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## Arch Therapeutics (OTCqb: ARTH)

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### BUY: AC5 - Gradual Launch is Progressing

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*Arch is developing an innovative platform of peptides to seal and protect bleeding, leaking, and injured tissues in a range of procedures. The initial product is based on the AC5, a self-assembling peptide technology platform, which rapidly generates nanofiber networks that control the movement of fluids and substances while enabling healing. The product is now approved in the U.S., and commercialization has begun. The E.U. is next. As resources allow, we expect to see indications expand and new products emerge from the pipeline.*

**An Effective Barrier and Scaffold that Promotes Healing.** The company's flagship product is based on its AC5 self-assembling peptide (SAP) technology platform. The platform includes AC5 Advanced Wound System and AC5 Topical Hemostat, which have received marketing authorization as medical devices in the United States and Europe, respectively, and which are intended for skin applications, such as management of complicated chronic wounds or acute surgical wounds. The AC5 platform is a biocompatible peptide that is synthesized from proteogenic, naturally occurring L-amino acids. Unlike products that contain traditional peptide sequences, when applied to a wound, AC5-based products intercalate into the interstices of the connective tissue and self-assemble into a protective physical-mechanical nanoscale structure that can provide a barrier to leaking substances, such as blood, while also acting as a biodegradable scaffold that enables healing. Self-assembly is a central component of the mechanism of action.

**Commercializing Begins.** The launch is underway and as we have expected, it's gradual. We expect it to build slowly over time. The company's strategy is to drive use with key opinion leaders and early adopters. The company is prioritizing its focus on private and government facilities. Hospitals in the Veterans Health Administration tend to have many patients whose needs may be applicable to AC5. The company has also engaged with third parties in the United States, from distributors to contract organizations, consultants, advisors, scientists, clinicians, and/or other collaborators.

**Modest Expectations:** We assume a very slow and gradual market share build in the U.S. and E.U. Initially, the focus is likely to be on the dermatological sciences area, which we think of as outside the body versus Biosurgery (inside the body). We assume pricing in-line with the competitive market place \$2500-\$3,000 for a 2x2 area (4 cm sq area) versus AC5 as a liquid application.

**Valuation:** We project detailed revenue assumptions in our model out to 2031. We assume a royalty model – 30% net to Arch in our product models. We apply a 30% risk rate in our Free Cash Flow to the Firm (FCFF), discounted EPS (dEPS), and Sum-of-the-Parts (SOP) models, which are then equal-weighted and averaged and rounded to the nearest whole number to derive our 12-month projected price target of \$3.00.

**Risks to our thesis** include: (1) commercial; (2) financial; (3) intellectual property; and (4) OEM and/or manufacturing. We review these risks in the Risks Analysis section of this report.

Current Price				\$0.12
Price Target				\$3.00
<b>Estimates</b>	<b>2022E</b>	<b>2023E</b>	<b>2024E</b>	
<b>Expenses (\$000s)</b>	\$6,331	\$8,247	\$51,172	
1Q December	\$1,583	\$2,030	\$11,908	
2Q March	\$1,646	\$2,128	\$12,862	
3Q June	\$1,583	\$2,046	\$12,350	
4Q September	\$1,519	\$2,043	\$14,052	
<b>Estimates</b>	<b>2022E</b>	<b>2023E</b>	<b>2024E</b>	
<b>Revenues (\$000s)</b>	\$0	\$16,000	\$442,662	
1Q December	\$0	\$3,680	\$101,812	
2Q March	\$0	\$4,000	\$110,666	
3Q June	\$0	\$3,840	\$106,239	
4Q September	\$0	\$4,480	\$123,945	
<b>Estimates</b>	<b>2022E</b>	<b>2023E</b>	<b>2024E</b>	
<b>EPS (diluted)</b>	(\$0.03)	\$0.03	\$1.48	
1Q December	(\$0.01)	\$0.01	\$0.34	
2Q March	(\$0.01)	\$0.01	\$0.37	
3Q June	(\$0.01)	\$0.01	\$0.35	
4Q September	(\$0.01)	\$0.01	\$0.41	
<b>Stock Data</b>				
52-Week Range	\$0.06	-	\$0.20	
Shares Outstanding (mil.)				236.7
Market Capitalization (mil.)				\$28
Enterprise Value (mil.)				\$28
Debt to Capital				0%
Book Value/Share				\$0.01
Price/Book				-
Average Three Months Trading Volume (K)				82
Insider Ownership				13.5%
Institutional Ownership				0.0%
Short interest (mil.)				-
Dividend / Yield				\$0.00/0.0%



**Model Assumptions**

- We assume a typical use will cost between \$2,500 and \$3,000, which represents a 2cm x 2cm treatment area.
- Our Therapeutic models for both the U.S. and Europe have a 90% risk cut applied to the revenue projections. This is in addition to the risk rate (30%) applied in our valuation metrics.
- Our market share assumptions for all indications are modest at single-digit percentages. We assume the current markets are entrenched with well-funded competitors. As such, potential market share build is likely to build slowly.
- We model the U.S. and Europe and the dermatological and Biosurgery individual markets.

**Market Models**

	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
<b>Surgery: ACS Surgical Hemostat and Sealtite (Europe)</b>																		
Annual surgical procedures	60,000,000	60,300,000	60,600,015	60,900,045	60,120,090	60,150,150	60,180,225	60,210,315	60,240,420	60,270,540	60,300,675	60,330,825	60,360,990	60,391,172	60,421,368	60,451,578	60,481,804	60,512,045
Increase in procedures	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General surgical procedures (excluding cosmetic plastic surgery)	48,000,000	48,024,000	48,048,012	48,072,036	48,096,072	48,120,120	48,144,180	48,168,255	48,192,345	48,216,450	48,240,570	48,264,705	48,288,855	48,313,020	48,337,198	48,361,389	48,385,494	48,409,615
Laposcopic procedures (25%)	12,000,000	12,006,000	12,012,012	12,018,036	12,024,072	12,030,120	12,036,180	12,042,255	12,048,345	12,054,450	12,060,570	12,066,705	12,072,855	12,079,020	12,085,198	12,091,389	12,097,594	12,103,815
Non-laposcopic general procedures (75%)	36,000,000	36,018,000	36,030,000	36,042,024	36,054,072	36,066,150	36,078,180	36,090,255	36,102,345	36,114,450	36,126,570	36,138,705	36,150,855	36,163,020	36,175,198	36,187,389	36,199,594	36,211,815
Plastic surgery	1,100,000*	1,100,500	1,101,100	1,101,650	1,102,200	1,102,750	1,103,300	1,103,850	1,104,400	1,104,950	1,105,500	1,106,050	1,106,600	1,107,150	1,107,700	1,108,250	1,108,800	1,109,350
Market penetration (Laposcopic)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market penetration (non-laposcopic)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market penetration (plastic surgery)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Laposcopic procedures using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-laposcopic procedures using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plastic surgery using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total procedures using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost per unit (typical patency may use up to 5 units)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Price increase	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
ACS revenue (\$00)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk Reduction	90%																	
Source: Dawson James research																		
<b>Surgery: ACS Surgical Hemostat and Sealtite (US)</b>																		
Annual surgical procedures	51,000,000	51,025,500	51,051,015	51,076,545	51,102,075	51,127,620	51,153,180	51,178,755	51,204,345	51,229,950	51,255,570	51,281,205	51,306,855	51,332,520	51,358,195	51,383,880	51,409,575	51,435,285
Increase in procedures	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General surgical procedures (excluding cosmetic plastic surgery)	40,800,000	40,824,000	40,848,012	40,872,036	40,896,072	40,920,120	40,944,180	40,968,255	40,992,345	41,016,450	41,040,570	41,064,705	41,088,855	41,113,020	41,137,198	41,161,389	41,185,594	41,209,815
Laposcopic procedures (25%)	10,200,000	10,206,000	10,212,012	10,218,036	10,224,072	10,230,120	10,236,180	10,242,255	10,248,345	10,254,450	10,260,570	10,266,705	10,272,855	10,279,020	10,285,198	10,291,389	10,297,594	10,303,815
Non-laposcopic general procedures (75%)	30,600,000	30,618,000	30,630,000	30,642,024	30,654,072	30,666,150	30,678,180	30,690,255	30,702,345	30,714,450	30,726,570	30,738,705	30,750,855	30,763,020	30,775,198	30,787,389	30,799,594	30,811,815
Plastic surgery	1,100,000*	1,100,500	1,101,100	1,101,650	1,102,200	1,102,750	1,103,300	1,103,850	1,104,400	1,104,950	1,105,500	1,106,050	1,106,600	1,107,150	1,107,700	1,108,250	1,108,800	1,109,350
Market penetration (Laposcopic)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market penetration (non-laposcopic)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market penetration (plastic surgery)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Laposcopic procedures using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-laposcopic procedures using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plastic surgery using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total procedures using ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost per procedure	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Price increase	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
ACS revenue (\$00)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk Reduction	90%																	
Source: Dawson James research																		
<b>Diabetic ulcers: ACS Surgical Hemostat and Sealtite (EU)</b>																		
Diabetes (incidence)	40,000,000	40,000,000	40,000,010	40,000,030	40,000,060	40,100,100	40,120,150	40,140,210	40,160,280	40,180,360	40,200,450	40,220,550	40,240,660	40,260,780	40,280,910	40,301,050	40,321,200	40,341,360
Increase in population	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Diabetic foot ulcers (15%)	6,000,000	6,000,000	6,006,002	6,009,005	6,012,009	6,015,015	6,018,023	6,021,032	6,024,044	6,027,058	6,030,076	6,033,098	6,036,124	6,039,154	6,042,188	6,045,228	6,048,274	6,051,325
Market penetration	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Patients treated with ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost per treatment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Increase in price	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk Adjusted	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Revenue (\$00)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Source: Dawson James research																		
<b>Diabetic ulcers: ACS Surgical Hemostat and Sealtite (US)</b>																		
Diabetes (incidence)	29,000,000	29,014,500	29,029,010	29,043,522	29,058,044	29,072,573	29,087,109	29,101,652	29,116,203	29,130,761	29,145,326	29,159,899	29,174,479	29,189,067	29,203,661	29,218,263	29,232,872	29,247,488
Increase in population	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Diabetic foot ulcers (15%)	4,350,000	4,352,175	4,354,351	4,356,526	4,358,707	4,360,888	4,363,068	4,365,248	4,367,430	4,369,614	4,371,799	4,373,985	4,376,172	4,378,360	4,380,549	4,382,739	4,384,931	4,387,123
Market penetration	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Patients treated with ACS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost per treatment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Increase in price	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk Adjusted	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Revenue (\$00)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Source: Dawson James research																		
<b>Venous ulcers: ACS Surgical Hemostat and Sealtite (US)</b>																		
US population	316,100,000	316,250,000	316,416,179	316,574,387	316,732,674	316,891,041	317,049,486	317,207,911	317,366,315	317,524,700	317,683,067	317,841,416	318,000,747	318,159,060	318,318,355	318,477,632	318,636,891	318,796,132
Increase in population	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
People with venous incompetence (10%)	31,610,000	31,625,000	31,641,619	31,657,439	31,673,274	3												

## Risk Analysis

**Commercial risk.** The focus of the company is on successfully developing its products and bringing them to the market. Competition may be intense from external players as well as customers who choose to “build it themselves.”

**Financial risk.** The company may need to raise capital in the marketplace relatively soon. There can be no assurance that the company will be able to raise capital and do so on favorable terms successfully.

**Intellectual property risk.** The company may have to defend its patents and technical know-how, and there can be no assurances that the patents will not be infringed or will be held as valid if challenged, and the company may infringe on third parties' patents.

**OEM and or manufacturing risk.** Original Equipment Manufacturers (OEMs) may decide to make products themselves, and, as such, terminate production contracts before completion, creating revenue shortfalls. Manufacturing risks include the ability to produce and do so in a competitive, timely, and efficient way.

**Exhibit 1. Income Statement**

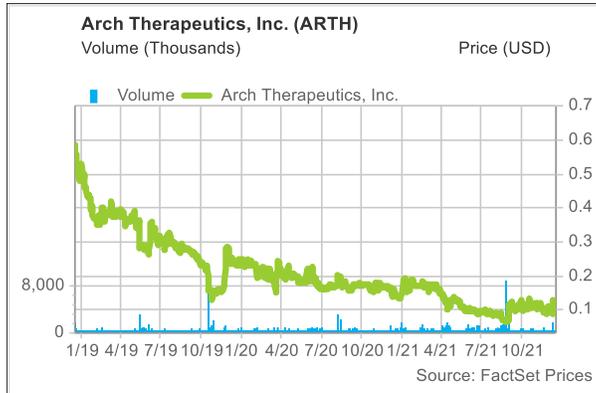
Arch Therapeutics, Inc.: Income Statement (\$000)	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep		Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep											
Arch Therapeutics, Inc.: YE September 30	1Q21A	2Q21A	3Q21A	4Q21E	2021E	1Q22E	2Q22E	3Q22E	4Q22E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	
<b>Product sales</b>																				
AC5 (US) Dermatologic Science											12,000	21,478	43,408	65,795	88,649	111,975	135,782	160,076	184,866	
AC5 (EU) " "	-	-	-	-	-	-	-	-	-	-	4,000	29,608	44,878	60,466	76,376	92,614	109,185	126,094	143,346	
AC5 (US) BioSurgery											178,345	288,532	339,996	404,585	454,604	527,452	582,152	621,898		
AC5 (EU) " "											-	85,972	143,002	144,504	156,226	165,805	167,547	179,836	181,725	
<b>Total Product Sales</b>	-	1	-	-	-	-	-	-	-	-	16,000	442,662	720,066	906,743	725,836	824,999	939,966	1,048,158	631,835	
<b>Expenses</b>																				
Cost of Goods Sold		1	-	-	-	-	-	-	-	-	1,600	44,266	72,007	90,674	72,584	82,500	93,997	104,816	63,184	
%COGS	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	
Research and Development	344	410	297	350	1,401	368	382	368	353	1,471	1,544	2,007	2,610	3,392	4,410	4,631	4,862	5,105	5,361	
%R&D																				
General and Administrative	919	1,339	1,370	1,000	4,628	1,215	1,264	1,215	1,166	4,860	5,103	4,899	4,703	4,515	4,650	4,790	5,029	5,281	5,545	
%SG&A																				
<b>Total expenses</b>	<b>1,263</b>	<b>1,760</b>	<b>1,667</b>	<b>1,350</b>	<b>6,029</b>	<b>1,583</b>	<b>1,646</b>	<b>1,583</b>	<b>1,519</b>	<b>6,331</b>	<b>8,247</b>	<b>51,172</b>	<b>79,319</b>	<b>98,592</b>	<b>81,644</b>	<b>91,920</b>	<b>103,888</b>	<b>115,202</b>	<b>74,089</b>	
Operating Income (Loss)	(1,263)	(1,750)	(1,667)	(1,350)	(6,029)	(1,583)	(1,646)	(1,583)	(1,519)	(6,331)	7,753	391,490	640,747	808,162	644,192	733,078	836,078	932,956	557,747	
Interest expense																				
Fair value of derivative liabilities in excess of proceeds		(41)	(40)																	
Gain on exercise of warrants			178																	
Loss on warrant derivative modification																				
Loss on issuance of warrants																				
Adjustments of fair value of derivative																				
Other income																				
<b>Total other income</b>	<b>109</b>	<b>(41)</b>	<b>138</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>							
<b>Pretax Income</b>	<b>(1,263)</b>	<b>(1,791)</b>	<b>(1,529)</b>	<b>(1,350)</b>	<b>(6,029)</b>	<b>(1,583)</b>	<b>(1,646)</b>	<b>(1,583)</b>	<b>(1,519)</b>	<b>(6,331)</b>	<b>7,753</b>	<b>391,490</b>	<b>640,747</b>	<b>808,162</b>	<b>644,192</b>	<b>733,078</b>	<b>836,078</b>	<b>932,956</b>	<b>557,747</b>	
Income Tax Benefit (Provision)	-	-	-	-	-	(79)	(82)	(79)	(76)	(317)	620	39,149	76,890	113,143	128,838	175,939	234,102	279,887	178,479	
Tax Rate	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%	8%	10%	12%	14%	20%	24%	28%	30%	32%	
<b>GAAP Net Income (loss)</b>	<b>(1,154)</b>	<b>(1,791)</b>	<b>(1,529)</b>	<b>(1,350)</b>	<b>(6,029)</b>	<b>(1,503)</b>	<b>(1,564)</b>	<b>(1,503)</b>	<b>(1,443)</b>	<b>(6,014)</b>	<b>7,133</b>	<b>352,341</b>	<b>563,857</b>	<b>695,019</b>	<b>515,354</b>	<b>557,140</b>	<b>601,976</b>	<b>653,069</b>	<b>379,268</b>	
<b>GAAP-EPS</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.03)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.03)</b>	<b>0.03</b>	<b>1.48</b>	<b>2.36</b>	<b>2.89</b>	<b>2.14</b>	<b>2.30</b>	<b>2.48</b>	<b>2.68</b>	<b>1.55</b>	
GAAP EPS (dil)	(0.01)	(0.01)	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.03)	0.03	1.48	2.36	2.89	2.14	2.30	2.48	2.68	1.55	
Wgtd Avg Shrs (Bas) - '000s	193,044	213,337	236,719	256,956	225,014	236,000	236,236	236,472	236,709	236,354	237,301	238,252	239,206	240,164	241,126	242,092	243,062	244,036	245,014	
Wgtd Avg Shrs (Dil) - '000s	193,044	213,337	236,719	256,956	225,014	236,000	236,236	236,472	236,709	236,354	237,301	238,252	239,206	240,164	241,126	242,092	243,062	244,036	245,014	

Source: Dawson James estimates

Companies mentioned in this report:

**Important Disclosures:**

**Price Chart:**



**Price target and ratings changes over the past three years:**

Initiated – Buy – May 5, 2021 – Price Target \$3.00

Update Report – Buy – December 17, 2021 – Price Target \$3.00

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The following chart reflects the range of current research report ratings for all companies, followed by the analysts of the Firm. The chart also reflects the research report ratings relating to those companies for which the Firm has performed investment banking services.

Current as of... 14-Dec-21

	<b>Company Coverage</b>		<b>Investment Banking</b>	
<b>Ratings Distribution</b>	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	25	68%	5	20%
Market Perform (Neutral)	12	32%	0	0%
Market Underperform (Sell)	0	0%	0	0%
<b>Total</b>	<b>37</b>	<b>100%</b>	<b>5</b>	<b>14%</b>

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