UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **August 25, 2025**

ASP Isotopes Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-41555**	**87-2618235**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

601 Pennsylvania Avenue NW, South Building, Suite 900 Washington, DC	**20004**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(202) 756-2245**

Not Applicable
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01	**ASPI**	**The Nasdaq Stock Market LLC**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act ☐

Item 7.01. Regulation FD Disclosure.

ASP Isotopes Inc. (the "Company") will host a corporate access event on August 26, 2025 for South African investors in advance of the anticipated secondary listing of ASP Isotopes on the Johannesburg Stock Exchange (JSE). The listing of the Company's common stock on the Main Board of the JSE and the commencement of trading is expected to take effect on August 27, 2025. The secondary listing on the JSE is not in connection with any current capital raising effort and the Company will retain its primary listing on the Nasdaq Capital Market.

During the investor access event the Company will provide several updates on the progress of commercial production at the Company's three isotope enrichment facilities in Pretoria, South Africa, as well as other corporate matters.

Silicon-28. The Company commenced commercial production of Silicon-28 during late March 2025. During August 2025, the Company shipped its first samples of enriched Silicon-28 to a customer in the United States.

Many researchers believe that highly enriched Silicon-28 will be required by manufacturers of next-generation semiconductors. Naturally occurring Silicon has three isotopes – 28, 29 and 30. The 29 isotope has a ½ positive spin, which is an intrinsic form of angular momentum carried by elementary particles. In contrast, highly enriched Silicon-28 is spin-free where qubits are protected from sources of decoherence that causes loss of quantum information. In addition to its potential to process superior information such as qubits, it is believed that highly enriched Silicon-28 can conduct heat 150% more efficiently than natural Silicon, which will potentially allow for chips to become smaller, faster and cooler.

Ytterbium-176. The Company commenced commercial production of Ytterbium-176 during April 2025 and has successfully enriched significant quantities of intermediate product to as high as 92.4%. The Company is currently achieving an enrichment factor of 52, which is in line with Company's expectations of greater than 50. The Company expects the production of Ytterbium-176 to be a two-step process with the first batch enriching product from natural abundance of 13% Ytterbium-176 to at least 88% and the final batch completing the enrichment from 88% to 99.75%. The Company expects to enrich its first batch of final product during the last few days of August 2025 and it expects to ship these commercial samples to customers shortly thereafter.

The Ytterbium-176 enrichment plant is currently operating in a batch processing mode operating for 3-5 hours per day, 5-6 days per week. The Company expects to transition to a semi-continuous processing method, which will allow for the production of larger quantities of enriched product. The Company has experienced a slight (3-4 week) delay in the construction of equipment that enables semi-continuous processing method due to procurement supply chain problems for a single essential item. The Company now expects to transition to the semi-continuous processing method towards the end of the third quarter or the beginning of the fourth quarter 2025 versus previous guidance of late August 2025.

Nickel-64, Gadolinium-160 and Zinc-68. The Company has recently received the first of the required permits to import controlled laser equipment for the enrichment of Nickel-64, Gadolinium-160 and Zinc-68. Based on the operational results of the first Quantum Enrichment facility, the Company is accelerating plans to construct enrichment facilities in South Africa for additional isotopes using the QE process.

Carbon-14/Carbon-12. As previously disclosed, the Company's Carbon-14 enrichment plant was ready for commercial production during 2024, but the Company experienced continued delays in the delivery of adequate quantities of feedstock from its customer, which delayed the production of commercial quantities of enriched Carbon-14. Initial batches of feedstock arrived during the first quarter of 2025, but the Company failed to receive sufficient additional quantity of feedstock from the customer to produce commercial product.

Recently, there has been significant interest in Carbon-12 and the Company is currently enriching Carbon-12 to 99.99% in its existing Carbon-14 enrichment plant, for a US customer. Following a 10-day delay because of regulatory inspections and the subsequent permitting process, the Company now expects to supply its first commercial product during September 2025 versus previous guidance of August 2025. Demand for Carbon-12 significantly exceeds the demand for Carbon-14 and the Company is assessing the potential to expand the capacity of the Carbon enrichment facility to be able to supply both Carbon-12 and Carbon-14 from this facility.

Carbon-12 has historically been separated in the form of carbon dioxide gas by cascaded chemical exchange reactions with amine carbamate. The Company believes that its Aerodynamic Separation Process represents a superior method of separation with a significant reduction in capital costs and comparable operating costs. Carbon-12 is of particular importance in its use as the standard from which atomic masses of all nuclides are measured, because its atomic mass is exactly 12 daltons and is also being used in research quantities for Quantum Sensing applications.

Quantum Sensors are used in military applications for navigation, communication, and detection in high electronic warfare environments as well as use cases where extreme precision is required. The Carbon-13 isotope has a ½ positive spin, which is an intrinsic form of angular momentum carried by elementary particles. In contrast, highly enriched Carbon-12 is spin-free leading to increased coherence in Quantum Sensing applications.

Other Matters. The Company continues to expect to initiate the spin out of its subsidiary, Quantum Leap Enrichment ("QLE"), as a standalone public company during the second half of 2025, subject to obtaining applicable approvals and consents and complying with applicable rules and regulations and public market trading and listing requirements. The Company continues to anticipate that the Renergen acquisition will close during the third quarter of 2025, subject to receipt of all relevant regulatory approvals and third party consents.

RedChip Conference Call. Representatives of the Company, QLE and Renergen will be participating in a RedChip conference call at 4:15 pm EDT on August 28, 2025. Please see the Company's press release on August 26, 2025 for dial-in information.

Forward Looking Statements

This Form 8-K contains "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations, and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy, and other future conditions. Forward-looking statements can be identified by words such as "goal", "target", "believes," "plans," "anticipates," "expects," "aims", "intends", "estimates," "projects," "will," "may," "might," "seeks", "sees", "should," "would," "expect," "positioned," "strategy," and words of a similar nature. Examples of forward-looking statements include, among others but are not limited to, statements relating to the commencement of supply of isotopes to customers, the construction of additional enrichment facilities, the completion of the Renergen acquisition and other transactions in the anticipated timeframe or at all, the plans for a spin-out of Quantum Leap Energy as a standalone public company, and statements we make regarding expected operating results, such as future revenues and prospects from the potential commercialization of isotopes, future performance under contracts, and our strategies for product development, engaging with potential customers, market position, and financial results. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict, many of which are outside our control. Our actual results, financial condition, and events may differ materially from those indicated in the forward-looking statements based upon a number of factors. Forward-looking statements are not a guarantee of future performance or developments. You are strongly cautioned that reliance on any forward-looking statements involves known and unknown risks and uncertainties. Therefore, you should not rely on any of these forward-looking statements.

There are many important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements, including, but not limited to, the outcomes of various strategies and projects undertaken by the Company; the potential impact of laws or government regulations or policies in South Africa, the United Kingdom or elsewhere; our reliance on the efforts of third parties; our future capital requirements and sources and uses of cash; our ability to obtain funding for our operations and future growth; our reliance on the efforts of third parties; our ability to complete the construction and commissioning of our enrichment plants or to commercialize isotopes using the ASP technology or the Quantum Enrichment Process; our ability to obtain regulatory approvals for the production and distribution of isotopes; the financial terms of any current and future commercial arrangements; our ability to complete certain transactions and realize anticipated benefits from acquisitions and contracts; dependence on our Intellectual Property (IP) rights, certain IP rights of third parties; the competitive nature of our industry; and risks related to: (i) the implementation of the scheme of arrangement for the proposed Renergen acquisition in the anticipated timeframe or at all, (ii) the satisfaction of the scheme conditions, (iii) the failure to obtain necessary regulatory approvals and third party consents, (iv) the ability to realize the anticipated benefits of the proposed acquisition of Renergen, (v) the ability to successfully integrate the businesses; (vi) disruption from the proposed acquisition of Renergen making it more difficult to maintain business and operational relationships, (vii) the negative effects of the consummation of the proposed acquisition of Renergen on the market price of Renergen's or ASPI's securities, (viii) significant transaction costs and unknown liabilities, and (ix) litigation or regulatory actions related to the proposed acquisition of Renergen; and the factors disclosed in Part I, Item 1A. "Risk Factors" of the company's Annual Report on Form 10-K for the fiscal year ended December 31, 2024 and any amendments thereto and in the company's subsequent reports and filings with the U.S. Securities and Exchange Commission. Any forward-looking statement made by us in this Form 8-K is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise. No information in this Form 8-K should be interpreted as an indication of future success, revenues, results of operation, or stock price. All forward-looking statements herein are qualified by reference to the cautionary statements set forth herein and should not be relied upon.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ASP ISOTOPES INC.

Date: August 25, 2025

By: */s/ Donald G. Ainscow*
Name: Donald G. Ainscow
Title: Executive Vice President,
General Counsel and Secretary