

WWR / NYSE-Amer

**SPECULATIVE
BUY**

Unchanged

\$20.00

Unchanged

CAPITALIZATION

Shares Outstanding (2/10/22)	35.4 M
Recent Price (2/23/22)	\$1.94

Market Capitalization	\$ 68.7 M
+ Debt	1.4 M
- Cash	115.3 M
Enterprise Value	\$ (45.2) M

Book Value	\$126.2 M
Working Capital	\$110.3 M
Dividend	Nil

Balance sheet figures as of 12/31/21

MARKET DATA

Bid-Ask Spread, % Price	0.5%
52 Week High/Low	\$7.15 - \$1.75

Shares Outstanding	35.4 M
Inside Ownership	<1%
Institutional Ownership	10%
Estimated Flotation	32.0 M

Average Daily Volume	749 K
Short Interest, % of Float	4.6%
Beta	1.40

Source: Bloomberg LP

INVESTMENT RETURNS

	WWR	Sector*
Return on Equity	Neg	31.61%
Return on Assets	Neg	12.71%
Return on Capital	Neg	16.25%

Source: Crystal Equity Research, CSI Markets

FINANCIAL PROFILE

	FY20	FY21
Sales	\$ 0.0 M	\$ 0.0 M
EBITDA	(\$11.2) M	(\$18.1) M
(L)EPS	(\$1.58)	(\$0.49)

Source: Company Reports

HIGHLIGHTS

- **Capital resources.** Reported \$115.3 million in cash on the balance sheet at year-end 2021, more than half of the \$202 million price tag for its graphite materials project in Alabama.
- **Graphite processing plant construction.** Chief operating officer tapped to replace retiring chief executive officer; certain executive responsibilities spread across leadership team to keep new CEO focus on graphite processing plant currently under construction.
- **Rating.** Continue to rate WWR at Speculative Buy and view the Company as among the leading players in the battery graphite materials development sector.
- **Price target.** Price target of \$20.00 is validated by a recent comparison of WWR to a group of sixteen graphite materials developers; pegged intrinsic value at \$21.29 per share
- **Stock price catalysts.** In next few months progress reports on the Alabama graphite plant are expected to trigger new interest in WWR.

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INDUSTRY: INDUSTRIAL, ENERGY MATERIALS

WWR: NYSE-Amer

RECENT DEVELOPMENTS

A change-over of senior officers for Westwater appears to have been handled with some ease, as the Company elevates its chief operating officer to replace the retiring chief executive officer. To make certain the new CEO Chad Potter can remain focused on the construction of the graphite materials processing facility in Kellyton, Alabama, some of the usual executive responsibilities will be carried out by the Company's chairman, Terence Cryan, who was named Executive Chairman. In our view, the right talent is still represented on Westwater's executive team, even if its ranks appear to be a bit thin following the retirement of Christopher Jones. The path forward for the next two years is already well mapped out and appears now to be a matter of strong and timely execution. In this regard, Potter is well suited to the new assignment with an extensive operational background.

RECOMMENDATION

Our target price of \$20.00 for WWR remains frustratingly afar. Nonetheless, a recent valuation exercise at the time of this report has validated our goal. The calculation determined the Company's intrinsic value is \$21.29 per share based on the application of a price-to-book value multiple derived from a group of sixteen public companies in the graphite sector. As shown in Table II on page 8 of this report, a review of this group's most recent corporate announcements suggests that Westwater Resources is well to the leading edge of the sector. Westwater has begun construction of a processing facility with the capacity to process 8,050 metric tons of graphite concentrate and produce 7,500 metric tons of battery-grade graphite materials per year. The Westwater sales team has also built up a business pipeline populated by as many as forty parties interested enough to sign non-disclosure agreements and take up testing of Westwater's proprietary battery materials. At least two of these prospects have moved forward with volume testing and preliminary order discussion.

Accordingly, we continue to view WWR as egregiously undervalued at the current price level. The Company should be given far greater regard for its accomplishments compared to the balance of the graphite sector

VALUATION

Price/Sales	Neg
Price/Cash Flow	Neg
Price/EPS	Neg
Price/Book Value	0.54 X
Consensus EPS 2022	na
Forward PE	na

Per share figures estimated 12/31/21

OPERATING PROJECTIONS

	2020A	2021A	2022E	2023E	2024E
Sales	\$ 0.0	\$ 0.0	\$ 0.0	\$21.1	\$28.1
Operating (Loss)	(\$11.2)	(\$18.2)	(\$21.0)	(\$ 9.8)	(\$ 6.0)
Net Inc (Loss)	(\$23.6)	(\$16.1)	(\$21.0)	(\$ 9.8)	(\$ 6.0)
CFO (U)	(\$15.2)	(\$16.9)	(\$20.6)	(\$13.9)	(\$ 2.7)
EPS (LPS)	(\$1.58)	(\$0.49)	(\$0.48)	(\$0.19)	(\$0.11)

Dollars in millions except per share earnings

Company Reports and Crystal Equity Research Estimates

FOURTH QUARTER 2021 FINANCIAL RESULTS

Last week Westwater Resources reported financial results for the fourth quarter and year ending December 2021. We estimate operating expenses were \$2.8 million in the quarter, bringing total operating expenses to \$18.2 million for the full year. The majority of the Company's expenditures supported general, administrative and product development activities related to the Coosa graphite materials project. During the year the Company engaged engineering consultants to first design and build a pilot processing plant and then complete definitive feasibility study for production of advanced battery-grade graphite materials.

The Company reported a GAAP net loss of \$16.1 million, but we believe investors are better information by the measure of cash used by operations. Westwater reported using \$16.9 million in cash during the year to support operations. Another \$2.1 million was used for investment in property and equipment as well as cash deposits for materials and equipment intended for construction of the graphite processing facility planned for an industrial site near Kellyton, Alabama.

YEAR-END 2021 BALANCE SHEET

Westwater ended the year with \$115.3 million in cash on the balance sheet. Cash resources were supplemented during the year by the sale of common stock through two equity placement agreements. The Company raised a total of \$84.1 million in new capital through the sale of 16.1 million shares of common stock, implying an average sales price of \$5.24 per share. Notably the Company's cash position was also enhanced by the sale of \$3.6 million in equity securities during the fourth quarter. Specifically, Westwater realized a gain on the sale of common stock of enCore Energy Corporation, which had purchased certain uranium resource assets in exchange for enCore shares.

New to the balance sheet are assets related to the graphite processing plant now under construction. Property, plant and equipment totaling \$14.5 million includes the addition of a \$1.0 million value for 'construction in process'. We expect this line item to build each quarter in 2022 and into 2023 until the processing facility is completed and commissioned, at which time it will be renamed as a permanent asset. Property, plant and equipment also includes new assets related to the two commercial buildings acquired in October 2021, at the Kellyton industrial park site. The buildings are being repurposed to house administrative offices and warehousing for materials needed for the Company proprietary graphite process. The building assets values could potentially be adjusted for improvements.

Also new to the Company's balance sheet is a \$1.4 million long-term liability related to a land grant offered to Westwater by the local government as a location inducement. Since the land grant is conditional upon certain performance obligations on the part of the Company, the value is represented on the balance sheet as a liability. The liability will be adjusted as the Company fulfills its obligation to construct and operate the graphite processing facility.

MANAGEMENT CHANGES

In the week prior to the financial report, Westwater announced changes in its management line-up. The Company elevated its chief operating officer Chad Potter to chief executive officer to replace its incumbent CEO. Christopher Jones is retiring to pursue personal interests. The Company also announced the appointment of Terence Cryan as Executive Chairman of the Board. Cryan will handle some of the executive functions, including shareholder communications and investors relations as well as capital markets activities. This is expected to allow Potter the time to focus on the buildout of the graphite processing facility in Alabama.

Potter's background includes extensive operational experience in the metals industry. Prior to joining Westwater Resources in August 2021, he had been chief operating officer for American Consolidated Industries, a manufacturer of steel pipe and tubes also located in Alabama. He was also a senior officer at Nucor Corporation, a producer of steel products. At Nucor Potter was tapped as chief executive officer of a joint venture in Mexico after having served over eleven years as a division controller for Nucor. His educational background is in accounting, finance and business administration.

While Potter is relatively new to the Company, Terence Cryan knows Westwater's history well through fifteen years of service on the Company's board of directors. Cryan has brought lengthy corporate experience to the Westwater boardroom. He has extensive experience in the investment banking industry and has served as director at several other public companies. In our view, he appears particularly well suited to play a more visible role in communicating with investors and shareholders.

It is also notable from an investor's perspective that there are additional players at Westwater that supplement the capacities of the top officers. Dain McCoig is vice president of operations and Cevat Er is vice president of technology. Both have extensive experience in metals mining that will be key when the Company moves toward mining activities at the Coosa graphite resource. Westwater began preparing for the start-up of processing plant construction and operations in Alabama by appointing Steven Cates as controller to augment the finance and accounting function headed by the chief financial officer, Jeff Vigil. Cates accumulated considerable experience as a senior accounting officer in the mining, minerals and real estate sectors, after beginning his accounting career in audit services at a major accounting firm.

Additionally, two of the Company's most recent additions to the board of directors have brought vital knowledge related to human resources and protection of intellectual property. These are two matters that are particularly salient for Westwater at this stage in its graphite materials development efforts. Karli Anderson, director since 2018, has been involved in finance and investor relations in the mining industry for over fifteen years. Deborah Peacock, director since 2020, is an attorney and engineer with extensive experience in both public and private mining operations.

UPDATED FINANCIAL MODEL

Our financial model has been updated to reflect Westwater's fourth quarter 2021 financial results. Based on commentary by senior officers during the quarter conference call, we have made additional adjustments to our model for the next two years. These adjustments primarily in magnitude of costs or expenses. Otherwise, our assumptions related to timing are largely unchanged at this time.

- Completion of graphite processing plant near Kellyton, Alabama by early 2023.
- Commencement of battery-grade graphite production by mid-2023 and the realization of revenue from at least one customer beginning in the second half 2023.
- Raise of at least \$100 million in additional capital in 2023, through the sale of common stock, using first the existing equity purchase agreements with Cantor Fitzgerald and Lincoln Park Capital, and then potentially extending these agreements. Private or public sale of common stock could also be on the table.
- Sales prices for the Company's principal products, *Coated Spherical Purified Graphite (CSPG)* and *Purified Micronized Graphite (PMG)*, near \$6,000 per metric ton and \$3,000 per metric ton, respectively.

In our view, the Company remains somewhat thinly staffed given the objective over the next year to construct and commission a processing facility capable of producing 8,050 metric tons of battery-grade graphite material per year. We have observed that the Westwater team, particularly under the leadership of the CFO Jeff Vigil, has been particularly frugal with its budget and operating structure, foregoing some of the frills that some developmental stage companies take for granted. Nonetheless, our model suggests the Company will use as much as \$20.0 million in cash resources to support operations during the year 2022. This estimate assumes the addition of new personnel and the engineering activities related to the construction of the graphite processing facility. The model shown in Table III on page 9 also reflects the investment of \$125 million in plant and equipment during 2022.

VALUATION

Our approach to WWR pricing continues to be largely based on comparable valuation metrics within the graphite mining and materials sector. We have refreshed our survey of price multiples for fourteen public companies exploring and developing graphite resources and two additional public companies that have reached full commercial stage. Since only the two commercial stage companies in the group have revenue or earnings multiples, we have confined our comparable analysis to the price-to-book value metric. Notably, book value multiples encompass a market view on asset utilization and capitalization strategies.

The group trades at an average 5.97 times book value. This comparable metric implies an intrinsic value of \$21.29 per share based on the Company's balance sheet at the end of 2021.

At the present time the market has dramatically discounted WWR shares to a level well below its cash per share. While we grant that some of the Company's current cash resources will be used to support operations during the year 2022, the majority of cash is earmarked for the Company's graphite processing facility construction project. Accordingly, if cash on the balance sheet is adjusted to reflect this use, the same exercise must also acknowledge the resulting creation of a new asset. At this time, we believe there are few impediments to realizing the completion of the Kellyton construction project. Even with the supply chain issues that have plagued manufacturers and builders around the world in recent months, Westwater is likely to only experience delays of days or weeks rather than lasting damage to its strategic plans.

Our argument holds as inherently faulty the simple discounting Westwater's cash resources without regard for the resulting value created as that cash is invested. Table I below provides an illustration of the line of thinking that the Company's cash asset is must be discounted given the required budget for current development activities. Even with the assumption that \$30 million of the Company's cash is consumed over the next year to support operations and pay for construction services or materials that cannot be capitalized, the total asset value would be near \$103 million and book value near \$80 million. The implied value per share would \$13.54 based on investors' valuation of the broader graphite materials sector, still well above the current price.

The same exercise can be undertaken with any combination of expenditures for operating expenses and construction activity. To reach the current WWR price of \$1.94 and based on the prevailing market multiple of 5.97 in the graphite sector, the implied book value would have to be is \$12.0 million. This seems an unlikely scenario.

Table I: Balance Sheet Illustration

	12/31/21	Adjustments	Pro Forma
Cash	\$115.29 M	Minus \$20.0 M operating expenses Minus \$10.0 M construction services Minus \$70.0 M capital investment	\$ 15.29 M
PP&E	\$ 14.48 M	Plus new asset value \$70.0 M	\$ 84.48 M
Total Assets	\$132.98 M		\$102.98 M
Book Value	\$126.20 M		\$ 80.20 M

All figures in millions

Sources: Company Reports; Crystal Equity Research estimates

OUTLOOK

We anticipate several milestones in the next few months that could trigger a change in sentiment toward WWR. It is more likely than not that Westwater Resources will have a series of encouraging announcements related to its graphite processing facility construction project. The project itself will become physically visible. Indeed, the two buildings that the Company purchased at the end of 2021, are already the center of activity at the site. We also expect at least the announcement of a decision the international investment tribunal related to the Company dispute with the Republic of Turkey.

Wild cards in the mix would be announcements related to potential customers. In late 2021, management had suggested that as many as forty non-disclosure agreements had been executed, implying a robust business pipeline. Unfortunately, the pipe flows slowly. The review, testing and design-in process for battery manufacturers can be expected to be lengthy, even extending into years. In August 2019, Westwater announced that a major battery manufacturer had moved forward far enough to request a bulk sample of one metric ton of *Purified Micronized Graphite (PMG)* for volume testing, ostensibly in an alkaline battery. In November 2021, the Company announced a letter of intent with another undisclosed prospect with interests in lithium-ion batteries. The letter calls for the sale of 125 to 250 metric tons of *Coated Spherical Purified Graphite (CSPG)* beginning in 2023.

During the fourth quarter financial results conference call in mid-February 2022, management was silent on the two 'announced' prospects. Informally, management had earlier confirmed that the one metric ton of *PMG* was delivered for the alkaline battery prospect's testing effort. Additionally, the Company's annual report filed on February 11, 2022, that the letter of intent with the prospect interested in *CSPG* is subject to the commissioning of a pilot plant and full-scale plant by the prospect. Management has advised that it has good visibility into this prospect's efforts. While not the strong attestation of progress in these two prospects that some investors and shareholders might want, the clues provide at least some comfort that the well populated business pipeline could produce confirmed orders. Any progress with these two prospects that rises to the Company's disclosure criteria, could be a strong valuation catalyst.

GRAPHITE SECTOR

A review of recent events within the graphite materials sector, suggests Westwater is in a leadership position as the Company constructs its graphite processing facility and engages potential customers in testing its materials. The Table II on page 8 provides the most recent company announcement from a selection of sixteen graphite companies. Price metrics from this group provided the basis for our WWR valuation exercise. Notably Syrah Resources recently announced plans to expand the foot print for its graphite processing building to accommodate equipment for processing as much as 11,500 metric tons. The move appears to be in part a competitive response to Westwater's earlier announcement of its plans for a Phase II expansion to 32,400 metric tons production per year.

Table II: Graphite Sector

COMPANY	SYM	OPERATIONS/PROJECTS	MOST RECENT COMPANY ANNOUNCEMENT
Alba Mineral Resources Plc.	ALBA.L	Amitsoq Island, Greenland	Maiden drilling program completed in 2021 confirming high grade graphite deposits; proceeding with scoping study
Eagle Graphite, Inc.	EGA: V	Black Crystal, British Columbia	March 2021, partnered with University of British Columbia to develop silicon-enhanced graphite anodes
EcoGraf Ltd. (Kibaran Res.)	EGR.AX	Epanko, Tanzania	Testing completed in 2021 for graphite purification pilot plant; pre-construction work initiated
Focus Graphite, Inc.	FMS: V	Lac Knife, Lac Tetepisca, Quebec	Feb. 2022, maiden mineral resource estimate of 6.2 metric tons at Lac Tetepisca graphite project
Graphite One, Inc.	GPH: V	Graphite Creek, Alaska	Completed drill program in 2021 at Graphite Creek; pre-feasibility study expected in first quarter 2022
Imerys Graphite & Carbon	NK: PA	Specialty graphite materials	Claims #1 position as supplier of graphite and carbon performance materials for alkaline and lithium-ion batteries
Leading Edge Materials	LEM: V	Woxna, Sweden	Considers resumption of graphite production at Woxna mine on improved market conditions
Lomiko Metals	LMR: V	La Loutre, Quebec	Completed preliminary economic assessment in Sept. 2021, environmental impact statement planned in 2022
Mason Graphite	LLG.V	Lac Guaret, Quebec	In partnership with Sicona Battery Technologies, in Nov. 2021 completed testing of spherical graphite anode materials enhanced with silicon
NextSource Materials	NEXT: TO	Molo, Madagascar	January 2022, completed factory acceptance testing for graphite processing plant equipment design
Northern Graphite Corp.	NGC: V	Bissett Creek, Ontario	December 2021, plans to acquire graphite mines in Namibia from Imerys Group
Nouveau Monde Graphite	NOU: V	Matawinie, Quebec	Initiated in 2021, construction of access road and civil works for battery material plant; produced spherical graphite test materials
SGL Carbon SE	SGLFF: OTC	Carbon fiber, specialty graphite	Claims significant market share in natural and synthetic graphite for anode materials; announced restructuring in 2020
Syrah Resources Ltd.	SYR: ASX	Balama, Mozambique	Expanding footprint of Louisiana graphite processing facility for 11,250 metric ton production capacity
Talga Group Ltd.	TLG: ASX	Vittangi, Sweden	Completed feasibility study for graphite anode in July 2021; production in 2024; testing and graphene silicon composite battery material
Triton Minerals Ltd.	TON: ASX	Ancuabe, Mozambique	Revised project development plan for commercial pilot plant; binding offtake agreement 10,000 metric tons graphite concentrate with Yichang Xincheng Graphite Co.

Sources: Company reports and Corporate Websites

Table III: Historic and Projected Annual Financial Performance

Dollars in Thousands	2020A Year	2021A Year	2022E Year	2023E Year	2024E Year
Total revenue	-	-	-	21,056	28,074
Gross profit	-	-	-	12,633	18,248
Operating expenses:					
General and administrative	5,678	12,120	12,500	13,200	14,500
Product development and other	5,378	5,975	7,500	5,500	5,000
Depreciation and amortization	(55)	20	260	3,000	4,000
Mineral property expenses	34	110	750	750	750
Accretion of asset retirement obligations	201	-	-	-	-
Total operating expenses	11,236	18,225	21,010	22,450	24,250
Operating income (loss)	(11,236)	(18,225)	(21,010)	(9,817)	(6,002)
Other income and expenses					
Gain (loss) on sale of assets	(2,665)	2,057			
Other	(11)	24			
Total other income (expense)	(2,676)	2,081	-	-	-
Income (loss) before income taxes	(13,912)	(16,144)	(20,410)	(9,817)	(6,002)
Discontinued operations, net of taxes	(9,662)	-	-	-	-
Net income (loss)	(23,574)	(16,144)	(21,010)	(9,817)	(6,002)
Net EPS (LPS), comprehensive	\$ (2.68)	\$ (0.49)	\$ (0.48)	\$ (0.19)	\$ (0.11)
Wtd shares outstanding, diluted in 000s	8,799	32,653	44,125	53,000	53,000

Source: Company Reports and Crystal Equity Research Estimates

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ANALYST

Debra Fiakas, CFA is a seasoned, credentialed investment professional with a diversified and successful track record as a research analyst and as an investment banker. Her decade-plus career includes solid experience in all aspects of the equity capital markets with particular emphasis on emerging growth companies operating in the technology sectors. Ms. Fiakas is also the principal member of Crystal Equity Research, LLC.

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RATING SYSTEM

Buy	Price appreciation expected 10% or more over a 12-month period.
Hold	Price appreciation/depreciation expected between 10% and -10% over 12 months.
Sell	Price depreciation expected 10% or more over a 12-month period.

CRYSTAL RESEARCH UNIVERSE

Buys	70%
Holds	15%
Sells	<u>15%</u>
Total	100%

HISTORICAL RECOMMENDATIONS AND TARGET PRICE: Westwater Resources / WWR

<u>Report</u>	<u>Date</u>	<u>Price</u>	<u>Rating</u>	<u>Target Price</u>
Previous reports by request				
Update	2/24/2022	\$1.94	Buy	\$20.00

DISCLOSURES

<u>Name</u>	<u>Symbol: Exchange</u>	<u>Disclosures</u>
Westwater Resources, Inc.	WWR: NYSE/Amer	D

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