailorising rigs, putting in different electrical standards, etc. These process drive costs and timeframes up.

Need to find a way, with the Government, to work out how we can get access to resources so rigs can be brought in within a shorter time frame.

3. Critical Infrastructure

Current infrastructure will not sustain the increase in people and activity because of the number of limitations. Santos would like to see the industry band together, to put together a

hub outside the Moomba complex where service companies could have their own facilities, and therefore could service everyone.

It is important to get ahead of the game; all issues are solvable if we work together.

Santos believes the focus should be on:

1. Resources – if we don't grow these today we won't have the people with experience required.
2. Logistics Hubs – to ensure that no one individual is constrained; that the suppliers can get their economies of scale right and not be constrained by infrastructure.
3. Reducing the regulatory burden - Bringing rigs and equipment in and mapping electrical standards between the US and Australia.
4. Increase the availability of the Strzelecki Track – floods impact all operations. Productivity will not be sustainable when there's 15-30 running.

MP: Do you see the development of multiple depots across the Cooper Basin?

CS: Multiple depots would be logical, but it is unknown whether it is achievable. If the volume is there it makes sense to do it. You could centralise a hub, for example in Innamincka, and try to get a township happening.

BG: DMITRE will be establishing forums to set up joint ventures for joint ventures to discuss the options that are available.

?? Is it possible to set up a 'standard exchange zone' for the Cooper Basin where US standards are accepted.

BG: DMITRE are going to take this up with QLD. Creating all-round exemptions will add to productivity. BAG would like to see a red line around the Cooper Basin creating a trade zone.



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Presentation 3

Senex

Presented by Susan Mallan, General Manager Operational Services & Compliance

Majority of Senex's production comes from the Growler and Snatcher Fields. Most of the company's SA permits are held in Joint Venture with a variety of partners. Unconventional wells are 100% Senex owned.

In terms of Unconventional Gas, the campaign is currently in the exploration phase. Senex are not producing gas in SA at all.

Last year the producing fields produced 4600 barrels, this year the target is 1 million barrels. Senex exceeded the half yearly target this year.

Five unconventional wells have been drilled to date. A new rig will be coming in in July, followed by a fracture stimulation campaign. Senex is trying to build critical mass, continuity of supply.

85% of Senex expenditure has been in SA in the last 12 months. Half of Senex' top 10 suppliers are Australian companies –with three being South Australian. Most key services come from SA, such as consulting engineering firms, environmental providers, freight, transport, construction, camp facility providers.

BG: Where do you see Senex being able to fit in with joint venture of joint venture operations?

SM: The entry level discussions Senex has with Beach so far is not joint contracting, more scheduling sharing. Key areas of focus are around logistic constraints - air strips, roads etc – Senex would be keen to be involved in that space to see how it can be done better. SM would not want to see the process become too prescriptive, as there is an onus on service companies to take a risk and to educate themselves on upcoming programs.

BG: What if DMITRE was to create a bulletin board for seismic and drilling schedules.

?: The major players already know what the major clients are doing.

BG: For a competitive supply chain we may want to go a step further? Is there a way to breed competition through transparency by having a government managed bulletin board?

CS: That kind of publication may not deliver the results we're looking for.

SM: It would be an interesting balance between transparency and rewarding those who put in the effort. The service companies that take the time to enquire know what is going on, those that don't bother won't know. Should the onus be on the regulator?

BG: It may not achieve much, would rather it be a commercial arrangement.

MMc: In terms of trying to bring in more competition, we're not at the volumes where we can look at bringing in a lot of people and service providers and still make it profitable for everybody. This needs to be considered.

BG: Operating companies want to see the service companies coming in, the service companies want the operating companies give clarity about what they are coming in for. What can be done to reduce uncertainty to help the decision makers in the service companies to decide earlier that it's time to mobilise? This will assist in trying to expedite the economies of scale for successful operations.



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Presentation 5

Baker Hughes

Presented by Andrew Buffin

On the asset life cycle South Australia is in the exploration phase, it seems we are about to move into appraisal phase. This is where things are going to ramp up. As an industry, we need to feel comfortable that we truly believe that we will move from exploration to appraisal and development. Is this the case?

- MP: It is a difficult question to answer because it is the operators that are taking the risk. We are moving into the appraisal stage, Beach have drilled 8 wells this year. A commitment is required from service companies to come with us.
- AB: Chevron are making the commitment, what is happening in the Cooper Basin is good enough to move into the appraisal phase.
- BG: The information that we are sure of is the rig count, and what the companies are planning on doing in the next few years is budget certain. Is there another litmus test, other than rig counts, that would help service companies in their decision making processes?
- CS: Where is the threshold line that allows a company to invest to support the industry? To get the economy of scale, you have to commit to a certain volume of work. Knowing that information helps the service companies to take the extra risk (getting additional rigs in, etc).
- TW: A rig count only tells you what's happening today, decisions need to be forward facing at least 12-20 months. What is most beneficial is to look at well projections going forward. It needs rolling dialogue.
- BG: Business will grow on basis of new deliverability.
- TW: Preparations need to start now. The key is setting up work groups to challenge ourselves, come up with specific tactics along the way on a repetitive and continual basis.
- ?: Capital commitment is substantial, but one of the biggest pieces of the puzzle is getting the human capital right, but you need a degree of certainty to do this.
- MMc: It wasn't too many years ago service companies were being told the Cooper Basin was dying. In a couple of years time after all these risks have been taken, will we be told the Basin is dying again?

??: LNG has rejuvenated the Cooper Basin.

AB: Gas production over time graph shows how the industry took off in the US after the horizontal wells began producing. There will be a revolution but we haven't seen it take off just yet.

??: A lecturer at SPE a few weeks ago used the same graph, but he made the point about having sufficient information, holes, stats to prove it is a gas producible area. We don't have this information for the Cooper Basin yet, as there are very few wells that have been drilled to get unconventional gas information.

AB: Operators are taking a lot of the lessons learnt from the US and applying them as much as possible to Shale. There appears to be commitment to go into the appraisal section, everyone is prepared to take this risk and make this jump. There is a lot of information to be collected, the cost of collecting the data should not be ignored.

AB: We need to have a favourable legislative and fiscal environment, favourable public sentiment and access to sufficient amount of water. There needs to be a commitment to get data; buy the data; to take on board a service company to help with the data acquisition.

Conclusions:

- There is a need for training, knowledge transfer and exchange programs. A need to bring expertise here to Australia and to send our young people aboard to receive training and have them return to Australia to work.
- There is a need for retention incentives to stop talent drift. Visa solutions are required to make it easier to get appropriate professions to come Australia.
- Capital investment to get an understanding of the activity levels going forward.
- Retainers to keep the appropriate expertise in SA and the Cooper Basin.
- Supply Chain – need to try and get Australian wide standards or at least a Cooper Basin zone.

??: It is important to remember that there are still risks even though we are moving towards the development phase, it's a marginal play. This is why we need to drive down capital costs, service costs because we are running a risk. On the whole we need to shoot for something that is economical.



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Presentation 7

Saxon Energy

Presented by Daniel Marcano, Country Manager

Saxon's key challenges include determining the right type of rig with enough time in advance to enable upgrades or manufacturing the drilling equipment and bringing it into the country. This is easier said than done – requires 14 to 18 month to organise, not including tendering processes. Being able to have this conversation as early as possible with the drilling contractors will allow risks to be addressed earlier.

Need to be able to justify investment, need a certain amount of work to be guaranteed to enable a good return on your investment for the first 3 or 4 years of operation.

There is a need to increase the number of skilled workers – the supply of people today is not ready to meet the future demand; this is a fact. It takes years to get people's experience and knowledge up to the appropriate levels required. The education needs to start now in order to be ready.

When a drilling company is preparing to start some rigs in Australia, there are 3 options: attract skilled/competent people from other companies; bring in resources from abroad or train and promote internally; this becomes difficult and costly once you get to a certain level.

Local people Vs expats – there are limited financial incentives to bring expats over to Australia; having a high local content is good business from every point of view. However the number of skilled local people is extremely limited today. The attrition of people means there needs to be a constant stream of experienced people to fill the positions.

Saxon have been forced to increase their international content, which mean dealing with visa issues. The length of time it takes to apply is too long.

What can be done to help?

Funding Opportunities –more funding incentives for short compliance courses (OHS and on job advance skills); funding for online resource development and training facilities; skills transfer funding and looking at investing in new projects; and literacy and numeracy support.

Rig Crew Training and Development Initiative – Involving Government, operators and drilling contractors to help increase the supply of people to meet the demand that is coming. Government

sponsored people put on rigs to do on the job training. This will increase pool of people with some minimum training.

DM: It is unlikely that rigs will be manufactured in Australia because it is not cost effective.

AB: Would Saxon really be willing to train government sponsored people on their rigs?

DM: Yes, but the problem with doing this in the Cooper Basin is the accommodation issues; travelling costs etc. If Governments and operators are willing to work together to increase the amount of accommodation on the rigs and make it easier for people to move back and forth then Saxon could train people on their rigs – basic rig skills.

CS: Santos provide a similar model of training already. A range of consultative suppliers in Adelaide provide course work; students then mirror the operators out in the field. Santos provides the accommodation and on costs. They are not paid employees as such, but they earn a Certificate III or IV.

BG: Good Idea to progress further.

AB: Santos have a TAFE facility at O'Halloran Hill for operations – surface equipment/well heads/generators/compressors/ ex-cooper kit – for people to work on and learn about before they go out into the field. The TAFE is being shut down, so this facility will need to be moved. This is where the Tonsely Park redevelopment idea comes in – create a Centre of Excellence, aggregating service companies around a location with training on the periphery.

BG: Paul Goiak (PG) and Megan Antcliff from DMITRE are working on this idea, in close contact with Santos.

PG: The Federal Manufacturing and Innovation Policy Statement came out a few weeks ago, attached to that is some funding that could be attributed to precincts. Part of the work DMITRE are doing is trying to work out how to combine State and Federal funding to make this work and maximise it. What DMITRE will need relative quickly is to develop a high level picture of what the Centre of Excellence will look like so we can articulate this in our submission – need to be able to show that we have a clear picture of how it will work.

BG: Co-location / training will be one of the focus groups that will be developed as a result of this meeting.