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**RELIC SLIP VERIFICATION STUDY
TAURANGA DISTRICT COUNCIL ENVIRONS**

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INTRODUCTION

1. This study has been carried out for Tauranga District Council (TDC) to verify the location of relic slips within the environs of Tauranga. The project has involved the following tasks:
 - Review of relic slips shown on TDC's present Geographical Information System (GIS) system
 - Photogeological interpretation using 1943 to 1997 aerial photographs to check above and identify further areas of slip activity
 - Transfer of information to GIS system
 - Review of geotechnical implications of new landslide data
 TDC's project reference is File 6518-3 and 1880-45-00. The contract details are contained in TDC's letter from Paul Baunton dated 27 June 2000.
2. A previous 1980 study by Houghton & Hegan¹ using vertical aerial photographs available at that time had identified about 250 relic slips and plotted these on to a 1:40 000 scale map of the city (Appendix 1). Others subsequently transposed these slip locations on to the TDC GIS system and there are significant anomalies up to and over 50m between the plotted and the physical location of the slip features. Tonkin & Taylor made further additions to the GIS information in 1994.
3. For this present report, Royden Thomson used aerial photographs provided by TDC covering the period from 1943 to 1997 to carry out a comprehensive photogeological interpretation. Field checks on the aerial photo interpretation were carried out by David Bell and Royden Thomson during the period from 7 to 9 September 2000. The information provided by TDC for this study is listed in Appendix 2 and a 1:20 000 plan of the new relic slip data is included in Appendix 3. A glossary of technical terms is included in Appendix 4.

GEOLOGICAL BACKGROUND

4. Oliver's 1997 thesis² and a University of Waikato report³ include useful summaries of relevant geological information. Figure 1 shows the main physiographical and geological features of the Tauranga area in relation to the TDC boundaries and Figure 2 summarises the general stratigraphy of the ashfall sequence areas at the Maungatapu Peninsula. The geological materials are of variable engineering quality as can be seen from the test results compiled by Oliver (see Table 1 below)

Table 1: Properties of Tauranga soils from Oliver thesis			
	Bulk density - kg/m ³	Direct shear strength (effective parameters)	
		Cohesion kPa	Friction °
Post Rotoehu Ash	1299	0 - 1	40 - 42
Rotoehu Ash		0 - 0.5	37 - 42
Palaeosol	1402	6	31
Hamilton Ash		6 - 9	32 - 33

Note: These results are based on limited soil testing in the Maungatapu area and should not be used for general design purposes as they may not be applicable to the lithologies throughout the city

5. The Tauranga Basin contains a number of terraces that are generally preserved as peninsulas trending in a NE or NNE direction (e.g. Omokoroa, Tauranga City and Greerton, Matua, Matapihi and Maungatapu) with terrace levels at 80m, 30-60m, 12-22m, 5m and 0.5 to 1m above present sea level.

¹ Houghton BF & Hegan BD. *Preliminary assessment of geological factors influencing slope stability and landslipping in and around Tauranga City* NZGS Engineering Geology Report EG348, October 1980

² Oliver R. *A geotechnical characterisation of volcanic soils in relation to coastal landsliding on the Maungatapu Peninsula, Tauranga, New Zealand*. MSc Thesis in Engineering Geology, University of Canterbury, 1997

³ Briggs RM et al. *Geology of the Tauranga area*. Occasional Report No 22, Dept of Earth Sciences, University of Waikato, 1996

The age and the origin of these terraces has not been well defined but have been related to four principal origins³:

- Volcanic constructional surfaces, e.g. lobes of pyroclastic flow deposits
- Volcanic and/or fluvial degradation surfaces modified and covered with airfall tephra
- Fluvial terraces formed by aggradation or lateral erosion
- Lower terraces formed by marine aggradation as a consequence of higher than present sea level

The higher terraces are thought to be the result of terrestrial aggradation during interglacial periods between 2 Ma and 150 ka.

6. The landscape is relatively old in New Zealand terms with the Hamilton Ash sequences of about 100,000 to 350,000 years old being draped across the older Tauranga Group sequences. The Tauranga coastline has been subject to major changes during recent geological times when global sea level changes have caused large coastal migration of many kilometres. Figure 3 from Davis and Healy⁴ shows the changes in sea level and coastal geometry over the last 10,000 years. Sea level stabilised about 6500 years ago and the coast achieved its present geomorphological character about 4000 years ago.
7. Previous assessments of landsliding in the general Tauranga area have concentrated on specific problem locations such as the Minden Area⁵ and may not be directly applicable to the TDC area. The Minden study indicated a total of 74 slips in an area of 92 km² over the period from 1943 to 1986 with an average frequency of 0.04 slips per km² per year. The same study indicated that during the March 1979 storm, there were 116 slips in one week in the 37 km² of high-density urban development in Tauranga. No useful information has been located which allows landslide dates to be correlated with specific rainfall events.

REVIEW OF PREVIOUS INVESTIGATION AND CONSULTANCY WORK

8. The following sections review previous guidelines for defining hazard lines in the TDC area, consider these with respect to the particular type of failure mechanisms that occur in the relevant soil types and provide some comments on the validity of the hazard line approach in these circumstances.

Hazard Lines

Omokoroa

9. The 1980 Tonkin & Taylor (T&T) studies⁶ were initiated after a number of landslips along the western coastline of Omokoroa in early August 1979, immediately following a period of heavy rainfall. The largest of these landslips involved a 20m recession of a 34m high cliff along a 60m length and subsequent removal of five endangered houses. T&T noted that the failures produced distinctive slip profiles with aspect ratios as shown in Figure 4. 60% of all the major failures had ratios between 1V:1.8H and 1V:2.2H⁷. They defined a failure limit for landslides of 1V: 2.25H (24°) beyond which they would not expect landslides to occur. This limit applies only to one-time landslides, and toe undercutting by sea, or piping erosion at seepage exits, may subsequently cause further landslides and further cliff erosion. T&T state that *In applying the ratio 1:2.25 (2.25H:1V) to define the failure limit, cliff heights used were those assumed to exist after possible failure (e.g. in the case of land sloping towards the cliff edge). The horizontal depth chosen was measured from the toe of the cliff, with allowance for any debris or marine erosion since slippage occurred.* For new areas of subdivision or on those lots not yet built on, T&T recommended that no dwelling should be allowed within 6m of the 2.25H:1V risk zone.
10. T&T's preferred failure model is shown in Figure 5a and the slope profile at Section 6 Bramley Drive in Figure 5b. The back surface of the failure regressed from near vertical on 9 August 1979 to about 13m further inland by 21 August 1979. The exit point of the failure appears to be defined by the lower part of the old ash sequences or the top of the Tauranga Formation for all the slides in the Omokoroa report.

⁴ Davis RA, Healy TR. *Holocene coastal depositional sequences on a tectonically active setting: south-eastern Tauranga Harbour, New Zealand.* Sedimentary Geology, 84, 1993

⁵ Western Bay of Plenty District Council. *Minden Geotechnical Review 1992.* Compilation of reports dated 13 March 1992

⁶ Tonkin & Taylor . *Omokoroa Point land stability investigation.* Report to Tauranga District Council, May 1980

⁷ The text of their report is confusing since horizontal measurements as referred to as depths

1980 NZGS study

11. The 1980 NZGS study¹ noted that *Analysis of 17 deep-seated failures at Omokoroa reveals that there is a close approximation to a height/depth ratio of 2:1.* They suggest that this relationship should be used to delineate a zone of high risk adjacent to the coastline. However, this erroneously reverses the Horizontal and Vertical parts of the ratio, as well as rounding the ratio from 1V:2.25H to 1V:2H, compared with the original information in the 1980 T&T report.

Failure mechanisms: Tauranga

12. Rob Oliver's 1997 thesis includes a review of failure mechanisms that have been applied to Tauranga landslides. Much of the following information has been abstracted from this thesis.
13. The T&T failure model considers an active-passive wedge (Figure 5a). This can be analysed by graphical procedures⁸ or by the Sarma non-vertical slice method of slope stability analysis⁹. Although this failure mechanism is relatively common and readily analysable, it does not appear to fit the observations made by T&T. Their failure model in Figure 5a shows the back wedge providing an active load onto the basal or passive wedge. This is contrary to their observation (see for example Section 6 in Figure 5b) that the back surface of the failure is initially subvertical and subsequently degrades to a flatter angle after the initial failure. An active wedge driving the failure therefore seems unlikely.
14. Bird¹⁰ concluded that conventional circular failures were not applicable and used non-circular failure surfaces as shown in Figure 6, analysing these by means of the Bishop and Janbu slope stability routines. These analyses suffer from two problems. Firstly the assumption of the driving force from the wedge of material in Soil 1 and Soil 2 in Figure 6 does not accord with T&T immediate post-slip observations as above. Secondly, the analyses consider only water pressures from a phreatic surface on the base of Soil 5 and take no consideration of water pressures that may be present in tension cracks and other features.
15. Hegan¹¹ considered that failure was initiated by a "blow out" in the loose sands (Unit TG3), which undermined the slope above and resulted in a steep circular failure (Figure 7). Similarly Oldham¹² also used circular failure surfaces to analyse the stability of slopes in the same area (Figure 8). Oliver agreed with the triggering of the slope failures by piping and/or erosion but noted that the large circular failure mechanisms of Hegan and Oldham were inappropriate in this area.
16. Oliver's thesis includes descriptions of two failure models triggered by piping within an aquifer sandwiched between two aquitards with the Upper Matua Group sediments (Figure 9a) and by wave erosion at sea level (Figure 9b). His analytical model involved large block movements on the lower bounding aquitard and was analysed by the Galena program (Figure 10). As with the other failure models described above, the analysis considered only phreatic water pressures.
17. Oliver's failure mechanism is one that often occurs; for example, in horizontally bedded coal deposits where blocks of material slide along weak clay seams of low residual shear strength. In these cases, failure through the "intact" material is unlikely. This does not appear to be a particularly appropriate mechanism for Maungatapu. However, his analyses (see Figure 10) show that he has used inclined failure surfaces on the base rather than sliding on the horizontal interface. The back slopes of his failure do not relate well to the exfoliation defects that were suggested as a controlling feature in this mechanism. The analysis does not therefore accord with the proposed mechanism.

⁸ Richards LR, Atherton D. *Stability of slopes in rock*. Ch 12 in *Ground Engineers Reference Book*. Ed F G Bell, Butterworths, 1987

⁹ Hoek E. *General two-dimensional slope stability analysis*. Ch 3 in *Analytical and computational methods in engineering rock mechanics*. Ed ET Brown, Allen & Unwin, 1987

¹⁰ Bird GA. *The nature and causes of coastal landsliding on the Maungatapu Peninsula, Tauranga, New Zealand*. MSc thesis, University of Waikato, 1981.

¹¹ Hegan BD. *Landslip damage at 85 and 89 Te Hono Street, Maungatapu, Tauranga*. Tonkin & Taylor report, 1995

¹² Oldham, 1995 – quoted in Oliver thesis

18. Profiles of three slips at 85 & 89 Te Hono Street and at 330 Maungatapu Road based on Oliver's thesis are shown on Figure 11. A comparison between Figures 4-5 and 11 shows that the slide geometry at Maungatapu is significantly different to that at Bramley Drive where the 2H:1V relationship seems to have emerged. The Maungatapu landslides have much steeper backslopes, being in excess of 60° almost five years after the slides. Based on the Bramley Drive history and general experience, the backslopes at the time of the landslide may well have been about 80-85°.
19. Oliver's work indicates that the Maungatapu slides are initiated by erosion of an aquifer layer with the Upper Matua Group sediments (see Figure 9). The erodible layer consists of loose medium-coarse sand between two clayey silty layers about 5m below the top of the Matua Subgroup. An important factor in the landslide development is the prevalent subvertical defects in the peninsula parallel to the cliff edges. Oliver refers to these as *exfoliation defects* (see Figure 9) although the more common engineering term is *tension crack*. They have a significant influence on slope failures since their orientation precludes any significant frictional resistance along the features, and the open joints contain water exerting horizontal pressures on the slide mass.
20. This failure mechanism is quite different to that described by T&T where the toe of the failure generally seems to have exited at the top of the Tauranga Formation. The Omokoroa slopes are notable for the fact that the lower slopes (Zone A in Figure 4) are much flatter than the lower slopes at Maungatapu, which are generally in excess of 60° except where mantled with landslide debris. The difference in the slopes is probably due to the fact that the Omokoroa slopes are more sheltered from wave action than those at Maungatapu. A comparison of the suggested failure mechanisms in the Tauranga ashfall sequences is shown in Figure 12.

Hutchinson failure model

21. Hutchinson¹³ has described the details of a chalk cliff failure that is induced by the undercutting action of the sea – this has been reanalysed by Hoek¹⁴ and seems to provide a good model for the Maungatapu failures (both piping and sea erosion cases). The analytical model is shown in Figure 13 and the Joss Bay example in Figure 14. The failure was not associated with heavy rain and the slope has been assumed to be well drained. Calculations can be carried out to determine the geometry of the next cliff failure with further undercutting as shown in Figure 15.
22. Important features in the Hutchinson failure model are the presence of a tension crack at the most critical location behind the slope crest and the basal failure along a critically oriented surface through previously "intact" material. Both of these features are considered to be applicable to the Maungatapu failures. Failure resistance in this failure model is limited to the basal surface since there is no resistance along the tension crack. Water in the tension crack also provides a larger driving force to the failure than the phreatic surface assumption in the other models.

Comments on failure mechanisms

23. The circular mechanisms often considered for failures in the Tauranga area may have been selected to suit available slope stability computing programs rather than according with field observations. Examples of classic circular soil failures seem to be quite rare in Tauranga. The failures described in Oliver's thesis are very similar to the detailed observations made by Hutchinson on the failure of chalk cliffs that are mainly caused by sub-vertical tension cracks. However the Tauranga failures are obviously affected by rainfall and water pressures in the tension cracks and the Hutchinson/Hoek method (which is based on a drained slope) would need some modification to suit the Tauranga situation.
24. A comparison of different methods of analysing the slope shown in Figure 7 is given in Figure 16 which shows the results of analyses using the Rocscience program *Slide* (ver 3) by the following different methods (all with the same breakout point at the bottom of TG3):
 - Circular failure analysis on grid
 - Path search for critical failure surface
 - Inclined failure surface through TG3, 45° to 85° failure surface in other materials

¹³ Hutchinson JN. *Field and laboratory studies of a fall in upper chalk cliffs at Joss Bay, Isle of Thanet*. Proc Roscoe Memorial Symposium, Cambridge, 1970

¹⁴ Hoek E, Bray JW. *Rock slope engineering*. Institution of Mining and Metallurgy, London, 1981.

These have similar factors of safety in the range from 1.0 to 1.1 but with different failure geometries. For the critical failure surfaces with the lowest factor of safety, the predicted geometries are reasonably similar to those on the Maungatapu Peninsula (Figure 7) and Omokoroa (Figure 4). The deep circular failure surfaces suggested in some studies (e.g. Figure 8) are not realistic and may result from an inadequate number of trial surfaces in the analyses.

25. Some of the stability analysis methods used by designers may be inadequate. The Geotechnical Engineering Office in Hong Kong requires that slope stability programs are checked and approved by them before they can be used on any jobs over which they have control. Where stability calculations are critical to the site approval process, an independent check on the calculations should be carried out..

RELIC SLIP VERIFICATION STUDY

26. The Houghton & Hegan study identified about 250 relic slips in the Tauranga City area. With the benefit of more detailed and recent aerial photographs and better topographical base maps, the present study has identified a larger number of geomorphological features in the area. Reduced scale versions of the two sets of plans are contained in Appendices 1 and 3 to this report – these are included only for the purposes of this report and only the full sized plans or the TDC GIS system should be used for assessing the geomorphological conditions at specific sites.
27. TDC provided the study team with aerial photographs taken from 1943 to 1997 and sets of maps at 1:5000 scale showing topographical contours, roads and the locations of relic slips based on the Houghton and Hegan work. Appendix 2 summarises the reference numbers, dates, scales and colour of the photographs. Geomorphological features were identified from the aerial photographs and transposed on to the base maps by Royden Thomson. A limited number of field checks were then carried out by David Bell and Royden Thomson in early September 2000 and refinements made to the classification of the geomorphological features.
28. The classification system used to describe scarp and debris features is given in Figure 17 with the earlier Houghton and Hegan terminology shown for comparison. The geomorphological features identified by the aerial photography interpretation have been classified as;
 - *Possible headscarsps and debris lobes* with poorly defined morphology
 - *Probable headscarsps and debris lobes* with clearly defined morphology
 - *Active slope debris lobes* with evidence of recent or current activity.
29. Most of the escarpments and embayments that have been identified as headscarsps do not have obvious associated landslide debris. Most of these features are not considered to be active but to have developed in times when the coast was well off the present shore, the terrain was not as incised as it is today and the groundwater levels were very high. The slides were therefore formed under different physical, climatic and slope stability conditions to the present ones and are thus true relic features.
30. There are also interpreted mass movement features that are defined by hummocky terrain alone. Examples occur south of Bethlehem. Such features have generally been classified as *probable* occurrences but the subsurface geology and likely failure modes have not been studied.
31. There are very few active geomorphological features indicated by the present study. These are largely confined to steeper terrain to the east of the city, but local failures are known in the Welcome Bay area and Matua.
32. Sections through a number of interpreted slips are given on Figures 18 and 19. Most of these slides have vacated scarps where the top of the slope debris has moved away from the headscarp feature.

Analysis of landslide and runout geometry

33. The relic slip plans have been overlain on 1:5000 plans from TDC showing the land areas within the 2H:1V zone and slopes at an angle greater than 26.5° (these being the slope angles currently used to assess whether Category 1 or 2 specialists are required). A large proportion of the slips were found to lie outside these two zones. As a further check on the geometrical characteristics of the head scarps and slope debris features, a detailed characterisation of all the identified features was undertaken and is described below.
34. Figure 20 shows the head scarp and slope debris attributes that were recorded for each feature. These data have been taken off the original mapping sheets and put into an Excel spreadsheet as shown on

the figure. There are over 2000 head scarps and 400 slope debris features for which attributes have been obtained.

35. Figure 21a shows the slope height versus angle relationships for the head scarp features and Figure 22b is a frequency distribution for the slope angle. The average angle of the scarp features is quite low at about 15° and most of the scarps are at less than 20°. The relationship between slope height and angle is significantly different to that which would normally be found based on either empirical observations or theoretical predictions. Such relationships invariably show a trend of decreasing slope angle with increasing slope height. For example, Figure 22 shows results of empirical observations on NZ greywacke rocks that display the normal height versus angle relationship. A theoretical relationship between height and angle for the Tauranga ash materials can be obtained by carrying out slope stability analyses using different slope geometries for given groundwater and material properties. Figure 23 shows the results of a set of analyses for typical properties of Tauranga ashes and these data are superimposed on Figure 21a for Factors of Safety equal to 1.0 and 1.5.
36. The observed pattern of the observed scarp height versus angle relationship is such that no simple interpretations can be made on the basis of the present attributes of the landslides. The present practice is to use a 2H:1V criterion (slope angle = 26.5°) to delineate sites requiring specialist geotechnical assessment. This slope angle is also just below the limiting angle for a high slope with typical ash properties (see Figure 21a) and there is therefore some basis for using this for preliminary screening purposes. The 2H:1V criterion has the advantage of being a simple check for preliminary site assessment and Tauranga experience has shown it to be a prudent guideline for undeveloped property. Figure 24 shows the 2H:1V criterion in relation to stability analyses on the Hegan section of Figure 7. The 2H:1V line encompasses all the failure surfaces with a factor of safety of less than 2 and can be seen to be conservative in this particular case.
37. A similar exercise to the above has been carried out for the slope debris runout. Figure 25 shows the height versus angle relationship and the frequency distribution for the slope angle. The overall mean angle of runout is about 15° corresponding approximately to a 3.75H:1V slope. Four examples of sections with slope debris below the headscarp are given on Figures 18 and 19. These show that the debris runout extends beyond a 3H:1V line in all cases except one where the runout is stopped by rising ground.
38. The travel angle of landslides (the inclination of the line joining the tip of the debris to the crest of the landslide scarp) is generally related to the apparent angle of friction of the slide material^{15 16}. For the Tauranga ashes, the friction angle can be as low as 30° and therefore a travel angle of about 1.7H:1V should be applicable. The field evidence from the TDC slides is that debris runout is much greater than the predicted value and can be about 4H:1V or more, typical of the runout for a material with an apparent friction angle of about 15°. The reason for the higher mobility of the TDC slides is likely to be related to the low densities of the ash materials. The ashes can have densities of about 1200 kg/m³ which is significantly lower than the range for typical soils of 1700 to 2300 kg/m³ and the ashes are therefore likely to flow more readily than high density soils where slides are induced by rainfall or high water pressures.

PROPOSED MANAGEMENT FOR RELIC SLIP AREAS

39. The geomorphological features identified in Appendix 3 have been used to assess the appropriate level of investigation for further development in the area and do not constitute hazard zones.
40. The verification exercise has identified the following number of geomorphological features:

1	Poorly defined headscarps with no associated debris:	> 800
2	Poorly defined headscarps with associated debris:	>100
3	Clearly defined headscarp with no associated debris:	>700
4	Clearly defined headscarp with associated debris:	>250

¹⁵ Australian Geomechanics Society, Sub-committee on Landslide Risk Management. *Landslide risk management concepts and guidelines*. NZ Geotechnical Society, Geomechanics News, Issue 60, December 2000

¹⁶ Wong HN, Ho KKS. *Travel distance of landslide debris*. Landslides. Balkema, 1996

5 Features with evidence of recent or current movement: 13

41. Based on the identified and interpreted geomorphological features, the requirements for specialist advisors (according to the TDC system of accreditation) are summarised in Table 2 below. Assessment of the potential hazard to development in each of the zones is primarily an engineering geological one. As a guideline only for developers and consultants, Table 3 gives details of the typical requirements for investigation and reporting in each of the zones.

Table 2: Requirements for specialist advisors

Category 1	Site includes probable slope movement feature with clearly defined headscarp and hummocky debris and with indications of recent or current activity
	Site includes possible slope movement feature with either or both of the following <ul style="list-style-type: none"> • clearly or poorly defined headscarp • hummocky debris or
	Building is located within 2H:1V slope line or 4H:1V runout distance from slope or Water seepage from slope at any height
Category 2	No evidence of landslides within or in close proximity to development area and Building is located outside 2H:1V slope line and 4H:1V runout distance from slope crest
Category 3	No requirement for assessment by engineering geologist or geotechnical engineer

CONCLUSIONS

42. The geomorphological features identified in this study have been used to assess the appropriate level of investigation for further development in the area and do not constitute hazard zones or building line restrictions.
43. The present study has identified a number of geomorphological features of different characteristics throughout the TDC area. On the basis of the aerial photography interpretation, the majority of these features show no evidence of active movement. Less than 1% of the identified features show indications of recent or current activity.
44. Recommendations have been made to indicate where specialist advice is required on the basis on slope angle and runout distance.

RECOMMENDATIONS FOR FURTHER WORK

45. Further work is recommended to supplement the mass movement database with geological information acquired from all sources, including exposures within development areas and experiences within the territories of adjacent councils.
46. Suggestions for additional work are listed below:
- Extend study beyond the TDC boundary into adjacent regional council territories
 - Update relic slip map by identifying which slips have been earthworked out and are not longer relevant
 - Collect information on all future landslip and debris flow events
 - Compile database of soil properties from site investigations in the area
 - Carry out field checks and assessment on all active areas identified by this study
 - Encourage geomorphological research in TDC area (e.g. student postgraduate theses).

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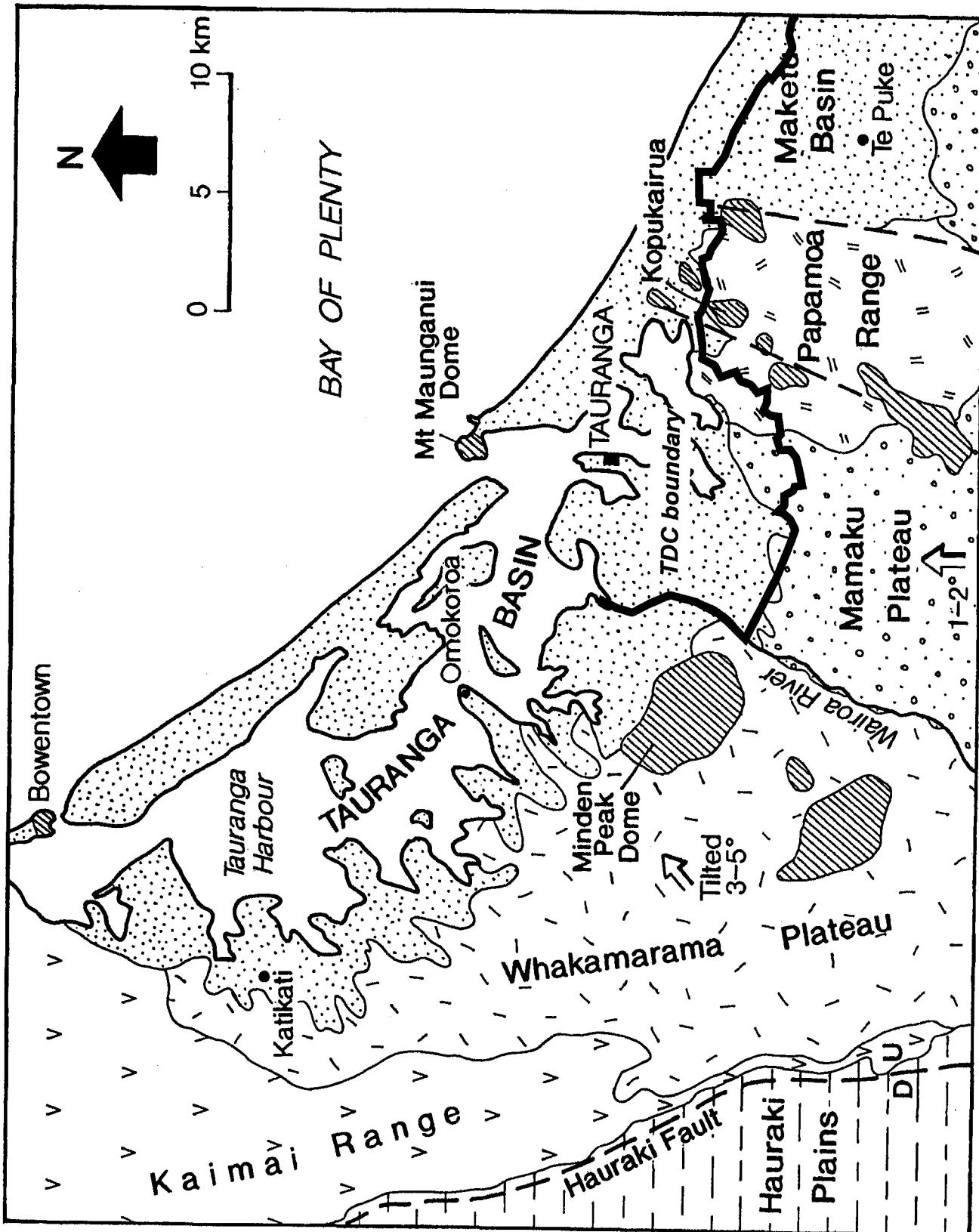
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Table 3: Description of geomorphological zones and assessment guidelines

Description	Assessment guidelines
Active feature Probable landslide feature <ul style="list-style-type: none"> • Clearly defined headscarp • Hummocky debris <p>Indications of recent or current activity <i>Requires detailed engineering geological and geotechnical assessment. Intensive investigation may be required and development may not be economically feasible</i></p>	<ol style="list-style-type: none"> Initial assessment to be carried out by Category 1 Geologist/geomorphologist Examination, on foot, of the surface of the site and the surrounding ground, with the assistance of existing topographical maps Examination of available aerial photographs of the area (include selection from early to present time) Assessment of available geological data (GNS and other maps, publications, university theses and any other published or unpublished data) Review of relevant files and other historical records Check with local residents and other sources for evidence of past instability, particularly during periods of heavy rainfall Prepare preliminary report including geomorphological map of site, detailed cross sections showing site stratigraphy, preliminary conclusions on site characteristics and recommendations for additional investigation, mapping and monitoring. Report to include specific reference to all aerial photographs and other sources of information used for the study. Geomorphological assessment to provide conclusion on characteristics of any landslide present and the history of movement (historical or current) If landslide with recent movement affects the site, further topographical surveys, ground investigations and stability analyses will be required to demonstrate that the site can be made adequately safe by remedial works Undertake investigations to determine the nature and distribution of the soils that may be prone to slip and develop engineering geology site model Measure groundwater pressures in the soils strata and evaluate the transient pressures that may develop under extreme rainfall conditions Produce engineering geological report with details of mass movement features and other ground failure hazards Carry out geotechnical evaluation, using Category 1 Engineer and including further sampling, laboratory testing, assessment of ground properties, groundwater monitoring, etc. If strength assessment has been made by reference to test data from other sites, provide detailed rationale for the use of such data Undertake slope stability evaluation using approved methods Make recommendations for use of site and provide design for remedial measures if appropriate
Probable or possible feature with no evidence of recent or current activity Interpreted slope movement feature with either or both of the following: <ul style="list-style-type: none"> • Clearly or poorly defined headscarp • Hummocky debris <p>No evidence of recent or current activity Building within 2H:1V slope line or within 4H:1V runout distance. Some sites may require detailed engineering geological and geotechnical assessment</p>	<ol style="list-style-type: none"> Assessment to be carried out by Category 1 Specialist Advisor (Geologist/geomorphologist or Geotechnical Engineer)) Examination, on foot, of the surface of the site and the surrounding ground, with the assistance of existing topographical maps Examination of available aerial photographs of the area (include selection from early to present time) Assessment of available geological data (GNS and other maps, publications, university theses and any other published or unpublished data) Review of Council files and other historical records Check with local residents and other sources for evidence of past instability, particularly during periods of heavy rainfall If absence of recent or current landslide activity is confirmed, prepare report confirming this with appropriate documentation (map and representative sections) If ground hazard identified, follow Steps 7 to 15 of Zone 1 procedures
No evidence of landslides <ul style="list-style-type: none"> • No indications of scarp or slide debris <p>Buildings not within 2H:1V slope line or 4H:1V runout distance Does not require engineering geological and geotechnical assessment</p>	<ol style="list-style-type: none"> Site to be inspected by competent Category 2 person (Registered Engineer or Geologist with equivalent experience) Provide written confirmation of inspection and judgement that there is no landslide hazard at the site
No requirement for engineering geology or geotechnical engineering expertise	<ol style="list-style-type: none"> Site to be inspected by competent Category 3 person



TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 1: Main physiographical and geological features of Tauranga area in relation to TDC boundary

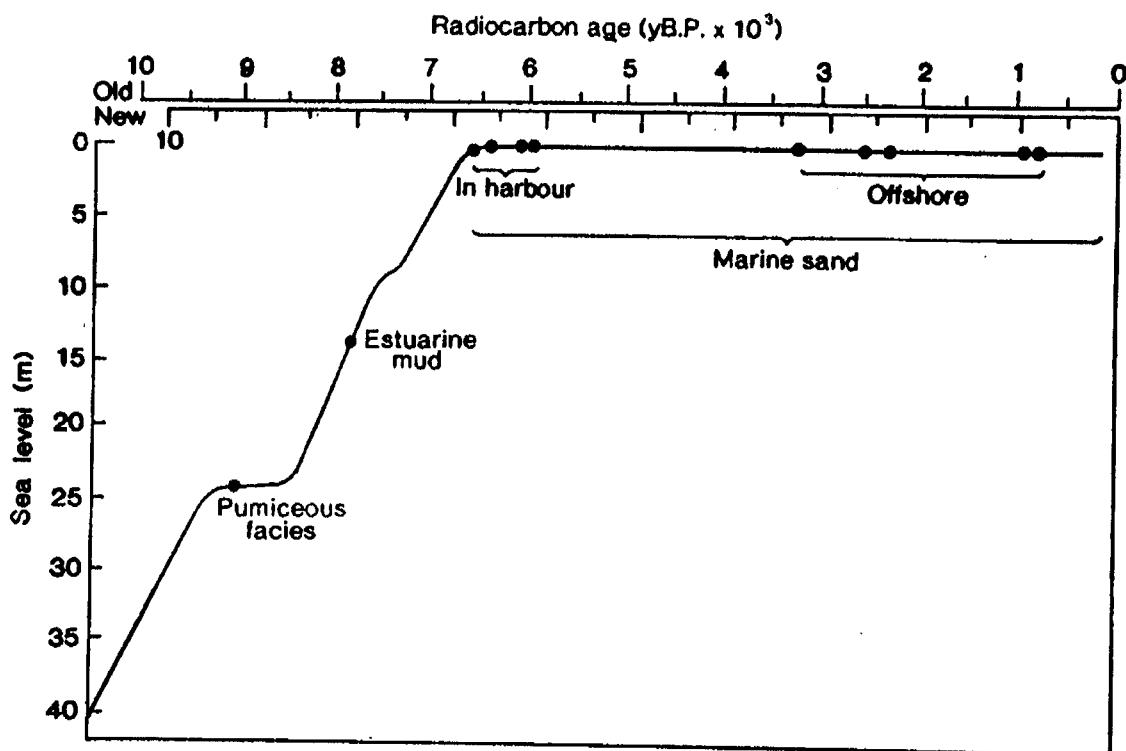
Figure from Briggs et al., 1996

Age

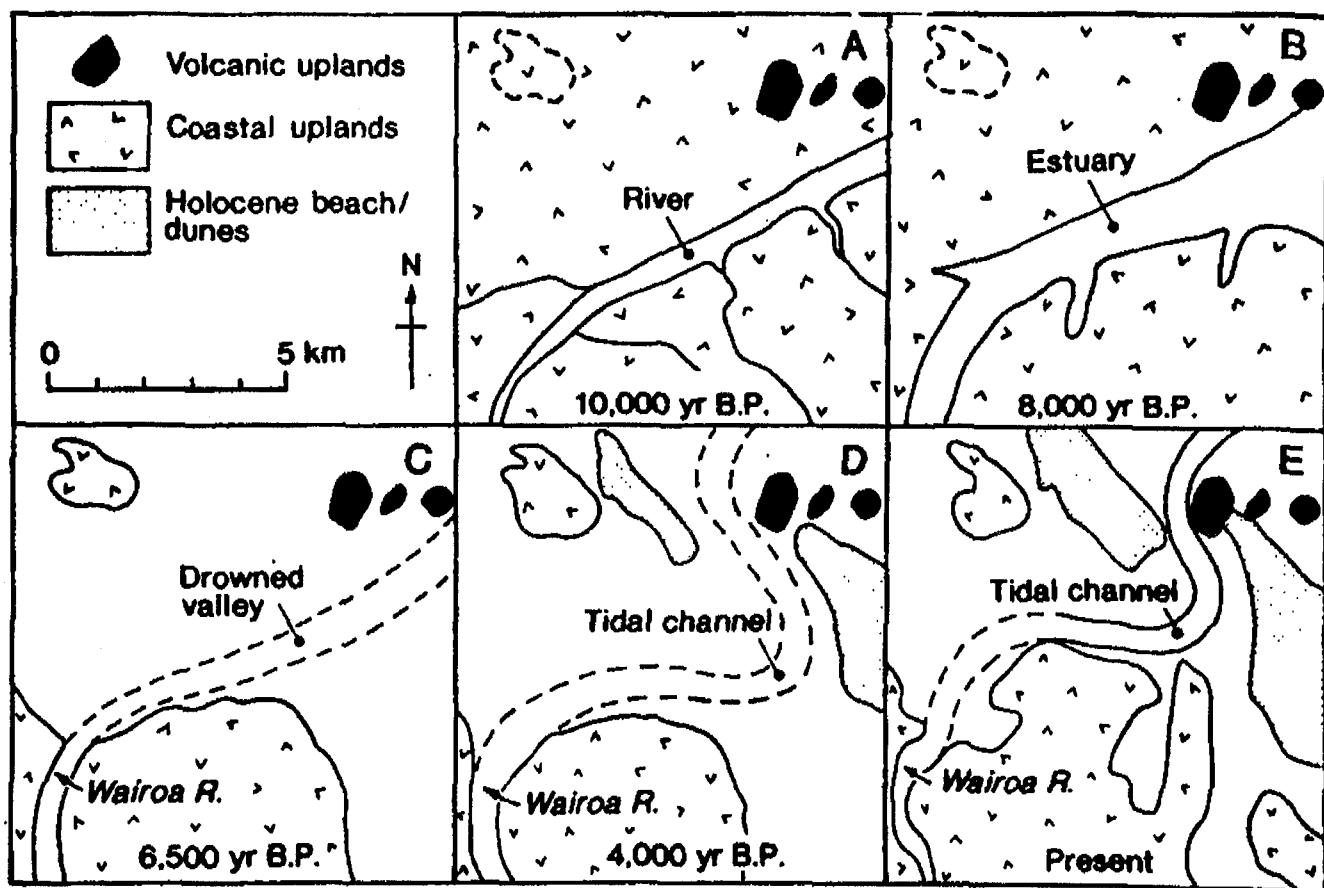
	DESCRIPTION OF ASH SEQUENCE MATERIALS AND MATUA SUBGROUP	
Holocene alluvium and dunes	<50 ka	YOUNGER ASH The Post-Rotoehu Ash Tephra consists of a number of ashfall tephra deposits, most of which are sourced from the Taupo Volcanic Zone. The thickness of the individual tephra layers varies from 0.1 to 3m.
Holocene and Late Pleistocene tephras	>c.50 ka	
Rotoehu Ash	0.22 Ma	ROTOEHU ASH The Rotoehu Ash is a distinctive sequence of shower-bedded tephra derived from the Taupo Volcanic Zone. Individual beds within the 0.3 to 2.4m thick sequence vary from 0.5 to 20 cms in thickness and are typically white to greyish yellow and fine to coarse sandy texture.
Mamaku Ignimbrite	?	
Waimakariri Ignimbrite	0.35 Ma – c.0.1 Ma	HAMILTON ASH The Hamilton Ash Formation consists of strongly weathered clay-textured tephra beds and paleosols. It consists of up to eight units. The sequence ranges in thickness from <0.5m to about 6m in areas of ponding.
Hamilton Ash	?	
Te Ranga Ignimbrite	>0.78 Ma	
Te Puna Ignimbrite	1.21 Ma	TAURANGA GROUP The Pahoia Tephra consists of all the tephra older than the Hamilton Ash Formation and are intercalated with fluvial and other sediments of the Matua Subgroup. They are a sequence of clay-rich rhyolitic tephra which consist of a wide range of grain sizes and structures, including clay, silts, silty sands and pebbles.
Ongatiti Ignimbrite	?	The presence of an intermediate aquifer layer gives rise to seepage and erosion problems in outcrop.
Papamoa Ignimbrite	2.18 Ma – 0.35 Ma	
Pahoia Tephra		MATUA SUBGROUP
Matua Subgroup (fluvialite sands and gravels, lignites, estuarine sands, lacustrine silts)	c. 2 Ma – c. 50 ka	The Matua Subgroup includes a wide range of lithologies from fluvial pumiceous and rhyolitic silts, sands and gravels, lacustrine to estuarine muds, lignites and peats intercalated with airfall tephra and thin distal ignimbrites. The sediments display a number of sedimentary structures such as cross-bedding, planar stratified and massive units, and post-depositional slump and water escape structures. Most of these sediments were derived from reworked ignimbrites, lava domes and flows, and tephra from the Tauranga region and the TVZ.
Waiteariki Ignimbrite	2.18 – 2.13 Ma	
Kopukairua Dacite	?	
Matakana Basalt	?	
Minden Rhyolite	2.36 – 2.28 Ma	
Otawa Volcanics	2.95 – 2.54 Ma	

TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 2: Generalised stratigraphy of the Tauranga area

Adapted from Oliver 1997 and Briggs et al 1996



HOLOCENE SEA LEVEL CURVE

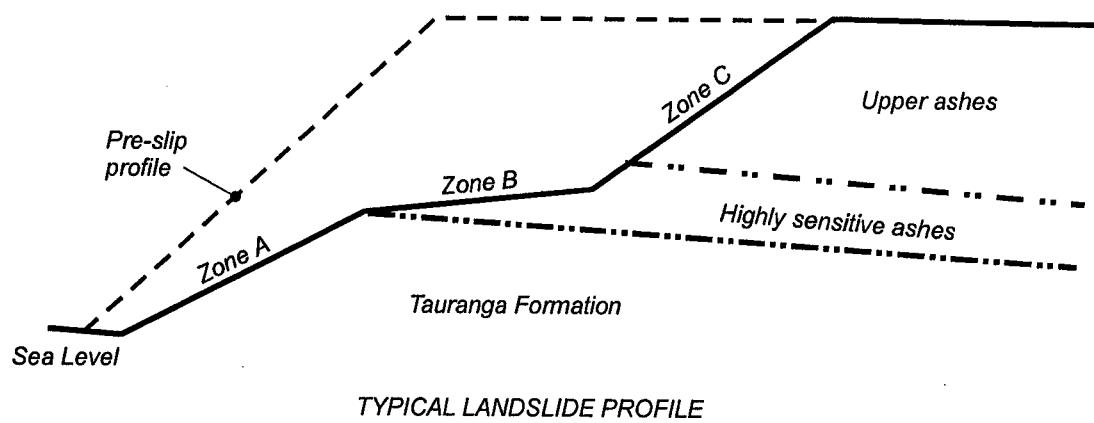


DEVELOPMENT OF TAURANGA HARBOUR

TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 3: Geomorphological development of Tauranga Harbour

From Davis & Healy 1993

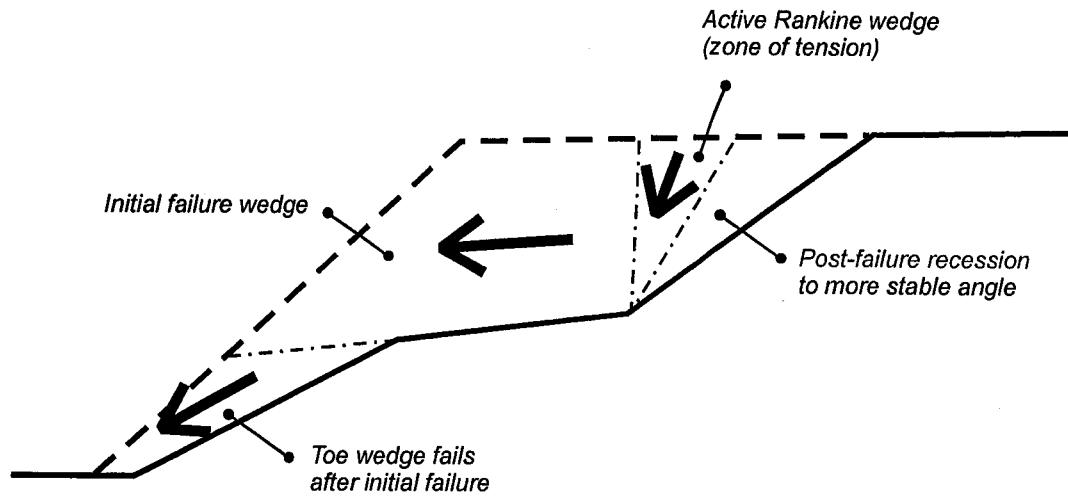


Geometry of Bramley Drive landslides					
	Average slope of zones		Vertical height to horizontal depth		
Section	A	B	C	Slip zone in Zones B&C	Overall slip shape (Zones A, B&C)
1	-	11°	33°	1:2	1:1.8
2	28°	12°	34°	1:1.7	1:1.8
3	25°	16°	39°	1:2	1:2.1
4	30°	7°	39°	1:2.5	1:2.0
5	23°	13°	49°	1:2	1:2.1
6	22°	15°	50°	1:1.5	1:1.8

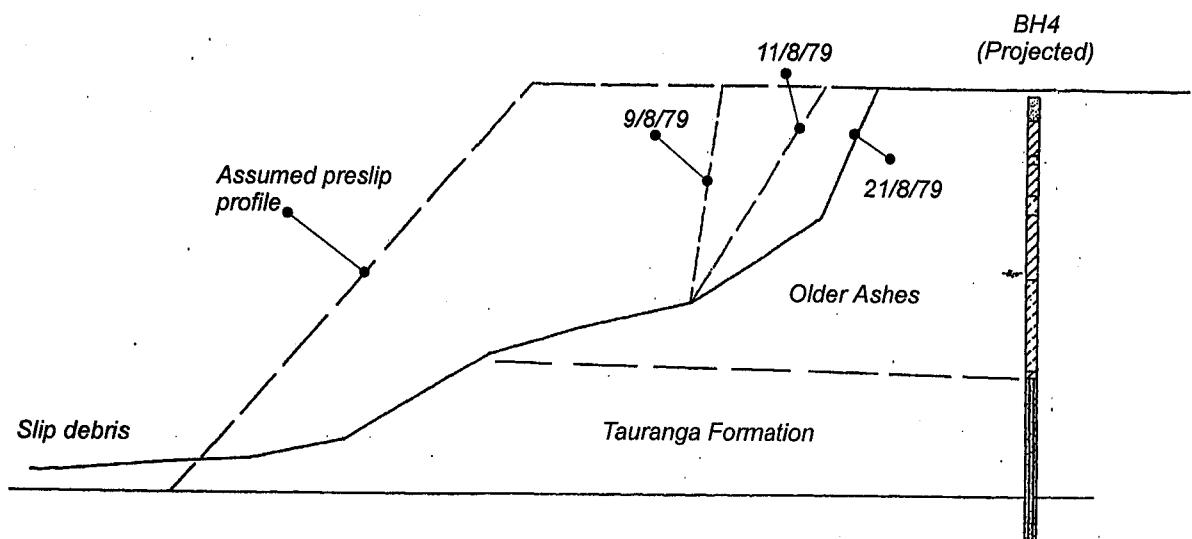
Geometry of major slips along the western coastline			
	Slip no.	Overall slip shape: Vertical height: Horizontal distance	Remarks
Crapp subdivision	1	1:2.1	
	2	1:1.8	
	3	1:1.8	Section 1 (Bramley Drive)
	4	1:1.6	Section 6
	5	1:1.5	
	6	1:1.8	Section 2
	7	1:1.6	
	8	1:1.7	
	9	1:1.9	
	10	1:2.2	
	11	1:2.1	Section 3
	12	1:1.4	
	13	1:2.0	Section 4
	14	1:1.6	
	15	1:1.6	
	16	1:2.1	Section 5
Cooney subdivision	17	1:2.0	

TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 4: Landslide geometry from 1980 T&T study at Omokoroa

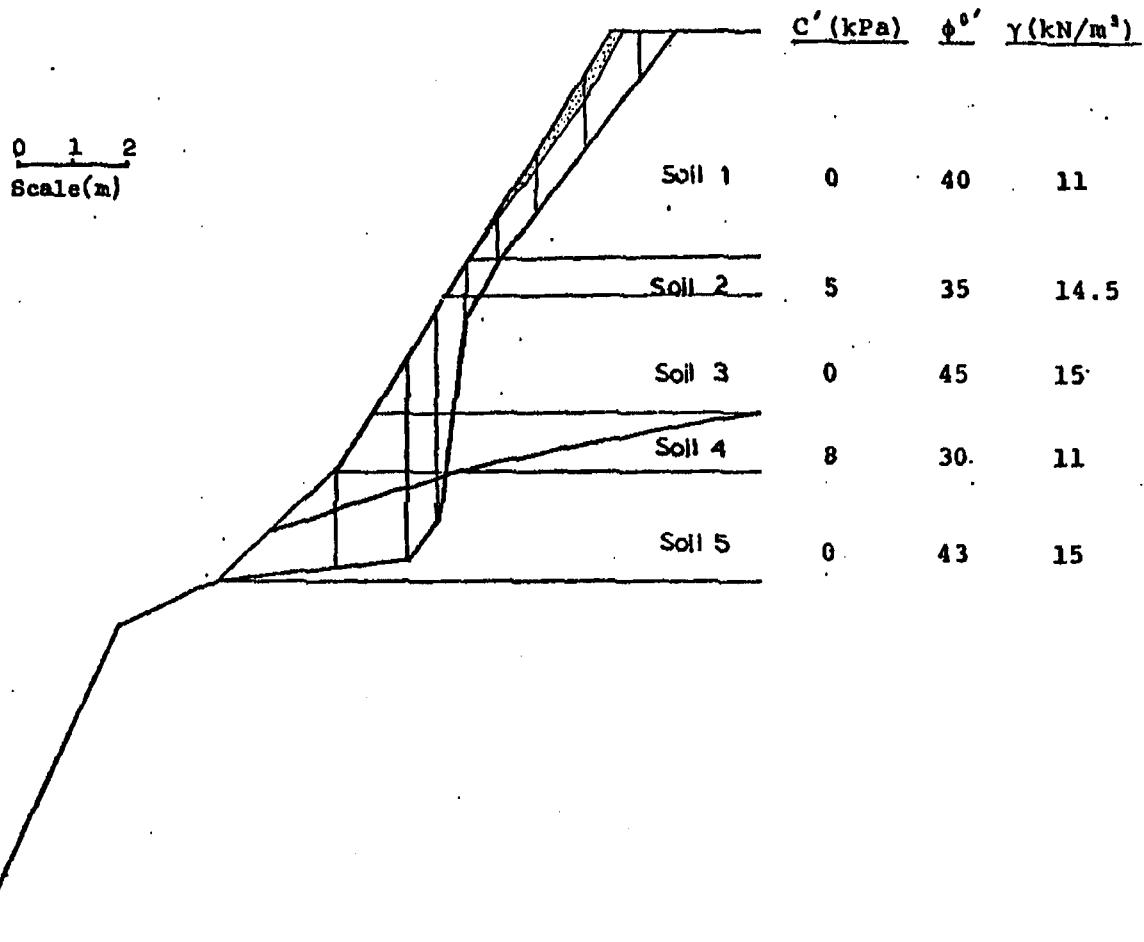


(a) *T&T MODEL FOR WEDGE FAILURE*



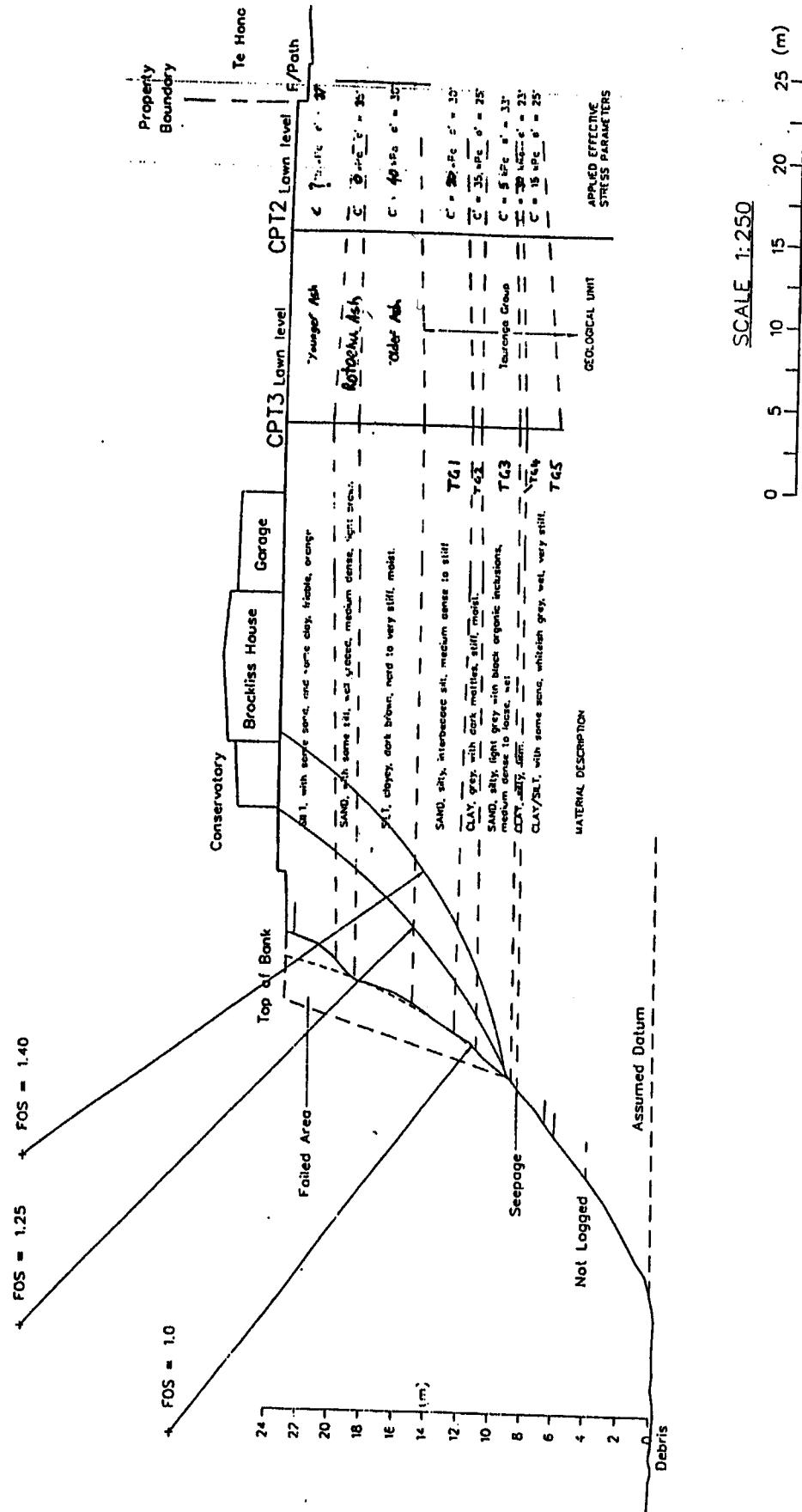
(b) *SECTION 6 BRAMLEY DRIVE LANDSLIDE*

TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 5: Landslide geometry from 1980 T&T study at Omokoroa



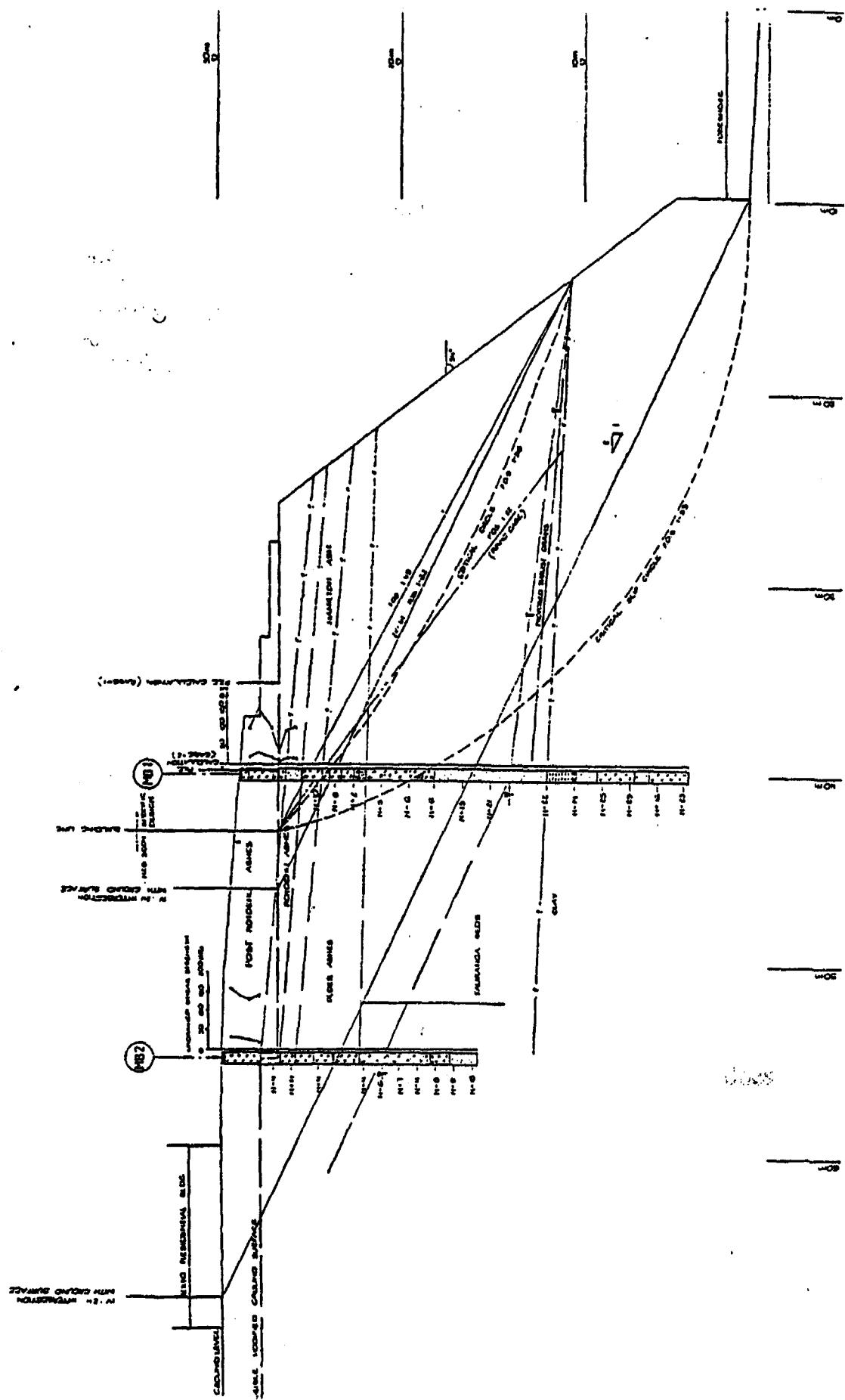
TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 6: Landslide failure mechanism assumed by Bird, 1981

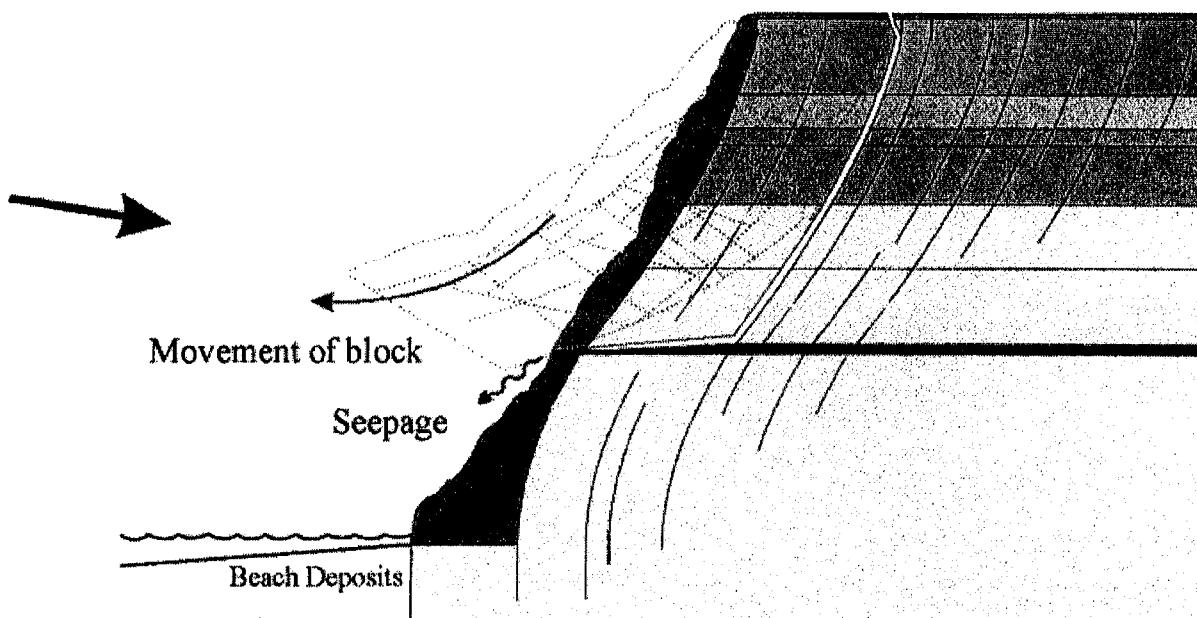


TAURANGA RELIC SLIP VERIFICATION STUDY

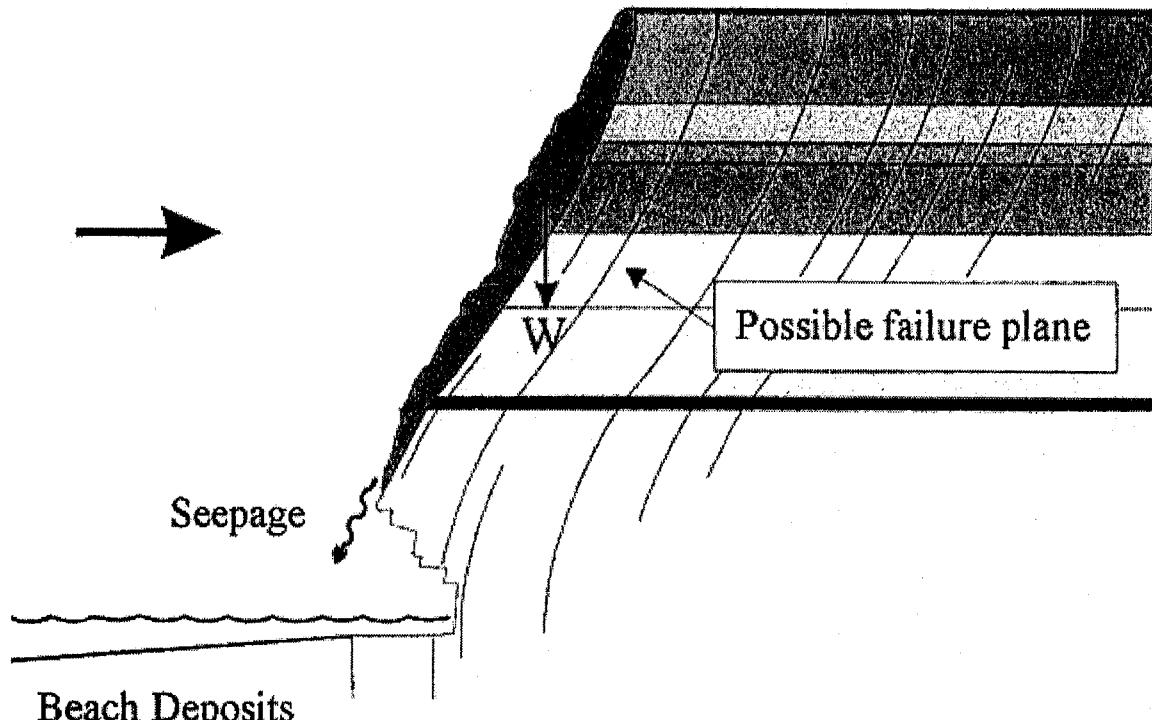
Figure 7: Landslide failure mechanism assumed by Hegan, 1995



TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 8: Landslide failure mechanism assumed by Oldham, 1995



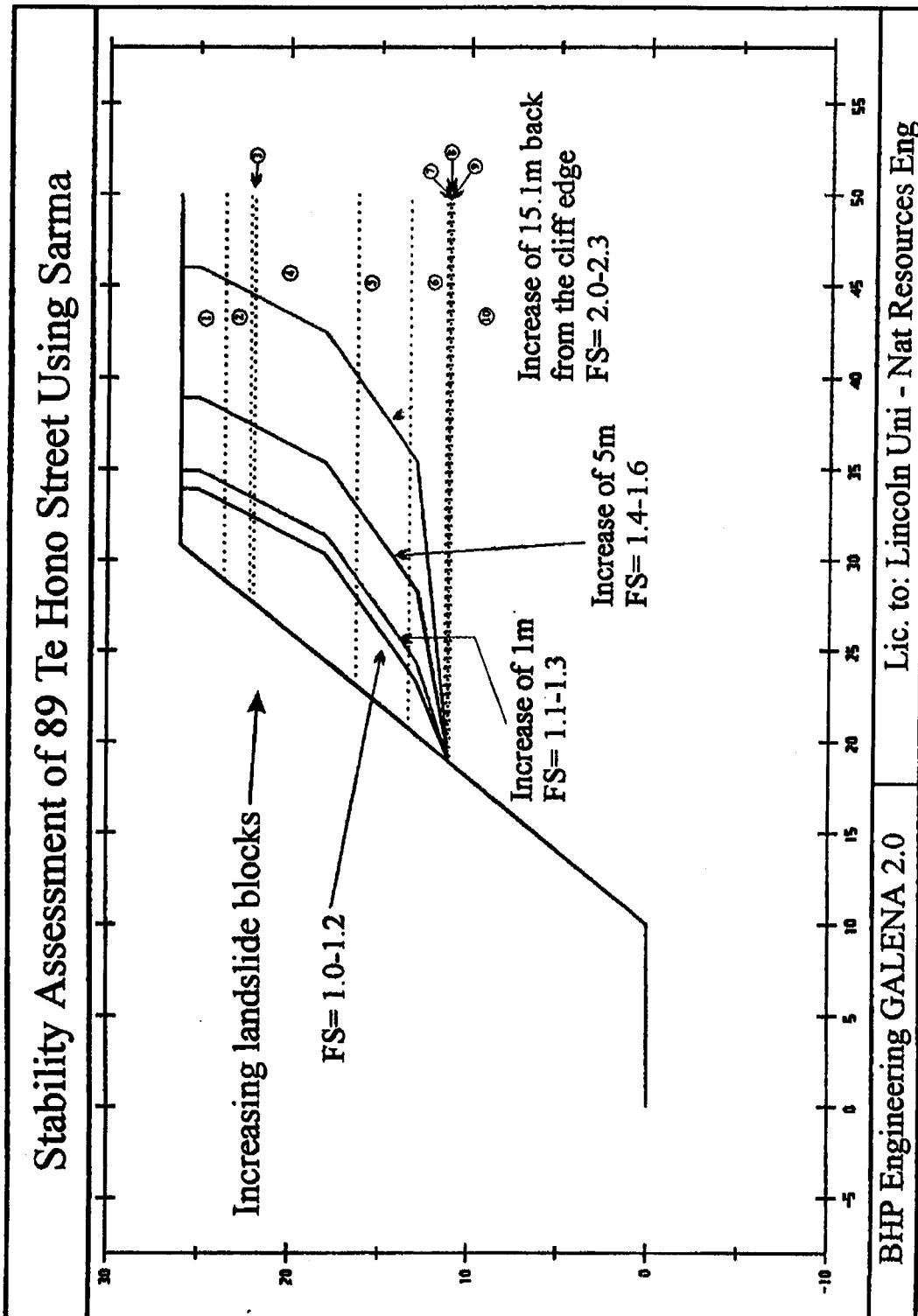
(a) PIPING TRIGGERED BLOCK FAILURE



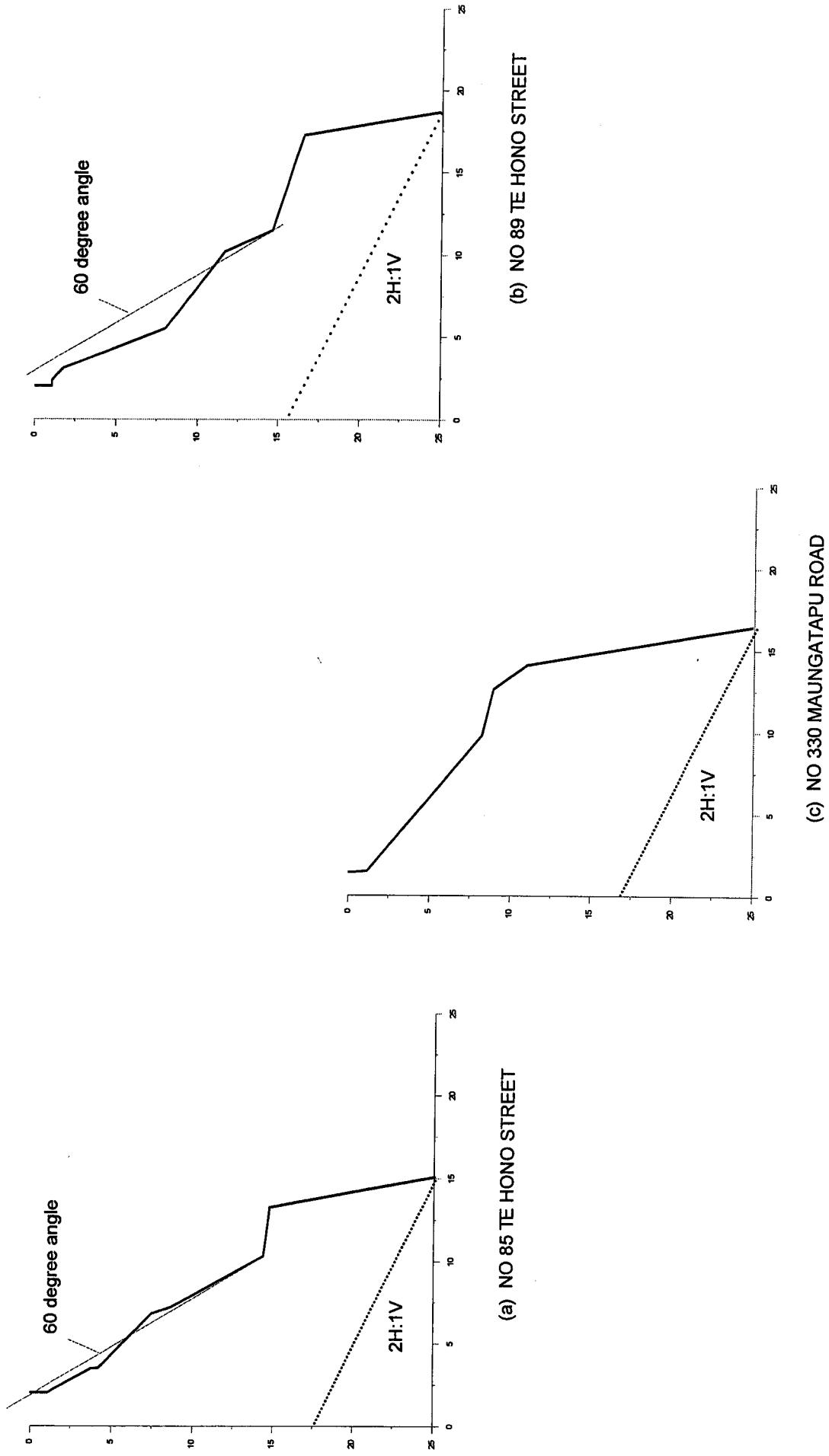
(b) WAVE EROSION TRIGGERED BLOCK FAILURE

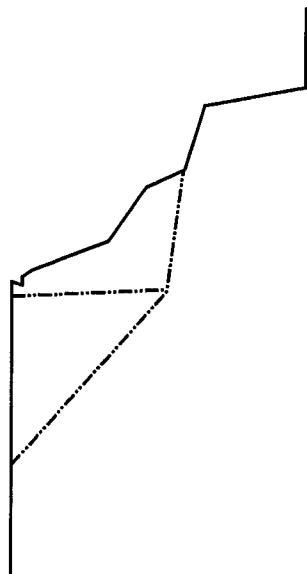
TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 9: Landslide failure mechanisms described by Oliver, 1997

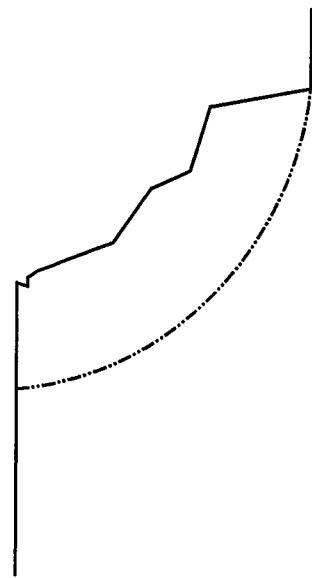


TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 11: Slip profiles on Maungatapu Peninsula

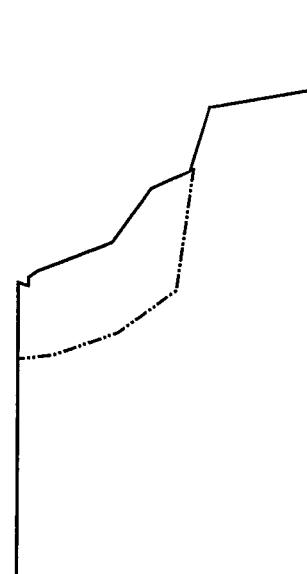




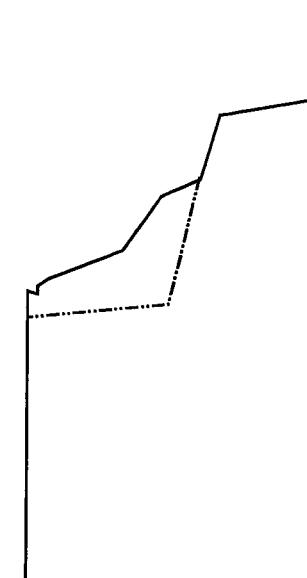
(a) ACTIVE-PASSIVE WEDGE FAILURE



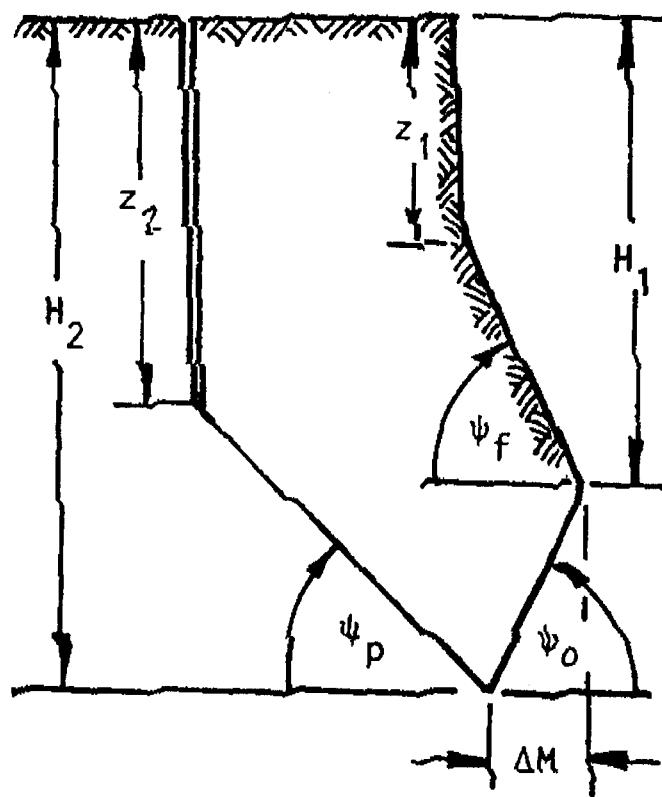
(b) DEEP SEATED CIRCULAR FAILURE



(c) NON-LINEAR FAILURE SURFACE



(d) CRITICALLY ORIENTED TENSION CRACK AND FAILURE PLANE



For $\psi_o > 0$,

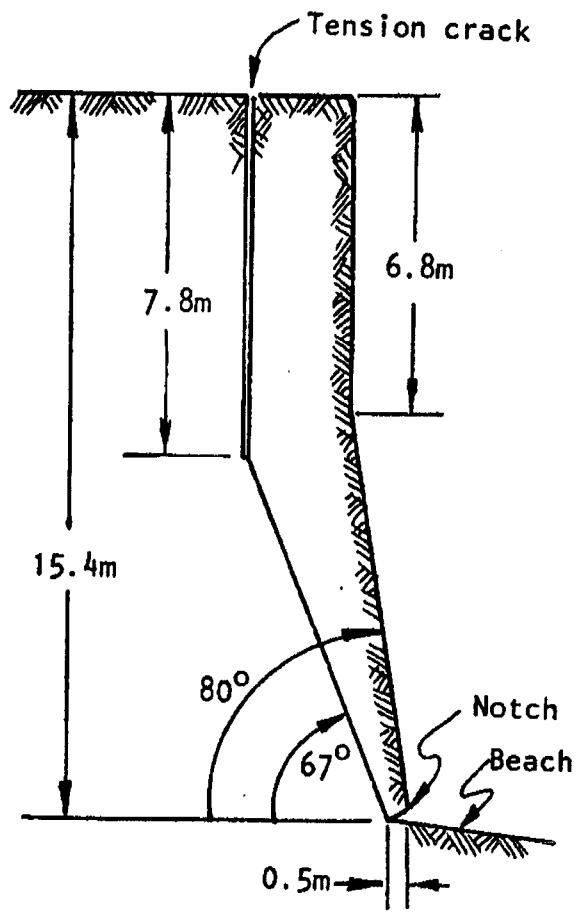
$$\Delta M = (H_2 - H_1) \cot \psi_o$$

The critical tension crack depth, for a dry under-cut slope, is given by:

$$z_2 = \frac{c \cdot \cos \phi}{\gamma \cdot \cos \psi_p \cdot \sin(\psi_p - \phi)}$$

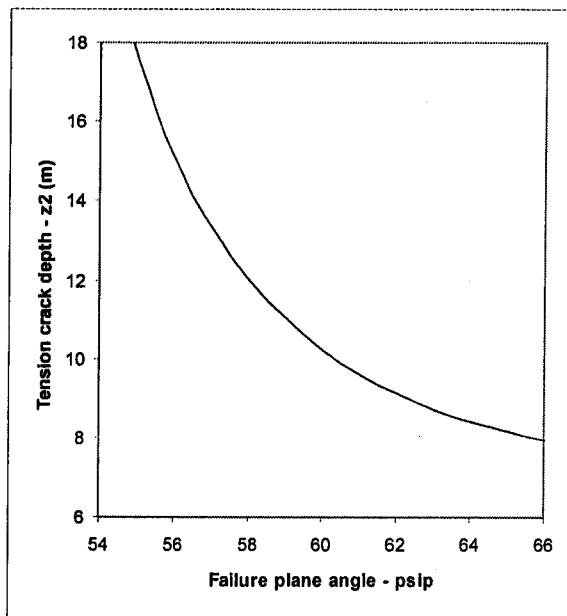
The critical failure plane inclination is:

$$\psi_p = 0.5(\phi + \arctan \frac{H_2^2 - z_2^2}{(H_1^2 - z_1^2) \cdot \cot \psi_f - (H_1 + H_2) \cdot \Delta M})$$



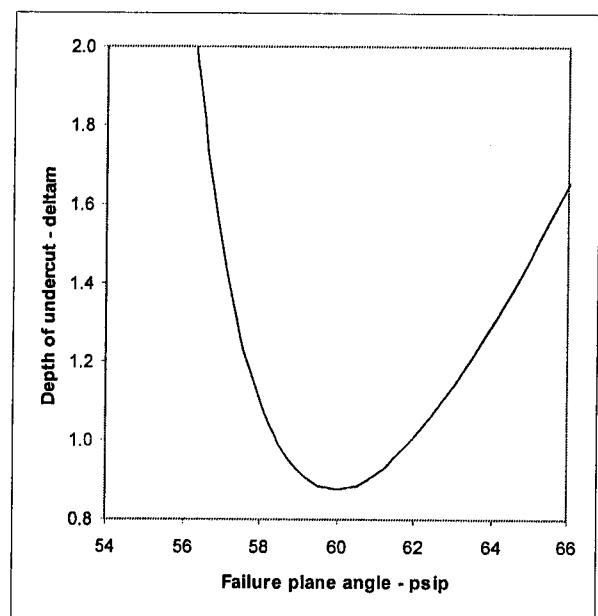
TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 14: Cross section of chalk cliff failure at Joss Bay (from Hutchinson)



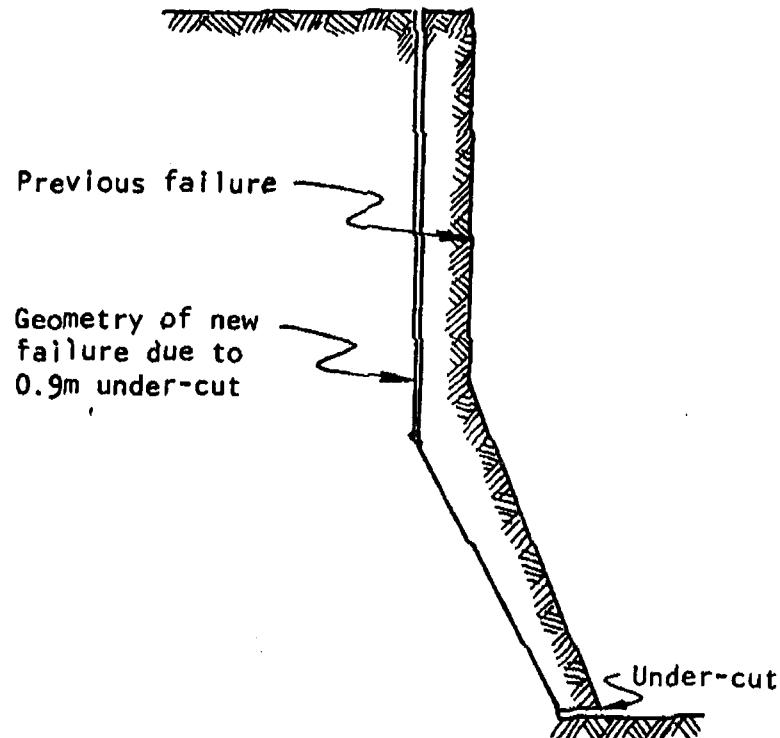
(a) TENSION CRACK DEPTH AT FAILURE

$$z_2 = \frac{c \cdot \cos \phi}{\gamma \cdot \cos \psi_p \cdot \sin(\psi_p - \phi)}$$



(b) DEPTH OF UNDER-CUT AT FAILURE

$$\Delta M = \frac{(H^2 - z_1^2) \cdot \cot \psi_f}{2H} - \frac{H^2 - z_2^2}{2H \cdot \tan(2\psi_p - \phi)}$$



(c) PREDICTED GEOMETRY OF NEXT CLIFF FAILURE
DUE TO UNDER-CUTTING

TAURANGA RELIC SLIP VERIFICATION STUDY

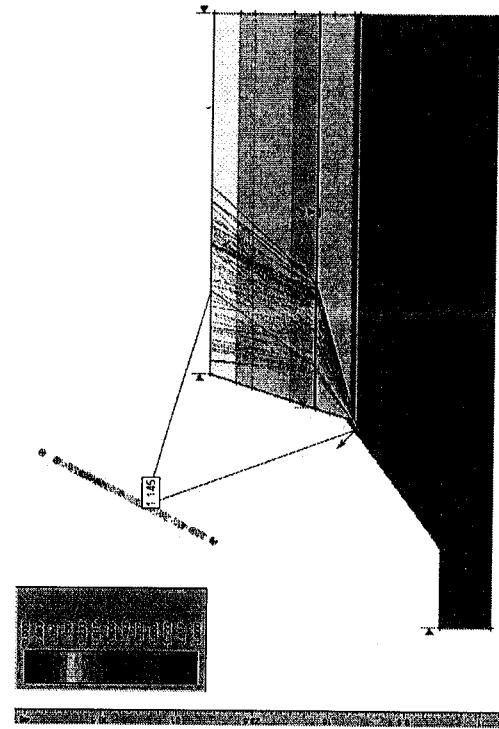
Figure 15: Predicted geometry of next slope failure due to undercutting

TAURANGA RELIC SLIP VERIFICATION STUDY

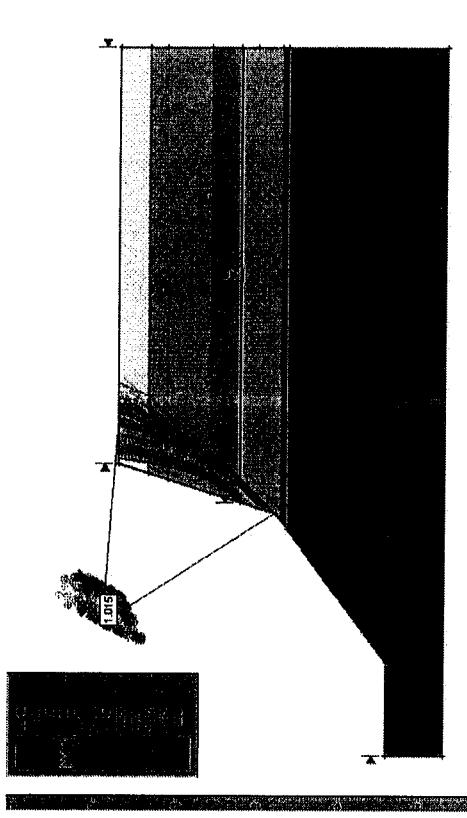
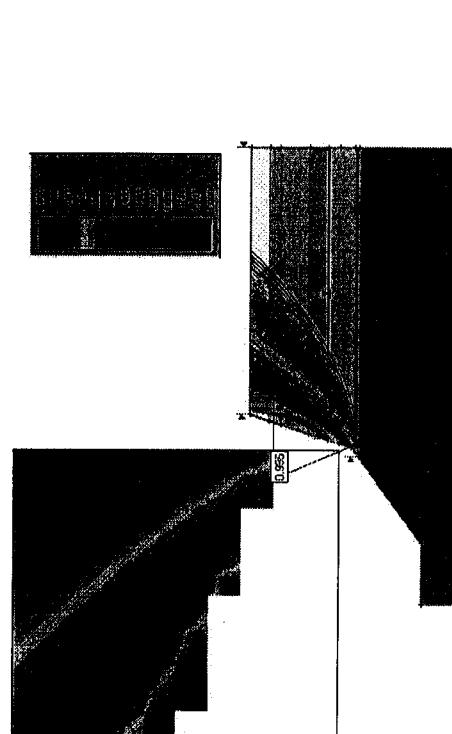
Figure 16: Comparison of different methods of finding critical failure surface

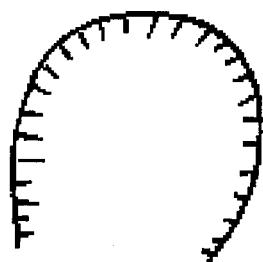
**INCLINED FAILURE SURFACE IN TG3 AND 45-85 DEGREE INCLINATION
IN UPPER MATERIALS**

PATH SEARCH FOR CRITICAL FAILURE SURFACE

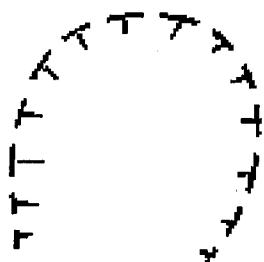


CIRCULAR FAILURES SURFACES USING GRID SEARCH





Probable



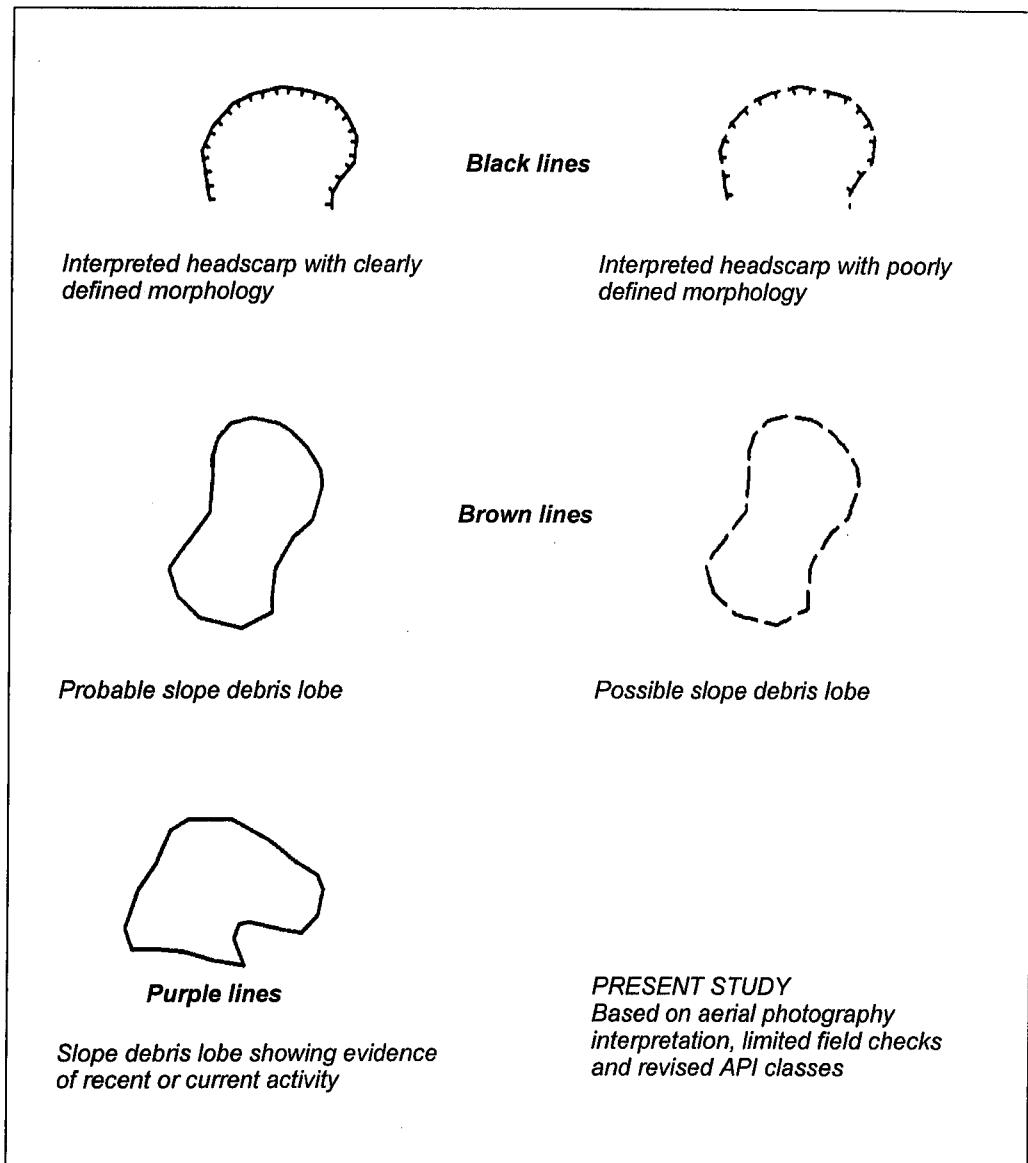
Possible

HOUGHTON & HEGAN 1980

Possible and probable landslides inferred from arcuate main scarps at the head of the slide and/or hummocky topography of the slumped material. Based on vertical aerial photographs up to 1977/78. No field checks were carried out.

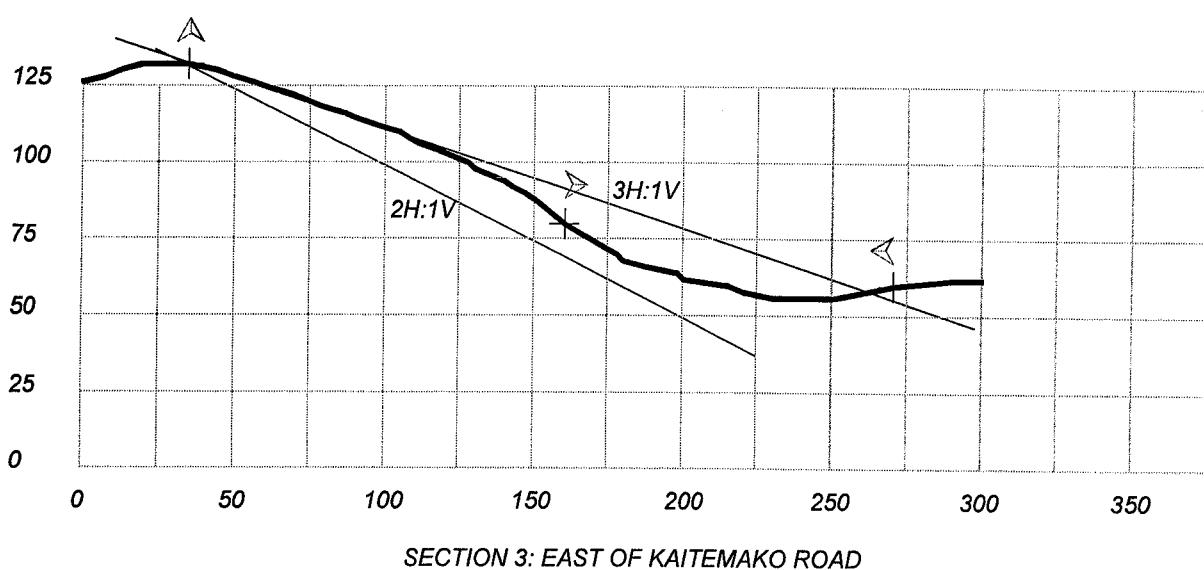
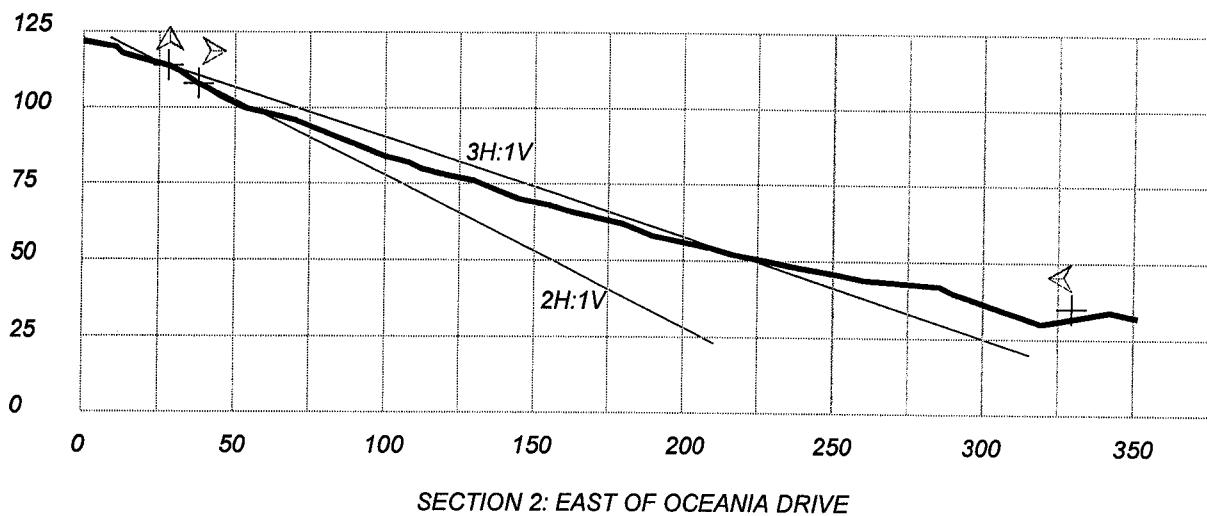
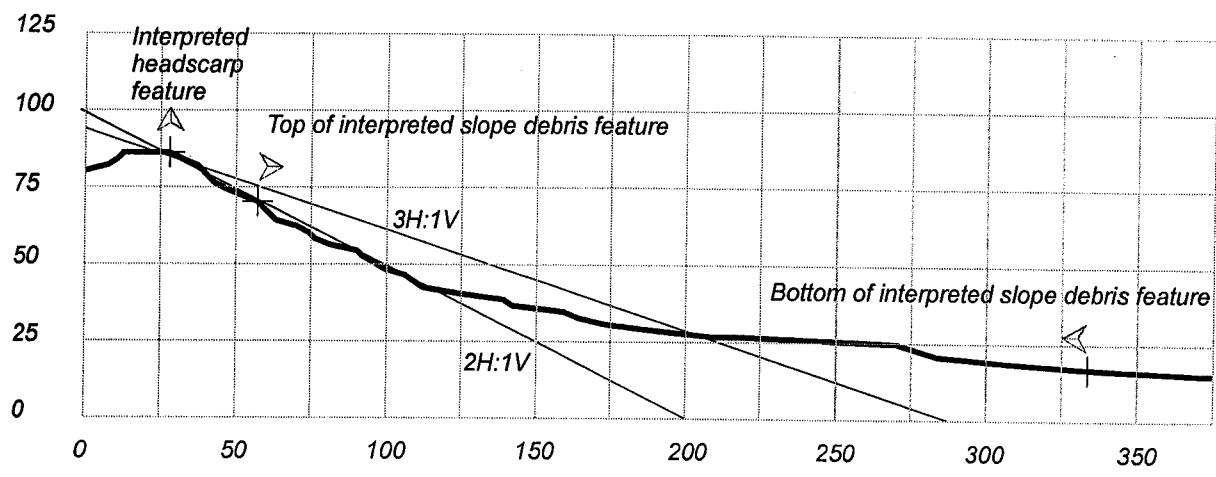
CURRENT TDC GIS INFORMATION

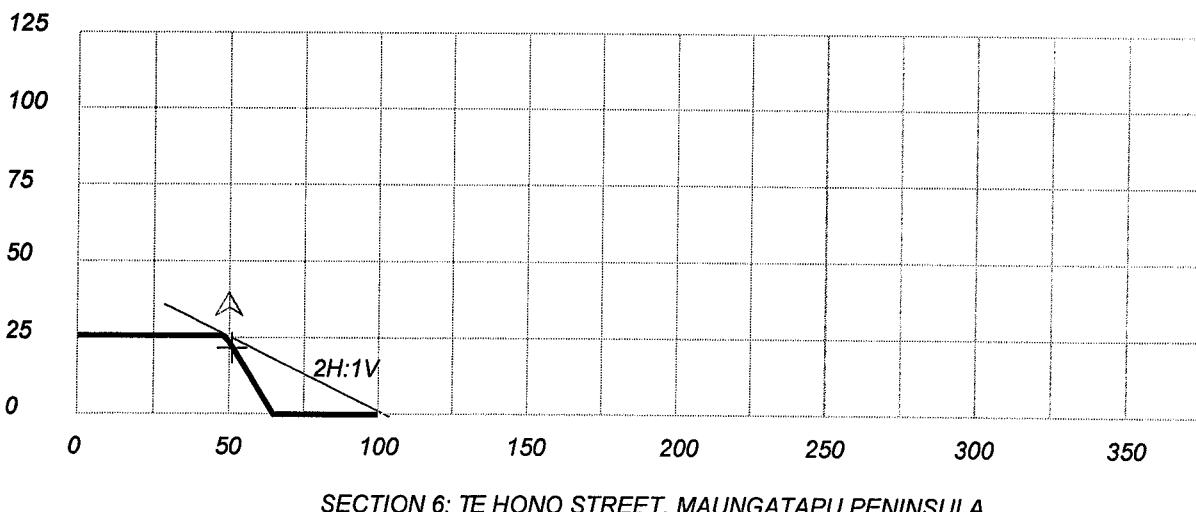
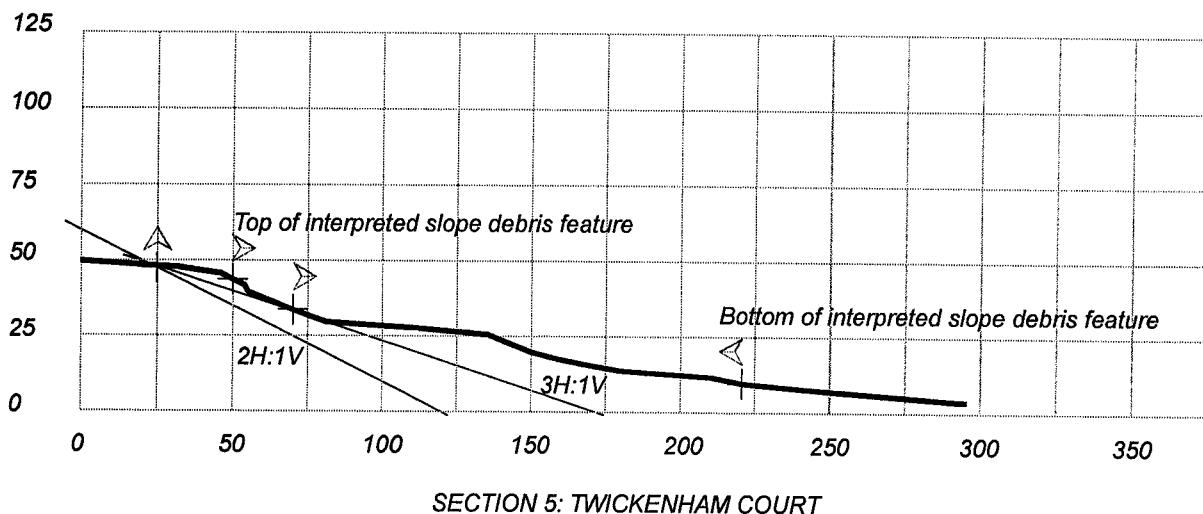
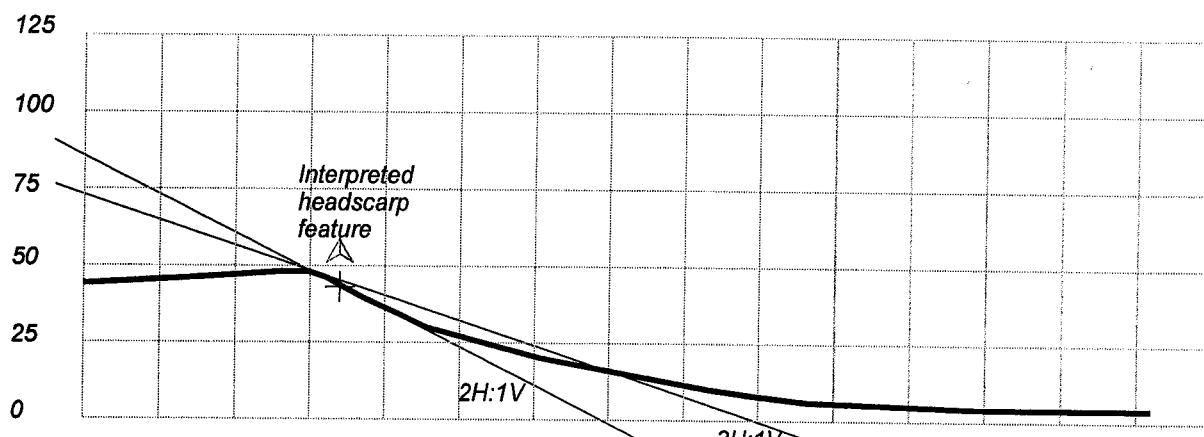
Locations of relic slips from Houghton & Hegan study. Significant location errors of about +/- 50m resulting from transposition of data from aerial photography interpretation on to GIS system.



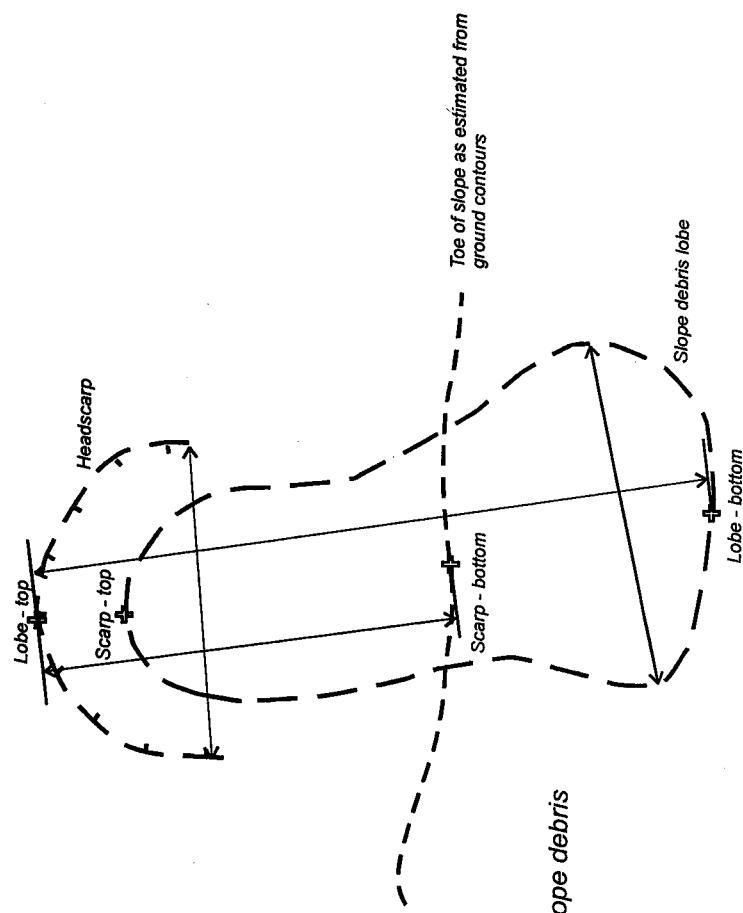
TAURANGA RELIC SLIP VERIFICATION STUDY

Figure 17: Geomorphological symbols used for different studies





TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 19: Sections through relic slip areas

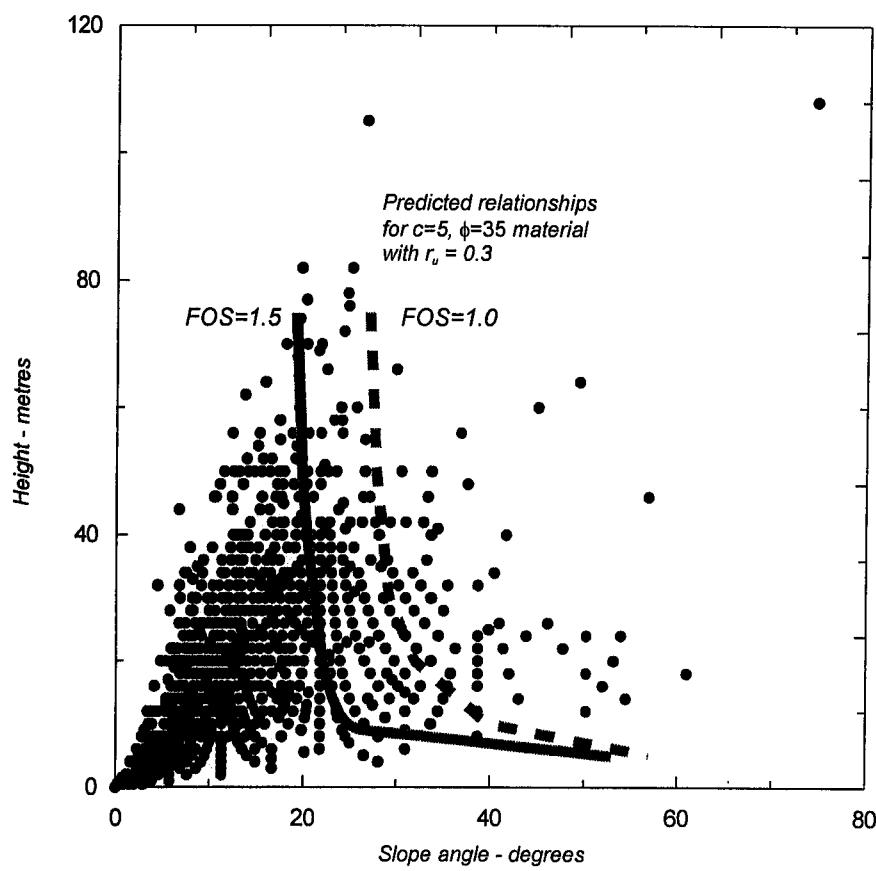


Plan of slide with associated slope debris

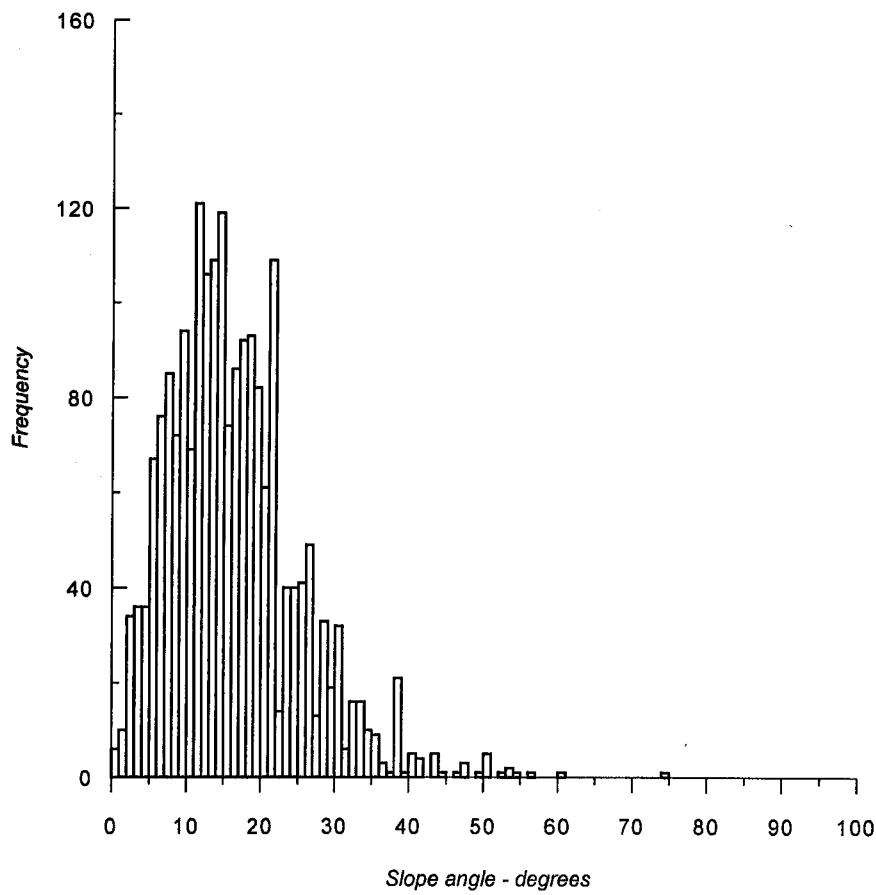
Ref. No.	Coordinates	Height(m)	Distance(m)	Width(m)	Scarp RL	Scarp RL	Runout Distance(m)	Width(m)	Toe Top RL	Toe Top RL	Slope angle	Geo.	Symbol	Comment
1A001	27967692	6384263.7	8	117.5	80	4	12	110	50	5	3.89	3.64	fs	wave cut cliff
1A002	2796861.8	6384341.4	8	90	75	4	12				5.08		fs	wave cut cliff
1B003	2800020.5	6380660.8	82	175	130	40	122	250	160	35	25.11	19.19	mr	2
1B002	2799851.2	6380935.9	?	110	70	?	?				?	?	tn	0
1B003	2799311.4	6380389.6	?	35	60	?	?	300	70	?	?	?	Yes	2
1B004	2796813.4	6381364.6	30	65	40	20	50				24.78	tm	no contours	0
1B005	2797040.5	6381406.9	30	110	100	40	70	100	50	38	15.26	17.74	tm	0

Slide attributes as coded on spreadsheet

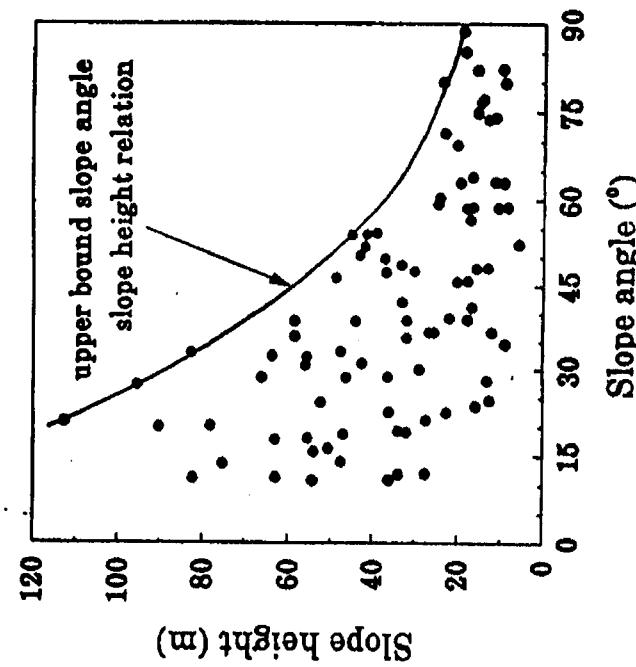
TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 20: Definition sketches for landslide attributes



(a) SCARP HEIGHT VERSUS ANGLE RELATIONSHIP

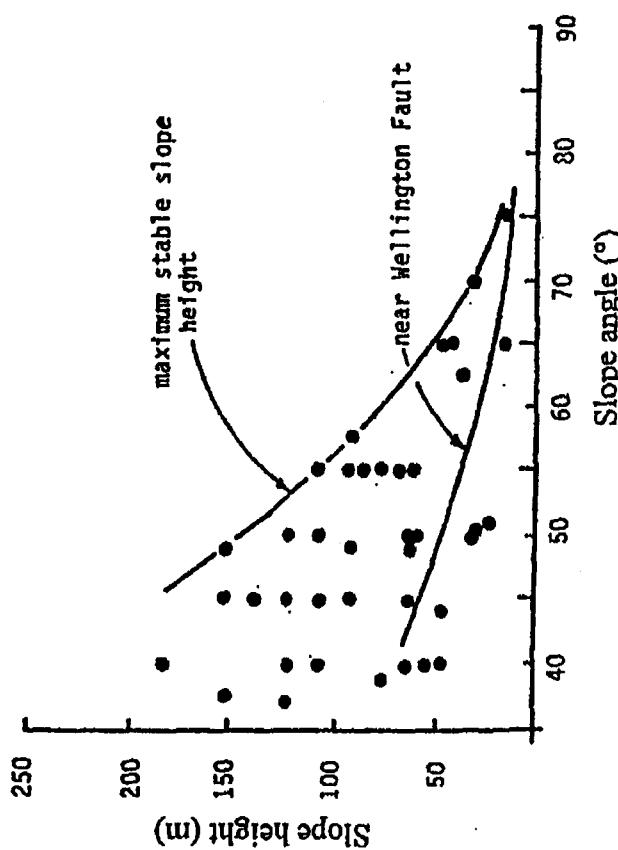


(b) FREQUENCY DISTRIBUTION FOR SCARP ANGLES



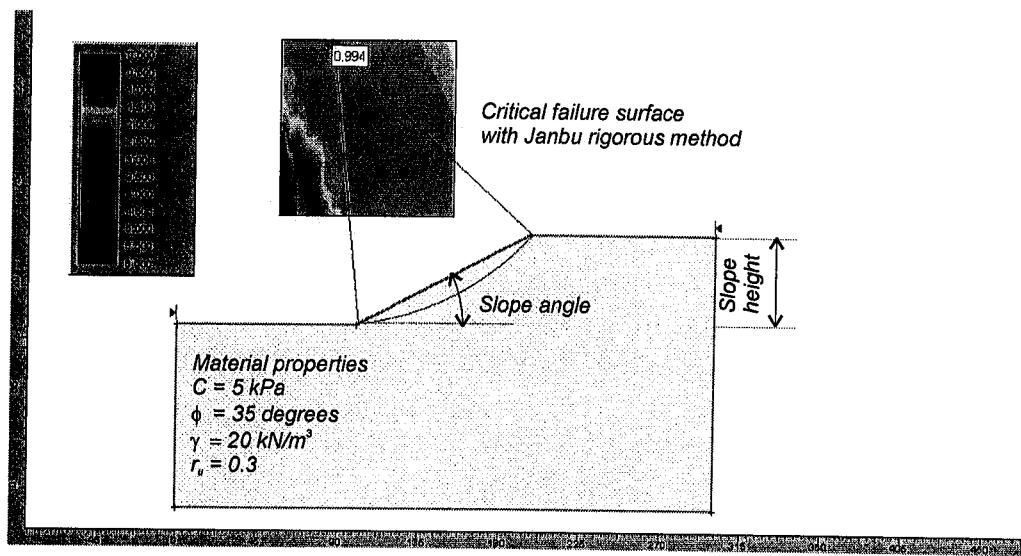
Slope height versus angle relationships for Kawakawa Bay greywackes

*Free MW. Back analysis of closely fractured greywacke sandstone and argillite rock slopes
MSc Thesis, University of Auckland, 1987*

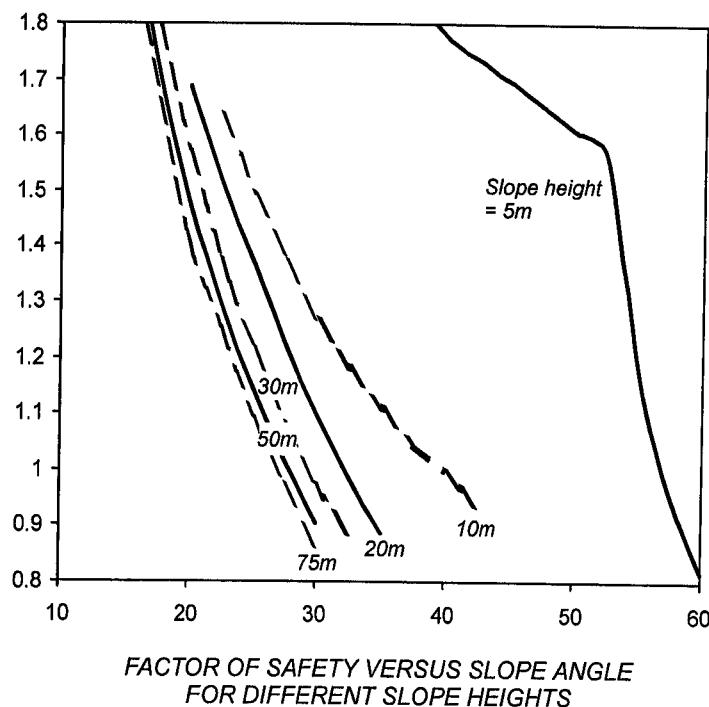


Slope height versus angle relationship for Wellington greywacke

*Grant Taylor TL. Stable angles in Wellington greywacke
New Zealand Engineering 19(4), April 1964*

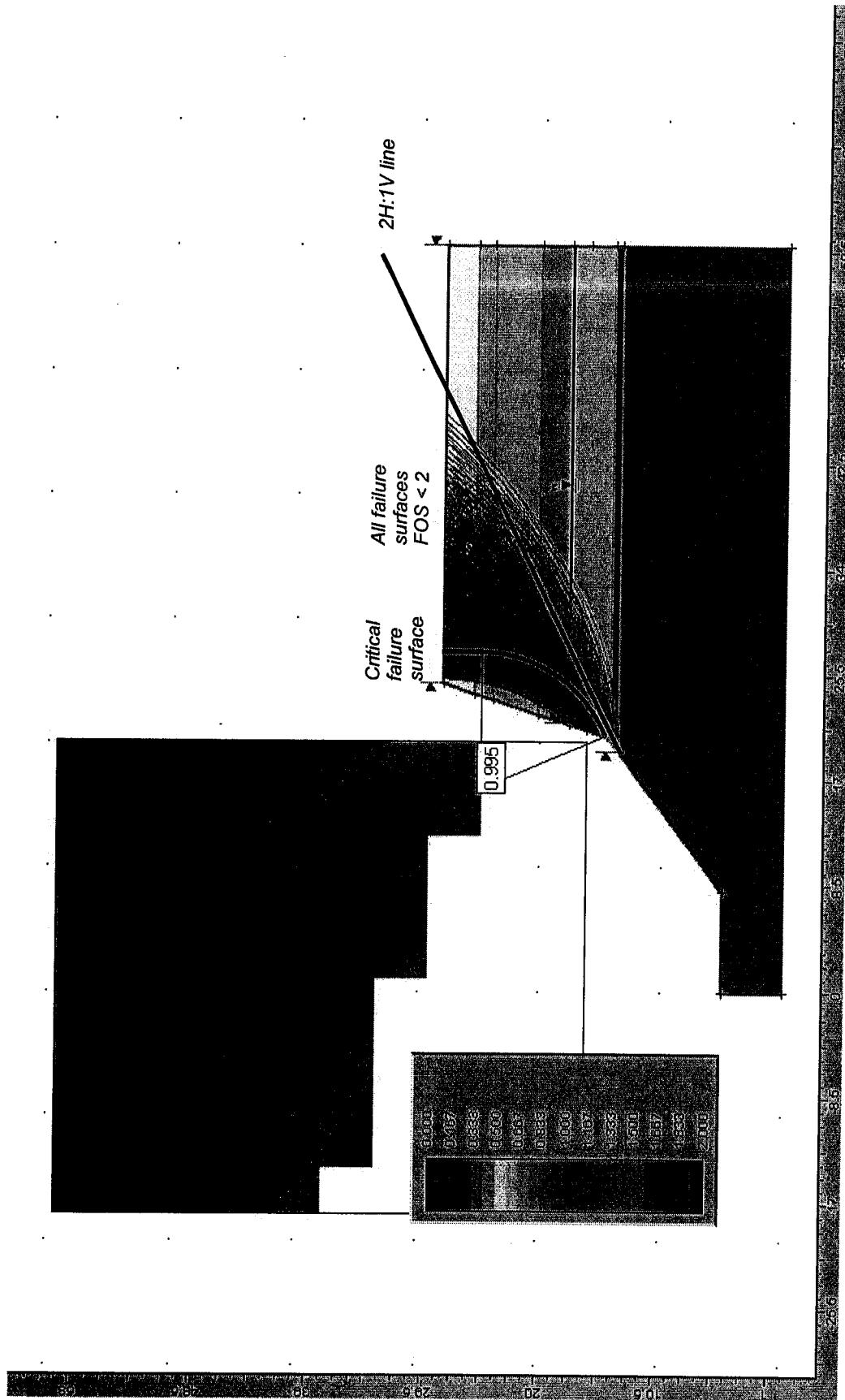


**DEFINITION SKETCH FOR SLOPE STABILITY ANALYSES
USING SLIDE PROGRAM FROM ROCSCIENCE**

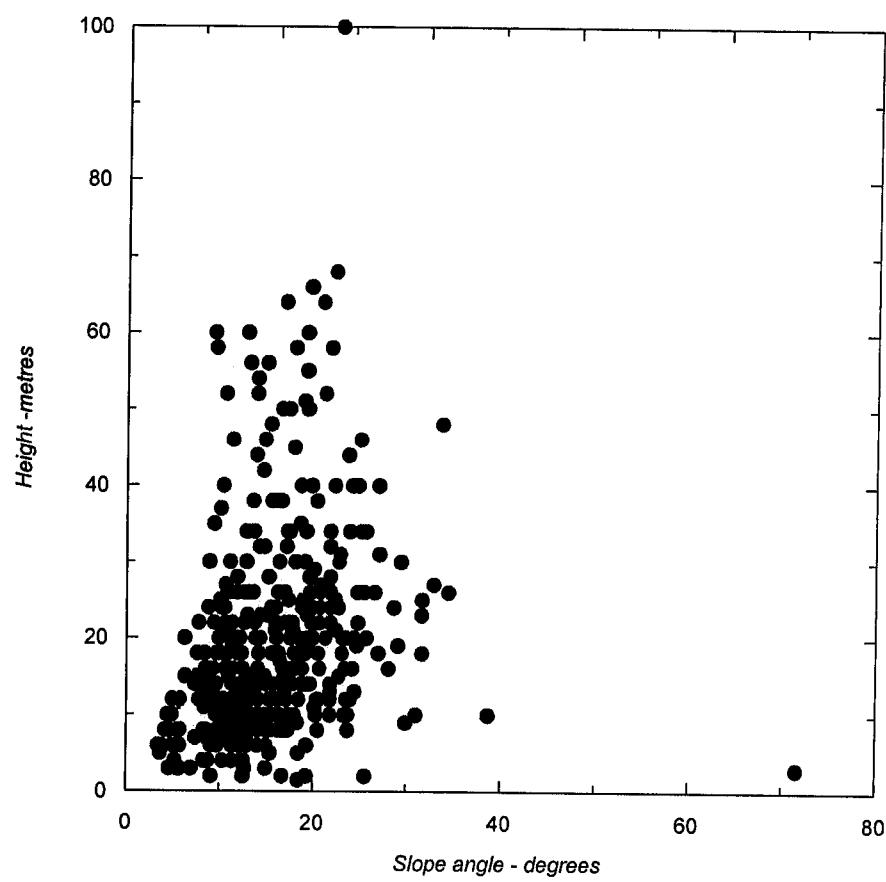


TAURANGA RELIC SLIP VERIFICATION STUDY

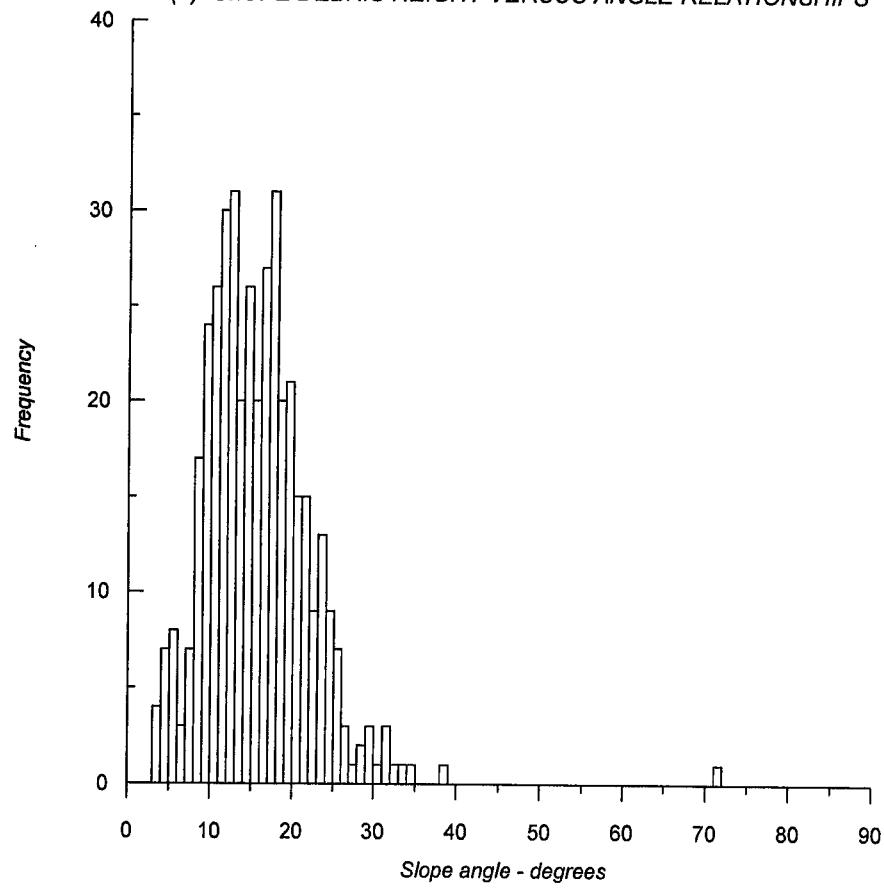
Figure 23: Factors of safety related to slope height and slope angle



TAURANGA RELIC SLIP VERIFICATION STUDY
Figure 24: 2H:1V line compared with factors of safety for circular failure surfaces



(a) SLOPE DEBRIS HEIGHT VERSUS ANGLE RELATIONSHIPS



(b) FREQUENCY DISTRIBUTION FOR SLOPE DEBRIS ANGLES

APPENDIX 1

**HOUGHTON & HEGAN 1980
RELIC SLIP PLAN**

APPENDIX 2

***INFORMATION PROVIDED BY
TDC***

REPORTS

Tonkin & Taylor. *Omokoroa Point land stability investigation*. Report to Tauranga District Council, May 1980

Houghton BF & Hegan BD. *Preliminary assessment of geological factors influencing slope stability and landslipping in and around Tauranga City* NZGS Engineering Geology Report EG348, October 1980

Tonkin & Taylor. *Stability assessment, residential land Minden and Maketu, Tauranga County*. Report to Tauranga County Council, July 1984

Tonkin & Taylor. *Geotechnical appraisal Minden area*. Report to Bruce Henderson Consultants for Western Bay of Plenty District Council, January 1992

Pender MJ, Taylor DK. *Geotechnical appraisal and review Minden area. Report of review panel 4 September 1991*. Report to Western Bay of Plenty District Council, February 1992

Briggs RM et al. *Geology of the Tauranga Area*. Occasional Report No 22, Dept of Earth Sciences, University of Waikato, 1996

AERIAL PHOTOGRAPHS

<i>February 1943</i>	<i>Black & white</i>	<i>Scale:</i>
09.02.43	502/52	502/55-58
	498/47	499/39-44
	500/43-47	501/55-57
	500/60-62	
<i>January 1959</i>	<i>Black & white</i>	<i>Scale:</i>
16.01.59	5153-5181	
<i>December 1971</i>	<i>Black & white</i>	<i>Scale: 200 ft to 1 inch</i>
24.12.71	203296-203307	
<i>September 1973</i>	<i>Black & white</i>	<i>Scale: 200 ft to 1 inch</i>
05.09.73	206615-206618	206626
	206628-206631	206634-206644
	206654	
<i>January 1975</i>	<i>Black & white</i>	<i>Scale: 1:2500</i>
03.01.75	208024-208043	
<i>June 1975</i>	<i>Black & white</i>	<i>Scale: 1000 ft to 1 inch</i>
05.06.75	208759-208783	208785-208792
<i>May 1977</i>	<i>Black & white</i>	<i>Scale: 1:15800</i>
11.05.77	212200-212203	212206-212264
	212267-212278	
<i>October 1978</i>	<i>Black & white</i>	<i>Scale: 1:3800</i>
03.10.78	66721-66723	66725-66741
	66746-66750	66752-66758
25.10.78	66919-66931	
<i>March/April 1997</i>	<i>Black & white</i>	<i>Scale: 1:2000</i>
14.03.97	419211-419213	419217-419219
	419221-419234	419235-419240
30.04.97	500621-500632	

<i>March-June 1997</i>	<i>Black & white</i>	<i>Scale: 1:6000</i>
14.03.97	419244-419266	
15.03.97	419267-419286	419293-419305
	419311-419322	
28.03.97	420280-420292	
30.03.97	420306-420341	420381-420470
	420352-420369	
22.04.97	500250-500254	500266-500272
	500274-500291	500315-500328
	500352-500344	
23.06.97	502545-502551	

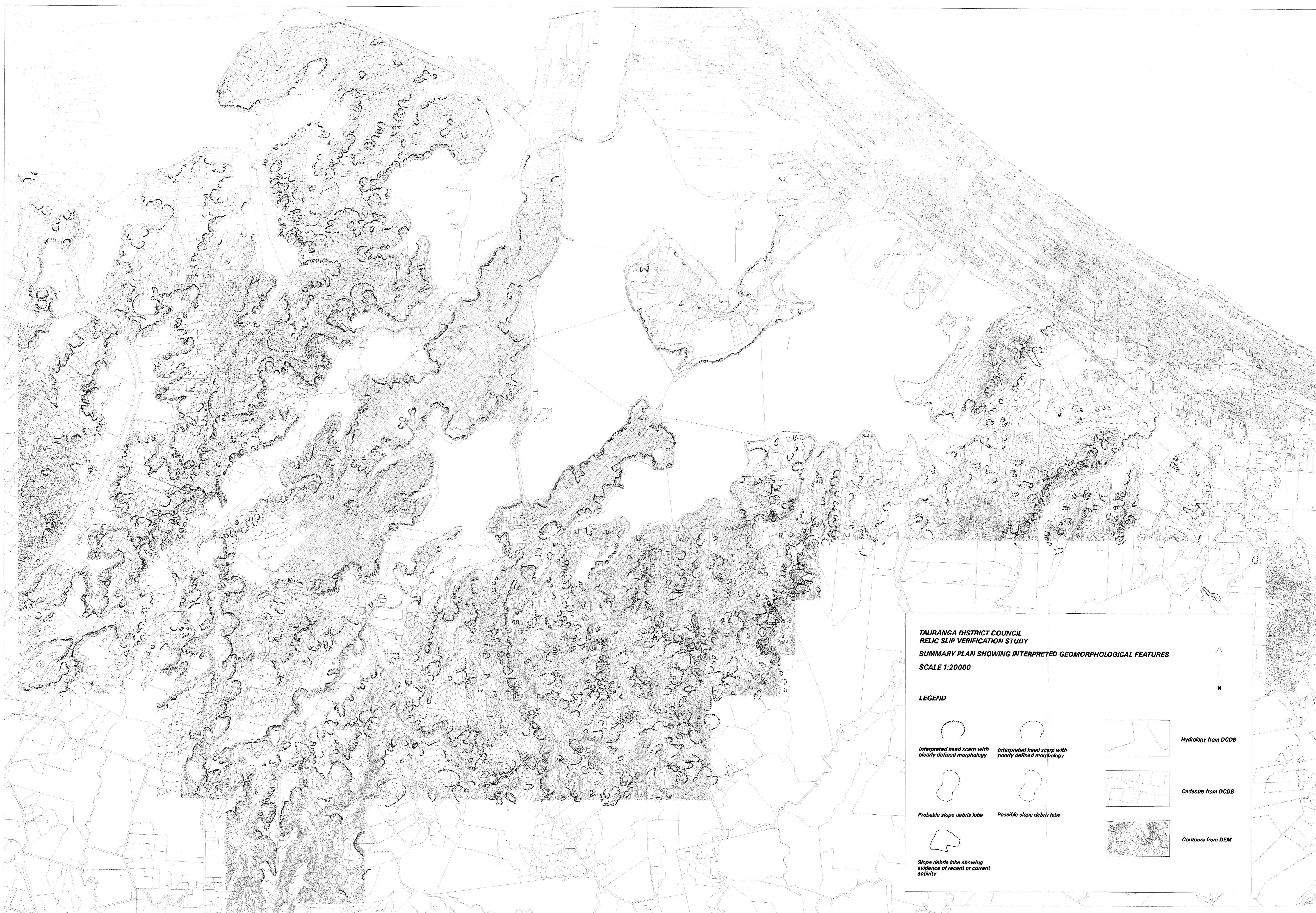
TOPOGRAPHICAL MAPS PROVIDED BY TDC

Scale 1:5000 GIS maps showing roads, lots, Council boundary, 2m contours and slip locations transposed from Houghton & Hegan plan

Scale 1:5000 GIS maps showing land within 2H:1V zone and slopes steeper than 26.5°.

APPENDIX 3

REVISED RELIC SLIP PLAN



APPENDIX 4

GLOSSARY OF TECHNICAL TERMS

GLOSSARY OF TECHNICAL TERMS

Aggradation: the accumulation of material deposited from water in lake or river resulting in sediment build up and increase in height of surfaces

Alluvial: deposited by running water on broad slopes or aprons (fans)

Aquifer: a bed of rock or soil that is sufficiently porous and permeable to be useful as a source of water

Aquitard: a bed of rock or soil in which permeability is relatively low

Ashfall: the unconsolidated fine-grained material formed as a result of volcanic explosions

Clay: material with extremely fine grains of less than 0.002mm particle size

Cohesion: the component of shear strength which is independent of the normal load

Embayment: a landform which is enclosed as in a bay. In a more general sense, it denotes a re-entrant into a slope, i.e. the concave 'relic slips' are often morphological embayments

Exfoliation: the phenomenon of splitting or fracturing of near surface materials more or less parallel to the free surface

Fluvial: deposited by running water in discrete channels as with rivers and streams

Friction: the component of shear strength which is dependent on the normal load

Geographical Information System (GIS): a computer-based system for presentation of topographical information

Geomorphological feature: an interpretation of a landform with respect to the process that formed it

Geomorphology: the description and interpretation of landforms

Headscarp: the upper extent of a landslide which is typically arcuate and steep

Mass movement: a general term for all types of large scale slope movements

Morphology: form

Palaechannel: old river channel

Palaeosol: an older soil preserved beneath more recent deposits

Phreatic surface: the upper surface of the groundwater

Physiography: synonym for geomorphology

Piping: the internal erosion of a soil due to flowing water

Pyroclastic: pyroclastic rocks consist of fragmental volcanic material which has been blown into the atmosphere by explosive activity

Recession: backward movement or retreat of a landslide feature

Relic slip: the remnants of a previous landslide, inferred from the presence of a headscarp feature and/or hummocky slope debris

Residual shear strength: the lowest value of shear strength applicable after large displacements

Shear strength: the resistance to sliding or shearing

Silt: material with fine grains of between 0.002mm and 0.06mm particle size

Slip debris: translated deposits, the fragmented material formed as a result of slope movements

Stratigraphy: the study of stratified rocks (sediments and volcanics) especially their sequence in time, the character of the rocks and the correlation of beds in different localities.

Tension crack: a sub-vertical fracture commonly formed beyond the crest of slopes because of stress relief. These are significant features with respect to slope stability since they may become full of water due periods of high rainfall.

Tephra: a term for all fragmental volcanic products which are ejected through the vent, e.g. ash, cinders, lapilli, scoriae, pumice, bombs, etc.

APPENDIX 5

**ATTRIBUTES OF
HEADSCARPS AND SLOPE
DEBRIS LOBES**

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe			Slope angle			Geo.	Symbol
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Top	Geology	Seepage						
1A001	2796769.2	6384263.7	8	117.5	80	4	12	110	50	5	10	3.89	3.64	swampy	4					fs	swampy
1A002	2796861.8	6384341.4	8	90	75	4	12					5.08								fs	swampy
1B003	2800020.5	6380660.8	82	175	130	40	122	250	160	35	90	25.11	19.19						mr	2	0
1B002	2799851.2	6380935.9	?	110	70	?	?	300	70	?	?	?							tm	0	0
1B003	2799311.4	6380389.6	?	35	60	?	?												tm	Yes	2
1B004	2796813.4	6381364.6	30	65	40	20	50					24.78							tm	0	0
1B005	2797040.5	6381406.9	30	110	100	40	70	100	50	38	60	15.26	17.74	tm					tm	0	0
1B006	2797035.0	6381518.2	7	40	40	28	35					9.93							tm	0	0
1B007	2797162.6	6381553.5	30	85	90	30	60					19.44							tm	0	0
1B008	2797083.9	6381716.3	5	105	45	25	30					2.73							tm	0	0
1B009	2797241.3	6381884.6	12	60	45	20	32					11.31							tm	0	0
1B010	2797390.6	6382014.9	9	70	50	20	29					7.33							Pa	1	1
1B011	2797395.0	6381846.6	35	65	150	20	55					28.30							Pa	0	1
1B012	2797632.1	6381879.1	2	20	75	20	22					5.71							Pa	0	0
1B013	2797507.3	6381719.0	16	75	60	18	34					12.04							Pa	0	0
1B014	2797382.4	6381702.7	43	120	125	20	63	100	80	28	51	19.71	19.29	Pa					Pa	0	0
1B015	2797358.0	6381520.9	7	15	40	40	47					25.02							Pa	2	0
1B016	2797287.5	6381425.9	20	40	30	40	60					26.57							Pa	0	0
1B017	2797292.9	6381341.8	18	45	45	40	58					21.80							Pa	0	0
1B018	2797809.6	6381375.7	15	70	55	50	65					12.09							Pa	0	0
1B019	2797728.6	6381584.0	8	85	70	18	26	100	70	18	21	5.38	4.57	Yes					Pa	0	0
1B020	2797837.7	6381567.5	10	50	45	20	30					11.31							Pa	0	0
1B021	2797923.7	6381549.3	40	115	270	20	60					19.18							Pa	0	0
1B022	2797879.0	6381739.5	5	10	40	18	23					26.57							Pa	Yes	3
1B023	2797880.7	6381868.5	23	100	70	18	41					12.95							Pa	1	3
1B024	2797961.7	6381794.1	11	20	100	50	61					28.81							Pa	1	1
1B025	2797956.8	6381926.3	41	60	185	10	51					34.35							tm	1	1
1B026	2798031.2	6382116.5	7	40	150	18	25					9.93							tm	0	0
1B027	2798039.5	6382230.6	1	25	70	17	18					2.29							tm	1	1
1B028	2798140.3	6381921.4	1	20	50	18	19					2.86							Pa	1	1
1B029	2798087.4	6381772.6	20	70	60	20	40					15.95							Pa	0	0
1B030	2798036.1	6381597.3	45	140	85	20	65	90	50	19	50	17.82	27.07	Pa					Pa	0	0
1B031	2797981.6	6381539.4	50	100	55	20	70					26.57							Pa	2	0
1B032	2797938.6	6381494.7	30	65	45	40	70					24.78							Pa	0	0
1B033	2797867.5	6381420.3	51	125	85	19	70	65	45	28	55	22.20	32.87	Pa					Pa	2	2
1B034	2797860.9	6381266.5	40	125	120	20	60	65	50	20	45	17.74	31.61	Pa					Pa	2	2
1B035	2798743.9	6381253.3	32	140	100	30	62	150	155	29	45	12.88	12.41	tm					tm	2	2
1B036	2798039.9	6381273.2	0.5	15	95	20	20.5					1.91							pa	0	0
1B037	2798963.8	6381569.2	0.5	10	90	20	20.5					2.86							tm	1	1
1B038	2798824.9	6381698.1	0.5	10	55	20	20.5					2.86							tm	3	3
1B039	2798022.3	6381785.4	0.5	15	80	20	20.5					1.91							tm	3	3
1B040	2799112.2	6381662.8	5.5	15	35	15	20.5					20.14							tm	0	0
1B041	2799153.1	6381957.1	5	75	55	10	15					3.81							tm	1	1
1B042	2799183.1	6382038.9	7	70	50	10	17					5.71							tm	1	1
1B043	2799002.6	6382204.7	2	15	60	10	12					7.59							tm	yes	3
1B044	2798730.6	6382256.9	8	125	70	10	18					3.66							tm	yes	3
1B045	2798700.5	6382428.7	8	35	50	10	18					12.88							tm	3	3
1B046	2799327.2	6382591.4	6	90	130	8	14	20	115	7	9	3.81	19.29	tm					tm	2	2
1B047	2799658.6	6381774.8	4	50	60	10	14					4.57							tm	1	1
1B048	2796804.1	6381953.7	40	125	30	70	70	80	27	50	17.74	31.56	mr					mr	3	3	
1B049	2798887.7	6382008.2	31	85	40	30	61	60	30	31	57	20.04	26.57	mr					mr	3	3
1B050	2796917.7	6382051.5	55	175	110	20	75	80	50	30	60	17.45	29.36	mr					mr	3	3
1B051	2796898.2	6382125.3	32	125	170	60	92	60	135	70	81	14.36	20.14	mr					mr	3	3
1B052	2796972.3	6382190.7	50	160	75	20	70	60	30	44	60	17.35	23.43	mr					mr	3	3
1B053	2797022.5	6382275.8	60	170	265	20	80					19.44							mr	3	3
1B054	2797118.4	6382203.8	30	95	35	40	70					17.53							mr	3	3
1B055	2797194.7	6382291.0	18	80	30	40	58					12.68							mr	3	3
1B056	2797272.3	6382343.8	30	90	140	30	60					18.43							mr	3	3
1B057	2797347.8	6382330.6	20	60	70	30	50	50	35	29	44	18.43	22.78	mr					mr	1	1
1B058	2797420.5	6382313.4	11	30	25	30	41					20.14							mr	3	3
1B059	2797155.9	6382325.3	22	120	115	50	72	200	175	39	61	10.39	9.37	mr					mr	4	3
1B060	2797233.8	6382301.2	42	140	60	30	72					16.70							mr	3	3
1B061	2797497.2	6382501.2	40	160	130	30	70	105	95	38	60	14.04	16.95	mr					mr	4	3
1B062	2797503.9	6382322.7	20	45	35	20	40					23.96							mr	3	3
1B063	2797570.0	6382365.0	30	125	70	20	50					13.50							mr	3	3
1B064	2797692.1	6382365.2	10	15	35	20	30					33.69							mr	0	0
1B065	2797788.2	6382567.4	10	25	130	20	30					21.80							mr	3	3
1B066	2797953.5	6382685.8	13	100	100	10	23					7.41							tm	1	1
1B067	2798025.1	6382761.9	10.5	100	70	10	20.5					5.99							tm	1	1
1B068	2798130.4	6382807.2	11	100	100	10	21					6.28</td									

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe			Slope angle			Geo. Symbol	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage							
1B086	2797333.0	6382995.8	2	40	20	17	19										2.86	tm		1	
2A001	2792710.7	6384255.5	10	40	20	0	10										14.04	tm		0	
2A002	2792750.4	6384282.0	14	30	25	0	14										25.02	tm		0	
2A003	2792933.0	6384395.8	12	45	15	0	12										14.93	tm		1	
2A004	2792964.7	6384407.7	12	35	25	0	12										18.92	tm		1	
2A005	2793253.1	6384545.3	13	70	60	0	13										10.52	tm		3	
2A006	2792771.6	6385257.0	8	70	55	4	12										6.52	tm		3	
2A007	2792873.5	6385384.0	8	40	90	4	12										11.31	tm		3	
2A008	2792890.7	6385463.4	10	45	70	4	14										12.53	tm		3	
2A009	2792887.2	6385918.5	10	40	65	6	16	3	25	7	10	14.04	71.57	tm					2		
2A010	2793030.9	6386414.5	12	25	90	2	14										25.64	tm	swampy	3	
2A011	2796860.7	6384308.5	10	90	75	6	16										6.34	tm		0	
2A012	2796784.0	6384250.3	7	90	90	8	15	185	55	4	10	4.45	3.40	tm			2.29			4	
2A013	2796747.0	6384000.2	2	50	90	18	20										5.08	mr		1	
2A014	2796642.5	6384034.6	4	45	90	20	24										16.11	mr		4	
2A015	2796543.2	6384079.6	26	90	90	30	56	125	70	24	47						14.36	mr		4	
2A016	2796539.3	6383987.0	10	30	50	30	40										18.43	mr		0	
2A017	2796475.8	6383984.3	55	110	185	30	85	375	85	15	67	26.57	10.57	mr			8.84			4	
2A018	2796450.6	6383889.1	40	75	60	20	60										28.07	mr		3	
2A019	2796483.7	6383733.0	10	25	85	20	30										21.80	mr		1	
2A020	2796414.9	6383979.1	42	130	75	40	82	75	165	32	80	17.90	33.69	mr			3				
2A021	2796372.6	6384013.4	23	75	85	60	83	80	90	60	80	17.05	16.04	mr			14.04			3	
2A022	2796445.3	6384082.2	50	200	145	26	76	340	90	20	80	14.04	9.35	mr			4				
2A023	2796350.1	6384112.7	28	150	60	30	58	270	75	16	46	10.57	8.84	mr			2				
2A024	2796190.0	6384446.0	4	30	25	14	18	50	30	3	5	7.59	16.70	mr			2				
2A025	2796138.4	6384420.9	5	20	25	13	18	45	25	3	5	14.04	18.43	mr			2				
2A026	2796074.9	3684364.0	5	35	35	12	17	40	30	5	7	8.13	16.70	mr			2				
2A027	2796063.0	6384356.1	4	30	25	13	17	45	40	5	8	7.59	14.93	mr			2				
2A028	2796033.9	6384296.6	2	40	55	18	20	45	55	5	10	2.86	18.43	mr			2				
2A029	2796112.0	6384057.7	45	100	40	85	100	65	40	80	24.23	24.23	mr			2					
2A030	2796078.9	6383973.8	65	185	80	20	85	175	70	25	50	19.36	18.92	mr			2				
2A031	2796098.7	6383789.9	12	50	100	80	92	125	25	50	85	13.50	18.57	mr			4				
2A032	2796158.3	6383759.4	10	40	170	90	100										14.04	mr		2	
2B001	2792673.4	6380515.4	16	90	55	60	76										10.08	pa		3	
2B002	2792873.7	6380365.8	28	100	105	70	98	65	30	78	90	15.64	17.10	pa			4				
2B003	2792842.5	6380398.9	36	65	150	60	96	80	45	66	88	28.98	20.58	pa			4				
2B004	2793138.3	6380486.2	18	75	125	88	106	80	55	84	96	13.50	15.38	pa			2				
2B005	2793179.3	6380409.5	22	60	55	60	82										20.14	pa		1	
2B006	2793199.1	3680531.2	60	135	190	46	106	225	150	14	82	23.96	22.24	pa			4				
2B007	2792996.7	6380499.4	36	150	145	70	106	240	75	61	88	13.50	10.62	pa			4				
2B008	2793122.4	6380549.7	50	220	120	60	110	130	25	67	76	12.80	18.30	pa			2				
2B009	2792980.8	6380637.0	14	55	45	68	72										14.28	pa		3	
2B010	2792806.2	6380742.8	6	75	45	42	48										4.57	pa		3	
2B011	2793048.3	6380711.1	15	40	15	60	75										20.56	pa		0	
2B012	2792763.9	6380860.6	4	50	65	44	48										4.57	pa		1	
2B013	2793053.6	6380754.7	34	105	65	48	82										17.94	pa		3	
2B014	2793162.1	6380733.6	64	225	315	24	88	325	200	200	14	74	15.88	12.83	pa/wt			4			
2B015	2793056.2	6380836.8	40	100	55	40	80										21.80	pa		3	
2B016	2793107.8	6380901.6	40	140	210	44	84										15.95	pa		3	
2B017	2793266.6	6380924.1	28	75	45	48	76										20.47	wt		3	
2B018	2793331.4	6380893.7	28	60	50	34	62	90	25	21	34	25.02	24.49	wt			4				
2B019	2793242.4	6381051.1	48	150	125	34	82	200	25	23	40	17.74	16.44	wt			4				
2B020	2793336.3	6381110.6	40	105	90	42	82	215	50	28	40	20.85	14.10	wt			4				
2B021	2793110.1	6381122.5	30	125	190	42	72										13.50	pa		3	
2B022	2793393.9	6381158.3	50	75	125	26	76	100	140	44	58	33.69	17.74	wt			3				
2B023	2793190.8	6381166.2	38	110	160	36	74										19.06	pa		3	
2B024	2793339.0	6381190.0	32	110	175	48	80	115	60	48	66	16.22	15.55	wt			4				
2B025	2793473.9	6381238.9	12	95	90	34	46	120	30	34	42	7.20	5.71	wt			4				
2B026	2793307.2	6381238.9	30	60	150	42	72										26.57	pa		3	
2B027	2793341.6	6381371.2	12	50	55	26	38										13.50	pa		3	
2B028	2793149.8	6381323.6	12	35	45	20	32										18.92	pa		3	
2B029	2793004.3	6381314.3	8	30	45	20	28										14.93	pa		1	
2B030	2792854.8	6381182.0	5	65	55	28	33										4.40	pa		1	
2B031	2793550.6	6380524.5	7	80	55	?	28										?	wt		0	
2B032	2793536.3	6381454.9	4	45	40	30	34										5.08	wt		1	
2B033	2793474.1	6381493.2	22	110	90	20	42	60	90	27	35	11.31	14.04	wt			3				
2B034	2793409.6	6381525.6	20	120	195	20	40										9.46	wt		3	
2B035	2793237.3	6381536.5	1	50	30	9	10										1.15	fa		1	
2B036	2793300.8	6381573.6	0	50	25	10	10										0.00	fa		1	
2B037	2793333.3	6381652.1	0	40	25	10	10										0.00	fa		1	
2B038	2793461.9	6381399.1	14	70	120	40	54										11.31	wt		1	
2B039	2793605.8	6381388.2	25	160	275	30	55					</									

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Top		Slope angle		Geo.
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol	
2B055	2793573.3	6382084.5	20	70	85	10	30	—	—	—	15.85	—	wt	Yes	3	
2B056	2793462.2	6382051.1	3	45	40	10	13	—	—	—	3.81	—	fa	—	3	
2B057	2793184.4	6382271.5	10	30	110	10	20	—	—	—	18.43	—	wt	—	3	
2B058	2793330.7	6382199.3	12	70	90	10	22	—	—	—	9.73	—	wt	—	3	
2B059	2793199.2	6381810.4	60	125	65	10	70	—	—	—	25.64	—	wt	—	3	
2B060	2793217.7	6381751.1	20	45	50	20	40	—	—	—	23.96	—	wt	—	3	
2B061	2793184.4	6381701.1	35	75	75	20	55	80	40	18	40	25.02	24.82	wt	—	4
2B062	2793051.0	6381752.9	11	45	75	70	81	—	—	—	13.74	—	wt	—	1	
2B063	2793015.9	6381615.9	41	90	110	20	61	—	—	—	24.49	—	wt	—	1	
2B064	2792869.5	6381651.1	41	100	120	30	71	175	55	23	71	22.29	15.34	wt	—	4
2B065	2792814.0	6381536.2	30	60	40	30	60	55	25	32	50	26.57	26.98	wt	—	4
2B066	2792751.0	6381536.2	33	105	45	30	63	—	—	—	17.45	—	wt	—	1	
2B067	2792784.3	6381625.1	40	45	100	30	70	—	—	—	41.63	—	wt	—	1	
2B068	2792773.2	6381725.2	20	75	70	50	70	—	—	—	14.93	—	wt	—	1	
2B069	2792852.9	6381815.9	21	90	105	50	71	—	—	—	13.13	—	wt	—	3	
2B070	2792964.0	6381847.4	32	90	135	50	82	—	—	—	19.57	—	wt	—	1	
2B071	2792756.6	6381860.4	20	105	80	50	70	170	80	40	65	10.78	10.01	wt	—	2
2B072	2792849.2	6381949.3	30	210	185	40	70	—	—	—	8.13	—	wt	—	1	
2B073	2792917.7	6382025.2	20	115	125	40	60	—	—	—	9.87	—	wt	—	3	
2B074	2792880.7	6382106.7	10	60	60	40	50	—	—	—	9.46	—	wt	—	1	
2B075	2792776.9	6382301.2	8	80	130	10	18	—	—	—	5.71	—	tm	—	1	
2B076	2792782.5	6382504.9	5	35	175	15	20	—	—	—	8.13	—	tm	Yes	3	
2B077	2792932.5	6382627.1	5	95	75	5	10	—	—	—	3.01	—	tm	—	1	
2B078	2793117.7	6382390.1	1	100	95	9	10	—	—	—	0.57	—	tm	—	3	
2B079	2793249.2	6382558.6	3	70	50	8	11	—	—	—	2.45	—	tm	—	1	
2B080	2793356.6	6382621.6	6	70	135	12	18	—	—	—	4.90	—	tm	—	1	
2B081	2793256.6	6382654.9	7	80	35	4	11	—	—	—	5.00	—	tm	—	1	
2B082	2793341.8	6382701.2	2	35	90	10	12	—	—	—	3.27	—	tm	—	1	
2B083	2793441.8	6382530.8	1	10	130	10	11	—	—	—	5.71	—	fa	—	3	
2B084	2793390.0	6382417.8	5	25	85	10	15	—	—	—	11.31	—	fa	—	3	
2B085	2794240.1	6382754.9	2.5	40	75	8	10.5	—	—	—	3.58	—	tt	—	3	
2B086	2794367.9	6382121.5	3	25	85	12	15	—	—	—	6.84	—	tt	—	1	
2B087	2793597.4	6382469.7	5	20	40	3	8	—	—	—	14.04	—	fa	—	1	
2B088	2793612.2	6382480.8	3	25	45	3	6	—	—	—	6.84	—	fa	—	1	
2B089	2793658.5	6382517.9	6	20	50	3	9	—	—	—	16.70	—	fa	—	1	
2B090	2793797.4	6382201.1	30	100	125	10	40	—	—	—	16.70	—	wt	—	3	
2B091	2794079.0	6382375.2	1	20	225	10	11	—	—	—	2.86	—	fa	—	1	
2B092	2794488.3	6381745.5	2	100	125	8	10	—	—	—	1.15	—	fa	—	0	
2B093	2794191.9	6382171.5	3	55	55	6	9	—	—	—	3.12	—	tt	—	1	
2B094	2794108.6	6382056.7	3	30	80	6	9	—	—	—	5.71	—	tt	—	1	
2B095	2794036.4	6381865.9	4	75	95	9	13	—	—	—	3.05	—	fa	—	0	
2B096	2794432.7	6381495.5	2	50	135	8	10	—	—	—	2.29	—	fa	—	0	
2B097	2794051.2	6381464.0	1	10	45	10	11	—	—	—	5.71	—	tt	—	0	
2B098	2793398.2	6381315.8	2	55	45	12	14	—	—	—	2.08	—	tt	—	0	
2B099	2794179.0	6381039.9	7	25	145	7	7	—	—	—	7	—	tt	—	0	
2B100	2794106.7	6381301.0	12	110	145	20	32	130	110	19	31	6.23	5.71	tt	—	2
2B101	2794273.4	6381351.0	3	50	130	30	33	—	—	—	3.43	—	tt	—	0	
2B102	2794375.3	6381262.1	5	30	35	10	15	—	—	—	9.46	—	fa	—	0	
2B103	2794484.6	6381238.1	0	30	40	10	10	—	—	—	0.00	—	fa	—	0	
2B104	2795021.7	6381556.6	1	100	75	9	10	—	—	—	0.57	—	tm	—	0	
2B105	2795008.7	6381619.8	4.5	15	105	10	14.5	—	—	—	16.70	—	tm	—	0	
2B106	2795093.9	6381477.0	12	30	170	20	32	—	—	—	21.80	—	tm	—	0	
2B107	2795179.1	6381352.9	13	125	180	20	33	—	—	—	5.94	—	tm	—	0	
2B108	2795079.1	6381838.1	1	25	85	9	10	—	—	—	2.29	—	tm	—	0	
2B109	2795418.0	6381775.2	18	30	50	10	28	—	—	—	30.96	—	tm	—	1	
2B110	2795381.0	6381962.2	12	110	175	10	22	—	—	—	6.23	—	tm	—	1	
2B111	2795395.8	6382067.8	12	80	100	10	22	—	—	—	8.53	—	tm	—	1	
2B112	2795697.7	6381352.9	105	210	65	50	155	300	125	30	130	26.57	22.62	kd	2	
2B113	2795769.9	6381465.9	34	85	85	110	144	160	125	70	110	21.80	24.82	kd	2	
2B114	2796218.1	6381315.8	23	45	50	60	83	—	—	—	27.07	—	pa	—	0	
2B115	2796273.7	6381367.7	50	120	50	30	80	—	—	—	22.62	—	pa	—	0	
2B116	2796292.2	6381501.1	20	40	75	40	60	—	—	—	26.57	—	pa	—	0	
2B117	2796394.1	6381382.5	30	80	125	60	90	—	—	—	20.56	—	pa	—	0	
2B118	2796457.0	6381293.6	66	115	225	30	100	—	—	—	29.85	—	pa	Yes	0	
2B119	2796514.4	6381451.1	35	100	180	40	80	155	150	30	75	19.29	17.88	pa	Yes	2
2B120	2796638.5	6381569.6	33	100	125	40	60	80	35	25	45	18.26	23.63	pa	—	2
2B121	2796890.4	6381095.4	?	135	70	?	?	—	—	—	?	—	pa	—	0	
2B122	2796892.3	6381226.9	?	70	40	?	?	—	—	—	?	—	pa	—	0	
2B123	2796860.8	6381269.5	20	75	35	20	45	—	—	—	14.93	—	pa	—	0	
2B124	2796870.0	6381343.6	27	80	55	20	52	—	—	—	18.65	—	pa	—	0	
2B125	2797179.3	6381545.5	10	90	55	30	50	—	—	—	6.34	—	pa	—	0	
2B126	2797147.9	6381708.5	15	60	40	30	45	—	—	—	14.04	—	pa	—	0	
2B127	2796749.7	6381834.4	35	85	70	30	80	120	40	24	70	22.38	25.02	pa	—	2
2B128	2796790.4	6381954.8	27	90	125	30	65	115	75	38	50	16.70	13.21	pa	4	
2B129	2796870.0	6382027.0	20	95	55	30	69	75	30	39	61	11.89	21.80	mr	4	
2B130	2796901.5	6382110.4	33	120	90	30	75	90	45	40	60	15.38	21.25	mr	4	
2B131	2796957.1	6382216.0	15	85	80	40	70	90	35	40	58	10.01	18.43	mr	2	
2B132	2797010.8	6382267.8	30	80	75	50	80	—	—	—	20.56	—	mr	0		
2B133	2796807.1	6382216.0	12	160	140	60	91	260	205	45	82	4.29	10.03	mr	4	
2B134	2796647.8	6381899.3	10	35	75	50	60	—	—	—	15.95	—	pa	—	3	
2B135	2796644.1	6381773.3	11	65	75	50	61	—	—	—						

Ref. No.	Coordinates	Scarp			Bottom		Scarp		Runout		Toe		Slope angle		Geo.	Symbol
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage		
2B142	2796210.7	6382582.7	10	45	40	10	20						12.53	tm	3	
2B143	2796229.2	6382704.9	10	40	50	10	20						14.04	tm	3	
2B144	2796221.8	6382904.9	5	45	35	10	15						6.34	fa	1	
2B145	2796192.2	6382969.8	2	15	50	10	12						7.59	fa	1	
2B146	2796016.2	6382925.3	3	35	115	10	13						4.90	fa	3	
2B147	2796027.3	6383103.1	3	35	125	20	23						4.90	mr	1	
2B148	2796145.9	6383271.7	3	10	65	18	21						16.70	mr	3	
2B149	2796342.2	6383460.6	6	75	85	10	24						4.57	mr	1	
2B150	2796418.1	6383553.2	5	100	110	10	20						2.86	mr	1	
2B151	2796507.0	6383679.1	6	95	65	10	21						3.61	mr	1	
2B152	2796116.2	6383693.9	15	25	40	70	105						30.96	mr	1	
2B153	2796121.8	6383631.0	32	150	80	50	92	175	70	42	66	12.04	15.95	mr	4	
2B154	2796062.5	6383573.5	50	155	95	50	102	165	45	49	70	17.88	17.81	mr	4	
2B155	2796008.8	6383493.9	20	100	105	50	90	140	110	39	68	11.31	20.02	mr	4	
2B156	2795901.4	6383166.1	25	90	100	10	40	85	45	10	30	15.52	19.44	mr	4	
2B157	2795829.2	6383143.9	15	75	105	10	40	70	45	10	30	11.31	23.20	mr	4	
2B158	2795716.2	6383258.7	30	60	150	10	40						26.57	mr/tt	3	
2B159	2795356.9	6383060.5	1	10	250	10	11						5.71	tt	3	
2B160	2795147.6	6383232.8	1	15	95	10	11						3.81	tt	3	
2B161	2795106.9	6382123.4	0.5	35	75	1	2						0.82	tm	1	
2B162	2795219.8	6382212.3	0.5	120	65	2	3						0.24	tm	3	
2B163	2795519.9	6382504.9	0.5	75	60	8	10						0.38	tm	3	
2B164	2795618.0	6382812.3	5	35	75	10	15						8.13	fa	3	
2B165	2795727.3	6382651.2	10	30	160	10	22						18.43	fa	3	
2B166	2795866.6	6382697.5	10	35	65	10	20						15.95	fa	1	
2B167	2795986.6	6382716.0	2	15	55	10	12						7.59	fa	3	
2B168	2796041.4	6382606.8	3	75	30	10	20						2.29	fa	1	
2B169	2795990.3	6382266.0	2	90	120	10	21						1.27	fa	1	
2B170	2796058.8	6382110.4	4	145	55	10	21						1.58	fa	1	
2B171	2795742.1	6382162.3	4	35	90	10	20						6.52	fa	1	
2B172	2795840.3	6382303.0	5	100	110	10	18						2.86	fa	1	
3A001	2789327.9	6386160.1	13	50	145	4	17						14.57	tm	3	
3A002	2789581.0	6386166.0	7	30	115	4	11						13.13	tm	1	
3A003	2789705.5	6386431.1	8	25	135	4	12						17.74	tm	3	
3A004	2789272.1	6386538.7	14	15	130	2	16						43.03	tm	0	
3A005	2789294.0	6386598.5	14	20	70	2	16						34.99	tm	0	
3A006	2789335.9	6386670.2	10	20	30	2	12	45	25	2	4	26.57	12.53	tm	2	
3A007	2789365.8	6386745.9	10	15	60	2	12	40	15	3	6	33.69	12.68	tm	2	
3A008	2793036.4	6386421.1	10	25	65	4	14						21.80	tm	3	
3B001	2790434.4	6382485.1	18	50	50	4	22						19.80	tm	3	
3B002	2790448.4	6382599.4	18	20	90	2	20						41.99	tm	3	
3B003	2790564.7	6382685.6	18	30	45	2	20						30.96	tm	3	
3B004	2790588.8	6382705.6	18	45	70	2	20						21.80	tm	3	
3B005	2790638.9	6382761.8	16	40	45	2	18						21.80	tm	3	
3B006	2790699.1	6382813.9	14	50	60	2	16						15.64	tm	3	
3B007	2790767.2	6382842.0	18	60	75	2	20						16.70	tm	3	
3B008	2790823.4	6382924.2	16	45	40	2	18						19.57	tm	3	
3B009	2790833.4	6382996.4	16	20	15	2	18						38.66	tm	0	
3B010	2790917.6	6383196.9	18	20	110	2	20						41.99	tm	0	
3B011	2790951.7	6383227.0	14	15	110	2	16						43.03	tm	0	
3B012	2791062.0	6383200.9	14	10	95	2	16						54.46	tm	0	
3B013	2791005.8	6383124.7	14	55	65	6	20						14.28	tm	3	
3B014	2790957.9	6382984.3	14	125	60	4	18						6.39	tm	1	
3B015	2791118.1	6382858.0	8	25	50	8	16						17.74	tm	3	
3B016	2791170.3	6382836.0	10	75	35	8	18						7.59	tm	3	
3B017	2791228.4	6382807.9	10	110	40	8	18						5.19	tm	3	
3B018	2791266.5	6382882.1	14	35	75	4	18	55	25	1	10	21.80	17.18	tm	2	
3B019	2791324.7	6382836.0	18	35	60	2	18	55	55	2	16	24.57	16.70	tm	2	
3B020	2791372.8	6382801.9	20	30	25	2	22						33.69	tm	0	
3B021	2791384.8	6382773.8	24	25	50	2	26	45	20	1	20	43.83	29.05	tm	2	
3B022	2791451.0	6382723.7	22	20	40	2	24	50	30	1	20	47.73	24.70	tm	2	
3B023	2791465.0	6382647.5	22	25	35	2	24						41.35	tm	3	
3B024	2791465.0	6382629.4	22	20	30	2	24	40	20	1	10	47.73	29.90	tm	2	
3B025	2791416.9	6382541.2	12	80	50	10	22						8.53	tm	1	
3B026	2792946.7	6384405.9	12	35	70	0	12						18.92	tm	3	
3B027	2792778.2	6384296.6	12	17.5	50	0	12	25	20	0	2	34.44	25.64	tm	2	
3B028	2792711.5	6384242.9	12	25	50	0	12	40	25	0	8	25.64	16.70	tm	2	
3B029	2792678.2	6384196.6	14	15	75	0	14						43.03	tm	2	
3B030	2792624.4	6384129.9	16	20	25	0	16	20	25	0	10	38.66	38.66	tm	2	
3B031	2792587.4	6384091.0	14	20	400	0	14	20	15	2	12	34.99	30.96	tm	2	
3B032	2792550.4	6384057.7	16	27.5	60	0	16						30.19	tm	3	
3B033	2792498.5	6384022.5	16	20	35	0	16						38.66	tm	0	
3B034	2792452.2	6384002.1	16	25	20	0	16						32.62	tm	3	
3B035	2792405.9	6383957.7	16	22.5	15	0	16						35.42	tm	3	
3B036	2792376.3	6383937.3	14	27.5	30	0	14	40	15	0	6	26.98	19.29	tm	2	
3B037	2792278.1	6383911.4	16	30	90	0	16						28.07	tm	3	
3B038	2792142.9	6383848.4	16	40	65	0	16						21.80	tm	3	
3B039	2792061.4	6383813.2	18	25	65	0	16						32.62	tm	3	
3B040	2791850.3	6383804.0	0	20	25	0	0						0.00	tm	0	
3B041	2791754.0	6383755.8	18	25	70	0	18	40	20	0	16	35.75	24.23	tm	2	
3B042	2791805.8	6383789.2	18	40	60	0	18						24.23	tm	3	
3B043	2791628.2	6383959.5	18	50	165	4	22						19.80	tm	3	
3B044	2791509.5	6383950.3	18	60	100	4	22						16.70	tm	3	
3B045	2791350.2	6383972.5	20	40	250	2	22						26.57	tm	3	
3B046	2791068.7	6384267.0	16	45	65	2	18						19.57	tm	3	
3B047	2790981.6	6384446.6	14	50	215	4	18						15.64	tm	3	
3B048	2790990.9	6385128.2	4	60	45</td											

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe		Top		Slope angle		Geo.
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol					
3B049	2791076.1	6385131.9	6	60	60	6	12					5.71		tm						3
3B050	2791089.1	6385307.9	10	20	60	4	14					26.57		tm						1
3B051	2791481.7	6385341.2	8	25	75	4	12					17.74		tm						3
3B052	2791607.6	6385213.4	8	30	80	4	12					14.93		tm	swampy					3
3B053	2791537.3	6384628.2	10	40	65	8	18					14.04		tm						0
3B054	2791778.0	6384580.0	2	40	40	14	16					2.86		tm						0
3B055	2792131.8	6384665.2	6	25	75	8	14					13.50		tm						1
3B056	2792302.2	6384535.5	8	20	80	4	12	45	45	2	6	21.80	12.53	tm						4
3B057	2792368.9	6384598.5	6	25	65	4	10	40	50	2	6	13.50	11.31	tm						4
3B058	2792413.3	6384648.5	6	25	45	4	10	40	45	2	6	13.50	11.31	tm						4
3B059	2792418.9	6384794.8	8	40	85	6	14	80	65	2	10	11.31	8.53	tm						4
3B060	2792535.5	6384774.5	10	55	75	6	16					10.30		tm						3
3B061	2792585.5	6385172.7	12	35	205	2	14					18.92		tm						3
3B062	2792767.1	6385261.6	8	65	65	4	12					7.02		tm	yes					3
3B063	2792865.2	6385385.7	8	30	80	4	12					14.93		tm	yes					3
3B064	2792887.4	6385485.7	10	40	80	4	14					14.04		tm						3
3B065	2792907.8	6385643.1	12	10	110	4	16					50.19		tm						0
3B066	2788670.3	6385174.4	8	20	45	10	18	60	30	2	10	21.80	14.93	tr						2
3B067	2788774.0	6385200.3	10	40	45	6	16					14.04		tr						0
3B068	2788805.5	6385259.6	12	35	40	6	18	70	30	2	16	18.92	12.88	tr						2
3B069	2788829.5	6385287.3	14	40	40	8	22					19.29		tr						0
3B070	2788874.0	6385341.0	4	30	95	6	10	70	30	3	6	7.59	5.71	tr						2
3B071	2788981.4	6385426.2	10	30	65	8	18					18.43		tr						3
3B072	2789007.3	6385254.0	14	45	80	4	18					17.28		tr						3
3B073	2789220.3	6385365.1	6	25	55	6	12					13.50		tm						1
3B074	2789237.0	6385439.2	9	25	60	4	13					19.80		tm						1
3B075	2789238.9	6385583.7	9	15	55	4	13					30.96		tm						3
3B076	2789240.7	6385665.2	9	20	60	4	13	75	30	2	6	24.23	8.34	tm	yes					4
3B077	2789429.6	6384991.0	10	25	150	4	14					21.80		tm						1
3B078	2789225.9	6384889.1	10	40	50	4	14					14.04		tm						3
3B079	2789085.1	6384850.2	12	115	225	6	18					5.96		tm						3
3B080	2789046.2	6384418.7	3	20	65	14	17	75	60	4	12	8.53	9.83	tm						2
3B081	2788949.9	6384322.4	6	45	110	14	20					7.59		tr						1
3B082	2789025.9	6384220.5	8	25	110	10	18					17.74		tr						3
3B083	2789166.6	6384118.7	10	70	195	6	16					8.13		tr						1
3B084	2789327.8	6384018.7	14	40	125	4	18					19.29		tr						3
3B085	2789190.7	6383926.0	8	35	85	10	18					12.88		tr						3
3B086	2789107.4	6383833.4	8	80	70	10	18					5.71		tr						1
3B087	2789162.9	6383553.8	8	85	135	10	18					5.38		tr						1
3B088	2789098.1	6383442.7	12	200	140	6	18					3.43		tr						1
3B089	2789070.3	6383305.6	15	105	75	4	19	120	65	3	18	8.13	7.59	tr						4
3B090	2788987.0	6383270.4	8	165	35	10	18					2.78		tr						1
3B091	2788948.1	6383209.3	6	70	50	6	12	90	50	4	10	4.90	5.08	tr						2
3B092	2788738.8	6382970.4	10	25	50	4	14					21.80		tr						3
3B093	2792741.1	6382537.1	0.5	20	260	2	2.5					1.43		tm						3
3B094	2792928.2	6382607.5	1.5	115	60	0.5	2					0.75		tm						1
4A001	2790643.4	6382757.6	16	60	30	2	18					14.93		wt						0
4A002	2790572.9	6382694.2	18	45	55	2	20					21.80		wt						0
4A003	2790527.2	6382669.6	16	20	45	2	18					38.66		wt						3
4A004	2790414.5	6382493.5	20	60	110	6	26					18.43		wt						3
4A005	2790365.2	6382458.3	14	50	70	12	26					15.64		wt						1
4A006	2790347.6	6382490.0	6	35	50	12	18					9.73		wt						1
4A007	2790245.5	6382373.8	22	45	45	2	24					26.05		wt						3
4A008	2790185.6	6382328.0	24	75	45	2	26					17.74		wt						3
4A009	2790111.6	6382268.1	18	30	65	10	28					30.98		wt						3
4A010	2790150.4	6382194.2	8	15	55	18	26					28.07		wt						3
4A011	2790076.4	6382095.6	8	40	40	18	26					11.31		wt						3
4A012	2790030.6	6382194.2	12	20	65	12	24					30.96		wt						3
4A013	2789988.4	6382282.2	26	45	50	2	28					30.02		wt						1
4A014	2789773.6	6382060.4	24	45	20	6	30					28.07		wt						0
4A015	2789675.0	6381838.5	18	50	95	4	22					19.80		wt						3
4A016	2789611.6	6381736.4	18	65	145	10	28					15.48		wt						3
4A017	2789412.0	6381563.0	16	125	50	14	30					7.29		wt						1
4A018	2789319.6	6381528.4	6	90	50	24	30					3.81		wt						1
4A019	2789277.2	6381574.6	6	55	40	24	30					6.23		wt						1
4A020	2789177.1	6381747.8	28	40	45	4	32					34.99		wt						1
4A021	2789127.1	6381705.5	26	50	50	4	30					27.47		wt						1
4A022	2789065.5	6381701.6	24	30	55	10	34					38.66		wt						1
4A023	2788903.8	6381301.3	20	45	15	6	26					23.96		wt						3
4A024	2789011.6	6381297.4	14	142.5	100	4	18					5.61		wt						3
4A025	2789069.4	6381189.6	30	65	65	8	38					24.78		wt						3
4A026	2788003.9	6381101.1	13	40	60	10	23	60	45	2	16	18.00	19.29	wt						4
4A027	2789088.6	6381054.9	28	120	30	4	32					13.13		wt						3
4A028	2789038.6	6381012.6	11	80	30	4	15					7.83		wt						3
4A029	2789261.8	6380997.2	22	150	85	14	36	</td												

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geo.	Symbol	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage		
4A042	2788749.4	6379687.1	10	95	70	44	54			6.01	wt	1				
4A043	2788942.4	6379523.1	56	125	105	14	70	120	65	16	56	24.13	24.23	wt	4	
4A044	2788913.5	6379605.1	40	140	100	24	64	100	95	22	52	15.95	22.78	wt	4	
4A045	2789047.1	6379584.8	16	40	45	18	34	50	50	25	18	32	21.80	17.74	wt	2
4A046	2789363.7	6379496.0	14	90	50	36	50			8.84	wt	3				
4A047	2789074.2	6379635.0	26	30	95	10	36	90	70	8	24	40.91	17.28	wt	4	
4A048	2789217.0	6379608.0	24	95	50	8	32			14.18	wt	1				
4A049	2789112.8	6379716.1	12	35	45	8	20			18.92	wt	1				
4A050	2789093.5	6379766.3	16	25	125	8	24	60	80	8	22	32.62	14.93	wt	2	
4A051	2789058.7	6379909.1	22	100	100	14	36	160	35	7	28	12.41	10.27	tm	2	
4A052	2788939.0	6379750.8	16	60	60	40	56			14.93	wt	1				
4A053	2789271.1	6379920.7	12	75	45	24	36			9.09	wt	1				
4A054	2789363.7	6379947.8	14	65	50	30	44			12.15	wt	1				
4A055	2789495.0	6379947.8	8	60	125	42	50			7.59	wt	1				
4A056	2789495.0	6380094.5	22	170	170	26	48	115	60	34	37	7.37	6.94	wt	4	
4A057	2789502.7	6380160.1	20	170	120	20	40			6.71	wt	1				
4A058	2789394.6	6380160.1	9	55	75	28	37			9.29	wt	1				
4A059	2789209.3	6380055.9	8	35	35	12	20			12.88	wt	3				
4A060	2789147.5	6380055.9	16	35	40	6	22			24.57	wt	3				
4A061	2789047.1	6380067.4	14	45	145	14	28	100	110	8	20	17.28	11.31	tm	4	
4A062	2789051.0	6380156.2	20	50	105	8	28	50	40	8	20	21.80	21.80	tm	2	
4A063	2789205.4	6380171.7	12	27.5	45	6	18	40	20	7	12	23.57	15.38	wt	2	
4A064	2789247.9	6380206.4	10	45	30	10	20			12.53	wt	0				
4A065	2789286.5	6380260.5	12	75	35	8	20			9.09	wt	1				
4A066	2789031.7	6380291.4	23	60	100	8	31	50	50	11	24	20.97	21.80	tm	4	
4A067	2789309.7	6380330.0	12	50	40	8	20			13.50	wt	1				
4A068	2789413.9	6380314.5	10	40	115	24	34			14.04	wt	1				
4A069	2789363.7	6380376.3	12	85	55	10	22			8.04	wt	1				
4A070	2788939.0	6380272.1	3	25	60	32	35			6.84	tm	1				
4A071	2788939.0	6380341.6	2	10	115	34	36			11.31	tm	1				
4A072	2788095.4	6380498.6	18	30	85	12	30			30.96	tm	3				
4A073	2789173.3	6380639.2	22	215	55	10	32			5.84	tm	3				
4A074	2789214.3	6380554.4	12	20	70	20	32	50	40	10	22	30.96	23.75	tm	4	
4A075	2789411.4	6380491.2	4	20	30	18	20			11.31	tm	0				
4A076	2789369.6	6380766.2	28	110	225	6	34	150	185	6	28	14.28	10.57	tm	4	
4A077	2788438.9	6380835.3	9	60	45	8	17			8.53	tm	0				
4A078	2789658.3	6380846.9	10	35	35	4	14			15.95	wt	3				
4A079	2789700.7	6380016.1	8	30	30	8	16			14.93	wt	3				
4A080	2789738.5	6380494.9	10	30	60	24	34			18.43	wt	3				
4A081	2789734.7	6380509.8	10	40	35	18	28			14.04	wt	0				
4A082	2789762.3	6380696.9	14	90	55	8	22	100	115	6	20	8.84	9.09	wt	2	
4A083	2789876.0	6380736.5	26	50	50	8	34			27.47	tm	3				
4A084	2789902.0	6380833.1	30	75	50	10	40	90	35	8	22	21.80	19.57	tm	4	
4A085	2789902.0	6380922.3	20	115	60	16	36			8.87	tm	3				
4A086	2788812.8	6380922.3	8	40	30	4	12			11.31	tm	3				
4A087	2789664.1	6381007.8	12	30	90	6	18			21.80	tm	3				
4A088	2789500.6	6381056.2	14	145	135	20	34			5.51	tm	1				
4A089	2789846.3	6380996.7	10	40	60	4	14			14.04	tm	3				
4A090	2789879.7	6381059.9	16	25	110	4	20			32.62	tm	3				
4A091	2789742.2	6381164.0	8	25	50	8	16			17.74	tm	3				
4A092	2789574.9	6381271.8	18	60	95	10	28			16.70	tm	3				
4A093	2789560.0	6381379.6	20	40	280	14	34			26.57	tm	3				
4A094	27898820.2	6381416.7	10	45	55	8	18			12.53	tm	3				
4A095	2789957.8	6381152.8	10	20	50	6	16			26.57	tm	3				
4A096	2790058.1	6381334.9	8	35	55	2	10			12.88	tm	3				
4A097	2790236.6	6381312.6	8	65	80	2	10			7.02	tm	3				
4A098	2790212.2	6381648.4	26	85	120	4	30			17.01	tm	3				
4A099	2790217.3	6381651.9	22	65	90	6	28			18.70	tm	3				
4A100	2790354.6	6381658.9	10	30	90	12	22			18.43	tm	3				
4A101	2790507.9	6381364.7	8	30	40	6	14			14.93	tm	3				
4A102	2790675.2	6381334.9	6	30	100	12	18			11.31	tm	1				
4A103	2790326.4	6381835.0	18	80	70	6	24			12.68	tm	3				
4A104	2790477.9	6381989.9	18	32.5	50	6	24			28.98	tm	3				
4A105	2790632.8	6382102.6	22	90	225	4	26	105	100	5	14	13.74	11.31	tm	4	
4A106	2790692.7	6382190.7	16	40	115	10	26	95	65	3	12	21.80	13.61	tm	4	
4A107	2790632.8	6382292.8	22	45	100	2	24			26.05	tm	0				
4A108	2790872.3	6382426.6	20	140	110	4	24			8.13	tm	Yes	0			
4A109	2790963.8	6382461.8	16	35	85	4	20			24.57	tm	3				
4A110	2790985.0	6382475.9	18	70	95	4	22			14.42	tm	Yes	3			
4A111	2791060.6	6382437.2	24	80	55	2	26	75	25	2	16	16.70	17.74	tm	4	
4A112	2791132.9	6382433.6	22	90	90	2	24			13.74	tm	3				
4A113	2791161.0	6382349.1	12	30	55	10	22	75	30	2	12	21.80	14.93	tm	4	
4A114	2791404.0	6382303.4	12	37.5	60	10	22	65	30	2	14	17.74	17.10	tm	4	
4A115	2791414.6	6382535.8	12	85	80	10	22			8.04	tm	1				
4A116	2791463.9	6382620.3	20	15	40	2	24			53.13	tm	0				
4A117	2791470.9	6382659.0	24	20	35	0	24			50.19	tm	0				
4A118	2791463.9	6382701.3	24	20	35	0	24	45	25	0	16	50.19	28.07	tm	2	
4A119	2789560.6	6379492.2	12	100	125	62	74			6.84	wt	1				
4A120	2789583.8	6379557.8	12	40	95	62	74			16.70	wt	1				
4A121	2789641.7	6379538.5	16	85	150	60	76			10.66	wt	3				
4A122	2789649.4	6379774.0	30	130	175	20	50			12.99	wt	1				
4A123	2789742.1	6379650.5	18	75	40	38	56	110	25	24	36	13.50	16.22	wt	4	
4A124	2787722.8	6379700.7	36	80	50	20	56	110	40	24	36	24.23	16.22	wt	4	
4A125	2790043.3	6379692.9	10	80	55	52	62	100	25	49	56	7.13	7.41	wt	2	
4A126	2789827.0	6379843.5	28	90	70	22	50			17.28	wt	0				
4A127	2789672.6	6379986.4	16	35	55	18	34	45	35	20	30	24.57	17.28	wt	2	
4A128	2789622.4	6380044.3	16	20	45	16	32			38.66	wt	3				

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe			Slope angle			Geo. Symbol	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage							
4A129	2789634.0	6380094.5	16	30	45	16	32					28.07		wt							3
4A130	2789939.0	6380028.8	22	90	60	32	54					13.74		wt							3
4A131	2789830.9	6380036.6	12	35	90	32	44	90	70	26	35	18.92	11.31	wt						4	
4A132	2789888.8	6380086.7	22	110	70	28	50					11.31		wt							3
4A133	2789819.3	6380191.0	8	35	95	26	34					12.88		wt							3
4A134	2789981.5	6380237.3	8	65	100	38	46					7.02		wt							3
4A135	2789857.9	6380279.8	3	30	75	42	45					5.71		wt							3
4A136	2789915.8	6380426.5	8	75	85	42	50					6.09		wt							1
4A137	2789931.7	6380595.2	26	160	60	18	44					9.23		wt							3
4A138	2789939.2	6380669.6	16	100	85	18	34					9.09		wt							1
4A139	2790009.8	6380584.1	22	130	135	24	46					9.61		wt							3
4A140	2790089.6	6379994.1	2	15	65	60	62					7.59		wt							3
4A141	2790097.3	6379920.7	8	60	60	56	64					7.59		wt							1
4A142	2790170.7	6379781.7	8	105	95	64	72					4.36		wt							3
4A143	2790193.8	6379592.5	20	90	190	64	84					12.53		wt							3
4A144	2790135.9	6379496.0	14	70	50	74	88					11.31		wt							3
4A145	2790271.1	6379480.6	20	75	55	102	122					14.93		wt							3
4A146	2790356.0	6379457.4	70	190	100	48	118	210	40	46	97	20.22	18.92	wt						4	
4A147	2790753.7	6379542.4	10	65	155	56	66					8.75		wt							3
4A148	2790734.4	6379692.9	22	140	125	40	62					8.93		wt							1
4A149	2790464.1	6379708.4	46	130	235	48	94	185	225	34	92	19.49	17.97	wt						4	
4A150	2790429.4	6379600.3	56	165	60	42	98	155	25	42	62	18.75	19.86	wt						4	
4A151	2790429.4	6379785.6	36	80	95	42	78	115	55	32	66	24.23	21.80	wt						4	
4A152	2790379.2	6379665.9	12	30	55	80	92					21.80		wt							1
4A153	2790290.4	6379681.3	8	50	95	84	92	95	30	56	83	9.09	20.75	wt						4	
4A154	2790232.4	6379859.0	64	55	80	24	88					49.33		wt							3
4A155	2790367.6	6379967.1	10	30	65	30	40	70	45	23	38	18.43	13.65	wt						4	
4A156	2790301.9	6380005.7	18	55	50	22	40					18.12		wt							1
4A157	279027496	6380117.6	32	105	70	30	62					16.95		wt							1
4A158	2790132.1	6380314.5	13	70	60	16	29					10.52		wt							1
4A159	2790195.7	6380506.0	6	20	40	14	20					16.70		wt							3
4A160	2790121.3	6380561.8	8	65	40	16	24					7.02		wt							3
4A161	2790258.9	6380662.2	10	30	45	16	26					18.43		tm							3
4A162	2790262.6	6380729.1	10	25	40	16	26					21.80		tm							3
4A163	2790292.3	6380803.4	18	50	60	8	26					19.80		tm							3
4A164	2790359.2	6380914.9	16	60	125	6	22					14.93		tm							3
4A165	2790498.7	6380926.1	6	20	30	4	10					16.70		tm							1
4A166	2790578.5	6381026.4	6	30	100	4	10					11.31		tm	poss.						1
4A167	2790638.0	6381119.4	8	35	35	4	12					12.88		tm							1
4A168	2790641.7	6381164.0	8	65	40	4	12					7.02		tm							1
4A169	2790805.3	6380996.7	16	85	50	10	26					10.66		wt							3
4A170	2790623.1	6380558.1	6	60	75	38	44					5.71		wt							1
4A171	2790564.5	6380414.9	10	75	105	36	46					7.59		wt							1
4A172	2790475.7	6380414.9	34	60	165	12	46					29.54		wt							3
4A173	2790529.7	6380326.1	20	60	100	14	34					18.43		wt							3
4A174	2790626.2	6379936.2	8	30	45	28	36					14.93		wt							3
4A175	2790711.2	6380191.0	14	75	80	26	40					10.57		wt							1
4A176	2790939.0	6380353.2	10	85	100	56	66	165	70	52	62	6.71	4.85	wt						4	
4A177	2790900.4	6380407.2	20	100	150	32	52					11.31		wt							3
4A178	2790897.6	6380543.2	24	120	150	38	62	90	35	42	50	11.31	12.53	wt						4	
4A179	2790890.8	6380755.1	22	150	175	42	64	115	60	46	60	8.34	8.90	wt						4	
4A180	2790957.7	6380874.0	24	130	80	40	64					10.46		wt							1
4A181	2791020.9	6380967.0	28	125	130	32	60					12.63		wt							3
4A182	2791072.9	6381100.8	22	80	165	24	46					15.38		wt							1
4A183	2791104.4	6381033.9	38	95	170	18	56	125	130	7	34	21.80	21.41	wt						4	
4A184	2791024.6	6380874.0	52	185	190	8	60	160	85	10	60	15.70	17.35	wt						2	
4A185	2791110.1	6380855.4	20	67.5	35	8	28					16.50		wt							3
4A186	2791050.6	6380729.1	48	130	115	10	58	195	70	10	54	20.27	13.83	wt	Yes						4
4A187	2791043.2	6380802.7	38	140	110	20	68	165	65	22	60	18.92	15.58	wt						4	
4A188	2791097.3	6380306.8	20	80	35	40	60					14.04		wt							1
4A189	2791093.4	6380264.4	34	150	75	36	70					12.77		wt							3
4A190	2791132.0	6380121.5	28	105	90	36	64					14.93		wt							3
4A191	2791166.8	6379932.3	26	165	150	50	76	175	45	48	60	8.95	9.09	wt						4	
4A192	2790977.6	6379843.5	10	60	90	52	62					9.46		wt							1
4A193	2791043.2	6379608.0	10	80	60	62	72					7.13		wt							1
4A194	2791074.1	6379774.0	20	50	120	56	76					21.80		wt							1
4A195	2791271.0	6380028.8	40	125	125	44	84					17.74		wt							3
4A196	2791494.7	6379716.5	33	230	180	78	111					8.16		wt							3
4A197	2791644.6	6379526.4	34	210	230	86	120					9.20		wt							3
4A198	2791255.6	6379897.6	17	175	115	67	84					5.55		wt							3
4A199	2791367.6	6379835.8	16	105	115	60	76	95	30	62	70	8.66	8.38	wt						4	
4A200	2791520.3	6379818.8	38	140	120	68	106	200	25	62	72										

Ref. No.	Coordinates	Scarp			Bottom		Scarp		Runout			Toe		Top		Slope angle		Geo.	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol				
4A216	2791604.7	6381260.5	24	100	185	10	34	185	80	6	13	13.50	8.61	wt		2			
4A217	2791866.5	6381416.1	4	30	75	12	16					7.59		wt		1			
4A218	2791838.2	6381302.9	12	60	70	6	18					11.31		wt		3			
4A219	2791831.1	6381210.9	12	65	115	8	20					10.46		wt		3			
4A220	2791753.3	6381122.5	20	175	100	22	42					6.52		wt		1			
4A221	2791834.7	6381065.9	13	25	90	24	37					27.47		wt		1			
4A222	2792192.0	6381430.3	3	25	95	10	13					6.84		wt		1			
4A223	2792082.3	6381267.5	8	50	50	4	12					9.09		wt		3			
4A224	2791735.6	6380899.0	38	110	125	8	46	125	50	7	32	19.06	17.33	wt		4			
4A225	2791749.8	6380768.7	22	75	135	28	50	130	30	12	30	16.35	16.29	wt		4			
4A226	2792029.3	6380899.6	10	40	105	6	16					14.04		wt		3			
4A227	2792107.1	6381016.4	8	25	45	10	18					17.74		wt		1			
4A228	2792135.4	6380938.5	10	90	110	18	28	115	65	17	25	6.34	5.46	wt		2			
4A229	2792308.8	6380949.1	10	30	25	20	30					18.43		wt		0			
4A230	2792192.0	6380814.7	20	85	60	28	48					13.24		wt		1			
4A231	2792131.9	6380743.9	22	100	55	14	36	70	30	21	28	12.41	12.09	wt		4			
4A232	2792004.5	6380814.7	8	25	85	8	16					17.74		wt		3			
4A233	2791845.3	6380726.2	18	40	30	12	30					24.23		wt		3			
4A234	2792061.1	6380701.5	6	22.5	35	14	20					14.93		wt		3			
4A235	2792142.5	6380680.3	10	25	75	24	34	65	45	16	26	21.80	15.48	wt		2			
4A236	2791735.6	6380616.6	18	50	220	32	50	135	90	8	30	19.80	17.28	wt		2			
4A237	2791813.5	6380545.8	8	20	85	16	24	45	50	10	19	21.80	17.28	wt		4			
4A238	2792276.9	6380666.1	14	75	95	30	44					10.57		wt		3			
4A239	2792319.4	6380591.8	31	105	200	44	75					16.45		wt		1			
4A240	2792238.0	6380450.3	26	70	110	62	88					20.38		wt		1			
4A241	2792071.7	6380446.7	20	55	105	28	48					19.98		wt		1			
4A242	2791990.3	6380429.1	8	50	45	18	26					9.09		wt	Yes	1			
4A243	2792245.1	6380386.6	38	115	95	52	90					18.29		wt		1			
4A244	2792230.9	6380344.1	26	75	75	64	90					19.12		wt		1			
4A245	2792209.7	6380305.2	28	105	115	54	82					14.93		wt		1			
4A246	2791930.2	6380209.7	16	75	90	32	48					12.04		wt		1			
4A247	2791771.0	6380110.6	46	90	210	30	76	100	190	28	62	27.07	25.64	wt		4			
4A248	2792054.0	6380032.8	15	50	40	46	61					16.70		wt		1			
4A249	2792262.3	6380170.8	13	85	100	74	87					8.70		wt		3			
4A250	2792177.9	6380103.6	18	80	45	52	70					12.68		wt		3			
4A251	2792273.4	6380025.7	32	100	70	50	82					17.74		wt		1			
4A252	2792212.2	6379884.9	22	67.5	50	54	76					18.05		wt		3			
4A253	2792179.5	6379745.9	25	70	95	58	83	95	20	54	70	19.65	16.98	wt		2			
4A254	2792065.1	6379800.1	22	70	80	68	90					17.45		wt		3			
4A255	2792111.4	6379874.0	30	87.5	80	50	80					18.92		wt		1			
4A256	2792059.6	6379950.3	28	65	85	48	76	75	30	48	56	23.30	20.47	wt		4			
4A257	2791969.7	6379939.4	26	100	150	56	82					14.57		wt		1			
4A258	2791887.9	6379868.5	8	32.5	50	54	62					13.83		wt		3			
4A259	2791784.3	6379860.3	34	70	60	46	80	75	30	46	66	25.91	24.39	wt		4			
4A260	2791743.5	6379830.4	22	45	65	58	80	55	35	50	74	26.05	28.61	wt		4			
4A261	2791639.9	6379754.0	22	155	90	86	108	140	40	84	92	8.08	9.73	wt		4			
4A262	2791634.4	6379699.5	38	160	115	82	120	145	90	85	98	13.36	13.57	wt		4			
4A263	2791716.2	6379636.8	48	62.5	190	86	134	255	65	83	102	37.52	11.31	wt		4			
4A264	2791926.1	6379756.8	26	125	70	58	84	115	30	59	70	11.75	12.26	wt		4			
4A265	2791980.6	6379655.9	22	35	5	58	80	45	35	60	72	32.15	23.96	wt		2			
4A266	2791917.9	6379655.9	34	100	60	60	94					18.78		wt		4			
4A267	2791868.8	6379566.0	48	130	75	62	110	135	45	60	98	20.27	20.32	wt		4			
4A268	2791792.5	6379506.0	70	175	130	64	134	175	110	64	122	21.80	21.80	wt		4			
4A269	2792005.1	6379473.3	8	60	35	62	70					7.59		wt		1			
4A270	2792043.3	6379544.2	8	30	45	62	70					14.93		wt		3			
4A271	2792326.7	6379533.3	18	60	160	98	116					16.70		wt		3			
4A272	2792348.5	6379642.3	4	100	240	94	98					2.29		wt		1			
4A273	2792334.9	6379912.1	46	145	150	50	96					17.60		wt		1			
4A274	2792463.0	6379604.1	12	75	250	98	110					9.09		wt		1			
4A275	2792424.8	6379835.8	12	75	90	88	100					9.09		wt		3			
4A276	2792528.4	6379844.0	12	85	40	72	84					8.04		wt		3			
4A277	2792438.4	6379966.6	18	70	45	88	106	70	50	88	98	14.42	14.42	wt		4			
4A278	2792489.2	6380015.1	34	102.5	120	72	106	100	60	70	94	18.35	19.80	wt		4			
4A279	2792453.8	6380107.1	38	140	110	60	98	150	60	92	151	15.19	14.22	wt		2			
4A280	2792468.0	6380199.1	16	40	35	58	74					21.80		wt		1			
4A281	2792368.9	6380184.9	28	100	50	60	88					15.64		wt	Yes	3			
4A282	2792605.9	6380340.6	8	50	35	54	62					9.09		wt		3			
4A283	2792584.7	6380414.9	12	75	50	48	60					9.09		wt		3			
4A284	2792411.4	6380471.5	16	65	85	46	62					13.83		wt		3			
4A285	2792457.4	6380804.1	18	95	155	36	54					10.73		wt		1			
4A286	2792404.3	6380825.3	4	20	30	36	40					11.31		wt		3			
4A287	2792588.3	6380913.8	18	55	110	44	62	100	100	34	52	18.12	15.64	wt		2			
4A288	2792591.8	6380995.1	28	100	130	30	58	115	100	30	52	15.64	13.68	wt		2			
4A289	2792499.8	6380995.1	22	90	180	42	64	125	100	38	58	13.74	11.75	wt		2			
4A290	2792315.8	6380109.9	10	50	35	18	28					11.31		wt		0			
4A291	2792414.9	6381235.7	32	415	185	12	44					4.41		wt		1			
4A292	2792510.4	6																	

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Top		Slope angle		Geo.
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol	
4A303	2793123.0	6382410.7	5	65	60	5	10					4.40		tm		3
4A304	2792877.8	6382103.5	10	60	35	40	50					9.46		wt		3
4A305	2792904.4	6382035.6	10	35	135	50	60					15.95		wt		3
4A306	2792795.1	6381923.3	32	165	190	40	72	225	85	35	70	10.98	9.34	wt		2
4A307	2792718.3	6382097.6	50	125	75	8	58					21.80		pa		3
4A308	2792632.7	6382065.1	18	55	40	10	28					18.12		pa		3
4A309	2792898.5	6381828.8	20	105	120	50	70					10.78		wt		3
4A310	2792978.2	6381825.9	23	95	160	60	83					13.61		wt		1
4A311	2793048.1	6381757.9	10	40	35	70	80					14.04		wt		0
4A312	2792896.1	6381536.4	42	100	150	30	72	175	100	20	70	22.78	16.55	wt		4
4A313	2792783.3	6381660.5	10	50	60	60	70					11.31		wt		1
4A314	2792722.7	6381536.4	30	90	110	30	60					18.43		wt		3
4A315	2792630.7	6381547.0	32	85	200	28	58	100	60	52	26	20.63	3.43	wt		4
4A316	2793016.3	6381313.5	8	25	50	20	28					17.74		wt		0
4A317	2793044.6	6381115.4	20	120	160	44	64					9.46		wt		1
4A318	2793169.4	6380881.9	12	85	75	48	60					8.04		wt		3
4A319	2793037.6	6380835.6	20	90	65	40	60					12.53		wt		3
4A320	2793058.8	6380789.9	12	125	55	50	62					5.48		wt		3
4A321	2792772.2	6380857.1	12	85	70	32	44					8.04		wt		1
4A322	2792694.4	6380775.8	5	30	45	38	43	90	25	34	40	9.46	5.71	wt		2
4A323	792786.43	6380754.5	11	25	45	36	47					23.75		wl		3
4A324	2792910.2	6380574.1	50	245	135	58	108	255	85	58	88	11.53	11.09	wt		4
4A325	2793037.6	6380468.0	4	25	85	94	98					9.09		wt		1
4A326	2793033.6	6380432.6	4	15	75	92	96	165	40	48	86	14.93	16.22	wt		2
4A327	2792998.7	6380422.0	50	100	175	60	110	70	75	62	88	26.57	34.44	wt		4
4A328	2792867.8	6380340.6	28	70	230	88	116	85	40	84	108	21.80	20.63	wt		2
4A329	2792825.3	6380400.8	12	45	55	64	76					14.93		wt		3
4A330	2792676.7	6380184.9	42	132.5	155	80	122					17.59		wt		3
4A331	2792952.7	6380262.8	28	70	55	84	112					21.80		wt		3
4A332	2792853.6	6380245.1	42	105	110	74	116	90	25	78	109	21.80	22.89	wt		3
4A333	2792998.7	6380202.6	28	85	80	50	78					18.23		wt		1
4A334	2792871.3	6380163.7	50	190	170	44	94	250	200	32	86	14.74	13.93	wt		4
4A335	2792719.2	6380100.0	46	150	165	76	122	130	120	86	110	17.05	15.48	wt		4
4A336	2792620.1	6380110.6	16	62.5	50	66	82					14.36		wt		3
4A337	2792713.7	6379928.5	16	40	140	88	104					21.80		wt		3
4A338	2792792.8	6379917.6	46	150	165	40	86	140	50	42	76	17.05	17.45	wt		4
4A339	2792999.9	6379933.9	12	75	75	36	48					9.09		wt		1
4A340	2792829.0	6379861.2	34	90	80	48	82					20.70		wt		1
4A341	2793010.8	6379865.8	9	25	50	38	47					19.80		wt		0
4A342	2792994.4	6379770.4	22	75	140	48	70					16.35		wt		4
4A343	2792915.4	6379879.6	22	20	40	68	90	65	20	50	68	47.73	31.61	wt		4
4A344	2792983.5	6379525.1	12	30	55	60	72					21.80		wt		3
4A345	2792874.5	6379500.6	16	30	70	76	92	65	60	68	78	28.07	20.27	wt		4
4A346	2792724.6	6379462.4	14	85	45	84	98					9.35		wt		3
4A347	2792702.8	6379732.2	78	170	250	42	120	210	250	40	104	24.65	20.85	wt		4
4B001	2788790.7	6379250.0	6	35	55	44	50					9.73		wt		3
4B002	2788722.5	6379064.5	10	35	70	38	48					15.95		wt		3
4B003	2788893.0	6379036.1	10	50	90	44	54					11.31		wt		3
4B004	2789040.7	6379257.7	56	150	130	12	68	140	30	18	44	20.47	19.65	wt		4
4B005	2789052.1	6379189.5	38	80	165	22	60					25.41		wt		3
4B006	2789063.4	6379058.8	10	35	125	68	78					15.95		wt		1
4B007	2789137.3	6379075.9	36	80	130	40	76	135	70	35	48	24.23	16.89	wt		4
4B008	2789148.7	6378985.0	54	155	140	24	78	160	65	24	64	19.21	18.65	wt		4
4B009	2789222.5	6378831.6	18	40	175	46	64					24.23		wt		1
4B010	2789273.7	6378644.1	16	80	100	50	66	80	40	52	64	11.31	9.93	wt		4
4B011	2789393.0	6378786.1	30	100	120	42	72					16.70		wt		3
4B012	2789506.6	6378780.4	14	60	80	46	60					13.13		wt		3
4B013	2789466.9	6378610.0	34	105	200	58	92	90	85	60	88	17.94	19.57	wt		4
4B014	2789495.3	6378445.2	36	125	175	58	94	190	160	44	90	16.07	14.74	wt		4
4B015	2789347.5	6378445.2	10	75	210	84	94					7.59		wt		1
4B016	2789049.4	6378536.1	12	60	75	82	94					11.31		wt		1
4B017	2788927.1	6378519.1	34	257.5	160	64	98					7.52		wt		3
4B018	2788935.0	6378450.9	-3	15	105	98	95					-11.31		wt		3
4B019	2788836.2	6378365.6	20	97.5	70	74	94					11.59		wt		1
4B020	2788802.1	6378280.4	24	65	90	74	98					20.27		wt		0
4B021	2788665.7	6378269.1	24	90	130	78	102	140	80	74	88	14.93	11.31	wt		4
4B022	2788705.5	6378144.1	12	90	150	90	102					7.59		wt		3
4B023	2788773.7	6377911.1	42	115	70	56	98					20.06		wt		3
4B024	2788853.2	6377825.9	26	75	135	98	124	225	100	64	120	19.12	14.93	wt		4
4B025	2788983.9	6377797.5	30	100	455	108	138	395	410	72	130	16.70	9.49	wt		4
4B026	2788966.8	6377791.1	50	180	110	82	132	180	75	82	120	15.52		wt		4
4B027	2789057.8	6377922.5	38	210	235	92	130	220	125	90	130	10.26	10.30	wt		4
4B028	2788955.5	6377518.0	7	100	110	7	7	130	60	7	7	?		wt		2
4B029	2789324.8	6377717.9	14	150	85	112	126					5.33		wt		0
4B030	2789131.6	6377502.0	7	160	65	92	?	225	100	?	?	?		wt		2
4B031	2789307.8	6378110.0	28	60	175	112	140					25.02		wt		3
4B032	2789421.4	6378036.1	52	150	175	88	140	175	80	88	126	19.12	16.55	wt		3
4B033	2789691.2	6379374.2	2	25	60	70	72					4.57		wt		1
4B034	2790178.4	6378933.4	2	20	145	94	96					5.71		wt		1
4B035	2789603.2	6377507.7	22	200	60	74	96					6.28		wt		0
4B036	2789597.5	6377695.2	56	140	250	64	120					21.80		wt		

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geo. Symbol
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage
4B043	2789889.0	6377519.5	34	105	45	76	110					17.94	wt	0
4B044	2790097.8	6377510.3	36	120	60	82	118	105	45	88	110	16.70	wt	2
4B045	2790046.8	6377635.5	6	20	115	114	120					16.70	wt	0
4B046	2790376.2	6377547.4	22	75	150	110	132					16.35	wt	0
4B047	2790608.1	6377496.3	35	230	290	99	134	220	150	110	130	8.65	wt	2
4B048	2790496.8	6377612.3	18	80	95	120	138					12.68	wt	0
4B049	2790770.5	6377589.1	48	130	60	102	150					20.27	wt	0
4B050	2790826.2	6377700.5	40	100	115	98	138					21.80	wt	0
4B051	2790914.4	6377825.8	20	40	70	80	100					26.57	wt	0
4B052	2790770.5	6377853.6	48	155	180	88	136	150	70	92	122	17.21	wt	2
4B053	2790040.0	6377909.3	18	50	85	88	106					19.80	wt	0
4B054	2790283.4	6378034.5	34	75	135	86	120	145	100	68	108	24.39	wt	1
4B055	2790153.5	6377983.5	16	60	120	100	116	100	120	93	116	14.93	wt	2
4B056	2790213.8	6378136.6	36	135	65	64	100					14.93	wt	1
4B057	279037.5	6378312.9	58	130	255	42	100	150	195	42	94	24.04	wt	4
4B058	2790371.5	6378456.7	14	75	150	92	106					10.57	wt	3
4B059	2790199.9	6378512.4	10	50	60	66	76					11.31	wt	0
4B060	2790408.6	6378628.4	13	85	85	104	117					8.70	wt	3
4B061	2790255.6	6378670.2	22	100	250	66	88					12.41	wt	1
4B062	2790018.9	6378772.2	14	55	130	80	94					14.28	wt	3
4B063	2789875.1	6378869.7	36	115	150	44	80					17.38	wt	1
4B064	2789759.1	6379004.2	36	180	155	36	72	205	60	34	58	11.31	wt	4
4B065	2789842.6	6379157.3	2	55	100	80	82					2.08	wt	1
4B066	2789656.5	6379281.4	32	270	160	52	84					6.76	wt	3
4B067	2789639.1	6379351.0	20	145	60	42	62					7.85	wt	1
4B068	2789749.2	6379322.0	34	150	110	42	76					12.77	wt	3
4B069	2789851.9	6379259.4	32	80	75	50	82	85	25	50	66	21.80	20.63	wt
4B070	2790023.6	6379181.9	14	80	65	68	82					9.93	wt	1
4B071	2790125.6	6379032.0	14	85	35	74	88					9.35	wt	3
4B072	2789972.5	6378971.7	18	120	80	76	94					8.53	wt	3
4B073	2790060.7	6378930.0	6	25	90	88	94					13.50	wt	1
4B074	2790325.1	6379022.8	20	85	160	94	114					13.24	wt	3
4B075	2790320.5	6378869.7	10	35	30	76	86					15.95	wt	0
4B076	2790366.9	6378874.3	12	40	20	76	88					16.70	wt	0
4B077	2790417.9	6378869.7	20	90	65	76	96					12.53	wt	3
4B078	2790417.9	6378818.6	6	20	45	80	86					16.70	wt	3
4B079	2790478.2	6378767.6	14	95	120	94	108					8.38	wt	1
4B080	2790822.1	6378847.0	12	95	135	100	112					7.20	wt	1
4B081	2790710.2	6378503.1	24	175	130	96	120					7.81	wt	3
4B082	2790622.1	6378424.3	36	165	220	86	122	110	150	90	116	12.31	16.22	wt
4B083	2790538.5	6378248.0	20	50	65	88	108					21.80	wt	0
4B084	2790561.7	6378192.3	14	60	60	102	116					13.13	wt	0
4B085	2790705.6	6378127.3	18	75	50	96	114					13.50	wt	0
4B086	2791123.1	6377932.5	9	170	165	82	91					3.03	pa	0
4B087	2791239.1	6378266.5	22	215	90	96	118					5.84	pa	3
4B088	2791109.2	6378308.3	32	90	100	80	112	90	90	82	102	19.57	18.43	wt
4B089	2791113.9	6378503.9	18	25	245	104	122					35.75	wt	0
4B090	2791206.6	6378595.9	8	120	270	108	116					3.81	wt	0
4B091	2790942.2	6378642.3	14	60	155	118	132					13.13	wt	3
4B092	2790355.6	6378856.2	44	150	200	82	126	175	130	92	118	16.35	10.99	wt
4B093	2790547.8	6379008.8	24	100	200	82	106	140	100	79	94	13.50	10.92	wt
4B094	2790714.9	6378985.6	4	30	55	74	78					7.59	wt	1
4B095	2790571.0	6379120.2	34	80	80	76	110					23.03	wt	3
4B096	2790431.8	6379073.8	34	150	200	98	132					12.77	wt	3
4B097	2790487.5	6379175.9	74	210	190	60	134	250	110	58	122	19.41	16.91	wt
4B098	2790691.7	6379134.1	8	25	60	62	70					17.74	wt	1
4B099	2790301.9	6379124.8	28	90	80	98	126	95	30	96	106	17.28	17.53	wt
4B100	2790237.0	6379161.9	21	100	50	100	121					11.86	wt	1
4B101	2790255.5	6379259.4	32	135	125	104	136	220	90	86	120	13.34	12.80	wt
4B102	2790371.5	6379264.0	82	230	95	52	134					19.62	wt	3
4B103	2790364.0	6379426.4	69	175	95	52	121	200	35	50	116	21.52	19.54	wt
4B104	2790784.4	6379268.7	24	65	150	80	104					20.27	wt	3
4B105	2790858.7	6379152.7	16	100	100	94	110					9.09	wt	1
4B106	2790970.0	6379101.8	18	135	180	98	116	140	145	98	112	7.59	7.33	wt
4B107	2790993.2	6378943.9	8	45	135	112	120					10.08	wt	1
4B108	2791127.8	6378800.1	14	122.5	60	80	104					6.52	wt	1
4B109	2791243.8	6378790.8	26	80	75	90	116					18.00	wt	3
4B110	2791331.9	6378781.5	9	140	30	108	117					12.68	pa	1
4B111	2791406.1	6378823.3	26	150	135	106	132					9.83	pa	3
4B112	2791498.9	6378739.7	28	60	115	102	130	75	75	102	124	25.02	20.47	pa
4B113	2791587.1	6378730.5	30	70	98	128						23.20	pa	1
4B114	2791624.2	6378665.5	20	50	100	132	152					21.80	pa	1
4B115	2791638.1	6378493.8	44	200	160	116	160	200	40	118	146	12.41	11.86	pa
4B116	2791563.9	6378415.0	24	90	75	132	156					14.93	pa	0
4B117	2791429.3	6378340.7	108	30	85	30	138	90	60	122	134	74.48	10.08	pa
4B118	2791536.1	6378312.9	22	110	160	138	160	135	50	139	152	11.31	8.84	pa
4B119	2791777.3	6378094.8	26	150	110	146	172					9.83	pa	0
4B120	2791670.6	6378029.9	56	255	175	110	166					12.39	pa	0
4B121	2791452.5	6377978.9	36	120	65	106	142					16.70	pa	0
4B122	2791554.6	6377830.4	52	150	160	102	154					19.12	pa	0
4B123	2791781.9	6377784.0	16	55	170	130	146					16.22	pa	0
4B124	2791953.6	6377932.5	8	60	85	154	162					7.59	pa	0
4B125	2792069.6	6377816.5	7	120	100	?	?					?	pa	0
4B126	2791916.5	6378043.8	30	100	85	144	174					16.70	pa	0
4B127	2791921.1	6378271.2	26	70	40	126	152					20.38	pa	1
4B128	2791907.2	6378326.8	24	75	55	122	146					17.74	pa	1
4B129	2791777.3	6378415.0	44	200	225	122	166					12.41	pa	0

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geology	Seepage	Geo. Symbol
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout				
4B130	2792000.0	6378637.7	22	210	240	116	138					5.98		pa		0
4B131	279188.70	6378540.2	14	40	40	116	130					19.29		pa		1
4B132	2791884.0	6378582.0	28	45	40	100	128					31.89		pa		1
4B133	2791689.2	6378637.7	38	95	200	112	150					21.80		pa		0
4B134	2791851.5	6378684.1	28	50	45	114	142					29.25		pa		0
4B135	2791962.9	6378823.3	34	115	210	102	136					16.47		pa		1
4B136	2791554.6	6378939.2	36	150	170	80	116	105	40	82	100	13.50	17.94	pa		4
4B137	2791661.3	6379013.5	16	27.5	50	98	114					30.19		pa		3
4B138	2791610.3	6379087.7	28	150	70	78	104					9.83		pa		3
4B139	2791410.8	6379069.2	36	155	100	94	130					13.08		wt		3
4B140	2791099.9	6379032.0	26	70	65	86	112					20.38		wt		3
4B141	2791104.6	6379120.2	36	80	85	74	110	80	35	72	98	24.23	25.41	wt		4
4B142	2791099.9	6379199.1	32	85	25	66	98					20.63		wt		1
4B143	2791044.3	6379185.1	24	75	60	80	104					17.74		wt		1
4B144	2791048.9	6379222.3	36	85	50	62	98					22.95		wt		1
4B145	2791016.4	6379245.5	34	90	40	60	94					20.70		wt		1
4B146	2791025.7	6379268.7	20	60	40	56	76					18.43		wt		1
4B147	2791164.3	6379426.4	12	80	80	64	76					8.53		wt		1
4B148	2791233.9	6379316.2	5	45	75	80	85					6.34		wt		1
4B149	2791373.1	6379397.4	14	50	95	90	104					15.64		wt		1
4B150	2791332.5	6379356.8	12	55	80	94	106					12.31		wt		1
4B151	2791475.7	6379254.7	14	90	45	98	112					8.84		wt		3
4B152	2791634.1	6379403.2	22	65	80	106	128					18.70		wt		1
4B153	2791508.2	6379213.0	38	175	230	98	136	225	325	82	120	12.25	13.50	pa		1
4B154	2791610.3	6379161.9	50	225	365	86	136					12.53		pa		2
4B155	2792399.0	6379273.3	14	50	65	88	102					15.64		pa		3
4B156	2792283.6	6377866.3	?	185	90	?	?					?		pa		1
4B157	2791518.1	6379403.2	20	62.5	160	110	130					17.74		pa		3
4B158	2791802.2	6379432.2	70	215	150	64	134	200	85	64	114	18.03	19.29	pa		4
4B159	2792005.2	6379414.8	18	85	110	64	82					11.96		pa		3
4B160	2792083.5	6379259.4	22	95	210	80	102					13.04		pa		3
4B161	2791851.5	6379180.5	12	55	80	68	80	85	25	66	78	12.31	9.35	pa		2
4B162	2792074.2	6379008.8	?	150	150	86	?	150	110	?	?	?	?	pa		4
4B163	2792218.1	6379250.1	10	60	165	94	104					9.46		pa		3
4B164	2792277.8	6379356.8	20	170	200	86	106					6.71		pa		3
4B165	2792515.0	6379259.4	20	140	120	108	128					8.13		pa		3
4B166	2792477.9	6379175.9	38	100	165	112	150					20.81		pa		1
4B167	2797714.5	6379041.3	?	135	95	?	180					?		pa		0
4B168	2792668.1	6379129.5	42	115	90	136	178					20.06		pa		1
4B169	2792498.2	6379235.0	34	150	85	100	134					12.77		pa		3
4B170	2792598.8	6379211.8	28	90	45	100	128					17.28		pa		1
4B171	2792776.6	6379165.4	66	160	65	88	154					22.42		pa		1
4B172	2792857.7	6379090.0	56	140	50	86	142					21.80		pa		1
4B173	2793002.7	6379345.2	?	60	85	?	?					?		pa		3
4B174	2793060.7	6379194.4	?	55	70	84	?					?		pa		3
4B175	2793066.5	6379058.6	?	50	40	?	?					?		pa		3
4B176	2791406.1	6378823.3	18	80	62.5	108	126					12.68		pa		1
4B177	2791016.4	6379245.5	58	135	300	56	114					23.25		wt		0
4B178	2792083.5	6379259.4	12	35	62.5	76	88					18.92		pa		3
4B179	2792218.1	6379250.1	16	25	65	80	96					32.62		pa		3
5A001	2785007.0	6385886.6	20	60	220	4	24					18.43		tm		3
5A002	2785266.7	6386036.2	24	40	105	4	28					30.96		tm		3
5A003	2785117.4	6386120.6	19	145	205	2	21					7.47		tm		1
5A004	2784896.6	6386088.1	9	65	75	4	13					7.88		tm	Yes	3
5A005	2784805.6	6385938.7	3	60	60	26	29					2.86		tm		1
5A006	2784734.2	6386120.6	10	100	245	18	28	110	40	18	22	5.71	5.19	tm		4
5A007	2784825.1	6386224.5	20	55	145	6	26					19.98		tm	Yes	3
5A008	2784922.5	6386399.9	22	45	190	4	26					26.05		tm		3
5A009	2784903.1	6386503.8	10	95	155	18	28					6.01		tm		1
5A010	2784929.0	6386575.2	6	60	45	20	26					5.71		tm		3
5A011	2784825.1	6386549.2	7	60	50	16	23					6.65		tm		1
5A012	2784714.7	6386692.1	7	30	165	6	13					13.13		tm		3
5A013	2784977.8	6387806.1	16	30	30	2	18					28.07		tm		0
5A014	2784962.6	6387775.8	14	30	35	2	18					25.02		tm		0
5A015	2784920.9	6387669.6	18	10	40	2	20	60	35	0	18	60.95	18.43	tm		2
5A016	2785068.8	6387472.4	16	20	110	2	18					38.66		tm		0
5A017	2785159.8	6387472.4	16	20	70	2	18					38.66		tm		0
5A018	2785273.6	6387419.3	16	25	95	2	18					32.62		tm		0
5A019	2785398.7	6387495.1	10	35	70	4	14					15.95		tm		3
5A020	2785459.4	6387525.12	12	60	120	4	16					11.31		tm		3
5A021	2785736.2	6388045.0	6	100	100	4	10					3.43		tm		1
5A022	2785857.6	6388136.1	4	55	115	4	8					4.16		tm		1
5A023	2785952.4	6387696.1	10	20	150	4	14					26.57		tm	Yes	3
5A024	2786024.5	6387813.7	3	30	120	6	9					5.71		tm		1
5A025	2786085.1	6387795.7	6	50	230	10	16					6.84		tm		1
5A026	2786316.5	6388075.4	16	80	260	4	20	90	100	2	10	11.31	11.31	tm	Yes	3
5A027	2786525.1	6387813.7	6	25	90	4	10					13.50		tm		1
5A028	2786638.8	6387946.4	6	25	135	4	10					13.50		tm		1
5A029	2786693.0	6387892.1	10	85	115	12	22					6.71		tm		1
5A030	2786650.1	6387724.7	12	65	100	2	14					10.46		tm		3
5A031	2786783.0	6387658.2	32	150	140	8	40	140	100	12	28	12.04	11.31	tm		4
5A032	2786930.2	6387519.8	10	40	55	34	44					14.04		tm		3
5A033	2786959.2	6387442.5	12	35	100	32	44	175	75	4	30	18.92	12.88	tm		4
5A034	2786828.5	6387252.4	38	175	265	4	42	155	65	4	24	12.25	13.78</td			

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe		Top		Slope angle		Geo. Symbol	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage							
5A038	2786388.5	6387131.1	10	45	75	4	14					12.53		tm							3
5A039	2786210.3	6387203.1	8	20	45	6	14					21.80		tm							1
5A040	2786088.9	6387153.8	17	30	45	4	21					29.54		tm	Swamp						1
5A041	2785990.3	6387051.4	16	40	90	4	20					21.80		tm							3
5A042	2785837.5	6386930.0	18	50	165	4	22					19.80		tm							3
5A043	2785736.0	6386876.8	20	55	85	6	26	75	40	4	12	19.98	16.35	tm						4	
5A044	2785566.8	6386664.0	14	30	50	8	22					25.02		tm							3
5A045	2785561.9	6386610.9	14	25	55	4	18					29.25		tm							3
5A046	2785760.2	6386644.7	20	100	130	14	34					11.31		tm	Yes						3
5A047	2785760.2	6386485.1	14	70	60	16	30					11.31		tm							1
5A048	2785789.2	6386470.6	14	45	45	32	46					17.28		tm							1
5A049	2785818.2	6386462.0	16	80	90	34	50					11.31		tm							1
5A050	2785905.2	6386398.1	12	72.5	100	38	50					9.40		tm							1
5A051	2785765.0	6386422.3	34	135	100	4	38					14.14		tm							3
5A052	2785871.4	6386340.1	46	250	160	4	50	220	250	8	26	10.43	10.81	tm	Yes						4
5A053	2785871.4	6386127.4	34	170	155	4	38					11.31		tm	Yes						3
5A054	2785968.1	6386083.8	14	75	60	22	36					10.57		tm							1
5A055	2785837.5	6385992.0	12	40	55	10	22	85	45	4	14	16.70	11.96	tm						2	
5A056	2786050.3	6385967.8	14	105	50	16	30					7.59		tm							3
5A057	2786016.4	6385861.4	7	?	250	?	?	40	16	30	?			tm							4
5A058	2786021.3	6386330.4	14	75	70	36	50					10.57		tm							1
5A059	2786035.8	6386199.9	18	55	140	34	52	185	135	20	38	18.12	9.81	tm							4
5A060	2786113.1	6386132.2	7	70	45	16	23					5.71		tm							3
5A061	2786234.0	6385934.0	8	80	90	22	30					5.71		tm							1
5A062	2786408.1	6385861.4	22	85	305	32	54					14.51		tm							1
5A063	2786606.3	6386233.7	26	135	205	26	52					10.90		tr							1
5A064	2786398.4	6386253.1	6	25	150	24	30					13.50		tr							1
5A065	2786543.4	6386480.3	30	125	250	20	50	165	50	20	24	13.50	10.30	tr							2
5A066	2786316.2	6386509.3	11	50	80	12	23					12.41		tr							3
5A067	2786282.3	6386635.0	12	40	100	12	24					16.70		tr							1
5A068	2786321.0	6386741.4	12	70	75	10	22					9.73		tr	Yes						3
5A069	2786562.8	6386606.0	24	50	65	24	48					25.64		tr							3
5A070	2786519.3	6386712.4	8	45	45	18	26					10.08		tr							3
5A071	2786620.8	6386654.4	26	90	110	22	48					16.11		tr							1
5A072	2786664.3	6386775.3	22	55	80	26	48					21.80		tr							3
5A073	2786891.6	6386712.4	20	165	215	20	40					6.91		tr							3
5A074	2787051.1	6386905.8	24	100	150	18	42					13.50		tr							3
5A075	2787147.8	387007.38	24	75	90	18	42					17.74		tr							3
5A076	2787234.8	6387104.0	22	70	65	16	38	75	30	16	26	17.45	16.35	tr							4
5A077	2787225.2	6387210.4	30	165	80	12	42					10.30		tr							3
5A078	2787404.1	6387050.8	12	25	90	12	24	70	60	8	14	25.64	12.88	tr							2
5A079	2787399.2	6387152.4	14	30	55	10	24	55	40	8	16	25.02	16.22	tm							4
5A080	2787505.6	6387181.4	12	15	60	10	22	45	25	8	16	38.66	17.28	tm							4
5A081	2787428.2	6387336.1	20	150	75	12	32					7.59		tr							3
5A082	2787481.4	6387418.3	16	60	100	12	28					14.93		tr							3
5A083	2787505.6	6387529.5	26	100	110	8	34					14.57		tr							3
5A084	2787650.7	6387616.5	7	35	65	16	23					11.31		tr							1
5A085	2787075.3	6387573.0	12	100	65	32	44					6.84		tr							1
5A086	2787196.2	6387645.6	10	50	130	30	40					11.31		tr							1
5A087	2787786.0	6387843.8	8	110	250	6	14					4.16		tm	Yes						3
5A088	2787483.6	6388084.5	6	30	135	8	14					11.31		tm							3
5A089	2787960.1	6387882.5	8	80	65	6	14					5.71		tm							1
5A090	2788105.1	6387592.4	8	35	130	4	12					12.88		tm	Yes						3
5A091	2787955.3	6387573.0	13	50	100	4	17					14.57		tm							3
5A092	2787863.4	6387495.7	18	50	125	6	24					19.80		tm							3
5A093	2787732.9	6387239.4	18	75	220	8	26					13.50		tm							1
5A094	2787549.1	6386944.5	20	50	110	12	32	65	95	10	24	21.80	18.70	tm							4
5A095	2787500.8	6386765.6	20	110	95	14	34	105	70	16	28	10.30	9.73	tm							2
5A096	2787476.6	6386635.0	30	60	110	6	36	80	50	6	18	26.57	20.56	tm							4
5A097	2787375.1	6386601.2	26	55	80	10	36	90	40	6	18	25.30	18.43	tm							4
5A098	2787288.0	6386509.3	30	65	75	8	38	75	40	7	28	24.78	22.46	tm							4
5A099	2787205.8	6386543.2	6	30	130	36	42					11.31		tm							1
5A100	2787263.9	6386432.0	28	110	145	6	34	130	165	6	26	14.28	12.15	tm							4
5A101	2787143.0	6386417.5	28	72.5	130	10	38	95	85	8	28	21.12	17.53	tm							2
5A102	2786978.6	6386393.3	32	140	130	18	50	120	45	18	26	12.88	14.93	tm							4
5A103	2786983.4	6386262.7	34	120	80	16	50					15.82		tm							3
5A104	2786973.8	6386170.9	12	110	135	36	48					6.23		tm							1
5A105	2787099.5	6386282.7	18	35	95	18	36					27.22		tm							3
5A106	2787210.7	6386286.6	16	25	70	10	26					32.62		tm							3
5A107	2787118.8	6386156.4	30	105	205	12	42	120	45	12	24	15.95	14.04	tm							4
5A108	2786988.3	6385972.6	16	110	155	26	42					8.28		tm							1

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe		Top		Slope angle		Geo.		
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol							
5A125	2788095.5	6387355.5	14	100	210	16	30	?	95	65	?	?	?	?	?	?	?	7.97	18.92	tr	1	
5A126	2786388.5	6387131.1	12	35	75	6	18	?	?	?	?	?	?	?	?	?	?	18.92	tr	tm	Yes	3
5B001	2789075.5	6383257.7	?	55	60	?	?	?	95	65	?	?	?	?	?	?	?	?	?	tr	2	
5B002	2788919.9	6383192.4	12	205	45	8	20	185	55	8	14	3.35	3.71	tr						tr	2	
5B003	2788834.6	6383061.9	18	70	65	4	22	75	75	6	12	14.42	12.04	tr						tr	2	
5B004	2788734.2	6382946.5	12	20	100	6	18	?	?	?	?	?	?	?	?	?	?	30.96	tr		0	
5B005	2788668.9	6382996.7	4	40	110	10	14	?	?	?	?	?	?	?	?	?	?	5.71	tr	tr	1	
5B006	2788578.6	6382866.2	16	75	85	2	18	?	?	?	?	?	?	?	?	?	?	12.04	tr		1	
5B007	2788397.9	6382695.5	12	35	55	2	14	?	?	?	?	?	?	?	?	?	?	18.92	tr		0	
5B008	2788342.7	6382685.5	12	60	50	4	16	?	?	?	?	?	?	?	?	?	?	11.31	tr		0	
5B009	2788142.0	6383026.8	26	165	360	2	28	?	?	?	?	?	?	?	?	?	?	8.95	tr	Yes	3	
5B010	2787865.9	6382956.5	23	50	90	2	25	?	?	?	?	?	?	?	?	?	?	24.70	tr	Yes	3	
5B011	2787675.2	6383087.0	6	45	110	20	26	?	?	?	?	?	?	?	?	?	?	7.59	tr		1	
5B012	2787529.7	6382886.3	12	130	190	16	28	?	?	?	?	?	?	?	?	?	?	5.27	tr		1	
5B013	2787625.0	6382620.3	22	30	40	4	26	?	?	?	?	?	?	?	?	?	?	36.25	tr		3	
5B014	2787489.5	6382570.1	18	25	100	6	24	?	?	?	?	?	?	?	?	?	?	35.75	tr		3	
5B015	2787374.1	6382625.3	22	115	220	6	28	?	?	?	?	?	?	?	?	?	?	10.83	tr	Yes	3	
5B016	2787193.4	6382565.1	12	32.5	50	12	24	?	?	?	?	?	?	?	?	?	?	20.27	tr		3	
5B017	2787133.2	6382514.9	8	20	70	16	24	?	?	?	?	?	?	?	?	?	?	21.80	tr		3	
5B018	2786267.1	6382517.0	12	70	75	18	30	?	?	?	?	?	?	?	?	?	?	9.73	tr		1	
5B019	2786298.3	6382638.2	10	25	85	24	34	?	?	?	?	?	?	?	?	?	?	21.80	tr		1	
5B020	2786478.5	6382821.9	20	150	180	10	30	?	?	?	?	?	?	?	?	?	?	7.59	tr		1	
5B021	2786572.0	6382860.0	14	65	65	8	22	?	?	?	?	?	?	?	?	?	?	12.15	tr		1	
5B022	2786537.4	6382752.6	22	30	100	8	30	?	?	?	?	?	?	?	?	?	?	36.25	tr		3	
5B023	2786478.5	6382659.0	22	100	105	8	30	?	?	?	?	?	?	?	?	?	?	12.41	tr		1	
5B024	2786544.3	6382648.6	8	40	55	2	10	?	?	?	?	?	?	?	?	?	?	11.31	tr		3	
5B025	2786582.4	6382558.5	8	40	55	4	12	?	?	?	?	?	?	?	?	?	?	11.31	tr		3	
5B026	2786800.7	6382530.8	4	20	135	28	32	?	?	?	?	?	?	?	?	?	?	11.31	tr		1	
5B027	2786800.7	6382676.4	12	65	215	18	30	?	?	?	?	?	?	?	?	?	?	10.46	tr		3	
5B028	2786773.0	6382828.8	12	40	155	6	18	?	?	?	?	?	?	?	?	?	?	16.70	tr		3	
5B029	2786873.5	6382915.5	12	65	65	12	24	?	?	?	?	?	?	?	?	?	?	10.46	tr		1	
5B030	2786873.5	6382998.6	18	30	95	8	26	?	?	?	?	?	?	?	?	?	?	30.96	tr		3	
5B031	2786904.7	6383119.9	10	30	95	4	14	?	?	?	?	?	?	?	?	?	?	18.43	tr		1	
5B032	2787032.8	6383117.1	14	50	175	18	32	?	?	?	?	?	?	?	?	?	?	15.64	tr		1	
5B033	2787017.8	6383247.6	14	95	105	12	26	?	?	?	?	?	?	?	?	?	?	8.38	tr		1	
5B034	2787208.5	6383368.1	5	35	90	30	35	?	?	?	?	?	?	?	?	?	?	8.13	tr		1	
5B035	2786987.6	6383538.7	10	80	110	4	14	?	?	?	?	?	?	?	?	?	?	7.13	6.28	tr	1	
5B036	2787198.4	6383528.7	28	80	220	4	32	?	?	?	?	?	?	?	?	?	?	19.29	tr		2	
5B037	2787434.3	6383513.6	20	40	175	14	34	?	?	?	?	?	?	?	?	?	?	26.57	tr		3	
5B038	2787610.0	6383513.6	8	25	110	18	26	?	?	?	?	?	?	?	?	?	?	17.74	tr		1	
5B039	2787776.6	6383518.6	16	75	170	6	22	?	?	?	?	?	?	?	?	?	?	12.04	tr	Yes	3	
5B040	2787665.2	6383609.0	8	25	90	2	10	?	?	?	?	?	?	?	?	?	?	17.74	tr		3	
5B041	2787911.1	6383759.5	14	115	175	4	18	?	?	?	?	?	?	?	?	?	?	6.94	tr	Yes	3	
5B042	2788011.5	6383905.1	6	50	115	24	30	?	?	?	?	?	?	?	?	?	?	6.84	tr		1	
5B043	2787865.9	6383925.2	24	40	150	6	30	?	?	?	?	?	?	?	?	?	?	30.96	tr		4	
5B044	2787931.2	6384050.6	24	40	95	4	28	?	?	?	?	?	?	?	?	?	?	30.96	tr		3	
5B045	2788016.5	6384151.0	20	40	60	6	26	?	?	?	?	?	?	?	?	?	?	26.57	tr		4	
5B046	2788101.8	6384196.2	22	45	65	4	26	?	?	?	?	?	?	?	?	?	?	26.05	tr		4	
5B047	2788182.1	6384271.4	8	10	75	18	26	?	?	?	?	?	?	?	?	?	?	38.66	tr		4	
5B048	2788261.1	6384387.7	28	45	160	2	30	?	?	?	?	?	?	?	?	?	?	31.89	tr		3	
5B049	2788579.3	6384759.9	16	45	280	4	20	?	?	?	?	?	?	?	?	?	?	19.57	tr	Yes	3	
5B050	2788627.4	6385036.1	20	50	180	4	24	?	?	?	?	?	?	?	?	?	?	21.80	tr	Yes	3	
5B051	2788759.5	6385210.2	16	45	115	8	24	?	?	?	?	?	?	?	?	?	?	19.57	tr		3	
5B052	2788831.5	6385288.3	14	45	100	8	22	?	?	?	?	?	?	?	?	?	?	17.28	tr		4	
5B053	2788891.6	6385354.3	13	35	70	6	19	?	?	?	?	?	?	?	?	?	?	20.38	tr		3	
5B054	2788981.6	6385438.4	12	45	100	4	16	?	?	?	?	?	?	?	?	?	?	14.93	tr		0	
5B055	2789023.6	6385282.3	12	40	75	6	18	?	?	?	?	?	?	?	?	?	?	16.70	tr		3	
5B056	2787584.7	6385672.5	16	75	160	6	22	?	?	?	?	?	?	?	?	?	?	12.04	tr		4	
5B057	2787342.5	6385444.4	10	40	45	4	14	?	?	?	?	?	?	?	?	?	?	14.04	tr		3	
5B058	2787294.5	6385432.4	6	35	60	6	12	?	?	?	?	?	?	?	?	?	?	9.73	tr		3	
5B059	2787096.4	6385390.3	14	120	50	6	20	?	?	?	?	?	?	?	?	?	?	6.65	tr	Yes	3	
5B060	2787030.3	6385432.4	10	35	175	26	36	185	120	20	26	15.95	4.94	tr					tr		4	
5B061	2787054.3	6385282.3	2	15	70	20	22	?	?	?	?	?	?	?	?	?	?	7.59	tr		3	
5B062	2787150.4	6385300.3	16	130	90	6	22	?	?	?	?	?	?	?	?	?	?	7.02	tr		3	
5B063	2787240.5	6385318.3	11	55	50	4	15	?	?	?	?	?	?	?	?	?	?	11.31	tr		0	
5B064	2787294.5	6385294.3	12	60	75	4	16	?	?	?	?	?	?	?	?	?	?	11.31	tr		3	
5B065	2787390.6	6385324.3	12	30	65	4	16	?	?	?	?	?	?	?	?	?	?	21.80	tr	Yes	3	
5B066	2787474.6	6385306.3	8	40	70	8	16	?	?	?	?	?	?	?	?	?	?	11.31	tr		1	
5B067	2787456.6	6385162.2	22																			

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe Top			Slope angle			Geo.	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol		
5B086	2786897.2	6385009.3	22	190	170	24	46								6.60	tr			1		
5B087	2786704.4	6384894.4	12	90	170	30	42								7.59	tr			1		
5B088	2786630.5	6384726.1	12	80	255	30	42								8.53	tr			3		
5B089	2786408.9	6384578.4	6	150	195	44	50								2.29	tr			1		
5B090	2787008.0	6384525.1	20	45	60	4	24								23.96	tr			3		
5B091	2786880.8	6384508.7	26	80	65	6	32								18.00	tr			3		
5B092	2786843.9	6384430.7	18	50	100	6	24	50	75	2	12	19.80	23.75	tr				4			
5B093	2786729.0	6384508.7	22	165	135	6	28								7.59	tr	Yes		3		
5B094	2786552.5	6384488.1	28	200	245	10	38	110	150	16	28	7.97	11.31	tr				4			
5B095	2786544.3	6384369.1	34	120	200	10	44	85	165	18	32	15.82	17.01	tr				4			
5B096	2786704.4	6384262.5	36	90	175	6	42	90	135	8	34	21.80	20.70	tr				4			
5B097	2786839.8	6384241.9	14	35	55	6	20								21.80	tr			3		
5B098	2786716.7	6384069.6	28	75	200	4	32	120	165	2	18	20.47	14.04	tr	Yes			4			
5B099	2786569.0	6384118.8	28	105	170	6	34								14.93	tr			3		
5B100	2786302.2	6384065.5	46	210	400	6	52	200	340	10	36	12.36	11.86	tr	Yes			4			
5B101	2786420.5	6383860.0	34	95	135	4	38	100	70	6	22	19.69	17.74	tr	Yes			4			
5B102	2786491.1	6383799.9	24	45	75	4	28	75	75	2	20	28.07	19.12	tr				4			
5B103	2786484.1	6383729.3	34	75	45	4	38								24.39	tr			3		
5B104	2786357.0	6383683.4	42	120	160	8	50	175	70	3	26	19.29	15.03	tr	Yes			4			
5B105	2786325.2	6383531.6	36	100	130	4	40	110	45	2	32	19.80	19.06	tr				4			
5B106	2786261.6	6383425.7	24	65	110	6	30	110	85	2	22	20.27	14.28	tr				2			
5B107	2786187.5	6383482.2	20	60	60	14	34	65	35	14	22	18.43	17.10	tr				4			
5B108	2786113.4	6383510.4	20	70	85	10	30	95	55	8	18	15.95	13.04	tr	Sat.			4			
5B109	2786063.9	6383595.2	20	30	95	12	32	100	20	11	22	33.69	11.86	tr	Sat.			2			
5B110	2785919.2	6383701.1	30	175	115	10	40								9.73	tr	Yes		3		
5B111	2785823.8	6383669.3	23	95	65	10	33								13.61	tr			3		
5B112	2786014.5	6383761.1	12	75	140	40	52								9.09	tr			1		
5B113	2785883.9	6383852.9	18	80	50	42	60								12.68	tr			1		
5B114	2785746.2	6383789.3	18	85	85	36	54								11.96	tr			1		
5B115	2785806.2	6383616.3	20	55	90	20	40								19.98	tr			3		
5B116	2785608.5	6383750.5	24	90	135	28	52	175	75	26	38	14.93	8.45	tr				4			
5B117	2785576.7	6383831.7	32	150	260	28	60								12.04	tr			1		
5B118	2785506.1	6383616.3	24	92.5	120	30	54								14.55	tr			3		
5B119	2785544.9	6383471.6	28	60	90	24	52								25.02	tr			3		
5B120	2785506.1	6383344.5	38	100	160	14	52	105	45	14	36	20.81	19.90	tr				4			
5B121	2785562.6	6383242.1	16	25	45	14	30								32.62	tr			3		
5B122	2785501.2	6383144.2	34	80	60	6	40								23.03	tr			3		
5B123	2785359.2	6383113.0	40	170	130	6	46								13.24	tr	Sat.		3		
5B124	2785386.9	6382950.1	15	50	55	6	21								16.70	tr			0		
5B125	2785289.9	6382929.3	12	50	60	6	18								13.50	tr			3		
5B126	2785300.3	6383012.5	24	65	120	20	44								20.27	tr			3		
5B127	2785213.6	6382995.2	32	150	120	10	42	110	60	18	32	12.04	12.31	tr				4			
5B128	2785081.9	6382988.2	26	115	40	14	40								12.74	tr			1		
5B129	2785012.6	6383016.0	18	42.5	65	20	38								22.95	tr			3		
5B130	2784905.2	6382960.5	26	135	150	14	40								10.90	tr			3		
5B131	2784834.2	6382887.7	22	105	80	26	48								11.83	tr			3		
5B132	2784832.4	6382790.7	26	80	70	22	48								18.00	tr			1		
5B133	2784811.6	6382707.5	22	100	75	26	48								12.41	tr			3		
5B134	2784731.9	6382544.7	26	130	75	24	50								11.31	tr			3		
5B135	2784700.7	6382600.1	40	175	135	24	64								12.88	tr			1		
5B136	2784898.3	6382607.1	9	35	30	16	25								14.42	tm			0		
5B137	2784939.9	6382492.7	6	25	45	18	24								13.50	tm			3		
5B138	2785102.7	6382659.0	12	55	60	16	28								12.31	tm	Yes		3		
5B139	2785251.7	6382756.1	11	90	45	10	21								6.97	tm			1		
5B140	2785328.0	6382759.5	16	60	60	8	24								14.93	tm	Yes		3		
5B141	2785393.8	6382773.4	18	65	50	8	26								15.48	tm	Yes		3		
5B142	2785542.8	6382915.5	20	70	75	8	28								15.95	tm	Yes		3		
5B143	2785657.2	6382995.2	26	135	60	6	32								10.90	tm			3		
5B144	2785837.4	6383067.9	30	145	125	0	30								11.69	tm			3		
5B145	2786021.0	6383071.4	14	35	75	4	18								21.80	tm			1		
5B146	2786028.0	6382950.1	22	40	60	4	26								28.81	tm			3		
5B147	2785669.1	6382894.7	24	50	60	4	28								25.64	tm			3		
5B148	2785879.0	6382794.2	30	55	165	2	32								28.61	tm			1		
5B149	2785754.2	6382686.8	28	70	100	4	32	110	45	3	18	21.80	14.77	tm				4			
5B150	2785657.2	6382631.3	28	85	75	2	30								18.23	tm			3		
5B151	2785598.3	6382562.0	16	55	55	2	18								16.22	tm			0		
5B152	2785605.2	6382617.4	26	100	65	2	28								14.57	tm			1		
5B153	2785490.8	6382596.7	30	100	110	4	34								16.70	tm			3		
5B154	2785383.4	6382534.3	14	55	70	2	16								14.28	tm			3		
5B155	2785421.5	6382669.4	28	175	175	2	28								8.45	tm			1		
5B156	2785251.7	6382600.1	14	55	90	18	32								14.28	tm			3		
5B157																					

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geo.		
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol	
5B173	2785114.2	6383860.0	5	30	35	24	29				9.46		tr		0	
5B174	2785153.3	6383971.1	9	75	55	20	29				6.84		tr		1	
5B175	2785182.0	6384061.4	16	105	60	14	30				8.66		tr		3	
5B176	2785366.7	6383995.7	14	30	100	28	42				25.02		tr		0	
5B177	2785280.5	6384131.2	10	30	70	20	30	80	20	13	20	18.43	12.00	tr	4	
5B178	2785395.4	6384040.9	14	42.5	55	24	38				18.23		tr		1	
5B179	2785338.0	6384196.8	16	30	70	16	32	70	25	12	22	28.07	15.95	tr	4	
5B180	2785473.4	6384098.3	25	105	115	16	41				13.39		tr	Yes	1	
5B181	2785473.4	6384028.6	22	75	90	38	60				16.35		tr		1	
5B182	2785411.8	6384344.5	20	50	55	8	28	85	35	8	16	21.80	13.24	tr	2	
5B183	2785588.3	6384283.0	22	60	60	10	32				20.14		tr	Yes	3	
5B184	2785801.6	6384020.4	26	165	275	32	58				8.95		tr		1	
5B185	2785822.1	6384110.6	16	135	60	20	36				6.76		tr	Yes	1	
5B186	2785793.4	6384365.0	16	80	60	10	26				11.31		tr		3	
5B187	2785965.8	6384180.4	6	15	60	20	26				21.80		tr		3	
5B188	2786002.7	6384106.5	12	50	60	20	32				13.50		tr	Yes	3	
5B189	2786076.6	6384188.6	20	60	100	18	38				18.43		tr		3	
5B190	2786175.0	6384307.6	16	60	130	16	32				14.93		tr	Yes	3	
5B191	2786006.8	6384291.2	11	45	60	14	25				13.74		tr		3	
5B192	2785937.0	6384352.7	12	70	150	12	24				9.73		tr		3	
5B193	2785912.4	6384508.7	16	55	90	8	24				16.22		tr	Yes	3	
5B194	2785932.9	6384635.9	18	125	155	6	24				8.19		tr		3	
5B195	2785797.5	6384685.1	16	90	150	2	18				10.08		tr		3	
5B196	2786129.9	6384598.9	16	40	150	18	34	190	90	8	20	21.80	7.79	tr	4	
5B197	2786265.3	6384582.5	20	160	240	30	50				7.13		tr		1	
5B198	2786203.8	6384689.2	20	95	45	18	38				11.89		tr		3	
5B199	2786146.3	6384804.1	12	65	75	10	22				10.46		tr		3	
5B200	2786212.0	6384878.0	12	50	60	12	24	130	35	2	20	13.50	9.61	tr	2	
5B201	2786310.4	6384890.3	22	130	125	4	26				9.61		tr	Yes	3	
5B202	2786458.2	6384898.5	20	140	90	8	28				8.13		tr		3	
5B203	2786503.3	6384767.2	36	125	70	6	42				16.07		tr		1	
5B204	2786585.4	6385103.6	14	85	210	8	22				9.35		tr	Yes	3	
5B205	2786523.8	6385210.3	20	105	70	8	28	85	55	8	16	10.78	13.24	tr	2	
5B206	2786429.4	6385239.0	20	130	100	4	24				8.75		tr		3	
5B207	2786343.3	6385230.8	24	120	60	4	28				11.31		tr		3	
5B208	2786306.3	6385243.1	22	120	50	4	26				10.39		tr		3	
5B209	2786216.1	6385226.7	16	70	90	4	20	75	30	4	12	12.88	12.04	tr	4	
5B210	2786142.2	6385210.3	9	50	60	4	13	65	35	2	12	10.20	9.61	tr	4	
5B211	2786101.2	6385288.3	13	65	60	4	17				11.31		tr		3	
5B212	2786236.6	6385386.8	20	145	75	6	26				7.85		tr		3	
5B213	2786337.9	6385477.0	10	105	175	28	38				5.44		tr		3	
5B214	2786532.0	6385587.8	6	75	150	32	38				4.57		tr		1	
5B215	2787315.2	6385727.3	18	70	150	4	22				14.42		tr		1	
5B216	2787077.8	6385710.9	11	85	50	6	17				7.37		tr		3	
5B217	2787063.9	6385773.5	?	50	125	8	7				?		tr		3	
5B218	2786981.8	6385732.5	10	37.5	100	8	18				14.93		tr		1	
5B219	2786951.1	6385824.8	6	55	120	18	24				6.23		tr		3	
5B220	2786880.8	6385616.5	14	95	80	8	22				8.38		tr	Yes	3	
5B221	2786782.3	6385719.1	2	45	120	28	30				2.54		tr		3	
5B222	2786429.4	6385710.9	16	130	190	34	50	225	75	32	40	7.02	4.57	tr	4	
5B223	2786343.3	6385600.1	16	145	210	30	46				6.30		tr		1	
5B224	2786216.1	6385641.2	7	110	135	42	49				3.64		tr		1	
5B225	2786248.9	6385735.5	?	95	245	?	52				?		tr		1	
5B226	2785920.8	6385731.4	?	40	110	?	58				?		tr		3	
5B227	2785797.5	6385682.2	20	70	70	4	24	80	40	4	20	15.95	14.04	tr	4	
5B228	2785789.3	6385641.2	18	50	85	4	22				19.80		tr		3	
5B229	2785809.8	6385583.7	20	50	75	2	22	50	50	2	12	21.80	21.80	tr	4	
5B230	2785982.2	6385624.8	56	205	150	4	60	240	55	2	36	15.28	13.59	tr	Yes	4
5B231	2786060.1	6385538.6	40	170	55	4	44	170	40	4	30	13.24	13.24	tr	Yes	4
5B232	2786117.6	6385477.0	32	200	165	4	36	175	55	4	22	9.09	10.36	tr	?	4
5B233	2786085.1	6383658.7	6	95	90	32	38				3.61		tr		1	
5B234	2784800.4	6385731.4	26	120	270	2	28	120	65	4	10	12.23	11.31	tm	4	
5B235	2784681.4	6385583.7	24	130	175	4	28	160	140	4	18	10.46	8.53	tm	Sat.	4
5B236	2784890.7	6385514.0	14	65	100	4	18				12.15		tm		3	
5B237	2785251.8	6385620.6	8	100	90	2	10				4.57		tm		1	
5B238	2785387.2	6385571.4	20	30	100	2	22				33.69		tm		3	
5B239	2785411.8	6385501.7	14	45	60	6	20				17.28		tm		1	
5B240	2785026.1	6385218.5	8	70	55	20	28				6.52		tm		3	
5B241	2785108.2	6384845.1	24	150	65	6	30	135	170	6	18	9.09	10.08	tm	2	
5B242	2785370.8	6385021.6	26	220	335	4	30	175	400	4	20	6.74	8.45	tm	4	
5B243	2785194.3	6384553.8	16	225	160	12	28				4.07		tm		1	
5B244	2785719.6	6384935.4	16	30	75	4	20				28.07		tm		3	
5B245	2785621.1	6384783.6	18	45	200	6	24				21.80		tm		3	
5B246	2785534.9	6384709.7	14	70	55	12	26	130	45	2	13	11.31	10.46	tm	4	
5B247	2785506.2	6384627.7	18	45	90	8	26	70	60	4	20	21.80	17.45	tm		4
5B248	2785424.1	6384557.9	17	70	125	8	25	135	75	2	10	13.65	9.67	tm	4	
5B249	2785227.2	6384369.1	20	170	160	12	32				6.71		tm	Yes	3	
5B250	2784919.4	6384122.9	2	25	150	34	36				4.57		tm		1	
5B251	2784923.5	6384799.6	5	40	210	32	37				7.13		tr		1	
5B252	2784862.0	6384436.3	4	30	100	26	30				7.59		tr		1	
5B253	2789281.8	6384081.5	6	20	85	10	16				16.70		tr		1	
5B254	2789185.7	6384147.5	6	45	110	14	20				7.59		tr		1	
5B255	2787444.6	6385048.1	18	50	105	8	26				19.80		tr ?		3	
5B256	2787456.6	6385162.2	14	40	105	10	24				19.29		tr ?		3	
5B257	2787696.8	6385390.3	16	50	125	6	22				17.74		tr		3	
6A001	2785617.3	6382323.0	10	65	150	52	62				8					

Ref. No.	Coordinates	Scarp		Bottom	Scarp		Runout		Toe	Top	Slope angle		Geology	Seepage	Geo. Symbol	
		Height(m)	Distance(m)		Width(m)	RL	RL	Distance(m)	Width(m)		RL	RL				
6A003	2784683.2	6382538.5	28	160	80	22	50	130	45	34	52	13.09	16.29	tr	Yes	3
6A004	2784645.6	6382466.7	50	215	105	22	72	130	45	34	52	13.09	16.29	tr	Yes	4
6A005	2784905.6	6382641.2	9	35	35	16	25					14.42		tr		3
6A006	2784963.8	6382531.7	8	30	50	18	26					14.93		tr		3
6A007	2785117.8	6382641.2	10	30	65	18	28					18.43		tr	Yes	3
6A008	2785234.1	6382716.4	8	75	60	14	22					6.09		tr		0
6A009	2785843.1	6382716.4	24	35	50	8	32					34.44		tr		0
6A010	2785743.9	6382678.8	24	65	95	6	30	90	45	4	16	20.27	16.11	tr		4
6A011	2785637.8	6382630.9	26	70	75	4	30					20.38		tr		3
6A012	2785545.5	6382613.8	26	85	55	4	30					17.01		tr		1
6A013	2785583.1	6382555.6	12	35	105	4	16					18.92		tr		3
6A014	2785487.3	6382576.2	28	75	55	6	34					20.47		tr		3
6A015	2785394.9	6382665.1	8	40	190	26	34					11.31		tr		1
6A016	2785258.0	6382596.7	14	60	90	18	32					13.13		tr		3
6A017	2785388.1	6382545.4	12	52.5	70	4	16					12.88		tr		3
6A018	2785227.2	6382490.6	26	80	80	8	34	100	50	6	20	18.00	15.64	tr	Yes	4
6A019	2785240.9	6382432.5	14	20	50	4	18					34.99		tr		0
6A020	2785138.3	6382429.0	26	70	70	6	32	70	40	6	18	20.38	20.38	tr		4
6A021	2785076.7	6382370.9	22	70	60	8	30					17.45		tr		3
6A022	2785076.	6382442.7	26	80	165	6	32					18.00		tr		1
6A023	2785039.1	6382288.7	14	27.5	50	12	26					26.98		tr		3
6A024	2784871.4	6382302.4	16	70	65	24	40					12.88		tr		3
6A025	2785008.3	6382227.2	12	25	65	14	26					25.64		tr		1
6A026	2784967.2	6382158.7	16	57.5	85	8	24					15.55		tr		3
6A027	2784868.0	6382104.0	22	70	45	8	30					17.45		tr		1
6A028	2784714.0	6382186.1	13	140	65	24	37					5.31		tr		1
6A029	2784882.6	6381984.8	34	80	175	6	40	85	165	5	30	23.03	22.38	tr		4
6A030	2784939.7	6381870.5	16	30	50	4	20					28.07		tr		1
6A031	2784976.1	6381805.6	12	25	65	6	18					25.64		tr		1
6A032	2784776.	6381862.7	26	60	290	16	42	200	270	4	30	23.43	10.76	tr		4
6A033	2784651.5	6381896.5	2	40	120	38	40	100	80	20	32	2.86	11.31	tr		4
6A034	2784771.8	6380428.8	16	35	90	18	34					24.57		tr		3
6A035	2784756.3	6380315.3	32	85	115	8	40					20.63		tr		3
6A036	2784802.8	6380217.2	30	50	100	16	46					30.96		tr		3
6A037	2784844.0	6380098.5	24	45	50	8	32					28.07		tr		0
6A038	2784699.5	6379979.8	18	105	120	26	44					9.73		tr		1
6A039	2784653.1	6379546.3	10	50	55	36	46					11.31		tr		0
6A040	2785365.3	6379520.5	14	45	55	32	46					17.28		tr		1
6A041	2785210.5	6379510.2	20	35	130	26	46					29.74		tr		1
6A042	2785127.9	6379541.1	32	55	80	20	52					30.19		tr		3
6A043	2785071.1	6379608.2	32	40	300	18	50					38.66		tr		3
6A044	2785029.8	6379783.7	26	25	115	16	42					46.12		tr	Yes	1
6A045	2785112.4	6380000.5	36	155	335	6	42	270	85	6	24	13.08	7.59	tr	Yes	3
6A046	2784942.1	6380191.4	20	25	40	10	30					38.66		tr		1
6A047	2784936.9	6380263.7	18	30	70	10	28					30.96		tr		1
6A048	2784952.4	6380330.8	6	30	50	24	30					11.31		tr		3
6A049	2785174.3	6380464.9	18	65	75	20	38					15.48		tr		3
6A050	2785164.0	6380624.9	32	55	225	10	42					30.19		tm		3
6A051	2784988.6	6380614.6	32	40	120	10	42					38.66		tm		3
6A052	2785009.2	6380748.8	12	40	100	30	42					16.70		tm		3
6A053	2785122.7	6380939.7	24	100	170	12	36					13.50		tm	Yes	3
6A054	2784957.6	6381099.7	42	70	320	6	48					30.96		tr		1
6A055	2784642.8	6381182.3	4	7.5	60	6	10					28.07		tr		1
6A056	2784730.5	6381218.4	4	20	90	6	10					11.31		tr		1
6A057	2784833.7	6381259.7	14	35	40	6	20					21.80		tr	Yes	3
6A058	2785014.4	6381275.2	28	130	60	6	34					12.15		tr		3
6A059	2785122.7	6381187.5	4	40	150	38	42					5.71		tr		1
6A060	2785122.7	6381795.8	32	175	85	6	38					10.36		tr	Yes	3
6A061	2785250.2	6381332.3	18	80	125	26	44					12.68		tm		3
6A062	2785455.4	6382312.1	8	100	130	34	42					4.57		tm		1
6A063	2785304.0	6381507.2	18	65	80	12	30					15.48		tm		1
6A064	2785396.8	6381608.2	22	125	120	12	34					9.98		tm		3
6A065	2785474.7	6381595.2	14	60	135	22	36					13.13		tm		1
6A066	2785586.4	6381784.8	26	50	70	6	32					27.47		tm		3
6A067	2785718.8	6381701.7	6	50	35	32	38					6.84		tm		1
6A068	2785820.1	6381797.8	16	30	130	16	32	100	60	10	20	28.07	12.41	tm		4
6A069	2785934.4	6381878.3	12	25	95	18	30	105	95	6	21	25.64	12.88	tr		4
6A070	2785960.4	6381945.8	13	35	40	10	23					20.38		tr		3
6A071	2786037.2	6381798.8	8	75	150	30	38					6.09		tr		1
6A072	2786289.5	6381947.8	14	65	50	18	32					12.15		tr		1
6A073	2786370.2	6382035.2	15	47.5	115	16	31					17.53		tr		3
6A074	2786380.1	6382119.3	14	20	95	16	30					34.99		tr		1
6A075	2786289.5	6382156.3	18	30	70	16	34					30.96		tr		1
6A076	2786154.8	6382126.0	18	40	140	16	34					24.23		tr		1
6A077	2785833.1	6382252.3	4	25	70	4	8					9.09		tr		1
6A078	2786022.7	6382291.2	28	120	100	4	32					13.13		tr	Yes	3
6A079	2786142.2	6382395.1	26	65	75	4	30					21.80		tr		3
6A080	2786178.5	6382356.2	20	30	210	16	36					33.69		tr		3
6A081	2786259.2	6382603.6	25	30	90	6	31					39.81		tr		1
6A082	2786508.1	6382724.7	22	95	85	6	28					13.04		tr		3
6A083	2786471.1	6382650.7	24	17.5	110	6	30					53.90		tr		3
6A084	2786585.4	6382539.7	3	15	75	6	9					11.31		tr		3
6A085	2786437.4	6382307.6	22	90	115	8	30					13.74		tr	Yes	3
6A086	2786511.4	6382183.2	16	50	65	14	30					17.74		tr		

Ref. No.	Coordinates	Scarp			Bottom			Scarp			Runout			Toe			Slope angle			Geo.
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol					
6A090	2786686.3 6382189.9	14	45	180	16	30	95	60	10	28	17.28	11.89	tr		2					
6A091	2786794.0 6382455.6	18	40	220	14	32					24.23		tr		1					
6A092	2786820.9 6382654.1	18	115	185	12	30					8.90		tr		3					
6A093	2787609.3 6382610.6	22	40	50	4	26					28.81		tr		3					
6A094	2787526.8 6382591.2	16	25	120	6	22					32.62		tr		3					
6A095	2787338.8 6382620.4	24	120	210	4	28					11.31		tr	Yes	3					
6A096	2787163.9 6382556.5	18	40	60	10	28					24.23		tr		3					
6A097	2787113.5 6382502.7	16	35	65	10	26	90	40	4	14	24.57	13.74	tr		4					
6A098	2786851.1 6382314.4	8	75	95	24	32					6.09		tr		1					
6A099	2786938.6 6382385.0	8	80	10	12	20					5.71		tr		3					
6A100	2786945.3 6382247.1	12	180	85	18	30					3.81		tr		1					
6A101	2787032.7 6382169.8	12	25	110	8	20					25.64		tr		1					
6A102	2786915.0 6381887.2	20	50	130	8	28	70	65	6	28	21.80	17.45	tr		2					
6A103	2786851.1 6381688.8	24	165	230	10	34	185	125	8	22	8.28	8.00	tr	Yes	3					
6A104	2787083.2 6381934.3	8	20	105	10	18	65	60	4	10	21.80	12.15	tr		4					
6A105	2787143.7 6382008.3	14	25	85	6	20					29.25		tr		1					
6A106	2787231.2 6382206.7	11	25	60	6	17					23.75		tr		3					
6A107	2787325.3 6382243.7	20	45	120	6	26					23.96		tr		3					
6A108	2787444.3 6382324.3	15	40	55	4	19					20.56		tr		3					
6A109	2787924.7 6382469.8	12	50	105	2	14					13.50		tr		1					
6A110	2788201.3 6382727.0	14	25	75	4	18					29.25		tr		3					
6A111	2788322.6 6382668.8	12	40	80	4	16					16.70		tr		1					
6A112	2787963.5 6382314.6	15	45	55	2	17	85	30	0	16	18.43	11.31	tr		2					
6A113	2787958.7 6382309.7	18	55	55	4	22					18.12		tr	Yes	3					
6A114	2787885.9 6382067.1	16	55	125	2	18					16.22		tr		1					
6A115	2787817.9 6381999.1	16	47.5	90	4	20					18.62		tr		3					
6A116	2787716.0 6381906.9	16	40	75	4	20					21.80		tr		1					
6A117	2787677.2 6381868.1	6	20	50	6	12					16.70		tr		1					
6A118	2787502.5 6381868.1	12	40	130	8	20					16.70		tr		3					
6A119	2787526.8 6381800.2	6	25	45	8	14					13.50		tr		3					
6A120	2787696.6 6381785.6	12	45	100	6	18					14.93		tr	prob	3					
6A121	2787352.1 6381746.8	10	165	150	18	28					3.47		tr		1					
6A122	2787444.3 6381635.2	6	55	35	22	28					6.23		tr		3					
6A123	2787604.4 6381688.6	10	65	120	16	26					8.75		tr		1					
6A124	2787701.5 6381533.3	18	50	150	4	22	80	55	2	8	19.80	14.04	tr		4					
6A125	2787390.9 6381421.7	10	35	150	22	32	125	95	2	28	15.95	13.50	tr		2					
6A126	2787172.5 6381188.7	8	87.5	55	26	34					5.22		tr		1					
6A127	2787162.8 6380897.6	12	30	45	18	30					21.80		tr		3					
6A128	2787182.2 6380815.1	20	30	75	4	24					33.69		tr		1					
6A129	2787143.4 6380747.1	19	60	60	10	29					17.57		tr		3					
6A130	2787090.0 6380718.0	16	65	35	14	30					13.83		tr		0					
6A131	2786900.8 6380737.4	6	10	45	12	18					30.96		tr	Yes	3					
6A132	2786944.5 6380810.2	14	40	60	26	40					19.29		tr		1					
6A133	2786818.3 6380912.1	24	110	80	10	34					12.31		tr	Yes	3					
6A134	2786755.2 6380878.2	28	55	170	10	38	100	80	6	24	26.98	16.70	tr		4					
6A135	2786576.4 6380667.8	10	50	65	34	44	150	75	6	20	11.31	14.22	tr		2					
6A136	2786576.4 6380540.6	36	55	55	4	40	90	60	4	16	33.21	21.80	tr		4					
6A137	2786466.1 6380468.5	32	45	75	6	38	100	55	3	22	35.42	19.29	tr		4					
6A138	2786398.2 6380438.8	21	50	55	16	37	65	35	6	32	22.78	25.50	tr		4					
6A139	2786314.9 6380583.6	11	50	95	28	39					12.41		tr		3					
6A140	2786082.7 6380578.5	8	30	140	30	38					14.93		tr		3					
6A141	2785917.5 6380635.2	4	25	75	34	38	50	35	30	36	9.09	9.09	tr		2					
6A142	2785773.0 6380583.6	14	60	135	24	38					13.13		tr		3					
6A143	2785592.4 6380434.0	8	155	60	32	40					2.95		tr		0					
6A144	2785742.0 6380274.0	19	175	170	18	37					6.20		tr		3					
6A145	2785607.9 6380119.2	16	155	80	22	38					5.89		tr		3					
6A146	2785726.6 6379897.2	16	100	195	30	46					9.09		tr		1					
6A147	2786072.3 6379959.2	18	100	130	18	36					10.20		tr		1					
6A148	2786198.2 6380088.2	18	100	175	12	30					10.20		tr		1					
6A149	2786072.3 6379830.1	30	75	365	10	40	135	275	6	24	21.80	14.14	tr		4					
6A150	2785943.3 6379726.9	28	100	45	16	44	175	50	10	18	15.64	10.99	tr		2					
6A151	2786005.2 6379665.0	10	35	20	12	22					15.95		tr		0					
6A152	2785933.0 6379577.3	18	60	40	14	32					16.70		tr		3					
6A153	2785907.2 6379530.8	12	40	60	16	28					16.70		tr		3					
6A154	2785948.5 6379520.5	10	30	35	20	30					18.43		tr		1					
6A155	2785762.7 6379499.9	6	65	40	38	44					5.27		tr		1					
6A156	2786216.8 6379489.5	7	125	140	20	?					?		tr		1					
6A157	2786299.4 6379675.3	28	55	180	14	42	90	110	14	22	26.98	17.28	tr	Yes	4					
6A158	2786500.0 6379709.3	10	60	225	32	42					9.46		tr		1					
6A159	2786432.2 6379739.0	28	195	50	8	36					8.17		tr	Yes	3					
6A160	2786470.4 6379900.2	14	65	75	8	22					12.15		tr		1					
6A161	2786580.6 6379921.4	26	150	245	10	36					9.83		tr		1					
6A162	2786801.2 6380035.9	16	40	90	6	22					21.80		tr		1					
6A163	2786877.5 6380018.9	14	35	75	10	24					21.80		tr		3					
6A164	2787088.1 6380273.4	6	45	55	6	12					7.59		tr		0					
6A165	2787255.0 6380383.7	8	15	50	6	14					28.07									

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geology	Seepage	Geo. Symbol	
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout					
6A177	2788022.6	6380112.2	10	50	140	20	30					11.31		tm		3	
6A178	2788099.0	6380184.3	16	85	115	8	24					10.66		tm	Yes	3	
6A179	2788183.8	6380116.5	28	125	160	8	36					12.63		tm		3	
6A180	2788315.3	6380218.2	24	90	175	10	34					14.93		tm	Yes	3	
6A181	2788361.9	6380379.4	6	70	70	24	30					4.90		tm		1	
6A182	2788277.1	6380430.3	14	70	90	6	20	80	40	5	14	11.31	10.62	tm		3	
6A183	2788378.9	6380578.7	18	60	120	6	24	80	75	6	18	16.70	12.68	tm		4	
6A184	2788770.9	6380379.4	8	70	130	2	10					6.52		tm		1	
6A185	2787434.6	6380844.2	8	30	80	2	10					14.93		tm		0	
6A186	2787652.9	6380795.7	4	20	110	6	10					11.31		tm		3	
6A187	2787735.4	6380887.9	8	17.5	125	4	12					24.57		tm		2	
6A188	2788055.	6381086.8	4	15	75	4	8					14.93		tm		3	
6A189	2788215.9	6381227.6	6	20	75	2	8					16.70		tm		3	
6A190	2788327.5	6381310.0	4	20	80	4	8					11.31		tm		3	
6A191	2787978.1	6380766.5	4	20	85	4	8					11.31		tm	Yes	3	
6A192	2788589.5	6380708.3	25	90	90	30	6	31	110	35	4	14	15.52	13.79	tm		3
6A193	2788315.3	6380493.9	22	115	150	8	30					10.83		tm		3	
6A194	2788497.7	6380366.7	8	70	120	30	38					6.52		tm		1	
6A195	2788565.5	6380303.1	8	40	40	20	28					11.31		tm		3	
6A196	2788642.9	6380214.0	14	45	65	12	26					17.28		tm		3	
6A197	2788607.9	6380091.0	14	22.5	70	18	32					31.89		tm		3	
6A198	2788535.8	6380052.8	8	25	80	28	36					17.74	11.31	tm		4	
6A199	2788489.2	6380040.1	10	30	95	26	36	85	75	18	30	18.43	11.96	tm		4	
6A200	2788540.1	6379925.6	8	35	60	22	30	65	40	20	24	12.88	8.75	tm		4	
6A201	2788548.6	6379789.9	12	40	100	26	38					16.70		tm		1	
6A202	2788786.1	6379556.6	6	35	60	50	56					9.73		tm		0	
6A203	2788930.3	6379607.5	50	125	190	24	74	110	180	18	58	21.80	26.98	tm		4	
6A204	2788760.6	6379666.9	14	80	105	46	60					9.93		tm		1	
6A205	2788930.3	6379845.0	20	110	210	38	58					10.30		tm		1	
6A206	2788786.1	6379883.2	8	105	105	40	48					4.36		tm		1	
6A207	2788815.7	6379959.5	14	95	90	32	46					8.38		tm		1	
6A208	2789006.6	6379904.4	16	40	100	20	36	85	40	18	31	21.80	11.96	tm		2	
6A209	2789006.6	6379959.5	14	35	135	16	30	55	60	18	22	21.80	12.31	tm		2	
6A210	2789040.5	6380141.9	12	35	100	18	30					18.92		tm		3	
6A211	2788853.9	6380201.3	14	135	145	22	36					5.92		tm		1	
6A212	2788853.9	6380337.0	20	125	195	6	26					9.09		tm		1	
6A213	2789023.6	6380239.5	16	50	150	14	30	70	55	18	24	17.74	9.73	tm		2	
6A214	2788947.2	6380349.7	1	15	115	34	35					3.81		tm		1	
6A215	2788824.2	6380489.7	10	60	55	10	20					9.46		tm		1	
6A216	2788870.9	6380616.9	10	45	55	4	14					12.53		tm		1	
6A217	2788895.2	6380679.2	8	30	50	4	12					14.93		tm		1	
6A218	2788963.2	6380790.8	16	75	100	4	20					12.04		tm		1	
6A219	2789011.7	6380980.1	?	30	30	?	?					?		tm		1	
6A220	2788997.1	6381009.2	?	40	35	4	?					?		tm		3	
6A221	2788997.1	6381111.1	18	55	50	4	22					18.12		tm		1	
6A222	2788992.3	6381188.7	26	85	165	4	30					17.01		tm		3	
6A223	2788900.1	6381237.3	20	40	70	6	26					26.57		tm		3	
6A224	2785250.2	6381332.3	7	60	50	4	11					6.65		tm		3	
6A225	2786037.2	6381799.8	6	50	70	16	22					6.84		tr		3	
6A226	2787338.8	6382620.4	18	95	130	6	24					10.73		tr		1	
6B001	2785521.2	6376259.9	58	185	200	34	92					17.41		wk		0	
6B002	2785695.1	6376439.6	20	125	75	62	82					9.09		wk		0	
6B003	2785579.2	6376943.9	46	120	190	22	68					20.97		wk		0	
6B004	2785486.5	6377013.4	50	170	100	18	68					16.39		wk		0	
6B005	2785660.3	6377274.3	42	90	410	20	62	115	190	22	82	25.02	19.18	wk		2	
6B006	2785503.8	6377314.9	16	70	50	18	34					12.88		wk	Yes	0	
6B007	2785590.8	6377465.6	18	90	45	28	46					11.31		wk		0	
6B008	2785648.8	6377593.1	34	145	125	16	50					13.20		wk	Yes	0	
6B009	2785712.5	6377767.0	24	65	50	18	42					20.27		wk		0	
6B010	2785440.1	6377593.1	6	20	55	10	16					16.70		fa	Yes	0	
6B011	2785561.8	6377981.5	2	30	40	10	12					3.81		wk		0	
6B012	2785724.1	6378062.6	8	100	185	8	16					4.57		fa		0	
6B013	2785445.9	6378149.6	8	65	85	8	16					7.02		fa		1	
6B014	2785677.7	6378474.2	46	150	250	6	52					17.05		tr	Yes	3	
6B015	2785930.3	6378665.6	42	65	285	10	52					32.87		tr	Yes	0	
6B016	2786051.2	6378965.0	42	85	265	8	50					26.29		tr	Yes	3	
6B017	2786483.0	6379120.4	36	95	60	10	46	135	60	2	32	20.75	18.05	tr		4	
6B018	2786506.0	6379339.2	12	50	80	34	46					13.50		tr		1	
6B019	2785740.3	6379408.3	14	50	90	28	42					15.64		wk		1	
6B020	2785792.1	6379316.2	16	100	95	24	40					9.09		wk		3	
6B021	2785803.7	6379235.6	8	25	60	28	36					17.74		wk		1	
6B022	2785734.6	6379137.7	6	30	65	28	34					11.31		wk		1	
6B023	2785556.0	6378358.2	4	50	75	28	32					4.57		tr		0	
6B024	2785474.9	6378346.6	12	25	55	40	52					25.64		tr		0	
6B025	2785341.5	6378294.5	26	40	135	24	50					33.02		tr	Yes	0	
6B026	2785028.5	6378213.3	26	45	80	28	54					30.02		tr		0	
6B027	2784999.5	6378503.1	30	60	240	24	54					26.57		tr		3	
6B028	2784974.6	6378826.8	32	175	150	16	48					10.36		tr	Yes	3	
6B029	2785147.3	6379062.8	34	130	290	16	50					14.66		tr	Yes	3	
6B030	2785112.8	6379339.2	30	90	200	16	46					18.43		tr		3	
6B031	2784790.4	6379178.0	32	75	205	12	44	100	210	10	34	23.11	18.78	tr		4	
6B032	2784732.8	6378976.5	36	70	275	14	50					27.22		tr	Yes	3	
6B033	2784721.3	6378462.6	32	65	135	18	50					26.21		tr		0	
6B034	2784680.7	6378022.0	18	40	100	34	52					24.23		tr			

Ref. No.	Coordinates	Scarp			Bottom		Scarp			Runout			Toe		Top		Slope angle		Geo.	Seepage	Symbol
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology								
6B038	2785011.1	6377935.1	36	65	100	20	56	156	200	215	18	38	28.98	tr					0		
6B039	2784848.8	6377882.9	26	75	230	32	58	140	155	32	42	19.12	10.52	tr					2		
6B040	2784680.7	6377680.0	14	65	55	42	56	12	42	12	42	12.15		tr					0		
6B041	2784727.1	6377616.3	16	50	60	42	58	11	56	11	56	17.74		tr					0		
6B042	2784796.7	6377529.3	22	90	200	36	58	200	215	18	38	13.74	11.31	tr					2		
6B043	2785225.6	6377813.4	26	30	120	22	48	12	42	105	70	8	18	40.91	wk				0		
6B044	2785364.7	6377796.0	30	75	125	12	42	12	42	105	70	8	18	21.80	17.94	wk			2		
6B045	2785306.8	6377656.8	46	120	175	12	58	115	75	12	36	20.97	21.80	wk					2		
6B046	2785301.0	6377535.1	46	92.5	80	10	56	10	56	10	56	26.44		wk					0		
6B047	2785202.4	6377407.6	40	75	230	18	58	100	45	18	46	28.07	21.80	wk	Yes				2		
6B048	2785179.2	6377245.3	32	85	65	16	48	16	48	16	48	20.63		wk					0		
6B049	2785069.1	6377251.1	26	80	135	32	58	16	62	16	62	18.00		wk					0		
6B050	2785857.4	6377065.6	46	165	205	16	62	16	62	16	62	15.58		wk	Yes				0		
6B051	2785840.0	6377268.5	34	60	300	24	58	16	62	16	62	29.54		wk					0		
6B052	2786008.1	6377604.7	38	100	200	16	54	16	54	16	54	20.81		wk	Yes				0		
6B053	2786147.3	6377656.8	14	40	50	10	24	12	24	12	24	19.29		wk					0		
6B054	2786158.8	6377726.4	12	60	40	12	24	12	24	12	24	11.31		wk					0		
6B055	2786089.3	6377917.7	30	50	45	10	40	10	40	10	40	30.96		wk					0		
6B056	2786095.1	6377969.9	28	55	40	10	38	10	38	10	38	26.98		wk					0		
6B057	2785990.8	6377975.7	28	55	115	24	52	24	52	24	52	26.98		wk					0		
6B058	2786129.9	6378056.8	12	25	60	8	20	8	20	8	20	25.64		wk					0		
6B059	2786135.7	6378143.8	10	95	170	6	16	6	16	6	16	6.01		fa					3		
6B060	2785903.8	6378288.7	12	50	120	6	18	6	18	6	18	13.50		fa					3		
6B061	2786292.2	6378311.9	10	70	50	6	16	6	16	6	16	8.13		tm					3		
6B062	2786234.2	6378201.7	12	32.5	35	6	18	6	18	6	18	20.27		tm					0		
6B063	2786286.4	6378097.4	14	45	50	6	20	6	20	6	20	17.28		tm					3		
6B064	2786286.4	6378039.4	14	60	50	6	20	6	20	6	20	13.13		tm					0		
6B065	2786303.8	6377929.3	12	37.5	100	8	20	8	20	8	20	17.74		tm					0		
6B066	2786379.1	6377836.5	12	40	60	8	20	8	20	8	20	16.70		tm					0		
6B067	2786452.5	6377784.4	8	75	35	8	16	8	16	8	16	6.09		tm					0		
6B068	2786529.8	6377917.7	14	25	200	12	26	12	26	12	26	29.25		wk					0		
6B069	2786767.5	6377824.9	42	100	360	16	58	16	58	16	58	22.78		wk					0		
6B070	2786477.7	6377471.4	12	60	55	8	20	8	20	8	20	11.31		wk					0		
6B071	2786605.2	6377251.1	32	50	170	26	58	26	58	26	58	32.62		wk					0		
6B072	2786721.1	6376115.0	26	75	190	60	86	60	86	60	86	19.12		wk					0		
6B073	2786982.0	6376387.4	?	20	75	?	80	?	80	?	80	?		wk					0		
6B074	2787039.9	6376439.6	7	25	70	7	7	7	7	7	7	7		wk					0		
6B075	2786895.0	6376880.1	46	70	325	28	74	28	74	28	74	33.31		wk					0		
6B076	2787225.4	6377651.1	12	75	55	56	68	56	68	56	68	9.09		wt					1		
6B077	2787219.6	6377755.4	16	25	50	48	64	60	135	44	64	32.62	18.43	wt					2		
6B078	2787248.6	6378045.2	8	35	90	48	56	48	56	48	56	12.88		wt					0		
6B079	2787271.8	6378126.4	14	40	150	36	50	36	50	36	50	19.29		wt					0		
6B080	2787086.3	6378109.0	50	85	100	4	54	4	54	4	54	30.47		wk					1		
6B081	2787387.7	6378219.1	18	85	75	26	44	26	44	26	44	11.96		wt					3		
6B082	2787444.5	6378348.9	16	80	80	22	38	22	38	22	38	11.31		wt					3		
6B083	2787051.5	6378497.3	32	90	300	8	40	8	40	8	40	19.57		wk					1		
6B084	2787106.0	6378558.5	8	20	50	14	22	14	22	14	22	21.80		wk					3		
6B085	2787083.3	6378813.0	12	20	50	14	26	14	26	14	26	30.96		wk					3		
6B086	2787115.1	378771.86	16	35	100	10	26	10	26	10	26	24.57		wk					3		
6B087	2786951.7	6378690.1	8	42.5	160	38	46	38	46	38	46	10.66		wk					1		
6B088	2787395.6	6378849.0	18	80	50	14	32	14	32	14	32	12.68		wt					3		
6B089	2787519.0	6379039.6	16	75	80	28	44	28	44	28	44	12.04		wt					1		
6B090	2787446.4	6379085.0	14	75	100	24	38	24	38	24	38	10.57		wt					1		
6B091	2787500.8	6379130.3	14	55	65	30	44	30	44	30	44	14.28		wt					1		
6B092	2787242.2	6379334.6	12	25	90	4	16	4	16	4	16	25.64		wt					3		
6B093	2787124.2	6379271.0	12	50	75	4	16	4	16	4	16	13.50		wk					1		
6B094	2787024.3	6379234.7	12	30	115	4	16	4	16	4	16	21.80		wt					3		
6B095	2786978.9	6379112.2	8	40	45	6	14	6	14	6	14	11.31		wk					3		
6B096	2786824.6	6378935.2	13	60	70	4	17	4	17	4	17	12.23		wk					1		
6B097	2786670.3	6378744.6	8	35	120	10	18	10	18	10	18	12.88		wk					3		
6B098	2786575.0	6378680.1	10	60	40	6	16	6	16	6	16	9.46		wk					3		
6B099	2786420.7	6378640.2	14	35	125	4	18	4	18	4	18	21.80		wt					3		
6B100	2786511.5	6378608.4	8	37.5	80	8	16	8	16	8	16	12.04		wt					3		
6B101	2786570.5	6378581.2	12	50	60	6	18	6	18	6	18	13.50		wk					3		
6B102	2786819.7	6378497.3	38	85	260	10	48	10	48	10	48	24.09		wk					3		
6B103	2786866.0	6378288.7	33	110	140	12	45	12	45	12	45	16.70		wk					3		
6B104	2786773.3	6378103.2	30	100	100	20	50	20	50	20	50	16.70		wk					1		
6B105	2786715.3	6378172.7	20	150																	

Ref. No.	Coordinates	Height(m)	Distance(m)	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geo.
				Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol	
6B125	2787691.5	6378340.7	38	100	70	14	52	115	35	12	46	20.81	19.18	wk	2	
6B126	2787605.2	6378177.3	2	40	80	36	38	40	20	46	2.86	2.86	wk	0		
6B127	2787804.9	6378172.8	24	150	70	18	42	42	32	12	46	9.09	9.09	wk	0	
6B128	2787936.5	6378308.9	8	20	210	24	32	32	20	46	21.80	21.80	wk	0		
6B129	2788077.2	6378549.4	44	200	220	20	64	64	20	46	12.41	12.41	wk	3		
6B130	2788213.4	6378508.6	10	65	75	54	64	64	20	46	8.75	8.75	wk	3		
6B131	2788190.7	6378322.5	40	95	75	22	62	62	20	46	22.83	22.83	wk	3		
6B132	2788263.3	6378358.8	11	65	85	62	73	73	20	46	9.61	9.61	wk	3		
6B133	2788422.1	6378417.8	20	240	120	66	86	260	70	66	76	4.76	4.40	wk	4	
6B134	2788417.6	6378277.1	48	245	170	50	98	220	90	64	88	11.08	8.79	wk	4	
6B135	2788217.9	6378122.8	14	40	190	32	46	46	20	46	19.29	19.29	wk	0		
6B136	2788313.2	6377991.2	12	40	85	36	48	48	20	46	16.70	16.70	wk	0		
6B137	2788526.5	6378068.4	10	50	45	74	84	84	20	46	11.31	11.31	wk	1		
6B138	2788571.9	6377950.4	34	70	100	48	82	82	20	46	25.91	25.91	wk	3		
6B139	2788295.1	6377809.7	12	120	255	56	68	68	20	46	5.71	5.71	wk	0		
6B140	2787981.9	6377551.0	40	110	150	56	96	96	20	46	19.98	19.98	wk	0		
6B141	2788345.0	6377669.0	30	130	230	70	100	140	60	70	84	12.99	12.09	wk	2	
6B142	2788467.5	6377632.7	16	57.5	50	50	66	66	20	46	15.55	15.55	wk	0		
6B143	2788558.3	6377737.1	12	30	80	50	62	62	20	46	21.80	21.80	wk	3		
6B144	2789058.1	6377471.6	?	150	95	72	?	130	60	7	?	?	?	wk	2	
6B145	2788817.0	6377578.2	32	75	145	70	102	85	35	68	94	23.11	21.80	wk	2	
6B146	2788830.6	6377800.6	26	80	205	96	122	275	90	54	106	18.00	13.89	wk	4	
6B147	2789029.7	6377666.6	22	85	340	110	132	132	20	46	14.51	14.51	wk	3		
6B148	2789086.4	6377857.3	54	200	220	76	130	200	55	78	120	15.11	14.57	wk	4	
6B149	2788748.9	6378059.3	18	100	70	74	92	92	20	46	10.20	10.20	wk	3		
6B150	2788703.5	6378113.8	24	190	225	78	102	102	20	46	7.20	7.20	wk	3		
6B151	2788658.1	6378159.1	26	175	295	74	100	155	225	52	86	8.45	17.21	wk	4	
6B152	2788862.3	6378308.9	24	62.5	110	74	98	98	20	46	21.01	18.92	wk	2		
6B153	2788567.4	6378599.4	36	100	235	52	88	185	260	46	76	19.80	12.79	wk	4	
6B154	2789041.0	6378470.0	-2	5	95	98	96	96	20	46	-21.80	-21.80	wk	1		
6B155	2789058.1	6378555.1	14	80	60	82	96	96	20	46	9.93	9.93	wk	1		
6B156	2788839.7	6378603.9	34	265	170	64	98	98	20	46	7.31	7.31	wk	1		
6B157	2788880.5	6379039.6	12	60	90	42	54	54	20	46	11.31	11.31	wk	3		
6B158	2788990.0	6379366.3	#VALUE!	60	130	?	72	72	20	46	?	?	?	wk	3	
6B159	2788748.9	6379280.1	14	80	55	36	50	50	20	46	9.93	9.93	wk	3		
6B160	2788735.3	6379320.9	11	35	45	34	45	45	20	46	17.45	17.45	wk	1		
6B161	2788662.7	6379089.5	6	30	85	40	46	46	20	46	11.31	11.31	wk	3		
6B162	2788499.3	6379171.2	36	120	290	42	78	160	300	36	68	16.70	14.71	wk	4	
6B163	2788408.5	6379307.3	26	200	215	44	70	70	20	46	7.41	7.41	wk	3		
6B164	2788449.4	6379452.6	16	65	100	48	64	64	20	46	13.83	13.83	wk	1		
6B165	2788240.6	6379252.9	8	25	80	36	44	44	20	46	17.74	17.74	wk	1		
6B166	2788951.7	6378690.1	6	50	90	40	46	46	20	46	6.84	6.84	wk	2		
TA001	2782146.8	6386449.0	20	30	250	4	24	24	20	46	33.69	33.69	tm	0		
TA002	2782063.1	6385932.9	12	15	70	14	26	26	20	46	38.66	38.66	tp	0		
TA003	2782291.9	6385983.1	16	20	115	2	18	18	20	46	38.66	38.66	tp	0		
TA004	2782383.9	6385893.8	10	30	125	12	22	22	20	46	18.43	18.43	tp	0		
TA005	2782710.4	6385877.1	34	95	125	2	36	36	20	46	19.69	19.69	tp	0		
TA006	2782794.1	6385977.5	18	15	40	4	22	22	20	46	50.19	50.19	tp	0		
TA007	2782830.3	6385871.5	32	65	120	6	38	38	20	46	26.21	26.21	tp	0		
TA008	2784211.3	6385958.0	76	165	215	6	82	82	20	46	24.73	24.73	tm	Yes		
TA009	2783943.5	6386066.8	21	95	235	10	31	155	530	4	24	12.46	9.88	tm	4	
TA010	2783812.4	6386119.8	18	35	80	10	28	28	20	46	27.22	27.22	tm	3		
TA011	2784183.4	6386429.5	10	40	65	6	16	16	20	46	14.04	14.04	tm	3		
TA012	2784308.9	6386490.8	14	45	140	6	20	20	20	46	17.28	17.28	tm	3		
TA013	2784412.2	6386613.6	20	45	40	6	26	26	20	46	23.96	23.96	tm	3		
TA014	2784546.1	6386644.3	4	15	70	24	28	28	20	46	14.93	14.93	tm	0		
TA015	2784498.7	6386568.9	2	10	90	26	28	28	20	46	11.31	11.31	tm	0		
TA016	2784621.4	6386708.4	8	30	120	16	24	24	20	46	14.93	14.93	tm	0		
TA017	2784693.9	6386611.0	6	30	150	6	12	12	20	46	11.31	11.31	tm	1		
TA018	2784808.3	6386543.8	5	55	55	16	21	21	20	46	5.19	5.19	tm	1		
TA019	2784878.1	6386571.7	8	85	140	18	26	26	20	46	5.38	5.38	tm	1		
TA020	2784922.7	6386379.2	22	50	175	4	26	26	20	46	23.75	23.75	tm	Yes		
TA021	2784897.6	6386100.2	18	50	160	8	26	26	20	46	19.80	19.80	tm	Yes		
TA022	2784886.4	6386086.3	6	30	85	6	12	12	20	46	11.31	11.31	tm	3		
TA023	2784702.3	6386114.2	10	100	205	18	28	28	20	46	5.71	5.71	tm	1		
TA024	2784685.6	6385918.9	-4	60	65	32	28	28	20	46	-3.81	-3.81	tm	1		
TA025	2784964.6	6385882.6	18	125	200	6	24	24	20	46	8.19	8.19	tm	0		
TA026	2784933.9	6387478.4	18	15	45	2	20	20	20	46	50.19	50.19	tm	0		
TA027	2784900.4	6387525.9	20	25	40	2	22	22	20	46	38.66	38.66	tm	0		
TA028	2784894.8	6387612.3	16	20	30	2	18	18	20	46	38.66	38.66	tm	0		
TA029	2784911.6	6387668.1	16	12.5	30	2	18	55	25	0	18	52.00	18.12	tm	2	
TA030	2784953.4	6387807.6	14	27.5	85	2	16	16	20	46	26.98	26.98	tm	0		
7B001	2782542.9	6385672.1	18	75	105	10	28	28	20	46	13.50	13.50	tp	0		
7B002	2782705.8	6385507.2	16	70	105	20	36	36	20	46	12.88	12.88	tp	0		
7B003	2782452.1	6385536.8	28	50	190	4	32	32	20	46	29.25	29.25	tp	0		
7B004	2782157.6	6384810.8	20	47.5	65	8	28	28	20	46	22.83	22.83	tp	0		
7B005	2782172.4	6384727.5	16	50	55	12	28	28	20	46	17.74	17.74	tp	0		
7B006	2782292.8	6384709.0	30	45	175	10	40	40	20	46	33.69	33.69	tp	0		
7B007	2782359.5	6384631.2	10	75	130	22	32	32	20	46	7.59	7.59	tp	0		
7B008	2782298.4	6384492.3	6	62.5	65	18	22	22	20	46	5.48	5.48	tp	0		
7B009	2782470.6	6384609.0	26	40	190	4</td										

Ref. No.	Coordinates	Scarp		Bottom	Scarp		Runout		Toe	Top	Slope angle		Geology	Seepage	Geo. Symbol	
		Height(m)	Distance(m)		Width(m)	RL	RL	Distance(m)	Width(m)		RL	RL	Scarp	Runout		
7B016	2782541.0	6383501.4	24	80	135	14	38					16.70		tm		0
7B017	2782565.1	6383666.2	22	65	110	14	36					18.70		tm		0
7B018	2782667.0	6383723.7	28	115	95	8	36					13.68		tm		0
7B019	2782778.1	6383901.5	28	95	100	10	38					16.42		tm		0
7B020	2782804.0	6384040.4	28	85	190	8	36					18.23		tm		0
7B021	2783135.5	6384386.7	16	60	55	10	26					14.93		tm		0
7B022	2783144.8	6384149.6	20	35	105	6	26					29.74		tm		0
7B023	2783100.3	6384092.2	8	45	120	14	22					10.08		tm		0
7B024	2783363.3	6384145.9	18	75	170	10	28					13.50		tm		0
7B025	2783268.9	6384003.3	22	50	35	10	32					23.75		tm		0
7B026	2783276.3	6383907.0	18	45	45	16	34					21.80		tm		0
7B027	2783159.6	6383747.7	30	60	315	6	36					26.57		tm		0
7B028	2782948.5	6383371.8	36	220	95	6	42	195	30	10	22	9.29	9.32	tm		2
7B029	2783124.4	6383390.3	10	45	80	6	16					12.53		tm		0
7B030	2782965.1	6383256.9	22	95	180	8	30	125	145	8	18	13.04	9.98	tm	Yes	2
7B031	2782989.2	6383056.9	24	110	185	8	32					12.31		tm	Yes	0
7B032	2783076.3	6383021.7	24	85	45	6	30					15.77		tm		0
7B033	2783091.1	6382949.5	22	80	65	8	30					15.38		tm	Yes	0
7B034	2783200.4	6382892.1	18	92.5	60	6	24					11.01		tm		0
7B035	2783170.7	6382810.6	18	50	95	8	26					19.80		tm	Yes	0
7B036	2783126.3	6382716.1	18	80	80	4	22					12.68		tm		0
7B037	2782961.4	6382799.5	8	30	85	26	34					14.93		tm		0
7B038	2782831.8	6382692.0	32	85	150	18	50					20.63		tm		0
7B039	2782642.9	6382630.9	28	130	205	22	50					12.15		tm		0
7B040	2783796.7	6382645.7	34	80	260	10	44	125	60	6	32	23.03	16.91	tr		4
7B041	2784257.9	6382510.5	14	30	90	22	36					25.02		tr		3
7B042	2784233.8	6382656.9	28	60	170	10	38					25.02		tr		1
7B043	2784683.9	6382519.8	22	85	135	30	52					14.51		tr		3
7B044	2784967.2	6382529.1	7	25	45	18	25					15.64		tr		3
7B045	2784887.6	6382579.1	10	30	30	14	24					18.43		tr		3
7B046	2784770.9	6382693.9	22	95	75	28	50	75	25	32	42	13.04	13.50	tr		4
7B047	2784711.7	6382747.6	6	60	230	54	60					5.71		tr		1
7B048	2784557.9	6382771.7	10	50	150	44	54					11.31		tr		1
7B049	2784276.4	6382769.8	30	75	115	10	40					21.80		tr		1
7B050	2784395.0	6382818.0	16	60	110	20	36					14.93		tr		3
7B051	2784537.6	6382899.5	12	25	80	26	38					25.64		tr		3
7B052	2784700.5	6382895.8	8	55	95	44	52					8.28		tr		1
7B053	2784828.3	6382764.3	24	70	100	24	48					18.92		tr		1
7B054	2784811.7	6382860.6	8	32.5	75	38	46					13.83		tr		3
7B055	2784920.9	6383001.3	12	30	145	26	38					21.80		tr		3
7B056	2784750.6	6383173.6	14	40	375	40	54					19.29		tr		3
7B057	2784704.3	6383051.3	10	85	125	42	52					6.71		tr		1
7B058	2784633.9	6383142.1	12	130	75	40	52					5.27		tr		1
7B059	2784570.9	6383153.2	7	80	65	40	47					5.00		tr		1
7B060	2784391.2	6383008.8	22	95	60	10	32					13.04		tr		1
7B061	2784378.3	383269.94	22	120	40	12	34					10.39		tr		1
7B062	2784026.4	6383290.3	20	55	55	18	38	75	25	8	22	19.98	21.80	tr		4
7B063	2784074.5	6383318.0	22	90	65	14	36	150	55	8	24	13.74	10.57	tr		4
7B064	2784146.8	6383349.5	8	25	60	26	34	110	65	10	28	17.74	12.31	tr		4
7B065	2784159.7	6383377.3	20	75	60	14	34					14.93		tr		1
7B066	2784204.2	6383475.5	22	45	90	10	32					26.05		tm		3
7B067	2784306.1	6383536.6	22	65	80	10	32					18.70		tm		3
7B068	2784428.3	6383668.1	18	70	85	12	30					14.42		tm		0
7B069	2784459.8	6383627.3	5	30	50	28	33					9.46		tm		3
7B070	2784472.7	6383384.7	0	40	50	42	42					0.00		tr		1
7B071	2784715.4	6383419.9	8	40	140	42	50					11.31		tr		1
7B072	2784678.3	6383501.4	4	35	60	40	44					6.52		tr		1
7B073	2784874.6	6383386.6	14	50	65	34	48					15.64		tr		1
7B074	2784841.3	6383494.0	12	60	100	38	50					11.31		tr		3
7B075	2784750.6	6383595.9	10	65	145	36	46					8.75		tr		1
7B076	2784845.0	6383805.1	4	40	200	32	36					5.71		tm		1
7B077	2784782.0	6383705.1	4	60	75	34	38					3.81		tm		1
7B078	2784919.1	6383947.8	2	15	60	32	34					7.59		tm		1
7B079	2784946.9	6384053.3	4	30	75	32	36					7.59		tm		1
7B080	2784357.9	6383736.6	14	85	110	16	30					9.35		tm		3
7B081	2784213.4	6383619.9	18	25	95	12	30					35.75		tm		1
7B082	2784080.1	6383592.2	16	45	50	8	24					19.57		tm		3
7B083	2784017.1	383634.80	8	95	85	12	20					4.81		tm		1
7B084	2784037.5	6383734.8	11	55	50	16	27					11.31		tm		1
7B085	2783969.0	6383701.4	12	30	125	4	16					21.80		tm		1
7B086	2784146.8	6383844.0	34	55	105	6	40					31.72		tm		3
7B087	2784263.5	6383873.7	28	65	100	8	36					23.30		tm		1
7B088	2784448.7	6383970.0	28	160	265	10	38					9.93		tm	Yes	3
7B089	2784369.4	6384096.6	20	70	75	10	30					15.95		tm		3
7B090	2784380.1	6384218.2	17	100	90	12	29					9.65		tm		3
7B091	2784265.3	6384281.1	12	50	55	12	24					13.50		tm		3
7B092	2784335.7	6384355.2	8	50	155	24	32	75	35	20	22	9.09	9.09	tm		2
7B093	2784411.6	6384416.3	8	35	55	24	32					12.88		tm		1
7B094	2784567.2	6384586.7	20	95	80	12	32	150	40	6	24	11.89	9.83	tm	Yes	4
7B095	2784582.0	6384712.7	18	30	100	12	30					30.96		tm	Yes	3
7B096	2784539.4	6384860.8	18	45	170	12	30	170	55	5	16	21.80	8.37	tm	Yes	3
7B097	2784413.5	6384827.5	14	35	85	16	30					21.80		tm	Yes	4
7B098	2784293.1	6384810.8	22	65	95	8	30					18.70		tm		3
7B099	2784211.6	6384762.7	24	70	70	6	30					18.92		tm		3
7																

Ref. No.	Coordinates	Height(m)	Scarp Distance(m)	Width(m)	Bottom RL	Scarp RL	Runout Distance(m)	Width(m)	Toe RL	Top RL	Slope angle	Geology	Seepage Sym	G	
											Scarp Runout				
7B103	2784015.3	6384662.7	12	20	50	18	30	30			30.96				
7B104	2784007.9	6384564.5	10	30	55	20	30				18.43				
7B105	2783993.0	6384486.7	20	182.5	35	10	30				6.25				
7B106	2784076.4	6384562.7	16	20	65	12	28				38.66				
7B107	2784172.7	6384529.3	22	55	35	6	28				21.80				
7B108	2784011.6	6384353.4	18	25	45	18	36				35.75				
7B109	2783956.0	6384320.0	20	25	75	18	36				38.66				
7B110	2783874.5	6384292.2	28	80	95	8	38				18.43				
7B111	2783778.2	6384216.3	18	50	70	6	36				19.29				
7B112	2783704.1	6384305.2	24	100	170	12	24				19.80				
7B113	2783718.9	6384590.4	8	105	365	34	36				13.50				
7B114	2783594.9	6384390.4	20	57.5	75	4	42				4.36				
7B115	2783583.7	6384544.1	12	45	125	26	38				19.18				
7B116	2783618.9	6384651.6	14	45	70	26	40				14.93				
7B117	2783691.2	6384864.5	12	50	175	28	40				17.45				
7B118	2783583.7	6385129.4	12	50	180	12	24				14.93				
7B119	2783494.8	6385320.2	12	50	100	4	26				14.04				
7B120	2783594.9	6385588.7	22	70	4	26					9.29				
7B121	2783724.5	6385451.7	12	45	100	8	20				18.43				
7B122	2783665.3	6385612.8	20	80	190	10	30				16.70				
7B123	2784009.7	6385714.6	18	110	110	10	30				12.80				
7B124	2782535.5	6384751.6	30	90	225	8	26				10.46				
7B125	2783572.6	6382536.5	16	30	70	2	18				10.46				
7B126	2783585.6	6382584.6	14	25	60	8	18				28.07				
7B127	2784782.0	6385746.1	16	35	35	8	22				29.25				
7B128	2784676.5	6385594.3	24	80	175	8	24				24.57				
7B129	2784615.4	6385459.1	24	120	130	4	28				17.45				
7B130	2784563.5	6385327.6	26	110	155	2	28				13.50				
7B131	2784502.4	6385277.6	11	35	45	16	16				4.57				
7B132	2784587.6	6385157.2	12	50	80	10	28				7.59				
7B133	2784567.2	6385018.3	6	75	80	16	27				4.81				
7B134	2784730.2	6385016.4	6	55	55	28					18.43				
7B135	2784915.4	6385510.9	8	45	50	22	28				38.66				
7B136	2782542.9	6385672.1	10	95	120	4	28				16.70				
7B137	2784172.7	6384529.3	18	30	110	20	28				14.18				
8A001	2782770.1	6379766.6	24	22.5	80	6	16				16.22				
8A002	2782302.2	6379867.4	24	80	85	6	28				7.79				
8A003	2782465.0	6380128.5	16	95	300	22	30				8.13				
8A004	2782325.4	6380113.0	8	55	120	32	46				13.50				
8A005	2782633.1	6380278.5	6	40	255	40	48				24.57				
8A006	2782666.7	6380374.1	8	25	80	12	18				23.43				
8A007	2782736.5	6380467.2	30	30	235	40	48				19.98				
8A008	2782764.9	6380534.4	16	55	55	36	44				7.13				
8A009	2782317.7	6380369.0	8	85	150	6	16				15.95				
8A010	2782237.5	6380304.3	6	40	100	38	46				23.03				
8A011	2782100.5	6380255.2	7	65	150	26	32				14.36				
8A012	2782149.6	6380322.4	13	65	55	14	38				24.23				
8A013	2782126.3	6380425.8	10	95	85	22	29				23.50				
8A014	2782216.8	6380482.7	12	70	45	6	16				18.23				
8A015	2782198.1	6380516.3	32	50	50	12	84				13.67				
8A016	2782307.3	6380619.7	26	70	190	6	18				13.50				
8A017	2782284.1	6380883.4	20	60	85	6	32				24.57				
8A018	2782113.4	6380945.5	10	55	135	14	34				23.43				
8A019	2782033.3	6380924.8	30	80	60	10	20				19.98				
8A020	2782382.3	6381217.0	34	80	85	28	58				7.13				
8A021	2782428.3	6381430.7	32	125	75	40	74				15.95				
8A022	2782511.7	6381454.8	72	160	80	24	56				23.03				
8A023	2782582.1	6381473.3	50	115	115	12	84				14.36				
8A024	2782545.0	6381549.2	28	85	50	12	62				24.23				
8A025	2782193.1	6381693.7	62	255	170	8	46				23.50				
8A026	2782320.9	6381954.8	48	200	150	54	105				14.04				
8A027	2782154.2	6382049.3	50	115	100	42	92				19.22				
8A028	2782385.7	6382208.6	10	40	130	100	110				20.70				
8A029	2782495.0	6382390.1	34	95	95	32	100				11.31				
8A030	2782628.4	6382656.8	30	40	40	36	70				20.70				
8A031	2782815.4	6382686.4	32	150	205	20	50				11.31				
8A032	2782806.2	6382273.4	10	95	170	18	50				18.62				
8A033	2782974.7	6382297.5	8	50	135	6	16				16.95				
8A034	2783052.5	6382223.4	18	15	70	4	12				11.31				
8A035	2783804.4	6382649.4	38	60	75	4	22				28.07				
8A036	2783560.3	6382582.7	10	25	260	6	44				16.70				
8A037	2783569.2	6382519.7	25	85	85	8	18				16.91				
8A038	2783541.4	6382436.4	18	35	85	8	18				15.19				
8A039	2783534.0	6382204.9	20	35	85	8	18				15.19				
8A040	2783461.8	6382104.8	42	60	75	4	26				25.41				
8A041	2783435.9	6382032.6	38	140	195	24	40				22.89				
8A042	2783439.6	6381943.7	38	80	90	4	46				21.80				
8A043	2783510.0	6381825.2	40	90	70	4	42				27.22				
8A044	2783574.8	6381695.5	38	180	175	6	44				18.43				
8A045	2783619.2	6381580.7	16	60	200	6	46				25.41				
8A046	2783687.8	6381538.1	32	115	55	24	40				22.89				
8A047	2783824.8	6381473.3	32	165	50	10	42				17.45				
8A048	2783850.7	6381180.7	22	100	190	20	52				21.80				
8A049	2783619.2	6381288.1	30	75	145	16	48				16.11				
8A050	2783742.8	6381180.7	32	100	85	22	44				11.31				
8A051	2783619.2	6381288.1	34	115	85	14	44				11.31				
8A052	2783850.7	6381180.7	32	165	80	10	42				11.31				
8A053	2783619.2	6381288.1	34	100	190	20	52				11.31				
8A054	2783619.2	6381288.1	32	165	80	10	42				11.31				
8A055	2783619.2	6381288.1	34	100	190	20	52				11.31				
8A056	2783619.2	6381288.1	32	165	80	10	42				11.31				
8A057	2783619.2	6381288.1	34	10											

Ref. No.	Coordinates	Scarp		Bottom		Scarp		Runout		Toe		Slope angle		Geology	Seepage	Geo. Symbol
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout				
8A053	2784186.0	6381308.5	8	55	40	26	34	14	30	8.28	tr	19.29	tr	2		
8A054	2783146.9	6381167.7	42	120	75	6	48					19.29	tr	3		
8A055	2783132.1	6381075.1	44	160	100	6	50	230	175	4	50	15.38	tr	4		
8A056	2783156.2	6381014.0	44	100	100	2	46	105	55	2	26	23.75	22.74	tr	4	
8A057	2783456.2	6380997.3	28	85	215	14	42					18.23	tr	3		
8A058	2783432.2	6380858.4	34	40	55	12	46					40.36	tr	1		
8A059	2783358.1	6380806.5	34	40	65	10	44					40.36	tr	1		
8A060	2783272.9	6380695.4	42	165	140	4	46					14.28	tr	3		
8A061	2783289.6	6380593.5	38	150	65	8	46					14.22	tr	3		
8A062	2783248.8	6380465.8	32	90	85	14	46					19.57	tr	3		
8A063	2783169.2	6380237.9	36	115	460	10	46					17.38	tr	Yes	3	
8A064	2782984.0	6380360.2	38	150	160	8	46					14.22	tr	3		
8A065	2783009.9	6380538.0	42	70	300	6	48					30.96	tr	3		
8A066	2782928.4	6380754.7	36	65	95	4	40					28.98	tr	1		
8A067	2782850.6	6379819.3	50	135	320	8	58					20.32	tr	3		
8A068	2782978.4	6379832.3	38	100	525	8	46					20.81	tr	3		
8A069	2783585.9	6379850.5	2	60	85	8	10					1.91	tr	1		
8A070	2783513.7	6379695.3	4	30	85	10	14					7.59	tr	1		
8A071	2783643.3	6379795.3	16	45	120	10	26	75	80	9	18	19.57	12.77	tr	3	
8A072	2783743.3	6379736.0	8	40	65	6	14					11.31	wt	3		
8A073	2783787.8	6379815.7	10	30	75	6	16					18.43	wt	3		
8A074	2783763.7	6379960.1	9	85	175	8	17					6.04	wt	1		
8A075	2783865.6	6380047.2	8	35	60	8	16					12.88	wt	3		
8A076	2783819.2	6380197.2	5	35	55	10	15					8.13	wt	1		
8A077	2783939.6	6380306.5	4	30	55	8	12					7.59	wt	1		
8A078	2783919.3	6380367.6	4	20	40	6	10					11.31	wt	1		
8A079	2783797.0	6380434.3	6	30	65	8	14					11.31	wt	1		
8A080	2783589.6	6380256.5	14	50	80	34	48					15.64	wt	1		
8A081	2783541.4	6380304.6	18	95	80	32	50					10.73	wt	3		
8A082	2783458.1	6380439.8	14	120	75	34	48					6.65	wt	1		
8A083	2783632.2	6380652.8	14	40	65	26	40					19.29	wt	3		
8A084	2783715.5	6380651.0	32	85	75	6	38					20.63	wt	3		
8A085	2783752.6	6380754.7	40	130	95	8	48					17.10	wt	3		
8A086	2783841.5	6380843.6	40	75	80	8	48	85	60	8	42	28.07	25.20	wt	2	
8A087	2783834.1	6380863.9	42	75	45	8	50					29.25	wt	3		
8A088	2783771.1	6381043.6	52	210	245	6	58					13.91	wt	3		
8A089	2783934.1	6381175.1	16	25	40	36	52					32.62	wt	3		
8A090	2784069.3	6381117.7	46	30	95	6	52	100	60	18	34	56.89	18.78	wt	2	
8A091	2784100.8	6381139.9	4	25	75	22	26					9.09	wt	3		
8A092	2784130.4	6381284.4	12	75	75	14	26	85	40	8	22	9.09	11.96	wt	4	
8A093	2784011.9	6381408.5	12	65	130	16	28					10.46	wt	1		
8A094	2784050.8	6381508.5	4	50	50	32	36					4.57	wt	3		
8A095	2784134.1	6381569.6	40	100	450	16	56					21.80	wt	3		
8A096	2784230.4	6381469.6	14	25	80	24	38					29.25	wt	3		
8A097	2784297.1	6381445.5	16	25	80	28	44					32.62	wt	3		
8A098	2784369.3	6381262.1	16	95	30	6	22					9.56	wt	1		
8A099	2784358.2	6381356.6	22	75	60	6	28					16.35	wt	1		
8A100	2784336.0	6381486.3	32	100	55	16	48					17.74	wt	3		
8A101	2784400.8	6381452.9	9	80	60	6	15					6.42	wt	3		
8A102	2784441.5	6381554.8	16	35	120	8	24					24.57	wt	1		
8A103	2784295.2	6381582.6	38	110	150	30	68	105	70	38	62	19.06	15.95	wt	4	
8A104	2784397.1	6381702.9	52	145	225	18	70	275	180	6	62	19.73	13.10	wt	4	
8A105	2784502.7	6381817.8	26	80	70	10	36	90	60	8	22	18.00	17.28	wt	2	
8A106	2784400.8	6381951.1	38	125	180	26	64	130	100	27	48	16.91	15.89	wt	4	
8A107	2784506.4	6381923.3	20	60	65	18	38	75	50	18	32	18.43	14.93	wt	4	
8A108	2784676.8	6381860.4	26	125	170	12	38	130	125	10	28	11.75	12.15	wt	4	
8A109	2784758.3	6381803.0	38	125	285	4	42	100	265	6	28	16.91	19.80	wt	4	
8A110	2784134.1	6381569.6	6	45	125	48	54					7.59	wt	0		
8A111	2782545.0	6381549.2	52	175	75	22	74					16.55	wt	0		
8A112	2784882.3	6381986.3	32	65	185	6	38	75	155	6	24	26.21	23.11	wt	4	
8A113	2784919.4	6382128.9	18	75	75	8	26					13.50	wt	1		
8A114	2784767.5	6382199.3	8	130	70	24	32					3.52	wt	1		
8A115	2784513.8	6382141.9	16	90	85	42	58					10.08	wt	3		
8A116	2784582.3	6382217.8	18	75	120	50	68					13.50	wt	3		
8A117	2784682.3	6382343.8	28	95	90	40	68					16.42	wt	3		
8A118	2784863.8	6382308.6	16	75	65	24	40					12.04	wt	3		
8A119	2784643.4	6382406.7	77	210	105	22	99	135	50	34	54	20.14	25.71	wt	4	
8A120	2784700.8	6382525.3	30	150	70	20	50					11.31	wt	3		
8A121	2784610.1	6382532.7	48	200	190	20	68					13.50	wt	1		
8A122	2784686.0	6382695.7	12	90	150	52	64					7.59	wt	1		
8A123	2784786.0	6382695.7	24	100	85	26	50	80	30	30	38	13.50	14.04	wt	4	
8A124	2784899.0	6382625.3	11	40	35	16	27					15.38	wt	3		
8A125	2784967.5	6382530.8	8	30	50	18	26					14.93	wt	3		
8A126	2784647.1	6381167.7	2	35	180	6	8					3.27	tr	1		
8A127	2784804.6	6381236.2	14	40	140	6	20					19.29	tr	3		
8A128	2784971.2	6381117.7	26	60	315	8	34					23.43	tr	3		
8A129	2785025.0	6380426.9	4	70	95	6	10					3.27	tr	0		
8A130	2784661.9	6380734.3	10	40	50	8	18					14.04	tr	1		
8A131	2784547.1	6380741.7	22	110	90	8	30					11.31	tr	1		
8A132	2784476.7	6380632.4	14	30	70	20	34					25.02	tr	3		
8A133	2784265.6	6380717.6	4	40	120	10	14					5.71	tr	1		
8A134	2784530.5	6380523.2	28	135	70	16	44					11.72	tr	3		
8A135	2784445.3	6380432.4	30	60	30	8	38	65	25	8	34	26.57	24.78	tr	2	
8A136	278439															

Ref. No.	Coordinates	Scarp			Bottom		Scarp		Runout			Toe		Top		Slope angle		Geo.
		Height(m)	Distance(m)	Width(m)	RL	RL	Distance(m)	Width(m)	RL	RL	Scarp	Runout	Geology	Seepage	Symbol			
8A140	2784441.5	63780054.6	8	25	80	32	40				17.74		tr			9.09		1
8A141	2784515.6	6379904.6	4	25	60	38	42				7.59		tr			13.50		1
8A142	2784421.2	6379960.1	14	105	40	16	30				10.62		tr			14.93		3
8A143	2784348.9	6379939.8	15	80	60	12	27				14.93		tr			13.50		3
8A144	2784254.5	6379928.6	4	15	100	12	16				17.74		tr			14.93		3
8A145	2783945.2	6379674.9	6	25	60	8	14				17.74		fa			13.50		3
8A146	2783884.1	6379582.3	8	25	65	6	14				14.93		tr			14.93		3
8A147	2784139.7	6379708.2	8	30	115	8	16				17.74		fa			14.93		3
8A148	2784315.6	6379554.5	40	60	225	10	50				33.69		tr			33.69		1
8A149	2784406.4	6379437.8	7	30	90	7	56				17.74		tr			17.74		3
8A150	2784658.2	6379545.3	16	70	50	34	50				12.88		tr			12.88		1
8A151	2784552.7	6379593.4	20	75	80	20	40				14.93		tr			14.93		3
8A152	2784450.8	6379619.3	22	70	50	28	50				17.45		tr			17.45		0
8A153	2784393.4	6379661.9	28	120	275	20	48	235	100	13	28	13.13	8.47	tr			413	
8A154	2784658.2	6379969.4	14	45	125	28	42				17.28		tr			17.28		1
8A155	2784695.3	6380036.1	18	25	55	26	44				35.75		tr			35.75		0
8A156	2784813.8	6380106.4	24	35	55	8	32				34.44		tr			34.44		0
8A157	2784786.0	6380191.6	32	45	130	14	46				35.42		tr			35.42		0
8A158	2784754.6	6380308.3	30	75	100	8	38				21.80		tr			21.80		0
8A159	2784774.9	6380425.0	22	50	90	12	34				23.75		tr			23.75		0
8A160	2784936.1	6380273.1	12	85	55	46	58				8.04		wt			8.04		0
8A161	2784945.3	6380197.2	12	75	50	46	58				9.09		wt			9.09		0
8A162	2784232.3	6382614.2	26	55	165	10	36				25.30		wt			25.30		1
8A163	2784256.3	6382508.6	16	45	115	20	36				19.57		wt			19.57		3
8A164	2784241.5	6382425.3	8	40	55	12	20				11.31		wt			11.31		3
8A165	2784337.8	6382419.7	24	65	90	22	48				20.27		wt			20.27		3
8A166	2784341.5	6382336.4	26	60	50	20	46				23.43		wt			23.43		3
8A167	2784474.9	6382301.2	40	165	115	24	64	170	45	26	52	13.63	12.60	wt			13.63	4
8A168	2784348.9	6382206.7	28	100	80	22	50				15.64		wt			15.64		3
8A169	2784258.2	6382141.9	18	45	130	26	44				21.80		wt			21.80		3
8A170	2783985.9	6382317.8	26	60	65	12	38				23.43		wt			23.43		3
8A171	2783124.7	6382738.3	30	200	200	10	40				8.53		wt			8.53		3
8A172	2784936.1	6380273.1	16	80	120	6	22				11.31		wt			11.31		0
8A173	2784265.6	6380717.6	6	95	230	48	54				3.61		wt			3.61		1
8A174	2784515.6	6379904.6	9	35	50	24	33				14.42		tr			14.42		1
8B001	2784378.2	6377538.0	32	65	65	28	60				26.21		tr			26.21		0
8B002	2784574.7	6377545.7	20	45	80	32	52				23.96		tr			23.96		0
8B003	2784579.9	6377631.0	14	25	95	36	50				29.25		tr			29.25		0
8B004	2784460.9	6378078.3	32	100	90	24	56				17.74		tr	Yes		17.74		3
8B005	2784872.0	6377899.9	20	55	115	36	56				19.98		tr			19.98		0
8B006	2784928.9	6378024.0	10	25	60	44	54				21.80		tr			21.80		0
8B007	2784833.2	6378083.5	14	25	55	42	56				29.25		tr			29.25		0
8B008	2784590.2	6378251.5	34	85	180	22	56				21.80		tr	Yes		21.80		3
8B009	2784670.4	6378349.8	32	65	80	20	52				26.21		tr			26.21		3
8B010	2784714.3	6378486.8	32	70	130	18	50				24.57		tr			24.57		3
8B011	2784618.6	6378429.9	10	25	50	40	50				21.80		tr			21.80		3
8B012	2784556.6	6378414.4	8	15	35	44	52				28.07		tr			28.07		0
8B013	2784486.8	6378437.7	12	70	125	42	54				9.73		tr			9.73		3
8B014	2784608.3	6378716.9	12	90	35	40	52				7.59		tr	Yes		7.59		0
8B015	2784670.4	6378903.0	28	55	50	20	48				26.98		tr	Yes		26.98		0
8B016	2784740.2	6379006.5	26	55	125	18	44				25.30		tr	Yes		25.30		3
8B017	2784791.9	6379140.9	24	55	100	22	46				23.57		tr			23.57		3
8B018	2784264.4	6378941.8	34	70	70	12	46				25.91		tr			25.91		3
8B019	2784153.3	6378833.2	18	55	50	32	50				18.12		tr			18.12		3
8B020	2784036.9	6378820.3	28	40	90	16	44				34.99		tr			34.99		3
8B021	2784398.9	6379399.4	36	115	110	18	54				17.38		tr			17.38		3
8B022	2784217.9	6379352.9	24	25	110	10	34				43.83		tr			43.83		0
8B023	2784155.9	6379371.0	20	45	115	12	32	80	60	6	22	23.96	18.00	tr			23.96	4
8B024	2783072.6	6379151.2	7	50	35	14	21				7.97		tr			7.97		0
8B025	2782718.4	6379140.9	26	30	130	28	54				40.91		tr			40.91		0
8B026	2782690.0	6379050.4	16	65	70	38	54				13.83		tr			13.83		0
8B027	2782449.5	6379130.6	30	70	80	28	58				23.20		tr			23.20		0
8B028	2782346.1	6379107.3	30	110	130	14	44				15.26		tr			15.26		0
8B029	2782136.7	6379063.3	18	35	75	20	38				27.22		tr			27.22		0
8B030	2782596.9	6379363.2	14	40	175	42	56				19.29		tr			19.29		0
8B031	2782793.4	6379536.5	48	120	55	16	64				21.80		tr			21.80		0
8B032	2782845.1	6379412.4	24	50	75	24	48				25.64		tr			25.64		0
8B033	2784998.7	6378830.7	?	55	90	20	?				7		tr			7		3
8B034	2782596.9	6379363.2	24	125	175	30	54				10.87		tr			10.87		0