

Submission to DoIR on Recommendations for Well and Borehole Naming

**From the FESWA Data Standards and Best Practices Group
21-Jun-2007**

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Summary

The FESWA Data Standards and Best Practices Group was invited to comment on the DoIR well naming draft recommendations (attached as Appendix 1). The DoIR recommendations were also sent to the other state Geological Survey offices and Geoscience Australia for comment.

The FESWA recommendations outlined below were assembled from the DoIR draft recommendations and through discussions with representatives from companies operating in Western Australia. The DoIR draft recommendations and the FESWA recommendations are summarised in Table1 (and Appendix 2).

Type	Hole Section Type	DoIR Draft Recommendations	FESWA Committee - Recommendations	Comments
1	Planned wells	N/A	ALPHA-A, ALPHA-B etc	Planned Locations without any numbers
2	Pilot Holes	ALPHA 1 PILOT	ALPHA-1PILOT	Spell Pilot to avoid any doubt
3	Re Spuds	ALPHA 1A	ALPHA-1A	Accepted Practice for naming
4	Sidetracks	ALPHA 1ST1	ALPHA-1ST1	Accepted Practice for naming
5	Horizontal	ALPHA 1H	ALPHA-1H	Accepted Practice for naming
6	Lateral	ALPHA 1L1	ALPHA-1L1	Accepted Practice for naming
7	Post drilling coring	ALPHA 1CH1	ALPHA-1ST1	This is a special case of a sidetrack - no need for a different suffix
8	Borehole corrections	ALPHA 1BHC1	ALPHA-1ST1	This is a special case of a sidetrack - no need for a different suffix
9	Duplicate Well Name	N/A	National UWI System	For further discussion
10	Development Well	ALPHA 1 (no specific requirement)	ALPHA-1, ALPHA-2, ALPHA-3 etc	Full name avoids any confusion. Typically named after the well slot - an attribute not required in well name
11	Manifold	ALPHA 1 (no specific requirement)	ALPHA-1, ALPHA-2, ALPHA-3 etc	Use full name. Manifold is an attribute that can change with time
12	Multiple Exploration Targets from same well	ALPHA 1, ALPHA 2	ALPHA-1X1, ALPHA-1X2 ALPHA-1X3 etc	If drilled from same surface location using same wellhead, then different targets named as X1, X2 etc
13	Deeping to a new target	ALPHA 2 (new well name required) or ALPHA 1 DEEPENING	ALPHA-1ST1	This is a special case of a sidetrack - no need for a different suffix or different wellname

Table1: Summary of DoIR and FESWA Recommendations

The over-riding principle for the FESWA submission was to keep the well naming process simple and, as much as possible, in line with current and accepted practice.

Accordingly, the rules applied were:

- To put a dash between the well name and the number, but no dash or space between the number and an eventual suffix. For example: Alpha-1, Alpha-2 or Alpha-1ST1. The use of a dash rather than a

space is a constraint of unix-based software used by many operators in Australia, and is also common practice.

- Two different wellbores (holes/drains), with a common wellhead, require the use of a single well name (to indicate one well) but with a different suffix (to indicate different wellbores). For example Alpha-1 versus Alpha-1ST1.
- A well name or its suffix should contain no concept of purpose or intention (eg “injection”). For example a well may begin life as a producer (eg Alpha-1) but may be converted some years later into a water injector or water disposal well (still called Alpha -1)

Discussion

For the most part FESWA supports the DoIR draft.

In Table 1, Types 1- 6 are already in common use and are generally accepted within industry and by the DoIR.

In the DoIR proposal, Type 7 in Table 1, the DoIR propose a “-CH1” suffix for a well that is side-tracked for the purpose of coring. In line with the key FESWA principles, this is a sidetrack specifically undertaken for coring and as such no purpose should be attached to the well name, that is, the suffix should be “-ST1”.

The same reasoning applies to Type 8 in Table 1 where the DoIR propose the suffix “-BHC1” where a well is sidetracked to correct for a borehole in the wrong place or to bypass stuck pipe. Again this is a sidetrack to which no purpose should be attached to the well name, that is, the suffix should be “-ST1”.

The issue of duplicate well names (Type 9 in Table1) at both state and national levels can be dealt with by adopting a national Unique Well Identification number (UWI). This is a topic that is not covered by this submission but nevertheless needs addressing as soon as possible as the debate and action on a national UWI system is long overdue.

Types 10 and 11 in Table 1, apply to a development scenario utilising an offshore platform where some operators are shortening the well name (ALPHA-1) to the first 3 letters (ALP01) and using the 01, 02 in the name to indicate the slot from which the well was drilled. This nomenclature is to some extent specifying the purpose of the well and as such should not have any specific purpose attached to the suffix or any modification to the well name. The well naming should be the well name in full with a sequential well number (ALPHA-1, ALPHA-2 etc). A similar argument applies to the way in which the

wells are connected to a manifold. No purpose should be attached to the well name.

In Type 12 of Table 1, where multiple targets are tested from the same well (typically from the same surface location), FESWA suggests that the suffix incorporates the different targets as X1, X2, X3 etc (as in "X" marks the spot). Therefore a well targeting an upthrown and downthrown fault target as two different pools, from the same surface location, would be named ALPA-1X1 and ALPHA-1X2. This is a special case of a sidetrack situation but is differentiated from a sidetrack in that two or more quite separate hydrocarbon pools are targeted by specific wells which happen to be drilled from the same well location. In the past these wells might have had different names (ALPHA-1 and BETA-1) or be named as sequential wells (ALPHA-1 and ALPHA-2).

In the case of deepening of a well, Type 13 in Table 1), FESWA suggests that this is a special case of a sidetrack and that the suffix should be "-ST1".

Conclusion

FESWA commends the DoIR for initiating the well naming review and supports the push for a national system that incorporates a consistent approach to well and borehole naming. FESWA believes that the recommendations given in the present submission will lead to a relatively simple system that is by and large in common use and will require little effort to be implemented nationally.

Appendix 1:

Western Australia

Department of Industry and Resources

Draft Recommendations on Well Naming Conventions

Well Naming Conventions

The purpose of this document is to cover as many possible permutations in the drilling of a well and to provide industry with guidelines as to the naming convention approved by the Department of Industry and Resources (DoIR).

The current overarching rule for well names is:

No well name in Western Australia or the Australian Commonwealth Adjacent areas will be duplicated. Similarly, well names used in significant oil fields elsewhere in onshore Australia will not be used in Western Australia.

Definitions:

For the purpose of this document, the following definitions are used:

Borehole correction – a drilling effort in which an additional hole is drilled by leaving a previously drilled hole at some depth below the surface and above total depth due to missing the intended target due to geological or some other problem not including junk in the hole. A whipstock or cement plug is set in the previously drilled hole which is the starting point for the borehole correction operations.

Core hole – this wellbore is drilled after completion of the main wellbore for the purpose of cutting a conventional core between the surface and total depth of the main wellbore.

Deepening – a well drilled from the base of a previously drilled well for the purpose of reaching a new objective.

Horizontal well – a well with a wellbore whose angle of deviation is 75 degrees or greater for more than four consecutive directional survey points.

Laterals – a wellbore sharing a common wellbore at surface with other lateral wellbores for producing underground resources or providing services related to the production of underground resources.

Multilateral well – a well with two or more wellbores, usually but not necessarily drilled and completed horizontally or highly directionally, sharing a common surface casing.

Pilot hole – a vertical wellbore drilled to determine stratigraphic or true vertical location of the target prior to drilling a more steeply deviated (usually horizontal) wellbore.

Re-spud - a remedial drilling effort in which a new surface wellbore is drilled due to the original wellbore being “lost” due to junk (i.e. lost tools, pipe or other material blocking the hole).

Sidetrack – a remedial drilling effort in which portions of a wellbore are redrilled around junk (i.e. lost tools, pipe or other material blocking the hole), “lost holes” are redrilled, or “key seats” or “crooked holes” are straightened. Also known as “mechanical sidetrack” or “bypass”.

Wellbore/borehole – a unique, oriented hole from the bottom of a drilled interval to the surface. If more than one path exists from a surface location to bottom hole point(s), then more than one wellbore exists.

Well – one or more wellbores drilled into the Earth to a specific target for the purpose of either finding or producing underground resources or providing services related to the production of underground resources. The Department does not regard a new hole as a well until the conductor casing is set and drilling commences from the casing point.

Nomenclature

The table below provides a list of naming conventions for the various types of wellbores as defined previously

Hole section Type	Naming	Example
Pilot holes	Name of well + “pilot”	Asparagus 1 Pilot
Sidetrack	Name of well + “ST” + sidetrack number	Asparagus 1 ST1
Re spuds	Name of well with sequential alphabetical letter after well name	Asparagus 1A
Horizontal	Name of well + “H”	Asparagus 1H
Laterals	Name of well + “L” + sequence number	Asparagus 1 L1
Post drilling core holes	Name of well + “CH” + sequence number	Asparagus 1 CH1
Borehole corrections	Name of well + “BHC” + sequence number	Asparagus 1 BHC1
Well drilling to a new target location within a defined structure i.e. (Appraisal)	New well name	Asparagus 2
Deepening a well to a new target	New well name though usually it is the old well name with “Deepening” as a suffix.	Asparagus 3 or Asparagus 1 Deepening

Databases

DoIR databases store information on all the wellbores drilled to complete a well. Each wellbore is assigned a unique well index (UWI) that is generated by the database and used to link “child” tables to the main table. Similarly all

wellbores associated with a well are linked through a "PARENT_UWI" field in the table. All names of the wellbores are stored in a "well alias" table. Finally, if known, the wellbores are linked to the Geoscience Australia (GA) well database using the "GOVT_ASSIGNED_NO" field in the parent table. This field corresponds to GA's "ENO" field.

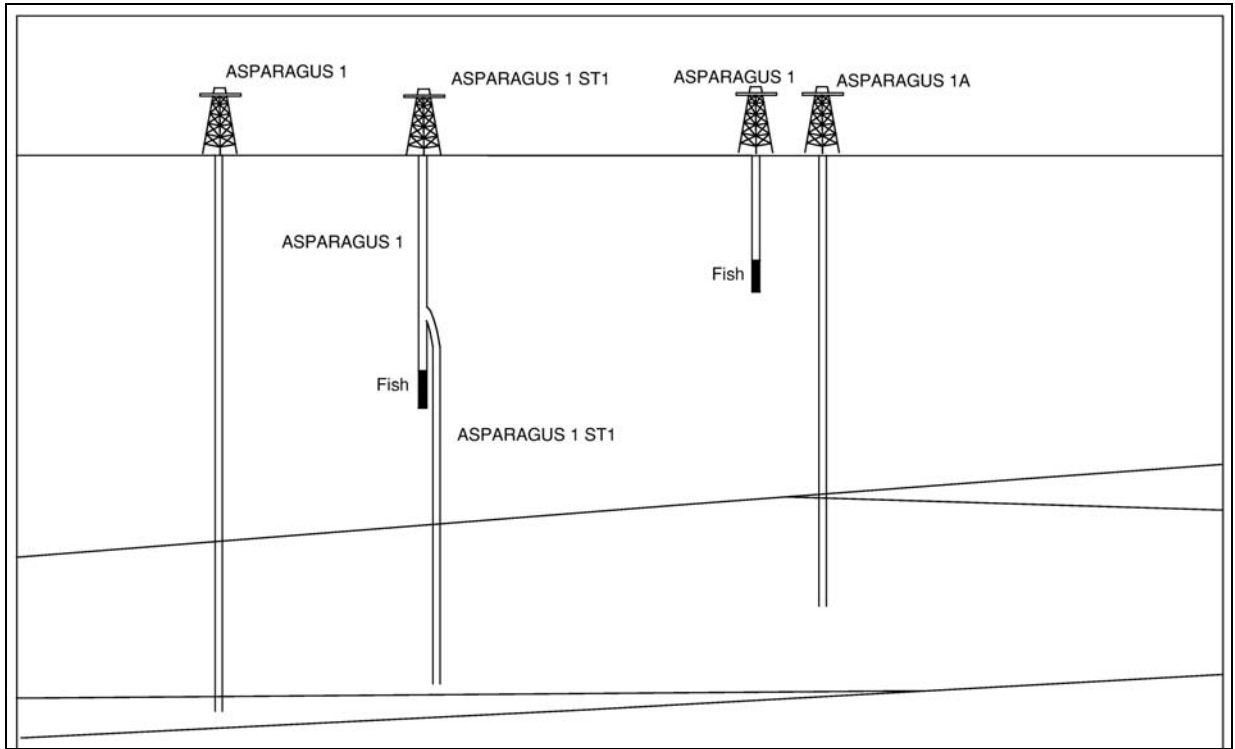


Figure 1: Examples of labelling sidetracks and re-spuds

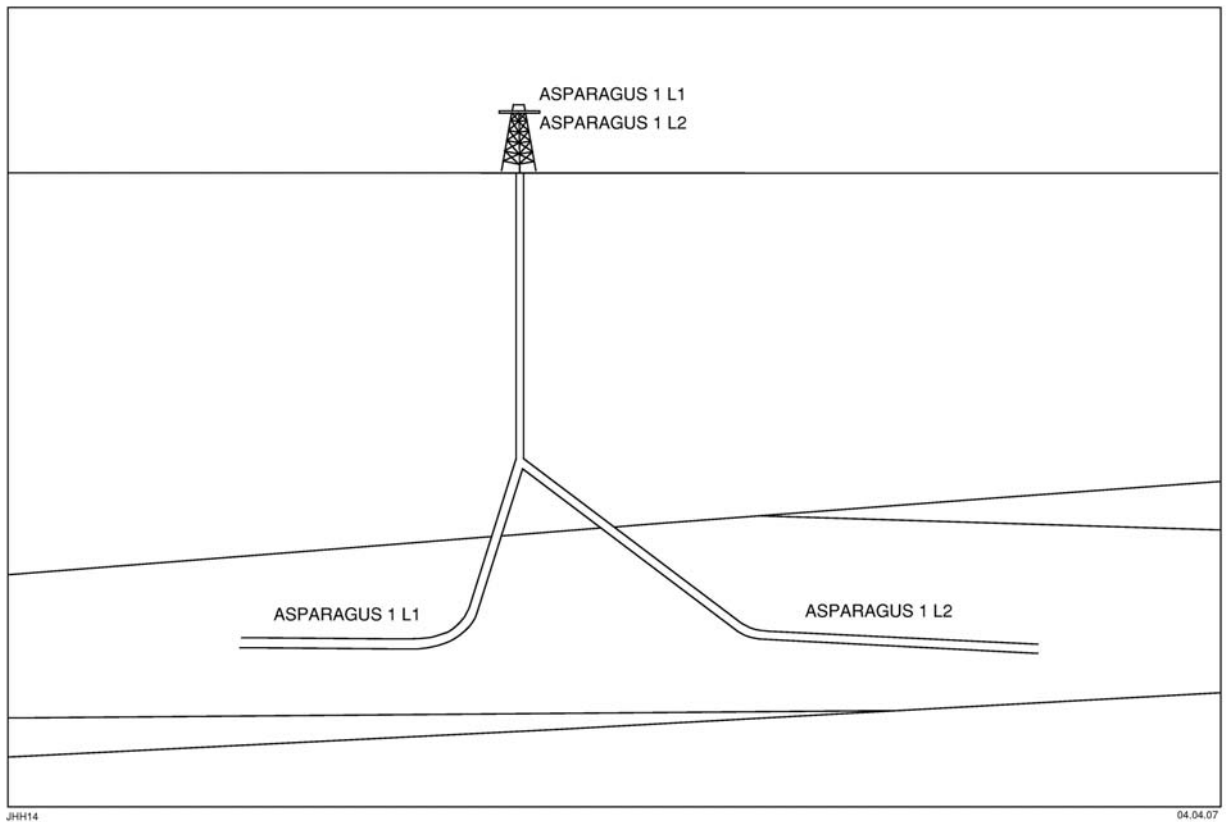
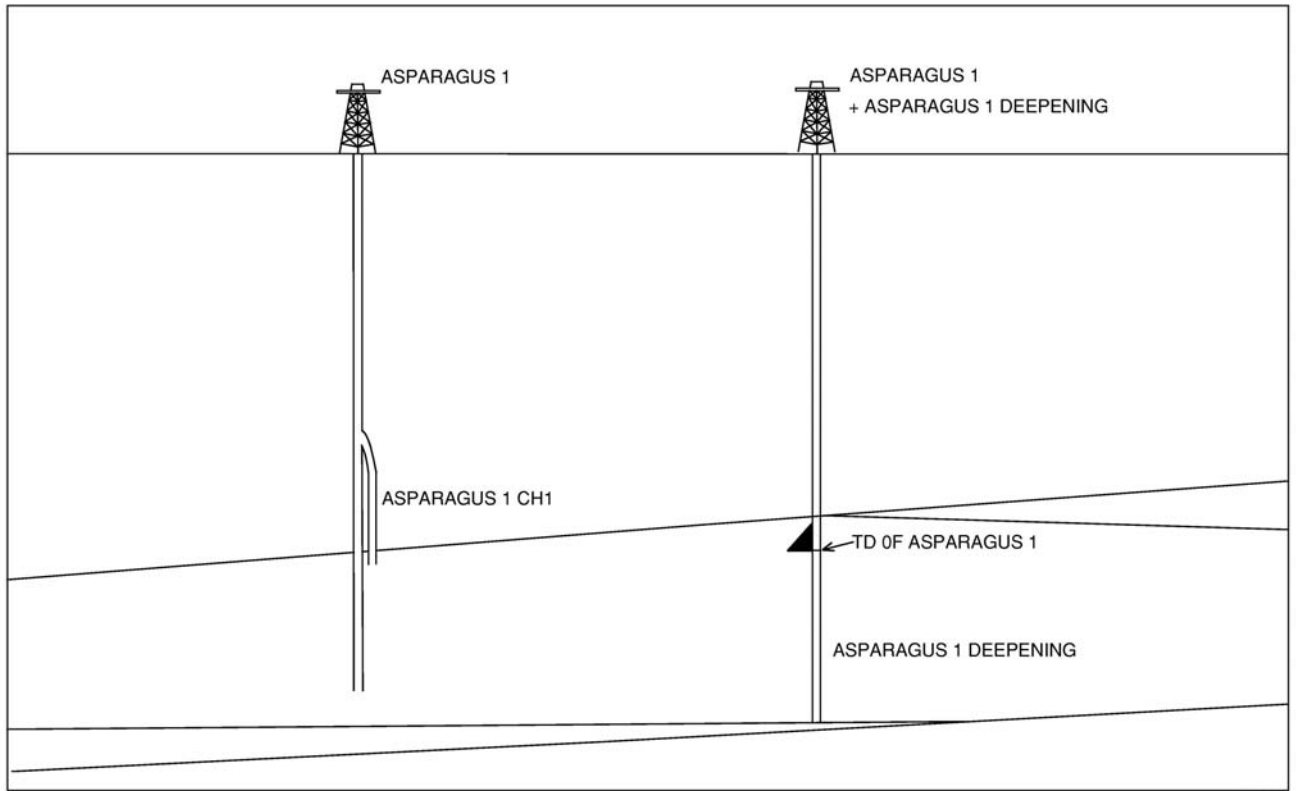


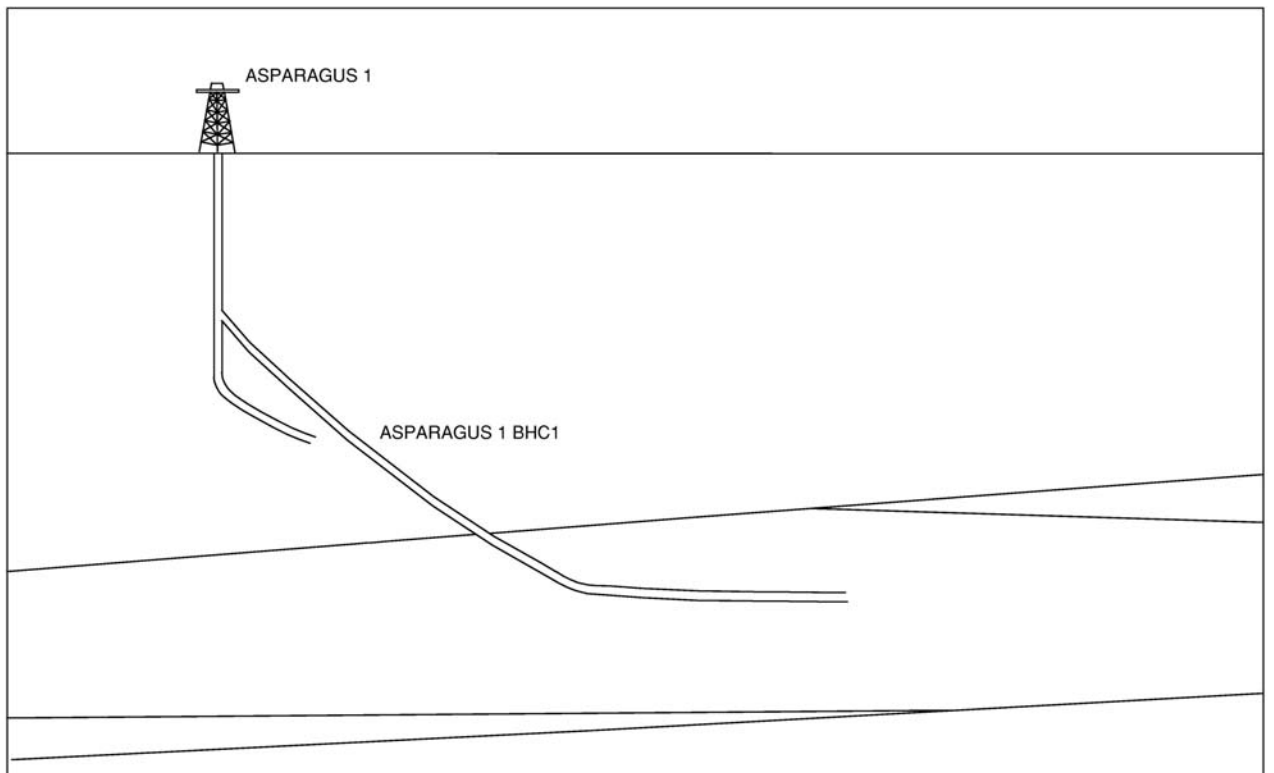
Figure 2: Example of labelling laterals



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Figure 3: Examples of labelling coreholes and deepenings



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Figure 4: Example of labelling borehole corrections

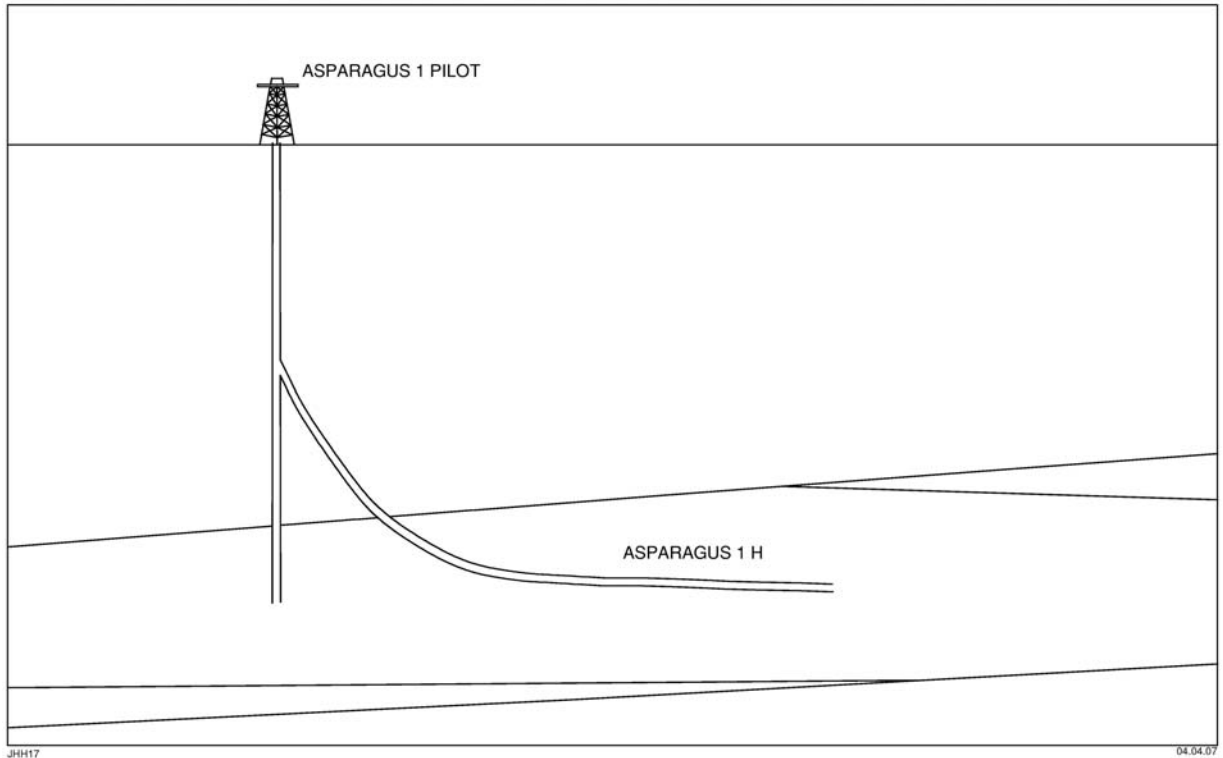


Figure 5: Example of labelling pilot and horizontal wells

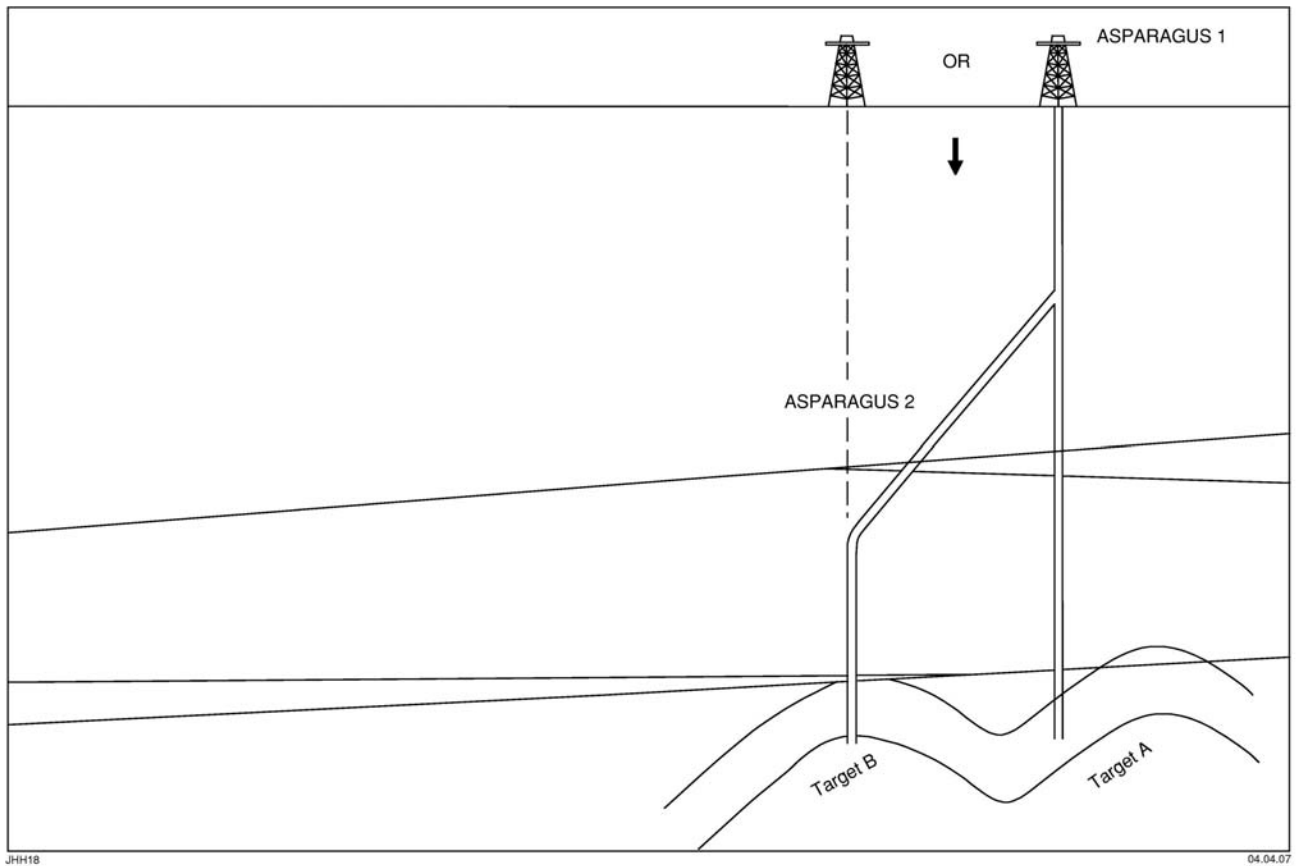


Figure 6: Example of labelling new hole kicked off an existing well

Appendix 2:

Summary of DoIR draft recommendations and the FESWA recommendation

Type	Hole Section Type	DoIR Draft Recommendations	FESWA Committee - Recommendations	Comments
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