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February 8, 2006 05-1413-044

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Attention: Mr. Douglas Sedgwick

RE: FARO PIT SLOPE MOVEMENT MONITORING

Dear Mr. Sedgwick:

This report presents the results of an assessment of slope movement of the Faro Pit east wall, in the area of the Faro Creek Diversion Channel (FCDC). The site reconnaissance visit for evaluating the on-going movement of the slope was carried out by our Mr. L. Pohl on August 2 and 3, 2005. The east wall stability performance is comparatively discussed based upon current field observation and review of previous slope assessment studies, photos and data. An updated photographic record is provided. The anticipated stability performance and movement of the crest are discussed. Finally, recommendations are provided regarding a slope stability performance monitoring program.

The observation and assessment of the stability of the east and north walls of the Faro Pit were previously undertaken by Golder Associates Ltd. in September 2002, and therefore provide the background information and basis of comparison for the present study.

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1.0 FARO PIT STATUS

The Faro Pit is an inactive mine pit consisting of a roughly elliptical-shaped open pit with the major axis striking to northwest/southeast. The East and North walls represent the main slopes in terms of final heights, with the East wall being the highest and longest wall due to the major axis alignment of the elliptical-shaped pit.

The pit geometry resulted from the orientation of the Faro ore body which consisted of northwesterly/southeasterly striking, westerly dipping, en-echelon sulfide lenses.

Mining at the Faro Pit was completed in 1991. At the time of the site visit, the East wall, the focus of the present assessment, the crest and floor of the pit were located at approximately the 4,430 and 3,200 ft elevations, respectively. The height of the wall was approximately 1,230 ft.

According to previous information, in 1992 approximately 3.4 million cubic meters of waste rock were disposed below the 3,650 ft bench, from underground mining operations. The location and the extent of the underground mining beneath the east wall are not known as as-built maps of this development were not available.

The Faro Creek Diversion Channel (FCDC) and Faro Valley Interceptor (FVI) were originally built as part of the mine development to divert Faro Creek and runoff from north of the Faro Pit area around the Faro Pit and mill site. These channel and valley interceptor schemes collect water from upstream of the waste dumps and the Faro Pit and directs it in a southeasterly direction to the North Fork of Rose Creek.

The Faro Creek Diversion Channel (FCDC) was built in a cut/fill section, excavated in both overburden soil and rock, and is located behind the crest of the east wall of the Faro Pit.

The FCDC is at risk by the existing instability at the east wall of the Faro Pit, where distance between the channel and the slope crest varies from approximately 18 meters at the north upstream portion of the channel to 100 meters at the south downstream portion.

From previous assessments it was understood that the FVI and FCDC leak water into the Faro Pit. However, it is believed that not all of the seepage on the east wall underneath the FCDC could be attributed to diversion channel seepage losses, as seepage was also likely to occur due to natural groundwater flow beneath the channel.

In 2003, remedial works were carried out on the FCDC as an effort to reduce seepage losses. A total of 2,300 meters in length of the diversion channel were lined with a combination of Bentomat liner and overlying protection with 12" to 4" rip-rap applied on the channel surface. Also as result of these works, the channel geometry had cross-section adjustments. The previous existing road located along and in between the wall crest and the FCDC was also adjusted and leveled. A safety berm was constructed on the mine side of the road along the northern crest of the east wall.

Since mining operations were discontinued, a lake has formed at the bottom pit. Maximum recorded water level showed the lake elevation at 3,865.45 ft in December 1997. At the time of the site reconnaissance visit, the water level was located at about 3,856.5 ft elevation. Pumping and water treatment facilities exist at the site with an operational scheme which results in annual seasonal fluctuation of the lake water level within the pit. Since the last slope movement assessment in 2002, the seasonal annual fluctuation was recorded with maximum and minimum water levels occurring in May and September, respectively. During this interval, maximum water levels ranged from 3,861.6 to about 3858 ft elevation, and minimum water levels ranged from 3,855.7 to 3852.6 ft elevation. Therefore, since 2002 the maximum recorded water level fluctuation was of about 7.7 ft.

2.0 FARO PIT ENGINEERING GEOLOGY BACKGROUND

2.1 Faro Pit Geology

The orebody in the Faro Pit consists of northwesterly/southeasterly striking, westerly dipping, en-echelon sulfide lenses. The sulfide lenses are contained within metamorphosed, interbedded, non-calcareous phyllites, schist and calc-silicate sedimentary rocks. Rocks immediately adjacent to the sulfide lenses have undergone intensive alteration, and are essentially, massive, featureless muscovite/kaolinite clay envelopes.

2.2 East Wall Geology

The east wall of the Faro Pit was excavated along the footwall of the sulfide lenses, i.e., footwall of the ore body. The following rock types were exposed on the east wall.

- Westerly dipping biotite-muscovite schist, with a westerly dipping bedding foliation.
- Calc-silicate band trending north/south and is exposed in the lower centre portion of the east wall and the upper portion of the north side of the wall.

- Diorite intrusive in the upper wall.

- Quartzite in the upper portion of the south side of the east wall.

Previous interpretation of geologic cross sections indicated the presence of shallow to moderate westerly dipping strata, and westerly dipping faults that are inclined at approximately 60 degrees.

The Big Indian Fault is the most dominant structural feature observed in the east wall. This fault strikes roughly north/south and dips toward the west at an inclination of approximately 60 degrees.

The east boundary of the north/south trending band of calc-silicate rock in the east wall is suggestively defined by the Big Indian Fault.

Other westerly dipping faults have also been interpreted to exist. Also smaller, east/west trending faults are noted on existing geologic plans.

2.3 East Wall Instability and Slope Movement

As previously assessed, the Faro Pit east wall shows two separate instability zones, which were referred as the North and South instability zones, respectively.

The North and South instability zones are apparently separated by the north/south trending band of calc-silicate rock, as panoramically shown in Photograph 1. The North instability zone is located to the north of the band of calc-silicate rock, and the South zone is located to the south.

The east boundary of the band of calc-silicate rock is bounded by the Big Indian Fault.

From the previous assessment the east wall instability has been interpreted to have occurred as a result of the following two failure mechanisms.

- Initially, the individual benches would experience planar failure along a variety of westerly dipping structures that were undercut by the steep bench faces. This would result in the loss of catchment and the general accumulation of ravel debris on the slope. Ultimately, the wall would resemble an unbenched talus slope.

- As the wall height increased due to continued mining, the slope continued to deteriorate, and deeper-seated instability would develop, as the accumulated failure debris would begin to slide down the face along the underlying westerly dipping structures. In the south side of the slope, these structures appear to consist predominantly of a variety of faults that dip toward the west at approximately 50 degrees. In the north side of the wall, the failure debris appears to have slid along the westerly dipping Big Indian fault. The material in the upper portion of the failure zone would push and plough under the material in the lower slope, forming obsequent ridges and graben like features. Displacement rates would have increased with the mining of each bench, and would subsequently decrease to background rates of less than 5 mm/day soon after the removal of each bench. During the operating life of the mine, instability continued to creep in a progressive and predictable manner, without the development a catastrophic failure.

2.3.1 South Instability

The South instability is formed by highly blocky failure debris at the base of the slope that has undergone large displacement. The failure material had dropped downward along a westerly sloping back scarp that was formed by moderate to steep westerly dipping faults and joint sets. Generally massive rock mass outcrops behind the backscarp.

The schist debris in the lower slope is highly friable and weathered, and contributed to the raveling on the slopes and the general loss of benches. The rock at the base of the slope was observed to be more bleached and altered than the fresher and more competent rock at the crest. This is likely due to the fact that the material at the base of the slope was closer to the footwall of the sulfide lenses.

Seepage into the South instability zone was observed along a creek located along the north of the instability area, emanating from under the access road immediately along the west side of the FCDC.

At the time of the 2002 assessment, there were no signs of impending, large-scale, overall instability within the face of the steep back scarp. Some raveling was occurring within the face of the backscarp. There was no evidence of tension cracks behind the crest.

The calc-silicate band, that separates the South and North instabilities, is described as a more competent rock containing numerous, closely-spaced, near-vertical, westerly dipping joints. The outcropping calc-silicate band represents an area of improved stability relatively to the instabilities in the schist to the north and south, and might be acting as a buttress on the north side of the South instability. Also the local favorable orientation of flat-lying or near-vertical joints in the schist might have contributed to the improved stability in the near vertical zone between the north and south failure zones.

2.3.2 North Instability

The North instability zone consists of much finer-grained and more bleached and altered failure debris at the base of the slope than the debris in the South zone. A steep backscarp has formed in more competent rock at the crest of the slope. This backscarp is defined by the Big Indian Fault. The north side of the North instability zone appears to be defined by a steep, south to southwesterly dipping diorite dyke. The south side of the North instability is delineated by the calc-silicate band area that separates the north and south zones.

At the time of the 2002 assessment, the minimum distance from the crest of the east wall instability to the FCDC occurred in the middle of the North instability area. At that location, the overburden is approximately 5 to 6 meters thick. Additionally, seepage emanating from the overburden/bedrock contact at that location was causing erosion in the bedrock below. However, there was no evidence of tension cracks or instability behind the crest of the slope, and the rock behind the backscarp appeared to be stable. Therefore, only limited instability appeared to occur as sloughing or raveling in the steep overburden face, due to seepage erosion of the underlying bedrock, which undercut the overburden slope.

2.3.3 Slope Movement and Crest Retreat

The previous instability assessment carried out by Golder Associates Ltd. in 2002 was based mostly on site reconnaissance and limited monitoring information of the rate of regression of the crest of the slope, as no stability monitoring had been carried out on the failure debris at the base of the slope or on the face and crest of the slope.

At the time of the previous assessment in 2002, the slope crest in the South instability area was estimated as approximately 100 meters to west of the FCDC. The observed crest regression rate, on the order of 1 meter per year as monitored and reported by Faro's staff, would not affect the channel for many years in this area.

However, the slope crest in North instability area was located a minimum of approximately 7 - 8 meters from the crest of the access road and approximately 17 - 18 meters from the FCDC. Therefore, it was possible that the access road would be undercut by ongoing crest failure within approximately 5 years, while the FCDC could be undercut within approximately 10 years.

In summary, from the previous assessment it was evaluated that catastrophic failure of the bedrock and overburden slopes appeared to be unlikely to occur. Rather, instability was likely to continue to develop at the crest of the slope due to seepage erosion at the overburden bedrock contact.

3.0 2005 SITE RECONNAISSANCE

For the present crest movement assessment, a site reconnaissance visit was carried out with geotechnical inspection of the east wall and existing instability (Photograph 1).

In similarity to the previous assessment, no slope monitoring has been carried out, and therefore, the slope inspection was focused on obtaining visual observations for a comparative approach with existing photographic records and field remarks.

Slope crest to diversion channel distances were also measured at critical locations in order to evaluate crest regression rate. Distance measurements were taken by means of measuring tape at the minimum distance locations at the crest of the North and South instabilities.

The geotechnical inspection of the east wall mostly corroborated observations from the previous instability assessment.

The east wall instability is still characterized by two failures zones, as the North and South instabilities separated by the calc-silicate band zone, as shown on Photographs 1 and 2. A broad overview inspection of the east wall indicates that the instability has not progressed significantly, as major change or increase in displacement is not apparent.

3.1 South Instability

The current South instability is characterized by highly blocky failure debris at the base of the slope and back scarp in a generally more massive rock mass. This portion of the slope is shown on panoramic Photographs 2 and 3. The blocky failure debris is accumulated along the slope. Failure debris has formed variable thickness talus deposits with evidence of large displacement as previously assessed, as shown in Photograph 4. Raveling is observed to affect the steep back scarp. The back scarp consists of more competent jointed rock mass.

Comparative assessment of photographs taken on 2002 and the recent site reconnaissance inspection allowed a qualitative evaluation of movement and displacement within the

South instability zone. Reference points are highlighted in the photographs in order to illustrate comparison features, and the main observations are as follows.

- Photographs 5a and 5b show that the north boundary of the South instability has not significantly changed since the previous assessment from a visual inspection perspective. The back scarp at the north end does not show any perceptible regression or degradation. Only some settlement and downward displacement appears to have occurred on the accumulated debris.

- Photographs 6a and 6b show that the crest at the South instability has not changed perceptibly since the previous assessment from a visual inspection perspective. The crest at back scarp does not show significant regression or degradation. Some settlement and downward displacement have occurred on the accumulated debris. Downward displacement also appears to have occurred on the "stepped" bench at the centre of the photographs. The most significant change occurred at the south limit of the South instability. A remnant bench failed underneath the slope crest, apparently controlled by west dipping joints. The same slope face is seen "intact" in the 2002 photograph and displaced with several cracks and accumulated debris in the recent photograph. As a consequence, the back scarp resembles now a continuous unbenched slope up to the crest at this portion of the wall (Photograph 7). It must be emphasized that up to now, this failure does not appear to have affected the previous existing crest, as there are no cracks behind the crest, as shown on Photograph 8.

As previously assessed, seepage into the south failure zone is occurring along a creek located along the north side of the zone. Water flows on the surface along the back scarp crest at the north side of the South instability, resulting in saturation of the ground adjacent to the back scarp, as shown on Photographs 8, 9 and 10. As a consequence, local tension cracks occur at this location parallel and close to the scarp crest, as shown on Photographs 8 and 9. However, there was no evidence of continuity of the existing cracks laterally and away from this specific location. There was no evidence of other tension cracks behind this saturated area or even behind the back scarp crest outside this saturated area. This location represents apparently the minimum distance from the scarp crest to the Faro Creek Diversion Channel at the South instability area, as shown on Photographs 11 and 12. The minimum FCDC to back scarp crest distance in the South instability was measured at the back scarp crest in the saturated area at about 93 meters. The actual measurement represents an inclined distance due to the sloping terrain, and represents the distance between the crest of the slope back scarp and the west slope of the diversion channel.

The calc-silicate band, a more competent rock mass, is shown on Photographs 1, 2 and 5. Comparison of the 2002 photographs and the recent site reconnaissance indicated that the calc-silicate band at the north boundary of the South instability appears to have not changed significantly since the previous assessment, Photographs 7a and 7b.

3.2 North Instability

The current North instability is shown on Photograph 13. The instability zone is characterized by accumulated failure debris at the base of the slope and a steep back scarp at the crest of the slope, to the north of the calc-silicate band. The accumulated debris is much finer-grained and more bleached and altered than the debris in the south failure zone. The steep backscarp was formed in more competent rock at the crest of the slope. However a steep scarp is also exists in the overburden deposits at the crest of the slope, unlike the South instability.

Comparison of the 2002 photographs and the recent site reconnaissance indicate the following:

- Photographs 14a and 14b show generally that the lower slope at the south boundary of the North instability, i.e., along the north side of the calc-silicate band, appears to have not changed significantly since the previous assessment;

- Photographs 15a, 15b, 16a and 16b show that the north boundary of the North instability zone appears to have not changed perceptibly since the previous assessment from a visual inspection perspective, and down slope displacement of the failure debris appears to have been limited. The previous existing erosion gully has deepened on the debris at the lower slope (Photograph 15a); and

- Photographs 17a, 17b, 18a, 18b, 19a, 19b, 20a and 20b illustrate that the crest and the back scarp of the North instability show no perceptible regression or significant degradation since 2002.

The minimum distance from the crest of the east wall instability to the FCDC occurs in the middle of the North failure zone (Photographs 14, 21 and 22). Prior to any comparative assessment of the 2005 and the 2002 minimum distances to the FCDC, two important remarks must be emphasized about this particular location where the minimum distance was measured (Photographs 23 and 24).

Firstly, during the remedial construction works of the FCDC, a severe water leakage occurred from a temporary pipeline, according to Faro's staff. The pipeline was set up as a water diversion from the channel during the execution of construction works. The leakage flowed thought the slope crest at the minimum distance location, and an erosion gully was formed on the steep overburden scarp and affected the debris accumulated at the lower slope (Photograph 25). The leakage was eventually controlled, and the erosion gully was reconstructed with till material (Photographs 26).

The second remark regards the fact that the construction works altered the road and channel geometry. The road width and the west side of the channel were adjusted, and a safety berm was added to the west crest of road. Consequently, the distance from the east wall crest to the edge of the road is different form 2002, and this is not related to crest regression. At the minimum distance location, the current road width is about 12 meters, including the berm.

The current measured minimum distance between the crest of the wall failure zone and west crest of the FCDC is approximately 18.5 meters. The distance measured in 2002 was about 17 to 18 meters. The slightly lengthened distance can be attributed to modifications of the road and channel geometry. Although the current measurement does not allow to a precise comparison with the 2002 measurement, it is possible to verify that the crest regression at that location has not been sufficient to significantly reduce the minimum distance. The actual distance remains in the same order of extent to the previous assessment.

Considerable seepage occurs at the minimum distance location (Photograph 29). Seepage is emanating from the overburden/bedrock contact (Photographs 28 and 29). Despite of the remedial works on the FCDC, seepage at this location remains considerable.

To the north of the minimum distance location, the steep overburden scarp shows limited, but on-going regression due to raveling (Photograph 30). Therefore, a distance measurement was also taken at the apparently shortest distance from the overburden scarp crest to the west slope channel. The current distance at that location is about 35 meters.

The site reconnaissance inspection showed that there is no evidence of tension cracks behind the back scarp crest in the area of the North instability. Also, there is no evidence of instability behind the crest of the slope, and the rock at the back scarp appears to be stable.

4.0 EAST WALL STABILITY PERFORMANCE AND PROGNOSTICS

Similar to the previous assessment, no stability monitoring has been carried out on the failure debris at the base of the slope or at the crest of the slope at the east wall. Consequently, the extent and degree of possible current and ongoing instability within the failure debris at the base of the slope or within the more competent massive rock at the crest of the slope is still not known. However an indirect qualitative approach is possible based on the current observations.

The comparative analysis of previous data and photographs taken during the two assessments, allows to a qualitative approach on the assessments of the additional instability that has occurred over the last 3 years. From these photographs, it is possible to verify that the existing North and South instability zones have not significantly changed from their previous conditions, as neither slope exhibits shows significant displacements and movements since the previous assessment. The failure debris on the lower slope and the back scarp regression appears to have not changed significantly from the previous condition at both South and North instability. The current lack of instability on the face of the back scarps, and of tension cracks behind the crests of the scarps corroborates the previous consideration that deep-seated, overall instability is not occurring in the rock exposed in the back scarps at the North and South instabilities. However, local, back scarp crest failure is possible at the saturated zone at the north end of the South instability zone, as local non-extensive tension cracks are present.

The instability process due to erosion and raveling caused by seepage that is emanating from the overburden/bedrock contact at the crest of the North instability, is still present.

The rate of crest regression can not be precisely assessed, as no crest to channel alignment measurement had been carried out consistently since the previous stability assessment. Road and FCDC channel adjustments during construction works do not allow a direct comparison of the current and previous measured distances. However, it is possible to verify that back scarp crest regression did not changed significantly from the previous condition at both South and North instability. The same order of minimum distances to the FCDC still exists at both North and South instability zones.

In summary, the present slope movement assessment corroborates the previous assessment. Sudden, catastrophic failure of the bedrock and overburden slopes at the back scarps does not appear to be likely to occur within the near future. Instability is likely to continue slowly to develop at the crest of the back scarp due to seepage erosion at the overburden bedrock contact. This process is likely to affect more severely the North instability zone, and will leads to a slow ongoing regression of the crest. Local back scarp failure is also possible to develop at the saturated area in crest of the South instability back scarp.

The South instability will not likely undermine the FCDC for many years. However, the crest of the North instability remains a threat to the FCDC over the long-term. However, in the short-term, it is unlikely that the FCDC will be undercut in the next 5 years. Erosion and undercutting of the FCDC can be slowed by repairing the crest of the slope at the minimum distance in the North instability zone by repairing the erosion gully by placing fill in the gully on an annual or as required basis.

5.0 SLOPE MONITORING PROGRAM

The current assessment highlights the requirement to establish monitoring procedures in order to:

- develop a consistent and better evaluation of crest regression rate;
- allow a better evaluation of the stability of the more competent massive rock at the crest of the slope; and
- create a proper record of the existing instability.

The proposed monitoring procedures and objectives are summarized in Table 1

Table 1: Recommended Monitoring Program Summary

MONITORING PROCEDURE	OBJECTIVE	MAIN TASKS	FREQUENCY
Visual Inspection	• Crest regression • Stability of the crest of the back scarp • Warning for FCDC failure	Monitoring based on routine walk over and visual inspection on the most critical areas at the crest of the North and South instabilities and FCDC	Weekly during spring, fall. Every second week during summer.
Distance Measurement	• Crest regression rate	Measurement of the shortest distance from reference bars to the crest of the slope	Each spring and fall
Survey Monitoring Points	• Stability of the rock mass at the crest of the east wall	Topographic survey of reference points	Each spring and fall

These programs are discussed in more detail in the following sections.

5.1 Visual Inspection Monitoring

This simple procedure, but effective for the purpose of monitoring the FCDC safety, consists of routine inspection of the east wall crest and the area between the crest and the FCDC for signs of cracking and increasing crest regression. Currently, there are no cracks behind the crest, except at the locally saturated are at the north end of the South instability.

Inspection will involve walking these areas over the entire length of the east wall crest along the FCDC. This should not be done from the cab of a vehicle driving along the access road.

Photographs as listed in Table 2 may provide comparable visual reference for areas of major interest. It is suggested that reference photographs should be taken during each inspection from similar views to provide historical comparative records.

Table 2: Recommended Reference Photographs

Photograph Number	Location	Features of Interest
3 and 5	South instability	Overview
7	South instability back scarp	Back scarp stability at the south limit of the South instability
8	Crest above South instability	Back scarp stability and crest regression. North limit of the South instability
9	Crest above South instability	Back scarp stability and crest regression at saturated area
13a	Slope between North and South instability	Stability of remaining benches in "improved" stability slope
21	North instability	Overview
17a	Crest above North instability	Back scarp stability and crest regression
25, 26 and 27	Crest above North instability	Back scarp stability and crest regression at minimum distance from crest to FCDC
30	Crest above North instability	Back scarp stability and crest regression at raveling overburden scarp.

All observations should be properly recorded with photographic evidence. Location of significant cracking should be recorded by use of GPS or survey. A sample Visual Inspection Form is provided in Appendix II.

These inspections should be performed ideally by the same person or team on a regular basis, as visual comparison is crucial.

Early warning of any critical condition to the FCDC should be identified by this monitoring procedure.

5.2 Alignment Distance Measurements

This simple procedure, but effective to assess crest regression rate, consist of periodical measurement of the shortest distance from reference bars to the slope crest.

For this purpose, reinforced reference bars should be driven deep into the ground to the west of the access road along the FCDC. Reference bars should be painted and installation location should be surveyed and recorded.

Reference bars should be installed at the following locations.

- One reference bar should be placed where the distance between the crest of the scarp and the FCDC is at a minimum at the North instability (Photographs 23 and 24). It is recommended that this bar should be placed to the west of the FCDC at the east side of the access road, due to presence of loose fill material and the proximity of the scarp crest at the west side of the road.

- One reference bar should be placed to the north of the above location at the next location where the distance between the steep overburden crest at the North instability and the FCDC is at a minimum (Photograph 30).

- One reference bar should be placed between the two reference bars above, and one reference bar should be placed to the north of these bars.

- One reference bar should be placed where the distance between the crest of the scarp and the FCDC is at a minimum at the South instability (Photograph 11).

- One or two bars, depending on field adjustment, should be placed between the South instability bar and the North instability bars.

These measurements need to be recorded along with any other pertinent observations. A sample Measurement Record Form is provided in Appendix III.

5.3 Survey Monitoring Points

The intent of this procedure is to monitor bedrock mass slope movement and displacement behind the existing instabilities over a long period of time. However due to the low frequency of surveys, it is not indented to provide early warning of imminent slope failures.

Topographic survey points should be placed as concrete and reinforcing steel bar blocks solidly founded on "in situ" ground. Survey reference points should have ideally a metal mounting base for removable survey prisms.

The topographic reference points should be installed at the following locations.

- One reference point should be placed where the distance between the crest of the scarp and the FCDC is at a minimum at the North instability, and another reference point should be placed at the existing bench immediately to the south of that location (Photographs 23 and 24). It is recommended that the reference point at the minimum distance area should be placed to the east of the FCDC, due to presence of loose fill material and the proximity of the scarp crest at the west side of the road.

- One reference point should be placed behind the scarp crest and to the west of the FCDC road where the distance between the raveling overburden crest of the scarp at North instability and the FCDC is at a minimum (Photograph 30). One reference point should be placed to the north from this location.

- One reference point should be placed behind the scarp crest and to the west of the FCDC road where the distance between the crest of the scarp and the FCDC is at a minimum at the South instability (Photograph 11). One reference point should be placed to the south from this location.

- Other reference points should be placed behind the east wall crest and to the west of the FCDC road on locations between the above reference points.

- Other reference points should be placed above the south end of the North instability and above the "stable" slope in between the North and South instabilities as shown in Photograph 31.

- One reference point should be placed on stable ground for quality control of monitoring survey. It may be installed to the south of the FCDC or on natural terrain to the east the FCDC in the area between the North and South instability.

Survey monitoring points should be placed at least 3 meters from any current slope crest to avoid assessment of local bench/crest instability instead of major slope deformation.

A sample Slope Monitoring Spreadsheet is provided in Appendix IV.

6.0 RECOMMENDATIONS

This letter report has presented the results of a review of the stability of the east wall of the Faro Pit with respect to the integrity of the Faro Creek diversion channel that is located behind the crest of the east wall. The present slope movement assessment corroborates the previous observations from the 2002 site inspection, and provides further evaluation on the slope and crest regression process.

The field evidence and observations collected during the recent site reconnaissance indicate that crest regression and down slope displacement of the ravel debris at the base of the east wall appears to have not increased perceptibly since the 2002 inspection. Moreover, sudden catastrophic failure of the bedrock and overburden slopes at the back scarps does not appear to be likely to occur within the near future. Instability is likely to continue to develop slowly at the crest of the back scarp due to seepage erosion at the overburden bedrock contact. This process affects more intensely the overburden crest above the North instability, and leads to a slow ongoing regression of the crest. While instability at the crest of the North instability zone remains a threat to the FCDC over the long-term, it is unlikely that the FCDC will be undercut at this location in the next 5 years. Erosion instability within the gully and at the crest of the North Zone can be reduced by repairing the erosion gully by placing fill in the gully on an annual or as required basis.

The South instability will not likely undermine the FCDC for many years. However, local back scarp failure is possible at the saturated area in crest of the South instability back scarp.

Due to intrinsic nature of the slope instability and the existing threat to the FCDC, it is recommended that a slope stability monitoring program should be initiated.

In addition, while the final FCDC closure plans are still being discussed and the relocation alternative has not been finalized, it is recommended that an emergency contingency plan should be established for the unlikely scenario of a FCDC local failure at the North instability zone. This emergency contingency plan should likely include the following:

- procedures and actions to control and manage the additional water inflow into the lake at Faro Pit; and

- procedures and actions to alternatively bypass the water flow through an affected FCDC section.

We trust this report satisfies your current requirements. If you have any questions or require further assistance, please do not hesitate to contact us.

Yours very truly,

GOLDER ASSOCIATES LTD.

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Geotechnical Engineer

A.V. Chance, P.Eng.
Principal

LP/AVC/aaf
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APPENDIX I

PHOTOGRAPHS

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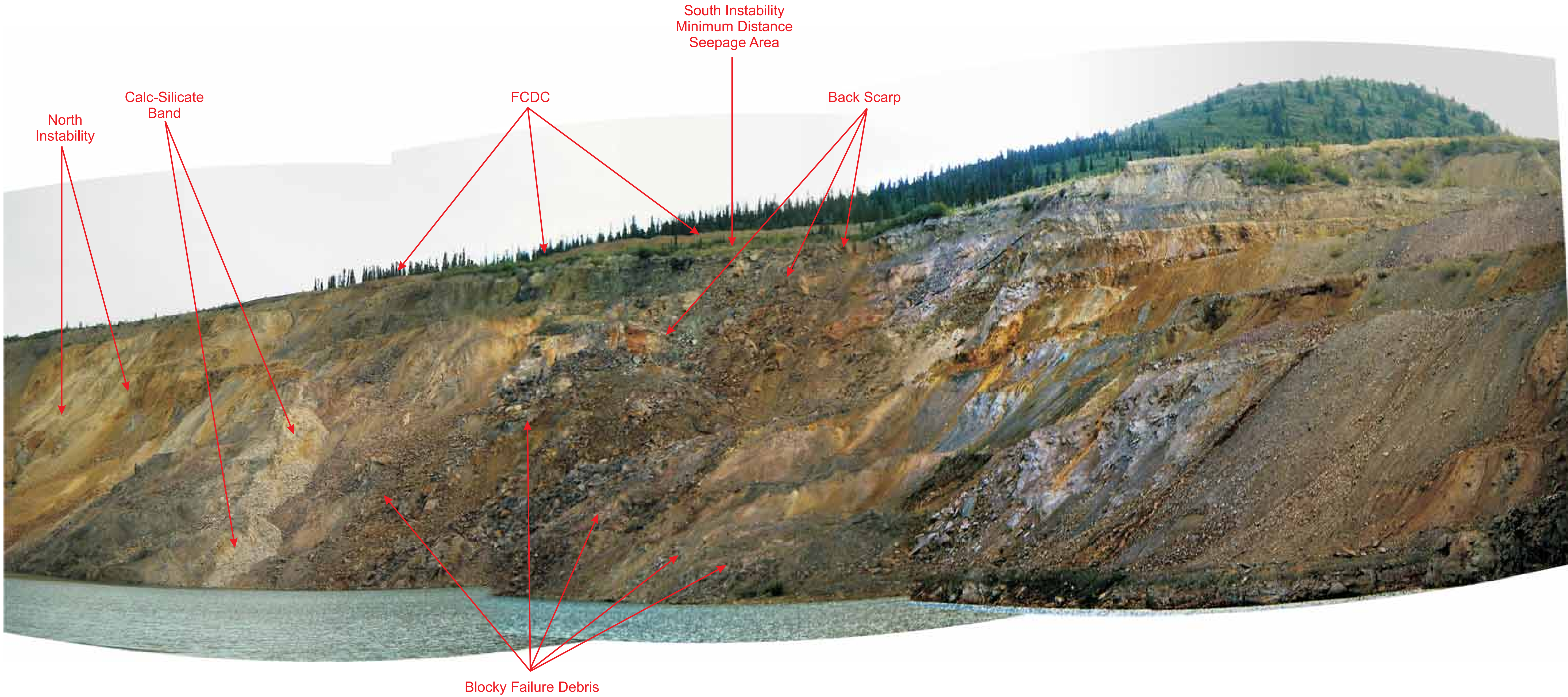
Photograph 1 : Panoramic overview of the Faro Pit East Wall, August 2005.



Photograph 2 : Panoramic view of the South Instability, August 2005.

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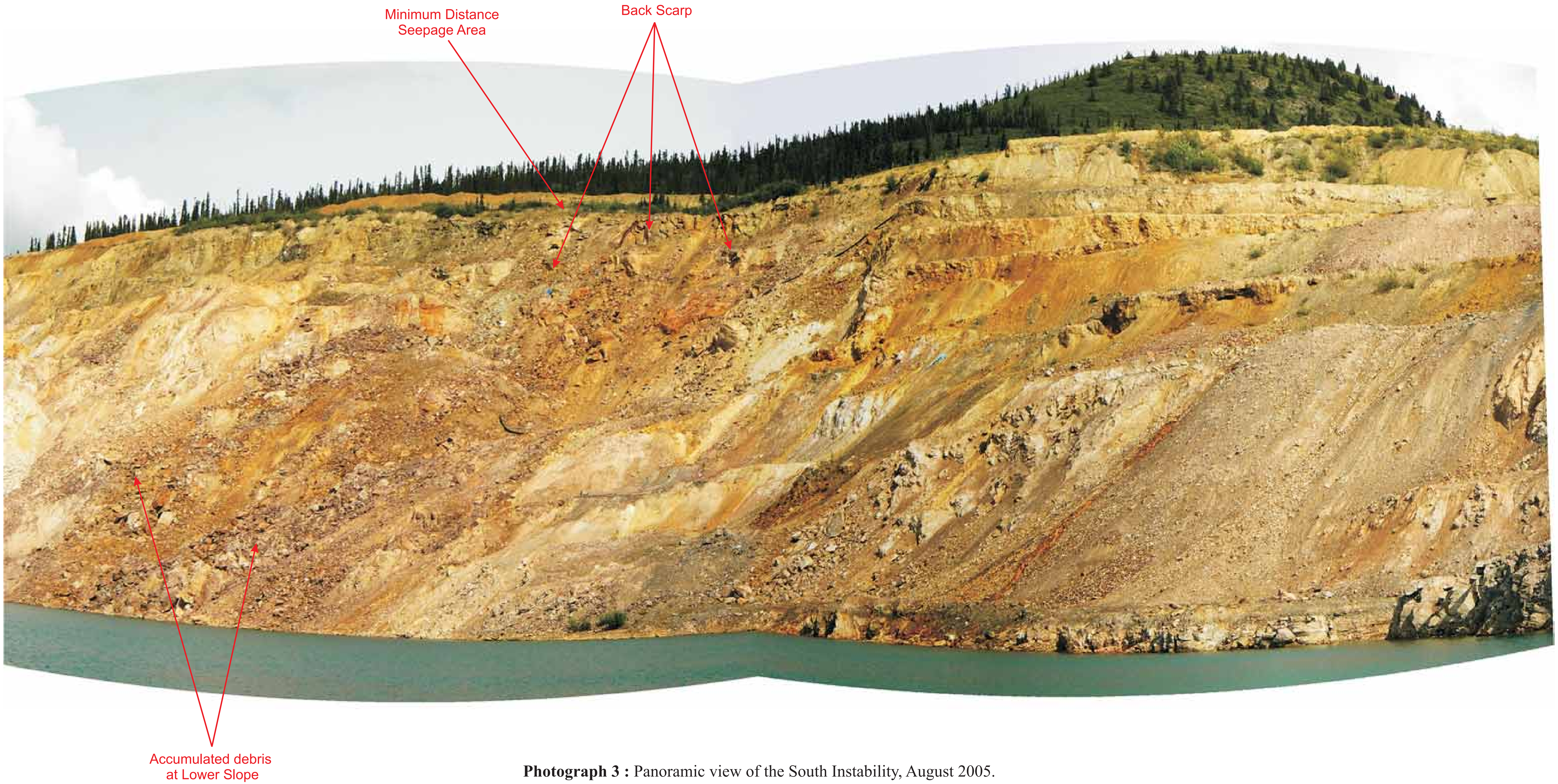
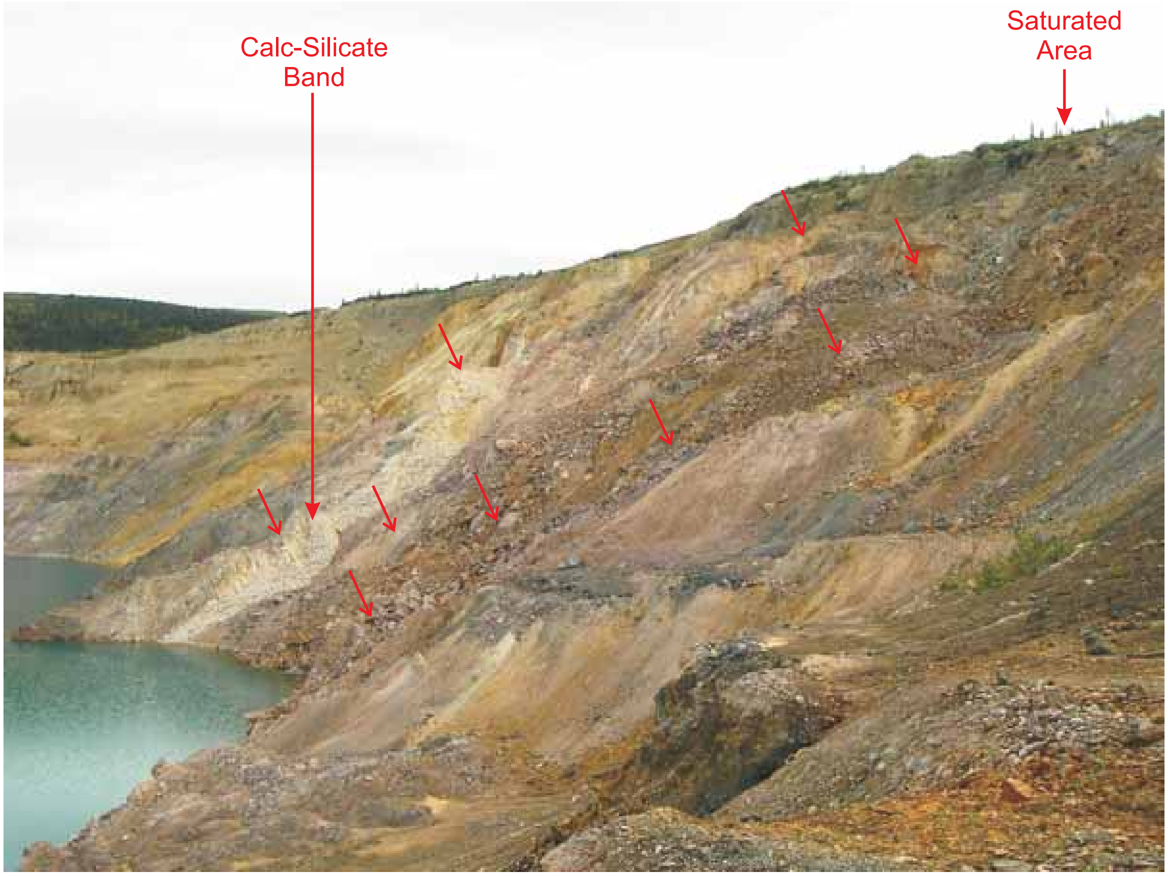
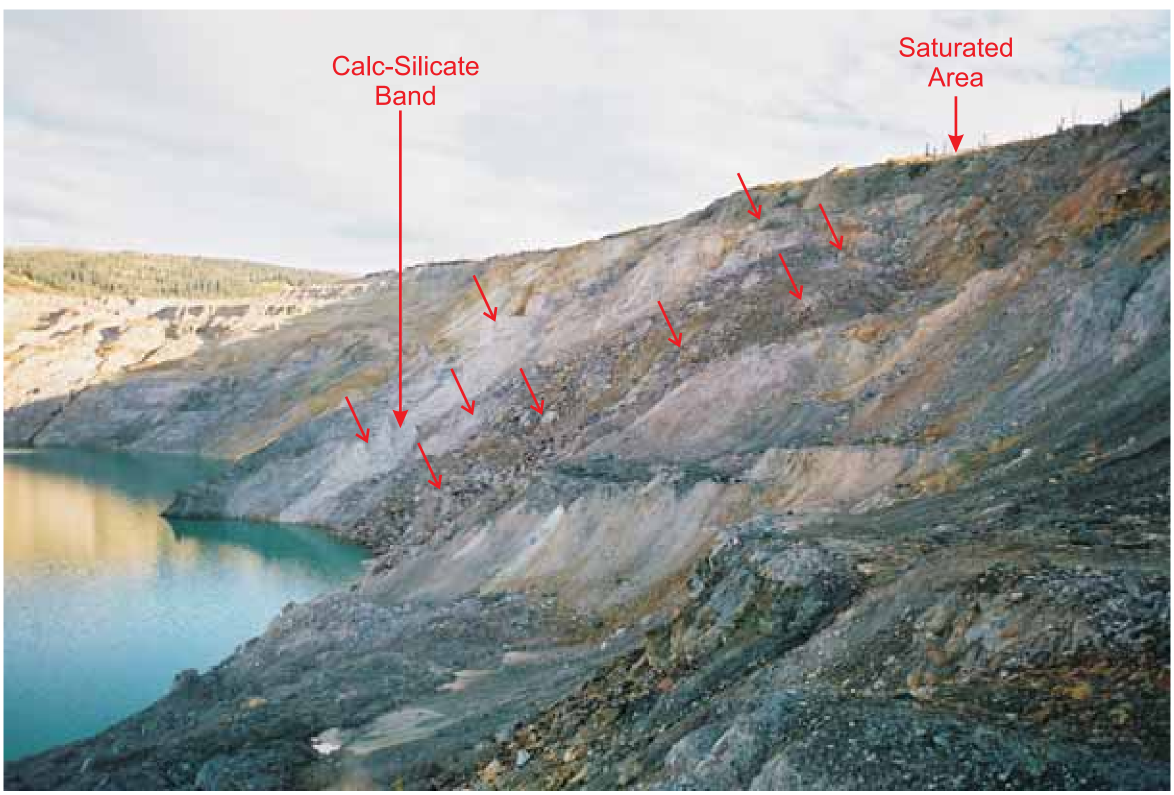


Photograph 3 : Panoramic view of the South Instability, August 2005.

Photograph 4 : Overall view of the South Instability.
Note accumulated debris and large displacement, August 2005.



Photograph 5a : South instability and calc-silicate band, August 2005. View to North. Comparison photograph.



Photograph 5b : South instability and Calc-Silicate band, September 2002. View to North. Comparison photograph.

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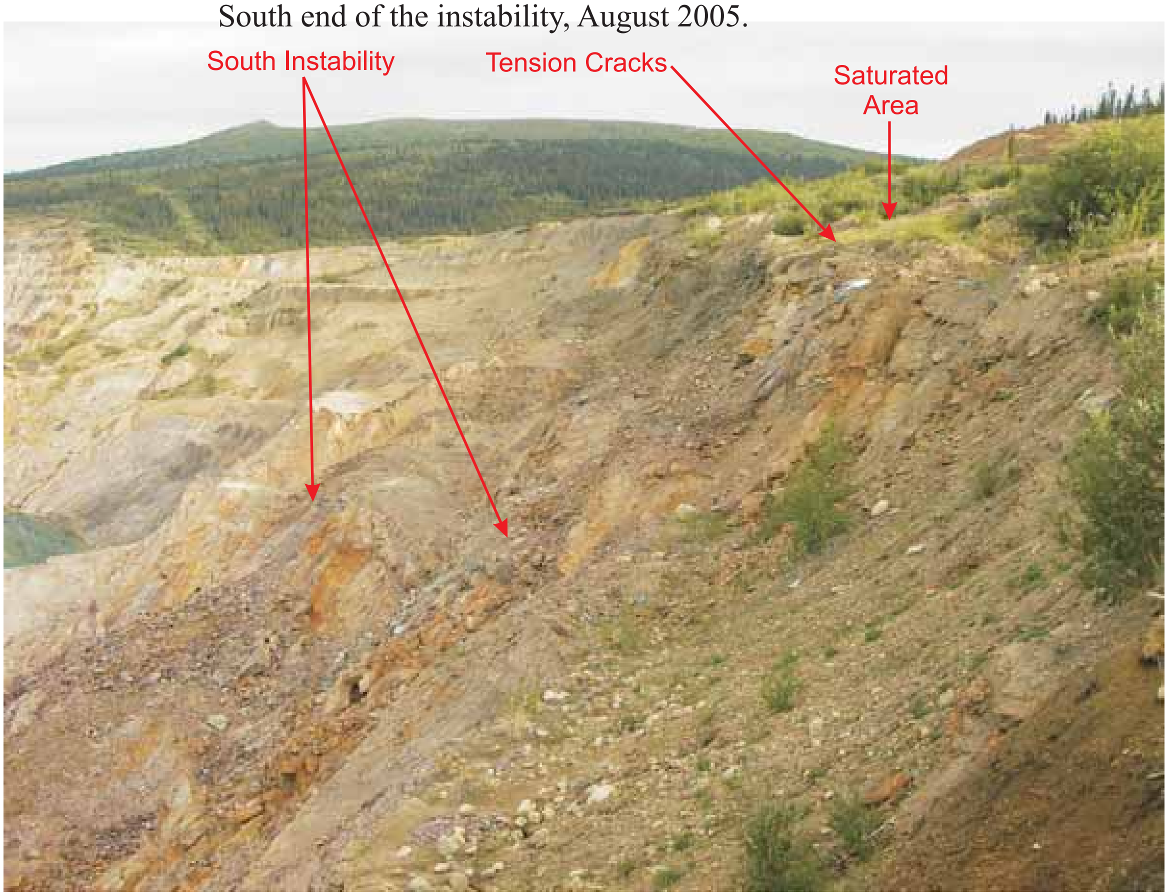
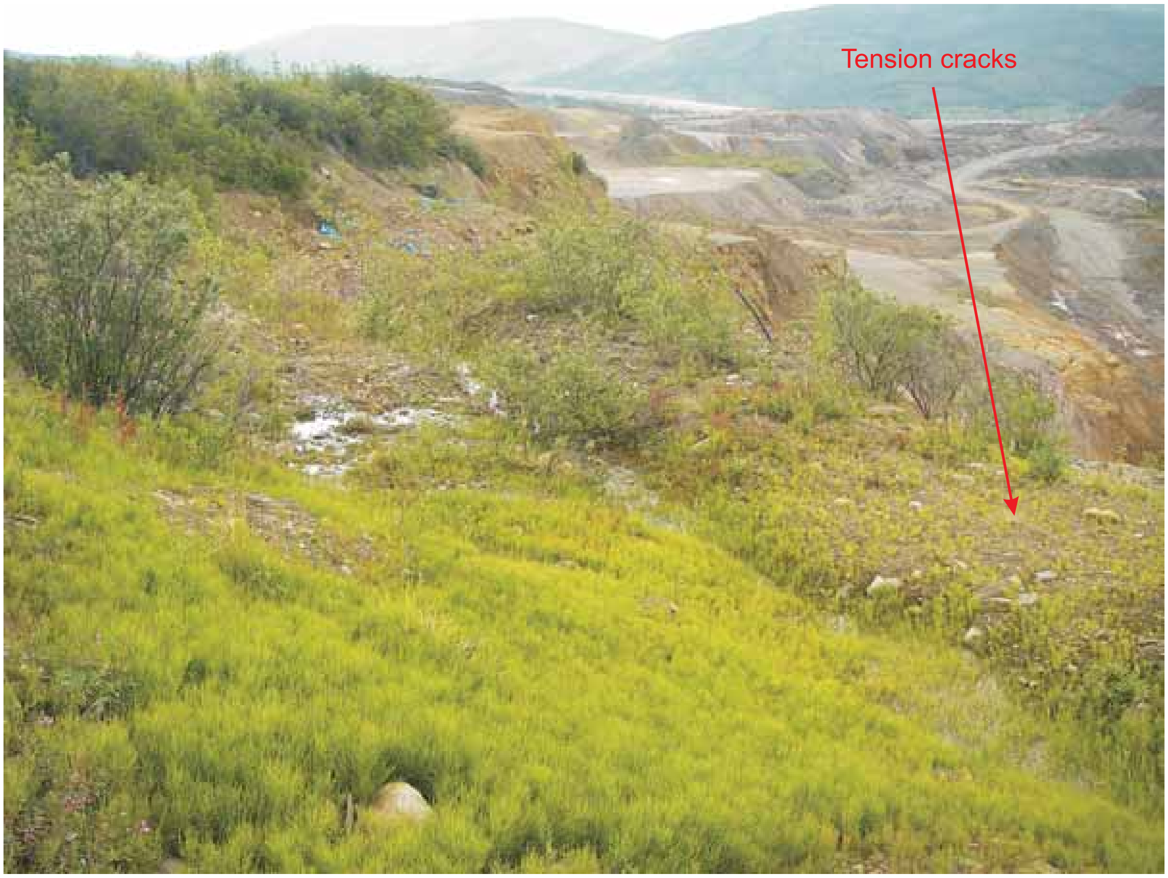
Photograph 6a : Back scarp crest at the South instability, August 2005. View to South. Comparison photograph.

Photograph 6b : Back scarp crest of the South instability, September 2002. View to South. Comparison photograph.

Photograph 7 : View of South instability back scarp. Note "recent" bench failure at the South end of the instability, August 2005.



Photograph 8 : East wall crest at the South instability, August 2005.



Photograph 9 : Saturated ground, South instability, August 2005.

Photograph 10 : South Instability.

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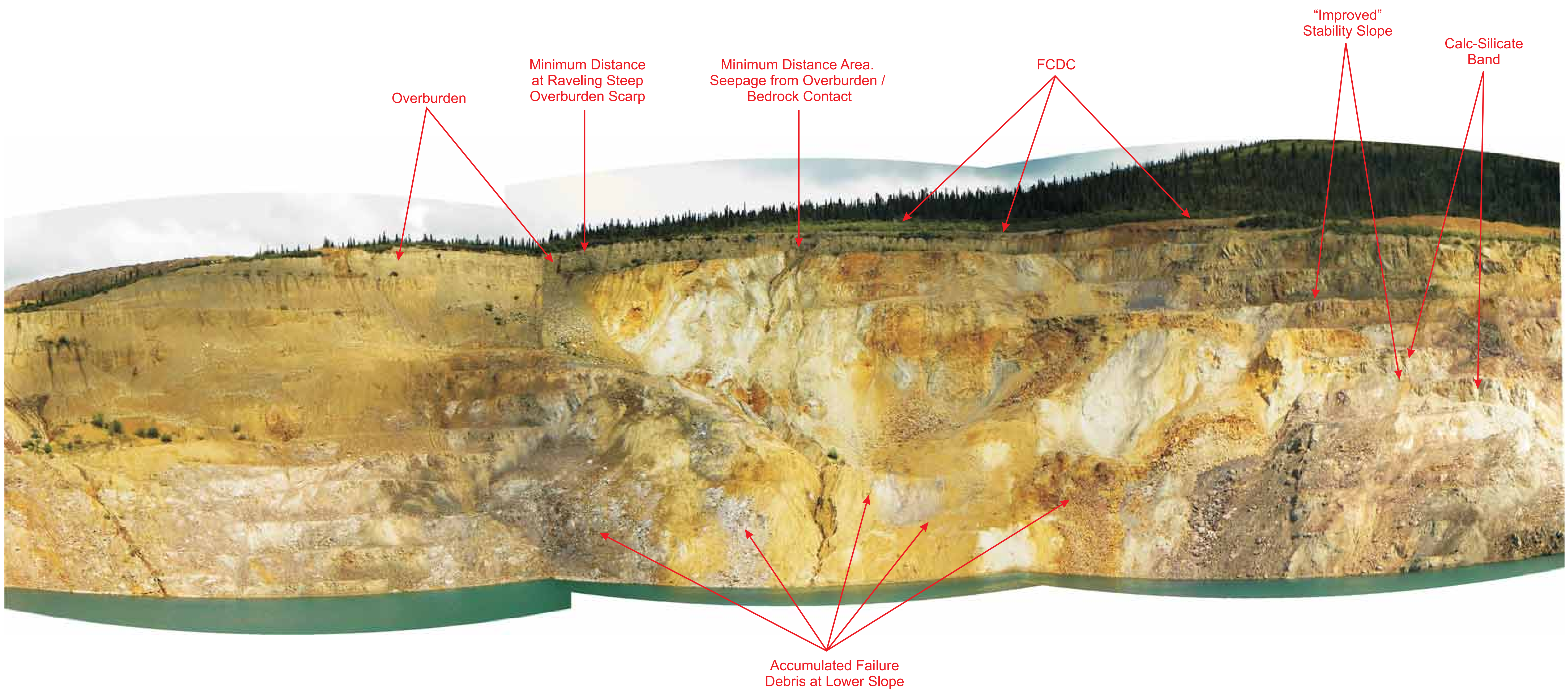
Photograph 11 : Alignment at the minimum distance from scarp crest by the FCDC at the South instability, August 2005.

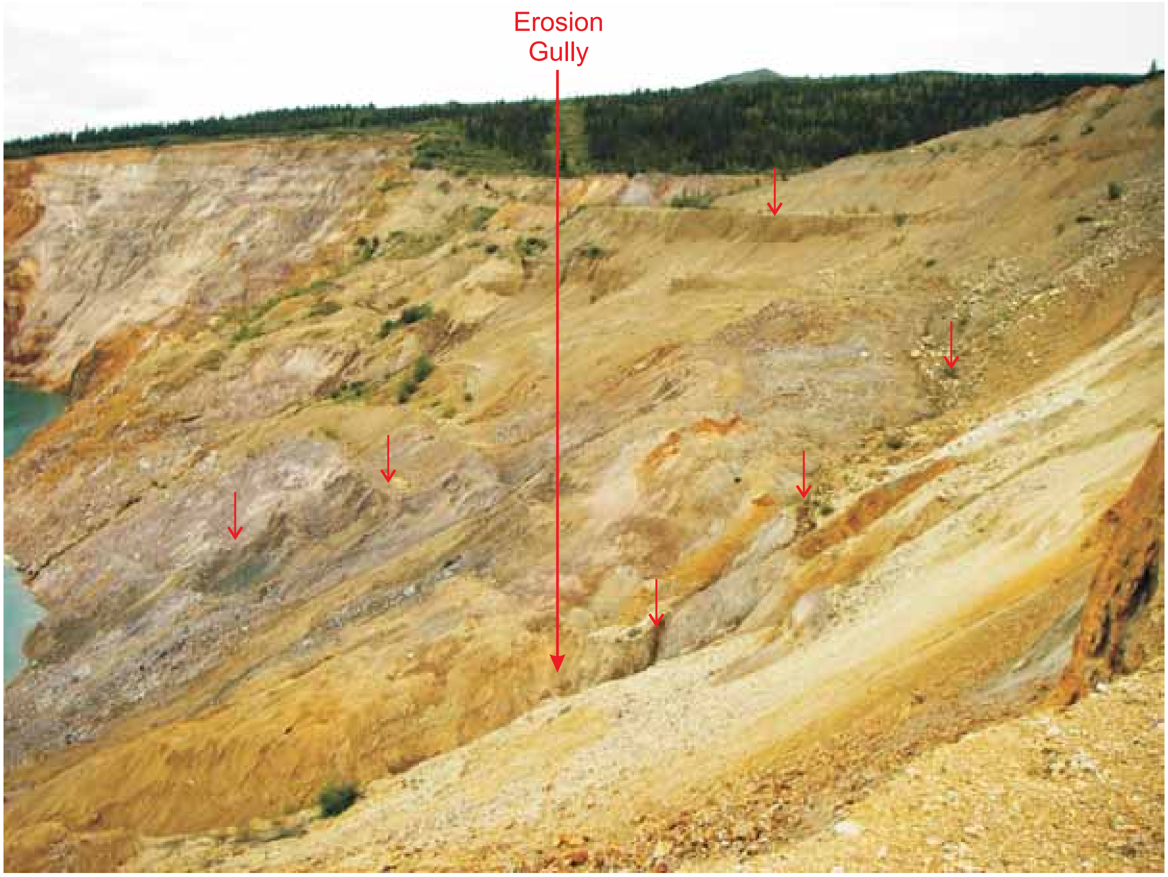
Photograph 12 : View of the Faro Creek Diversion Channel (FCDC) nearby by South instability, August 2005.



Photograph 13 : Panoramic view of the North Instability. Faro Pit East Wall, August 2005.

Photograph 14a : South boundary of the North instability, August 2005.
Comparison photograph.

Photograph 14b : South boundary of the North instability, September 2002.
Comparison photography.



Photograph 15a : North instability, view to north, August 2005. Comparison photograph.

Photograph 15b : North instability, view to north, September 2002. Comparison photograph.

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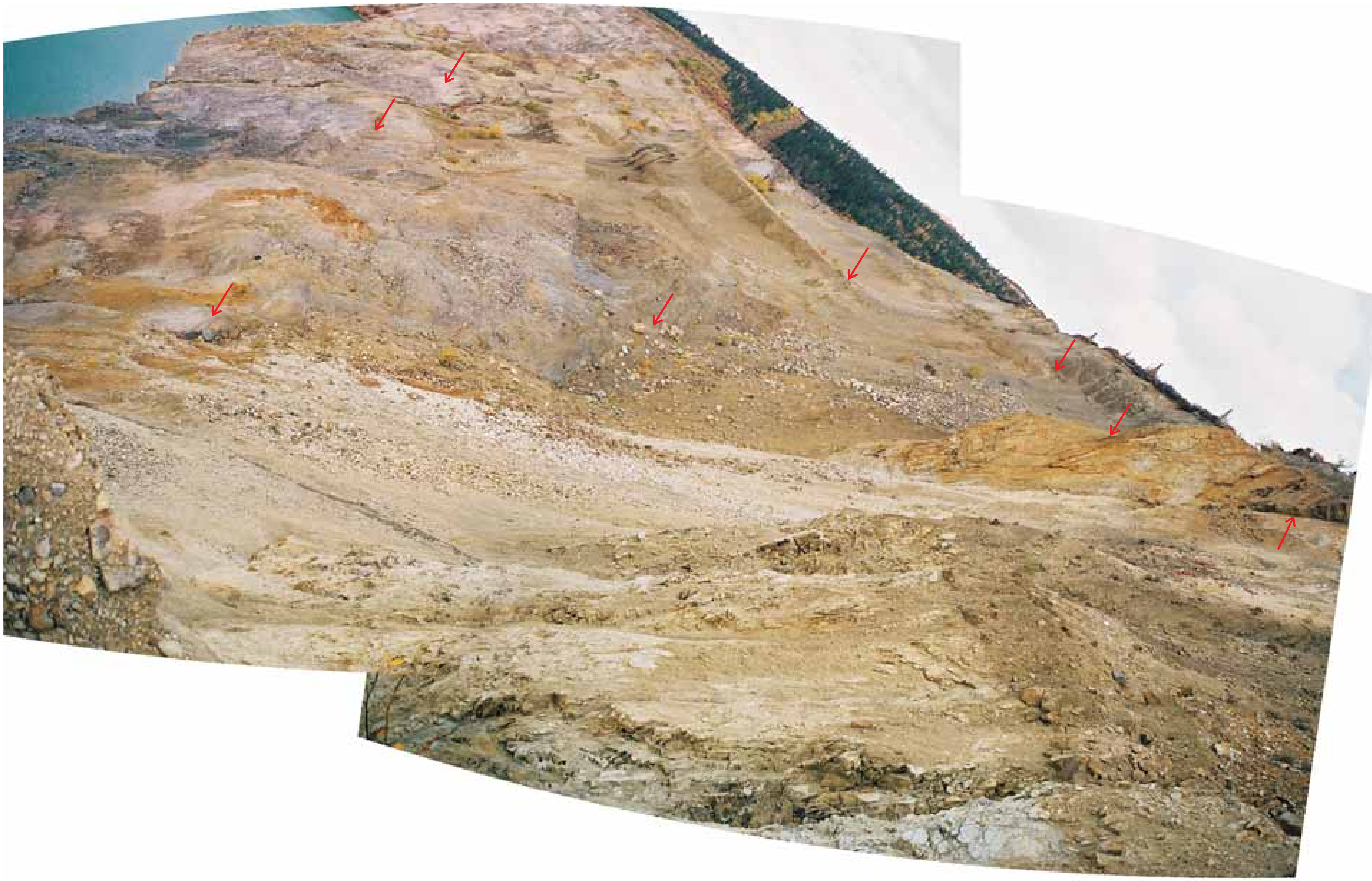
Photograph 16a : North instability. View to North, August 2005.
Comparison photograph.



Photograph 16b : North instability. View to North, September 2002.
Comparison photograph.

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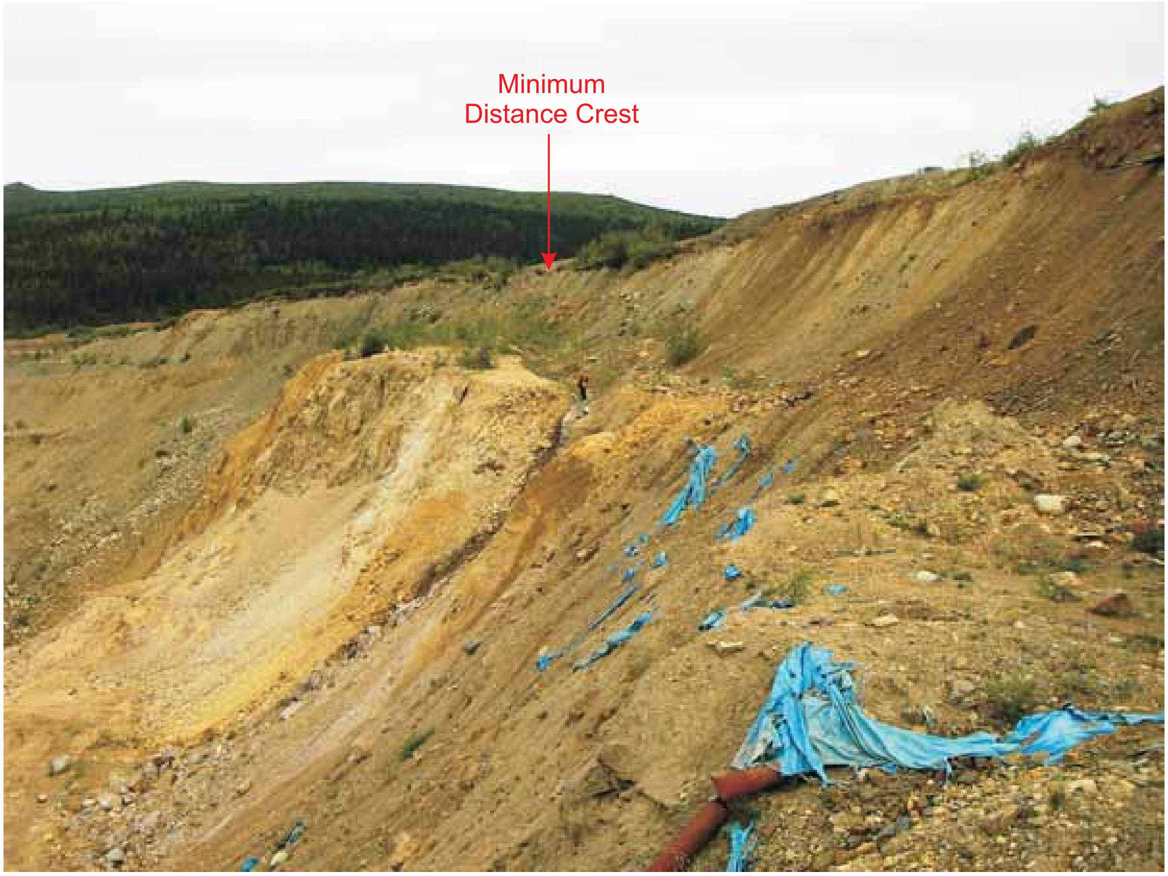

Photograph 17a : North instability, August 2005. Comparison photograph.

Photograph 17b : North instability, September 2002. Comparison photograph.

Photograph 18a : North instability back scarp and crest, August 2005.
Comparison photograph.

Photograph 18b : North instability back scarp and crest, September 2002.
Comparison photograph.

Photograph 19a : North instability back scarp and crest, August 2005.
Comparison photograph.

Photograph 19b : North instability back scarp and crest, September 2002.
Comparison photograph.

Photograph 20a : North Instability, August 2005.
Comparison photograph.

Photograph 20b : North Instability, September 2002.
Comparison photograph.

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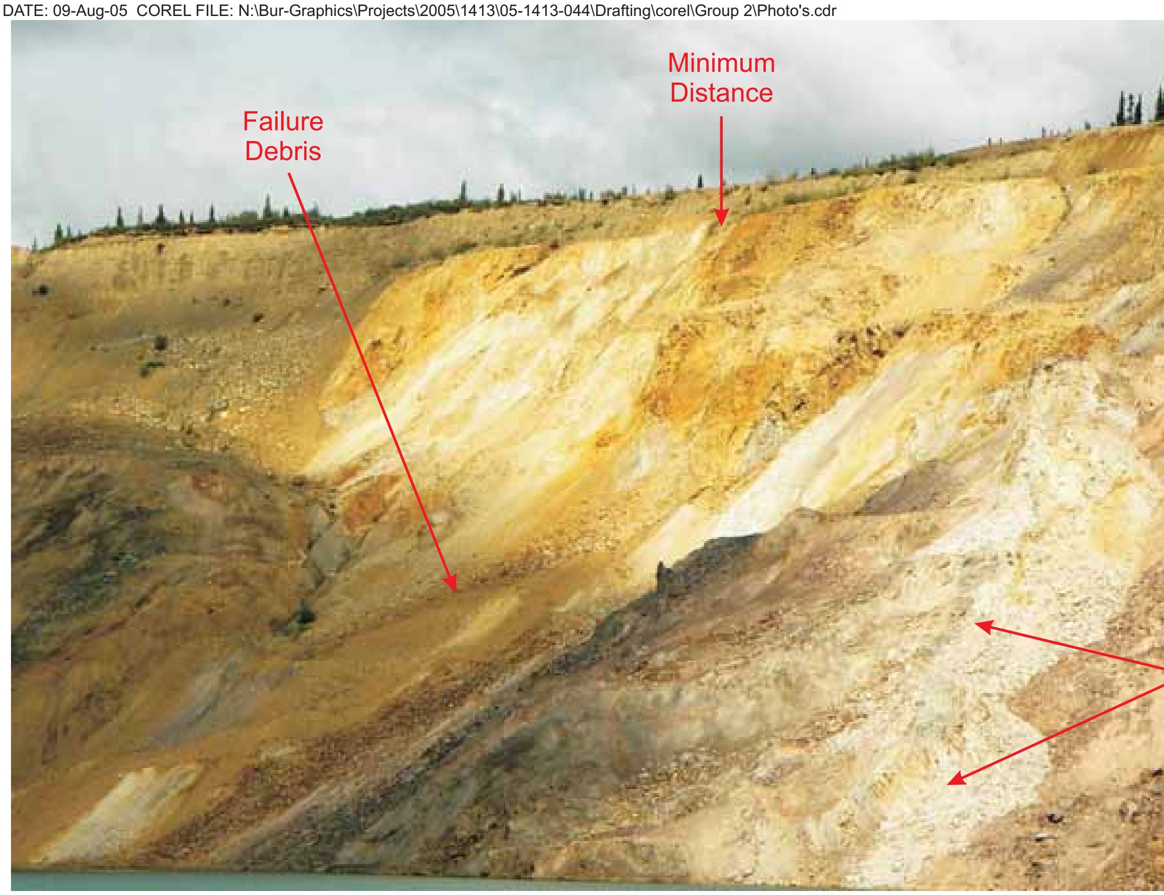
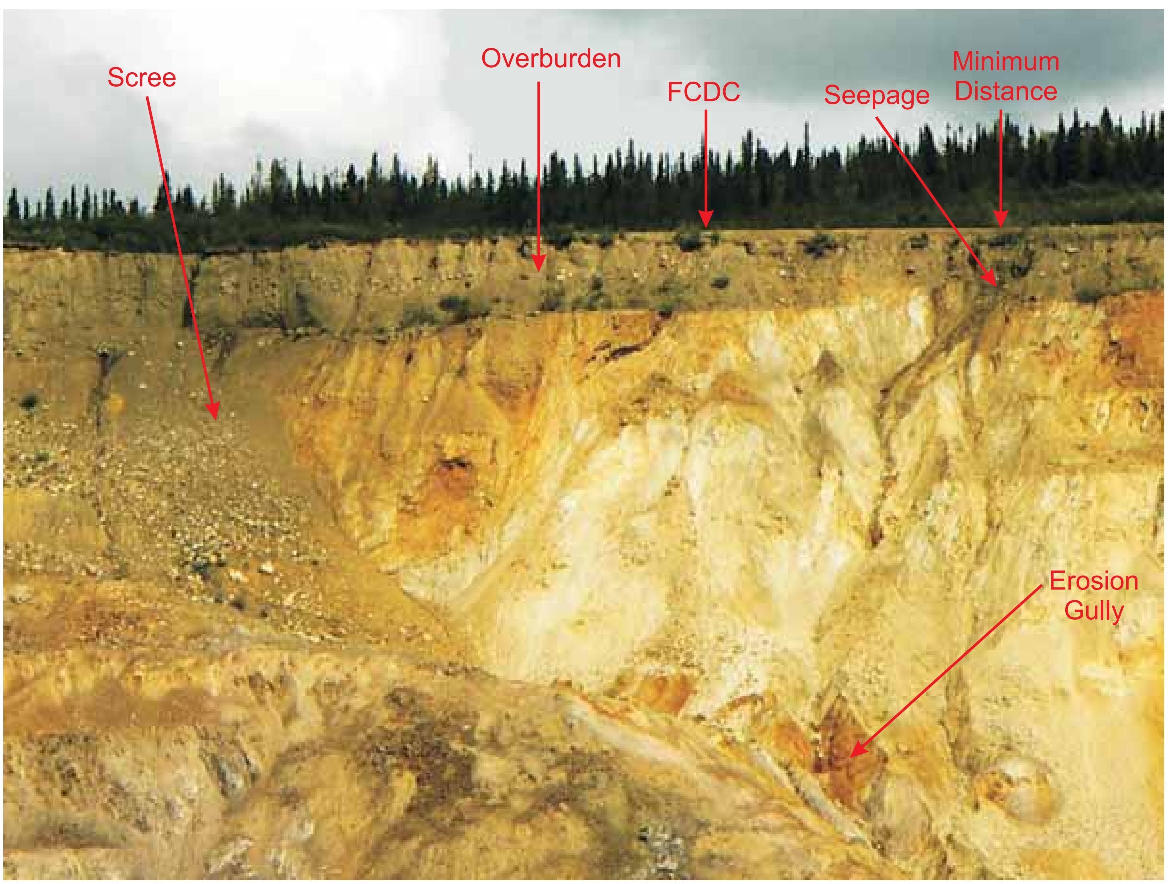
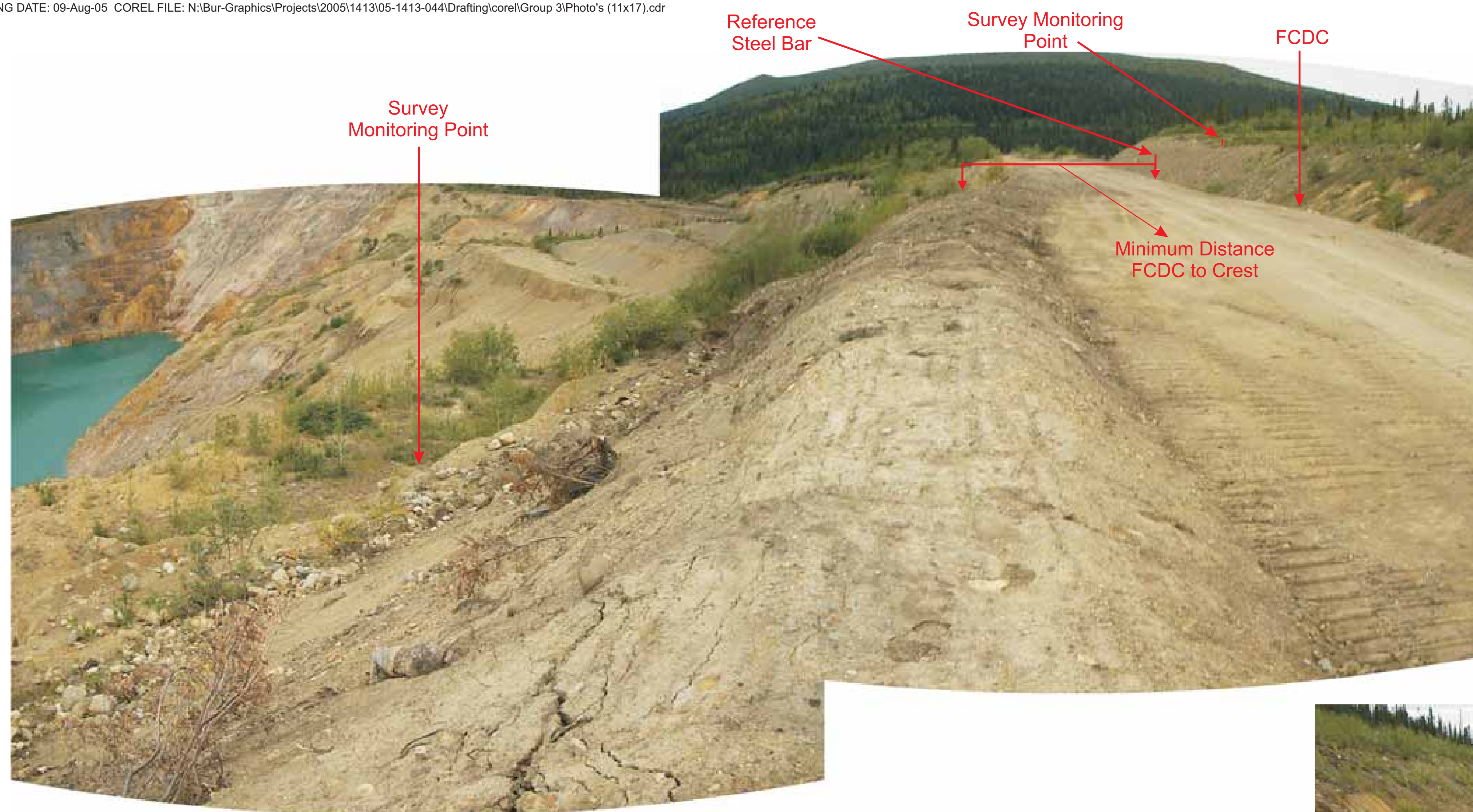


Photograph 21 : North instability, August 2005.

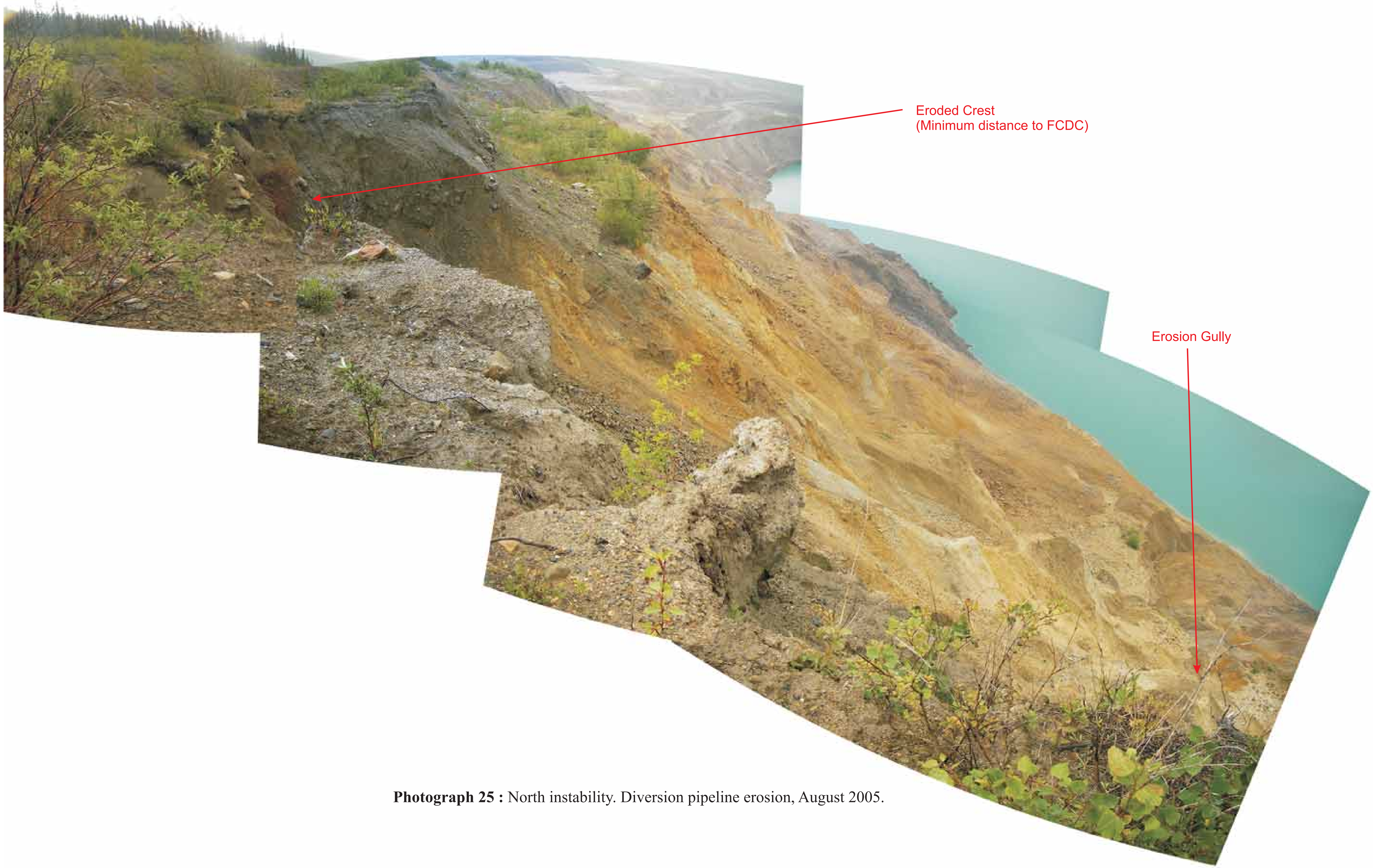


Photograph 22 : North instability. View of overburden crest and minimum distance area, August 2005.



Photograph 23 : Crest of east wall above the North instability, August 2005.
Suggested locations for reference bar and survey monitoring points.

Photograph 24 : View of the Faro Creek Diversion Channel (FCDC) above the North instability.



Photograph 25 : North instability. Diversion pipeline erosion, August 2005.

Photograph 26 : Reconstructed crest above North instability at the minimum distance from the FCDC, August 2005.

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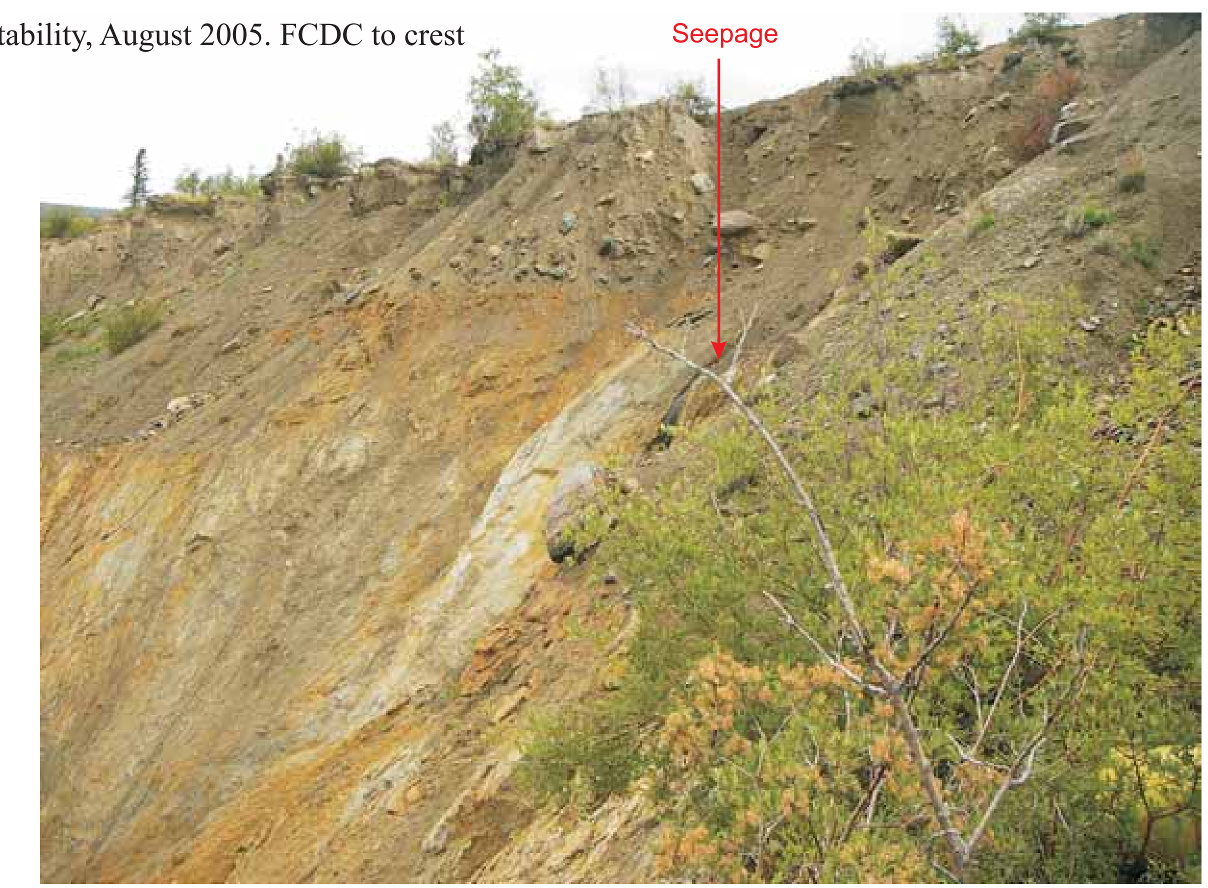
Photograph 27 : Crest above the North instability, August 2005. FCDC to crest at minimum distance.

Photograph 28 : View of the back scarp and slope crest at the FCDC to crest minimum distance, August 2005. North instability.



Photograph 29: Seepage at Overburden / bedrock contact. FCDC to scarp crest distance at minimum, August 2005.
North instability.

Photograph 30 : Overburden scarp above North instability, August 2005.
Note raveling process.

Photograph 31 : Slope benches above North instability. Suggested location for survey monitoring points, August 2005.

APPENDIX II

VISUAL INSPECTION FORM

VISUAL INSPECTION RECORD FORM				
Inspection Date:			Inspected by:	
Location:				
Coordinates			Record of Photographs:	
Northing	Easting	Elevation		
Description of Findings (such as crest regression, cracks, slip surface, seepage, etc):				
Schematic Drawing (if possible include distance, length, height, orientation, etc):				

APPENDIX III

DISTANCE MEASUREMENT RECORD SHEET

DISTANCE MEASUREMENT RECORD

Reference Bar Number:		Installation Date:	
Location:			

Installation Coordinates			Installation and Location Remarks:
Northing	Easting	Elevation	

Date			Distance (meters)	Measured by	Remarks
Month	Day	Year			

Note: Distance measurement should be taken as the shortest distance between the reference bar and the slope/scarp crest.

APPENDIX IV

SURVEY MONITORING POINTS SPREADSHEET

PRISM NO. **PROJECT**

SPECIFIED ORIGIN				
	NORTHING	EASTING	ELEV'N	
RDG				MM DD YY HH MM

	SURVEY RESULTS			DATE			TIME		INCREMENTAL MOVEMENTS								INCREMENTAL VELOCITIES			TOTAL MOVEMENTS RELATIVE TO SPECIFIED ORIGIN							
RDG NO.	NORTHING (m)	EASTING (m)	ELEV'N (m)	DATE MM DD YY	TIME HH MM	Date+Time	DELTA TIME (DAYS)	CUM TIME (DAYS)	DELTA N (mm)	DELTA E (mm)	DELTA H (mm)	DELTA V (mm)	TOTAL (mm)	AZIMUTH (deg)	PLUNGE (deg)	RDG NO.	HORIZ (mm/DAY)	VERT (mm/DAY)	TOTAL (mm/DAY)	TOT. HORZ MOVEMENT (mm)	TOT. VERT MOVEMENT (mm)	TOTAL MOVEMENT (mm)	TOTAL AZIMUTH (deg)	TOTAL PLUNGE (deg)	CUM. TOT. TIME (DAYS)	TOT. VELOCITY (mm/DAY)	COMMENTS
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