October 15, 2025 Reference No. CA0012787.0623-001-RPT-Rev0

Mr. Kevin Kehl
Duntroon Quarry
Walker Aggregates Inc.
9861 County Road 91
Duntroon, Ontario, L0M 1H0

REPORT – GEOTECHNICAL INSPECTION OF THE HAULAGE TUNNEL AT THE DUNTROON QUARRY

Dear Mr. Kehl,

WSP Canada Inc. (WSP) was retained by Walker Aggregates Inc. (Walker) to carry out a geotechnical inspection of the haulage tunnel at the Duntroon Quarry in Duntroon, Ontario. The inspection, which consisted of visual observations of the tunnel and portal faces, was carried out to assess the existing condition of the shotcrete lining, rock bolts and wire mesh in order to identify any potential areas of concern including any potential rockfall hazards.

WSP (previously Golder) was involved in development of the tunnel design and the preparation of construction drawings and technical specifications. During the construction, between July and early December 2015, WSP was also on site to monitor the construction activities and provide technical advice.

The tunnel inspection was carried out on October 23, 2023, and it is our understanding that this was the first geotechnical inspection since the completion of the tunnel.

In April 2024, a meeting between the Town of Clearview and WSP was held regarding a number of items including the stability of the tunnel during operations, during rehabilitation (e.g. lake filling), and post licence surrender. The Town of Clearview has indicated that following completion of quarry activities, any tunnel infrastructure that remains must not impact the future public use of Township Road 91. A Terms of Reference (TOR) was submitted to the Township of Clearview, following the meeting, for a geotechnical study that was to be completed to assess current and future use of the existing haulage tunnel at the site.

This report is amended to include recommendations for long term stability and inspections during lake filling and post licence surrender.

BACKGROUND

The Duntroon Quarry is situated along County Road 91, west of the village Duntroon, Ontario with the main quarry located on the south side of County Road 91. The tunnel was constructed as a horseshoe shaped, one-lane truck tunnel with a total length of approximately 87 metres, a height of approximately 8.6 metres and a width of approximately 10 m. The tunnel excavation was carried out by drilling and blasting methods. The crown was supported with rock bolts and shotcrete reinforced with welded wire mesh. In order to prevent a significant build-up of water pressure behind the shotcrete, drainage composite panels were installed in strips across the tunnel crown to drain water from behind the shotcrete towards the sides of the tunnel.

Except for short sections at the tunnel entrances, no rock support was installed in the tunnel walls. The first 3 metres of the tunnel walls at each end of the tunnel, which are expected to be impacted more heavily by weathering, were supported with rock bolts and fibre reinforced shotcrete. The drainage panels in these areas were installed from the crown down to the tunnel floor.

Rockfall protection mesh, pinned to the rock faces with rock bolts and mesh pins, was installed on both portal faces above the tunnel. Fibre-reinforced shotcrete was applied to the rock faces immediately around the tunnel opening and the tunnel brow was supported with rock bolts.

SITE INSPECTION OBSERVATIONS

The inspection was carried out on foot from the tunnel floor and from a man lift operated by Walker personnel. The inspection consisted of a visual assessment of the tunnel and the portal faces and a hammer sounding of selective areas of the shotcrete in the tunnel crown. Based on conversation with Mr. Robert McKean, Quarry Superintendent, there have been no rockfall incidents or issues with the tunnel lining reported since the tunnel opened in December 2015. WSP was informed that icicles do form on the tunnel crown during the winter months, and they are being regularly removed.

Tunnel Portals

The condition of the rockfall protection mesh and rock bolts installed in the area above the tunnel on both portal faces was inspected for signs of corrosion. The condition of the shotcrete applied around the tunnel entrance on both the south and the north portal faces was assessed visually for evidence of deterioration, such as cracking or spalling, and possible degradation due to groundwater seepage.

South Tunnel Portal

In general, the shotcrete around the tunnel entrance was in good condition (see Plate 1 in Appendix A). The portal face was dry during the inspection. Several minor cracks in the shotcrete were noted directly above the tunnel entrance that do not require remediation at this time. The exposed rock bolt heads and plates were found to be in good condition with no visible signs of significant corrosion. Plates appeared to be tight to the mesh except for one plate located close to bench on the west side of the portal (indicated on Plate 2). A significant amount of rock debris (individual pieces approx. 5 to 10 cm across) was noted to have accumulated behind the mesh particularly along the lower rock face, in the area directly above the tunnel portal. Overall, the conditions of rock faces above and around the portal appear stable. On both sides of the portal along the toe of the rockface, there are areas with accumulated rock debris. A blocky and weathered area was noted along the upper rock face in an area not covered with rockfall protection mesh. Several blocks located close to the crest appear loose and smaller overhangs on the rock faces were noted on both, the east and west side of the portal (Plate 3); however, these areas are located at a distance from the tunnel access road and as such they do not pose a safety concern for

tunnel traffic. A comparison of the current conditions with the photographs taken during the final tunnel inspection in 2015, indicated no major changes in rock conditions along the South Portal.

North Tunnel Portal

Cracking and spalling of the shotcrete, locally with exposed rock areas, was noted over much of the east side of North Portal, including the portal brow area, while the shotcrete on the west side of the portal was in fair to good condition (see Plates 4 and 5). The portal face was dry during the inspection. Consideration should be given to removal of any loose and cracked shotcrete and covering the areas of exposed rock with a new layer of shotcrete. Rock bolts installed along the rock face above the tunnel portal were in good condition. All rock bolt plates were observed to be tight to the mesh and no visible signs of corrosion were noted on the bolt heads. A considerable amount of rock debris was noted behind the rockfall protection mesh along the entire rock face. Large overhanging blocks, located along the crest area, were also observed; however, these blocks appear to be stable. The rock face to the east, adjacent to the portal area, has undergone significant weathering such that a significant amount of rock debris has accumulated at the toe of the face (Plate 6). There is a rockfall hazard potential from this area due to the quantity of loose blocks which may dislodge with the possibility that some of the falling material could bounce or roll towards the haul road. Consideration should be given to cleaning the accumulated rock debris at the toe of the rock face and installing a concrete jersey barrier at the entrance to the tunnel to prevent blocks from reaching the haul road. The rock face on the west side is nearly vertical and fairly clean with a smaller overhang below the crest that currently appears stable. The rock face parallel to the haul road is considerably more weathered with many loose blocks evident. Potential rockfalls from this area are currently not considered a major hazard for the road since the debris will most likely be retained in the 5 to 6 m wide catchment ditch (Plate 7).

Tunnel

A chainage system was established in the approximately 87 m long tunnel with chainage 0+00 m at the south portal and chainage 0+87 m at the north portal. Observations within the tunnel are provided with reference to this chainage. As mentioned previously, shotcrete was installed in the crown and haunches, while the tunnel walls were left unsupported. Shotcrete areas in the tunnel haunches and tunnel crown that showed signs of deterioration and appeared to be hollow after sounding the shotcrete with a hammer were marked with spray paint during the inspection. In general, since the debris from the haunch and crown areas will tend to fall onto the travelled portion of the tunnel road, it is recommended that these areas be monitored regularly for signs of further cracking or delamination and if significant changes occur WSP should be notified. Due to dust accumulated along the walls, it was difficult to inspect the rock mass conditions; however, some areas were clearly observed to be more weathered than others. The areas along the vertical tunnel walls are of less concern since the debris from these areas will generally fall into the ditches along the tunnel sides, though any rockfalls should be noted and reviewed by a geological/geotechnical engineer as this may be a precursor to future rockfalls. The original bolts in the crown of the tunnel are mostly covered by the shotcrete and their condition could not be assessed visually during the inspection.

West Tunnel Wall

Shotcrete applied over a 3 m length at both ends of the west wall appears to be in good condition. A few minor cracks in the shotcrete were noted at approximately chainage 0+02 and 0+06 m and some areas with cracked/ missing shotcrete, possibly caused by impacts with tunnel traffic, were observed at 0+86 m. The west wall appears mostly dry, with some dampness noted at 0+06 m and between 0+16 and 0+25 m (Plate 8). Drainage

strips are mostly visible in the haunch area, but in some areas the ends of the drainage strips appear to be covered with shotcrete. In general, the rock mass conditions along the west wall appear to be in fair to good condition with some shorter areas being more weathered and blockier than others. Between chainage 0+23 m and 0+28 m the rock mass is very weathered with a diagonal undulating discontinuity extending towards the tunnel haunch with an orientation of 50-70º/205º (dip/dip direction) and a 2 to 4 cm wide aperture (Plate 9). Loose, small to medium sized blocks were noted along the discontinuity that could fall into the ditch. Relative to the previous inspection (after tunnel completion in 2015), it appears no major changes have occurred in this zone (see Figure **1** below). The main concern, however, is the large block sloping towards the haul road which might become unstable over time due to further weathering and deterioration of the supporting rock. Consideration should be given to scaling any loose rock and applying mesh reinforced shotcrete in this area to prevent further rock mass deterioration. A subvertical discontinuity with a similar orientation was noted at chainages 0+44 m and at 0+69 m (Plate 10). At these locations, the tunnel walls are partially undermined and have irregular surfaces with small loose blocks noted along the discontinuities; however, these areas are not of concern as any rockfall from these locations will likely be contained by the ditch.

Figure 1: Weathered rock mass at chainage 0+23 m, photograph taken in 2015 (left) and photograph taken in 2023 (right).

East Tunnel Wall

Some features observed in the west wall were also noted along the east wall as well. A zone with weathered and blocky rock along a subvertical discontinuity with an orientation of 75º/195º (dip/dip direction) was noted between chainage 0+19 and 0+22 m. This rock appears to be related to the weathered zone at a similar chainage noted along the west wall (Plate 11). The upper area is undermined, and some blocks appear to be loose. Consideration should be given to scaling any loose rock and applying mesh reinforced shotcrete to prevent further weathering

and deterioration in this area. Furthermore, an undermined area with small loose blocks and shotcrete was noted at 0+43 m and a subvertical discontinuity with some keyed in wedges was noted at 0+66 m (Plate 12). These two areas currently appear stable but should be monitored. Signs of cracked and loose shotcrete and areas with exposed rock were noted along the last 3 m of the tunnel (Plate 13). In general, the east wall is mostly dry to slightly wet. Water dripping was observed at chainage 0+11 m and dampness and staining was observed between 0+03 and 0+05 m, at 0+27 m, from 0+35 to 0+38 m and from 0+41 to 0+70 m.

Tunnel Crown

The shotcrete in the tunnel crown was inspected visually using a man lift and the shotcrete was locally sounded with a hammer to check if the shotcrete was bonded to the rock surface. Hollow sounding areas and areas that appeared to be detached from the rock face were marked with spray paint for reference and monitoring in the future. Since the debris from the haunch and crown areas will tend to fall onto the travelled portion of the tunnel road, it is recommended that these areas are monitored regularly for signs of further cracking or delamination. Overall, the shotcrete was in good condition, with hollow areas noted mostly where the drainage strips were installed around the 12 o'clock position which is to be expected. Minor cracking and water dripping was noted at the chainage 0+02 m, while the rest of the crown was dry, with smaller areas of dampness (Plates 14 through 17).

CONCLUSIONS

The portal at the south end appears to be in good condition with some minor cracking in shotcrete noted. The shotcrete along the north portal appears to be in a poorer condition with areas of detached shotcrete and exposed rock. At both portals, considerable amounts of rock debris have accumulated behind the rockfall protection mesh. At the north portal, along the mesh edges there are some loose rocks, and these could be potential small rockfall hazards. Overall, the tunnel appears to be in good condition with shorter sections where the rock mass appears to be more weathered. Subvertical joint sets were noted along both walls and these appear to be a potential source of rockfalls. Some undermined areas were noted; specifically, between chainages 0+23 to 0+28 m along the west wall, and between 0+19 to 0+22 m along the east wall. The tunnel crown appears to be in good condition with some hollow areas in the shotcrete noted, mostly in the areas where the drain membrane has been installed. The shotcrete appears to be very thin in the haunches and in some areas the ends of the drainage strips appear to be covered with shotcrete preventing proper drainage. Mostly dry conditions were noted at the time of the inspection in the tunnel with some localized dampness and water dripping noted only at south portal crown. The groundwater seepage will likely fluctuate seasonally.

RECOMMENDATIONS FOR REMEDIAL WORKS AND INSPECTIONS DURING TUNNEL OPERATIONS

Based on the inspection results, the portal and tunnel ground support elements (i.e. rock bolts, wire mesh, shotcrete) are currently performing satisfactorily. Short term recommendations are provided below for more urgent issues, while medium term recommendations are provided for rehabilitation of the tunnel for longer term stability. Based on this year's inspection observations, emphasis should be on regular monitoring of tunnel conditions and conditions of both portal rock faces, specifically the crest areas, to prevent any potential rockfall hazards by performing the following:

Short Term (within 1 to 3 years)

- For both the tunnel portals and the tunnel itself, regular annual inspections are recommended to be carried out. In the tunnel, these inspections should include checking for sign of distress in shotcrete in the crown and haunches. At the portals the inspection should include visual assessments of the shotcrete and rock bolts

installed in the area above the tunnel portal and assessments of the wire mesh and rock bolts conditions installed on the vertical rock face above. The inspection should include the bench area and the rock face above the south portal face to identify any rockfall hazards from these areas. In between inspections, any significant changes in the tunnel or portal conditions should be recorded and reported promptly to WSP so that a stability and hazard assessment can be carried out.

- Remove all loose rocks noted along the east and the west walls as indicated on the photographs in Appendix A, and install a layer of reinforced shotcrete on west wall between chainage 0+23 and 0+28 m, and on east wall between chainage 0+19 and 0+22 m.
- Remove accumulated rock debris on the east side of the north portal and install a concrete jersey type barrier to prevent rockfalls from bouncing or rolling onto the haul road.
- Remove the rock debris accumulated behind and along the mesh edges on both sides above both the south and north portal.
- Remove all currently loose, detached shotcrete along the eastern side of the north portal and re-apply a new layer of shotcrete.
- If any work is required in the portal areas close to the adjacent unprotected rock faces (for example on the ditch) then scaling of any loose rock that might fall into the work area must be carried out before starting the work.

Medium Term (depending on future inspection results, tentatively within 5 to 10 years)

- Perform a detailed sounding of the shotcrete inside the tunnel and around the portals to identify areas of drummy, detached shotcrete and loose rock. Remove all detached shotcrete and loose rock and reinstate the shotcrete as required.
- Detailed inspection and testing of rock bolts installed along the rock faces on both tunnel portals.
- Monitor the stability of the overhang supported with rock bolts located at the crest and in general stability of the rockfaces adjacent to the North Portal specifically the east side.

RECOMMENDATIONS FOR LONG TERM STABILITY AND INSPECTIONS DURING LAKE FILLING AND POST LICENCE SURRENDER

For the long-term stability of the tunnel, the tunnel should be backfilled prior to the start of lake filling. Backfilling could be done by creating a bulkhead at one end of the tunnel and pushing granular material into the tunnel to fill the tunnel as close as possible to the crown (within approximately 0.5 m of the crown or less). After backfilling the two ends should be covered with rockfill. During lake filling it is recommended that regular visual inspections of the tunnel ends and the road above be carried until the tunnel is flooded to above the tunnel obvert level or until the licence is surrendered and accepted by the Ministry of Natural Resources. As a minimum the tunnel ends and road above should be inspected at the start of lake filling, when the lake level is halfway up the tunnel height and again just before the lake level reaches the tunnel crown. The need for further inspections and the frequency of the any such inspections can be re-assessed at that time depending on the inspection results.

CLOSURE

Currently the tunnel is functioning as designed and is considered stable and as such there is no concern for the roadway above the tunnel. There are, however, some areas of concern, as noted above, that should be addressed to ensure the safety of personnel using the tunnel.

We trust that this report meets your expectations and fulfilled our requirements in relation to our approved scope of work. If you have any questions or comments regarding the content of this report, please do not hesitate to contact us.

The reader is referred to the Study Limitations section, which follows the text and forms an integral part of this report.

WSP Canada Inc.

Petrina Kontrec Sahin
Rock Mechanics Specialist

Mark Telesnicki, P.Eng.
Rock Mechanics Engineer

PKS/MJT/jl/lc

Attachment A: Main Haulage Tunnel – Plates 1 through 17

STUDY LIMITATIONS

WSP Canada Inc. (“WSP”) prepared this report solely for the use of the intended recipient, Walker Aggregates Inc., 9861 County Road 91, Duntroon, Ontario, L0M 1H0 (Walker), in accordance with the professional services agreement between the parties. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

WSP disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation or evidence.

WSP makes no other representations whatsoever concerning the legal significance of its findings.

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WSP has provided services to the intended recipient in accordance with the professional services agreement between the parties and in a manner consistent with that degree of care, skill and diligence normally provided by members of the same profession performing the same or comparable services in respect of projects of a similar nature in similar circumstances. It is understood and agreed by WSP and the recipient of this report that WSP provides no warranty, express or implied, of any kind. Without limiting the generality of the foregoing, it is agreed and understood by WSP and the recipient of this report that WSP makes no representation or warranty whatsoever as to the sufficiency of its scope of work for the purpose sought by the recipient of this report.

In preparing this report, WSP has relied in good faith on information provided by others, as noted in the report. WSP has reasonably assumed that the information provided is correct and WSP is not responsible for the accuracy or completeness of such information.

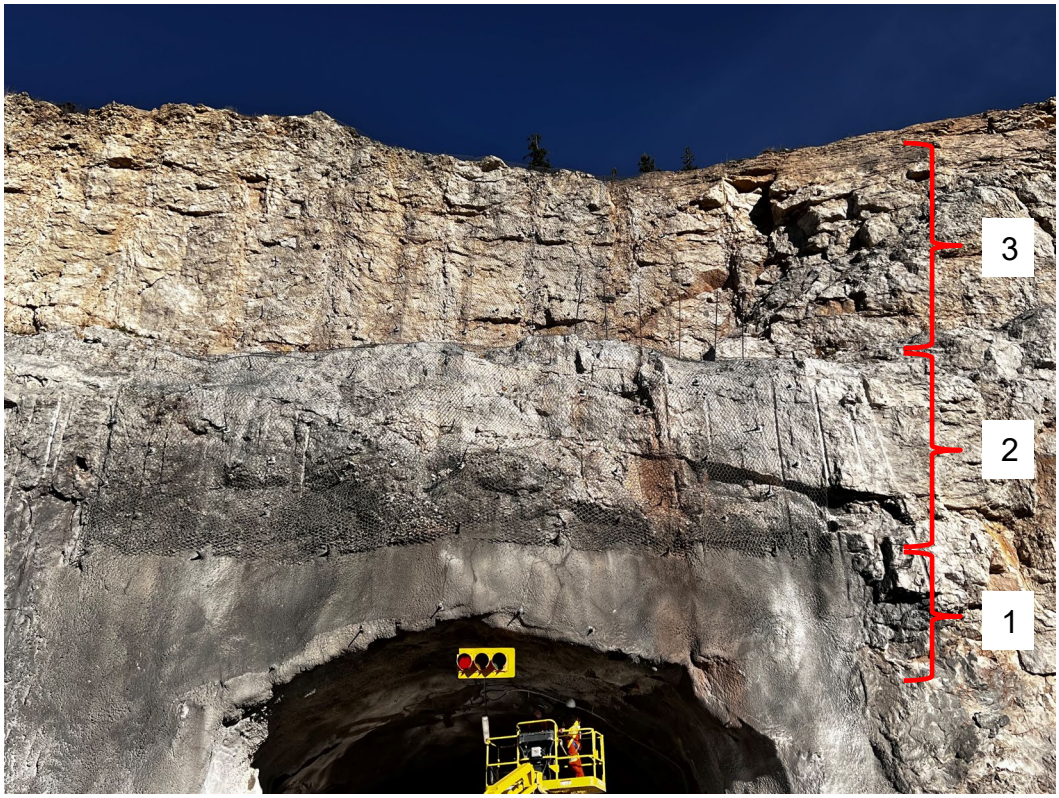
Benchmark and elevations used in this report are primarily to establish relative elevation differences between the specific testing and/or sampling locations and should not be used for other purposes, such as grading, excavating, construction, planning, development, etc.

The original of this digital file will be kept by WSP for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP, its integrity cannot be assured. As such, WSP does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient.

ATTACHMENT A

Main Haulage Tunnel - Plates 1 through 17

wsp	Duntroon Quarry, Haulage Tunnel **SOUTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 1

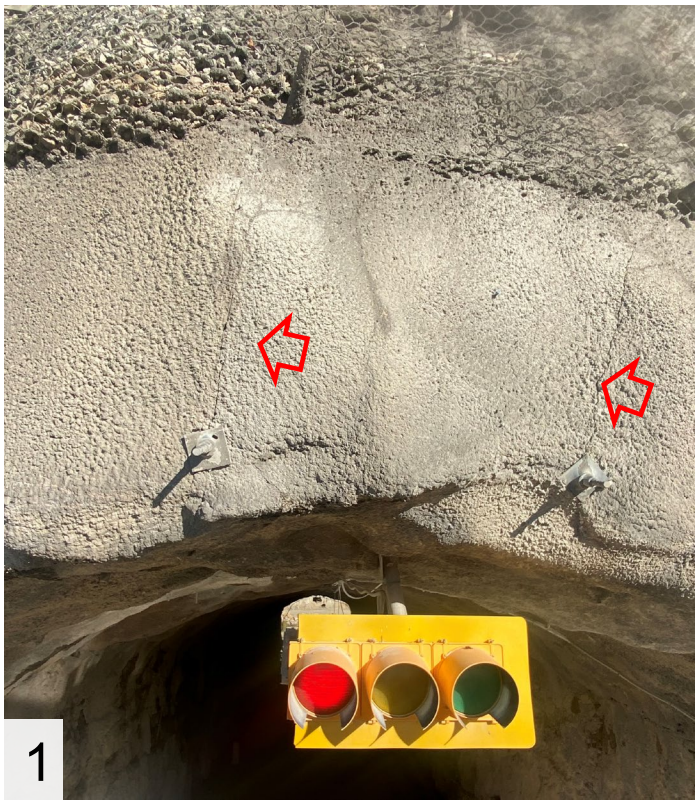


Area directly above the portal (1) supported with reinforced shotcrete and rock bolts. Mid rock face (2) and an upper rock face (3) including the bench area supported with a mesh and rock bolts. Rock face completely dry.

West: Shotcrete on lateral edges of the south portal face in good condition.

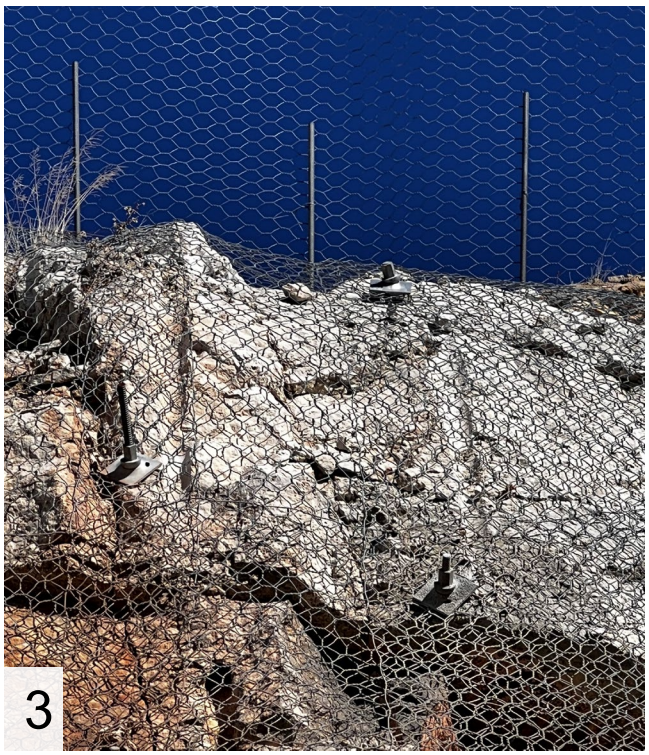
East: Shotcrete on lateral edges of the south portal face in good condition.

wsp	Duntroon Quarry, Haulage Tunnel **SOUTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 2

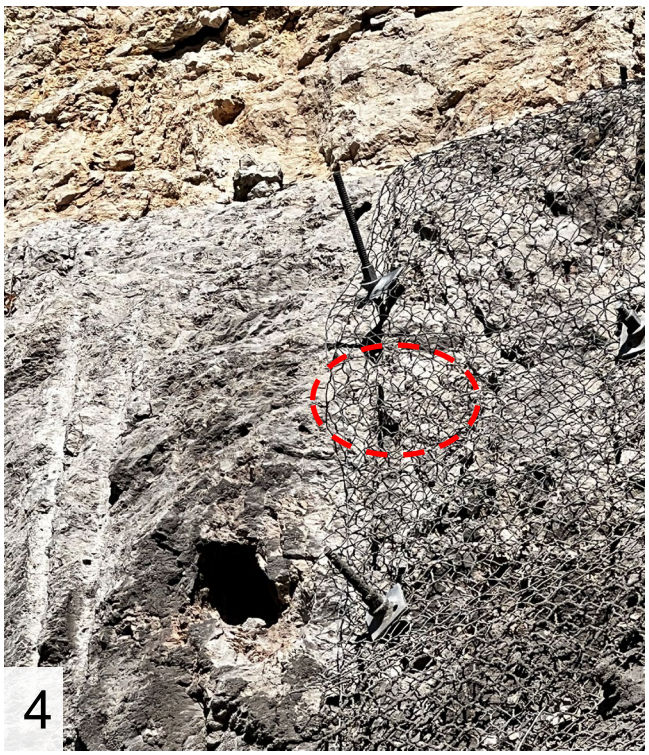


Two vertical cracks (1-2mm wide) in shotcrete above the portal..

Rock debris accumulated behind the mesh.



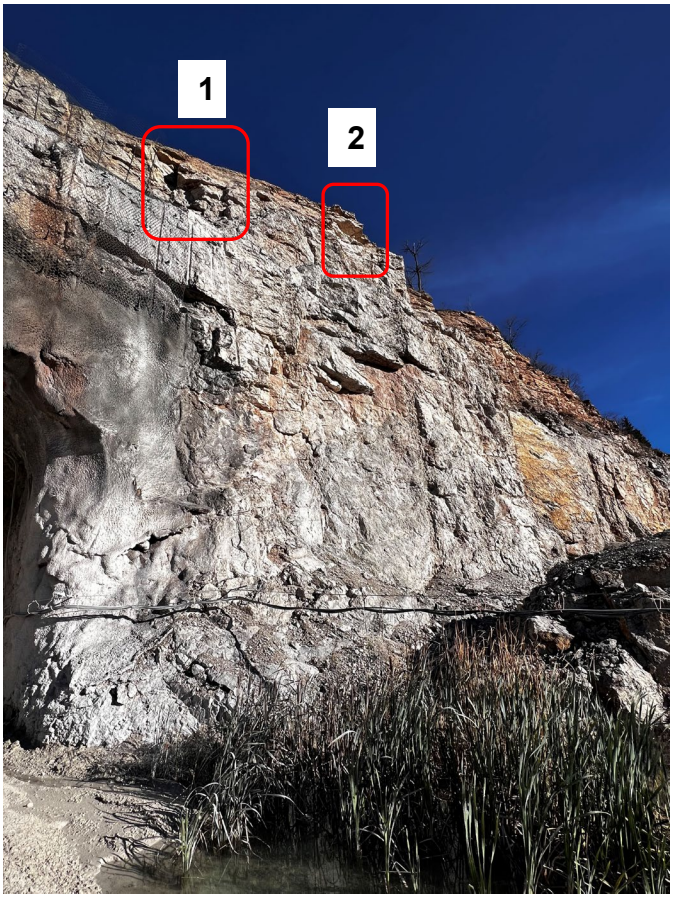
Approximately 4 to 5 m long and approximately 2 m high “mesh barrier” installed along the edge of the bench, on the east side.



Rock bolt plate not tight to mesh on the west side

wsp	Duntroon Quarry, Haulage Tunnel **SOUTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 3

West rock face adjacent to south tunnel portal structure; vertical clean rock face with some minor debris visible at the slope toe. Some detached blocks noted close to the crest but distanced from the tunnel entrance. In case of rockfalls, they would fall directly into the ditch (filled with water) and will not have impact on tunnel traffic safety.



East rock face adjacent to south tunnel portal structure; some detached blocks noted in the upper part of rockface. 1. If these blocks are dislodged, they could be contained by the bench and a 5 m long “mesh barrier” installed along the bench edge. 2. Undercut at the crest area, but far from the tunnel portal, not impacting the tunnel traffic in case of rockfall.

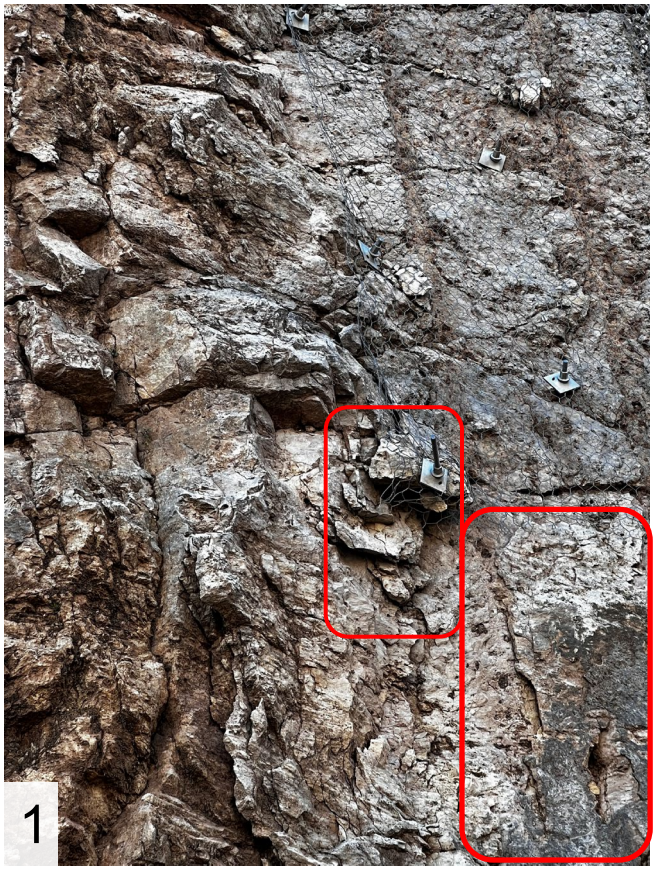
wsp	Duntroon Quarry, Haulage Tunnel **NORTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 4

Area around the tunnel opening supported with reinforced shotcrete and rock bolts (1). Upper rockface area (2) supported with wire mesh and rock bolts. Areas along the portal with cracked and loose shotcrete, some areas with shotcrete missing. No seepage/moisture noted at the rockface.

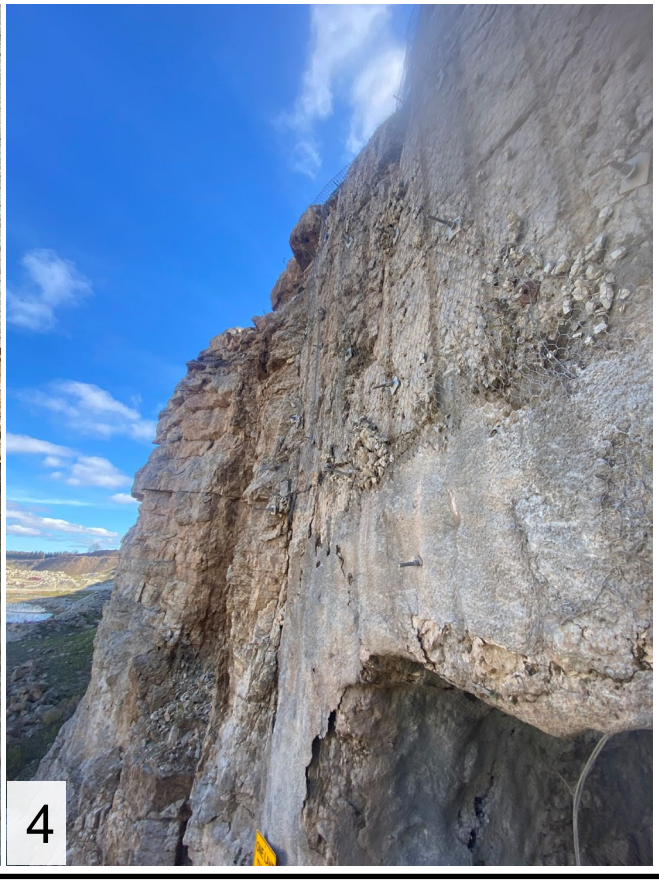
East: Areas with loose shotcrete and cracking in shotcrete and exposed rock on lateral edges of the north portal face.

West: Minor cracking in shotcrete on lateral edges of the north portal face.

wsp	Duntroon Quarry, Haulage Tunnel **NORTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 5



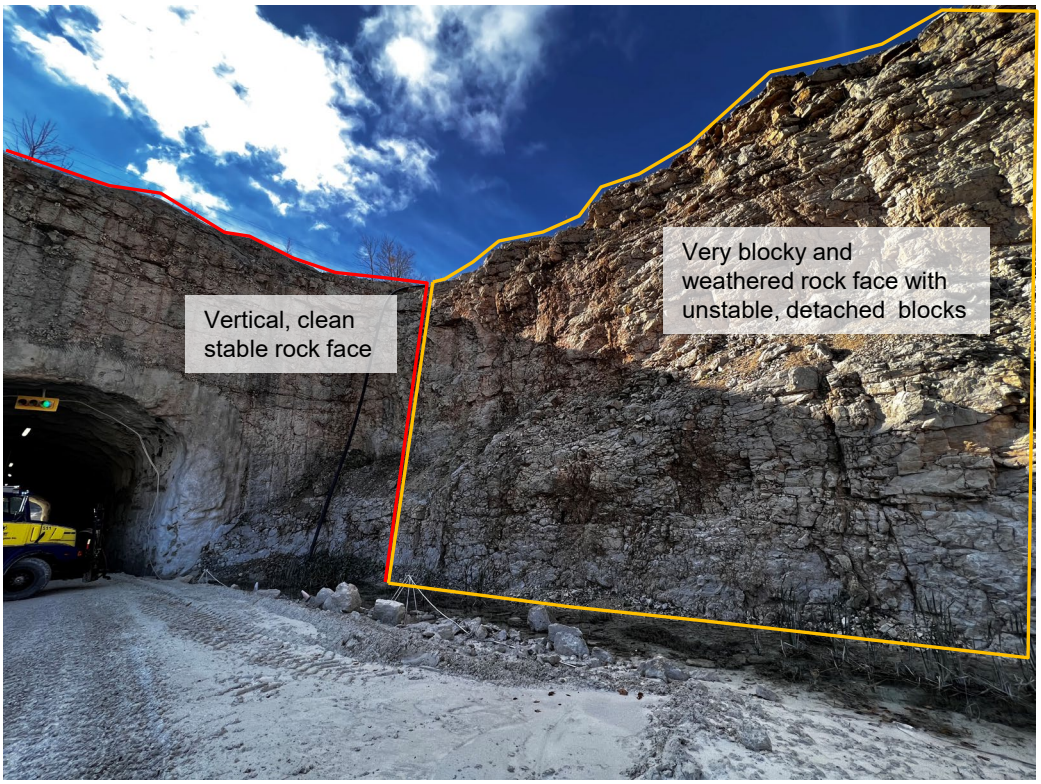
1. Loose rock debris above the east edge of tunnel portal.
2. Area with loose shotcrete and exposed rock mass in the crown above the tunnel opening.
3. Cracked and loose shotcrete and areas with exposed rock mass on the east side above the portal.
4. Rock debris accumulated behind the mesh above the tunnel portal.



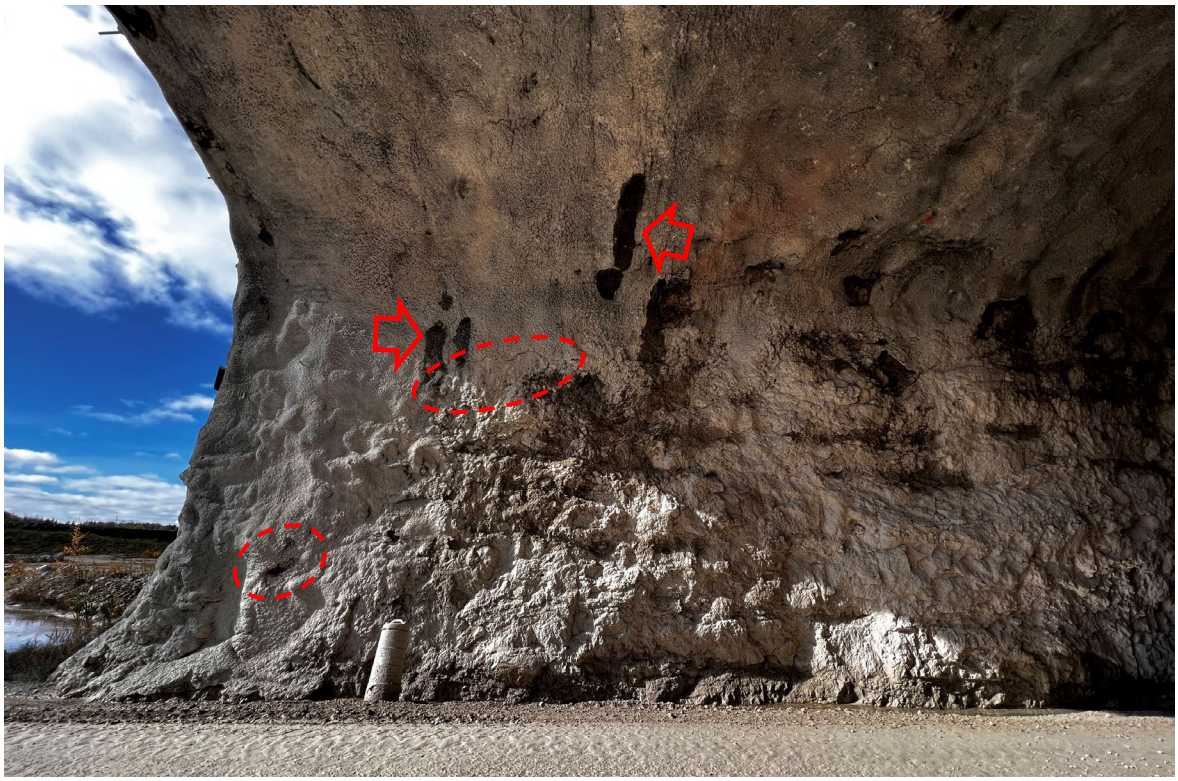
wsp	Duntroon Quarry, Haulage Tunnel **NORTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 6

East face adjacent to north tunnel portal: Weathered rock mass with loose blocks and large overhang supported with rock bolts at slope crest. Rock debris accumulated along the rock face toe at tunnel entrance.

wsp	Duntroon Quarry, Haulage Tunnel **NORTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 7



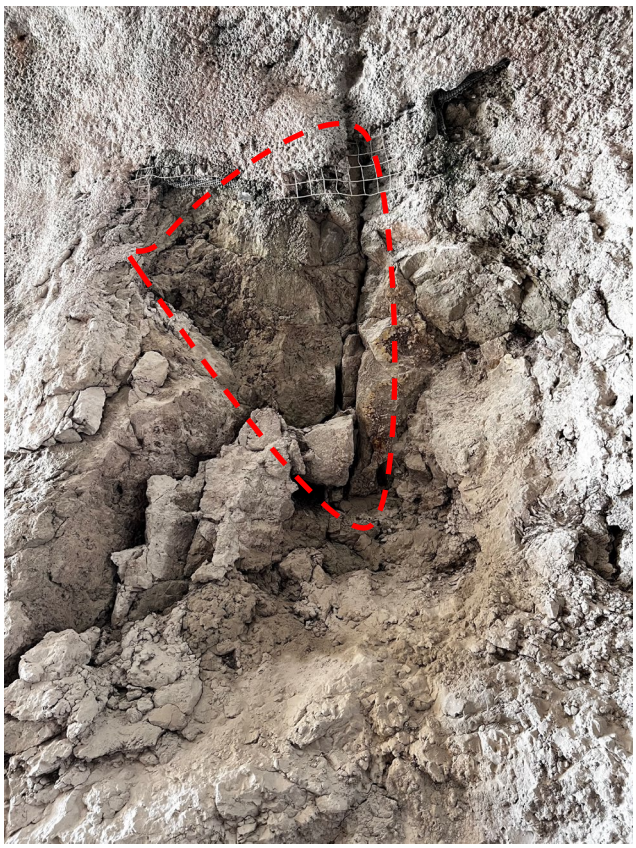
West rock face adjacent to north tunnel portal appears stable but rock face further away along the access road appears very weathered and blocky with some overhangs noted, however, potentially unstable blocks will most probably be contained by the catchment area which appears to be approximately 5 to 6 m wide. Some smaller blocks and rock debris noted along the access road to tunnel (indicated with dashed red line on the left).

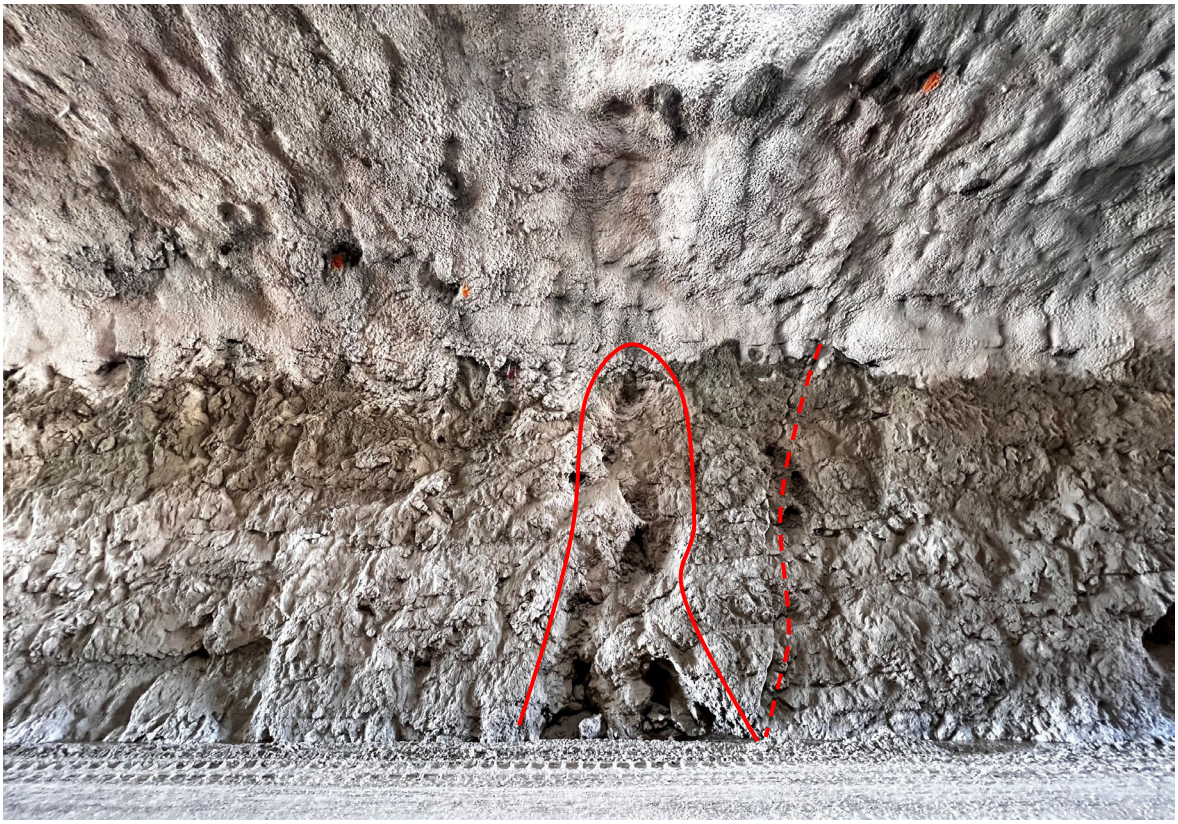


0+00 to 0+10 m. Shotcrete around portal in good condition. Minor cracks noted in shotcrete at 0+02 and 0+06 m (indicated with dashed line circles) and dampness at 0+06 m (arrows).

0+10 to 0+20 m. Shotcrete generally very thin in haunches. Some dampness noted along the tunnel haunches near where the water is drained by the drainage panels.

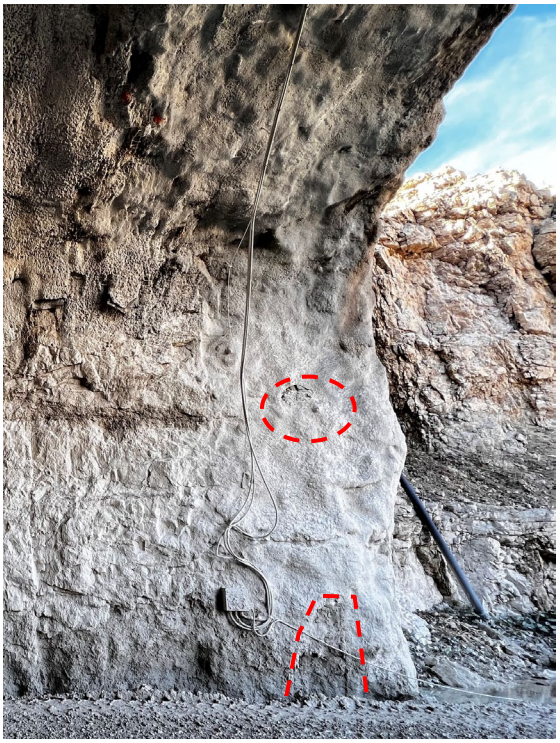
Chainage 0+23 m. Weathered area with open discontinuity (dashed line) and small to medium sized loose blocks (see left below) and a large unsupported block with potential to fall (on right below)





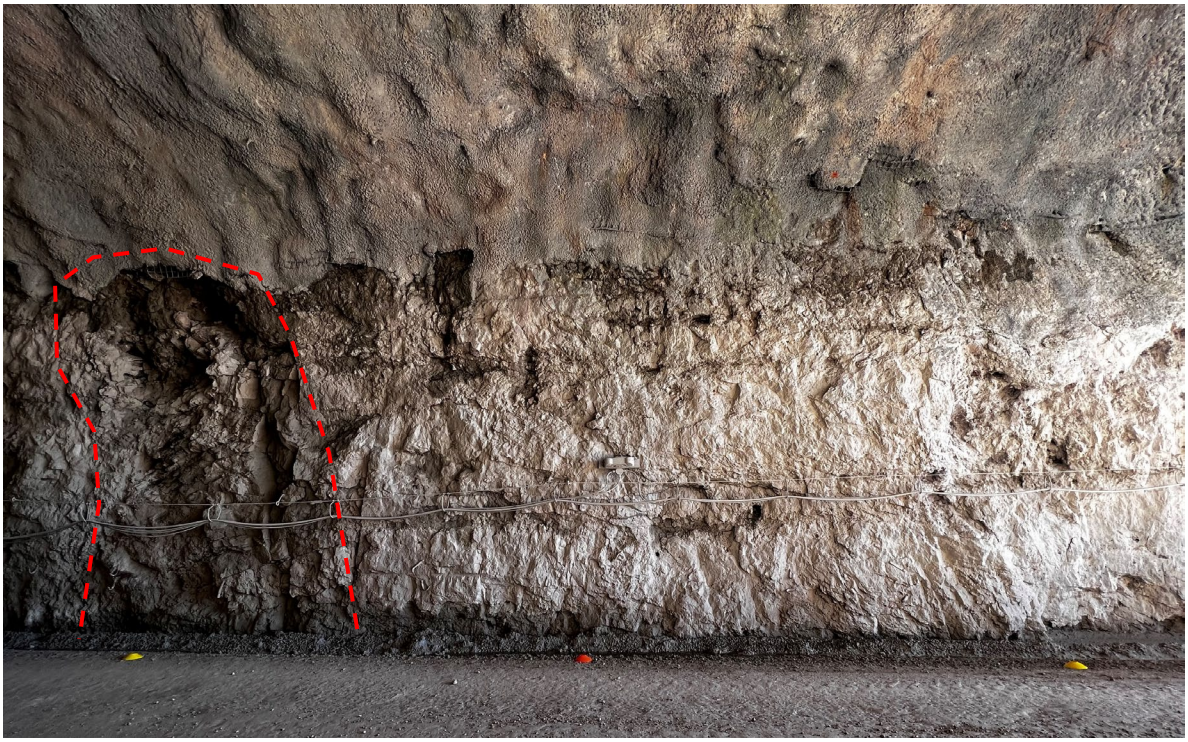
0+40 to 0+50 m. Rock mass appears to be very weathered and blocky resulting in a very rough and irregular tunnel wall surface. Subvertical joint 80º/205º with 1 to 2 cm wide opening at 0+44 m (dashed line).

Left: Small loose blocks along the vertical discontinuity (dashed line) at 0+69 m.

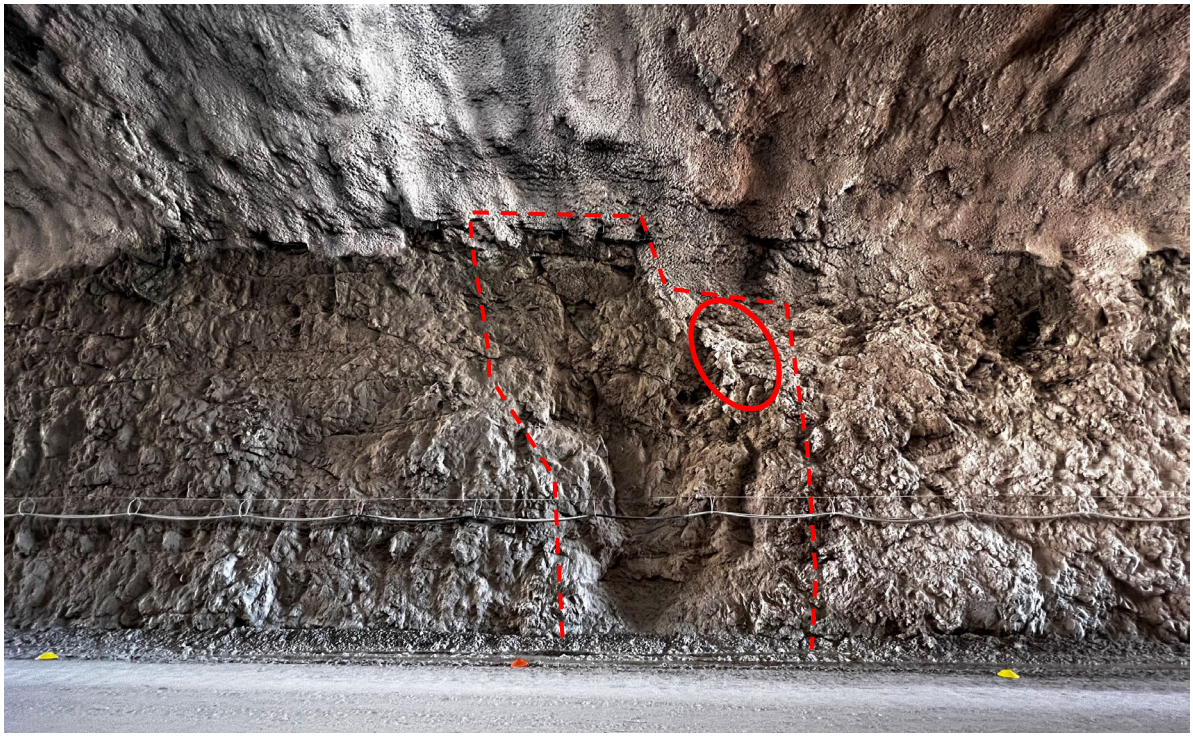


Right: Minor cracks and areas without shotcrete at 0+86 m.

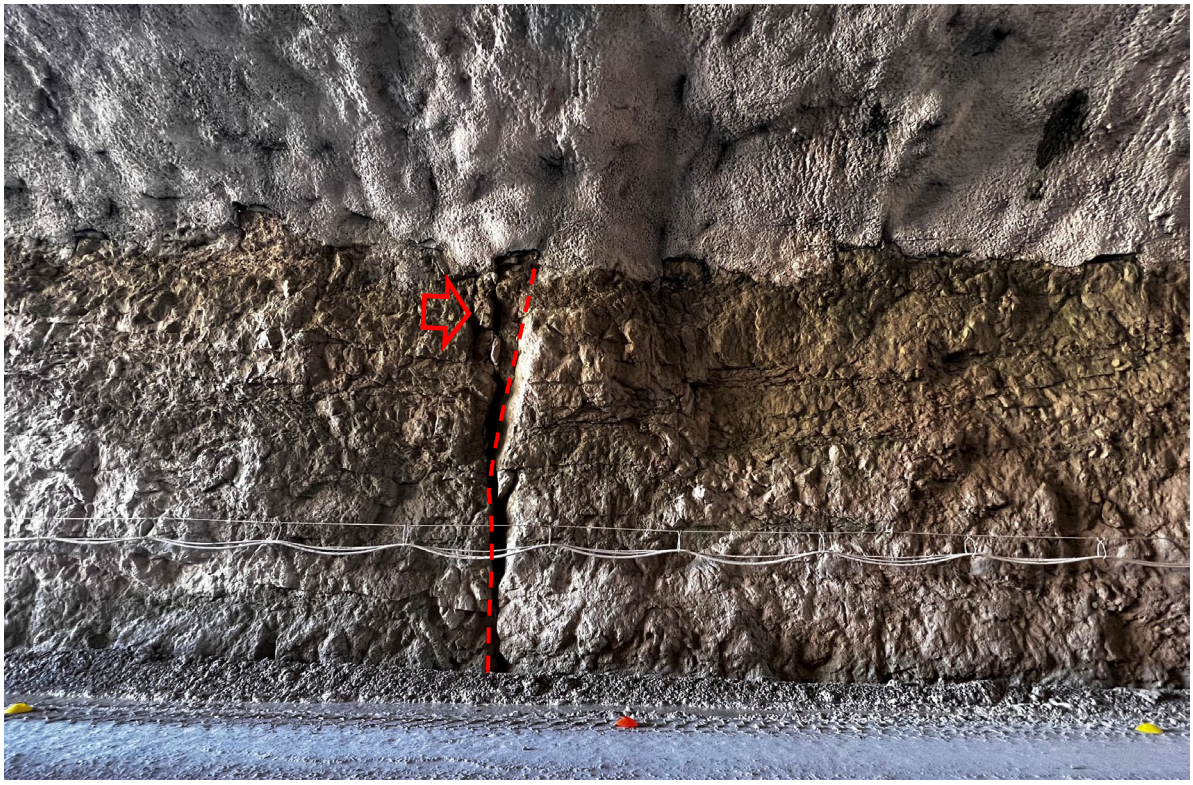
0+00 to 0+10 m. Shotcrete around tunnel portal in good condition. Some dampness noted in tunnel haunches between 0+03 and 0+05 m .



0+10 to 0+20 m. Weathered undermined zone between 0+19 and 0+22 m with some small loose blocks (dashed line)



Chainage 0+40 to 0+50 m. Very weathered and blocky rock mass with some undermined areas. Undermined zone and detached block with shotcrete at chainage 0+43 m.



Chainage 0+60 to 0+70 m. Vertical discontinuity at 0+66 m with wide opening and some keyed in wedges (indicated with an arrow) in the upper area.

wsp	Duntroon Quarry, Haulage Tunnel **TUNNEL EAST WALL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 13

Shotcrete cracking and areas with exposed rock observed near the north portal.

wsp	Duntroon Quarry, Haulage Tunnel **TUNNEL CROWN AT SOUTH PORTAL**	Project: CA0012787.0623 Insp. Date: Oct 23, 2023	Plate 14

Overview of crown at south portal. Mesh reinforced shotcrete in good condition, with some minor cracking (red circle) and hollow areas (indicated with orange spray paint) mostly noted in areas with thin shotcrete layer and in places with drainage membrane visible. Water dripping from 12:30 o'clock position.

Overview of crown near North Portal. Shotcrete in good condition in the crown. Areas of hollow and cracked shotcrete smaller areas with exposed wire mesh and rock mass (in red below).

Overview of shotcrete condition in the crown at chainage 0+45 m toward the North Portal. Dry conditions with some hollow areas.

Tunnel crown near 0+20 m looking toward the South Portal. Crown in good condition with several hollow areas, mostly noted around 12 o'clock position. Dry conditions.