

UK Southern North Sea licences P2300, P2329 & P2427



Opportunity Summary

Licences P2300, P2329 & P2427 were awarded to groups variously comprising Ardent Oil, Simwell Resources, Comtrack and Horizon Energy Partners in the 28th, 29th And 30th rounds of UKCS Licensing. A highly prospective Upper Permian Zechstein ('Z2') play fairway has been recognised within the acreage, and a total of 12 leads have been mapped on 2D seismic data. They are part structural and part stratigraphic traps, with reservoir objectives in Hauptdolomite carbonate buildups deposited in high energy shoals / barriers or reefal facies. The play has broad similarities with established analogues further east in Poland and Germany. Most likely prospective resources (recoverable gas) for a typical lead are 165 bcf with combined numbers for all 12 leads totaling nearly 2TCF. Important secondary objectives also exist in Carboniferous sandstones, productive from the 500 bcf Breagh Field, some 50-80 kms southwest. The initial work programme consists of database consolidation and reprocessing, to be followed in year 3 (or earlier if elected) by 250 square kms of 3D seismic.



Technical Information

Database. The seismic database in the area consists of the OGA MNSH WesternGeco 2D dataset(10,849 kms) along with further reprocessed legacy 2D data. A total of 23 wells were used in the technical analyses. 3D is planned for the area in early 2019.

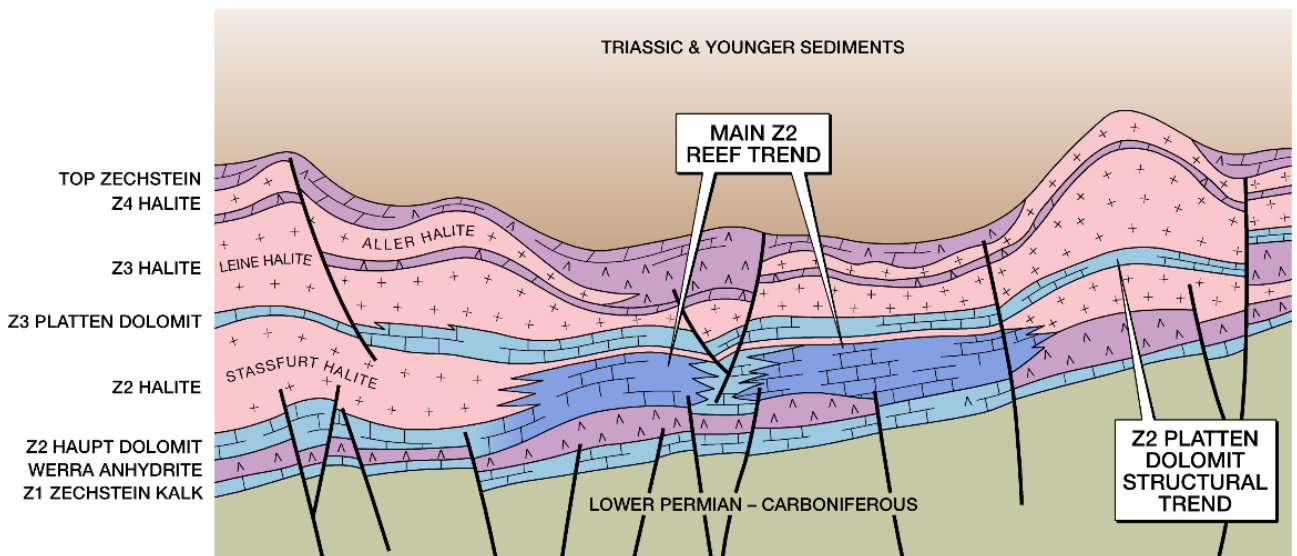
Reservoir. The Zechstein platform margin play has been explored with success elsewhere in Europe but to date has seen little focus in the UK due to lack of good legacy seismic data and a focus on Carboniferous & Rotliegend targets. However, Zechstein carbonates have been encountered in several UK wells in the area and several have flowed hydrocarbons from intervals 40-60m thick. Porosities of 6-20% have been recorded and permeabilities greater than 10mD can occur at porosities of more than 8%. Fracture enhanced porosity is also likely.

Seals. The Stassfurt halite of the Z2 cycle provides topseal for the Hauptdolomite leads. This would also provide the postulated lateral seal against the margins of the carbonate buildups.

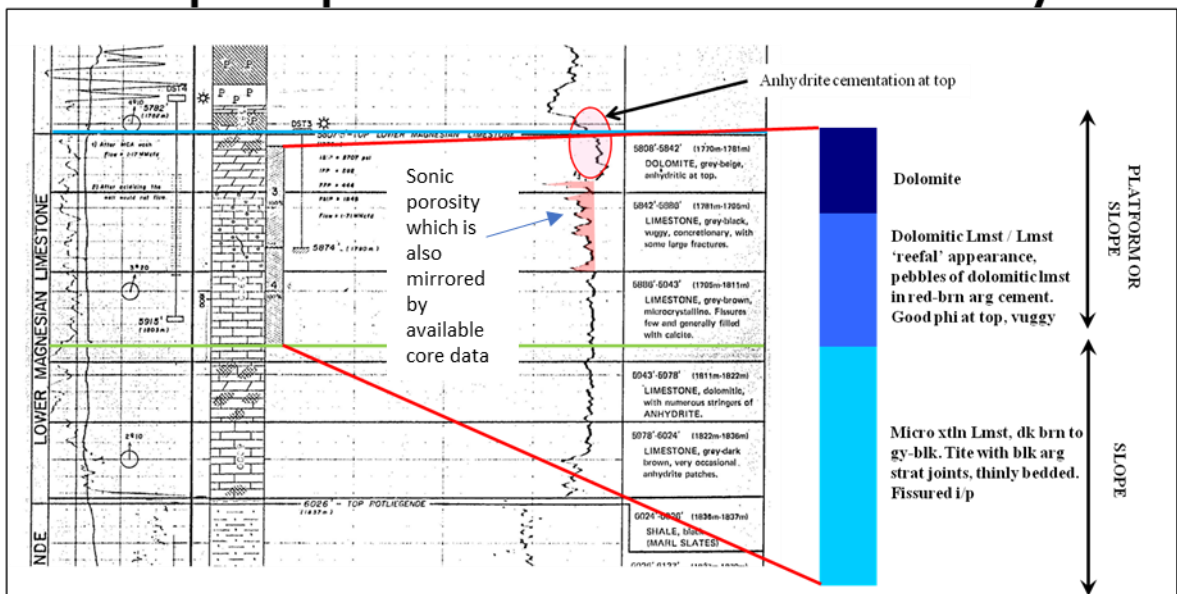
Source. Dinantian or early Namurian deep marine shales are the most likely sources of gas (or even maybe oil) in this fairway, and are the main targets of recent UK onshore exploration. The younger Westphalian source rocks are present too far south for effective migration. However, the large Breagh gasfield nearby probably has a Dinantian source, and Dinantian rocks are known to source the UK Onshore Errington Field and probably also the Lockton gas field in the Cleveland Basin.

Trap. The leads are a combination of structural and stratigraphic trapping, and the play fairway can be readily identified on isopach maps of the Z2 Zechstein interval. Structural noses are trapped by lateral seals of Stassfurt halite, which also provides the topseal. Depths to the top of the Hauptdolomite in the licence are typically around 2100 to 2300m subsea.

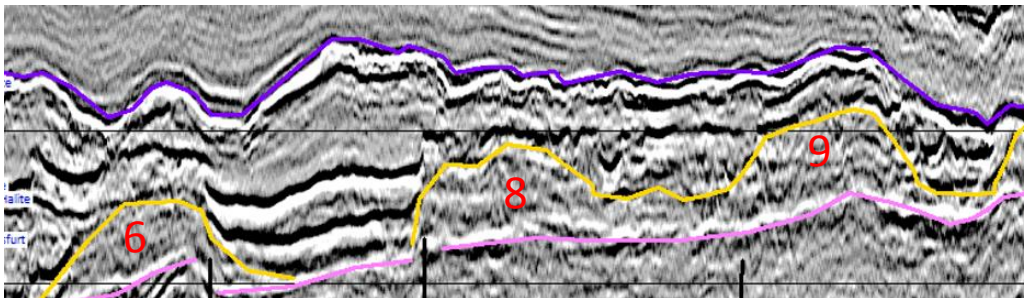
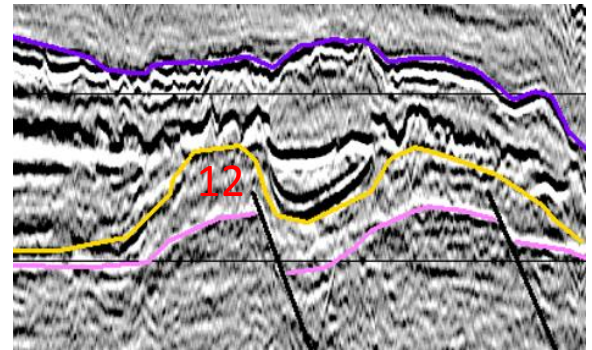
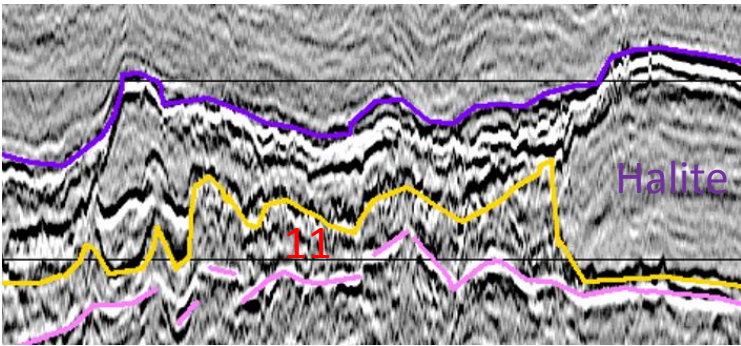
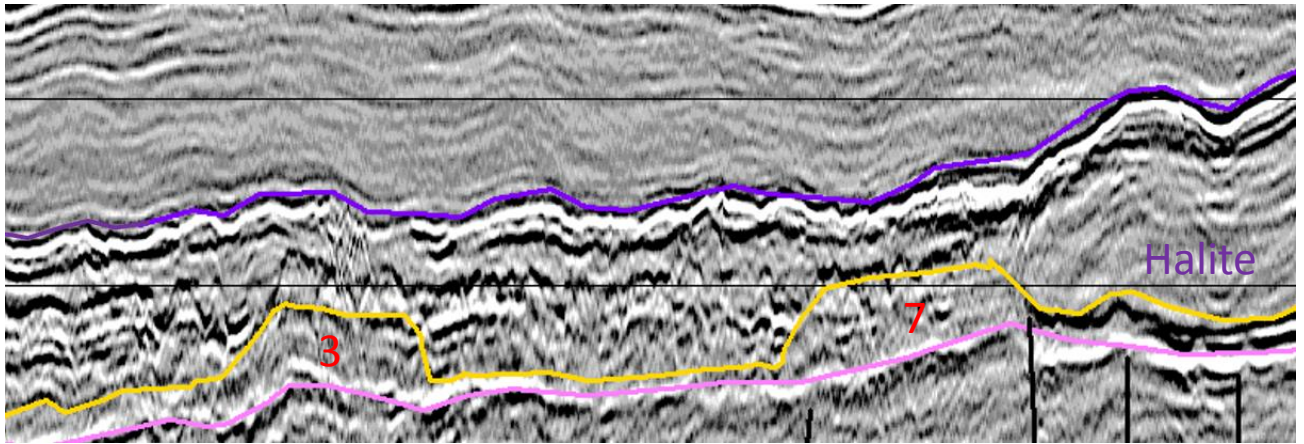
Licences P2329, P2300, P2427: Geoseismic section



Example of potential reservoir facies in nearby well



Zechstein leads: seismic examples



Key
 Top Zechstein
 Top Z2 reservoir
 Base Zechstein

Zechstein leads Prospective resources

GAS Prospect	all bcf recoverable blocks	Total Prospect		
		minimum	most likely	maximum
ZH1	37/26	30	153	511
ZH2	37/26 + 37/27	3	15	50
ZH3	37/27	19	97	323
ZH4	37/27	39	198	661
ZH5	37/27 + 37/28b	13	68	226
ZH6	37/28a + b	9	47	157
ZH7	37/28a + b + 37/23 (part)	25	127	426
ZH8	37/29a	21	104	349
ZH9	37/29b	12	63	209
ZH11	37/21 + 37/22 (part) + 37/26	136	687	2297
ZH12	36/24 + 36/25	39	195	650
ZH14	36/24 + 36/25 + 37/21 + 36/26	136	687	2297
	TOTALS	391	1978	6611

Licence details

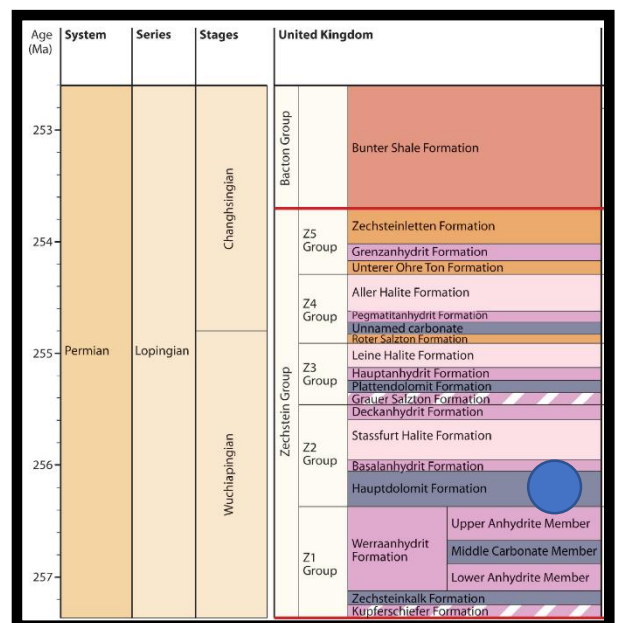
Licence	Round	Current licence type	Award date	Key dates	Comments
P2300	28th	Promote ('traditional phase')	01.09.15	31.03.18	3D or drop decision point
P2329	29th	Innovate (7 year term)	15.05.17	15.05.19	3D or drop decision point
P2427	30th	Innovate (7 year term)	01.09.18	01.09.20	3D or drop decision point

Licence	Area (sq. kms)	Block / Part Blocks
P2427	149	43/2a
P2300	475	37/26,37/27
P2329	1232	36/24, 36/25, 37/21, 37/22a, 37/23a, 37/28b, 37/29b

Licence interests

Current licence interests are Simwell Resources (40%), Ardent Oil (25%), Horizon Energy Partners (25%) and Comtrack (10%).

Zechstein Stratigraphy



Risks

The 'generic' risk for the leads as currently identified is 1 in 7.1. The main risk factor relates to reservoir performance and also trap integrity, given the currently licenced 2D seismic dataset. New 3D data are probably needed to reduce these risks significantly pre-drill.