



COAL MINE METHANE BOREHOLES

CLIENT NAME:

ALKANE ENERGY

DESCRIPTION OF THE WORKS:

ALKANE ENERGY DRILLS INTO DISUSED NON-FLOODED MINE WORKINGS TO EXTRACT COAL MINE METHANE, USED TO POWER GENERATORS WHICH FEED ELECTRICITY INTO THE GRID. THE BOREHOLE CONSTRUCTION WORKS ARE TYPICALLY COMPLICATED BECAUSE DRILLING MUST BE GUIDED TO PENETRATE A KNOWN ROADWAY IN THE MINE WHICH IS ONLY A FEW METRES WIDE AND MAY BE IN EXCESS OF 500MTR DEEP.

THIS TARGET ZONE IS USUALLY BENEATH A BUILDING OR CONSTRUCTION AND THE BOREHOLE LOCATION CAN BE 50-100 MTR AWAY VERTICALLY. WORKS MUST THUS BE CARRIED OUT TO STRICT HEALTH AND SAFETY GUIDELINES AS PRESSURISED GAS WILL BE ENCOUNTERED. WELLHEAD CONTROL IS NEEDED TO MANAGE ANY GAS EMISSIONS.



DRILCORP

HOW THE WORK WAS CARRIED OUT:

A ROTARY TOP DRIVE DRILLING RIG WITH DIRECT CIRCULATION MUD FLUSH WAS CHOSEN TO BE USED FOR THIS PROJECT. AS IS TYPICAL, THE BOREHOLE DESIGN WAS SPECIFIED BY THE CLIENT IN LIAISON WITH THE ENVIRONMENT AGENCY AND COAL AUTHORITY. THE SUPERFICIAL DEPOSITS WERE CASED OFF WITH A HEAVY DUTY MILD STEEL CASING, THE ANNULUS WAS FULLY GROUTED AND PRESSURE WAS TESTED TO ENSURE CONTROL OF ANY GAS EMISSIONS WHEN THE WELLHEAD CONTROL IS FITTED.

THE BOREHOLE WAS ADVANCED TO THE BASE OF ALL THE WATER AQUIFERS WHICH WERE THEN CASED OFF ACCORDING TO ENVIRONMENT AGENCY REQUIREMENTS IN ORDER TO AVOID CROSS CONTAMINATION. ONCE THIS HAD BEEN CAREFULLY PERFORMED, THE BOREHOLE WAS THEN ADVANCED USING A GUIDANCE SYSTEM TO 20MTR ABOVE THE TARGET SEAM. A THIRD CASING WAS INSTALLED TO THIS DEPTH AND THE ANNULUS FULLY GROUTED. DRILLING WAS THEN ADVANCED SUCCESSFULLY PENETRATING THE TARGET ROADWAY. THE COMPLETED BOREHOLE WAS THEN HANDED OVER TO THE CLIENT TO INSTALL HIS VACUUM PUMP AND COMMENCE EXTRACTING GAS.

SPECIALIST CONTRACTORS FROM THE OIL INDUSTRY GUIDED THE DRILL BIT GRADUALLY TOWARD THE TARGET AND MORE CASING WAS INSTALLED AND ANNULUS FULLY GROUTED. DRILLING WAS SUBSEQUENTLY ADVANCED INTO THE TARGET ROADWAY.

ON COMPLETING THESE PRELIMINARY PROCEDURES, THE CLIENT WAS ABLE TO ASSUME CHARGE OVER THE BOREHOLE AND A VACUUM APPARATUS WAS FITTED TO EXTRACT THE GAS.

TO DATE **DRILCORP** HAS DRILLED TEN OF THESE TARGETED BOREHOLES AND HAD 100% SUCCESS ON HITTING THE TARGET.

