



Imagery Update: Iran Continues to Harden its New Natanz Tunnel Complex¹

By David Albright and Sarah Burkhard

May 5, 2022

This report is an imagery update of earlier reports on the construction progress at the new Natanz tunnel complex, located under a mountain south of the main uranium enrichment site. Commercial satellite imagery from March and May 2022 show new, long extensions at two tunnel entrances, likely to be covered by earth to further protect and secure the entrances. In parallel, construction inside the tunnel appears to be progressing steadily. Major excavation efforts appear completed, while tunnel lining work appears to be ongoing, as well as clearance activities for a possible fourth tunnel portal. It now appears possible that the site could be ready for initial operation in 2022. Based on official Iranian accounts, the new tunnel complex will house a new centrifuge assembly facility to replace the Iranian Centrifuge Assembly Center (ICAC) destroyed in an attack in July 2020. However, a recent Institute analysis found that the new tunnel complex will likely be more deeply buried than Fordow and have significantly more floor space, raising questions about other sensitive nuclear activities at the site, most worrisome, enrichment activities.

Construction Progress

Figure 1 provides an overview of the Natanz tunnel complex as of March 8, 2022, with three visible tunnel portals (two eastern portals and one western portal) and a possible fourth one being constructed. Newly visible since the Institute's January 2022 update are new extensions at two tunnel entrances, one at the western tunnel portal and one at the eastern auxiliary entrance.

Figures 2 and 3 show the tunnel entrances and their extensions in March, situated in a channel of excavated rock, allowing future coverage with earth and providing significant additional protection to the tunnel portals. By May 2022, the eastern tunnel entrance extension is covered, while the extension at the western main portal appears to be in progress (see Figures 4 and 5).

¹ David Albright, Sarah Burkhard, and John Hannah, "Iran's Natanz Tunnel Complex: Deeper, Larger than Expected," *Institute for Science and International Security*, January 13, 2022, <https://isis-online.org/isis-reports/detail/irans-natanz-tunnel-complex-deeper-larger-than-expected/8>.

Water appearing to flow from the eastern main portal, previously visible in November 2021, is visible again in May 2022. It is unknown if the water is uncontrolled outflow from the eastern main portal, representing an unexpected construction challenge.

Surrounding spoil piles remained largely unchanged since November 2021, indicating that boring and excavation of the underground complex are largely complete. The addition of a probable concrete batch plant, continued presence of heavy construction equipment and usage of dirt roads, as well as previously visible probable shotcrete equipment indicate that the concrete lining of the complex walls is well underway and that final lining and reinforcement operations of the tunnel complex are ongoing. The possible fourth tunnel portal would likely be constructed relatively quickly and segue into the existing tunnel. A spoil pile associated with road grading and clearance of the area appears to grow quickly.

There has been no visible evidence of centrifuge manufacturing or centrifuge-related equipment being moved into the tunnel complex. It may be possible that such transfers could occur later this year or early next year.

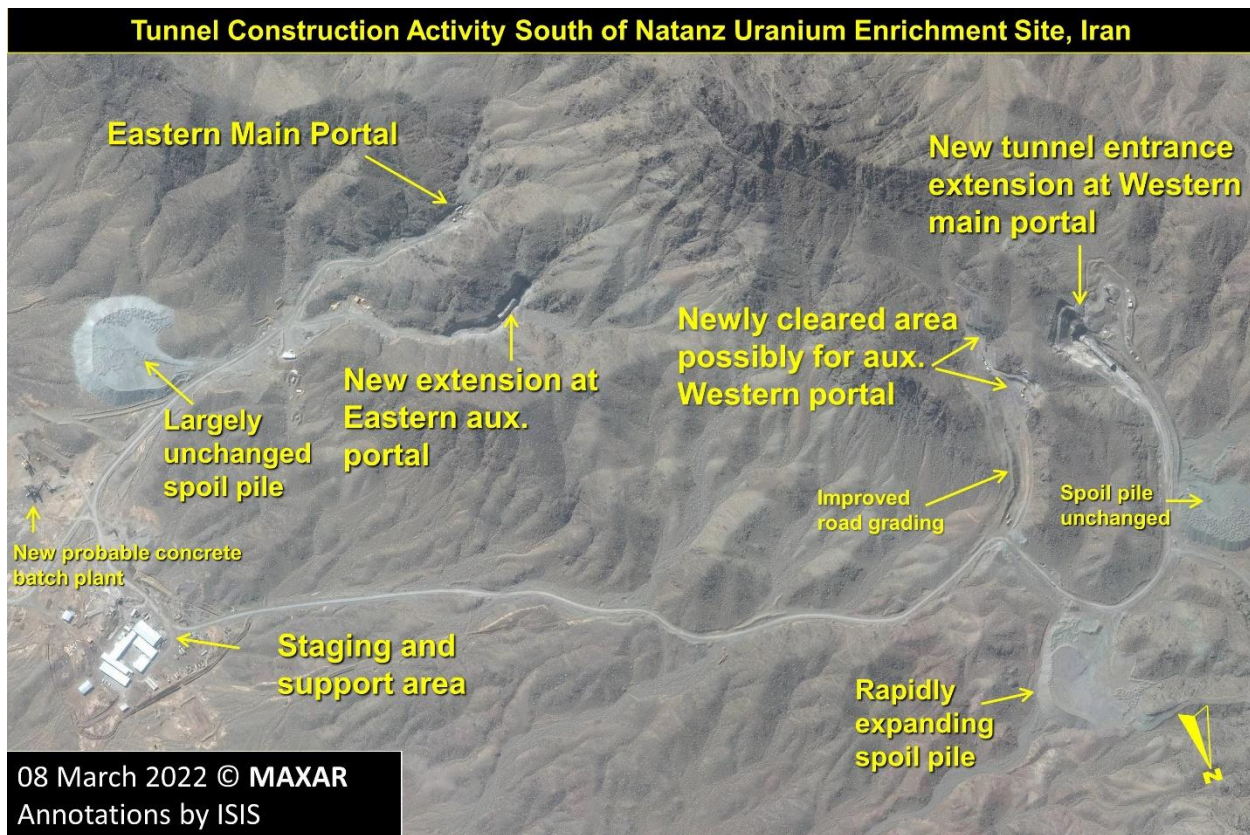


Figure 1. A March 2022 overview image of the tunnel complex under construction south of the main Natanz enrichment plant.



Figure 2. One of the two eastern tunnel portals shows a likely permanent tunnel entrance extension, adding further protection to the entrance.



Figure 3. The western tunnel entrance also features a new entrance extension, likely to be covered by earth in the future, as of March 2022.

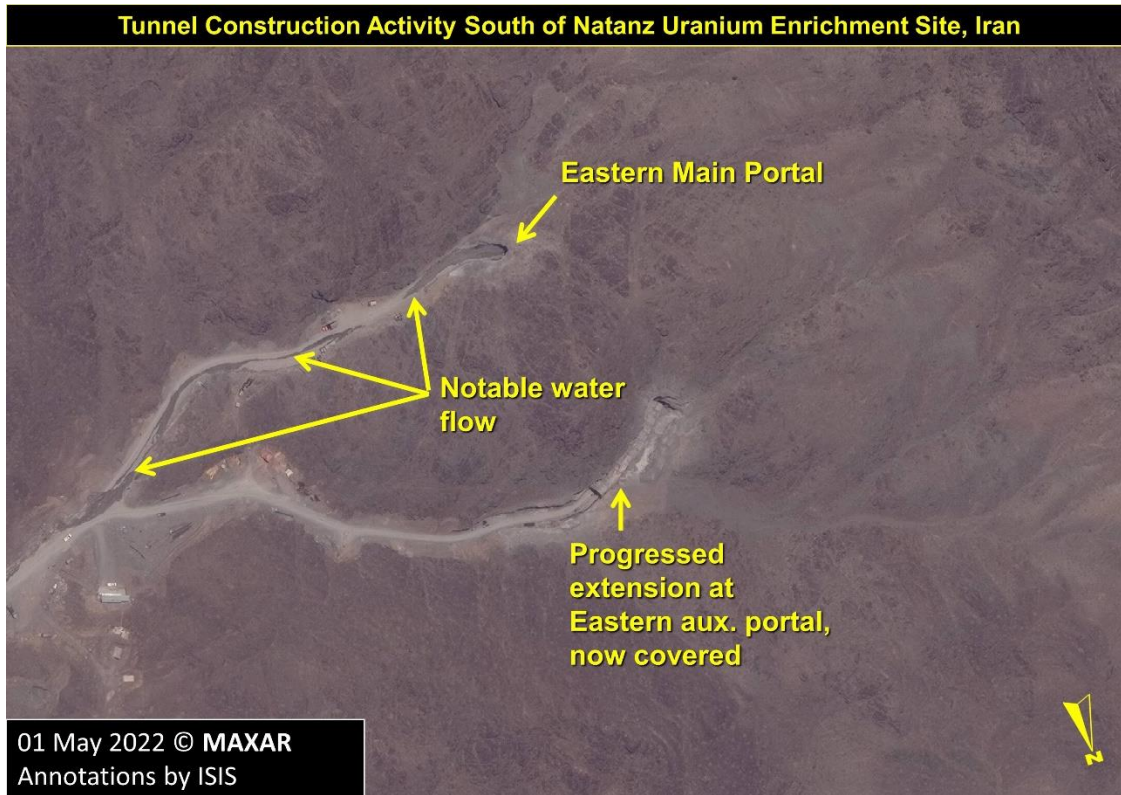


Figure 4. The eastern tunnel entrance extension is covered in May 2022.

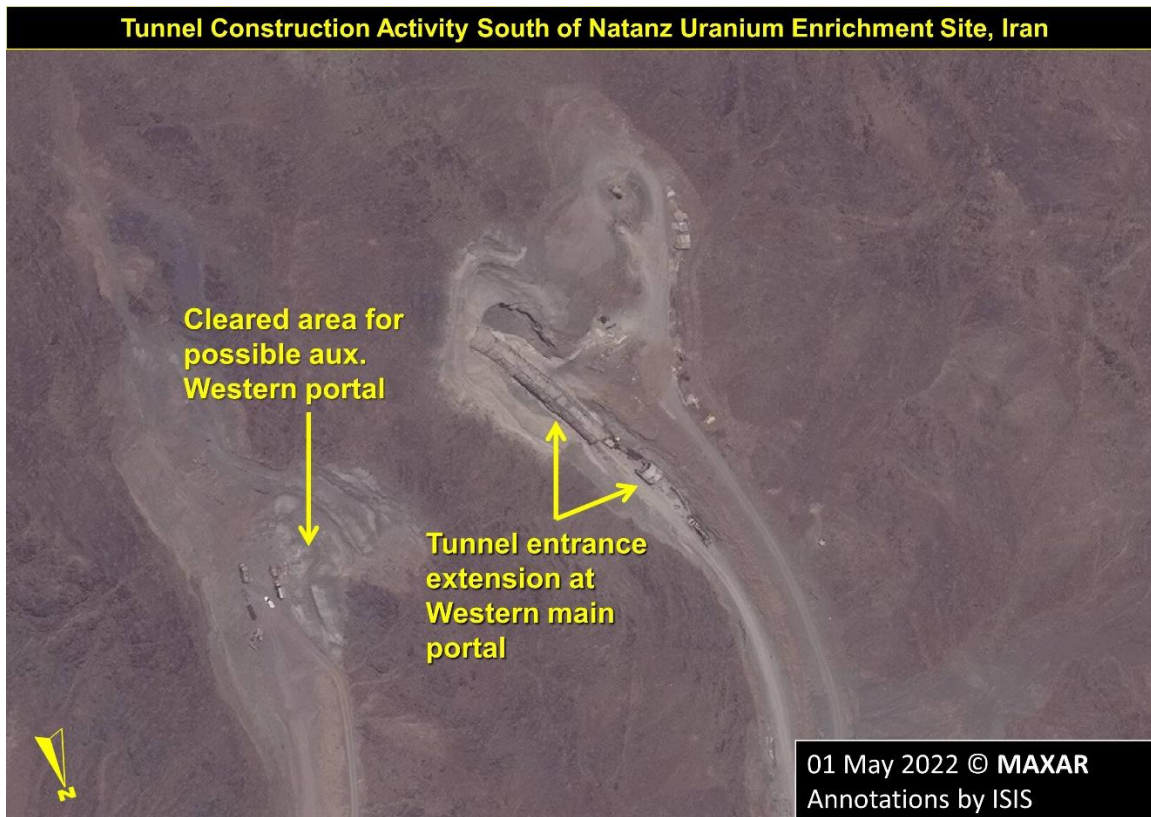


Figure 5. The western tunnel entrance extension appears to have progressed slightly.