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REPORT ON

2009 Faro Pit Slope Movement Monitoring

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REPORT

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1.0 INTRODUCTION

This report presents the results of a visual inspection and of a review of the pit slope monitoring data for the east wall of the Faro Pit, in the area of the Faro Creek Diversion Channel (FCDC), located in the central Yukon Territory. A site visit for geotechnical inspection of the east wall was carried out by our Mr. L. Pohl on August 25, 2009.

The stability conditions of the east wall were previously assessed by Golder Associates Ltd. in September 2002 and August 2005 (References 1 and 2). The latter assessment provided recommendations for a slope monitoring program. A slope monitoring program has been carried out since 2006 by the mine site staff. The review of the 2006, 2007 and 2008 monitoring data were previously carried out by Golder (References 3, 4 and 5). In addition, a site visit for geotechnical inspection of the east wall was also carried out in 2008 (Reference 5).

The east wall stability performance is discussed based upon current field observations and a review of the 2009 pit slope monitoring data. The review of the 2009 monitoring data is presented in a similar format as the previous monitoring data reviews. An updated photographic record is provided. Possible slope movement and crest recession are evaluated. Finally, recommendations are provided regarding the continuation of the monitoring program.

2.0 FARO PIT STATUS

A summary of background information on the Faro Pit and the Faro Creek Diversion Channel (FCDC) and their current status are presented below.

2.1 Faro Pit

The Faro Pit is an inactive open pit mine, roughly elliptical-shaped with the major axis striking northwest/southeast, as shown in Figure 1. The mined-out ore body consisted of en-echelon sulphide lenses striking northwest/southeast and dipping moderately toward the southwest.

Mining of the Faro Pit was completed in 1991. The east and north walls represent the main slopes in terms of ultimate height, with the east wall being the highest and longest wall, and is aligned with the major axis of the elliptical-shaped pit. The crest and toe of the east wall were located at approximately the 1,350 meter (4,430 ft) and 975 meter (3,200 ft) elevations, respectively. The height of the wall was approximately 375 meters (1,230 ft).

According to previous information, in 1992 approximately 3.4 million cubic meters of waste rock were disposed below the 1,112 meter (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.

Since mining operations were discontinued, a pit lake has accumulated at the bottom of the pit. Water pumping and treatment facilities operated at the site control the water elevation in the pit. The water level on June 2009 was at approximately the 1,176 meter (3,859 ft) elevation.

2.2 Faro Creek Diversion Channel (FCDC)

The Faro Creek Diversion Channel (FCDC) and Faro Valley Interceptor (FVI) were originally built as part of the mine development to divert the Faro Creek and surface runoff water from north of the pit area around the Faro Pit and mill site, shown in Figure 1. The diversion channel and valley interceptor collect water from upstream of the waste dumps and the Faro Pit and direct it in a southeasterly direction to the North Fork of Rose Creek.

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

In 2003, remedial works were carried out on the FCDC in an effort to reduce seepage losses, and the channel geometry had some cross-section adjustments. The road located behind the east wall crest and along the west side of the FCDC was also adjusted and levelled, and a safety berm was constructed along the road.

The integrity of the FCDC could be at risk from potential slope instabilities of the east wall, where the distance between the channel and the slope crest varies from about 18 meters at the north upstream portion of the channel to about 100 meters at the south downstream portion.

The stability conditions of the east wall affecting the FCDC are discussed in the following sections.

3.0 EAST WALL STABILITY CONDITIONS

The engineering geology and pit wall stability conditions of the east wall are discussed below. Photographs are shown in Appendix I.

3.1 East Wall Engineering Geology

The mined-out orebody in the Faro Pit consists of sulphide lenses contained within metamorphosed, interbedded, non-calcareous phyllites, schist and calc-silicate rocks. Rocks immediately adjacent to the sulphide lenses have undergone intensive alteration, and are essentially, massive, featureless muscovite/kaolinite clay envelopes. The east wall was excavated along the footwall of the sulphide lenses, *i.e.,* the ore body. The following rock types were exposed on the east wall.

- Westerly dipping biotite-muscovite schist.
- Diorite intrusive in the upper wall.
- North/south trending calc-silicate band in the central portion of the wall.
- Quartzite at the upper end of the south wall.

A previous review 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 defined by the Big Indian Fault.

Other westerly dipping faults have also been interpreted to exist. Also smaller, East/West trending faults were noted on geologic plans.

3.2 East Wall Instability Zones

The previous stability assessments of the east wall indicated the presence of two separate instability areas, referred as the North and South Instability zones. These zones appear to be separated by a North/South trending band of calc-silicate rock. Photographs are presented in Appendix I.

Instability along the east wall has been interpreted to have resulted from the following failure mechanisms that occurred during mining operations.

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

- As the wall height increased with mining, the slope continued to deteriorate, and deeper-seated instability would develop, as the accumulated failure debris would slide down the face along the underlying westerly dipping structures. 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 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.

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 instability zone. A steep backscarp has formed in more competent rock at the crest of the slope, 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. In addition, a steep scarp also exists in the overburden deposits at the crest of the slope, unlike the South instability zone.

The calc-silicate band separating the South and North instabilities represents an area of improved stability relative 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.

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

3.3 East Wall Slope Movement and Crest Recession

Previous field assessments of crest retreat and stability of the east wall were carried out by Golder Associates Ltd. in 2002, 2005 and 2008 (References 1, 2 and 5).

The minimum distance between the crest of the east wall to the FCDC is located above the North instability zone. At this location, the crest of the pit wall exhibits a steep overburden face, with approximately 5 to 6 meters of overburden soils capping the bedrock. In addition, seepage has been observed emanating from the overburden/bedrock contact, causing erosion in the bedrock and debris to accumulate downslope.

The following conditions were observed in the 2005 and 2008 pit wall inspections, which were carried out after the 2003 remedial construction works of the FCDC.

- Within the North instability zone, the minimum distance measured between the crest of the wall and the FCDC was approximately 18.5 meters. To the north of this minimum distance location, a steep overburden scarp had also exhibited on-going recession due to ravelling. The distance from this steep overburden scarp crest to the FCDC was approximately 35 meters.
- Above the South Instability zone, the minimum distance measured between the backscarp crest of the wall and the FCDC was approximately 93 meters.

- The 2008 and 2005 assessments indicated that the North and South instability zones had not significantly changed since the 2002 inspection. Minimum crest distances to the FCDC measured at both North and South instability zones were on the same order as the 2002 inspection.

In regard to the stability condition and crest recession on the east wall, the results of the previous geotechnical inspections and reviews of the monitoring data (References 2 to 5) indicated that the crest recession process was evolving at a slower rate than originally anticipated in 2002 based on historical site information. In addition, the absence of significant increase of instability on the backscarps of the North and South instability zones indicated that large scale deformation associated with major instability of the east wall did not appear to be occurring. This understanding was also corroborated by the monitoring data that indicated that movement of the monitoring prisms that would be expected to accompany large scale deformation associated with major pit wall instability was also not occurring on the east wall.

Overall, these observations corroborated the understanding that catastrophic failure of the bedrock and overburden slopes at the backscarps did not appear to be likely to occur within the near future. However, limited erosion and ravelling instability would likely continue to develop slowly at the crest of the wall due to sloughing or ravelling in the steep overburden face, and to seepage erosion of the underlying bedrock, which undercuts the overburden slope. Since this process could likely be more active at the North instability zone, it has been considered to remain a threat to the FCDC over the long-term, while the South instability would not likely undermine the FCDC for many years.

4.0 2009 SITE INSPECTION

A site visit for geotechnical inspection of the east wall was carried out by our Mr. L. Pohl on August 25, 2009. The pit wall inspection focused on obtaining visual observations for comparison with the findings of the previous inspections. Photographs are presented in Appendix I.

During the site visit, the existing pit wall stability monitoring program and procedures were discussed with the Denison Environmental personnel on site. In addition, a survey of the slope monitoring prims was also carried out by YES (Yukon Engineering Services) during the site visit. The monitoring program is discussed in the following sections of this report.

The east wall instability is still characterized by two failures zones, as the North and South instabilities which are separated by the calc-silicate band zone, as shown on Photographs 1 and 2. The observations of the pit wall inspection are discussed in the following sections.

4.1 North Instability Zone

During the site visit, the east wall in the area of the North instability zone was inspected for signs of increased deformation and movement within the failure zone. The area behind the crest of the wall was also inspected for signs cracking and deformation. Comparison with the records from the previous inspection of the North instability zone which was carried out in 2008 indicated the following.

- The south boundary of the North instability zone, *i.e.,* along the north side of the calc-silicate band, appears to have not changed significantly since the previous assessment.
- The north boundary of the North instability zone appears to have not changed perceptibly since the previous assessment from a visual inspection perspective, and any down slope displacement of the failure debris appears to have been limited.
- The backscarp of the North instability zone do not exhibit signs of perceptible or significant degradation.
- The site reconnaissance inspection showed that there is no evidence of tension cracks behind the 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 backscarp appears to be stable.
- The crest of the pit wall in overburden soils in the area of North instability does not exhibit signs of significant recession or degradation since 2008. Only limited erosion and ravelling was observed to have occurred in localized areas, and is likely due to erosion by surface water run-off over the edge of the wall during the spring season. Variable loss of overburden crest of approximately 0.25 to less than 0.5 metre appears to have occurred along the crest of the pit wall in the areas near reference bars 15355 and 15354. No tension cracks were observed behind the crest of the wall in those areas affected by some crest erosion.

- The minimum distance between the crest of the east wall instability and the FCDC remains in the middle of the North instability zone, as shown in photographs in Appendix I. Crest recession at that location has not been sufficient to significantly reduce the minimum distance, and the actual distance remains in the same order as observed in the 2005 inspection, *i.e.,* approximately 18 metres. Only limited erosion and ravelling was observed to have occurred in this area, and is also likely due to sloughing and erosion of overburden soils by surface water run-off over the edge of the wall during the spring season. No tension cracks were observed behind the crest of the wall in this area.
- Groundwater seepage is still observed at the minimum distance location, and is emanating from the overburden/bedrock contact. The previously existing erosion gully developed in the talus debris on the lower slope below this area has increased in size. The lateral extent of the erosion gully does not appear to have changed, but the depth of the erosion channel appears to have increased, mostly in the debris in the lower slope.

4.2 South Instability Zone

During the site visit, the east wall in the area of the South instability zone was inspected for signs of increased deformation and movement within the failure zone. The area behind the crest of the wall was also inspected for signs of cracking and deformation. Comparison with the records from the previous inspection of the South instability zone which was carried out in 2008 indicated the following.

- The north boundary of the South instability zone has not significantly changed since the 2008 site visit, from a visual inspection perspective. The backscarp at the north end does not show any significant recession or degradation.
- The south boundary of the South instability zone has not changed significantly since the 2008 site visit. Only some ravelling from the backscarp and limited downward displacement of the accumulated failure debris appears to have occurred.
- The crest of the pit wall in the area of the South instability has not changed perceptibly since the previous assessment, from a visual inspection perspective. The crest at the backscarp does not show any significant recession or degradation. Only some limited ravelling from the backscarp appears to have occurred.
- As previously assessed, seepage into the South instability zone is occurring along a creek located in the north portion of the area. Water flows on the surface along the backscarp crest at the north side of the South instability are resulting in saturation of the ground adjacent to the backscarp. However, no evidence was observed that would indicate that the previous existing tension cracks have increased. There was no evidence of other tension cracks behind this saturated area, or behind the backscarp crest outside this saturated area.

- No significant changes were observed to have occurred along the creek draining into the failure zone. An erosion gully has not developed within the coarser grained debris of the South instability zone, and the surface water flowing from the ground behind the crest of the backscarp of the South instability zone is observed to infiltrate the talus debris.

- The minimum distance between the pit wall crest to the FCDC in the area of the South instability zone has not changed significantly since the last inspection in 2005. The distance is on the same order as the previous assessment, *i.e.,* about 90 metres.

5.0 SLOPE MONITORING PROGRAM

Due to the on-going, long-term potential threat to the FCDC, it was recommended that a slope stability monitoring program should be initiated. The recommended monitoring program was presented and discussed in the report following the 2005 site inspection (Reference 2). The recommended monitoring procedures and objectives are summarized in Table 1.

Table 1: Recommended Monitoring Program Summary (Reference 2)

Monitoring Method	Objective	Main Tasks	Frequency
Visual Inspection	■ Crest recession. ■ Stability of the crest of the backscarp. ■ Advance Warning of 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. Area is not accessible during winter.
Distance Measurement	■ Measure crest recession rate.	Measurement of the shortest distance from reference bars to the crest of the slope.	Each spring and fall.
Survey Monitoring Prisms	■ Monitor stability of the overall rock mass at the crest of the east wall.	Survey of ground reference prisms.	Each spring and fall.

Since the initial recommendations, a slope monitoring program was implemented at the Faro Pit with the following components.

- Slope Movement Observations Points – Reference Bars: Reference bars were installed behind the crest of the east wall along the FCDC in order to provide fixed reference points for measurement of the shortest distance to the crest of the wall. The periodic measurement of distances can provide an assessment of crest recession rates. These measurements can be easily carried out by the site staff as topographic survey is not required.
- Monitoring Points: Survey monitoring points were established closer to the crest of the east wall in order to provide monitoring of coordinates of fixed points to allow assessment of displacement and ground movements in the areas that have a greater potential for deformation. In addition, survey monitoring points were also installed uphill beyond the FCDC in the natural ground area. The periodic monitoring of survey points can provide indications of overall stability conditions and of instability mechanisms should instability develop. The topographic survey of these monitoring points has been carried out by YES (Yukon Engineering Services).

During the site inspection carried out in 2008, the locations of reference bars and monitoring points were reviewed. The current monitoring array is presented in Figure 1.

The review of the 2009 monitoring data is presented in the following section.

6.0 REVIEW OF 2009 SLOPE MONITORING DATA

The present review of available monitoring data includes the following data:

- Slope Movement Observations Points – Reference Bars; and
- Monitoring Survey Points.

6.1 Slope Movement Observations Points – Reference Bars

The purpose of the reference bars is to physically measure the rate of erosion or retreat of the crest of the wall, in order to determine if and when the FCDC may be undercut. This is done by installing a series of pins just behind the crest of the slope, and regularly measuring the distance from the pins to the crest.

The current location of the reference bars are shown in Figures 1 and 2, and presented in Table 2.

Table 2: Location of Reference Bars

Reference Bar Number	Installation Coordinates		Bearing of Distance Measurements from Reference Bar to Pit Crest (Azimuth)	Initial Distance Measurements (metres) (July, 2008)
	Northing	Easting		
15351	6,914,799.449	585,229.770	235º	11.19
15352	6,914,849.439	585,204.524	245º	11.25
15353	6,915,216.929	585,064.654	240º	17.41
15354	6,915,241.231	585,025.422	235º	8.06
15355	6,915,292.340	584,978.739	220º	5.59
15356	6,915,336.758	584,936.761	225º	17.55

Since the initial readings after the installation of the new reference bars in 2008, distance measurements were subsequently carried out by the site staff. In addition to the measurements taken by the site staff, readings were also obtained by Golder during the recent site inspection.

The monitoring data is presented in Appendix II. Summary of readings are presented in Table 3.

Table 3: Reference Bars - Measurements

Reference Bar Number	Horizontal Distance (note 1) (metres)			Cumulative Change (metres)	Comments
	July 2008	September 2008	August 2009		
15351	11.19	11.18	11.18	-0.01	Within the accuracy of measurements
15352	11.25	11.25	11.25	0.00	No changes since installation
15353	17.41	17.39	17.00	-0.41	Crest loss
15354	8.06	8.01	8.00	-0.06	Crest loss
15355	5.59	5.58	5.25	-0.34	Crest loss
15356	17.55	17.55	17.55	0.00	No changes since installation

Note 1: All measurements are approximate as the crest surface is irregular.

Figure 2 shows the locations of reference bars and the respective measured distances.

The cumulative changes of distance measurements over the period of July 2008 to August 2009 do not indicate any significant changes or advance of the crest erosion or recession process at the monitoring locations above the South instability zone. Minor changes indicated by these readings are probably within the accuracy of the monitoring system and procedures.

The cumulative changes of distance measurements over the period of July 2008 to August 2009 indicate crest recession at the monitoring locations of reference bars 15353, 15354 and 15355 located above the North instability zone. The crest recession varies from approximately 60 to 410 mm. These monitoring results are in agreement with the field observations of the recent site inspection, and can be attributed to localized erosion due to water surface run-off.

6.2 Monitoring Survey Prisms

The location of the monitoring survey prisms is also shown on Figure 1. The most recent monitoring data is presented in Appendix III.

The location of the existing monitoring survey prisms is considered to be appropriate. Most of the survey prisms (seven prisms) were originally established behind the crest of the east wall, and monitoring displacement within the area of greater potential for ground deformation. In addition, two survey monitoring prisms were installed uphill beyond the FCDC in the natural ground area. These latter prisms are located in an area not expected to exhibit deformation, and can be used to determine the accuracy of the monitoring system. The periodic monitoring of all survey prisms is expected to provide indications of overall stability conditions.

Monitoring survey prisms were installed in August 2006, when initial readings were taken. Since the initial installation of survey prisms, no additional survey prisms were installed. All existing monitoring prisms have been recently surveyed in August 2009. Table 4 presents a summary of cumulative coordinate changes based on the most recent monitoring data.

Table 4: Monitoring of Survey Prisms – August 2006 and August 2009 (Most Recent Survey)

Survey Prism	Initial Installation Coordinates			Cumulative Changes Between August 2006 and August 2009 (metres)		
	Northing	Easting	Elevation	Northing	Easting	Elevation
13872	6915376.00	584838.73	1289.09	0.0148	-0.0141	-0.0222
13873	6915330.14	584922.20	1298.26	0.0187	-0.0045	-0.0603
13874	6915302.30	584972.86	1297.44	0.0067	-0.0155	-0.0499
13875	6915262.94	585078.53	1303.92	0.0030	-0.0285	-0.0677
13876	6915108.37	585074.49	1281.13	-0.0016	-0.0001	-0.0995
13877	6915066.79	585200.63	1300.46	0.0192	-0.0036	-0.0077
13878	6915002.33	585128.77	1280.65	0.0292	-0.0137	0.0589
13879	6914854.63	585228.55	1275.00	0.0181	-0.0071	-0.0509
13880	6914786.53	585240.53	1269.17	0.0254	-0.0026	-0.0395

Table 5 presents the resulting vectors of cumulative apparent displacements based on the changes of monitoring survey prisms between August 2006 and August 2009.

Table 5: Apparent Movement of Monitoring Survey Prisms – August 2006 and August 2009 (Most Recent Survey)

Survey Prism	Total Vector – Changes Between August 2006 and August 2009		
	Total Cumulative Displacement (meter)	Trend (Azimuth Degree)	Plunge (Degree) (1)
13872	0.0302	316	-47
13873	0.0633	346	-72
13874	0.0527	293	-71
13875	0.0735	264	-67
13876	0.0995	184	-89
13877	0.0210	349	-22
13878	0.0672	335	61
13879	0.0545	339	-69
13880	0.0470	354	-57

Notes: Negative plunge = downward direction; Positive plunge = Upward direction.

Figure 3 presents a detailed assessment of changes, cumulative total displacements and displacement vectors from each survey carried out since initial installation of the monitoring survey prisms. In addition, a plot of cumulative displacement over time is also presented for each survey prism.

Table 6 presents a summary interpretation of each survey prism based on the monitoring results.

Table 6: Survey Prisms – Interpretation of Monitoring Points

Survey Prism	Monitoring Interpretation of "Changes" Between August 2006 and August 2009
13872	Located above the North Instability zone. Low total "apparent" displacement since installation (0.0302 meters) with displacement vector indicating downward plunge (-47 degrees) and trending northwest (316º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13873	Located above the North Instability zone. Low total "apparent" displacement since installation (0.0633 meters) with displacement vector indicating downward plunge (-72 degrees) and trending north-northwest (346º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13874	Located above the North Instability zone. Low total "apparent" displacement since installation (0.0527 meters) with displacement vector indicating downward plunge (-71 degrees) and trending west-northwest (293º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13875	Located above North Instability zone, uphill beyond the FCDC. Low total "apparent" displacement since installation (0.0735 meters) with displacement vector indicating downward plunge (-67 degrees) and trending west (264º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13876	Located above the North Instability zone. Low total "apparent" displacement since installation (0.0995 meters) with displacement vector indicating downward plunge (-89 degrees) and trending south (184º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13877	Located between the North and South Instability zones, uphill beyond the FCDC. Low total "apparent" displacement since installation (0.0210 meters) with displacement vector indicating downward plunge (-22 degrees) and trending north-northwest (349º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13878	Located between the North and South Instability zones. Low total "apparent" displacement since installation (0.0672 meters) with displacement vector indicating upward plunge (61 degrees) and trending north-northwest (335º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.

Survey Prism	Monitoring Interpretation of “Changes” Between August 2006 and August 2009
13879	Located above the South Instability zone. Low total “apparent” displacement since installation (0.0545 meters) with displacement vector indicating downward plunge (-69 degrees) and trending northwest (339º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.
13880	Located above the South Instability zone. Low total “apparent” displacement since installation (0.0470 meters) with displacement vector indicating downward plunge (-57 degrees) and trending north (354º azimuth). Fluctuation of monitoring data between different readings indicates that measured displacements are within the monitoring system accuracy. Not exhibiting actual movement and possibly within the monitoring system accuracy.

The monitoring data indicates that survey prisms are not likely exhibiting actual movement, and that “apparent” displacements are probably within the monitoring system accuracy. Furthermore, all survey prisms were installed behind the crest of the wall, where one would expect that any actual movement or deformation would trend predominantly southwest, *i.e.,* movement out of the pit wall would be in a direction mostly perpendicular to the main wall orientation. However, eight survey points are exhibiting “displacement” vectors trending into or parallel to the wall orientation, which indicates these apparent displacements are not likely actual movement of the slope, but just reflect the monitoring system accuracy.

The accuracy of the monitoring system appears to be on the order of +/- 5 cm, which is common for large shot distances, and is usually appropriate for the large scale deformations that the monitoring of survey points are intended to detect. According to information provided previously by YES (Reference 3), the monitoring survey prisms have been surveyed from three “observation (control) points” at fixed locations on the west side of the pit, as shown in Figure 1. Distances across the pit from location of the “control” stations to the monitoring survey prisms are on the order of 800 to 1,400 meters. The current monitoring procedure uses metal bars that are fixed on the ground to which removable survey prisms are attached every time a survey is carried out. It might be possible to improve the survey accuracy and efficiency by permanently attaching the prisms to the metal bars, as is typically done in most open pit mines. It is expected that any variations resulting from the repetitive installation and removal of the prisms would be eliminated, and therefore, the survey accuracy could be improved. In addition, the use of permanent prism installations will reduce the exposure of personnel to the safety hazards related to working within the proximity of the crest of the existing slope. When considering the installation of permanent survey prisms, it is recommended to use high quality weatherproof sealed prisms, which will minimize long-term survey problems related to water infiltration and condensation.

Consequently, the monitoring of survey prisms indicates that on-going, large scale deformation associated with major pit wall instability does not appear to be occurring on the east wall.

7.0 FINAL CONSIDERATIONS AND RECOMMENDATIONS

This letter report has presented the results of the geotechnical inspection and review of the 2009 slope movement of the east wall of the Faro Pit. The review of the 2009 monitoring data has indicated the following.

Monitoring of Reference Bars – The cumulative changes of distance measurements taken since the reference bars were reinstalled in July 2008, do not indicate any significant changes or recession of the east wall crest at the locations where the reference bars have been installed above the South instability zone.

The cumulative changes of distance measurements over the period of July 2008 to August 2009 indicate some crest recession at the monitoring locations of reference bars 15353, 15354 and 15355 located above the North instability zone. The monitoring results indicating crest recession of approximately 0.05 to 0.40 metre are in agreement with the field observations of the recent site inspection. The crest recession can be attributed to localized erosion due to water surface run-off.

Monitoring of Survey Prisms – The review of the 2009 monitoring data indicates that survey prisms are likely not exhibiting actual movement, and that “apparent” displacements are probably within the monitoring system accuracy. Consequently, the monitoring of survey prisms indicates that on-going, large scale deformation associated with major pit wall instability does not appear to be occurring on the east wall.

In regard to the stability condition and crest recession on the east wall, the results of the geotechnical inspection and review of the monitoring data provided the following conclusions.

Crest Recession – No significant changes or recession of the crest appears to have occurred above the South instability zone in comparison to the observations of the geotechnical inspections carried out in 2005 and 2008. During this period, the crest of the pit wall in the area of the South instability zone has not changed perceptibly from a visual inspection perspective. The rock backscarp also does not show any significant recession or degradation, and only some limited ravelling from the backscarp appears to have occurred.

The recent site inspection indicated that the crest of the pit wall in the overburden soils in the area of North instability zone does not exhibit signs of significant recession or degradation in comparison to the observations of the geotechnical inspections carried out in 2005 and 2008. However, some erosion and ravelling was observed to have occurred in localized areas. A variable degree of crest recession appears to have occurred along the crest of the pit wall in the overburden soils, and is a result of erosion by surface water run-off running over the edge of the wall. Crest recession appears to vary from no changes to approximately less than 0.5 metre in a few localized erosion gullies at the crest of the wall. No tension cracks were observed behind the crest of the wall in the areas affected by crest erosion. The rock backscarp at the North instability zone also does not exhibit signs of perceptible or significant recession or degradation.

Consequently, the crest recession in the area of North instability appears to be evolving on a slower rate than originally anticipated in 2002 based on historical site information. However, due to the unpredictable nature of the erosion processes, the potential threat to the FCDC still remains for the long-term.

Overall Stability Conditions - The absence of significant increase of instability on the backscarps of the North and South instability zones, and no evidence of the development of tension cracks behind the crest of the pit wall indicate that large scale deformation associated with major instability of the east wall does not appear to be occurring. This understanding is also corroborated by the available monitoring data that indicates that on-going movement of the monitoring prisms that would be expected to accompany large scale deformation associated with major pit wall instability is also not occurring on the east wall. Currently, instability along the east wall appears to be limited to minor ravelling of localized zones of the crest of the slope, largely due to surface erosion where surface water or groundwater seepage flows over the overburden and rock slope.

Based on the current stability conditions of the east wall of the Faro Pit, it is our understanding that the number and locations of the reference bars and survey prisms are adequate for the on-going monitoring of the pit wall stability. Furthermore, the recommended monitoring procedures including frequency of monitoring are also adequate, and no changes are required at the present time.

The reader is referred to the "Study Limitations" which is provided at the beginning of this document.

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

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

ORIGINAL SIGNED

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LP/AVC/rs

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REFERENCES

1) Golder Associates Ltd. – Report “Faro Creek Diversion Channel Short-term Stability Review, Faro YT”. December 16, 2002.

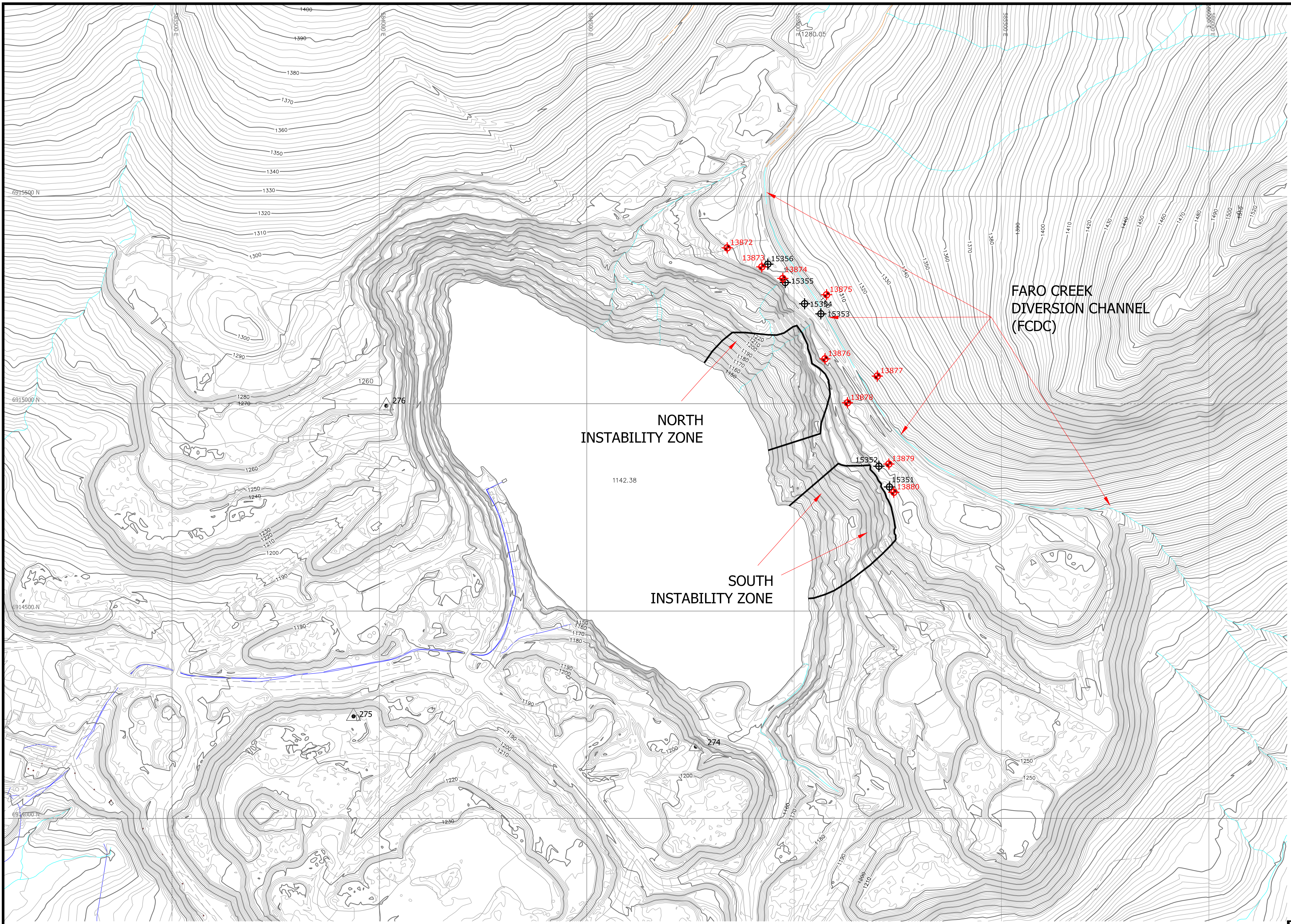
2) Golder Associates Ltd. – Report “Faro Pit Slope Movement Monitoring”. February 8, 2006.

3) Golder Associates Ltd. – Report “Review of 2006 Pit Slope Monitoring Data, Faro Pit”. April 24, 2007.

4) Golder Associates Ltd. – Report “Review of 2007 Pit Slope Monitoring Data, Faro Pit”. March 14, 2008.

5) Golder Associates Ltd. – Report “2008 Faro Pit Slope Movement Monitoring”. December 10, 2008.

6) Faro Mine, Yukon – Topographic Map, 1:20,000. Compiled by The Orthoshop, Calgary. September, 2003.



NOTES:

1) ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.

LEGEND:

⌖ 13878	MONITORING SURVEY PRISMS
⌖ 13912	SLOPE MOVEMENT OBSERVATIONS - REFERENCE BARS
△ 274	OBSERVATION POINTS-FIXED LOCATION

PROJECT

DENISON ENVIRONMENTAL SERVICES
FARO PIT, YUKON

TITLE

REVIEW OF PIT SLOPE MONITORING DATA
SITE PLAN

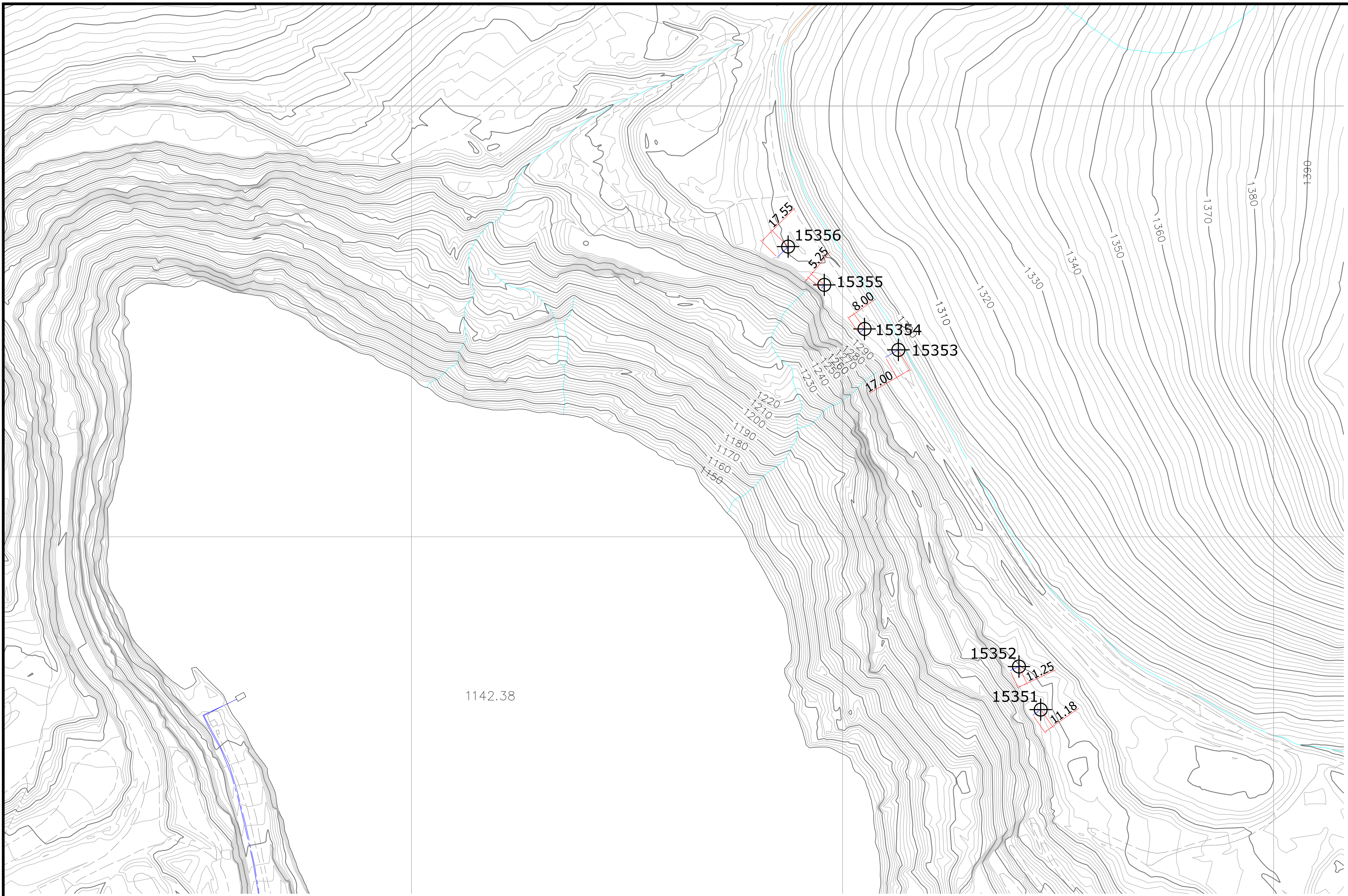
PROJECT No.		09-1426-0019	FILE No.	0914260019-2000-A_01
DESIGN	LP	16SEPT09	SCALE AS SHOWN	REV. -
CADD	LP	16SEPT09	FIGURE 1	
CHECK	LP	16SEPT09		
REVIEW	AVC	16SEPT09		

DRAWING NO.	REFERENCES

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
△	-	-	-	-	-	-

STAMP

REVISION DATE: 09/09/17 11:26AM By: bdrozdiak CADD FILE: N:\Bur-Graphics\Projects\2009\1426\09-1426-0019\Drafting\2000\0914260019-2000-A_01.dwg



NOTES:

1) ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.

LEGEND:

13912 ⌖	SLOPE MOVEMENT OBSERVATIONS - LOCATION OF REFERENCE BARS AND MEASURED DISTANCES (AUGUST 2009)

0 25 50 75 100 125
Scale in Meters

PROJECT

DENISON ENVIRONMENTAL SERVICES
FARO PIT, YUKON

TITLE

LOCATION OF PIT SLOPE MONITORING REFERENCE BARS

PROJECT No.		09-1426-0019	FILE No.	0914260019-2000-A_02
DESIGN	LP	16SEPT09	SCALE AS SHOWN	REV. -
CADD	LP	16SEPT09	FIGURE 2	
CHECK	LP	16SEPT09		
REVIEW	AVC	16SEPT09		

Golder Associates

DRAWING NO.	REFERENCES

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
△	-	-	-	-	-	-

STAMP

REVISION DATE: 09/09/16 01:15PM By: bdrozdiak CADD FILE: N:\Bur-Graphics\Projects\2009\1426\09-1426-0019\Drafting\2000\0914260019-2000-A_02.dwg

Monitoring Data Review

Changes Between Original Coordinates and October 2006

Point #	Δ_N(m)	Δ_E(m)	Δ_Z(m)	Δ_{NxE}(m)
13872	0.0044	-0.0186	-0.0106	0.0191
13873	0.0057	-0.0160	0.0583	0.0170
13874	0.0105	-0.0215	0.0256	0.0239
13875	0.0107	-0.0268	-0.0004	0.0289
13876	0.0011	-0.0140	-0.0506	0.0140
13877	0.0047	-0.0174	-0.0007	0.0180
13878	0.0212	-0.0213	0.0801	0.0301
13879	0.0212	-0.0184	0.0072	0.0281
13880	0.0184	-0.0132	-0.0307	0.0226

Point #	Total Displacement (m)	Trend (deg)	Plunge (deg)
13872	0.0219	283	-29
13873	0.0607	290	74
13874	0.0350	296	47
13875	0.0289	292	-1
13876	0.0525	274	-74
13877	0.0180	285	-2
13878	0.0856	315	69
13879	0.0290	319	14
13880	0.0381	324	-54

Changes Between Original Coordinates and June 2007

Point #	Δ_N(m)	Δ_E(m)	Δ_Z(m)	Δ_{NxE}(m)
13872	0.0111	-0.0209	-0.0189	0.0237
13873	0.0039	-0.0106	0.0214	0.0113
13874	0.0067	-0.0207	-0.0231	0.0218
13875	-0.0007	-0.0210	-0.0042	0.0210
13876	0.0095	-0.0124	-0.0722	0.0156
13877	0.0073	-0.0177	0.0226	0.0191
13878	0.0156	-0.0105	0.0555	0.0188
13879	0.0093	-0.0245	0.0125	0.0262
13880	0.0079	-0.0106	0.0089	0.0132

Point #	Total Displacement (m)	Trend (deg)	Plunge (deg)
13872	0.0303	298	-39
13873	0.0242	290	62
13874	0.0317	288	-47
13875	0.0214	268	-11
13876	0.0739	307	-78
13877	0.0296	292	50
13878	0.0586	326	71
13879	0.0290	291	26
13880	0.0159	307	34

Changes Between Original Coordinates and October 2007

Point #	Δ_N(m)	Δ_E(m)	Δ_Z(m)	Δ_{NxE}(m)
13872	-0.0049	-0.0327	-0.0309	0.0331
13873	-0.0128	-0.0165	-0.0179	0.0209
13874	-0.0119	-0.0305	-0.0251	0.0327
13875	-0.0188	-0.0370	0.0078	0.0415
13877	-0.0019	-0.0402	0.0395	0.0402
13878	0.0035	-0.0279	0.0986	0.0281
13879	0.0084	-0.0348	0.0130	0.0358
13880	0.0410	-0.0301	0.0047	0.0509

Point #	Total Displacement (m)	Trend (deg)	Plunge (deg)
13872	0.0453	261	-43
13873	0.0275	232	-41
13874	0.0413	249	-37
13875	0.0422	243	11
13877	0.0564	267	44
13878	0.1025	277	74
13879	0.0381	284	20
13880	0.0511	324	5

Changes Between Original Coordinates and July 2008

Point #	Δ_N(m)	Δ_E(m)	Δ_Z(m)	Δ_{NxE}(m)
13872	0.0163	-0.0161	0.0319	0.0229
13873	0.0061	-0.0016	-0.0308	0.0063
13874	0.0139	-0.0213	-0.0066	0.0254
13875	0.0168	-0.0300	-0.0112	0.0344
13876	0.0132	-0.0029	-0.0060	0.0135
13877	0.0129	-0.0072	-0.0174	0.0148
13878	0.0286	-0.0072	0.0741	0.0295
13879	0.0251	-0.0078	-0.0115	0.0263
13880	0.0248	-0.0044	-0.0161	0.0252

Point #	Total Displacement (m)	Trend (deg)	Plunge (deg)
13872	0.0393	315	54
13873	0.0314	345	-78
13874	0.0263	303	-15
13875	0.0362	299	-18
13876	0.0148	348	-24
13877	0.0228	331	-50
13878	0.0798	346	68
13879	0.0287	343	-24
13880	0.0299	350	-33

Changes Between Original Coordinates and October 2008

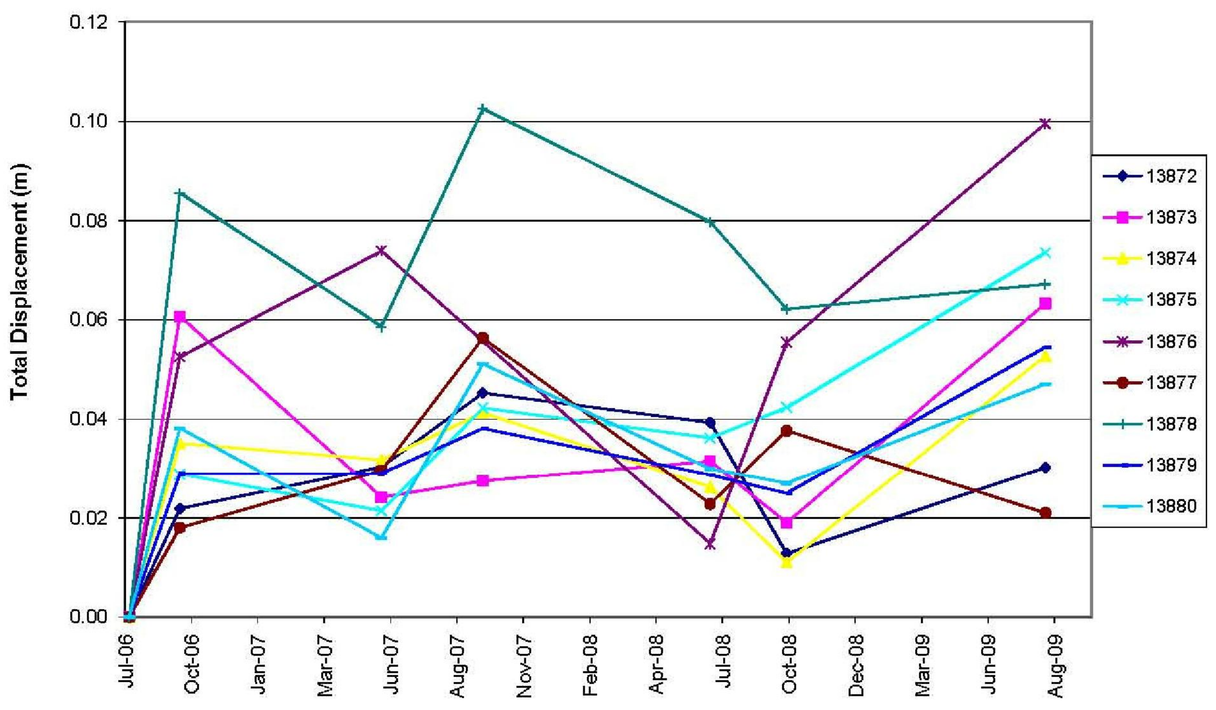
Point #	Δ_N(m)	Δ_E(m)	Δ_Z(m)	Δ_{NxE}(m)
13872	0.0020	-0.0120	-0.0040	0.0122
13873	0.0090	-0.0050	0.0160	0.0103
13874	0.0010	-0.0110	-0.0010	0.0110
13875	-0.0030	-0.0360	-0.0220	0.0361
13876	-0.0060	-0.0040	-0.0550	0.0072
13877	0.0080	-0.0140	0.0340	0.0161
13878	0.0270	-0.0180	0.0530	0.0324
13879	0.0210	-0.0100	0.0090	0.0233
13880	0.0220	-0.0070	0.0140	0.0231

Point #	Total Displacement (m)	Trend (deg)	Plunge (deg)
13872	0.0128	279	-18
13873	0.0190	331	57
13874	0.0111	275	-5
13875	0.0423	265	-31
13876	0.0555	214	-83
13877	0.0376	300	65
13878	0.0621	326	59
13879	0.0249	335	21
13880	0.0270	342	31

Changes Between Original Coordinates and August 2009

Point #	Δ_N(m)	Δ_E(m)	Δ_Z(m)	Δ_{NxE}(m)
13872	0.0148	-0.0141	-0.0222	0.0204
13873	0.0187	-0.0045	-0.0603	0.0192
13874	0.0067	-0.0155	-0.0499	0.0169
13875	0.0030	-0.0285	-0.0677	0.0287
13876	-0.0016	-0.0001	-0.0995	0.0016
13877	0.0192	-0.0036	-0.0077	0.0195
13878	0.0292	-0.0137	0.0589	0.0323
13879	0.0181	-0.0071	-0.0509	0.0194
13880	0.0254	-0.0026	-0.0395	0.0255

Point #	Total Displacement (m)	Trend (deg)	Plunge (deg)
13872	0.0302	316	-47
13873	0.0633	346	-72
13874	0.0527	293	-71
13875	0.0735	264	-67
13876	0.0995	184	-89
13877	0.0210	349	-22
13878	0.0672	335	61
13879	0.0545	339	-69
13880	0.0470	354	-57



Cumulative Displacement Plot

PROJECT

DENISON ENVIRONMENTAL SERVICES
FARO PIT, YUKON

TITLE

REVIEW OF PIT SLOPE MONITORING SURVEY PRISMS

Golder Associates
Greater Vancouver Office, BC

PROJECT No. 09-1426-0019			PHASE No.	2000
DESIGN	LP	02NOV09	SCALE AS SHOWN	REV. –
CADD	OD	02NOV09	**FIGURE 3**	
CHECK				
REVIEW				

APPENDIX I

Photographs

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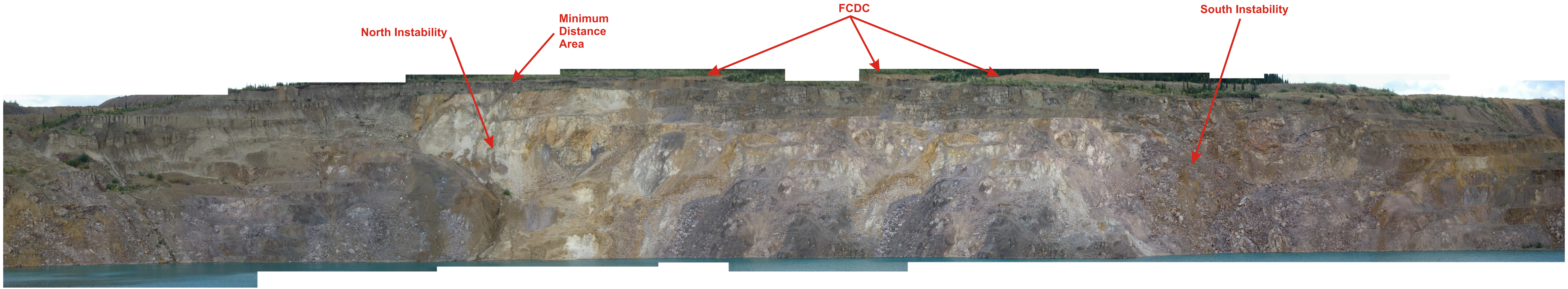
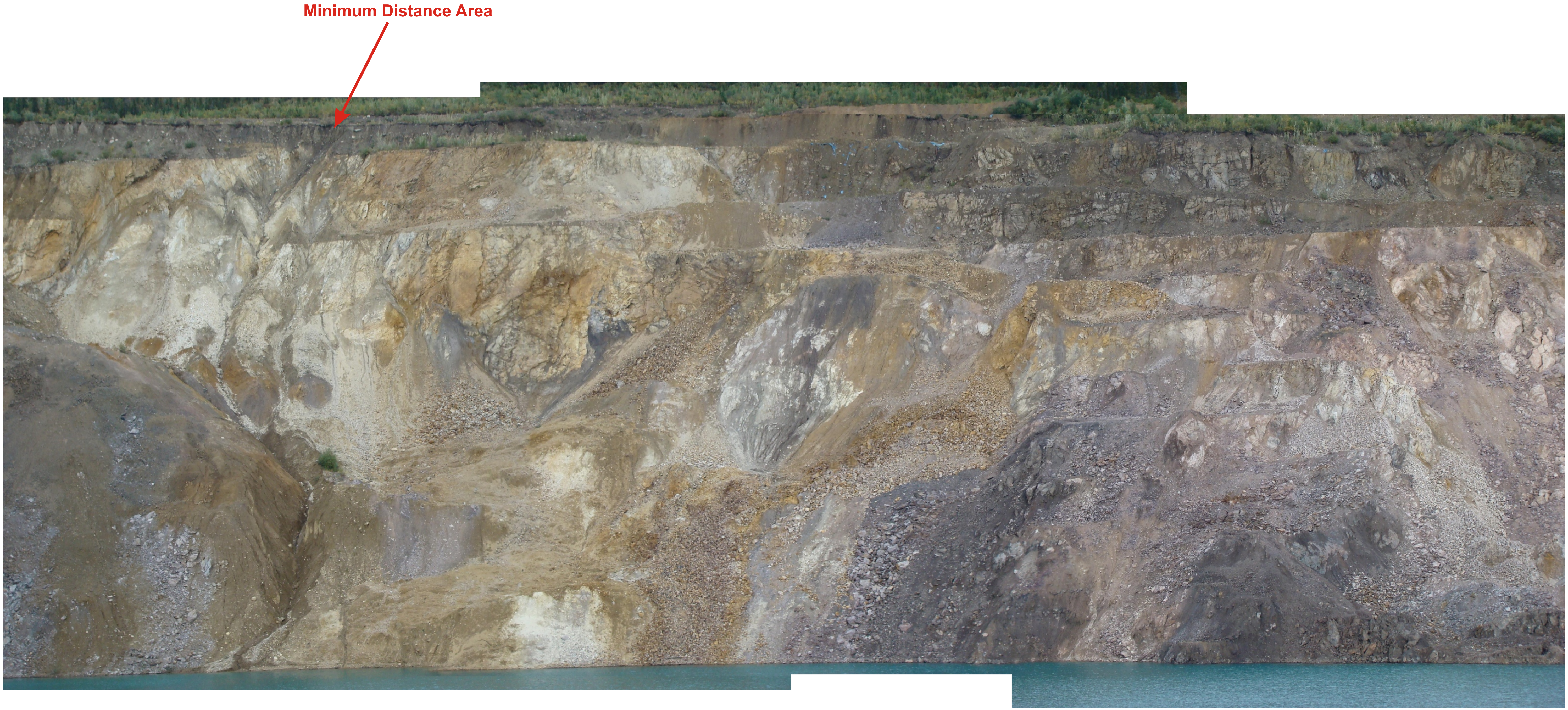


Photograph 1 : Panoramic view of the East Wall (August, 2009).

Photograph #2 : Panoramic view of the east wall (August 2009).

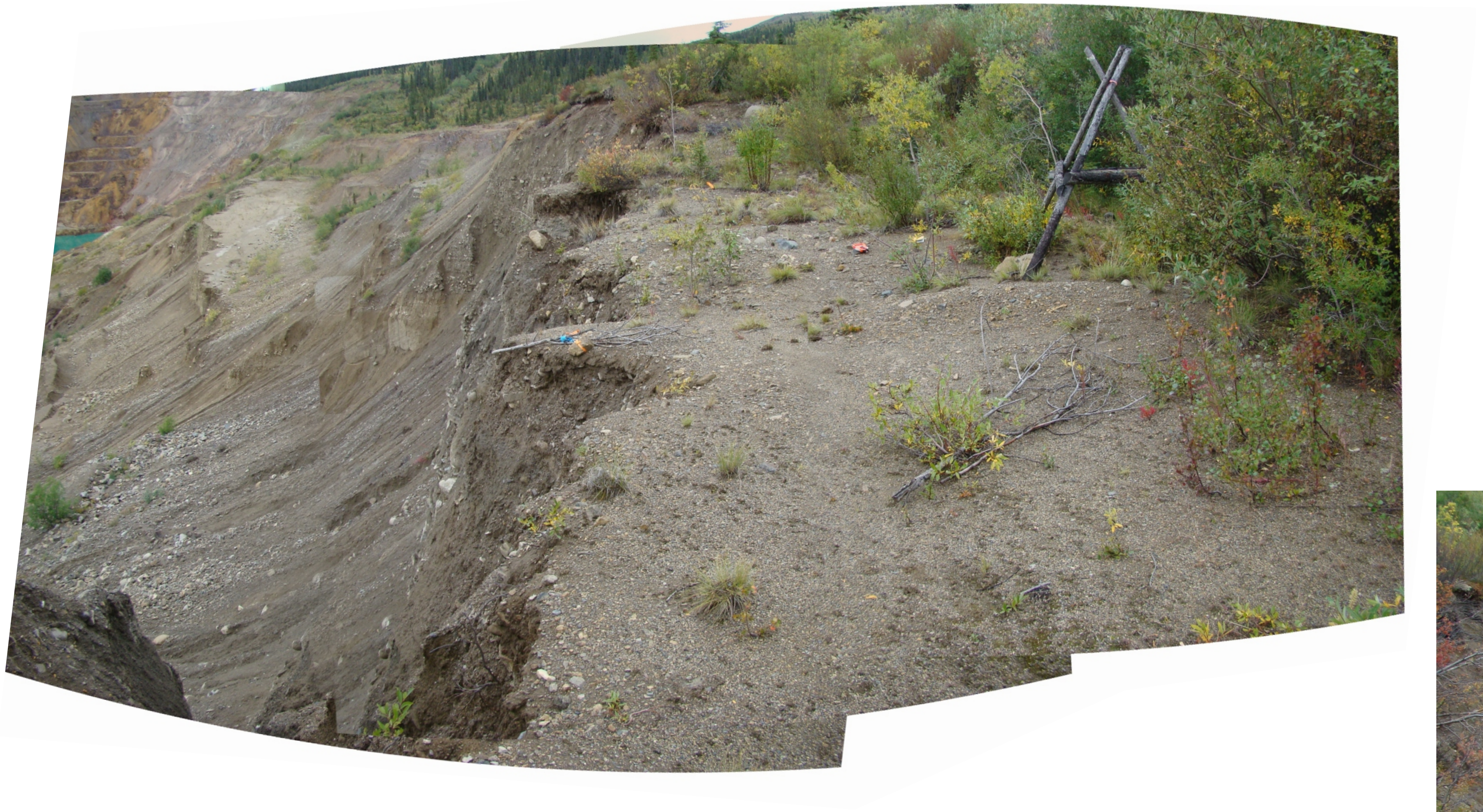


Photograph #3 : North instability zone (August 2009).

Photograph #4 : North instability zone. View of the crest of the pit wall (August 2009).

Photograph #5 : North instability zone. View of crest pit wall on overburden soils (August 2009).

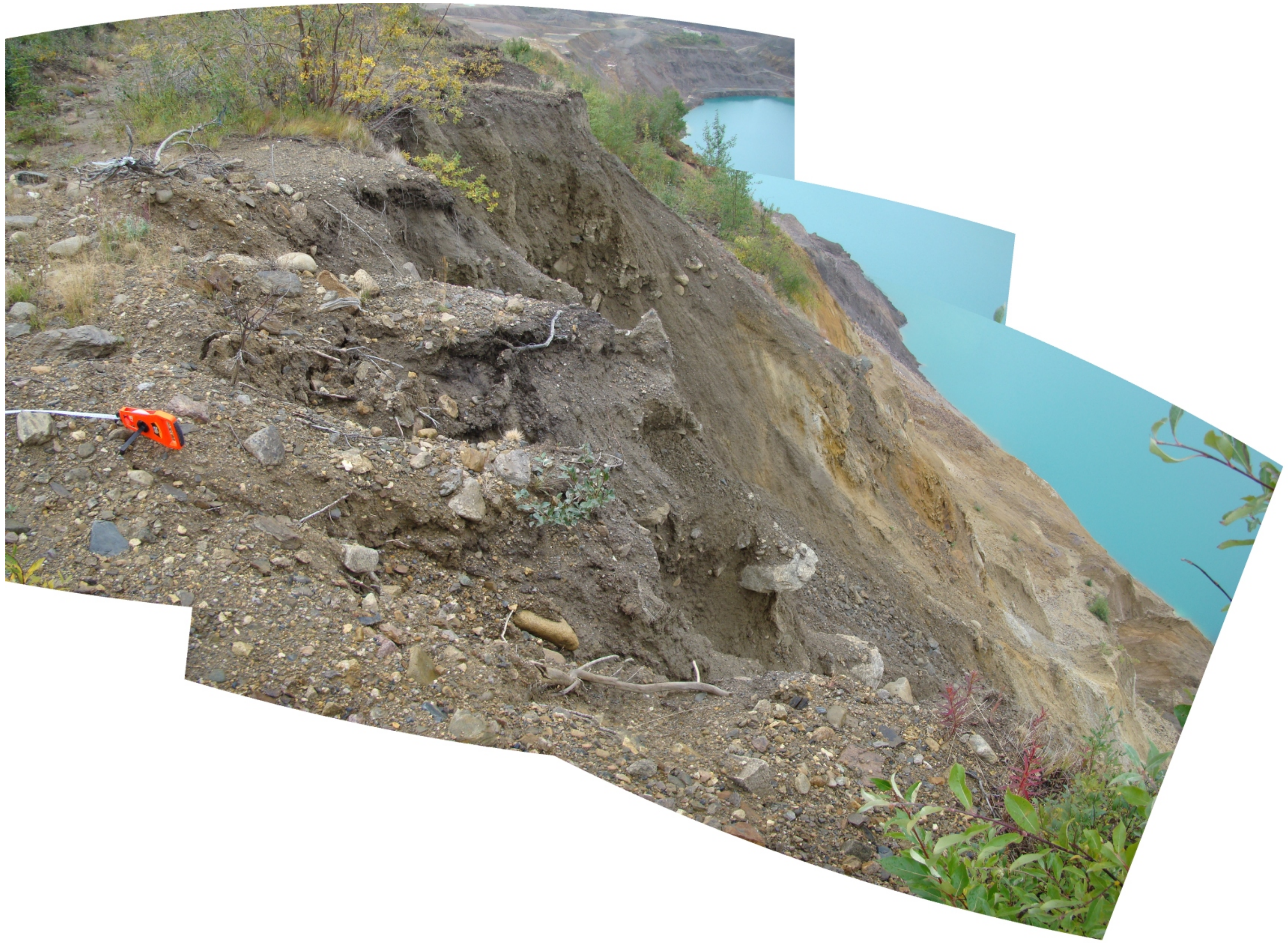
Photograph 6 : North instability zone. View of crest of the pit wall near reference bar 15354 (August 2009).



Photograph 7 : North instability zone. View of crest of the pit wall near reference bar 15355 (August 2009).

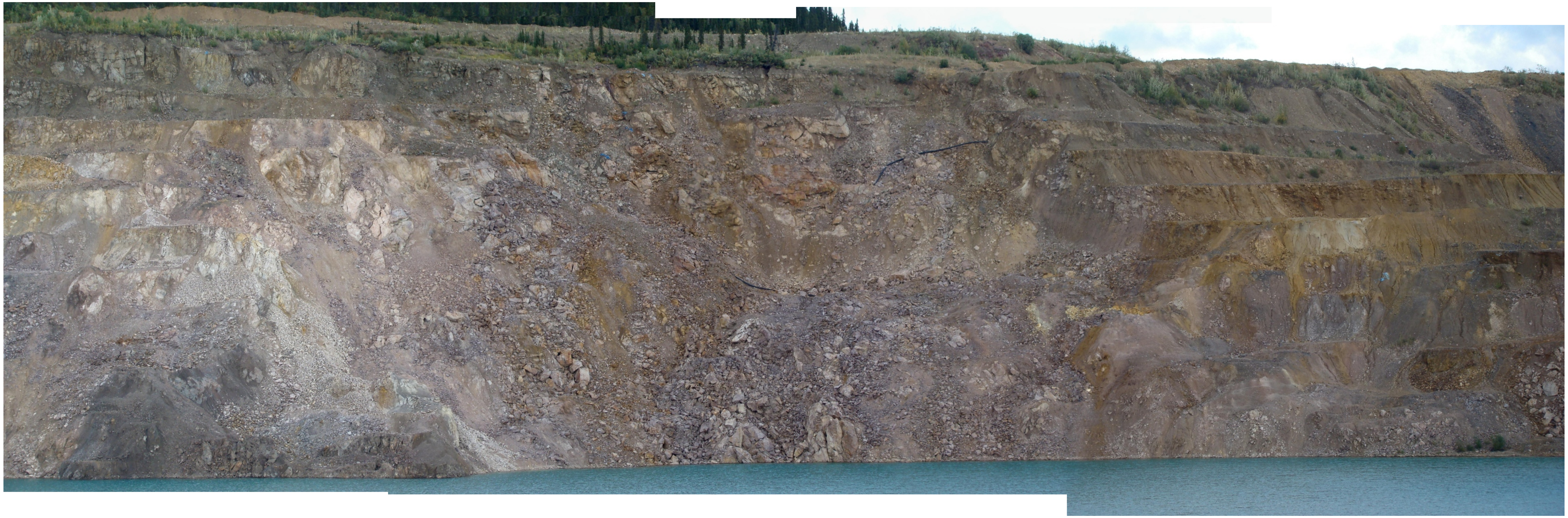
Photograph 8 : North instability zone. View of crest of the pit wall on overburden soils near reference bar 15355 (August 2009).

Photograph 9 : North instability zone. Minimum distance area near reference bar 15353 (August 2009).



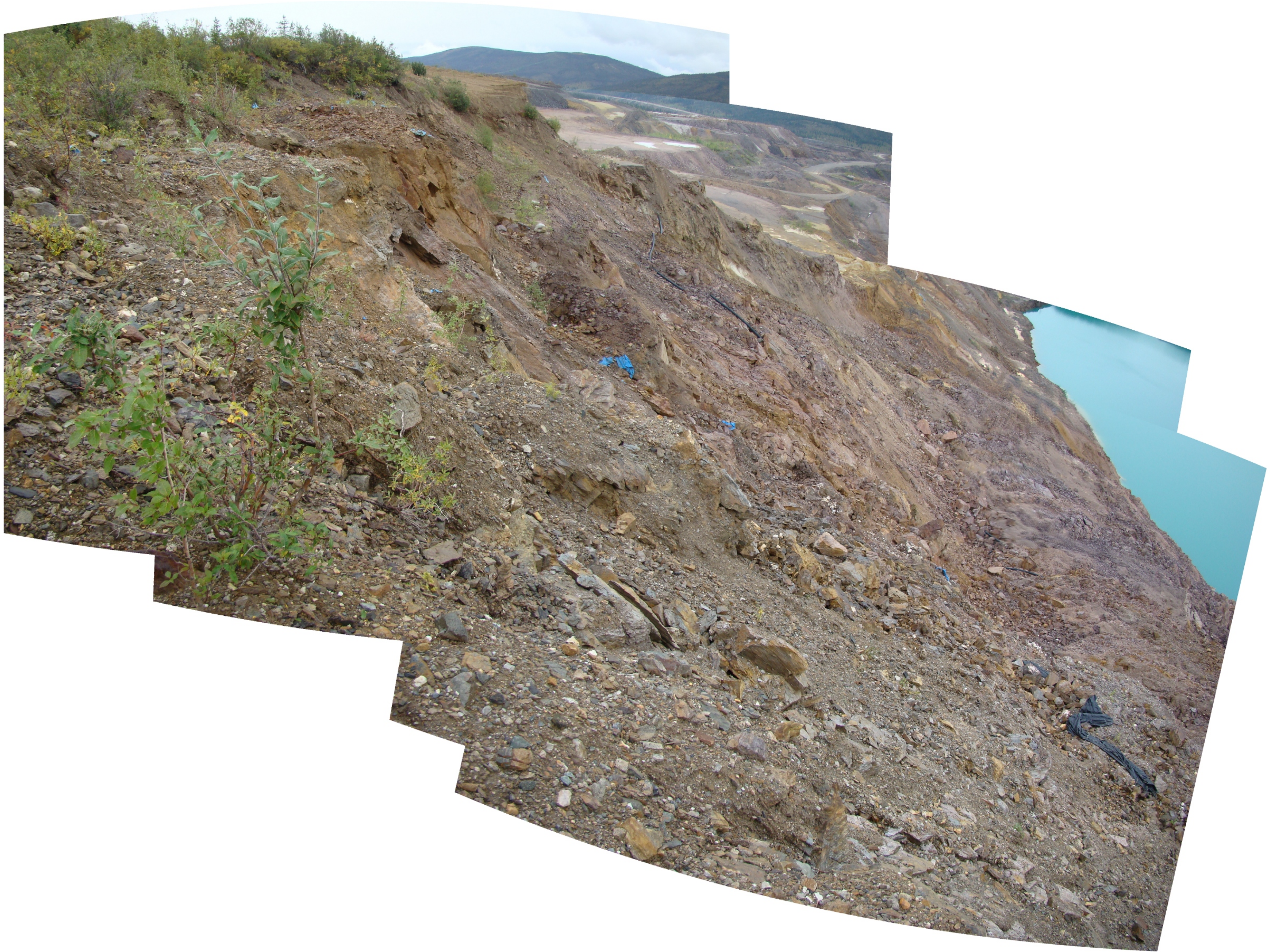
Photograph 10 : North instability zone. Minimum distance area near reference bar 15353 (August 2009).

Photograph 11 : North instability zone. Erosion gully (August 2009).



Photograph 12 : South instability zone. (August 2009).

Photograph 13 : South instability zone. View of the crest of the pit wall. (August 2009).



Photograph 14 : South instability zone. View of the back-scarp looking south (August 2009).

APPENDIX II

Reference Bars

Faro Pit Wall Crest Recession

Date (note 1)	Old Pin #er	New Pin #er	Distance (m)	Notes
July 8, 2008	13911	15356	17.55	
July 8, 2008	13909	15355	5.59	
July 8, 2008	13910	15354	8.06	
July 8, 2008	13908	15353	17.41	
July 8, 2008	13912	15352	11.25	
July 8, 2008	N/A	15351	11.19	New Pin
Date (note 2)	**Old Pin #er**	**New Pin #er**	**Distance (m)**	**Notes**
August 20, 2008	13911	15356	17.55	
August 20, 2008	13909	15355	5.58	
August 20, 2008	13910	15354	8.04	Some minor rain erosion
August 20, 2008	13908	15353	17.40	
August 20, 2008	13912	15352	11.25	
August 20, 2008	N/A	15351	11.19	
Date (note 2)	**Old Pin #er**	**New Pin #er**	**Distance (m)**	**Notes**
September 22, 2008	13911	15356	17.55	
September 22, 2008	13909	15355	5.58	
September 22, 2008	13910	15354	8.01	Some minor rain erosion
September 22, 2008	13908	15353	17.39	
September 22, 2008	13912	15352	11.25	
September 22, 2008	N/A	15351	11.18	
Date (note 3)	**Old Pin #er**	**New Pin #er**	**Distance (m)**	**Notes**
August 25, 2009	13911	15356	17.55	
August 25, 2009	13909	15355	5.25	Crest erosion
August 25, 2009	13910	15354	8.00	Some minor crest erosion
August 25, 2009	13908	15353	17.00	Crest erosion
August 25, 2009	13912	15352	11.25	
August 25, 2009	N/A	15351	11.18	

Notes:
1) Distance measurements taken during Golder site visit on July, 2008.
2) Distance measurements taken by mine staff.
3) Distance measurements taken during Golder site visit on August, 2009.

APPENDIX III

Monitoring Prisms

Datum: NAD27
Geoid Model: GSD95
Date: August 25,2009
File: August09.dat

Observation Points (Control) - Fixed Location

Point #	Northing	Easting	Elev.
274	6914173.162	584763.276	1195.519
275	6914246.141	583937.823	1208.705
276	6914995.038	584016.996	1255.410

Standard Deviations @ 95th Percentile

σ_N (mm)	σ_E (mm)	σ_Z (mm)
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0

Original Coordinates (Monitoring Points) August 2006

Point #	Northing	Easting	Elevation
13872	6915376.00	584838.73	1289.09
13873	6915330.14	584922.20	1298.26
13874	6915302.30	584972.86	1297.44
13875	6915262.94	585078.53	1303.92
13876	6915108.37	585074.49	1281.13
13877	6915066.79	585200.63	1300.46
13878	6915002.33	585128.77	1280.65
13879	6914854.63	585228.55	1275.00
13880	6914786.53	585240.53	1269.17

σ_N (mm)	σ_E (mm)	σ_Z (mm)
5.5	5.8	14.8
5.3	5.5	14.6
6.1	6.0	15.9
7.1	6.7	18.7
7.1	6.3	19.5
7.6	6.3	19.9
7.0	5.7	17.1
7.3	5.3	18.5
7.7	5.4	19.4

Coordinates (Monitoring Points) October 2006

Point #	Northing	Easting	Elevation
13872	6915376.01	584838.71	1289.08
13873	6915330.15	584922.18	1298.32
13874	6915302.31	584972.83	1297.46
13875	6915262.95	585078.50	1303.92
13876	6915108.37	585074.48	1281.08
13877	6915066.79	585200.61	1300.46
13878	6915002.36	585128.75	1280.73
13879	6914854.65	585228.53	1275.01
13880	6914786.55	585240.51	1269.13

σ_N (mm)	σ_E (mm)	σ_Z (mm)
6.3	6.9	33.3
8.0	1.1	47.0
7.0	7.0	34.5
7.3	6.6	35.8
7.0	5.9	33.1
7.7	6.0	34.7
7.2	5.6	32.2
7.6	5.3	31.6
7.6	5.1	30.6

Coordinates (Monitoring Points) June 2007

Point #	Northing	Easting	Elevation
13872	6915376.01	584838.71	1289.07
13873	6915330.14	584922.19	1298.28
13874	6915302.31	584972.84	1297.41
13875	6915262.94	585078.51	1303.92
13876	6915108.38	585074.48	1281.06
13877	6915066.79	585200.61	1300.48
13878	6915002.35	585128.76	1280.71
13879	6914854.64	585228.52	1275.01
13880	6914786.53	585240.51	1269.17

σ_N (mm)	σ_E (mm)	σ_Z (mm)
6.1	6.9	11.5
6.3	6.7	11.8
6.5	6.6	11.9
6.9	6.6	12.4
6.7	5.9	11.5
7.3	5.9	12.0
6.9	5.6	11.2
7.3	5.2	11.0
7.4	5.1	10.7

Coordinates (Monitoring Points) October 2007

Point #	Northing	Easting	Elevation
13872	6915376.00	584838.70	1289.06
13873	6915330.13	584922.18	1298.24
13874	6915302.29	584972.83	1297.41
13875	6915262.92	585078.49	1303.93
13877	6915066.78	585200.58	1300.50
13878	6915002.34	585128.74	1280.75
13879	6914854.63	585228.51	1275.01
13880	6914786.57	585240.49	1269.17

σ_N (mm)	σ_E (mm)	σ_Z (mm)
6.1	6.9	11.5
6.3	6.7	11.8
6.5	6.6	11.9
6.9	6.6	12.4
7.3	5.9	12.0
6.9	5.6	11.2
7.3	5.2	11.0
7.4	5.1	10.7

Coordinates (Monitoring Points) July 2008

Point #	Northing	Easting	Elevation
13872	6915376.02	584838.71	1289.12
13873	6915330.15	584922.20	1298.23
13874	6915302.31	584972.83	1297.43
13875	6915262.95	585078.50	1303.91
13876	6915108.39	585074.49	1281.12
13877	6915066.80	585200.62	1300.44
13878	6915002.36	585128.76	1280.72
13879	6914854.65	585228.54	1274.99
13880	6914786.55	585240.52	1269.15

σ_N (mm)	σ_E (mm)	σ_Z (mm)
6.2	6.9	22.3
6.5	6.8	22.9
6.7	6.7	23.2
7.1	6.6	24.1
6.8	5.9	22.2
7.5	5.9	23.4
7.0	5.6	21.7
7.4	5.3	21.3
7.5	5.1	20.6

Coordinates (Monitoring Points) October 2008

Point #	Northing	Easting	Elevation
13872	6915376.00	584838.72	1289.09
13873	6915330.15	584922.19	1298.28
13874	6915302.30	584972.85	1297.44
13875	6915262.93	585078.49	1303.90
13876	6915108.37	585074.49	1281.07
13877	6915066.79	585200.61	1300.49
13878	6915002.36	585128.75	1280.70
13879	6914854.65	585228.54	1275.01
13880	6914786.55	585240.52	1269.18

σ_N (mm)	σ_E (mm)	σ_Z (mm)
8.7	9.8	31.6
9.2	9.6	32.3
9.4	9.4	32.8
10.0	9.3	34.1
9.7	8.4	31.4
10.6	8.4	33.1
9.9	8.0	30.7
10.5	7.4	30.1
10.6	7.2	29.2

Coordinates (Monitoring Points) August 2009

Point #	Northing	Easting	Elevation
13872	6915376.016	584838.717	1289.068
13873	6915330.160	584922.193	1298.200
13874	6915302.306	584972.841	1297.387
13875	6915262.939	585078.500	1303.852
13876	6915108.370	585074.493	1281.030
13877	6915066.804	585200.621	1300.452
13878	6915002.363	585128.755	1280.709
13879	6914854.644	585228.540	1274.949
13880	6914786.552	585240.522	1269.126

σ_N (mm)	σ_E (mm)	σ_Z (mm)
8.7	9.8	31.6
9.2	9.6	32.3
9.4	9.4	32.8
10.0	9.3	34.1
9.7	8.4	31.4
10.6	8.4	33.1
9.9	8.0	30.7
10.5	7.4	30.1
10.6	7.2	29.2

Datum:	NAD83
Geoid Model:	GSD95
Date:	August 25,2009
File:	August09.dat

Point #	Northing	Easting	Elevation
274	6914347.736	584658.819	1195.447
275	6914420.710	583833.357	1208.648
276	6915169.611	583912.542	1255.356
13872	6915550.595	584734.273	1289.068
13873	6915504.739	584817.749	1298.200
13874	6915476.885	584868.397	1297.387
13875	6915437.519	584974.057	1303.852
13876	6915282.950	584970.048	1281.030
13877	6915241.384	585096.177	1300.452
13878	6915176.943	585024.309	1280.709
13879	6915029.223	585124.093	1274.949
13880	6914961.131	585136.075	1269.126

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