
November 4, 2022

United States Securities and Exchange Commission
Division of Corporate Finance
Office of Industrial Applications and Services
Washington, D.C. 20549-6010

Attention: Ibolya Ignat
Kevin Kuhar
Jordan Nimitz
Margaret Schwartz

Re: **ASP Isotopes Inc.**
Amendment No. 3 to Registration Statement on Form S-1
Filed October 31, 2022
File No. 333-267392

Ladies and Gentlemen:

On behalf of ASP Isotopes, Inc. (the "**Company**"), we are transmitting this letter in response to the comments received from the staff (the "**Staff**") of the Securities and Exchange Commission (the "**Commission**") contained in its letter dated November 3, 2022, with respect to Amendment No. 3 to Registration Statement on Form S-1 (the "**Amendment No. 3**") filed by the Company with the Commission on October 31, 2022. Concurrently with the submission of this letter, the Company has publicly filed through EDGAR Amendment No. 4 to the Registration Statement ("**Amendment No. 4**").

For your convenience, we have set forth each comment of the Staff from its letter in bold and provided the Company's response in italics below each comment. Unless otherwise indicated, capitalized terms used herein have the meaning assigned to them in the Amendment No. 3.

Amendment No. 3 to Registration Statement on Form S-1 filed on October 31, 2022

Summary
Recent Developments, page 3

- 1. We note your statement on page 3: "if the licensed rights granted to us are found to be invalid or unenforceable, or if our exclusive license agreement with Klydon is terminated or Klydon, as licensor, fails to abide by the terms of our exclusive license agreement, our ability to commercialize our future isotopes would suffer and our business, results of operations and financial condition may be adversely affected." Please revise to clarify what your business operations would be if you did not have this license, given your current and proposed business seems to operate either exclusively or mostly through use of the ASP technology.**

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Response:

We have revised our disclosure to clarify what our business operations would be if we did not have the license agreement with Klydon as follows:

"If the prior sub-license granted to Radfarma is found to be valid, we would be required to cease using the ASP technology for the separation of isotopes of Molybdenum that have medical applications (unless we were able to obtain a license from Radfarma), and we would focus our business operations on the enrichment of isotopes other than Molybdenum. For example, instead of continuing to pursue the production of Molybdenum-100, we could focus on the production and commercialization of zinc, silicon and/or chlorine using the ASP technology. We expect that our Mo-100 plant in South Africa would need to be redesigned and retrofitted in order to produce other isotopes, which would take approximately six months and cost approximately \$1 million."

- 2. We note your statement on page 3 that "[t]he NMS Letter includes a request for ASP Isotopes Inc. to enter into discussions for an agreement with NMS based on terms proposed in previous correspondence from NMS." Please revise to provide a high level summary of the terms of the previous correspondence with NMS.**

Response:

We have revised our disclosure to provide a high level summary of the terms of the previous correspondence with NMS as follows:

"The NMS Letter includes a request for ASP Isotopes Inc. to enter into discussions for an agreement with NMS based on terms proposed in previous correspondence from NMS. The previous correspondence from NMS included the following key prerequisites to a possible cooperation between NMS and ASP Isotopes Inc.: (1) NMS will be granted the right to set up an enrichment facility for a Mo-100 in Norway; (2) NMS will be granted the exclusive rights to sales, marketing, and distribution in Europe, while ASPI gets similar rights for the rest of the world; and (3) NMS will support the development of the Mo-100 target production and Mo-99 generator production and if required the sales operations of ASPI."

Very truly yours,

/s/ Brenda Hamilton
