UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2024

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _________________ to _________________

Commission File Number: 001-41555

ASP Isotopes Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**87-2618235**
(State or other jurisdiction of incorporation or organization)	(I.R.S. 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

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 $0.01per share	ASPI	Nasdaq Stock Market LLC (Nasdaq Capital Market)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		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. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of November 13, 2024, the registrant had 71,390,107 shares of common stock, $0.01 par value per share, outstanding.

Table of Contents

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the federal securities laws. All statements other than statements of historical fact contained in this Quarterly Report on Form 10-Q, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “should,” “would,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this Quarterly Report on Form 10-Q are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this Quarterly Report on Form 10-Q and are subject to a number of risks, uncertainties and assumptions described in the section titled “Risk Factors” and elsewhere in this Quarterly Report on Form 10-Q. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include:

- our ability to achieve or sustain positive cash flows from operations or profitability;
- our ability to complete the construction of, commission and successfully operate isotope enrichment plants in a cost-effective manner;
- our ability to meet, and to continue to meet, applicable regulatory requirements for the use of the isotopes we may produce using the ASP technology or the Quantum Enrichment process;
- our ability to obtain regulatory approvals for the production and distribution of isotopes;
- our ability to comply on an ongoing basis with the numerous regulatory requirements applicable to the ASP technology, the Quantum Enrichment process and our enrichment facilities in South Africa;
- the introduction, market acceptance and success of Mo-100 that we may produce using ASP technology as an alternative and potentially more convenient production route for Tc-99m;
- the success or profitability of our future offtake arrangements with respect to various isotopes that we may produce using ASP technology or the Quantum Enrichment process;
- a failure of demand for various isotopes that we may produce using ASP technology or the Quantum Enrichment process;
- our future capital requirements and sources and uses of cash;
- our ability to obtain funding for our operations and future growth;
- the extensive costs, time and uncertainty associated with new technology development;
- our ability to implement and maintain effective internal controls;
- developments and projections relating to our competitors and industry;
- the ability to recognize the anticipated benefits of acquisitions, including our acquisition of assets of Molybdos (Pty) Limited in the “business rescue” auction, the assets and intellectual property we acquired from Klydon Proprietary Ltd, and our investment in PET Labs Pharmaceuticals;
- problems with the performance of the ASP technology or the Quantum Enrichment process in the enrichment of isotopes;
- our dependence on a limited number of third-party suppliers for certain components;
- our inability to adapt to changing technology and diagnostic landscape, such as the emergence of new diagnostic scanners or tracers;
- our expected dependence on a limited number of key customers for isotopes that we may produce using ASP technology or the Quantum Enrichment process;
- our inability to protect our intellectual property and the risk of claims that we have infringed on the intellectual property of others;
- our inability to compete effectively;
- risks associated with the current economic environment;
- risks associated with our international operations;
- our credit counterparty risks;
- geopolitical risk and changes in applicable laws or regulations;
- our inability to adequately protect our technology infrastructure;
- our inability to hire or retain skilled employees and the loss of any of our key personnel;
- operational risk;
- costs and other risks associated with becoming a reporting company and becoming subject to the Sarbanes-Oxley Act; and
- other factors that are described in “Risk Factors,” on page 38.

These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those set forth in Part I, Item 1A - "Risk Factors" below and for the reasons described elsewhere in this Quarterly Report on Form 10-Q. Any forward-looking statement in this Quarterly Report on Form 10-Q reflects our current view with respect to future events and is subject to these and other risks, uncertainties, and assumptions relating to our operations, results of operations, industry, and future growth. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

This Quarterly Report on Form 10-Q also contains estimates, projections, and other information concerning our industry, our business, and the potential markets for certain isotopes, including data regarding the estimated size of those markets, their projected growth rates, and the incidence of certain medical conditions. Information that is based on estimates, forecasts, projections, or similar methodologies is inherently subject to uncertainties, and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained these industry, business, market, and other data from reports, research surveys, studies, and similar data prepared by third parties, industry, medical and general publications, government data, and similar sources. In some cases, we do not expressly refer to the sources from which these data are derived.

Except where the context otherwise requires, in this Quarterly Report on Form 10-Q, "we," "us," "our," "ASP Isotopes," and the "Company" refer to ASP Isotopes Inc. and, where appropriate, its consolidated subsidiaries.

Trademarks

All trademarks, service marks, and trade names included in this Quarterly Report on Form 10-Q are the property of their respective owners. Solely for convenience, the trademarks and trade names in this report may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

PART I-FINANCIAL INFORMATION

Item 1. Financial Statements.

ASP Isotopes Inc.
Condensed Consolidated Balance Sheets
(unaudited)

	September 30, 2024	December 31, 2023
Assets		
Current assets:		
Cash	$ 51,571,540	$ 7,908,181
Accounts receivable	560,429	216,504
Inventory	84,851	—
Receivable from noncontrolling interests	—	721,548
Prepaid expenses and other current assets	3,872,444	1,664,023
Total current assets	56,089,264	10,510,256
Property and equipment, net	22,984,292	10,712,839
Operating lease right-of-use assets, net	1,360,829	1,258,701
Goodwill	3,461,459	3,267,103
Other noncurrent assets	229,899	1,793,014
Total assets	**$ 84,125,743**	**$ 27,541,913**
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 1,797,536	$ 1,111,819
Accrued expenses	1,762,422	1,311,245
Notes payable	33,446	470,396
Finance lease liabilities – current	695,235	61,941
Operating lease liabilities – current	589,457	336,564
Deferred revenue	882,000	882,000
Other current liabilities	1,249,249	1,500,000
Share liability	416,652	—
Total current liabilities	7,425,997	5,673,965
Deferred tax liabilities	83,867	110,578
Convertible notes payable, at fair value	31,778,742	—
Finance lease liabilities – noncurrent	1,913,143	207,092
Operating lease liabilities – noncurrent	912,519	1,066,647
Other noncurrent liabilities	—	1,653,000
Total liabilities	42,114,268	8,711,282
Commitments and contingencies (Note 8)		
Stockholders' equity		
Preferred stock, $0.01 par value; 10,000,000 shares authorized, no shares issued and outstanding as of September 30, 2024 and December 31, 2023	—	—
Common stock, $0.01 par value; 500,000,000 shares authorized, 68,409,116 and 48,923,276 shares issued and outstanding as of September 30, 2024 and December 31, 2023, respectively	684,092	489,233
Additional paid-in capital	84,406,759	40,567,003
Accumulated deficit	(46,991,549)	(23,839,300)
Accumulated other comprehensive income (loss)	595,735	(920,982)
Total ASP Isotopes stockholders' equity	38,695,037	16,295,954
Noncontrolling interests	3,316,438	2,534,677
Total stockholders' equity	42,011,475	18,830,631
Total liabilities and stockholders' equity	**$ 84,125,743**	**$ 27,541,913**

The accompanying notes are an integral part of these condensed consolidated financial statements.

ASP Isotopes Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(unaudited)

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Revenue	$ 1,087,695	$ —	$ 2,950,348	$ —
Cost of goods sold	793,714	—	1,956,473	—
Gross profit	293,981	—	993,875	—
Operating expenses:				
Research and development	1,034,446	239,199	1,722,882	699,413
Selling, general and administrative	4,693,158	3,707,311	17,976,882	11,319,465
Total operating expenses	5,727,604	3,946,510	19,699,764	12,018,878
Loss from operations	(5,433,623)	(3,946,510)	(18,705,889)	(12,018,878)
Other (expense) income:				
Foreign exchange transaction loss	(131,247)	—	(129,443)	(935)
Change in fair value of share liability	381,969	(279,425)	327,969	(109,040)
Change in fair value of convertible notes payable	(2,692,073)	—	(5,220,599)	—
Interest income	602,181	3,452	657,899	4,946
Interest expense	(90,966)	—	(173,832)	—
Total other expense	(1,930,136)	(275,973)	(4,538,006)	(105,029)
Loss before income tax expense	(7,363,759)	(4,222,483)	(23,243,895)	(12,123,907)
Income tax provision	8,370	—	42,220	—
Net loss before allocation to noncontrolling interests	(7,355,389)	(4,222,483)	(23,201,675)	(12,123,907)
Less: Net loss attributable to noncontrolling interests	(84,150)	—	(49,426)	—
Net loss attributable to ASP Isotopes Inc. shareholders before deemed dividend on inducement warrant for common stock	**$ (7,271,239)**	**$ (4,222,483)**	**$ (23,152,249)**	**$ (12,123,907)**
Deemed dividend on inducement warrant for common stock	—	—	(2,779,659)	—
Net loss attributable to ASP Isotopes Inc. shareholders	**$ (7,271,239)**	**$ (4,222,483)**	**$ (25,931,908)**	**$ (12,123,907)**
Net loss per share, attributable to ASP Isotopes Inc. shareholders, basic and diluted	**$ (0.12)**	**$ (0.14)**	**$ (0.50)**	**$ (0.40)**
Weighted average shares of common stock outstanding, basic and diluted	**61,532,172**	**31,147,749**	**51,779,067**	**29,954,321**
Comprehensive loss:				
Net loss before allocation to noncontrolling interests	$ (7,355,389)	$ (4,222,483)	$ (23,201,675)	$ (12,123,907)
Foreign currency translation	1,297,026	(64,644)	1,516,717	(1,541,170)
Total comprehensive loss before allocation to noncontrolling interests	(6,058,363)	(4,287,127)	(21,684,958)	(13,665,077)
Less: Comprehensive (loss) income attributable to noncontrolling interests	(18,430)	—	26,343	—
Total comprehensive loss	**$ (6,039,933)**	**$ (4,287,127)**	**$ (21,711,301)**	**$ (13,665,077)**

The accompanying notes are an integral part of these condensed consolidated financial statements.

ASP Isotopes Inc.
Condensed Consolidated Statements of Changes in Stockholders' Equity
(unaudited)

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Noncontrolling Interests	Total Stockholders' Equity
Balance as of December 31, 2023	**48,923,276**	**$ 489,233**	**$ 40,567,003**	**$ (920,982)**	**$ (23,839,300)**	**$ 2,534,677**	**$ 18,830,631**
Retired unvested restricted shares	(325,000)	(3,250)	3,250	—	—	—	—
Stock-based compensation expense	—	—	1,713,654	—	—	—	1,713,654
Distribution to noncontrolling interest of VIE	—	—	—	—	—	(8,694)	(8,694)
Foreign currency translation	—	—	—	(543,729)	—	—	(543,729)
Net loss	—	—	—	—	(6,948,085)	(16,759)	(6,964,844)
Balance as of March 31, 2024	**48,598,276**	**$ 485,983**	**$ 42,283,907**	**$ (1,464,711)**	**$ (30,787,385)**	**$ 2,509,224**	**$ 13,027,018**
Issuance of common stock from warrant exercise	3,164,557	31,646	5,506,329	—	—	—	5,537,975
Issuance of restricted common stock	250,000	2,500	(2,500)	—	—	—	—
Issuance of common stock to consultant	60,000	600	183,000	—	—	—	183,600
Settlement of liabilities with consultants	60,000	600	183,000	—	—	—	183,600
Board fee liabilities to be settled with shares	—	—	240,000	—	—	—	240,000
Stock-based compensation expense	—	—	2,518,016	—	—	—	2,518,016
Contribution from noncontrolling interest in VIE	—	—	—	—	—	807,975	807,975
Distribution to noncontrolling interest of VIE	—	—	—	—	—	(18,422)	(18,422)
Foreign currency translation	—	—	—	763,420	—	—	763,420
Net loss	—	—	—	—	(8,932,925)	51,483	(8,881,442)
Balance as of June 30, 2024	**52,132,833**	**$ 521,329**	**$ 50,911,752**	**$ (701,291)**	**$ (39,720,310)**	**$ 3,350,260**	**$ 14,361,740**
Issuance of common stock, net of issuance costs of $2,194,041	13,800,000	138,000	32,167,959	—	—	—	32,305,959
Issuance of restricted common stock	1,678,466	16,785	(16,785)	—	—	—	—
Issuance of restricted common stock to consultants	150,000	1,500	327,750	—	—	—	329,250
Issuance of common stock to board members	497,817	4,978	(4,978)	—	—	—	—
Settlement of liabilities with consultant	150,000	1,500	(1,500)	—	—	—	—
Commission fee liability to be settled with cash and common stock warrant	—	—	(1,045,529)	—	—	—	(1,045,529)
Stock-based compensation expense	—	—	2,068,090	—	—	—	2,068,090
Contribution from noncontrolling interest in VIE	—	—	—	—	—	83,504	83,504
Distribution to noncontrolling interest of VIE	—	—	—	—	—	(33,176)	(33,176)
Foreign currency translation	—	—	—	1,297,026	—	—	1,297,026
Net loss	—	—	—	—	(7,271,239)	(84,150)	(7,355,389)
Balance as of September 30, 2024	**68,409,116**	**$ 684,092**	**$ 84,406,759**	**$ 595,735**	**$ (46,991,549)**	**$ 3,316,438**	**$ 42,011,475**

The accompanying notes are an integral part of these condensed consolidated financial statements.

ASP Isotopes Inc.
Condensed Consolidated Statements of Changes in Stockholders’ Equity
(unaudited)

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Noncontrolling Interests	Total Stockholders' Equity
Balance as of December 31, 2022	**35,907,127**	**$ 359,071**	**$ 16,756,426**	**$ 255,030**	**$ (7,553,066)**	$ —	**$ 9,817,461**
Issuance of common stock and warrants, net of issuance costs of $506,390	3,164,557	31,646	4,461,964	—	—	—	4,493,610
Cancellation of common stock received in exchange for issuance of preferred stock in subsidiary	(3,000,000)	(30,000)	30,000	—	—	—	—
Issuance of common stock in lieu of commissions	57,250	573	74,997	—	—	—	75,570
Issuance of restricted common stock	1,256,750	12,567	(12,567)	—	—	—	-
Stock-based compensation expense	—	—	2,144,099	—	—	—	2,144,099
Foreign currency translation	—	—	—	(1,003,853)	—	—	(1,003,853)
Net loss	—	—	—	—	(3,615,078)	—	(3,615,078)
Balance as of March 31, 2023	**37,385,684**	**$ 373,857**	**$ 23,454,919**	**$ (748,823)**	**$ (11,168,144)**	$ —	**$ 11,911,809**
Settlement of liabilities with related party	—	—	626,223	—	—	—	626,223
Stock-based compensation expense	—	—	2,374,686	—	—	—	2,374,686
Foreign currency translation	—	—	—	(472,673)	—	—	(472,673)
Net loss	—	—	—	—	(4,286,346)	—	(4,286,346)
Balance as of June 30, 2023	**37,385,684**	**$ 373,857**	**$ 26,455,828**	**$ (1,221,496)**	**$ (15,454,490)**	$ —	**$ 10,153,699**
Issuance of restricted common stock	500,000	5,000	(5,000)	—	—	—	-
Settlement of liabilities with consultants	462,500	4,625	696,500	—	—	—	701,125
Stock-based compensation expense	—	—	2,071,790	—	—	—	2,071,790
Foreign currency translation	—	—	—	(64,644)	—	—	(64,644)
Net loss	—	—	—	—	(4,222,483)	—	(4,222,483)
Balance as of September 30, 2023	**38,348,184**	**$ 383,482**	**$ 29,219,118**	**$ (1,286,140)**	**$ (19,676,973)**	$ —	**$ 8,639,487**

The accompanying notes are an integral part of these condensed consolidated financial statements.

ASP Isotopes Inc.
Condensed Consolidated Statements of Cash Flows
(unaudited)

	Nine Months Ended September 30, 2024	2023
Cash flows from Operating activities		
Net loss	$ (23,201,675)	$ (12,123,907)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation	425,630	969
Loss on disposal of property and equipment	1,666	—
Stock-based compensation expense	6,299,760	6,590,576
Convertible note payable for non-cash issuance costs	621,915	—
Shares issued for non-cash consultant expense	783,200	669,700
Change in fair value of share liability	(327,969)	109,040
Change in fair value of convertible notes payable	5,220,599	—
Change in right-of-use lease asset	343,473	49,173
Change in deferred tax liabilities	(31,149)	—
Changes in operating assets and liabilities:		
Accounts receivable	(309,762)	—
Inventory	(79,395)	—
Prepaid expenses and other current assets	(2,062,720)	132,677
Other noncurrent assets	(11,000)	(48,812)
Accounts payable	(286,173)	(298,663)
Accrued expenses	329,489	712,368
Deferred revenue	—	882,000
Operating lease liability	(354,663)	(30,292)
Other current liabilities	(296,780)	-
Net cash used in operating activities	(12,935,554)	(3,355,171)
Cash flows from investing activities		
Purchases of property and equipment	(8,352,422)	(1,190,157)
Net cash used in investing activities	(8,352,422)	(1,190,157)
Cash flows from financing activities		
Proceeds from issuance of common stock	34,500,000	5,000,000
Common stock issuance costs	(2,194,041)	(506,390)
Proceeds from exercise of warrants	5,537,975	—
Proceeds from noncontrolling interest in VIE	891,479	—
Proceeds from collection of receivable from noncontrolling interest in VIE	706,774	—
Distribution to noncontrolling interest in VIE	(60,292)	—
Proceeds from issuance of convertible notes payable	25,936,228	—
Payment of notes payable	(438,569)	—
Payment of principal portion of finance leases	(38,347)	—
Net cash provided by financing activities	64,841,207	4,493,610
Net change in cash and cash equivalents	43,553,231	(51,718)
Effect of exchange rate changes on cash and cash equivalents	110,128	(50,617)
Cash and cash equivalents - beginning of period	7,908,181	2,389,140
Cash and cash equivalents - end of period	**$ 51,571,540**	**$ 2,286,805**
Supplemental disclosures of non-cash investing and financing activities:		
Settlement of liabilities with related party	**$** —	$ 626,223
Right-of-use asset obtained in exchange for operating lease liability	$ 364,458	**$** —
Right-of-use asset obtained in exchange for finance lease liability	$ 1,732,464	**$** —
Purchase of property and equipment included in accounts payable	$ 952,035	$ —
Deemed dividend on inducement warrant	$ 2,779,659	**$** —
Board fees settled with common stock	$ 240,000	**$** —
Commission fee liability to be settled with cash and common stock warrant	$ 1,045,529	**$** —
Settlement of share liability	**$** —	$ 776,695

The accompanying notes are an integral part of these condensed consolidated financial statements.

ASP Isotopes Inc.
Notes to Unaudited Condensed Consolidated Financial Statements

1. Organization

Description of Business

ASP Isotopes Inc. was incorporated in the state of Delaware on September 13, 2021, and has its principal operations in Washington, DC. ASP Isotopes Inc.'s subsidiary ASP Isotopes Guernsey Limited ("ASP Guernsey"), has its principal operations in Guernsey. ASP Guernsey's subsidiary, ASP Isotopes South Africa Proprietary Limited ("ASP South Africa"), has its principal operations in South Africa. ASP Rentals Proprietary Limited ("ASP Rentals"), a variable interest entity ("VIE") of ASP South Africa, has its principal operations in South Africa. Enlightened Isotopes (Pty) Ltd ("Enlightened Isotopes"), a 80% owned subsidiary of ASP South Africa, was formed in March 2023 and began operations in January 2024. ASP Isotopes UK Ltd ("ASP UK"), a subsidiary of ASP Guernsey, was incorporated in July 2022. ASPI South Africa Asset Finance Proprietary Limited ("ASP SA Asset Finance"), a subsidiary of ASP South Africa, was incorporated in July 2024. PET Labs Global Nuclear Medicine SEZC ("PET Labs Global"), a subsidiary of ASP Guernsey, was incorporated in June 2024 in the Cayman Islands. PET Labs Pharmaceuticals Proprietary Limited ("PET Labs"), a 51% owned subsidiary of ASP Isotopes Inc. operates in South Africa. ASP Isotopes Inc.'s subsidiary, Quantum Leap Energy LLC, was formed in the state of Delaware in September 2023 and began operations in February 2024. Quantum Leap Energy LLC's subsidiary Quantum Leap Energy Proprietary Limited ("Quantum Leap Energy South Africa"), has its operations in South Africa. ASP Isotopes Inc., its subsidiaries and ASP Rentals are collectively referred to as "the Company" throughout these consolidated statements.

The Company is a development stage advanced materials company dedicated to the development of technology and processes that, if successful, will allow for the enrichment of natural isotopes into higher concentration products, which could be used in several industries. The Company's proprietary technology, the Aerodynamic Separation Process ("ASP technology"), originally developed by Klydon Proprietary Ltd ("Klydon"), is designed to enable the production of isotopes used in several industries. The Company's initial focus is on the production and commercialization of enriched Carbon-14 ("C-14"), Molybdenum-100 ("Mo-100") and Silicon-28 ("Si-28"). The Company has completed an isotope enrichment plant for the enrichment of C-14 located in Pretoria, South Africa and we expect to start commercial supply of C-14 in the first quarter of 2025, assuming timely delivery of the feedstock from the Company's customer. The Company anticipates completion and commissioning of a multi-isotope enrichment plant in Pretoria, South Africa in the fourth quarter 2024, and the Company expects to start initial commercial supply of Si-28 in early 2025. In addition, the Company has started planning additional isotope enrichment plants. The Company believes the C-14 it may develop using the ASP technology may be used in the development of new pharmaceuticals and agrochemicals. The Company believes that the Mo-100 it may develop using the ASP technology has significant potential advantages for use in the preparation of nuclear imaging agents by radiopharmacies and others in the medical industry. The Company believes the Si-28 it may develop using the ASP technology may be used to develop advanced semiconductors and in quantum computing. In addition, the Company is considering the future development of the ASP technology for the separation of Zinc-68, Xenon-129/136 for potential use in the healthcare end market, Germanium 70/72/74 for possible use in the semiconductor end market, and Chlorine-37 for potential use in the nuclear energy end market.

The Company is also developing quantum enrichment technology to produce enriched Ytterbium-176 ("Yb-176"), Nickel-64, Lithium6, Lithium-7 and Uranium-235 ("U-235"). Quantum enrichment is an advanced isotope enrichment technique that is currently in development that uses lasers. The Company believes the U-235 that it may develop using quantum enrichment technology may be commercialized as a nuclear fuel component for use in the new generation of high-assay low-enriched uranium (HALEU)-fueled small modular reactors that are now under development for commercial and government uses. The construction of the Company's first quantum enrichment facility was completed in August 2024, and the Company produced the first semi-finished material of enriched Yb-176 during the commissioning phase of the plant in October 2024. The Company expects to be able to achieve a 99.75% enrichment for Yb-176 and offer highly enriched Yb-176 for commercial sale during 2025. The Company also expects to proceed with the plans to construct Nickel-64 and Lithium- 6/7 quantum enrichment plants with targeted production during 2025.

Liquidity

The Company has experienced net losses and negative cash flows from operating activities since its inception. The Company incurred net losses of $23,201,675 and $12,123,907 for the nine months ended September 30, 2024 and 2023, respectively.

The Company currently expects that its cash and cash equivalents of $51,571,540 as of September 30, 2024 will be sufficient to fund its operating expenses and capital requirements for more than 12 months from the date the financial statements are issued. In November 2024, the Company issued an additional 2,754,250 shares of common stock in a public offering at a public offering price of $6.75 per share for net proceeds of approximately $17,100,000. The Company anticipates it will need to continue to raise capital through additional equity and/or debt financings and/or collaborative development agreements to fund its operations.

There can be no assurance that the Company will achieve or sustain positive cash flows from operations or profitability. The Company is in the process of seeking additional debt and equity financing. However, such funding may not be available on a timely basis on terms acceptable to the Company, or at all. If the Company is unable to raise additional capital when required or on acceptable terms, the Company may be required to scale back or discontinue the advancement of product candidates, reduce headcount, reorganize, merge with another entity, or cease operations.

2. Basis of Presentation and Summary of Significant Accounting Policies

Unaudited Financial Information

The Company's unaudited condensed consolidated financial statements included herein have been prepared in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP"), and pursuant to the rules and regulations of the Securities and Exchange Commission, or SEC. In the Company's opinion, the information furnished reflects all adjustments, all of which are of a normal and recurring nature, necessary for a fair presentation of the financial position and results of operations for the reported interim periods. The Company considers events or transactions that occur after the balance sheet date but before the financial statements are issued to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure. The results of operations for interim periods are not necessarily indicative of results to be expected for the full year or any other interim period. These unaudited condensed consolidated financial statements should be read in conjunction with the audited financial statements and related notes for the year ended December 31, 2023.

Basis of Presentation and Use of Estimates

The Company's condensed consolidated financial statements are prepared in accordance with U.S. GAAP. The preparation of the Company's condensed consolidated financial statements requires management to make estimates and assumptions that impact the reported amounts of assets, liabilities and expenses and disclosure in the Company's condensed consolidated financial statements and accompanying notes. The most significant estimates in the Company's consolidated financial statements relate to stock-based compensation expense, the accounting for the acquisition of PET Labs and fair value measurement of the convertible notes payable and warrants. Although these estimates are based on the Company's knowledge of current events and actions it may undertake in the future, actual results may materially differ from these estimates and assumptions.

Principles of consolidation

The Company's condensed consolidated financial statements include the accounts of ASP Isotopes Inc., its wholly-owned subsidiaries, the 80% owned Enlightened Isotopes, the 51% owned PET Labs and the 42% owned VIE ASP Rentals. All intercompany balances and transactions have been eliminated in consolidation.

Currency and currency translation

The condensed consolidated financial statements are presented in U.S. dollars, the Company's reporting currency. The functional currency of ASP Isotopes Inc. and ASP Guernsey is the U.S. dollar. The functional currency of the Company's subsidiaries ASP South Africa and Quantum Leap Energy South Africa is the South African Rand. The functional currency of the 80% owned Enlighted Isotopes, the 51% owned PET Labs and the 42% owned VIE ASP Rentals is the South African Rand. Adjustments that arise from exchange rate changes on transactions of each group entity denominated in a currency other than the functional currency are included in other income and expense in the consolidated statements of operations and comprehensive loss. Assets and liabilities of the entities with functional currency of South African Rand are recorded in South African Rand and translated into the U.S. dollar reporting currency of the Company at the exchange rate on the balance sheet date. Revenue and expenses of the entities with functional currency of South African Rand are recorded in South African Rand and translated into the U.S. dollar reporting currency of the Company at the average exchange rate prevailing during the reporting period. Resulting translation adjustments are recorded separately in stockholders' equity as a component of accumulated other comprehensive (loss) income.

Concentration of Credit Risk and other Risks

Cash balances maintained at U.S. financial institutions may exceed the Federal Deposit Insurance Corporation ("FDIC") insurance limit of $250,000 per depositor, per insured bank for each account ownership category. Although the Company currently believes that the financial institutions with whom it does business, will be able to fulfill their commitments to the Company, there is no assurance that those institutions will be able to continue to do so. The Company has not experienced any credit losses associated with its balances in such accounts for the nine months ended September 30, 2024 and 2023.

The Company's foreign subsidiaries held cash of approximately $2,062,000 and $1,963,000 as of September 30, 2024 and December 31, 2023, respectively, which is included in cash on the consolidated balance sheets. The Company's strategic plan does not require the repatriation of foreign cash in order to fund its operations in the U.S., and it is the Company's current intention to indefinitely reinvest its foreign cash outside of the U.S. If the Company were to repatriate foreign cash to the U.S., the Company would be required to accrue and pay U.S. taxes in accordance with applicable U.S. tax rules and regulations as a result of the repatriation.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities at the date of purchase of three months or less to be cash equivalents. Cash and cash equivalents are stated at fair value and may include money market funds, U.S. Treasury and U.S. government-sponsored agency securities, corporate debt, commercial paper and certificates of deposit. The Company had cash equivalents of $186,229 in the form of money market funds as of September 30, 2024. The Company had no cash equivalents as of December 31, 2023.

Segment Information

As of December 31, 2023, the Company managed its operations as a single segment, specialist isotopes and related services. Beginning in 2024, primarily as a result of increased business activities of its subsidiary, Quantum Leap Energy LLC, the Company has two operating segments: (i) nuclear fuels, and (ii) specialist isotopes and related services.

The nuclear fuels segment is focused on research and development of technologies and methods used to produce high-assay low-enriched uranium (HALEU) and Lithium-6 for the advanced nuclear fuels target end market.

The specialist isotopes and related services segment is focused on research and development of technologies and methods used to separate high-value, low-volume isotopes (such as C-14, Mo-100 and Si-28) for highly specialized target end markets other than advanced nuclear fuels, including pharmaceuticals and agrochemicals, nuclear medical imaging and semiconductors, as well as services related to these isotopes, and this segment includes PET Labs.

The financial information is regularly reviewed by the chief operating decision maker ("CODM") in deciding how to allocate resources. The Company's CODM is its chief executive officer.

The Company manages assets on a total company basis, not by operating segment, as the assets are shared or commingled. Therefore, the chief operating decision maker does not regularly review any asset information by operating segment and, accordingly, asset information is not reported on a segment basis.

Select information from the consolidated statements of operations and comprehensive loss as of the three months ended September 30, 2024 and 2023 is as follows:

Segment	Revenues Three Months Ended September 30, 2024	Revenues Three Months Ended September 30, 2023	Net Loss Before Allocation to Noncontrolling Interest Three Months Ended September 30, 2024	Net Loss Before Allocation to Noncontrolling Interest Three Months Ended September 30, 2023
Specialist isotopes and related services	$ 1,087,695	$ —	$ (3,722,764)	$ (4,222,483)
Nuclear fuels	—	—	(3,632,625)	—
	$ 1,087,695	$ —	$ (7,355,389)	$ (4,222,483)

Select information from the consolidated statements of operations and comprehensive loss as of the nine months ended September 30, 2024 and 2023 is as follows:

Segment	Revenues Nine Months Ended September 30, 2024	Revenues Nine Months Ended September 30, 2023	Net Loss Before Allocation to Noncontrolling Interest Nine Months Ended September 30, 2024	Net Loss Before Allocation to Noncontrolling Interest Nine Months Ended September 30, 2023
Specialist isotopes and related services	$ 2,950,348	$ —	$ (14,637,771)	$ (12,123,907)
Nuclear fuels	—	—	(8,563,904)	—
	$ 2,950,348	$ —	$ (23,201,675)	$ (12,123,907)

Fair Value of Financial Instruments

Accounting guidance defines fair value, establishes a consistent framework for measuring fair value, and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Observable inputs such as quoted prices in active markets;

Level 2: Inputs, other than the quoted prices in active markets, that are observable either directly or indirectly; and

Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The Company's share liability (Note 12) is measured as a Level 1 fair value on a recurring basis. There was no share liability as of December 31, 2023. The Company's share liability was $416,652 as of September 30, 2024. The Company's convertible notes payable (Note 6) is measured as a Level 3 fair value on a recurring basis and was $31,778,742 as of September 30, 2024. There were no transfers among Level 1, Level 2 or Level 3 categories in the nine months ended September 30, 2024. The following table provides a reconciliation of the Company's liabilities measured as a Level 3 at fair value on a recurring basis using significant unobservable inputs:

	Convertible Notes Payable
Balance as of December 31, 2023	—
Fair value at issuance	26,558,143
Fair value adjustment	5,220,599
Settlement of liability	—
Balance as of September 30, 2024	$ 31,778,742

The carrying amounts of accounts payable, accrued expenses and notes payable are considered to be representative of their respective fair values because of the short-term nature of those instruments.

Revenue Recognition

The Company's revenue relates to PET Labs, in which the Company acquired 51% ownership on October 31, 2023 (Note 11). The Company recognizes revenue in accordance with Accounting Standard Codification ("ASC") Topic 606, Revenue from Contracts with Customers ("ASC 606"). The Company enters into transactions with radiopharmacy companies that are within the scope of ASC 606. The terms of these transactions include payment for delivery of nuclear medical doses for PET scanning in South Africa.

Under ASC 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of ASC 606, the Company performs the following five steps: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when (or as) the Company satisfies each performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect consideration it is entitled to in exchange for the goods or services it transfers to the customer.

The Company evaluates a transaction's performance obligations to determine if promised goods or services in a contract to transfer a distinct good or service to the customer and are considered distinct when (i) the customer can benefit from the good or service on its own or together with other readily available resources and (ii) the promised good or service is separately identifiable from other promises in the contract. In assessing whether promised goods or services are distinct, the Company considers whether the goods or services are integral or dependent to other goods or services in the contract.

The Company determines the transaction price based on the agreed government rates for the promised goods in the contract.

The consideration is recognized as revenue when control is transferred for the related goods.

The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition. The Company receives payments from its customers based on billing schedules established in each contract. Upfront payments and fees are recorded as deferred revenue upon receipt or when due until the Company performs its obligations under these arrangements. Amounts are recorded as accounts receivable when the Company’s right to consideration is unconditional.

Accounts Receivable

Accounts receivable are stated at the amount management expects to collect from outstanding balances. An allowance for expected credit losses is estimated for those accounts receivable considered to be uncollectible based upon historical experience and management's evaluation of outstanding accounts receivable. The Company maintains an allowance for expected credit losses for accounts receivable, which is recorded as an offset to accounts receivable, and changes in such are classified as selling, general and administrative expense in the Consolidated Statements of Operations and Comprehensive Loss. The Company assesses collectability by reviewing accounts receivable on a collective basis where similar characteristics exist and on an individual basis when the Company identifies specific customers with known disputes or collectability issues. In determining the amount of the allowance for credit losses, the Company considers historical collectability based on past due status and make judgments about the creditworthiness of customers based on ongoing credit evaluations. The Company also considers customer-specific information, current market conditions, and reasonable and supportable forecasts of future economic conditions. Bad debts are written off against the allowance when identified. As of September 30, 2024, December 31, 2023 and January 1, 2023 there was no allowance for expected credit losses.

Inventory

The Company uses the first in, first out inventory method to account for its inventory. As of September 30, 2024, inventory consists of raw materials and is stated at the lower of cost or net realizable value. There was no inventory as of December 31, 2023.

Property and Equipment

Property and equipment include costs of assets constructed, purchased or leased under a finance lease, related delivery and installation costs and interest incurred on significant capital projects during their construction periods. Expenditures for renewals and betterments also are capitalized, but expenditures for normal repairs and maintenance are expensed as incurred. Costs associated with yearly planned major maintenance are generally deferred and amortized over 12 months or until the same major maintenance activities must be repeated, whichever is shorter. The cost and accumulated depreciation applicable to assets retired or sold are removed from the respective accounts, and gains or losses thereon are included in the statement of operations and comprehensive loss.

The Company assigns the useful lives of its property and equipment based upon its internal engineering estimates, which are reviewed periodically. The estimated useful lives of the Company's property and equipment range from 3 to 10 years, or the shorter of the useful life or remaining life of the lease for leasehold improvements. Depreciation is recorded using the straight-line method.

Construction in progress (Note 4) is carried at cost and consists of specifically identifiable direct and indirect development and construction costs. While under construction, costs of the property are included in construction in progress until the property is placed in service, at which time costs are transferred to the appropriate property and equipment account, including, but not limited to, leasehold improvements or other such accounts.

Property and equipment acquired in the acquisition of PET Labs was measured at fair value on October 31, 2023. The fair value forms the new basis of these assets and is depreciated over the remaining estimated useful lives of the related assets.

Business Combination and Asset Acquisitions

The Company evaluates acquisitions of assets and other similar transactions to assess whether or not the transaction should be accounted for as a business combination or asset acquisition by first applying a screen to determine if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the screen is met, the transaction is accounted for as an asset acquisition. If the screen is not met, further determination is required as to whether or not the Company has acquired inputs and processes that have the ability to create outputs, which would meet the requirements of a business. If determined to be a business combination, the Company accounts for the transaction under the acquisition method of accounting in accordance with ASC Topic 805 Business Combinations ("ASC 805"), which requires the acquiring entity in a business combination to recognize the fair value of all assets acquired, liabilities assumed, and any non-controlling interest in the acquiree and establishes the acquisition date as the fair value measurement point. Accordingly, the Company recognizes assets acquired and liabilities assumed in business combinations, including contingent assets and liabilities, and non-controlling interest in the acquiree based on the fair value estimates as of the date of acquisition. In accordance with ASC 805, the Company recognizes and measures goodwill as of the acquisition date, as the excess of the fair value of the consideration paid over the fair value of the identified net assets acquired.

The consideration for the Company’s business acquisitions may include future payments that are contingent upon the occurrence of a particular event or events. The obligations for such contingent consideration payments are recorded at fair value on the acquisition date. The contingent consideration obligations are then evaluated each reporting period. Changes in the fair value of contingent consideration, other than changes due to payments, are recognized as a gain or loss and recorded within change in the fair value of deferred and contingent consideration liabilities in the consolidated statements of comprehensive loss.

If determined to be an asset acquisition, the Company accounts for the transaction under ASC 805-50, which requires the acquiring entity in an asset acquisition to recognize assets acquired and liabilities assumed based on the cost to the acquiring entity on a relative fair value basis, which includes transaction costs in addition to consideration given. No gain or loss is recognized as of the date of acquisition unless the fair value of non-cash assets given as consideration differs from the assets’ carrying amounts on the acquiring entity’s books. Consideration transferred that is non-cash will be measured based on either the cost (which shall be measured based on the fair value of the consideration given) or the fair value of the assets acquired and liabilities assumed, whichever is more reliably measurable. Goodwill is not recognized in an asset acquisition and any excess consideration transferred over the fair value of the net assets acquired is allocated to the identifiable assets based on relative fair values.

Contingent consideration payments in asset acquisitions are recognized when the contingency is resolved and the consideration is paid or becomes payable (unless the contingent consideration meets the definition of a derivative, in which case the amount becomes part of the basis in the asset acquired). Upon recognition of the contingent consideration payment, the amount is included in the cost of the acquired asset or group of assets.

Goodwill

Goodwill represents the amount of consideration paid in excess of the fair value of net assets acquired as a result of the Company's business acquisitions accounted for using the acquisition method of accounting. Goodwill is not amortized and is subject to impairment testing at a reporting unit level on an annual basis or when a triggering event occurs that may indicate the carrying value of the goodwill is impaired. An entity is permitted to first assess qualitative factors to determine if a quantitative impairment test is necessary. Further testing is only required if the entity determines, based on the qualitative assessment, that it is more likely than not that the fair value of the reporting unit is less than its carrying amount. The Company will perform its annual test for goodwill as of October 31.

Variable Interest Entities

The Company accounts for the investments it makes in certain legal entities in which equity investors do not have (1) sufficient equity at risk for the legal entity to finance its activities without additional subordinated financial support, or (2) as a group, the holders of the equity investment at risk do not have either the power, through voting or similar rights, to direct the activities of the legal entity that most significantly impact the entity's economic performance, or (3) the obligation to absorb the expected losses of the legal entity or the right to receive expected residual returns of the legal entity. These certain legal entities are referred to as "variable interest entities" or "VIEs."

The Company would consolidate the results of any such entity in which it determined that it had a controlling financial interest. The Company would have a "controlling financial interest" in such an entity if the Company had both the power to direct the activities that most significantly affect the VIE's economic performance and the obligation to absorb the losses of, or right to receive benefits from, the VIE that could be potentially significant to the VIE. On a quarterly basis, the Company will reassess whether it has a controlling financial interest in any investments it has in these certain legal entities.

Convertible Notes Payable

Convertible notes payable are accounted for in accordance with ASC Topic 825, *Financial Instruments* ("ASC 825"). Upon issuance the Company has elected the fair value option to account for the convertible notes payable. Changes in fair value during the reporting period are recognized in other income (expense) in the consolidated statement of operations and comprehensive loss.

Leases

Leases are accounted for in accordance with ASC Topic 842, *Leases* ("ASC 842"). At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on specific facts and circumstances, the existence of an identified asset(s), if any, and the Company's control over the use of the identified asset(s), if applicable. Operating lease liabilities and their corresponding right-of-use ("ROU") assets are recorded based on the present value of future lease payments over the expected lease term. The interest rate implicit in lease contracts is typically not readily determinable. As such, the Company will utilize the incremental borrowing rate, which is the rate incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment, and considering the region in which the ROU asset and liabilities are located.

The Company has elected to combine lease and non-lease components as a single component. Operating leases are recognized on the balance sheet as ROU lease assets, lease liabilities current and lease liabilities non-current. Fixed rents are included in the calculation of the lease balances, while variable costs paid for certain operating and pass-through costs are excluded. Lease expense is recognized over the expected term on a straight-line basis.

Finance leases are recognized on the balance sheet as property and equipment, finance lease liabilities current and finance lease liabilities non-current. Finance lease ROU assets and the related lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. The finance lease ROU assets are amortized on a straight-line basis over the lease term with the related interest expense of the lease liability payment recognized over the lease term using the effective interest method.

Impairment of Long-lived Assets

Long-lived assets consist primarily of property and equipment. The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of an asset is not recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the asset exceeds the fair value of the assets. The Company did not recognize any impairment losses for the three and nine months ended September 30, 2024 or 2023.

Research and Development Costs

Research and development costs consist primarily of fees paid to consultants, license fees and facilities costs. Nonrefundable advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made. All research and development costs are expensed as incurred.

Selling, General and Administrative Costs

Selling, general and administrative expenses consist primarily of salaries and related benefits, including stock-based compensation expense, related to the Company's executive, finance, business development, legal, human resources and support functions. Other general and administrative expenses include professional fees for auditing, tax, consulting and patent-related services, rent and utilities and insurance.

Stock-based Compensation Expense

Stock-based compensation expense represents the cost of the grant date fair value of employee stock awards recognized over the requisite service period of the awards (usually the vesting period) on a straight-line basis. The Company estimates the fair value of each stock-based award on the date of grant using the Black-Scholes option pricing model. The Black-Scholes option pricing model incorporates various assumptions, such as the value of the underlying common stock, the risk-free interest rate, expected volatility, expected dividend yield, and expected life of the options. Forfeitures are recognized as a reduction of stock-based compensation expense as they occur.

The Company also awards restricted stock to employees and directors. Restricted stock is generally subject to forfeiture if employment terminates prior to the completion of the vesting restrictions. The Company expenses the cost of the restricted stock, which is determined to be the fair market value of the shares of common stock underlying the restricted stock at the date of grant, ratably over the period during which the vesting restrictions lapse.

Stock-based compensation expense is classified in the statement of operations and comprehensive loss in the same manner in which the award recipients' payroll costs are classified or in which the award recipients' service payments are classified.

Income Taxes

Deferred income tax assets and liabilities arise from temporary differences associated with differences between the financial statements and tax basis of assets and liabilities, as measured by the enacted tax rates, which are expected to be in effect when these differences reverse. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

Prior to the acquisition of 51% of PET Labs in October 2023, the Company had generated net losses since inception and accordingly had not recorded a provision for income taxes. Subsequent to the acquisition of 51% of PET Labs, the Company records the provision for income taxes for the activity from PET Labs operations.

The Company follows the provisions of ASC 740-10, *Uncertainty in Income Taxes,* or ASC 740-10. The Company has not recognized a liability for any uncertain tax positions. A reconciliation of the beginning and ending amount of unrecognized tax benefits has not been provided since there is no unrecognized benefit since the date of adoption. The Company has not recognized interest expense or penalties as a result of the implementation of ASC 740-10. If there were an unrecognized tax benefit, the Company would recognize interest accrued related to unrecognized tax benefits and penalties in income tax expense.

The Company has identified the United States, South Africa and Guernsey as its major tax jurisdictions. Refer to Note 15 for further details.

Comprehensive Loss

Comprehensive loss is defined as a change in equity during a period from transactions and other events and circumstances from non-owner sources. The Company's comprehensive loss is comprised of net loss and the effect of currency translation adjustments.

Recently Issued Accounting Pronouncements

The Company has reviewed recently issued accounting pronouncements and plans to adopt those that are applicable to it. The Company does not expect the adoption of any recently issued pronouncements to have a material impact on its results of operations or financial position.

In November 2023, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures ("ASU 2023-07"). ASU 2023-07 will improve reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses on an interim and annual basis. The ASU is effective for fiscal years beginning after December 15, 2023, and interim periods after December 15, 2024, with early adoption permitted. The adoption of this standard is not expected to have a material impact on the Company's condensed financial statements at adoption date.

In November 2024, the FASB issued ASU 2024-03, Disaggregation of Income Statement Expenses ("ASU 2024-03") and is effective for annual reporting periods beginning after December 15, 2026 and interim reporting periods beginning after December 15, 2027. ASU 2024-03 requires disclosures about specific types of expenses included in the expense captions presented on the face of the income statement as well as disclosures about selling expenses. The Company is still assessing the impact of adopting this standard.

3. Revenue

In connection with the Company's acquisition of 51% ownership of PET Labs in October 2023, the Company manufactures and sells nuclear medical doses for PET scanning in South Africa. For the three and nine months ended September 30, 2024, the Company recognized revenue of $1,087,695 and $2,950,348, respectively. Since the acquisition did not occur until October 2023, there is no accounts receivable as of January 1, 2023 and no revenue was recognized for the three and nine months ended September 30, 2023.

The following table presents changes in the Company's accounts receivable for the nine months ended September 30, 2024:

	Balance as of December 31, 2023	Additions	Deductions	Balance as of September 30, 2024
Accounts receivable	$ 216,504	$ 2,950,348	$ (2,606,423)	$ 560,429

4. Property and Equipment

Property and equipment as of September 30, 2024 and December 31, 2023 consisted of the following:

	Useful Lives (Years)	September 30, 2024	December 31, 2023
Construction in progress	-	$ 14,227,486	$ 9,108,923
Tools, machinery and equipment	3 - 10	8,598,704	1,458,654
Computer equipment	3 - 4	114,231	60,447
Vehicles	5	257,158	39,849
Software	5	1,737	1,639
Office furniture	7	144,213	59,588
Leasehold improvements	5	126,134	21,446
Property and equipment, at cost		23,469,663	10,750,546
Less accumulated depreciation		(485,371)	(37,707)
Property and equipment, net		$ 22,984,292	$ 10,712,839

The Carbon-14 plant (which is included within tools, machinery and equipment) was completed in June 2024 and depreciation began in July 2024. The Company is currently building two other plants in Pretoria, South Africa: a multi-isotope plant and a laser isotope separation plan using quantum enrichment technology. Costs incurred for the other two plants are considered construction in progress because the work is not complete as of September 30, 2024. Costs incurred for the plants as of December 31, 2023 are considered construction in progress. There was no depreciation expense as it relates to the construction in progress for the three and nine months ended September 30, 2024 and 2023. Depreciation expense for all other asset categories was $175,916 and $802 for the three months ended September 30, 2024 and 2023, respectively. Depreciation expense for all other categories was $425,630 and $969 for the nine months ended September 30, 2024 and 2023, respectively.

5. Accrued Expenses

Accrued expenses as of September 30, 2024 and December 31, 2023 consisted of the following:

	September 30, 2024	December 31, 2023
Accrued professional	$ 503,386	$ 447,295
Accrued salaries and other employee costs	1,169,277	845,344
Accrued other	89,759	18,606
Total accrued expenses	$ 1,762,422	$ 1,311,245

6. Notes Payable

Convertible Notes Payable

In March 2024, the Company issued convertible notes payable (“March 2024 Convertible Notes”) totaling $21,063,748 and received aggregate cash of $20,550,000. One of the notes totaling $513,748 was issued to the placement agent in lieu of cash issuance costs. Issuance costs paid in cash totaling $521,423 and the value of the note issued upon issuance to the placement agent were expensed in selling, general and administrative costs in the condensed consolidated statement of operations and comprehensive loss for the nine months ended September 30, 2024.

In June 2024, the Company issued additional convertible notes payable (“June 2024 Convertible Notes”) totaling $5,494,395 and received aggregate cash of $5,386,228. One of the notes totaling $108,167 was issued to the placement agent in lieu of cash issuance costs and was expensed in selling, general and administrative costs in the condensed consolidated statement of operations and comprehensive loss for the nine months ended September 30, 2024. Issuance costs paid in cash were negligible. The March 2024 Convertible Notes and the June 2024 Convertible Notes are collectively the “Convertible Notes”.

The Convertible Notes are payable on demand in March 2029 and bear an annual interest rate of 6% through March 7, 2025 and 8% thereafter. Upon a qualified financing event the Convertible Notes convert into the shares issued in that qualified financing event at a price per share equal to 80% of the share price issued subject to a valuation cap. Upon a qualified transaction, the noteholders may elect to receive either 1.5x the principal and accrued interest balance in cash or convert into common shares.

The Convertible Notes are recorded on the condensed consolidated balance sheet at their fair values. The fair value of the March Convertible Notes on the date of issuance was $21,063,748. The fair value of the June Convertible Notes on the date of issuance was $5,494,395. The fair value of the Convertible Notes as of September 30, 2024 has been determined to be $31,778,742 and the resultant change in fair value of $5,220,599 has been recorded in other income and expense in the condensed consolidated statement of operations and comprehensive loss for the nine months ended September 30, 2024. The resultant change in fair value for the three months ended September 30, 2024 of $2,692,073 has been recorded in other income and expense in the consolidated statement of operations and comprehensive loss. The fair value of the Convertible Notes as of June 30, 2024 has been determined to be $29,086,669 and the resultant change in fair value of $2,528,526 has been recorded in other income and expense in the condensed consolidated statement of operations comprehensive loss for the six months ended June 30, 2024. As of September 30, 2024, the total principal and accrued interest of the Convertible Notes is $27,380,563 of which $822,420 is from the interest.

Promissory Note Payable

During 2021, the Company executed a promissory note payable with an aggregate principal balance of $33,500 (25,000 GBP). The note was due after a period of two months, followed by mutually agreed upon monthly extensions, and does not bear interest. As of September 30, 2024 and December 31, 2023, the promissory note payable balance was $33,446 and $31,827, respectively, and continues to be automatically extended on a monthly basis.

In November 2023, the Company executed a promissory note payable with a finance company to fund its directors and officers insurance policy for $526,282. This note bore interest at an annual rate of 8.74% with six monthly payments beginning in December

2023. The note was repaid in full in May 2024. For the nine months ended September 30, 2024, the Company recorded interest expense of $11,247. As of December 31, 2023, the promissory note payable balance was $438,569.

7. Deferred Revenues

In June 2023, the Company entered into a Supply Agreement with a customer for the delivery of Molybdenum-100 and Molybdenum-98 beginning in 2024. In conjunction with the Supply Agreement, the Company received $882,000 in September 2023, as an advance towards future revenue. The Company has recorded $882,000 as deferred revenue on the balance sheet as of September 30, 2024 and December 31, 2023. There was no deferred revenue recorded as of January 1, 2023 and September 30, 2023.

8. Commitments and Contingencies

Purchase of Cyclotron

In November 2023, the cyclotron that the Company ordered was shipped. As of December 31, 2023, the equipment had not been delivered; however, the Company was obligated to purchase this equipment and recorded the full cost of $1,653,000 in other noncurrent assets and other noncurrent liabilities on the consolidated balance sheet as of December 31, 2023.

In March 2024, the cyclotron was received by the Company and is recorded as property and equipment. The financing company has paid the vendor. The Company financed the cost of this equipment and it is recorded in finance lease liabilities as of September 30, 2024.

Klydon Proprietary Limited

In November 2021, the Company entered into an agreement with Klydon Proprietary Limited (“Klydon”) to design and build a plant to enrich Molybdenum in South Africa (the "Turnkey Contract"). The initial phase of the project included the building of a plant that can support the production of at least 5kgs of Mo-100. The contracted cost for this phase was $6,800,000. The second phase of the project included the production to be increased to 20kgs of Mo-100 with an additional cost of $6,000,000.

Klydon performed a portion of the services required under the Turnkey Contract; however, some services were incomplete and many of the services were not completed within the time frame required. As a result, Klydon and ASP South Africa entered into an Acknowledgement of Debt Agreement dated November 30, 2022, whereby Klydon (i) agreed to pledge its assets (the “Pledged Assets”) to ASP South Africa to secure its performance of the Turnkey Contract by December 31, 2022, and (ii) acknowledged that ASP South Africa would suffer damages in the amount of $6,050,000 (“Damage Amount”) should it fail to perform. Under the Acknowledgement of Debt Agreement, the Pledged Assets would serve as collateral for Klydon’s obligation to pay the Damage Amount should Klydon fail to perform. In connection therewith, also on November 30, 2022, ASP South Africa and Klydon entered into a Deed of Security Agreement whereby, if Klydon failed to complete its obligations under the Turnkey Contract by December 31, 2022, all of Klydon’s rights of any nature to and interests of any nature in the Pledged Assets would be transferred to ASP South Africa. Klydon failed to complete its obligations under the Turnkey Contract by December 31, 2022, however, the Company did not perfect its interests in the assets until April 4, 2023. The Company did not believe that the amounts owed by Klydon were realizable, nor did the Company know the timing of any recovery payments. Therefore, a loss recovery receivable was not recorded at any time prior to April 4, 2023.

On April 4, 2023, the Company perfected its interest under the Acknowledgement of Debt Agreement, pursuant to which the Company acquired certain intellectual property from Klydon (“Klydon Settlement”). In addition, the Company acquired Klydon's interest in four entities which are inactive and in the process of being dissolved. The Company has concluded that the Klydon Settlement is accounted for as an asset acquisition under ASC 805 since the assets acquired were concentrated in a single identifiable asset from a related party. In conjunction with the Klydon Settlement, the Company recorded an increase to additional paid-in capital for the settlement of all liabilities owed to Klydon at the time of settlement totaling $626,223.

Two individuals who are officers and board members of Klydon, one who is now an officer of ASP Isotopes Inc. and the other who is now a scientific advisor of ASP Isotopes Inc., received warrants to purchase common stock of the Company and therefore are considered related parties. See Notes 10 and 12.

Share Purchase Agreement relating to PET Labs

On October 31, 2023, the Company entered into a Share Purchase Agreement with Nucleonics Imaging Proprietary Limited, a company incorporated in the Republic of South Africa (the “Seller”), relating to the purchase and sale of ordinary shares in the issued share capital of Pet Labs. PET Labs is a South African radiopharmaceutical operations company, dedicated to nuclear medicine and the science of radiopharmaceutical production.

Under the Purchase Agreement, the Company has agreed to purchase from the Seller 51 ordinary shares in the issued share capital of PET Labs (the “Initial Sale Shares”) (representing 51% of the issued share capital of PET Labs) and has an option to purchase from the Seller the remaining 49 ordinary shares in the issued share capital of PET Labs (the “Option Shares”) (representing the remaining 49% of the issued share capital of PET Labs). The Company agreed to pay to the Seller an aggregate of $2,000,000 for the Initial Sale Shares, of which aggregate amount of $500,000 was payable on the completion of the sale of the Initial Sale Shares and $1,500,000 is payable on demand after one calendar year from the agreement date. In January 2024, the Company agreed to pay $264,750 to the Seller. The balance due for the Initial Sale Shares as of September 30, 2024 is $1,235,250 and is recorded in other current liabilities on the condensed consolidated balance sheet. If the Company exercises its option to purchase the Option Shares (which option is exercisable from the agreement date until January 31, 2027, provided that the Initial Sale Shares have been paid for in full), the Company has agreed to pay $2,200,000 for the Option Shares.

PET Labs Global

In August 2024, PET Labs Global entered into a three-year service agreement with Cayman Enterprise City and is licensed to operate from within the Cayman Islands’ Special Economic Zone (“SEZ”). The service fee includes among other things the right to use certain office space and associated facilities within the SEZ. The Company has applied the guidance in ASC 842 and determined that this agreement is not a leasing arrangement. Management has determined that based on the nature of the combined services the expense should be recognized as incurred. The Company recorded fees under this agreement totaling $10,583 for the three and nine months ended September 30, 2024.

Contingencies

From time to time, the Company may have certain contingent liabilities that arise in the ordinary course of its business activities. The Company accrues liabilities for such matters when future expenditures are probable and such expenditures can be reasonably estimated.

On October 25, 2022, the Company received a letter from a law firm acting on behalf of Norsk medisinsk syklotronsenter AS ("NMS"), asserting, among other things, that the grant of a license to the ASP technology to the Company by Klydon violates a pre-existing exclusive sub-license to the ASP technology granted to Radfarma. The asserted claims, arbitration and/or litigation could include claims against the Company, the Company's licensor (Klydon), or Klydon's present or former sub-licensors alleging infringement of intellectual property rights with respect to the ASP technology on which our company relies. The Company recorded legal costs totaling $78,304 which was paid to Klydon's attorneys to settle this claim. As of December 31, 2023, Radfarma has relinquished all claims and ASP Isotopes owns the rights to the licenses originally held by Klydon and acquired by ASP Isotopes.

9. Leases

The Company accounts for facility leases in accordance with ASC 842 (Note 2). The Company is party to five facility leases in South Africa for office, manufacturing and laboratory space.

A lease for office and laboratory space in Pretoria, South Africa commenced in October 2021 with the initial term set to expire in December 2030. The Company has applied the guidance in ASC 842 and has determined that it should be classified as an operating lease. The Company's incremental borrowing rate for this lease is 7.5% based on the remaining lease term of the applicable lease. Consequently, a ROU lease asset of $952,521 with a corresponding lease liability of $952,521 based on the present value of the minimum rental payments of such lease was recorded at the inception of the lease.

A lease for additional production space in Pretoria, South Africa commenced in April 2023 with the initial term set to expire in March 2024. Effective February 1, 2024, this lease was amended such that the new term begins on February 1, 2024 and expires in February 2026. Prior to the amendment, the Company had applied the guidance in ASC 842 and determined that this lease was a short term lease and expensed the monthly payments as incurred. The Company has applied the guidance in ASC 842 to the amended lease and has determined that it should be classified as an operating lease. The Company's incremental borrowing rate for this lease is 10.6% based on the lease term of the applicable lease. Consequently, a ROU lease asset of $364,458 with a corresponding lease liability of $364,458 based on the present value of the minimum rental payments of such lease was recorded at the inception of the lease.

A lease for laboratory space in Pretoria, South Africa commenced in November 2023 with the initial term set to expire in October 2026. The Company has applied the guidance in ASC 842 and has determined that it should be classified as an operating lease. The Company's incremental borrowing rate for this lease is 13.16% based on the remaining lease term of the applicable lease. Consequently, a ROU lease asset of $70,607 with a corresponding lease liability of $70,607 based on the present value of the minimum rental payments of such lease was recorded at the inception of the lease.

A lease for office and production space in Pretoria, South Africa commenced prior to October 31, 2023 with the initial term set to expire in March 2026. The Company has applied the guidance in ASC 842 and has determined that it should be classified as an operating lease effective on the date of ASP Isotopes' acquisition of 51% of PET Labs. The Company's incremental borrowing rate is approximately 12.875% based on the expected remaining lease term of the applicable lease. Consequently, a ROU lease asset of $592,304 which reflects an $84,858 unfavorable adjustment based on the fair value of the lease terms and a corresponding lease liability of $677,163 based on the present value of the minimum rental payments of such lease was recorded at the date of ASP Isotopes acquisition of 51% of PET Labs. Dr. Gerdus Kemp, an officer of PET Labs and an employee of ASP UK, is the sole owner of the facility under this lease agreement.

A summary of long leases in the condensed consolidated balance sheet as of September 30, 2024 is as follows:

	ROU Asset	Operating Lease Liability - Current	Operating Lease Liability – Non-Current	Total Operating Lease Liability
Lease:				
Office and laboratory, Pretoria, South Africa	$ 607,996	$ 66,207	$ 624,625	$ 690,832
Additional production, Pretoria, South Africa	277,439	191,491	85,948	277,439
Laboratory, Pretoria, South Africa	55,520	24,496	32,913	57,409
Office and production, Pretoria, South Africa	419,874	307,263	169,033	476,296
Total	$ 1,360,829	$ 589,457	$ 912,519	$ 1,501,976

A summary of long-term leases in the condensed consolidated balance sheet as of December 31, 2023 is as follows:

	ROU Asset	Operating Lease Liability - Current	Operating Lease Liability – Non-Current	Total Operating Lease Liability
Lease:				
Office and laboratory, Pretoria, South Africa	$ 626,548	$ 53,504	$ 637,348	$ 690,852
Laboratory, Pretoria, South Africa	68,089	19,608	48,805	68,413
Office and production, Pretoria, South Africa	564,064	263,452	380,494	643,946
Total	$ 1,258,701	$ 336,564	$ 1,066,647	$ 1,403,211

A lease for additional production space in Pretoria, South Africa commenced prior to October 31, 2023 with the initial term expiring in March 2024 and the Company is maintaining the lease under the agreed upon monthly extensions. The Company has applied the guidance in ASC 842 and has determined that this lease is a short term lease effective on the date of ASP Isotopes acquisition of

51% of PET Labs and expensed the monthly payments for the three and nine months ended September 30, 2024 and the two months ended December 31, 2023.

Quantitative information regarding the Company's operating lease liabilities is as follows:

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Operating Lease Cost				
Operating lease cost	$ 173,231	$ 29,654	$ 489,823	$ 88,962
Other Information				
Operating cash flows paid for amounts included in the measurement of lease liabilities	$ 169,241	$ 24,559	$ 474,616	$ 70,080
Operating lease liabilities arising from obtaining right-of-use assets	$ —	$ —	$ 364,458	$ —
Weighted average remaining lease term (years)	3.69	7.25	3.69	7.25
Weighted average discount rate	9.99 %	7.50 %	9.99 %	7.50 %

Future lease payments under noncancelable operating lease liabilities as of September 30, 2024 are as follows:

	Operating Leases
Future Lease Payments	
2024 (remaining three months)	$ 176,616
2025	711,758
2026	277,278
2027	136,324
2028	146,548
Thereafter	326,894
Total lease payments	$ 1,775,418
Less: imputed interest	(273,442)
Total lease liabilities	$ 1,501,976

The Company records the expense from short term leases as incurred. The Company recorded lease expense from its short term leases of $15,750 and $59,562 for the three and nine months ended September 30, 2024, respectively. Lease expense from short term leases was $5,154 and $18,882 for the three and nine months ended September 30, 2023, respectively.

The Company accounts for finance leases in accordance with ASC 842 (Note 2). Subsequent to the acquisition of 51% of PET Labs on October 31, 2023, the Company is party to nine ongoing finance leases in South Africa for certain fixed assets. In addition, In June and September 2024, the Company entered into new finance leases for additional equipment.

Quantitative information regarding the Company's finance lease liabilities is as follows:

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Finance Lease Cost				
Interest on lease liabilities	$ 138,652	$ —	$ 162,585	$ —
Other Information				
Operating cash flows paid for amounts included in the measurement of finance lease liabilities	$ 291,546	$ —	$ 330,392	$ —
Amortization of right-of-use assets	$ 54,347	$ —	$ 73,659	$ —
Weighted average remaining lease term (years)	4.7	—	4.7	—
Weighted average discount rate	12.5 %	— %	12.5 %	— %

Future lease payments under noncancelable finance lease liabilities are as follows as of September 30, 2024:

	Finance Leases
Future Lease Payments	
2024 (remaining three months)	$ 140,885
2025	729,079
2026	728,619
2027	721,558
2028	674,923
Thereafter	460,432
Total lease payments	$ 3,455,496
Less: imputed interest	(847,118)
Total lease liabilities	$ 2,608,378

10. License Agreements

In September 2021, ASP South Africa licensed certain intellectual property from Klydon for the development, production distribution, marketing and sale of Mo-100. The license had a term of 999 years, unless terminated earlier by either party under certain provisions. Two individuals who are officers and board members of Klydon received warrants to purchase common stock of the Company (See Note 12). Effective July 26, 2022, the parties agreed to terminate the Mo-100 license, which was superseded and replaced by a new license agreement (described below).

In January 2022, ASP South Africa licensed certain intellectual property from Klydon for the development, production distribution, marketing and sale of uranium isotope U-235 ("U-235"). The license had a term of 999 years, unless terminated earlier by either party under certain provisions. The Company paid an upfront fee of $100,000, which was expensed to research and development expense. The Company was required to pay a nominal royalty per Kg of product sold plus 10% royalties on product net profits over the term of the contract. One of the officers, who is also a board member of Klydon, became a board member and consultant of ASP Isotopes Inc. and an employee of ASP Guernsey in January 2022. Effective July 26, 2022, the parties agreed to terminate the U-235 license, which was superseded and replaced by a new license agreement (described below).

In July 2022, ASP UK entered into a license agreement with Klydon, as licensor, pursuant to which ASP Isotopes UK Ltd acquired from Klydon an exclusive license to use, develop, modify, improve, subcontract and sublicense certain intellectual property rights relating to the ASP technology for the production, distribution, marketing and sale of all isotopes produced using the ASP technology (the "Klydon license agreement"). The Klydon license agreement superseded and replaced the Mo-100 license and U-235 license described in Note 8 above. The Klydon license agreement is royalty-free, has a term of 999 years and is worldwide for the development of the ASP technology and the distribution, marketing and sale of isotopes. Future production of isotopes is limited to member countries of the Nuclear Suppliers Group. In connection with the Klydon license agreement the Company agreed to make an upfront payment of $100,000 (to be included within the payments the Company makes under the Turnkey Contract) and deferred payments of $300,000 over 24 months, which was expensed to research and development expense.

In July 2022, ASP South Africa acquired assets comprising a dormant Silicon-28 aerodynamic separation processing plant from Klydon for ZAR 6,000,000 (which at the then current exchange rate was approximately $354,000), which was recorded to property and equipment, would have been payable to Klydon on the later of 180 days of the acquisition and the date on which the assets generate any revenues of any nature.

On April 4, 2023, the Company perfected its interest under the Acknowledgement of Debt Agreement (see Note 8), pursuant to which the Company acquired certain intellectual property from Klydon ("Klydon Settlement"). The Company concluded that the Klydon Acquisition is accounted for under ASC 805, Business Combinations as an asset acquisition since the assets acquired were concentrated in a single identifiable asset from a related party. In conjunction with the Klydon Settlement, the Company recorded an increase to additional paid-in capital for the settlement of all liabilities owed to Klydon at the time of settlement totaling $626,223.

11. Acquisitions

PET Labs

In October 2023, the Company completed the acquisition of PET Labs. The acquisition is intended to accelerate the distribution of the Company's pipeline. The acquisition of PET Labs has been accounted for as a business combination in accordance with ASC 805.

Pursuant to the terms of the agreement, the Company acquired 51% of the common shares issued and outstanding for total purchase consideration of $2,000,000 in cash of which $500,000 was paid up front. In January 2024, the Company made a partial payment of $264,750 and the balance of $1,235,250 is expected to be paid in the second half of 2024 and is recorded in other current liabilities on the condensed consolidated balance sheet.

In addition to the purchase consideration, the Company has an option to purchase the remaining 49% of the issued and outstanding shares for an agreed consideration totaling $2,200,000. No consideration or value relating to this option was recognized as it was not considered probable at the time of acquisition and as of September 30, 2024.

Dr. Gerdus Kemp is an officer of PET Labs and, effective November 1, 2023, an employee of ASP UK. In addition, Dr. Kemp controls the remaining 49% ownership of PET Labs.

The following table summarizes the preliminary allocation of the purchase consideration to the fair value of the assets acquired and liabilities assumed:

Consideration		
Cash	$	500,000
Present value of balance due		1,395,348
	$	1,895,348
Recognized amounts of identifiable assets acquired and liabilities assumed		
Cash and cash equivalents	$	378,152
Accounts receivable		460,165
Other current assets		184,457
Property and equipment		821,926
Right of use assets		592,304
Financial liabilities		(1,248,699)
Right of use liabilities		(677,163)
Total identifiable net assets		511,142
Noncontrolling interest		(1,821,021)
Goodwill		3,205,227
	$	1,895,348

Goodwill arising from the acquisition as of October 31, 2023 of $3,205,227 was attributable mainly to buyer specific synergies expected to arise from the acquisition. No goodwill from this acquisition is deductible for income tax purposes.

The Company considered the contractual value of accounts receivable to be the same as the fair value and the full amount was collected.

The results of PET Labs have been included in the consolidated financial statements from the date of the acquisition.

The Company accounts for business combinations in accordance with ASU No. 2015-16, Business Combinations (Topic 805), which requires an acquirer to retrospectively adjust provisional amounts recognized in a business combination during the measurement period (which represents a period not to exceed one year from the date of the acquisition), in the reporting period in which the adjustment is determined, as well as present separately on the face of the income statement or as a disclosure in the notes to the consolidated financial statements, the portion of the amount recorded in current period earnings that would have been recorded in previous reporting periods if the adjustment to the provisional amounts had been recognized as of the acquisition date.

The changes to the carrying value of goodwill is as follows:

Balance as of October 31, 2023 (acquisition date)	$	3,205,227
Translation adjustment		61,876
Balance as of December 31, 2023		3,267,103
Translation adjustment		194,356
Balance as of September 30, 2024	$	3,461,459

ASP Rentals

In December 2023, ASP South Africa entered into a Shareholders Agreement (“ASP Rentals Shareholders Agreement”) with ASP Rentals, a newly formed equipment financing service provider formed for the sole purpose of providing financing to ASP South Africa for its significant asset purchases in South Africa. In accordance with the terms of the ASP Rentals Shareholders Agreement, ASP Rentals issued 24% of its capital stock to ASP South Africa for total consideration of ZAR 3,300,829 (which at the exchange rate as of December 31, 2023 was $180,387) and the remaining 76% of its capital stock was issued to two third party entities for combined consideration of ZAR 13,203,317 (which at the exchange rate as of December 31, 2023 was $721,548).

In June 2024, ASP Rentals issued additional capital stock to support additional financing to ASP South Africa and PET Labs. Per the terms of the ASP Rentals Shareholder Agreement, ASP Rentals issued 20% of the new capital to ASP South Africa for total consideration of ZAR 3,671,412 (which at the exchange rate as of June 30, 2024 was $201,994) and the remaining 80% of the new capital to one of the two original third party entities for a combined consideration of ZAR 18,357,063 (which at the exchange rate as of June 30, 2024 was $1,009,969).

In August 2024, ASP Rentals issued additional capital stock to support additional financing to PET Labs. Per the terms of the ASP Rentals Shareholder Agreement, ASP Rentals issued 20% of the new capital to ASP South Africa for total consideration of ZAR 369,965 (which at the exchange rate as of September 30, 2024 was $21,421) and the remaining 80% of the new capital to one of the two original third party entities for a combined consideration of ZAR 1,849,826 (which at the exchange rate as of September 30, 2024 was $104,925).

As a result of the additional financings in 2024, ASP South Africa now controls 42% of ASP Rentals.

In addition to issuance of these shares, future ASP South Africa and PET Labs Pharmaceutical equipment purchases may also be financed by ASP Rentals through the issuance of additional shares. ASP South Africa will only be entitled to dividend distributions upon the two third party entities receiving a designated return on their investment.

In conjunction with the ASP Rental Shareholders Agreement, ASP South Africa and PET Labs have both entered into an Asset Sale Agreement and an Asset Rental Agreement with ASP Rentals in order to facilitate the financing of equipment recently purchased by ASP South Africa and PET Labs. As a result of the transactions contemplated by these agreements, collectively, ASP Rentals is considered a variable interest entity. In addition, since the only function of ASP Rentals is to provide financing to ASP South Africa and PET Labs, ASP Isotopes is considered to be the primary beneficiary of ASP Rentals. Therefore, ASP Rentals has been consolidated in accordance with ASC 810.

Pursuant to the terms of the ASP Rentals Shareholders Agreement, as of December 31, 2023 ASP South Africa was obligated to acquire and ASP Rentals was obligated to issue 24% of the common shares of ASP Rentals to be issued and outstanding for total purchase consideration of ZAR 3,300,829 (which at the exchange rate as of December 31, 2023 was $180,387). As of December 31, 2023 these amounts are eliminated in consolidation.

As of December 31, 2023, ASP Rentals had a receivable and an obligation to issue 76% of the common shares of ASP Rentals with non-affiliates for an aggregate of ZAR 13,203,317 (which at the exchange rate as of December 31, 2023 was $721,548). As of December 31, 2023, the Company had recorded $721,548 as a receivable from noncontrolling interest in current assets and a non-controlling interest in equity. All consideration for these common shares of ASP Rentals was received in January 2024.

In January 2024, a total of ZAR 14,351,431 (which at the exchange rate as of December 31, 2023 was $784,291) was transferred between ASP Rentals and ASP South Africa per the terms of the ASP Sale Agreement and Asset Rental Agreement, excluding VAT. In June 2024, a total of ZAR 13,217,472 (which at the exchange rate as of June 30, 2024 was $727,199) was transferred between ASP Rentals and ASP South Africa and PET Labs per the terms of the ASP Sale Agreement and Asset Rental Agreement, excluding VAT.

12. Stockholders' Equity

Preferred stock

ASP Isotopes Inc. has 10,000,000 shares of preferred stock authorized, of which no shares were issued and outstanding as of September 30, 2024 and December 31, 2023.

Common stock

The Company has 500,000,000 shares of common stock authorized, of which 68,409,116 and 48,923,276 shares were issued and outstanding as of September 30, 2024 and December 31, 2023, respectively. Common stockholders are entitled to one vote for each share of outstanding common stock held at all meetings of stockholders and written actions in lieu of meetings. Common stockholders are entitled to receive dividends for each share of outstanding common stock, if and when declared by the Board. No dividends have been declared or paid by the Company through September 30, 2024.

As of December 31, 2022, the Company owed a placement agent, as amended, 57,250 shares and the fair value was $90,455. The fair value of the 57,250 shares issuable to the placement agent just prior to settlement in March 2023 was $75,570. The resulting change in fair value of share liability was a gain of $14,885 for the three months ended March 31, 2023. In March 2023, the Company settled this share liability by issuing the 57,250 shares of common stock.

In November 2022, the Company was required to issue shares of common stock with a then fair value totaling $50,000 to a consultant. The fair value of the 12,500 shares just prior to settlement in August 2023 was $18,125. The resulting change in fair value of share liability was a gain of $31,875 for the three and nine months ended September 30, 2023. In August 2023, the Company issued 12,500 shares of common stock to settle this share liability.

In February 2023, the Company was required to issue an aggregate of 100,000 shares of common stock to two consultants. The Company determined that the fair value of these two awards was $1.55 and $1.90 per share, respectively, for a total value of $172,500. The fair value of these shares just prior to settlement in August 2023 was $145,000. The resulting change in fair value of the share liability was a loss of $88,200 and a gain of $27,500 for the three and nine months ended September 30, 2023, respectively. In August 2023, the Company issued 100,000 shares of common stock to settle these share liabilities.

In March 2023, the Company was required to issue an aggregate of 100,000 shares of common stock pursuant to a settlement agreement that vests immediately. The Company determined that the fair value of this award was $0.94 per share for a total value of $93,700. The fair value of these shares just prior to settlement in August 2023 was $145,000. The resulting change in fair value of the share liability was a loss of $88,200 and $51,300 for the three and nine months ended September 30, 2023, respectively. In August 2023, the Company issued 100,000 shares of common stock to settle this share liability.

In March 2023, an officer and scientific advisor of the Company exchanged an aggregate of 3,000,000 shares of ASP Isotopes Inc. common stock for 2,500 shares of Enlighted Isotopes convertible preferred stock. In conjunction with the exchange, Enlightened Isotopes transferred the common shares of ASP Isotopes Inc. to ASP Isotopes and then ASP Isotopes immediately cancelled all 3,000,000 shares. The Company will report the non-controlling interest of future net income or loss on the consolidated balance sheet and statement of operations and comprehensive loss. As of December 31, 2023, negligible activity had been recorded for Enlightened Isotopes. Activities for Enlightened Isotopes began in 2024.

In May 2023, the Company was required to issue an aggregate of 100,000 shares of common stock pursuant to a consulting agreement. The Company determined that the fair value of this award was $0.65 per share for a total value of $65,100. The fair value of these shares issuable to the consultant was $95,000 as of September 30, 2023. The resulting change in fair value of share liability was a loss of $38,200 and $29,900 for the three and nine months ended September 30, 2023, respectively. As of September 30, 2023, these shares had yet to be issued, however, they were settled prior to December 31, 2023.

In May 2023, the Company was required to issue an aggregate of 50,000 shares of restricted common stock pursuant to a consultant. The company determined that the fair value of this award was $0.62 per share for a total value of $30,900. The fair value of these shares issuable was $47,500 as of September 30, 2023. The resulting change in fair value of share liability was a loss of $16,600 for the three and nine months ended September 30, 2023. As of September 30, 2023, these shares had yet to be issued however, they were settled prior to December 31, 2023.

In July 2023, the Company was required to issue an aggregate of 150,000 shares of common stock to two consultants. The Company determined that the fair value of these two awards was $1.21 for a total value of $181,500. The fair value of these shares just prior to settlement in August 2023 was $248,000. The resulting change in fair value of the share liability was a loss of $66,500 for the three and nine months ended September 30, 2023. In August 2023, the Company issued 150,000 shares of common stock to settle these share liabilities.

In August 2023, the Company was required to issue an aggregate of 100,000 shares of common stock pursuant to a consulting agreement. The Company determined that the fair value of this award was $1.26 per share for a total value of $126,000. The fair value of these shares just prior to settlement in August 2023 was $145,000. The resulting change in fair value of share liability was a loss of $19,000 for the three and nine months ended September 30, 2023. In August 2023, the Company issued 100,000 shares of common stock to settle this share liability.

The Company's non-employee board members agreed to receive the 2022 and 2023 director fees totaling $240,000 in shares of common stock. In August 2024, 163,632 shares of common stock were issued and the value of the fees totaling $165,000 is recorded as par and additional paid-in capital on the condensed consolidated balance sheet. As of September 30, 2024, 77,626 shares have yet to be issued and the value of the fees totaling $75,000 is recorded as additional paid-in capital on the condensed consolidated balance sheet.

In March 2023, the Company issued 3,164,557 shares of the Company's common stock at a purchase price of $1.58 per share and warrants to purchase up to an aggregate of 3,164,557 shares of its common stock with an exercise price of $1.75 per share for gross proceeds of $5,000,000. The Company incurred $506,390 in cash issuance costs and issued warrants to purchase up to an aggregate of 221,519 shares of common stock with an exercise price of $1.975 per share to the placement agent with an initial fair value of $179,116.

In October 2023, the Company entered into Securities Purchase Agreements with certain institutional and other accredited investors and certain directors of the Company to issue and sell an aggregate of 9,952,510 shares of the Company's common stock, for aggregate cash consideration of $9,129,495, as follows: (i) 8,459,093 shares to investors at a purchase price per share of $0.9105, (ii) 1,190,239 shares to investors at a purchase price per share of $0.9548, and (iii) 303,178 shares to directors at a purchase price per share of $0.96. The Company incurred issuance costs equivalent to 5% of the gross proceeds from new investors which was settled in stock through the issuance of 472,582 shares to the placement agent and additional cash issuance costs totaling $57,083.

In January 2024, the Company was required to issue an aggregate of 100,000 shares of common stock to a consultant. The Company determined that the fair value of this award was $1.95 per share for a total value of $195,000. The fair value of these shares issued upon settlement in September 2024 was $219,500. The resulting change in fair value of share liability was a gain of $86,500 and a loss of $24,500 for the three and nine months ended September 30, 2024, respectively.

In April 2024, the Company was required to issue an aggregate of 60,000 shares of common stock pursuant to a consulting agreement. The Company determined that the fair value of this award was $4.01 per share for a total value of $240,600 and recorded this as professional expense. The fair value of these shares issued upon settlement in June 2024 was $183,600. The resulting change in fair value of share liability was a loss of $57,000 for the nine months ended September 30, 2024.

In June 2024, the Company issued an aggregate of 60,000 shares of common stock pursuant to a consulting agreement. The Company determined that the fair value of this award was $3.06 per share for a total value of $183,600 and recorded this amount as professional expense for the nine months ended September 30, 2024.

In July 2024, the Company issued an aggregate of 50,000 shares of common stock pursuant to a consulting agreement. The Company determined that the fair value of this award was $3.28 per share for a total value of $164,000 and recorded this amount as professional expense for the nine months ended September 30, 2024.The fair value of these shares issued upon settlement in September 2024 was $109,750. The resulting change in fair value on the share liability was a gain of $54,250 for the three and nine months ended September 30, 2024.

Activity of the share liabilities for the nine months ended September 30, 2024 is as follows:

	Share Liability as of December 31, 2023	New Share Liabilities in 2024	Mark to Market Adjustments in 2024	Liabilities Settled in 2024	Share Liabilities as of September 30, 2024
Share liabilities originated in 2024	$ —	$ 599,600	$ (86,750)	$ (512,850)	$ —
Commission fee liability to be settled in common stock warrants	—	657,871	(241,219)	-	416,652
	$ —	$ 1,257,471	$ (327,969)	$ (512,850)	$ 416,652

Activity of the share liabilities for the nine months ended September 30, 2023 is as follows:

	Share Liability as of December 31, 2022	New Share Liabilities in 2023	Mark to Market Adjustments in 2023	Liabilities Settled in 2023	Share Liabilities as of September 30, 2023
Share liabilities originated in 2022	$ 140,455	$ —	$ (46,760)	$ (93,695)	$ —
Share liabilities originated in 2023	—	669,700	155,800	(683,000)	142,500
	$ 140,455	$ 669,700	$ 109,040	$ (776,695)	$ 142,500

In July 2024, the Company issued 13,800,000 shares of common stock in a public offering at a public offering price of $2.50 per share for aggregate gross proceeds totaling $34,500,000. Issuance costs, including commissions and expenses totaled $2,194,041.

In November 2024, the Company issued an additional 2,754,250 shares of common stock in a public offering at a public offering price of $6.75 per share for aggregate gross proceeds totaling approximately $18,600,000. The estimated issuance costs, including commissions and expenses, are expected to be approximately $1,455,000.

Common Stock Warrants

In September 2023, the Company issued warrants to purchase 3,386,076 shares of common stock. The fair value of these warrants was determined to be $2,882,621 and estimated based on the Black-Scholes model, using the following assumptions:

Expected volatility	60.3 %
Weighted-average risk-free rate	3.44 %
Expected term in years	5.5
Expected dividend yield	- %

In April 2024, a warrant to purchase 3,164,557 shares of common stock was exercised and the Company received gross proceeds of $5,537,975. As an inducement for the warrant holder to exercise in cash, a warrant to purchase 1,225,000 shares of common stock at an exercise price of $3.90 per share was issued to that same warrant holder for no consideration ("Inducement Warrant"). The Inducement Warrant vests in October 2024 and expires in October 2029. The Company evaluated the terms of the Inducement Warrant and determined that it should be accounted for as an equity-based warrant. The Company also evaluated the circumstances of the award and determined that the inducement should be treated as a deemed dividend.

The fair value of the Inducement Warrant was determined to be $2,779,659 and estimated based on the Black-Scholes model, using the following assumptions:

Expected volatility	73.5 %
Weighted-average risk-free rate	4.37 %
Expected term in years	5.5
Expected dividend yield	- %

The fair value of the Inducement Warrant is considered a deemed dividend and the amount is reflected in the calculation of earnings (loss) per share on a basic and diluted basis.

In conjunction with the exercise of the warrant in April 2024, the Company is now obligated to issue to an underwriter, a warrant to purchase 221,519 shares of common stock ("Commission Warrant") in addition to a cash payment totaling $387,658. The Company evaluated the terms of the Commission Warrant and determined that it should be accounted for as an equity-based warrant. The fair value of the Commission Warrant was determined to be $657,871 and estimated based on the Black-Scholes model, using the following assumptions:

Expected volatility	73.5 %
Weighted-average risk-free rate	4.60 %
Expected term in years	5.5
Expected dividend yield	- %

As of September 30, 2024, neither the cash payment nor the issuance of the Commission Warrant has been settled and therefore the cash payment due is included in accrued expenses and the fair value of the warrant is included in share liability on the consolidated balance sheet. The fair value of the Commission Warrant as of September 30, 2024 was $416,652. The resulting change in fair value of share liability was a gain of $241,219 for the three and nine months ended September 30, 2024.

In October 2024, a warrant to purchase 151,741 shares of common stock was exercised and the Company received gross proceeds of $299,688.

13. Stock Compensation Plan

Equity Incentive Plan

In October 2021, the Company adopted the 2021 Stock Incentive Plan ("2021 Plan") that provided for the issuance of common stock to employees, nonemployee directors, and consultants. Recipients of incentive stock options are eligible to purchase shares of common stock at an exercise price equal to no less than the estimated fair market value of such stock on the date of grant. The 2021 Plan provided for the grant of incentive stock options, non-statutory stock options, restricted stock, restricted stock units, stock awards and stock appreciation rights. The maximum contractual term of options granted under the 2021 Plan is ten years. The maximum number of shares initially available for issuance under the 2021 Plan was 6,000,000. No further options are available to be issued under the 2021 Plan.

In November 2022, the Company adopted the 2022 Equity Incentive Plan ("2022 Plan") that provides for the issuance of common stock to employees, nonemployee directors, and consultants. Recipients of incentive stock options are eligible to purchase shares of common stock at an exercise price equal to no less than the estimated fair market value of such stock on the date of grant. The 2022 Plan provides for the grant of incentive stock options, non-statutory stock options, restricted stock, restricted stock units, stock awards and stock appreciation rights. The maximum contractual term of options granted under the 2022 Plan is ten years. The number of shares of the Company's common stock initially reserved for issuance under the 2022 Plan is equal to 5,000,000, subject to an annual increase, to be added on the first day of each fiscal year, beginning with the fiscal year ending December 31, 2023 and continuing until, and including, the fiscal year ending December 31, 2033, equal to the lesser of 5% of the number of shares of the Company's common stock outstanding on such date or an amount determined by the Company's board of directors. On January 1, 2024, the Company added 2,446,164 shares to the 2022 Plan. As of September 30, 2024, 813,487 shares remain available for future grant under the 2022 Plan.

In June 2024, the Company adopted the 2024 Inducement Equity Incentive Plan ("2024 Plan"). The 2024 Plan will be used exclusively for the grant of equity awards to individuals who were not previously employees or directors of the Company, or following a bona fide period of non-employment, as an inducement material to such individuals entering into employment with the Company, pursuant to Nasdaq Listing Rule 5635(c)(4). Recipients of stock options are eligible to purchase shares of common stock at an exercise price equal to no less than the estimated fair market value of such stock on the date of grant. The 2024 Plan provides for the grant of non-statutory stock options, restricted stock, restricted stock units, stock awards and stock appreciation rights. The maximum contractual term of options granted under the 2024 Plan is ten years. The number of shares of the Company's common stock initially reserved for issuance under the 2024 plan is equal to 2,500,000. As of September 30, 2024, 2,100,000 shares remain available for future grant under the 2024 Plan.

Stock Options

The following table sets forth the activity for the Company's stock options during the periods presented:

	Number of Options	Weighted-Average Exercise Price per Share	Weighted Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2023	2,766,000	$ 1.91	8.4	$ 231,000
Granted	—	$ —		
Forfeited	(35,000)	$ 2.00		
Outstanding as of September 30, 2024	2,731,000	$ 1.90	7.6	$ 2,392,680
Exercisable as of September 30, 2024	2,174,302	$ 1.88	7.6	$ 1,957,708
Vested or expected to vest as of September 30, 2024	2,731,000	$ 1.90	7.6	$ 2,392,680

For the nine months ended September 30, 2024, no options were granted.

The Company recorded stock-based compensation expense from options of $196,987 and $207,253 for the three months ended September 30, 2024 and 2023, respectively. The Company recorded stock-based compensation expense from options of $588,018 and $773,238 for the nine months ended September 30, 2024 and 2023, respectively. As of September 30, 2024, there was $661,361 of unrecognized stock-based compensation expense related to non-vested stock-based compensation arrangements granted under the Plan, which is expected to be recognized over a weighted average period of approximately 0.7 years.

Stock Awards

In October 2021, the Company issued 1,500,000 shares of restricted common stock to its Chief Executive Officer. The number of shares that vest is dependent on achieving certain performance conditions and dependent market conditions upon the third anniversary from the date of grant. The Company determined that the fair value of this award was $0.25 per share for a total value of $375,000. The Company determined the performance condition probable and recognized stock-based compensation expense of $375,000 for the nine months ended September 30, 2024.

The Company recorded stock-based compensation expense from stock awards totaling $1,871,103 and $1,864,537 for the three months ended September 30, 2024 and 2023, respectively. The Company recorded stock-based compensation expense from stock awards totaling $5,711,742 and $5,817,338 for the nine months ended September 30, 2024 and 2023, respectively. As of September 30, 2024, there is $7,425,197 of unrecognized stock-based compensation expense related to the non-vested portion of restricted stock awards that is expected to be recognized over the next year.

The following table summarizes vesting of restricted common stock:

	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Unvested as of December 31, 2023	4,489,186	$ 1.42
Granted	2,078,466	$ 2.23
Vested	(2,503,420)	$ 1.33
Forfeited and retired	(325,000)	$ 1.19
Unvested as of September 30, 2024	3,739,232	$ 2.05

Stock-based Compensation Expense

Stock-based compensation expense for all stock awards recognized in the accompanying consolidated statements of operations and comprehensive loss is as follows:

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Selling, general and administrative	$ 1,985,471	$ 1,978,904	$ 6,052,357	$ 6,311,890
Research and development	82,619	92,886	247,403	278,686
Total	$ 2,068,090	$ 2,071,790	$ 6,299,760	$ 6,590,576

14. Net Loss Per Share

The Company has reported losses since inception and has computed basic net loss per share attributable to common stockholders by dividing net loss attributable to common stockholders by the weighted-average number of shares of Common Stock outstanding for the period, without consideration for potentially dilutive securities. The Company computes diluted net loss per share of Common Stock after giving consideration to all potentially dilutive shares of common stock, including options to purchase common stock and warrants to purchase common stock, outstanding during the period determined using the treasury-stock and if-converted methods, except where the effect of including such securities would be antidilutive. Because the Company has reported net losses since inception, these potential shares of Common Stock have been anti-dilutive and basic and diluted loss per share were the same for all periods presented.

The following table sets forth the computation of basic and diluted net loss per share for the three and nine months ended September 30, 2024 and 2023:

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Numerator:				
Net loss attributable to ASP Isotopes Inc. shareholders before deemed dividend on warrant to purchase common stock	$ (7,271,239)	$ (4,222,483)	$ (23,152,249)	$ (12,123,907)
Deemed dividend on warrant to purchase common stock	—	—	(2,779,659)	—
Net loss attributable to ASP Isotopes Inc. shareholders	$ (7,271,239)	$ (4,222,483)	$ (25,931,908)	$ (12,123,907)
Denominator:				
Weighted average common stock outstanding, basic and diluted	61,532,172	31,147,749	51,779,067	29,954,321
Net loss per share, basic and diluted	$ (0.12)	$ (0.14)	$ (0.50)	$ (0.40)

The following table sets forth the potentially dilutive securities that have been excluded from the calculation of diluted net loss per share because to include them would be anti-dilutive:

	As of September 30,	
	2024	2023
Options to purchase common stock	2,731,000	2,814,333
Warrants to purchase common stock	1,446,519	3,386,076
Unvested restricted stock	3,739,232	6,415,874
Total shares of common stock equivalents	7,916,751	12,616,283

15. Income Taxes

The Company's effective tax rate for the three months ended September 30, 2024 was 0.2%. The Company had no income tax expense due to operating losses incurred for the three months ended September 30, 2023, as the Company had a full valuation allowance on the net deferred tax asset. The effective tax rate for the three month period ended September 30, 2024 varied from the federal statutory rate primarily due to losses in jurisdictions for which a valuation allowance is recorded.

The Company's effective tax rate for the nine months ended September 30, 2024 was 0.2%. The Company had no income tax expense due to operating losses incurred for the nine months ended September 30, 2023, as the Company had a full valuation allowance on the net deferred tax asset. The effective tax rate for the nine months ended September 30, 2024 varied from the federal statutory rate primarily due to losses in jurisdictions for which a valuation allowance is recorded.

The Company recognizes a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. Income tax positions must meet a more likely than not recognition threshold to be recognized. The Company's practice is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company had no accrual for interest and penalties on the Company's balance sheets and has not recognized interest and/or penalties in the consolidated statements of operations and comprehensive loss for the three and nine months ended September 30, 2024. Uncertain tax positions are evaluated based upon the facts and circumstances that exist at each reporting period. Subsequent changes in judgment based upon new information may lead to changes in recognition, derecognition, and measurement. Adjustments may result, for example, upon resolution of an issue with the taxing authorities or expiration of a statute of limitations barring an assessment for an issue. As of September 30, 2024, there were no uncertain tax positions.

As of September 30, 2024, the Company did not recognize any interest and penalties associated with unrecognized tax benefits. Due to net operating losses incurred, tax years from inception remain open to examination by the Federal and State taxing jurisdictions to which the Company is subject. The Company is not currently under Internal Revenue Services (IRS), state or local tax examination.

Ownership changes, as defined in the IRC, may limit the amount of net operating loss carryforwards that can be utilized annually to offset future taxable income pursuant to IRC Section 382 or similar provisions. Subsequent ownership changes could further affect the limitation in future years. The Company has not completed a study to assess whether a change of control has occurred or whether there have been multiple changes of control since the Company's formation due to the significant complexity and cost associated with such study and because there could be additional changes in control in the future. As a result, the Company is not able to estimate the effect of the change in control, if any, on the Company's ability to utilize net operating loss and research and development credit carryforwards in the future.

16. Subsequent Events

The Company has evaluated subsequent events through November 13, 2024, the date on which the accompanying condensed consolidated financial statements were issued and concluded that no subsequent events have occurred that require disclosure except as noted in Note 12.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and related notes included in this Quarterly Report on Form 10-Q. Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the section entitled "Risk Factors," our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. You should carefully read the section entitled "Risk Factors" to gain an understanding of the important factors that could cause actual results to differ materially from our forward- looking statements. Please also see the section entitled "Cautionary Note Regarding Forward-Looking Statements."

Overview

We are a development stage advanced materials company dedicated to the development of technology and processes that, if successful, will allow for the enrichment of natural isotopes into higher concentration products, which could be used in several industries. Our proprietary technology, the Aerodynamic Separation Process ("ASP technology"), originally developed by Klydon Proprietary Ltd ("Klydon"), is designed to enable the production of isotopes used in several industries. Our initial focus is on the production and commercialization of enriched Carbon-14 ("C-14"), Molybdenum-100 ("Mo-100") and Silicon-28 ("Si-28"). We have completed an isotope enrichment plant for the enrichment of C-14 located in Pretoria, South Africa and we expect to start commercial supply of C-14 in the first quarter of 2025 assuming timely delivery of the feedstock from the Company's customer. We anticipate completion and commissioning of a multi-isotope enrichment plant in Pretoria, South Africa in the fourth quarter of 2024, and we expect to start initial commercial supply of Si-28 in early 2025. In addition, we have started planning additional isotope enrichment plants. We believe the C-14 we may produce using the ASP technology could be used in the development of new pharmaceuticals and agrochemicals. We believe the Mo-100 we may produce using the ASP technology could have significant potential advantages for use in the preparation of nuclear imaging agents by radiopharmacies and others in the medical industry. We believe the Si-28 we may produce using the ASP technology may be used to create advanced semiconductors and in quantum computing. In addition, we are considering the future development of the ASP technology for the separation of Zinc-68, Xenon-129/136 for potential use in the healthcare end market, Germanium 70/72/74 for possible use in the semiconductor end market, and Chlorine -37 for potential use in the nuclear energy end market.

We are also developing Quantum Enrichment technology to produce enriched Ytterbium-176 ("Yb-176"), Nickel-64, Lithium 6, Lithium7 and Uranium-235 ("U-235"). Quantum enrichment is an advanced isotope enrichment technique that is currently in development that uses lasers. We believe that the U-235 we may produce using quantum enrichment technology may be commercialized as a nuclear fuel component for use in the new generation of HALEU- fueled small modular reactors that are now under development for commercial and government uses. The construction of our first quantum enrichment facility was completed in August 2024, and we produced the first semi-finished material of enriched Yb-176 during the commissioning phase of the plant in October 2024. We expect to be able to achieve a 99.75% enrichment for Yb-176 and offer highly enriched Yb-176 for commercial sale during 2025. We also expect to proceed with the plans to construct Nickel-64 and Lithium- 6/7 quantum enrichment plants with targeted production during 2025.

Our Subsidiaries

We operate principally through our subsidiaries. ASP Isotopes Guernsey Limited (the holding company for subsidiaries in the Cayman Islands, South Africa, Iceland and the United Kingdom) is focused on the development and commercialization of high-value, low-volume isotopes for highly specialized end markets (such as C-14, Mo-100, and Si-28). ASP Isotopes UK Ltd is the owner of our technology.

In September 2023, we formed Quantum Leap Energy LLC, or "QLE," which also has subsidiaries in the United Kingdom (Quantum Leap Energy Limited) and South Africa (Quantum Leap Energy (Pty) Limited), to focus on the development and commercialization of advanced nuclear fuels such as HALEU and Lithium-6.

In addition, in the fourth quarter of 2023, we entered into a strategic relationship with Pet Labs Pharmaceuticals (Pty) Limited (PET Labs) by acquiring a 51% ownership stake in PET Labs. We anticipate this transaction will allow us to enter the downstream medical isotope production and distribution market. Beginning in 2024, primarily as a result of the increased business activities of QLE, we have two operating segments: (i) nuclear fuels, and (ii) specialist isotopes and related services.

Although no assurance can be given, we plan to spin-out QLE as a separate public company and list the shares of QLE on a U.S. national exchange and distribute a portion of QLE's common equity to ASPI's stockholders as of a to-be-determined future record date, in each case subject to obtaining applicable approvals and consents and complying with applicable rules and regulations and public market trading and listing requirements. The regulatory landscape and supply chain for nuclear fuel production differs significantly from that of medical isotopes, hence we and QLE have different business models and we believe that both companies would benefit if QLE is independently managed and financed.

In connection with the anticipated spin-out, in February 2024, we entered into a number of agreements with QLE, including a License Agreement, pursuant to which QLE has licensed from us the rights to technologies and methods used to separate Uranium 235 and Lithium 6 (including but not limited to the quantum enrichment and ASP technologies) in exchange for a perpetual royalty in the amount of 10% of all future QLE revenues, and an EPC Services Framework Agreement, pursuant to which we will provide services for the engineering, procurement and construction of one or more turnkey Uranium-235 and Lithium-6 enrichment facilities in locations to be identified by QLE and owned or leased by QLE, and commissioning, start-up and test services for each such facility, subject to the receipt of all applicable regulatory approvals, permits, licenses, authorizations, registrations, certificates, consents, orders, variances and similar rights. In addition, in February 2024, we assigned to QLE certain existing memoranda of understanding with U.S.-based small modular reactor companies for the use of Quantum Enrichment for the production of High-Assay Low Enriched Uranium (HALEU). The MOUs provide for substantial financial support for the development of HALEU production facilities that should be capable of supplying metric ton quantities of HALEU by 2027.

High-Assay Low-Enriched Uranium (HALEU) Production

In October 2024, we entered into a term sheet with TerraPower, LLC related to the construction of a uranium enrichment facility capable of producing HALEU and the future supply of HALEU to TerraPower. The term sheet contemplates the parties entering into a definitive agreement, pursuant to which TerraPower would provide funding for the construction of a HALEU production facility. In addition, the parties anticipate entering into a long-term supply agreement for HALEU expected to be produced at this facility, pursuant to which the customer would purchase all HALEU produced at the facility over a 10-year period after the expected completion of the facility in 2027. It is anticipated that the definitive agreements will be assigned to QLE. Except for binding periods of exclusivity, during which we will not negotiate with third parties for the supply of HALEU or work on another ASP technology-based uranium enrichment facility, the term sheet is non-binding and there is no assurance that the parties will enter into definitive agreements.

In November 2024, we entered into a memorandum of understanding ("MOU") with The South African Nuclear Energy Corporation (Necsa) to collaborate on the research, development and ultimately the commercial production of advanced nuclear fuels. Necsa is a state-owned company established by the Republic of South Africa Nuclear Energy Act in 1999 with a mandate to undertake and promote research and development in the field of nuclear energy and radiation sciences. Necsa is also responsible for processing source material, and co-operating with other institutions on nuclear and related matters. The proposed structure under discussion for the delivery of the objectives of the MOU contemplates the formation of a new entity in South Africa with a board of directors consisting of at least two representatives from the Company and Necsa. Discussions between the parties during the last three years have focused on advancing new nuclear fuel to cater especially for small modular reactors as a start and eventually the construction of a nuclear fuel facility for the production of HALEU. It is anticipated that the research, development and ultimate construction of a HALEU production facility will take place at Pelindaba in Pretoria, South Africa. Pelindaba is South Africa's main nuclear research center and is the home of the 20MW research nuclear reactor, SAFARI-1, which over the last several years has become one of the world's largest suppliers of Molybdenum-99 and other radioisotopes.

Financings

On November 15, 2022, we completed an IPO of our common stock and issued and sold 1,250,000 shares of common stock at a public offering price of $4.00 per share, resulting in net proceeds of $3.8 million after deducting underwriting discounts and commissions and offering expenses.

In March 2023, we issued 3,164,557 shares of our common stock at a purchase price of $1.58 per share and warrants to purchase up to an aggregate of 3,164,557 shares of our common stock with an exercise price of $1.75 per share for gross proceeds of $5.0 million. We incurred $506,390 in cash issuance costs and issued warrants to purchase up to an aggregate of 221,519 shares of common stock with an exercise price of $1.975 per share to the placement agent with an initial fair value of $179,116.

In October 2023, we entered into Securities Purchase Agreements with certain institutional and other accredited investors and certain directors of ours to issue and sell an aggregate of 9,952,510 shares of our common stock, for aggregate cash consideration of $9,129,495, as follows: (i) 8,459,093 shares to investors at a purchase price per share of $0.9105, (ii) 1,190,239 shares to investors at a purchase price per share of $0.9548, and (iii) 303,178 shares to directors at a purchase price per share of $0.96. We incurred issuance costs equivalent to 5% of the gross proceeds from new investors which was settled in stock through the issuance of 472,582 shares to the placement agent and additional cash issuance costs totaling $57,083.

In March 2024, our wholly owned subsidiary Quantum Leap Energy received gross proceeds of $20,550,000 through the issuance of Convertible Promissory Notes with a stated interest rate of 6% for the first year and 8% thereafter. The maturity date of the Convertible Promissory Notes is March 7, 2029. The Convertible Promissory Notes automatically convert into common shares upon Quantum Leap Energy's closing of an IPO or other qualifying public transaction at 80% of the share price taking into consideration a valuation cap.

In April 2024, we received approximately $5.5 million from the issuance of 3,164,557 shares of common stock upon the exercise of warrants.

In July 2024, we issued 13,800,000 in a public offering at a public offering price of $2.50 per share resulting in net proceeds of approximately $32.3 million after deducting underwriting discounts, commissions and offering expenses.

In October 2024, a warrant to purchase 151,741 shares of common stock was exercised and the Company received gross proceeds of $299,688.

In November 2024, the Company issued an additional 2,754,250 shares of common stock in a public offering at a public offering price of $6.75 per share for aggregate gross proceeds totaling approximately $18,600,000. The estimated issuance costs, including commissions and expenses, are expected to be approximately $1,455,000.

Acquisition of 51% of PET Labs

In October 2023, we entered into a Share Purchase Agreement with Nucleonics Imaging Proprietary Limited, a company incorporated in South Africa, to purchase 51% of the ordinary shares in Nucleonics' wholly-owned subsidiary, Pet Labs Pharmaceuticals Proprietary Limited ("Pet Labs"), a company incorporated in South Africa and dedicated to nuclear medicine and the science of radiopharmaceutical production.

Per the Share Purchase Agreement, we have agreed to pay a total of $2,000,000 for the shares in two installments. The first installment of $500,000 was paid in November 2023. In January 2024, we paid $264,750 towards the balance due. The remaining balance of $1,235,250 is due upon demand any time after October 31, 2024 and is expected to be paid in November 2024.

Acquisition of Assets and Agreements with Klydon

To date, we have purchased certain assets of Molybdos Proprietary Limited, a South Africa company (Molybdos), and entered into a number of agreements with Klydon (Pty) Limited, a South Africa company (Klydon). Below is a summary of the key terms for our former licenses and other agreements with Klydon.

Acquisition of Molybdos Assets. On September 30, 2021, our subsidiary, ASP Isotopes South Africa (Proprietary) Limited ("ASP South Africa"), participated in and was declared the winner of a competitive auction process under Section 45 of the South Africa Consumer Protection Act, 2008 related to the sale and assignment of the assets of Molybdos (the "Molybdos Business Rescue Auction"). On October 12, 2021, ASP South Africa acquired the assets of Molybdos for ZAR 11,000,000 (which at the then current exchange rate was approximately $734,000), plus value added tax (VAT) levied by the government of South Africa at the rate of 15% and auctioneers' commission at the rate of 10%.

Acquisition of Silicon-28 Plant Assets. On July 26, 2022, we acquired assets comprising a dormant Silicon-28 aerodynamic separation processing plant from Klydon for ZAR 6,000,000 (which at the then current exchange rate was approximately $364,000), which will be payable to Klydon on the later of 180 days of the acquisition and the date on which the assets generate any revenues of any nature.

Exclusive Mo-100 License (superseded and replaced by new license (see "Omnibus Klydon License" below)). On September 30, 2021, ASP South Africa, as licensee, entered into a license with Klydon, as licensor, pursuant to which ASP South Africa acquired from Klydon an exclusive license to use, subcontract and sublicense certain intellectual property rights relating to the ASP technology for the development and/or otherwise disposing of the ASP technology and production, distribution, marketing and or sale of Mo-100 isotope produced using the ASP technology (as amended on June 8, 2022, the "Mo-100 license"). The intellectual property rights granted to us through the Mo-100 license included all existing and/or future proprietary rights of Klydon relating to the ASP technology, whether or not such rights have been registered, including the copyright, designs, know-how, patents and trademarks (although Klydon currently has no such patents, patent applications or copyrights). The exclusive Mo-100 license was royalty-free, had a term of 999 years and was for the global development of the ASP Technology and production of the Mo-100 Isotope and global for the distribution, marketing and sale of the Mo-100 Isotope. No upfront or other payment was made or is owed in connection with the Mo-100 license. Klydon had the right to terminate the exclusivity of the Mo-100 license in the event that the licensee ceased carrying on activities of Mo-100 enrichment for a period longer than 24 consecutive months. Klydon had no other rights to terminate the Mo-100 license. Effective July 26, 2022, the parties agreed to terminate the Mo-100 license, which was superseded and replaced by a new license agreement (described under the heading "Omnibus Klydon License" below).

Exclusive U-235 License (superseded and replaced by new license (see "Omnibus Klydon License" below)). On January 25, 2022, ASP South Africa, as licensee, entered into a license with Klydon, as licensor, pursuant to which ASP South Africa acquired from Klydon an exclusive license to use, subcontract and sublicense certain intellectual property rights relating to the ASP technology for the development and/or otherwise disposing of the ASP technology and production, distribution, marketing and or sale of U-235 produced using the ASP (as so amended, the "U-235 license"). The intellectual property rights granted to us through the U-235 license included all existing and/or future proprietary rights of Klydon relating to the ASP technology, whether or not such rights have been registered, including the copyright, designs, know-how, patents and trademarks (although Klydon currently has no such patents, patent applications or copyrights). The exclusive U-235 license had a term of 999 years and was for the global development of the ASP technology and production of U-235 and global for the distribution, marketing and sale of U-235. In connection with the U-235 license we made an upfront payment of $100,000 and agreed to pay certain royalties (the greater of $50 per k.g. of U-235 and 10% of profits) and a 33% sublicensing revenue share of any cash consideration we may receive for any sublicenses we may grant. Klydon had the right to terminate the exclusivity of the U-235 license in the event that the licensee ceased carrying on activities of U-235 enrichment for a period longer than 24 consecutive months. Klydon had no other rights to terminate the U-235 license. Effective July 26, 2022, the parties agreed to terminate the U-235 license, which was superseded and replaced by a new license agreement (described under the heading "Omnibus Klydon License" below).

Omnibus Klydon License. On July 26, 2022, ASP Isotopes UK Ltd ("ASP UK"), as licensee, entered into a license agreement with Klydon, as licensor, pursuant to which ASP UK acquired from Klydon an exclusive license to use, develop, modify, improve, subcontract and sublicense certain intellectual property rights relating to the ASP technology for the production, distribution, marketing and sale of all isotopes produced using the ASP technology (the "Klydon license agreement"). The intellectual property rights granted to us through the Klydon license agreement included all existing and/or future proprietary rights of Klydon relating to the ASP technology, whether or not such rights have been registered, including the copyright, designs, know-how, patents and trademarks (although Klydon currently has no such patents, patent applications or copyrights). The Klydon license agreement was royalty-free, had a term of 999 years and was worldwide for the development of the ASP technology and the distribution, marketing and sale of isotopes. Future production of isotopes is limited to member countries of the Nuclear Suppliers Group. In connection with the Klydon license agreement, we agreed to make an upfront payment of $100,000 (to be included within the payments we made under the Turnkey Contract (described below) and deferred payments of $300,000 over 24 months. Effective April 4, 2023, pursuant to the Acknowledgement of Debt Agreement described below, we acquired the ASP technology, among other things, from Klydon, and the Klydon license agreement is no longer in effect.

Turnkey Contract. On November 1, 2021, ASP South Africa and Klydon, as the contractor, entered into a contract under which Klydon has been appointed to supply to ASP South Africa a complete turnkey isotope enrichment plant (the "Turnkey Contract"). The activities to be undertaken or performed by Klydon include: taking control of the assets acquired in the Molybdos Business Rescue Auction; the design of an isotope enrichment facility; the supply of components, equipment and labor required for the construction; the installation, testing and commissioning of the isotope enrichment plant; securing all required approvals, regulatory authorizations and other required consents for the operation of the plant; providing training to local ASP Isotopes South Africa (Proprietary) Limited personnel to enable them to operate the plant going forward; and providing warranties in relation to the performance targets of the plant which are required to be met. Klydon was responsible for liaising with the relevant South African authorities, including the South African Non Proliferation Council, the Nuclear Suppliers Group and International Atomic Energy Agency to ensure that the Turnkey Contract and the isotope enrichment plant are compliant with international laws and guidelines.

Acknowledgement of Debt Agreement. Klydon performed a portion of the services required under the Turnkey Contract described above; however, services were incomplete and many of the services were not completed within the time frame required. As a result, Klydon and ASP South Africa entered into an Acknowledgement of Debt Agreement dated November 30, 2022, whereby Klydon (i) agreed to pledge its assets (the "Pledged Assets") to ASP South Africa to secure its performance of the Turnkey Contract by December 31, 2022, and (ii) acknowledged that ASP South Africa would suffer damages in the amount of $6,050,000 ("Damage Amount") should it fail to perform. Under the Acknowledgement of Debt Agreement, the Pledged Assets would serve as collateral for Klydon's obligation to pay the Damage Amount should Klydon fail to perform. In connection therewith, also on November 30, 2022, ASP South Africa and Klydon entered into a Deed of Security Agreement whereby, if Klydon failed to complete its obligations under the Turnkey Contract by December 31, 2022, all of Klydon's rights of any nature to and interests of any nature in the Pledged Assets would be transferred to ASP South Africa. Klydon failed to complete its obligations under the Turnkey Contract by December 31, 2022.

On April 4, 2023, we perfected our interests in the assets under the Acknowledgement of Debt Agreement, pursuant to which we acquired the Pledged Assets, including certain intellectual property, from Klydon and settled all amounts due to Klydon, including the ZAR 6,000,000 for the acquisition of the Silicon-28 plant assets.

Other Commercial Agreements

Below is a summary of the key terms of our other commercial agreements.

Lease for Molybdenum Processing Plant. On October 12, 2021, ASP South Africa entered into an agreement of lease with the landlord of the facility located at 33 Eland Street, Koedoespoort Industrial, Pretoria where we operate our Molybdenum processing plant where gaseous Molybdenum compound will be treated (which process comprises several stages of compression and expansion during which the product is purified). The term of the lease ends on December 31, 2030.

Lease for additional production space. On April 1, 2023, ASP South Africa entered into an agreement of lease with the landlord of facility located in Pretoria where we plan to perform production activities. The initial term of the lease was set to end on March 31, 2024. We entered into a new agreement of lease with the landlord. The terms of the new lease ends on February 28, 2026.

Lease for additional laboratory space. On November 1, 2023, ASP South Africa entered into an agreement of lease with the landlord of the facility located in Pretoria where we perform research and development activities. The term of the lease ends on October 30, 2026.

Lease for PET Labs operations. Commencing with our acquisition of PET Labs in October 2023, this facility has an initial term set to expire in March 2026 with automatic monthly extensions thereafter. This space is used for office and production activities.

Lease for additional PET Labs operations. Commencing with our acquisition of PET Labs in October 2023, this facility had an initial term which expired in December 2023 and is currently under automatic monthly extensions. This space is used for production activities.

Political Risk Insurance Policy with Optio Group. On October 25, 2021, ASP Guernsey entered into a contract of insurance to cover against political risk and expropriation, to off-set the risk of events detrimental to the company occurring in the Republic of South Africa for a period of three years. The insurer is Optio Group Limited which is 100% underwritten by one or more syndicates at Lloyd's of London. The specific risks covered in the policy are: (i) permanent and total abandonment of operations, (ii) deprivation of assets or shareholding, (iii) physical damage due to political violence, (iv) non-transfer or inconvertibility, (v) business interruption, (vi) non-honouring of arbitration award, and (vii) crisis management support. The limit of cover is equal to or in excess of the projected amount of investment required to complete the initial stage of the first planned Molybdenum enrichment plant. The limit of cover is capable of being increased and extended by mutual agreement with the insurer.

Components of Results of Operations

Revenue

Effective with the acquisition of 51% of PET Labs, the Company recognizes revenue from the sale of nuclear medical doses for PET scanning.

Cost of Goods Sold

Cost of goods sold associated with the sale of nuclear medical doses for PET scanning consist of labor, delivery and materials.

Operating Expenses

Our operating expenses consist of (i) research and development expenses and (ii) selling, general and administrative expenses.

Research and Development

Our research and development expenses consist primarily of direct and indirect costs incurred in connection with the development activities for our future isotopes.

Direct costs include:

- external research and development expenses; and
- costs related to designing the development processes of isotope production.

Indirect costs include:

- personnel-related costs, which include salaries, payroll taxes, employee benefits, and other employee-related costs, including stock-based compensation expense, for personnel engaged in research and development functions; and
- facilities and other various expenses.

Research and development expenses are recognized as incurred and payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods or services are received.

As described above, Klydon charged us for expenses associated with these research and development functions under the Turnkey Contract. We expect that our research and development expenses will increase substantially for the foreseeable future as we continue the development of our future isotopes. We cannot determine with certainty the timing of initiation, the duration or the completion costs of development activities. Actual development timelines, the probability of success and development costs can differ materially from expectations.

We may need to raise substantial additional capital in the future. In addition, we cannot forecast which future isotopes may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

Our research and development expenses may vary significantly based on a variety of factors, such as:

- the scope, rate of progress, expense and results of our development activities;
- the phase of development of our future isotopes;
- the timing, receipt, and terms of any approvals from applicable regulatory authorities including the FDA and foreign regulatory authorities;
- significant and changing government regulation and regulatory guidance;
- the cost and timing of designing the development processes of isotope production;
- the extent to which we establish additional strategic collaborations or other arrangements; and
- the impact of any business interruptions to our operations or to those of the third parties with whom we work.

A change in the outcome of any of these variables with respect to the development of any of our future isotopes could significantly change the costs and timing associated with the development of that future isotope.

Selling, General and Administrative

Selling, general and administrative expenses consist primarily of personnel-related costs, which include salaries, payroll taxes, employee benefits, and other employee-related costs, including stock-based compensation expense, for personnel in executive, sales, finance and other administrative functions. Other significant costs include legal fees relating to corporate matters, professional fees for accounting and consulting services and facility-related costs.

We expect that our ongoing selling, general and administrative expenses will increase substantially for the foreseeable future to support our increased research and development activities and increased costs of operating as a public company and in building our internal resources. These increased costs will include increased expenses related to audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and SEC requirements, director and officer insurance premiums and investor and public relations costs associated with operating as a public company.

Segment Information

As of December 31, 2023, we managed our operations as a single segment, specialist isotopes and related services. Beginning in 2024, primarily as a result of the increased business activities of our subsidiary, Quantum Leap Energy LLC, we have two operating segments: (i) nuclear fuels, and (ii) specialist isotopes and related services.

The nuclear fuels segment is focused on research and development of technologies and methods used to produce high-assay low-enriched uranium (HALEU) and Lithium-6 for the advanced nuclear fuels target end market.

The specialist isotopes and related services segment is focused on research and development of technologies and methods used to separate high-value, low-volume isotopes (such as C-14, Mo-100 and Si-28) for highly specialized target end markets other than advanced nuclear fuels, including pharmaceuticals and agrochemicals, nuclear medical imaging and semiconductors, as well as services related to these isotopes, and this segment includes PET Labs.

The financial information is regularly reviewed by the chief operating decision maker ("CODM") in deciding how to allocate resources. Our CODM is our chief executive officer.

We manage assets on a total company basis, not by operating segment, as the assets are shared or commingled. Therefore, the chief operating decision maker does not regularly review any asset information by operating segment and, accordingly, asset information is not reported on a segment basis.

Select information from the consolidated statements of operations and comprehensive loss as of the three months ended September 30, 2024 and 2023 is as follows:

Segment	Revenues Three Months Ended September 30, 2024	2023	Net Loss Before Allocation to Noncontrolling Interest Three Months Ended September 30, 2024	2023
Specialist isotopes and related services	$ 1,087,695	$ —	$ (3,722,764)	$ (4,222,483)
Nuclear fuels	—	—	(3,632,625)	—
	$ 1,087,695	$ —	$ (7,355,389)	$ (4,222,483)

Select information from the consolidated statements of operations and comprehensive loss as of the nine months ended September 30, 2024 and 2023 is as follows:

Segment	Revenues Nine Months Ended September 30, 2024	2023	Net Loss Before Allocation to Noncontrolling Interest Nine Months Ended September 30, 2024	2023
Specialist isotopes and related services	$ 2,950,348	$ —	$ (14,637,771)	$ (12,123,907)
Nuclear fuels	—	—	(8,563,904)	—
	$ 2,950,348	$ —	$ (23,201,675)	$ (12,123,907)

Results of Operations

Comparison of the Three Months Ended September 30, 2024 and 2023

The following table summarizes our results of operations for the three months ended September 30, 2024 and 2023:

	Three Months Ended September 30, 2024	2023
Revenue	$ 1,087,695	$ —
Cost of goods sold	793,714	—
Gross profit	293,981	—
Operating expenses:		
Research and development	1,034,446	239,199
Selling, general and administrative	4,693,158	3,707,311
Total operating expenses	5,727,604	3,946,510
Other (expense) income:		
Foreign exchange transaction loss	(131,247)	—
Change in fair value of share liability	381,969	(279,425)
Change in fair value of convertible notes payable	(2,692,073)	—
Interest income	602,181	3,452
Interest expense	(90,966)	—
Total other (expense) income	(1,930,136)	(275,973)
Loss before income tax expense	$ (7,363,759)	$ (4,222,483)

Revenue and Cost of Goods Sold

Effective with the acquisition of 51% of PET Labs, we have recognized revenue from the sale of nuclear medical doses for PET scanning for the two month period since the acquisition was effective on October 31, 2023 and December 31, 2023 and the three and nine months ended September 30, 2024. In addition, we have recognized the related cost of goods sold, operating expenses and other income and expenses of PET Labs for the same periods. No revenue or cost of goods sold was recognized for the three months ended September 30, 2023.

Research and Development Expenses

The following table summarizes our research and development expenses for the three months ended September 30, 2024 and 2023:

	Three Months Ended September 30, 2024	2023
Indirect costs:		
Personnel-related costs	$ 368,515	$ 113,336
Consulting and professional	316,157	50,000
Facility and other expenses	349,774	75,863
Total research and development expenses	$ 1,034,446	$ 239,199

Research and development expenses were $1,034,446 for the three months ended September 30, 2024. These expenses include $368,515 of personnel-related costs, including $82,619 in stock-based compensation expense, $316,157 in consulting and professional costs and $349,774 in facility and other expenses.

Research and development expenses were $239,199 for the three months ended September 30, 2023. These expenses include $113,336 of personnel-related costs, including $92,886 in stock-based compensation expense, and $50,000 in consulting and professional costs, and $75,863 in facility and other expenses.

The increase in personnel-related costs is primarily attributable to the increase in headcount. The increase in consulting and professional costs is due to increased outsourced development activity for new specialty isotopes. The increase in facility and other is due to increase in space dedicated to development.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were $4,693,158 for the three months ended September 30, 2024. These expenses include $2,985,744 of personnel-related costs, including $1,985,471 in stock-based compensation expense, $1,063,595 of professional services and legal related fees and $643,819 in facility and other corporate expenses.

Selling, general and administrative expenses were $3,707,311 for the three months ended September 30, 2023. These expenses include $2,484,637 of personnel-related costs, including $1,978,904 in stock-based compensation expense, $669,118 of professional services and legal related fees and $553,556 in facility and other corporate expenses.

The increase in personnel-related costs is due to an increase in headcount and salaries. The increase in professional services and legal related fees is primarily attributable to the timing of corporate activity. The increase in facility and other corporate expenses is primarily attributable to the expansion of our operations in 2024.

Other Income and Expense

Other expense for the three months ended September 30, 2024 was $1,930,136, which includes a loss of $2,692,073 due to change in fair value of the convertible notes payable issued in March and June 2024, partially offset by interest income of $602,181.and a gain of $381,969 due to change in fair value of share liability.

Other expense for the three months ended September 30, 2023 was $275,973, which includes a $279,425 change in the fair value of the share liability related to the shares issuable to a placement agent and other consultants.

Comparison of the Nine Months Ended September 30, 2024 and 2023

The following table summarizes our results of operations for the nine months ended September 30, 2024 and 2023:

	Nine Months Ended September 30, 2024	2023
Revenue	$ 2,950,348	$ —
Cost of goods sold	1,956,473	—
Gross profit	993,875	—
Operating expenses:		
Research and development	1,722,882	699,413
Selling, general and administrative	17,976,882	11,319,465
Total operating expenses	19,699,764	12,018,878
Other (expense) income:		
Foreign exchange transaction loss	(129,443)	(935)
Change in fair value of share liability	327,969	(109,040)
Change in fair value of convertible notes payable	(5,220,599)	—
Interest income	657,899	4,946
Interest expense	(173,832)	—
Total other (expense) income	(4,538,006)	(105,029)
Loss before income tax expense	$ (23,243,895)	$ (12,123,907)

Revenue and Cost of Goods Sold

Effective with the acquisition of 51% of PET Labs, we have recognized revenue from the sale of nuclear medical doses for PET scanning for the two month period since the acquisition was effective on October 31, 2023 and December 31, 2023 and the three and nine months ended September 30, 2024. In addition, we have recognized the related cost of goods sold, operating expenses and other income and expenses of PET Labs for the same periods. No revenue or cost of goods sold was recognized for the nine months ended September 30, 2023.

Research and Development Expenses

The following table summarizes our research and development expenses for the nine months ended September 30, 2024 and 2023:

	Nine Months Ended September 30, 2024	2023
Indirect costs:		
Personnel-related costs	$ 673,140	$ 369,136
License fees	—	—
Consulting and professional	490,647	150,000
Facility and other expenses	559,095	180,277
Total research and development expenses	$ 1,722,882	$ 699,413

Research and development expenses were $1,722,882 for the nine months ended September 30, 2024. These expenses include $673,140 of personnel-related costs, including $247,403 in stock-based compensation expense, $490,647 in consulting and professional, and $559,095 in facility and other expenses.

Research and development expenses were $699,413 for the nine months ended September 30, 2023. These expenses include $369,136 of personnel-related costs, including $278,686 in stock-based compensation expense, $150,000 in consulting expenses and $180,277 in facility and other expenses.

The increase in personnel-related costs is mainly due to the increase in headcount and related costs. The increase in consulting and professional is due to increased outsourced development activity for new specialty isotopes. The increase in facility is due to increase in space dedicated to development.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were $17,976,882 for the nine months ended September 30, 2024. These expenses include $9,048,993 of personnel-related costs, including $6,052,357 in stock-based compensation expense, $4,720,772 of professional services and legal related fees and $4,207,117 in facility and other corporate expenses.

Selling, general and administrative expenses were $11,319,465 for the nine months ended September 30, 2023. These expenses include $7,720,997 of personnel-related costs, including $6,311,890 in stock-based compensation expense, $2,165,926 of professional services and legal related fees and $1,432,542 in facility and other corporate expenses.

The increase in personnel-related costs is due to an increase in headcount and salaries. The increase in professional services and legal related fees is mainly due to the timing of corporate activity. The increase in facility and other corporate expenses is mainly due to the expansion of our operations in 2024 and commission and fee expenses related to the issuance of convertible notes payable.

Other Income and Expense

Other expense for the nine months ended September 30, 2024 was $4,538,006, which includes a loss of $5,220,599 due to change in fair value of the convertible notes payable issued in March and June 2024, partially offset by $657,899 of interest income and a gain of $327,969 due to change in fair value of share liability.

Other expense for the nine months ended September 30, 2023 was $105,029, which includes a $109,040 change in the fair value of the share liability related to the shares issuable to a placement agent and other consultants.

Liquidity and Capital Resources

Sources of Liquidity

We have incurred net losses and negative cash flows from operations since our inception, and we expect to continue to incur significant and increasing net losses for the foreseeable future. We have principally financed our operations to date through the issuance of our common stock, including our IPO, subsequent common stock offerings and the issuance of convertible notes payable. In July 2024, we issued 13,800,000 in a public offering at a public offering price of $2.50 per share resulting in net proceeds of approximately $32.3 million after deducting underwriting discounts, commissions and offering expenses. In November 2024, we issued an additional 2,754,250 shares of common stock in a public offering at a public offering price of $6.75 per share resulting in net proceeds of approximately $17.1 million after deducting underwriting discounts, commissions and offering expenses.

As of September 30, 2024, we had cash and cash equivalents of $51,571,540. We have not generated any revenue from the sale of our enriched isotopes, and our ability to generate product revenue from the sale of enriched isotopes sufficient to achieve profitability will depend on the successful development and eventual commercialization of one or more of our current or future enriched isotopes.

Effective with the acquisition of 51% of PET Labs Pharmaceuticals on October 31, 2023, we have begun to recognize revenue from the sale of nuclear medical doses for PET scanning in South Africa. Our ability to generate product revenue from the sale of nuclear medical doses for PET scanning sufficient to achieve profitability will depend on the successful expansion of production capabilities and commercialization of the results of that expansion.

Future Funding Requirements

Based on our current operating plan, we estimate that our existing cash and cash equivalents will be sufficient to fund our operating expenses and capital expenditure requirements through at least the next 12 months from the date the financial statements are issued. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. We have based this estimate on assumptions that may prove to be wrong, and we could deplete our capital resources sooner than we expect. Additionally, the process of developing isotopes is costly, and the timing of progress and expenses in these development activities is uncertain.

Our future capital requirements will depend on many factors, including:

- the type, number, scope, progress, expansions, results, costs and timing of, our development activities for our future isotopes;
- the outcome, timing and costs of regulatory review of our future isotopes;
- the costs and timing of manufacturing for our future isotopes;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel and consultants as our preclinical and clinical activities increase;
- the costs and timing of establishing or securing sales and marketing and distribution capabilities, whether alone or with third parties, to commercialize future isotopes for which we may obtain regulatory approval, if any;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- the costs of obtaining, expanding, maintaining and enforcing our patent and other intellectual property rights; and
- costs associated with any products or technologies that we may in-license or acquire.

Developing isotopes is a time-consuming, expensive and uncertain process that takes years to complete, and we may never achieve the necessary results required or obtain applicable regulatory approval for any isotopes or generate revenue from the sale of any future isotopes (assuming applicable regulatory approval is received). In addition, our future isotopes (assuming applicable regulatory approval is received) may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of isotopes that we expect to be commercially available in substantial quantities in the last quarter of 2024. If we receive permits and licenses to enrich U-235 (which in itself is highly uncertain), we do not expect U-235 to be commercially available for at least several years, if ever. As a result, we may need substantial additional financing to support our continuing operations and further the development of and commercialization of our future isotopes.

Expansion of the production and distribution of nuclear medical doses for PET scanning is a time-consuming, expensive and uncertain process that may take years to complete. As a result, we may need substantial additional financing to support our continuing operations and further the development of and commercialization of future nuclear medical doses for PET scanning.

Until such time as we can generate significant revenue from sales of our future isotopes or nuclear medical doses for PET scanning, if ever, we expect to finance our cash needs through public or private equity or debt financings or other capital sources, including potential collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our ability to raise additional funds may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting severely diminished liquidity and credit availability, increased interest rates, inflationary pressures, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. The financial markets and the global economy may also be adversely affected by the current or anticipated impact of military conflict. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise funds through collaborations, or other similar arrangements with third parties, we may have to relinquish valuable rights to our future isotopes, future revenue streams or research programs or may have to grant licenses on terms that may not be favorable to us and/or may reduce the value of our common stock. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market our future isotopes even if we would otherwise prefer to develop and market such isotopes ourselves.

Cash Flows

The following table summarizes our sources and uses of cash for each of the periods presented:

	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Net cash provided by (used in):		
Operating activities	$ (12,935,554)	$ (3,355,171)
Investing activities	(8,352,422)	(1,190,157)
Financing activities	64,841,207	4,493,610
Net increase in cash and cash equivalents	$ 43,553,231	$ (51,718)

Operating Activities

Net cash used in operating activities was $12,935,554 for the nine months ended September 30, 2024 and was primarily due to our net loss of $23,201,675, adjusted for stock-based compensation expense of $6,299,760, non-cash issuance costs for the convertible notes payable of $621,915, amortization of right-of-use asset of $343,473, depreciation expense of $425,630, issuance of common stock to a consultant with a fair value of $783,200, change in fair values for the convertible notes payable of $5,220,599 and a $3,071,004 change in our operating assets and liabilities.

Net cash used in operating activities was $3,355,171 for the nine months ended September 30, 2023, and was primarily due to our net loss of $12,123,907, adjusted for stock-based compensation expense of $6,590,576, expense related to the issuance of common stock to consultants of $669,700, a change in fair value of share liability of $109,040 and amortization of right-of-use asset of $49,173, partially offset by a $1,349,278 change in our operating assets and liabilities.

Investing Activities

Net cash used in investing activities was $8,352,422 for the nine months ended September 30, 2024 and was comprised of the purchases of machinery and equipment, vehicles and construction in progress.

Net cash used in investing activities was $1,190,157 for the nine months ended September 30, 2023 and was comprised of additional construction in progress.

Financing Activities

Net cash provided by financing activities was $64,841,207 for the nine months ended September 30, 2024 and was comprised primarily of gross proceeds of $34,500,000 from issuance of common stock, gross proceeds of $25,936,228 from the issuance of convertible notes payable, proceeds of $5,537,975 from the issuance of common stock for a warrant exercise, contributions from noncontrolling interest in VIE of $891,479, proceeds from collection of receivable from noncontrolling interest in VIE of $706,774, partially offset by costs to issue common stock of $2,194,041, payments of $438,569 on the note payable related to a financed corporate insurance policy, payment of principal portion of finance leases of $38,347 and distribution to noncontrolling interest in VIE of $60,292.

Net cash provided by financing activities was $4,493,610 for the nine months ended September 30, 2023, and was comprised primarily of net proceeds of $4,493,610 from the sale and issuance of 3,164,557 shares of our common stock in March 2023.

Contractual Obligations and Commitments

We lease our main facility in Pretoria, South Africa under a lease with a base monthly rent payment of approximately $8,000 with a term expiring on December 31, 2030. We also lease additional space in Pretoria, South Africa under a lease with a base monthly rent payment of approximately $16,000 with a term that expires on February 28, 2026. We also lease additional space in Pretoria, South Africa under a lease with a base monthly rent payment of approximately $2,000 with a term expiring on October 30, 2026.

PET Labs operates in a facility in Pretoria, South Africa is under a lease with a base monthly rent payment of approximately $28,000 with a term expiring on March 30, 2026 with automatic monthly extension afterwards. PET Labs also rents space at a local hospital in Pretoria, South Africa for which there was a lease with a base monthly rent payment of approximately $5,000 which expired on December 31, 2023 and is currently in automatic monthly extensions.

In addition, we enter into contracts in the normal course of business with vendors for services and products for operating purposes. These contracts do not contain any minimum purchase commitments and generally provide for termination after a notice period and, therefore, are not considered long-term contractual obligations. Payments due upon cancellation consist only of payments for services provided and expenses incurred up to the date of cancellation.

Off-balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Critical Accounting Policies and Significant Judgments and Estimates

See Note 2 to our consolidated financial statements which discusses new accounting pronouncements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are a smaller reporting company as defined by Item 10 of Regulation S-K and are not required to provide the information otherwise required under this item.

Item 4. Controls and Procedures.

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2024. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, mean controls and other procedures of a company that are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company on the reports that it files or submits under the Exchange Act is accumulated and communicated to management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgement in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of September 30, 2024, our Chief Executive Officer and Chief Financial Officer concluded that, as a result of a material weakness identified in our internal control over financial reporting, as previously disclosed in our Annual Report on Form 10-K (as amended) for the year ended December 31, 2023, our disclosure controls and procedures were not effective as of September 30, 2024. In order to remediate the material weakness, management expects to hire additional accounting and finance resources or consultants with public company experience.

Changes in Internal Control

There has been no change in our internal control over financial reporting as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act during our most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Effective July 1, 2024, we hired a new Chief Financial Officer in order to address the internal control environment.

PART II-OTHER INFORMATION

Item 1. Legal Proceedings.

From time to time, we may be a party to litigation or subject to claims incident to the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we currently believe that the final outcome of these ordinary course matters will not have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors. We are not currently a party to any material legal proceedings.

Item 1A. Risk Factors.

In addition to the other information set forth in this Form 10-Q, including under the heading "Cautionary Note Regarding Forward-Looking Statements," the risks and uncertainties which could adversely affect our business, financial condition, results of operations and future growth prospects that we believe are most important for you to consider are discussed in "Part II, Item 1A—Risk Factors" of our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on April 10, 2024 and as amended by Forms 10-K/A filed with the SEC on April 29, 2024 and July 1, 2024. The risks described in our Annual Report on Form 10-K for the year ended December 31, 2023 (as amended) are not the only risks we face. Additional risks and uncertainties not presently known to us or that we presently deem less significant may also impair our business operations. There are no material changes to the Risk Factors described in our Annual Report on Form 10-K for the year ended December 31, 2023 (as amended).

Item 2. Unregistered Sales of Equity Securities, Use of Proceeds and Issuer Purchases of Equity Securities.

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

None.

Item 5. Other Information.

During the three months ended September 30, 2024, no director or officer of ours adopted or terminated a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement," as each term is defined in Item 408(a) of Regulation S-K.

Item 6. Exhibits.

Exhibit Number	Description
10.1*+	Executive Employment Agreement by and between the Company and Heather Kiessling, dated June 10, 2024.
31.1*	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2*	Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1**	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema With Embedded Linkbase Documents
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Exhibits filed herewith.
** Exhibits furnished herewith.
+ Management contract or compensatory plan or arrangement.

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 thereunto duly authorized.

ASP Isotopes Inc.

Date: November 19, 2024	By: */s/ Paul E. Mann* Paul E. Mann Executive Chairman and Chief Executive Officer (Principal Executive Officer)
Date: November 19, 2024	By: */s/ Heather Kiessling* Heather Kiessling Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 10.1

EXECUTIVE EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made and entered into as of the 10th day of June, 2024 by and between ASP Isotopes Inc., a Delaware corporation (the "Company"), and Heather Kiessling ("Executive"). As used herein, the "Effective Date" of this Agreement shall mean July 1, 2024 or such earlier date as mutually agreed to by Executive and the Company.

W I T N E S S E T H:

WHEREAS, the Executive desires to be employed by the Company as its Chief Financial Officer and the Company wishes to employ the Executive in such capacity commencing on and as of the Effective Date.

NOW, THEREFORE, in consideration of the foregoing and their respective covenants and agreements contained in this document, the Company and the Executive hereby agree as follows:

1.Employment and Duties. The Company agrees to employ, and the Executive agrees to serve as, the Chief Financial Officer of the Company. In such capacity, the Executive shall have such duties, authorities and responsibilities commensurate with the duties, authorities and responsibilities customary to this position and such other duties and responsibilities as the Company's Chief Executive Officer and/or the Board of Directors of the Company ("Board") may from time to time assign to the Executive.

The Executive shall devote her full business time and attention to the Company and its subsidiaries. Nothing in this Section 1 shall prohibit the Executive from: (A) serving as a director or member of any other board, committee thereof of any other entity or organization; (B) delivering lectures, fulfilling speaking engagements, and any writing or publication relating to her area of expertise; (C) serving as a director or trustee of any governmental, charitable or educational organization; or (D) engaging in additional activities in connection with personal investments and community affairs, including, without limitation, professional or charitable or similar organization committees, boards, memberships or similar associations or affiliations, *provided*, *however*, in each case, such activities (1) do not interfere with the Executive's duties, authorities and responsibilities as the Chief Financial Officer of the Company; (2) are not in competition with the business and affairs of the Company; or (3) are subject to approval in advance by the Board.

2.Term. The term of this Agreement shall commence on the Effective Date and shall continue for a period of one (1) year following the Effective Date and shall be automatically renewed for successive one (1) year periods thereafter unless either party provides the other party with written notice of her or its intention not to renew this Agreement at least three (3) months prior to the expiration of the initial term or any renewal term of this Agreement, or until terminated in accordance with the provisions of Section 10 of this Agreement. "Employment Period" shall mean the period of Executive's actual employment with the Company during the initial one (1)-year term plus one (1)-year renewals, if any.

3.Place of Employment. The Executive's services shall be performed at such location or locations as the Executive and the Chief Executive Officer shall determine, by mutual agreement. The Executive acknowledges that a significant amount of travel may be required.

4.Base Salary. The Company agrees to pay the Executive a base salary ("Base Salary") of US$400,000 per annum. Annual adjustments after the first year of the Employment Period shall be determined by the Board. The Base Salary shall be paid in periodic installments in accordance with the Company's regular payroll practices and subject to required withholding and deductions.

5.Incentive Compensation and Bonuses.

(a)Annual Bonus: For each fiscal year during the term of employment, the Executive shall be eligible to receive a bonus (the "Annual Bonus"), if any, in the target amount of fifty percent (50%) of Base Salary, with the amount of such bonus determined from time to time by the Compensation Committee or the Board in its discretion. The Annual Bonus, if any, shall be paid by the Company to the Executive promptly after determination that the relevant targets, if any, have been met, it being understood that the attainment of any financial targets associated with any bonus shall not be determined until following the completion of the Company's annual audit and public announcement of such results. Annual Bonuses may be paid in a mixture of cash and Common Stock, the ratio of which will be determined by the Compensation Committee or the Board in its discretion. The number of shares granted in the Common Stock portion of the Annual Bonus (if any) shall be determined by dividing the value of the Common Stock portion of the Annual Bonus by either (i) the fair market value per share of Common Stock, as determined in good faith by the Board, or (ii) the closing sale price of the Common Stock on the trading day immediately preceding the applicable payment date, as reported by the principal trading market for the Common Stock.

(b)Equity Awards and Incentive Compensation: During the term of employment, the Executive shall be eligible to participate in any equity-based incentive compensation plan or program adopted by the Company (such awards under such plan or program, the "Share Awards") as the Compensation Committee or Board may from time to time determine. Share Awards shall be subject to applicable plan terms and conditions and in such amounts and subject to such terms and conditions as determined by the Compensation Committee or the Board. Effective as of the Effective Date, the Board of Directors of the Company shall, as a material inducement to the Executive's commencement of employment, award 400,000 shares of common stock which shall vest (subject to compliance with the vesting conditions set forth in the Company's 2024 Inducement Equity Incentive Plan and applicable award agreement) in eight equal semi-annual installments over a four-year period beginning on the six-month anniversary of the Effective Date.

6.Severance Compensation:

Upon termination of employment for any reason other than the Executive's voluntary resignation pursuant to Section 10(e)(i) or termination for Cause pursuant to Section 10(c), the Executive shall receive her Accrued Benefits (as defined in Section 10(e)(i)) and will also be entitled to (A) a pro rata portion of the Executive's Base Salary up to the date of termination, (B) all Share Awards earned and vested prior to the date of termination. With respect to any Share Awards held by the Executive as of her death, Disability or termination without Cause after the initial one (1)-year term, that are not vested and exercisable as of such date, the Company shall fully accelerate the vesting and exercisability of such Share Awards, so that all such Share Awards shall be fully vested and exercisable as of the Executive's termination, such options (as well as any Share Awards that previously became vested and exercisable) to remain exercisable, notwithstanding anything in any other agreement governing such options, until the earlier of (X) a period of one (1) year after the Executive's termination or (Y) the original term of the option, if such Share Awards are an option. For the avoidance of doubt, the provisions of the immediately preceding sentence shall not be applicable in the event of the Executive's voluntary resignation pursuant to Section 10(e)(i) or if the Company terminates this Agreement and the Executive's employment with the Company without Cause during the initial one (1)-year term.

The Executive may continue coverage with respect to the Company's group health plans as permitted by the Consolidated Omnibus Budget Reconciliation Act of 1985 ("COBRA") for himself and each of her "Qualified Beneficiaries" as defined by COBRA ("COBRA Coverage"). Upon the Executive's termination of employment for any reason other than Executive's voluntary resignation pursuant to Section 10(e)(i) or termination for Cause pursuant to Section 10(c), the Company shall reimburse the amount of any COBRA premium paid for COBRA Coverage timely elected by and for the Executive and any Qualified Beneficiary of the Executive, and not otherwise reimbursed, during the period that ends on the earliest of (x) the date the Executive or the Qualified Beneficiary, as the case may be, ceases to be eligible for COBRA Coverage, (y) the last day of the consecutive eighteen (18) month period following the date of the Executive's termination of employment and (z) the date the Executive or the Qualified Beneficiary, as the case may be, is covered by another group health plan. To reimburse any COBRA premium payment under this paragraph, the Company must receive documentation of the COBRA premium payment within ninety (90) days of its payment.

The payment to the Executive of any amounts or benefits arising as a result of the termination of the Executive's employment are conditional upon the execution by the Executive of a full and final release of all claims and possible claims, in a form acceptable to the Company. Such full and final release shall include provisions requiring the affirmation of the continuance of the Employee's obligations following the end of her employment as outlined in this Agreement.

7.Expenses. The Executive shall be entitled to prompt reimbursement by the Company for all reasonable ordinary and necessary travel, entertainment, and other expenses incurred by the Executive while employed (in accordance with the policies and procedures established by the Company for its senior executive officers) in the performance of her duties and responsibilities under this Agreement; provided, that the Executive shall properly account for such expenses in accordance with Company policies and procedures.

8.Other Benefits. During the term of this Agreement, the Executive shall be eligible to participate in incentive, stock purchase, savings, retirement (401(k)), and welfare benefit plans, including, without limitation, health, medical, dental, vision, life (including accidental death and dismemberment) and disability insurance plans (collectively, "Benefit Plans"), in substantially the same manner and at substantially the same levels as the Company makes such opportunities available to the Company's managerial or salaried executive employees and/or its senior executives.

The Company shall pay one hundred percent (100%) of the cost for any group medical, vision and/or dental coverage elected by and for the Executive and one hundred (100%) of the additional incremental cost for any group medical, vision and/or dental coverage elected by the Executive for the Executive's family. Notwithstanding the foregoing, (i) the Company reserves the right to impose an employee contribution requirement for health insurance premiums, and (ii) to extent payment of such cost will result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Internal Revenue Code of 1986, as amended (the "Code"), or any statute or regulation of similar effect, then the parties shall negotiate in good faith an alternative arrangement that places the Executive in substantially the same after-tax position. In addition, the Company reserves the right to change its employee benefit plan design and administration.

The Executive shall be entitled to air travel, as is reasonable and necessary for the performance of her duties and responsibilities, in accordance with the Company's policies as approved by the Board.

9.Vacation. During the term of this Agreement, the Executive shall be entitled to accrue, on a pro rata basis, twenty (20) paid vacation days per year. Vacation shall be taken at such times as are mutually convenient to the Executive and the Company and no more than ten (10) consecutive days shall be taken at any one time without Company approval in advance. The Executive shall not be entitled to carry over any accrued, unused vacation days from year to year.

10.Termination of Employment:

(a)Death. If the Executive dies during the Employment Period, this Agreement and the Executive's employment with the Company shall automatically terminate on such date and the Company's obligations to the Executive's estate and to the Executive's Qualified Beneficiaries shall be those set forth in Section 6 regarding severance compensation.

(b)Disability. If during the term of this Agreement the Executive shall be prevented from performing her essential functions hereunder to the full extent required by the Company by reason of Disability (as defined below), this Agreement and the Executive's employment with the Company shall automatically terminate. The Company's obligation to the Executive under such circumstances shall be those set forth in Section 6 regarding severance compensation. For purposes of this Agreement, "Disability" shall mean a physical or mental disability that prevents the performance by the Executive, with or without reasonable accommodation, of her essential functions hereunder for an aggregate of ninety (90) days or longer during any twelve (12) consecutive months. The determination of the Executive's Disability shall be made by an independent physician who is reasonably acceptable to the Company and the Executive (or her representative), be final and binding on the parties hereto and be made taking into account such competent medical evidence as shall be presented to such independent physician by the Executive and/or the Company or by any physician or group of physicians or other competent medical experts employed by the Executive and/or the Company to advise such independent physician.

(c)Cause.

(i)At any time during the Employment Period, the Company may terminate this Agreement and the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (a) the willful and continued failure of the Executive to perform substantially her duties and responsibilities for the Company (other than any such failure resulting from the Executive's death, Disability, or approved leave-of-absence) after a written demand by the Board for substantial performance is delivered to the Executive by the Company, which specifically identifies the manner in which the Board believes that the Executive has not substantially performed her duties and responsibilities, which willful and continued failure is not cured by the Executive within thirty (30) days following her receipt of such written demand; (b) the conviction of, or plea of guilty or *nolo contendere* to, a felony, or (c) fraud, dishonesty or gross misconduct which is materially and demonstratively injurious to the Company. Termination under clauses (b) or (c) of this Section 10(c)(1) shall not be subject to cure.

(ii)For purposes of this Section 10(c), no act, or failure to act, on the part of the Executive shall be considered "willful" unless done, or omitted to be done, by him in bad faith and without reasonable belief that her action or omission was in, or not opposed to, the best interest of the Company.

(iii)Upon termination of this Agreement for Cause, the Company shall have no further obligations or liability to the Executive or her heirs, administrators or executors with respect to compensation and benefits thereafter, except for the obligation to pay the Executive any Base Salary earned through the date of termination to be paid according to Section 4; reimbursement of any and all reasonable expenses paid or incurred by the Executive in connection with and related to the performance of her duties and responsibilities for the Company during the period ending on the termination date to be paid according to Section 7; and any accrued but unused vacation time through the termination date in accordance with Company policy. The Company shall deduct, from all payments made hereunder, all applicable taxes, including income tax, FICA and FUTA, and other appropriate deductions. Any unvested Share Awards shall be forfeited in accordance with the terms of the applicable Company equity incentive plan and award agreement(s).

(d)For Good Reason or a Change of Control or Without Cause.

(i)At any time during the term of this Agreement and subject to the conditions set forth in Section 10(d)(ii) below the Executive may terminate this Agreement and the Executive's employment with the Company for "Good Reason" or for a "Change of Control" (as defined in Section 10(f)). For purposes of this Agreement, "Good Reason" shall mean the occurrence of any of the following events without Executive's consent: (A) the assignment to the Executive of duties that are significantly different from, and/or that result in a substantial diminution of, the duties that she assumed on the Effective Date (including reporting to anyone other than solely and directly to the Board); (B) the assignment to the Executive of a title that is different from and subordinate to the title of Chief Financial Officer; *provided*, *however*, for the absence of doubt following a Change of Control, should the Executive be required to serve in a diminished capacity in a division or unit of another entity (including the acquiring entity), such event shall constitute Good Reason regardless of the title of the Executive in such acquiring company, division or unit; (C) a material reduction in Executive's Base Salary or total annual cash compensation opportunity; or (D) material breach by the Company of this Agreement.

(ii)The Executive shall not be entitled to terminate this Agreement for Good Reason unless and until she shall have delivered written notice to the Company within ninety (90) days of the date upon which the facts giving rise to Good Reason occurred of her intention to terminate this Agreement and her employment with the Company for Good Reason, which notice specifies in reasonable detail the circumstances claimed to provide the basis for such termination for Good Reason, and the Company shall not have eliminated the circumstances constituting Good Reason within thirty (30) days of its receipt from the Executive of such written notice. In the event the Executive elects to terminate this Agreement for Good Reason in accordance with Section 10(d)(i), such election must be made within the twenty-four (24) months following the initial existence of one or more of the conditions constituting Good Reason as provided in Section 10(d)(i). In the event the Executive elects to terminate this Agreement for a Change in Control in accordance with Section 10(d)(i), such election must be made within one hundred eighty (180) days of the occurrence of the Change of Control.

(iii)In the event that the Executive terminates this Agreement and her employment with the Company for Good Reason or for a Change of Control or the Company terminates this Agreement and the Executive's employment with the Company without Cause after the initial one (1)-year term, the Company shall pay or provide to the Executive (or, following her death, to the Executive's heirs, administrators or executors) the severance compensation set forth in Section 6 above. The Company shall deduct, from all payments made hereunder, all applicable taxes, including income tax, FICA and FUTA, and other appropriate deductions.

(iv)The Executive shall not be required to mitigate the amount of any payment provided for in this Section 10(d) by seeking other employment or otherwise, nor shall the amount of any payment provided for in this Section 10(d) be reduced by any compensation earned by the Executive as the result of employment by another employer or business or by profits earned by the Executive from any other source at any time before and after the termination date. The Company's obligation to make any payment pursuant to, and otherwise to perform its obligations under, this Agreement shall not be affected by any offset, counterclaim or other right that the Company may have against the Executive for any reason.

(e)Without "Good Reason" by Executive or Without "Cause" by the Company.

(i)By the Executive. At any time during the term of this Agreement, the Executive shall be entitled to terminate this Agreement and the Executive's employment with the Company without Good Reason and other than for a Change of Control by providing prior written notice of at least sixty (60) days to the Company. Upon termination by the Executive of this Agreement or the Executive's employment with the Company without Good Reason and other than for a Change of Control after the initial one (1)-year term, the Company shall have no further obligations or liability to the Executive or her heirs, administrators or executors with respect to compensation and benefits thereafter, except for the obligation to pay the Executive the following (collectively, the "Accrued Benefits"): (i) any Base Salary earned through the date of termination to be paid according to Section 4; (ii) any earned but unpaid Annual Bonus to be paid according to Section 5(a); (iii) Executive's pro-rated Annual Bous for the year of termination to be paid according to Section 5(a); (iv) reimbursement of any and all reasonable expenses paid or incurred by the Executive in connection with and related to the performance of her duties and responsibilities for the Company during the period ending on the termination date to be paid according to Section 7; (v) any accrued but unused vacation time through the termination date in accordance with Company policy; (vi) any accrued and vested benefits under the Benefit Plans; and (vii) all Share Awards earned and vested as of the date or termination. The Company shall deduct, from all payments made hereunder, all applicable taxes, including income tax, FICA and FUTA, and other appropriate deductions.

(ii)By the Company. At any time during the term of this Agreement, the Company shall be entitled to terminate this Agreement and the Executive's employment with the Company without Cause by providing prior written notice of at least sixty (60) days to the Executive. The Company's failure to renew the term of this Agreement pursuant to Section 2 hereof shall be deemed a termination by the Company without Cause, and no additional notice shall be required other than that provided for in Section 2. Upon termination by the Company of this Agreement and the Executive's employment with the Company without Cause, the Company shall pay the Executive her Accrued Benefits (as defined in Section 10(e)(i)) and will also be entitled to all Share Awards earned and vested prior to termination. Notwithstanding the foregoing, upon termination by the Company of this Agreement and the Executive's employment with the Company without Cause after the initial one (1)-year term, the Executive shall be entitled to receive her regular salary plus all benefits under the Benefit Plans for a period of 120 days after Executive's last day of employment and continued coverage, at the Company's expense, under all Benefits Plans in which the Executive was a participant immediately prior to her last date of employment with the Company, or, in the event that any such Benefit Plans do not permit coverage of the Executive following her last date of employment with the Company, under benefit plans that provide no less coverage than such Benefit Plans, for a period of 120 days following the termination of employment. The Company shall deduct, from all payments made hereunder, all applicable taxes, including income tax, FICA and FUTA, and other appropriate deductions.

(f)Change of Control. For purposes of this Agreement, "Change of Control" shall mean the occurrence of any one or more of the following: (i) the accumulation (if over time, in any consecutive twelve (12) month period), whether directly, indirectly, beneficially or of record, by any individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended) of fifty percent (50%) or more of the shares of the outstanding Common Stock of the Company, whether by merger, consolidation, sale or other transfer of shares of Common Stock (other than a merger or consolidation where the stockholders of the Company prior to the merger or consolidation are the holders of a majority of the voting securities of the entity that survives such merger or consolidation), (ii) a sale of all or substantially all of the assets of the Company or (iii) during any period of twelve (12) consecutive months, the individuals who, at the beginning of such period, constitute the Board, and any new director whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds (2/3) of the directors then still in office who either were directors at the beginning of the twelve (12) month period or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority of the Board; provided that the following acquisitions shall not constitute a Change of Control for the purposes of this Agreement: any acquisition of Common Stock or securities convertible into Common Stock by any employee benefit plan (or related trust) sponsored by or maintained by the Company.

(g)Notice of Termination. Any termination of the Executive's employment by the Company or by the Executive (other than termination by reason of the Executive's death) shall be communicated by written Notice of Termination to the other party of this Agreement. For purposes of this Agreement, a "Notice of Termination" shall mean a written notice which shall indicate the specific termination provision in this Agreement relied upon and shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of the Executive's employment under the provision so indicated, provided, however, failure to provide timely notification shall not affect the employment status of the Executive.

11.Confidential Information.

(a)Disclosure of Confidential Information. The Executive recognizes, acknowledges and agrees that she has had and will continue to have access to secret and confidential information regarding the Company, its subsidiaries and their respective businesses (collectively, the "Company Group"), including but not limited to, its products, methods, formulas, software code, patents, sources of supply, customer dealings, data, know-how, trade secrets and business plans ("Confidential Information"), provided such information is not in or does not hereafter become part of the public domain, or become known to others through no fault of the Executive. The Executive acknowledges that such information is of great value to the Company Group, is the sole property of the Company Group, and has been and will be acquired by him in confidence. In consideration of the obligations undertaken by the Company herein, the Executive will not, at any time, during or after her employment hereunder, reveal, divulge or make known to any person, any information acquired by the Executive during the course of her employment, which is treated as confidential by the Company Group, and not otherwise in the public domain. The provisions of this Section 11 shall survive the termination of the Executive's employment hereunder. The Executive affirms that she does not possess and will not rely upon the protected trade secrets or confidential or proprietary information of any prior employer(s) in providing services to the Company Group.

(b)Return of Confidential Information. In the event that the Executive's employment with the Company terminates for any reason, the Executive shall deliver forthwith to the Company any and all originals and copies, including those in electronic or digital formats, of Confidential Information; *provided*, *however*, the Executive shall be entitled to retain (i) papers and other materials of a personal nature, including, but not limited to, photographs, correspondence, personal diaries, calendars and rolodexes, personal files and phone books, (ii) information showing her compensation or relating to reimbursement of expenses, (iii) information that she reasonably believes may be needed for tax purposes and (iv) copies of plans, programs and agreements relating to her employment, or termination thereof, with the Company. The covenants and agreements in this Section 11 shall exclude excludes information (A) which is in the public domain through no unauthorized act or omission of Executive or (B) which becomes available to Executive on a non-confidential basis from a source other than a member of the Company Group without breach of such source's confidentiality or non-disclosure obligations to the Company Group.

12.Non-Competition and Non-Solicitation.

(a)The Executive agrees and acknowledges that the Confidential Information that the Executive has already received and will receive is valuable to the Company and that its protection and maintenance constitutes a legitimate business interest of the Company, to be protected by the non-competition restrictions set forth herein. The Executive agrees and acknowledges that the non-competition restrictions set forth herein are reasonable and necessary and do not impose undue hardship or burdens on the Executive. The Executive also acknowledges that the Company's Business (as defined in Section 12(b)(1) below) is conducted worldwide (the "Territory"), and that the Territory, scope of prohibited competition, and time duration set forth in the non-competition restrictions set forth below are reasonable and necessary to maintain the value of the Confidential Information of, and to protect the goodwill and other legitimate business interests of, the Company, its affiliates and/or its clients or customers. The provisions of this Section 12 shall survive the termination of the Executive's employment hereunder for the time periods specified below.

(b)The Executive hereby agrees and covenants that she shall not without the prior written consent of the Board, directly or indirectly, in any capacity whatsoever, including, without limitation, as an employee, employer, consultant, principal, partner, shareholder, officer, director or any other individual or representative capacity (other than (i) as a holder of less than two (2%) percent of the outstanding securities of a company whose shares are traded on any national securities exchange or (ii) as a limited partner, passive minority interest holder in a venture capital fund, private equity fund or similar investment entity which holds or may hold an equity or debt position in portfolio companies that are competitive with the Company; *provided*, *however*, that the Executive shall be precluded from serving as an operating partner, general partner, manager or governing board designee with respect to such portfolio companies), or whether on the Executive's own behalf or on behalf of any other person or entity or otherwise howsoever, during the Term and thereafter to the extent described below, within the Territory:

(i)Engage, own, manage, operate, control, be employed by, consult for, participate in, or be connected in any manner with the ownership, management, operation or control of any business in competition with the Business of the Company, as defined in the next sentence. For purposes hereof, the Company's "Business" shall mean research, development, techniques and technology in any manner involving or related to the separation of isotopes;

(ii)Recruit, solicit or hire, or attempt to recruit, solicit or hire, any employee, or independent contractor of the Company to leave the employment (or independent contractor relationship) thereof, whether or not any such employee or independent contractor is party to an employment agreement, for the purpose of competing with the Business of the Company;

(iii)Attempt in any manner to solicit or accept from any customer of the Company, with whom Executive had significant contact during Executive's employment by the Company (whether under this Agreement or otherwise), business of the kind or competitive with the business done by the Company with such customer or to persuade or attempt to persuade any such customer to cease to do business or to reduce the amount of business which such customer has customarily done or might do with the Company, or if any such customer elects to move its business to a person other than the Company, provide any services of the kind or competitive with the business of the Company for such customer, or have any discussions regarding any such service with such customer, on behalf of such other person for the purpose of competing with the Business of the Company; or

(iv)Interfere with any relationship, contractual or otherwise, between the Company and any other party, including, without limitation, any supplier, distributor, co-venturer or joint venturer of the Company, for the purpose of soliciting such other party to discontinue or reduce its business with the Company for the purpose of competing with the Business of the Company.

With respect to the activities described in Paragraphs (i), (ii), (iii) and (iv) above, the restrictions of this Section 12(b) shall continue during the term of this Agreement and for a period of one (1) year thereafter.

13.Employee Developments. The Executive is aware and understands that during the term of the Executive's employment with the Company, the Executive may invent, create, develop, and improve certain valuable property such as, but not limited to, patents, trademarks, inventions, other patentable inventions and other trade secrets and formula ("Employee Developments"). The Executive agrees that all Employee Developments that may be developed or produced by the Executive during the Executive's employment with the Company are and will be the property of the Company and that the Executive further agrees that he will, at the request of the Company, execute such documents the Company may reasonably request from time to time, to assign and transfer all of the right, title and interest in Employee Developments that are the property of the Company to the Company and he will cooperate with the Company in connection with any patent applications. In this regard, the Executive will, at all times, fully advise and inform the Company of all matters that the Executive may be developing or working on while employed by the Company. The Executive further agrees that upon the termination of her employment with the Company for any reason whatsoever, the Executive shall immediately deliver and surrender to the Company any and all plans, documents and other materials of any nature relating to the Employee Developments. The Company may provide additional compensation to the Executive as consideration for Employee Developments in accordance with any patent policy of the Company. The provisions of this Section 13 shall survive the termination of Executive's employment with the Company and the termination of this Agreement.

14.Section 409A.

The provisions of this Agreement are intended to comply with or are exempt from Section 409A of the Code ("Section 409A") and the related Treasury Regulations and shall be construed in a manner consistent with the requirements for avoiding taxes or penalties under Section 409A. The Company and the Executive agree to work together in good faith to consider amendments to this Agreement and to take such reasonable actions necessary, appropriate or desirable to avoid imposition of any additional tax under Section 409A or income recognition prior to actual payment to the Executive under this Agreement.

It is intended that any expense reimbursement made under this Agreement shall be exempt from Section 409A. Notwithstanding the foregoing, if any expense reimbursement made under this Agreement shall be determined to be "deferred compensation" subject to Section 409A ("Deferred Compensation"), then (a) the right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit, (b) the amount of expenses eligible for reimbursement, or in-kind benefits, provided during any taxable year shall not affect the expenses eligible for reimbursement, or in-kind benefits to be provided, in any other taxable year (provided that this clause (b) shall not be violated with regard to expenses reimbursed under any arrangement covered by Section 105(b) of the Code solely because such expenses are subject to a limit related to the period the arrangement is in effect) and (c) such payments shall be made on or before the last day of the taxable year following the taxable year in which the expense was incurred.

With respect to the time of payments of any amount under this Agreement that is Deferred Compensation, references in the Agreement to "termination of employment" and substantially similar phrases, including a termination of employment due to the Executive's Disability, shall mean "Separation from Service" from the Company within the meaning of Section 409A (determined after applying the presumptions set forth in Treasury Regulation Section 1.409A-1(h)(1)). Each installment payable hereunder shall constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b), including Treasury Regulation Section 1.409A-2(b)(2)(iii). Each payment that is made within the terms of the "short-term deferral" rule set forth in Treasury Regulation Section 1.409A-1(b)(4) is intended to meet the "short-term deferral" rule. Each other payment is intended to be a payment upon an involuntary termination from service and payable pursuant to Treasury Regulation Section 1.409A-1(b)(9)(iii), et. seq., to the maximum extent permitted by that regulation, with any amount that is not exempt from Code Section 409A being subject to Code Section 409A.

Notwithstanding anything to the contrary in this Agreement, if the Executive is a "specified employee" within the meaning of Section 409A at the time of the Executive's termination, then only that portion of the severance and benefits payable to the Executive pursuant to this Agreement, if any, and any other severance payments or separation benefits which may be considered Deferred Compensation (together, the "Deferred Separation Benefits"), which (when considered together) do not exceed the Section 409A Limit (as defined herein) may be made within the first six (6) months following the Executive's termination of employment in accordance with the payment schedule applicable to each payment or benefit. Any portion of the Deferred Separation Benefits in excess of the Section 409A Limit otherwise due to the Executive on or within the six (6) month period following the Executive's termination will accrue during such six (6) month period and will become payable in one lump sum cash payment on the date six (6) months and one (1) day following the date of the Executive's termination of employment. All subsequent Deferred Separation Benefits, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, if the Executive dies following termination but prior to the six (6) month anniversary of the Executive's termination date, then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of the Executive's death and all other Deferred Separation Benefits will be payable in accordance with the payment schedule applicable to each payment or benefit.

For purposes of this Agreement, "Section 409A Limit" shall mean a sum equal to (x) the amounts payable within the terms of the "short-term deferral" rule under Treasury Regulation Section 1.409A-1(b)(4) plus (y) the amount payable as "separation pay due to involuntary separation from service" under Treasury Regulation Section 1.409A-1(b)(9)(iii) equal to the lesser of two (2) times: (i) the Executive's annualized compensation from the Company based upon her annual rate of pay during the Executive's taxable year preceding her taxable year when her employment terminated, as determined under Treasury Regulation 1.409A-1(b)(9)(iii)(A)(1); and (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which the Executive's employment is terminated.

15.Miscellaneous.

(a)Neither the Executive nor the Company may assign or delegate any of their rights or duties under this Agreement without the express written consent of the other; provided, however, that the Company shall have the right to delegate its obligation of payment of all sums due to the Executive hereunder, provided that such delegation shall not relieve the Company of any of its obligations hereunder.

(b)During the term of this Agreement, the Company (i) shall indemnify and hold harmless the Executive and her heirs and representatives to the maximum extent provided by the laws of the State of Delaware and by Company's bylaws and (ii) shall cover the Executive under the Company's directors' and officers' liability insurance on the same basis as it covers other senior executive officers and directors of the Company.

(c)This Agreement constitutes and embodies the full and complete understanding and agreement of the parties with respect to the Executive's employment by the Company, supersedes all prior understandings and agreements, whether oral or written, between the Executive and the Company, and shall not be amended, modified or changed except by an instrument in writing executed by the party to be charged. If any provision of this Agreement, or the application thereof, shall for any reason and to any extent be invalid or unenforceable, then the remainder of this Agreement and the application of such provision to other persons or circumstances shall be interpreted so as reasonably to effect the intent of the parties hereto. The parties further agree to replace such void or unenforceable provision of this Agreement with a valid and enforceable provision that shall achieve, to the extent possible, the economic, business and other purposes of the void or unenforceable provision. No waiver by either party of any provision or condition to be performed shall be deemed a waiver of similar or dissimilar provisions or conditions at the same time or any prior or subsequent time.

(d)This Agreement shall inure to the benefit of, be binding upon and enforceable against, the parties hereto and their respective successors, heirs, beneficiaries and permitted assigns.

(e)The headings contained in this Agreement are for convenience of reference only and shall not affect in any way the meaning or interpretation of this Agreement.

(f)All notices, requests, demands and other communications required or permitted to be given hereunder shall be in writing and shall be deemed to have been duly given when personally delivered, sent by registered or certified mail, return receipt requested, postage prepaid, or by reputable national overnight delivery service (e.g., Federal Express) for overnight delivery to the party at the address set forth in the preamble to this Agreement, or to such other address as either party may hereafter give the other party notice of in accordance with the provisions hereof. Notices shall be deemed given on the sooner of the date actually received or the third business day after deposited in the mail or one business day after deposited with an overnight delivery service for overnight delivery.

(g)This Agreement shall be governed by and construed in accordance with the internal laws of the State of Delaware, and each of the parties hereto irrevocably consents to the exclusive jurisdiction and venue of the federal and state courts located in the State of Delaware, County of New Castle for any disputes arising out of this Agreement, or the Executive's employment with the Company. The prevailing party in any dispute arising out of this Agreement shall be entitled to her or its reasonable attorney's fees and costs, (h)This Agreement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one of the same instrument. The parties hereto have executed this Agreement as of the date set forth above.

(i)The Executive represents and warrants to the Company, that she has the full power and authority to enter into this Agreement and to perform her obligations hereunder and that the execution and delivery of this Agreement and the performance of her obligations hereunder will not conflict with any agreement to which the Executive is a party.

(j)The Company represents and warrants to the Executive that it has the full power and authority to enter into this Agreement and to perform its obligations hereunder and that the execution and delivery of this Agreement and the performance of its obligations hereunder will not conflict with any agreement to which the Company is a party.

[Signature page follows immediately]

IN WITNESS WHEREOF, the Executive and the Company have caused this Executive Employment Agreement to be executed as of the date first above written.

ASP ISOTOPES INC.

Signed: /s/ Paul Mann
By: Paul Mann
Its: Chief Executive Officer
Date: 11 June 2024

EXECUTIVE

Signed: /s/ Heather Kiessling
Name: Heather Kiessling
Date: 10 June 2024

EXHIBIT 31.1

CERTIFICATION PURSUANT TO
SECURITIES EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Paul Mann, certify that:

1.I have reviewed this Quarterly Report on Form 10-Q for the period ended September 30, 2024 of ASP Isotopes Inc.;

2.Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3.Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4.The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a)designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b)designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c)evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d)disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5.The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a)all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b)any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 19, 2024

/s/ Paul Mann
Paul Mann
Chief Executive Officer (principal executive officer)

EXHIBIT 31.2

CERTIFICATION PURSUANT TO
SECURITIES EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Heather Kiessling, certify that:

1.I have reviewed this Quarterly Report on Form 10-Q for the period ended September 30, 2024 of ASP Isotopes Inc.;

2.Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3.Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4.The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a)designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b)designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c)evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d)disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5.The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a)all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b)any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 19, 2024

/s/ Heather Kiessling
Heather Kiessling
Chief Financial Officer
(principal financial officer and principal accounting officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of ASP Isotopes Inc. (the "Corporation") on Form 10-Q for the fiscal quarter ended September 30, 2024, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Paul Mann, as Chief Executive Officer of the Corporation, and I, Heather Kiessling, as Chief Financial Officer of the Corporation, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1)The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2)The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation.

Date: November 19, 2024	By: */s/ Paul Mann* Paul Mann Chief Executive Officer *(Principal Executive Officer)*
Date: November 19, 2024	By: */s/ Heather Kiessling* Heather Kiessling Chief Financial Officer *(Principal Financial Officer)*

A signed original of this written statement required by Section 906 has been provided to the Corporation and will be retained by the Corporation and furnished to the Securities and Exchange Commission or its staff upon request. This certification shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liability of Section 18 of the Exchange Act. Such certification shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that the Corporation specifically incorporates it by reference.