



DIVISION OF
CORPORATION FINANCE

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

January 25, 2011

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 the information and proposed disclosures filed on January 14, 2011, and have the following additional comments. Where indicated, we think you should amend your filing or revise your documents in response to these comments in all future filings with the Commission. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

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

Liquidity and Capital Resources, page 29

1. We note your response to prior comment 9. In future filings, please clarify the material terms of your accounts payable. Include in such disclosure the amounts payable to “trade vendors” and “professional advisors.”
2. We refer to your response to prior comment 11. We also see that MD&A states cash used in operating activities in 2009 was \$1,687,375. However, the statement of cash flows reports \$166,930 cash provided by operating activities in that year. Please appropriately reconcile for us and in future filings.

Note 14. Commitments and Contingencies, page 50

3. We refer to your response to prior comment 14. We note that you have an accrual for lawsuits totaling \$2.9 million as of December 31, 2009. Please clarify for us the legal matter(s) for which this accrual has been provided. Please also describe the accounting for the accrued Judgment Interest.

Item 10. Directors, Executive Officers, page 55

4. We will continue to evaluate your responses to prior comments 17 and 20-23 after you revise your filing, as indicated in your responses.

Section 16(a) . . . , page 56

5. Please expand your response to prior comment 19 to clarify how you intend to address the disclosure required by Item 405(a)(1)-(2) of Regulation S-K in your Form 10-K for the fiscal-year ended December 31, 2009. Also ask the individuals mentioned in your response to tell us when they intend to file the statements mentioned in your response.

Item 15. Exhibits, page 59

6. Please expand your response to prior comment 27 to clarify when “in the near future” you intend to file the request for confidential treatment.

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Signatures, page 60

7. Please respond to the last sentence of prior comment 28, which requested clarification of the identity of your chief financial officer.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a response letter that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

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) 551-3676.

Sincerely,

Brian R. Cascio
Accounting Branch Chief