



DIVISION OF
CORPORATION FINANCE

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

November 30, 2010

Via U S Mail and FAX [(408) 744-1711]

Ms. Rene A. Schena
Chief Executive Officer
Arrayit Corporation
524 East Weddell Drive
Sunnyvale, California 94089

Re: Arrayit Corporation
Form 10-K for the fiscal year ended December 31, 2009
Filed on March 31, 2010
File No. 001-16381

Dear Ms. Schena:

We have reviewed your filings and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended December 31, 2009

Item 1. Business, page 3

1. We note the first paragraphs on pages 3 and 25. Given your disclosure on page 22 regarding penny stock restrictions, please do not claim in future filings the protection of safe harbors that are inapplicable. Refer to Section 21E(b)(1)(C) of the Exchange Act and Section 27A(b)(1)(C) of the Securities Act.
2. Please provide us objective, independent support for each of the statements in your disclosure regarding the success of your business and technology, your status relative to that of your competitors and similar matters. Your response should address, at a minimum, your statements that:
 - You are a “leading edge” developer, have “earned respect as a leader” in your industries and have “proven expertise in three key areas,” as disclosed on page 3;
 - Your technology has become “an industry standard for microarray manufacturing” and that you have been a “market driver for more than a decade,” as disclosed on page 4;
 - Your substrates have been “adopted by major Life Science companies and are used industry wide,” as disclosed on page 6; and
 - You are the most “highly recognized independent brand name in the microarray industry,” as disclosed on page 8.
 - Please also support your statements on page 8 regarding the traffic your website receives on a daily and monthly basis.
3. Please ensure your business discussion complies with the requirements of Item 101(h) of Regulation S-K. For example, with a view toward disclosure, please tell us:
 - the sources of your raw materials as required by Item 101(h)(4)(v), and the nature of the raw materials they supply and the arrangements under which they supply those materials; and
 - the duration and affect of your patents mentioned on page 5.

Facilities, page 8

4. Please file your material leases as exhibits or tell us why they are not required to be filed by Regulation S-K Item 601.

Item 1A. Risk Factors, page 9

5. We note your disclosure at the top of page 24 regarding the shares “improperly issued without registration.” With a view towards disclosure in an appropriate section of your document, please provide us your analysis of the risks of liability under the Securities Act based on this transaction, and if so, the nature of the potential liability. Include in your response any steps you have taken regarding this transaction and whether the referenced shares are still outstanding.

Price Range of Common Stock, page 23

6. Please reconcile your disclosure below the chart and on the cover page regarding the number of shares outstanding as of March 26, 2010.

Common Stock, page 23

7. Please reconcile the last sentence on page 23 with the first two sentences on page 24.

Item 7. Management’s Discussion and Analysis, page 25

Liquidity and Capital Resources, page 29

8. Please tell us, and revise future filings to provide disclosure regarding, the impact and material terms of the credit facility mentioned in the second risk factor on page 16 and its restrictive covenants on your liquidity. Also, please file this agreement as an exhibit.
9. Please tell us and revise future filings to clarify the material terms of your accounts payable. For example, are they due on demand?
10. We note your disclosure here that you have been “frustrated” in your ability to raise capital. We note similar statements in your subsequently filed Form 10-Qs. Please tell us and revise future filings to discuss the material impediments to you accessing needed capital.

11. Please reconcile for us the amounts described as cash used in operating activities and cash provided in financing activities to the corresponding amounts from the statement of cash flows presented on page 36.

Item 8. Financial Statements, page 31

Statements of Operations, page 34

12. Please explain to us why you report research and development and legal expenses outside of operating expenses. Research and development and legal costs are normally operating expenses. Accordingly, please explain the basis in GAAP for your presentation.

Note 6. Accounts Receivable Sold with Recourse, page 42

13. Please tell us how you determined that the proceeds from receivables factored with recourse are sales as opposed to borrowings. Please tell us how your accounting is appropriate under FASB Codification Topic 860.

Note 14. Commitments and Contingencies, page 50

14. Please tell us how the jury awards were accounted for and the basis in GAAP for the accounting applied. Please also describe the accounting for the subsequent court ruling rendered in April 2010. In that regard, we see the significant liability accrued for legal matters in accounts payable.

Item 9A(T). Controls and Procedures, page 54

15. Please amend your filing to provide management's assessment of internal control over financial reporting as of December 31, 2009. Please refer to Item 308T of Regulation S-K and Exchange Act Rule 13a-15(c).
16. You disclose that you did not use a recognized framework for your evaluation of internal control over financial reporting. Please tell us how your evaluation fulfills the requirement set forth in Exchange Act Rule 13a-15(c). Under that rule, your evaluation of internal control over financial reporting must utilize a suitable, recognized control framework that is established by a body or group that has followed due-process procedures, including the broad distribution of the framework for public comment. Please appropriately apply the requirement in your amended filing.

Item 10. Directors, Executive Officers

17. Please revise your filing to provide for each of your directors a discussion of the specific experience, qualifications, attributes or skills that led to your conclusion that they should serve as your director in light of your business and structure. Refer to Item 401(e) of Regulation S-K as revised by Securities Act Release No. 9089 (December 16, 2009). Also, please provide the ages of each of your directors and executive officers as required by Regulation S-K Item 401(a) and (b).

Code of Ethics, page 56

18. We note the penultimate paragraph on page 56. Please tell us how you have complied with Regulation S-K Item 406(c).

Section 16(a) . . . , page 56

19. With a view toward clarified disclosure, please tell us why no disclosure was provided pursuant to Regulation S-K Item 405(a)(1) – (2). In this regard, tell us when the individuals identified in the table on page 57 filed the statements required by Section 16(a) of the Exchange Act related to the stock awards mentioned in that table.

Item 11. Executive Compensation, page 57

20. We note the stock awards column in your table on page 57. Please revise your filing to provide the information required by Item 402(n)(2)(v) as revised by Section II.A.2 of Securities Act Release No. 9089. Also provide the disclosure required by Instruction 1 to that item and Item 402(n)(2)(vi).
21. With a view toward disclosure, please tell us the nature of the compensation disclosed in the “all other compensation” column. In this regard, tell us why the royalty payments to Mark Schena referenced in the first paragraph on page 59 are not disclosed in the table, or revise your summary compensation table accordingly.
22. Please revise to provide the narrative disclosure required by Regulation S-K Item 402(o), including the terms of your executive officers’ employment agreements and the stock award grants disclosed in the table on page 57.
23. Given the stock awards mentioned on page 57, please tell us why you have not provided the table required by Item 402(p) of Regulation S-K.

Item 15. Exhibits, page 59

24. We note that you have filed almost no exhibits, including those related to your governing documents. See Item 601(b)(3) of Regulation S-K. In future filings, please ensure that you have filed or incorporated by reference all required exhibits. For guidance on this requirement, please refer to the exhibit table in Regulation S-K Item 601.
25. Please file as exhibits the notes payable to “SovCap,” Wells Fargo, and your related parties referenced on page 45 or tell us why you are not required to file these agreements pursuant to Regulation S-K Item 601.
26. We note the certifications required by Item 601(b)(31) and (32) were not separately filed as exhibits. Please ensure that any exhibits you file are separately tagged with the correct exhibit number in EDGAR.
27. We note that you have redacted information from the exhibits filed with your Form 8-Ks on December 9, 2010 and December 10, 2010. Please tell us when you filed the required confidential treatment request regarding the redacted information. Refer to Rule 24b-2 and Staff Legal Bulletin No. 1 available on our website at <http://www.sec.gov/interps/legal/slbcf1r.htm>.

Signatures, page 60

28. In future applicable filings, please indicate below the second paragraph of text which individual is signing in the capacity of principal accounting officer or controller. Also, please clarify who is signing in the capacity of principal financial officer; we note the conflicting information next the first and last signature.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company’s disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Ms. Rene A. Schena
Arrayit Corporation
November 30, 2010
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In responding to our comments, please provide a written a statement from the company acknowledging that

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Jeanne Bennett at (202) 551-3606 or Gary Todd, Reviewing Accountant, at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Louis Rambo at (202) 551-3289 or Geoffrey Kruczek, Senior Attorney, at (202) 551-3641 with any other questions. You may also contact me at (202) 551-3276.

Sincerely,

Brian R. Cascio
Accounting Branch Chief