

**Apex Energy**

**Supplementary Information**

# **Illawarra Coal Seam Gas Exploration Drilling and Gas Monitoring Program**

**Prepared by Olsen Consulting Group  
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## 1. Introduction.

Following Government Agency and Community responses to the Environmental Assessment, Apex Energy reviewed the proposal including the location of Boreholes AI05 and AI10.

This document describes the outcome of that review, which involved relocating the two boreholes. An environmental assessment of the proposed relocation of these two holes is included.

**Figure 1** shows the location of all 15 boreholes proposed for the entire exploration and monitoring program, including the proposed new locations of Borehole AI05 and Borehole AI10.

**Figure 2** is a Goggle Earth diagram showing the original location of AI05 and the proposed new location on the Rural Fire Services/Darkes Forest Community Hall site adjacent to Darkes Forest Road.

**Figure 3** is a photograph of the site taken from Drakes Forest Road. The site is located toward the back of the cleared land. None of the large trees will be removed to install the drilling equipment.

**Figure 4** is also a Goggle Earth diagram showing the proposed new location of AI10. This borehole has been moved only a small distance (approximately 40 m), however, it is relocated off Upland Swamp vegetation community.

**Figure 5** shows more detail of the original and new site for AI10.

## 2. Borehole AI05.

The National Parks and Wildlife Service (DECC) expressed concern about the original location of this borehole. The originally proposed site was an old gravel quarry that is in the process of rehabilitation including the provision of suitable habitat for frog species.

Apex has relocated AI05 onto Crown Land adjacent to the Darkes Forest Rural Fire Station and the Drakes Forest Community Hall. The site was inspected during the original site inspections undertaken between 3<sup>rd</sup> and 5<sup>th</sup> September 2008 and was re-inspected on 4<sup>th</sup> June 2009.

This site is cleared of native vegetation and supports mown grass. The new site eliminates the need to clear native vegetation.

The site slopes at about 5 degrees to the south away from Darkes Forest Road. It is proposed to install suitable erosion and sediment control measures as described in the original Environmental Assessment.

There were no Aboriginal sites identified on this site.

Traffic entry and exit points onto Darkes Forest Road already exist and require no special traffic management procedures.

**Figure 2** shows three residences near the proposed new site. These are located 140 m to the northwest (304 Darkes Forest Road), 152 m northeast (311 Darkes Forest Road) and 230 m (313 Darkes Forest Road).

Apex will implement the following noise abatement measures to manage potential acoustic impact at these residences.

- Rotary drilling equipment, which is less noisy than hammer drilling equipment, will be used. The original noise assessment modelled impacts using hammer drilling equipment.
- Noise screens will be installed from the commencement of drilling. **Figure 6** shows the acoustic screen currently used by the contract driller. Apex will install a series of these screens to provide effective screening for the drill rig.
- Apex will implement appropriate Best Management Practice (BMP) and Best Availability Technology Economically Achievable (BATEA) practices when drilling at the new AI05 location. These practices are fully described in the Environmental Assessment in Section 4.6.3.
- Apex will attempt to negotiate agreements with affected residents should the barriers not enable the noise criteria to be met. The relevant noise criteria are described in the Environmental Assessment Section 4.6.2.
- Appropriate monitoring would be undertaken during drilling operations to confirm that the criteria are being achieved. This will include a combination of operator-attended and real-time noise monitoring. Should this monitoring demonstrate non-compliance, Apex would undertake investigations and planned actions to ameliorate the non-compliance.
- Should these approaches not resolve any acoustic issues satisfactorily, drilling would be limited to those times of day when criteria are met after implementation of amelioration measures.

### 3. Borehole AI10

The original location for AI10 impacted a section of the Upland Swamp vegetation community. A number of submissions requested that disturbance to this community should be avoided or minimised.

The area around the original location of AI10 was inspected on 2<sup>nd</sup> June 2009 by a representative from Apex, an Ecologist, an Archaeologist and a water/erosion control expert.

During the inspection, Apex decided to relocate AI10 approximately 40m south southwest of the original location. The new location is on the southern side of a fire track and is located on an area of land that does not support Upland Swamp vegetation. The original and new locations of Borehole AI10 are shown on **Figures 4 and 5**.

Appropriate erosion and sediment control structures can be installed at the new site and no Upland Swamp vegetation will be cleared during the proposed drilling.

There were no flora and fauna species or communities identified that would preclude development of the new site for gas drilling and monitoring.

No Archaeological material was identified at the new location.

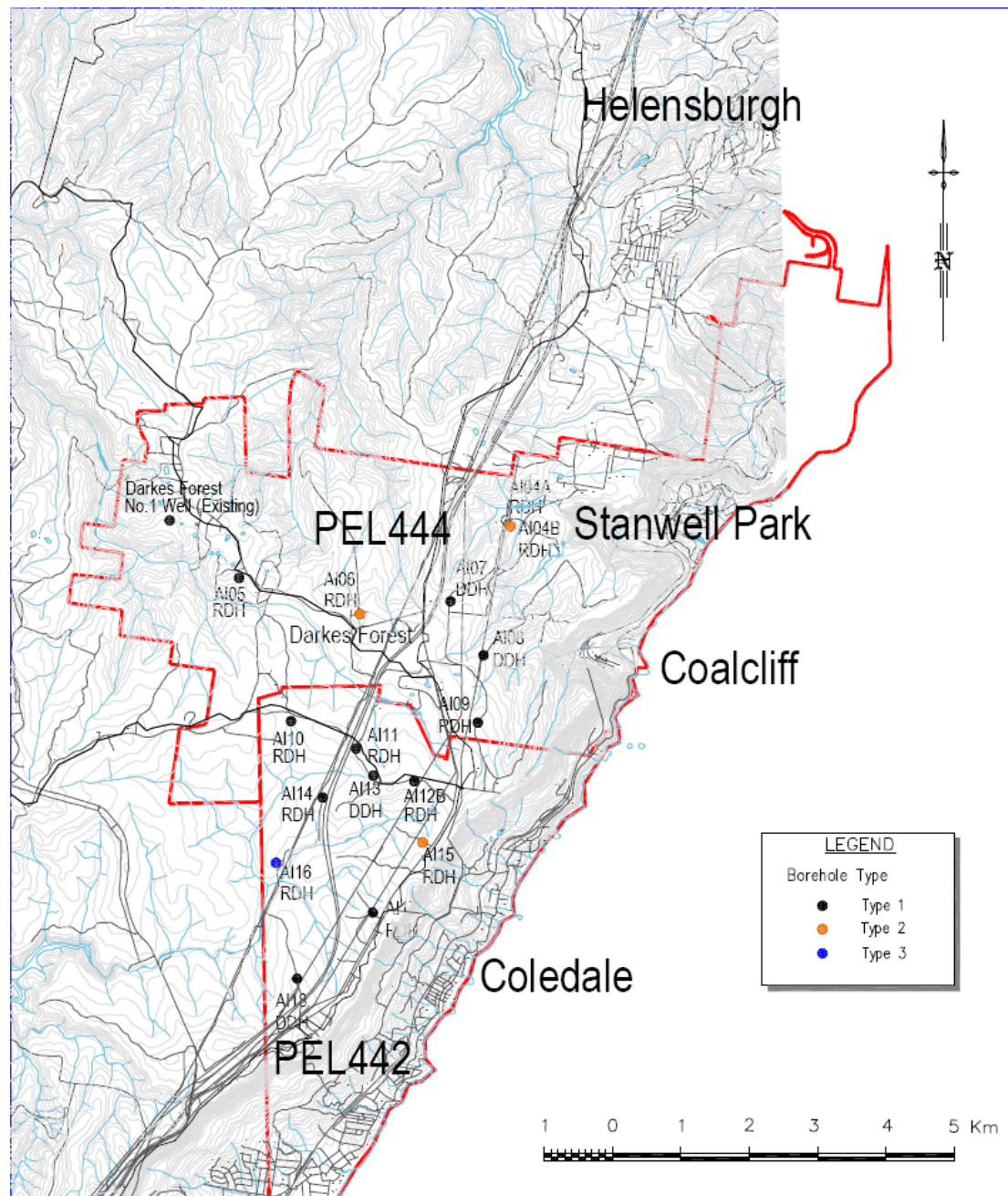


Figure 1. Borehole Locations



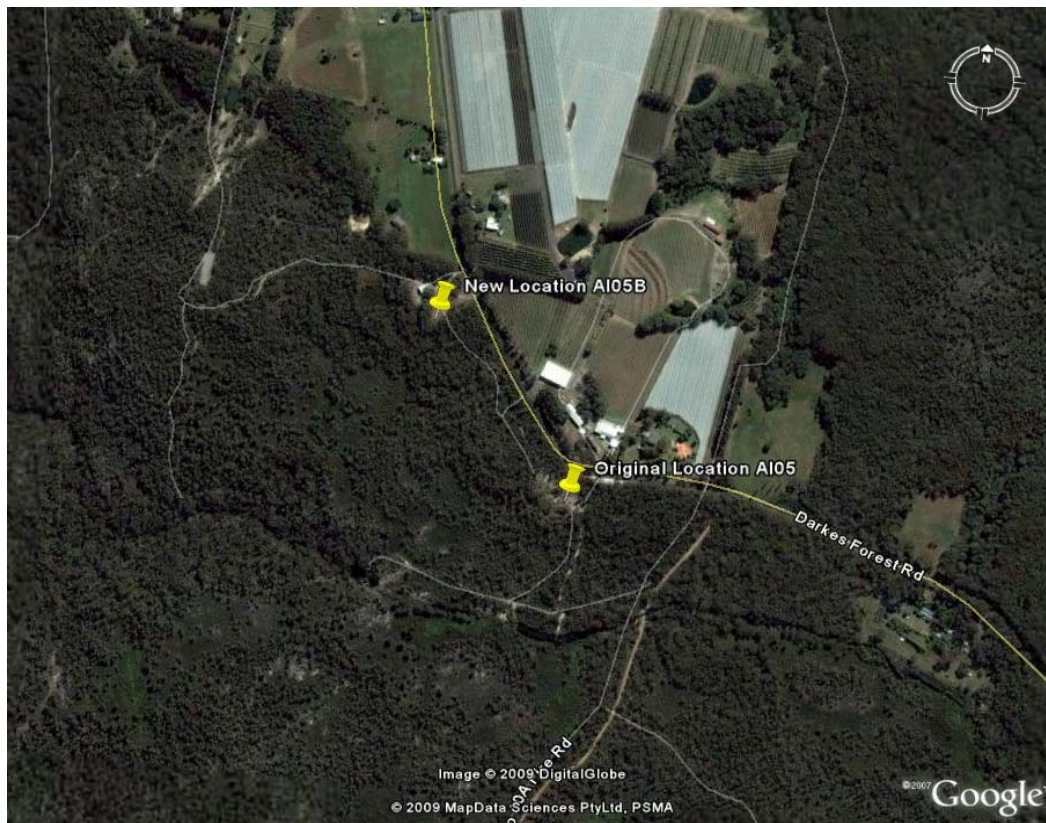


Figure 2. Original and New Location for AI05.



Figure 3. Photograph of New Site for AI05.

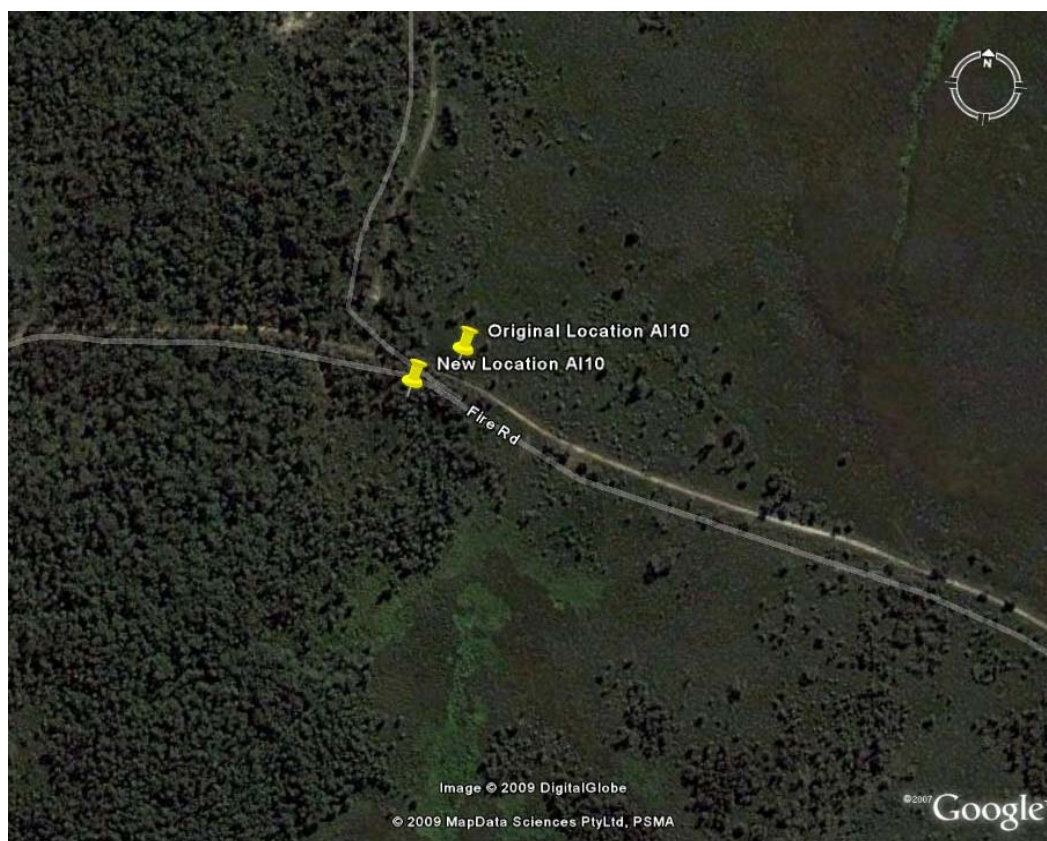


Figure 4. Original and New Location Borehole AI10

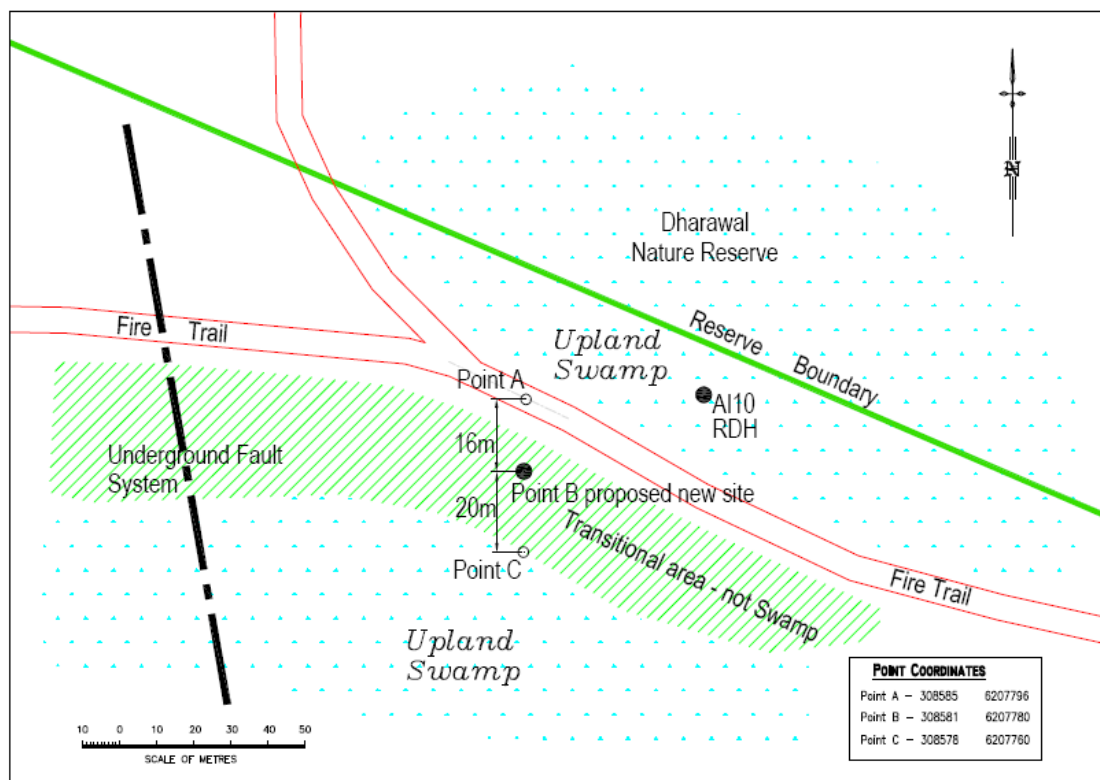


Figure 5. Detail of New Location of Borehole AI10





**Figure 6. Section of Acoustic Screen.**

**Note:** Apex will install a series of these screens to ensure appropriate acoustic management.

#### **4. Conclusions**

In response to submissions received in relation to the Environmental Assessment, Apex has reviewed the location of 2 of the proposed 15 gas exploration boreholes (AI05 and AI10). Apex has decided to relocate these boreholes as described in this report identified in the original Environmental Assessment.

Site inspection and assessment has not identified any environmental issues that would preclude the proposed development of the sites.

Development of the new sites would minimise the area of Upland Swamp vegetation community that would be affected by the proposal (AI10) and would avoid destruction of potential frog habitat in a rock quarry (AI05) currently undergoing rehabilitation.

Apex plans to proceed with drilling AI05 and AI10 at the locations identified in this report.