

INTERNATIONAL ISOTOPES INC
Form 424B3
July 20, 2011

Filed pursuant to Rule 424(b)(3)
Registration Statement No. 333-171140

PROSPECTUS

59,687,333 Shares

Common Stock, par value \$0.01

This prospectus relates to the offer and sale from time to time of up to 29,075,000 shares of our outstanding common stock and 30,612,333 shares of our common stock issuable upon the exercise of warrants previously issued to certain shareholders named in this prospectus pursuant to a private placement completed on October 29, 2010.

The selling shareholders may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. We will not receive any of the proceeds from the sale of the shares. We will, however, receive the proceeds of any cash exercise of the warrants.

Our common stock is quoted on the OTC Bulletin Board® under the ticker symbol INIS.OB. On July 18, 2011, the last sale price of the common stock, as reported on the OTC Bulletin Board®, was \$0.17 per share.

Investing in our securities involves risk. You should carefully review the risks and uncertainties described under the heading Risk Factors beginning on page 1 and in the documents which are incorporated by reference

herein.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is July 20, 2011.

TABLE OF CONTENTS

| | <u>Page</u> |
|--|-------------|
| SUMMARY | 1 |
| RISK FACTORS | 2 |
| CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS | 3 |
| USE OF PROCEEDS | 3 |
| PRICE RANGE OF COMMON STOCK | 4 |
| SELLING SHAREHOLDERS | 5 |
| PLAN OF DISTRIBUTION | 12 |
| DESCRIPTION OF SECURITIES | 13 |
| LEGAL MATTERS | 16 |
| EXPERTS | 16 |
| WHERE YOU CAN FIND MORE INFORMATION | 16 |
| INCORPORATION OF CERTAIN INFORMATION BY REFERENCE | 16 |

You should rely on the information that is contained in or incorporated by reference into this prospectus or that is contained in any free writing prospectus we may authorize to be delivered to you. We have not authorized anyone to provide you with information different from that contained in this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that information contained in or incorporated by reference into this prospectus is accurate only as of the date on the front cover of this prospectus or the date of the document incorporated by reference, as applicable. Our business, financial condition, results of operations, and prospects may have changed since those dates. The selling shareholders are offering to sell, and seeking offers to buy, our common stock only in jurisdictions where offers and sales are permitted.

This prospectus may be supplemented from time to time to add, update or change information in this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in such prospectus supplement modifies or supersedes such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus.

The registration statement containing this prospectus, including the exhibits to the registration statement, provides additional information about us and the securities offered under this prospectus. The registration statement, including the exhibits, can be read on the U.S. Securities and Exchange Commission's, or SEC, website or at the SEC offices mentioned under the heading "Where You Can Find More Information."

When used in this prospectus, the terms International Isotopes, INIS, we, our, us or the Company refer to International Isotopes Inc. and its consolidated subsidiaries, unless otherwise indicated or as the context

otherwise requires.

COMPANY INFORMATION

We manufacture a full range of nuclear medicine calibration and reference standards, a wide range of products including cobalt teletherapy sources, and a varied selection of radioisotopes and radiochemicals for medical research, and clinical devices. We also provide a host of transportation, recycling, and processing services on a contract basis for clients. Additionally, we hold several patents for a fluorine extraction process that we are planning to use in conjunction with a new commercial depleted uranium de-conversion facility. Our core business consists of six reportable segments which include: Nuclear Medicine Standards, Cobalt Products, Radiochemical Products, Fluorine Products, Radiological Services, and Transportation.

International Isotopes Inc. was formed as a Texas corporation in 1995. Our principal executive offices are located at 4137 Commerce Circle, Idaho Falls, Idaho 83401, and our phone number is (208) 524-5300. Our wholly owned subsidiaries are International Isotopes Idaho Inc.; International Isotopes Fluorine Products, Inc.; and International Isotopes Transportation Services, Inc., all of which are Idaho corporations. Our headquarters and all current operations are located within two facilities in Idaho Falls, Idaho.

We maintain a website at www.internationalisotopes.com where our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all amendments to those reports are available without charge, as soon as reasonably practicable following the time they are filed with or furnished to the SEC. Information contained on our website does not constitute, and shall not be deemed to constitute, part of this prospectus and shall not be deemed to be incorporated by reference into the registration statement as a result of this prospectus. You may read and copy any materials we file with the SEC at the SEC's public reference room at 100 F Street, NE, Washington, DC 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0300. The SEC also maintains an electronic Internet site that contains our reports, proxy and information statements, and other information at www.sec.gov.

RISK FACTORS

Except for the historical information contained in this prospectus or incorporated by reference, this prospectus (and the information incorporated by reference in this prospectus) contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed here or incorporated by reference. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below and in the section entitled **Risk Factors** contained in our most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated herein by reference in their entirety (the **INIS Risk Factors**).

Investment in our securities involves risks. Prior to making a decision about investing in our securities, you should consider carefully the INIS Risk Factors, together with all of the other information contained or incorporated by reference in this prospectus and any prospectus supplement, including any additional specific risks described in any prospectus supplement. Each of these risk factors could adversely affect our business, operating results and financial condition, which may result in the loss of all or part of your investment.

Keep these risk factors in mind when you read forward-looking statements contained elsewhere or incorporated by reference in this prospectus and any accompanying prospectus supplement. These statements relate to our expectations about future events. Discussions containing forward-looking statements may be found, among other places, in

Business and Management's Discussion and Analysis of Financial Condition and Results of Operations incorporated by reference from our most recent Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. These forward-looking statements are based largely on our expectations and projections about future events and future trends affecting our business, and so are subject to risks and uncertainties, including the risks and uncertainties described below under Forward-Looking Information, that could cause actual results to differ materially from those anticipated in the forward-looking statements.

Future equity issuances or a sale of a substantial number of shares of our common stock may cause the price of our common stock to decline.

Because we may need to raise additional capital in the future to construct our depleted UF₆ de-conversion and FEP facility, among other things, we may conduct additional equity offerings. If we or our shareholders sell substantial amounts of our common stock (including shares issued upon the exercise of options and warrants) in the public market, the market price of our common stock could fall. A decline in the market price of our common stock could make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Our disclosure and analysis in this prospectus, in any prospectus supplement, in the documents incorporated by reference and in some of our other public statements contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. This Act provides a safe harbor for forward-looking statements to encourage companies to provide prospective information about themselves so long as they identify these statements as forward-looking and provide meaningful cautionary statements identifying important factors that could cause actual results to differ from the projected results. In some cases, you can identify forward-looking statements by terminology such as anticipate, believe, continue, could, estimate, expect, intend, may, might, predict, should, or will, or the negative of those terms, or comparable terminology.

Any or all of our forward-looking statements in this prospectus, in any prospectus supplement, in the documents incorporated by reference and in any other public statements we make may turn out to be inaccurate. Forward-looking statements reflect our current expectations or forecasts of future events or results and are inherently uncertain.

Inaccurate assumptions we might make and known or unknown risks and uncertainties can affect the accuracy of our forward-looking statements. Accordingly, no forward-looking statement can be guaranteed and future events and actual or suggested results may differ materially.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make in our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, as well as in any prospectus supplement relating to this prospectus and other public filings with the SEC.

USE OF PROCEEDS

We are filing the registration statement of which this prospectus is a part to permit holders of the shares of our common stock described in the section entitled "Selling Shareholders" to resell such shares. We will not receive any proceeds from the sale of shares by the selling shareholders. All net proceeds from the sale of the common stock covered by this prospectus will go to the selling shareholders. It is unlikely that any outstanding warrants will be exercised for cash because they contain net exercise provisions that allow the holder to forgo some of the shares that would otherwise be received in order to pay the exercise price. However, if all of the outstanding warrants were exercised for cash, the gross proceeds to us would be \$11.63 million (exclusive of related expenses). The actual exercise of any of these securities however is beyond our control and depends on a number of factors, including the market price of our common stock. The net proceeds, if any, from the exercise of these securities will be used for general corporate purposes.

The selling shareholders will pay any underwriting discounts and commissions and expenses incurred by the selling shareholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling shareholders in disposing of the shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, and fees and expenses of our counsel and our accountants.

PRICE RANGE OF COMMON STOCK

Our common stock is quoted on the Over the Counter Bulletin Board under the trading symbol INIS.OB. High asked prices and low bid prices reported by the OTC Bulletin Board during the periods indicated are shown below, which reflect inter-dealer prices, without retail markup, mark-down, or commission and may not reflect actual transactions:

| Fiscal Year | Quarter | High Asked | Low Bid |
|--------------------|-----------------|-------------------|----------------|
| 2011 | 1 st | \$0.30 | \$0.15 |
| 2011 | 2 nd | \$0.22 | \$0.12 |
| 2010 | 1 st | \$0.59 | \$0.38 |
| 2010 | 2 nd | \$0.53 | \$0.35 |
| 2010 | 3 rd | \$0.45 | \$0.28 |
| 2010 | 4 th | \$0.35 | \$0.24 |
| 2009 | 1 st | \$0.40 | \$0.17 |
| 2009 | 2 nd | \$0.39 | \$0.25 |
| 2009 | 3 rd | \$0.73 | \$0.24 |
| 2009 | 4 th | \$0.70 | \$0.44 |
| 2008 | 1 st | \$1.15 | \$0.77 |
| 2008 | 2 nd | \$0.85 | \$0.63 |
| 2008 | 3 rd | \$0.82 | \$0.50 |
| 2008 | 4 th | \$0.49 | \$0.16 |

On May 31, 2011, there were 515 holders of record of our common stock. We have never paid any cash dividends on our common stock. In the future, and based upon our profit performance, our Board of Directors will evaluate and determine whether to issue dividends or retain funds for research and development and expansion of our business. It is unlikely that we will pay any dividends to shareholders for the foreseeable future.

SELLING SHAREHOLDERS

We issued 29,075,000 units on October 29, 2010 for a purchase price of \$0.20 per unit. Each unit consists of (i) one share of the Company's common stock and (ii) a common stock purchase warrant to purchase one share of our common stock at an exercise price of \$0.40 per share (subject to adjustment as set forth in the warrants). The warrants expire on October 29, 2015. Pursuant to the registration rights agreement entered into in connection with the issuance among us and the selling shareholders, we agreed to file this registration statement with the SEC to register the disposition of the shares of our common stock we issued to those stockholders and the shares of common stock issuable upon exercise of the warrants and to keep the registration statement effective until the earlier of (i) the date at which time the selling shareholders may sell all of the shares issued and the shares of common stock issuable upon exercise of the Warrants covered by this Registration Statement without restriction pursuant to Rule 144 promulgated under the Securities Act of 1933 or (ii) the date on which the selling shareholders shall have sold all such securities covered by this registration statement. The documents relating to the private placement are attached as exhibits to the Current Report on Form 8-K filed November 1, 2010 with the Securities and Exchange Commission.

The following table sets forth: (1) the name of each of the selling shareholders; (2) the number of shares of our common stock beneficially owned by each such selling shareholder prior to this offering; (3) the number of shares of our common stock covered by this prospectus; (4) the number of shares of our common stock beneficially owned upon completion of this offering, and (5) the percentage (if one percent or more) of common stock beneficially owned by each such selling shareholder after this offering, assuming all of the shares covered hereby are sold. Beneficial ownership is determined in accordance with Rule 13d-3 promulgated by the SEC, and generally includes those shares a selling shareholder has the power to vote or the power to transfer, and stock options and other rights to acquire common stock that are exercisable currently or become exercisable within 60 days. The selling shareholders may decide to sell all, some, or none of the shares of common stock covered hereby. Accordingly, we cannot provide any estimate of the number of shares of our common stock that any of the selling shareholders will hold once the offering is complete. However, for purposes of this table, we have assumed that, after completion of the offering, none of the shares covered by this registration statement will be held by the selling stockholders. The calculation of the percentage owned is based on 323,604,727 shares outstanding on June 28, 2011.

Security Ownership of Selling Shareholders

| Shares of Common Stock Beneficially Owned Prior to Offering(1) | Number of Shares of Common Stock Being | Shares of Common Stock to be Beneficially Owned After Offering(2) |
|---|---|--|
|---|---|--|

| Name of Selling Shareholder | Number | Percentage | Registered | | Percentage |
|---|------------|------------|------------|--------|------------|
| | | | for Resale | Number | |
| Barbara S. Meister TR The Meister Non-Exempt Marital TR U/A 11/17/83 | 500,000(3) | * | 500,000 | -- | -- |
| Brad K. Carr + Roxane Carr JT TEN | 500,000(4) | * | 500,000 | -- | -- |
| Brian Carr & Kari M. Carr TR Carr Family Revoc Living Trust U/A 7/28/06 | 500,000(5) | * | 500,000 | -- | -- |
| Carolyn R. Long | 500,000(6) | * | 500,000 | -- | -- |
| Chris Bougeokles | 100,000(7) | * | 100,000 | -- | -- |
| Christopher Rieger TOD Ramona S. Rieger Subject To STA TOD Rules | 100,000(8) | * | 100,000 | -- | -- |

| Name of Selling Shareholder | Shares of Common Stock | | Number of Shares of Common Stock Being Registered for Resale | Shares of Common Stock | |
|--|------------------------|------------|--|--------------------------------|------------|
| | Beneficially Owned | | | to be Beneficially Owned After | |
| | Prior to Offering(1) | | | Offering(2) | |
| | Number | Percentage | | Number | Percentage |
| Clearpath LLC | 500,000(9) | * | 500,000 | -- | -- |
| Cooper Barrons | 1,039,000(10) | * | 250,000 | 789,000 | -- |
| Corey Shannon McNamee | 500,000(11) | * | 500,000 | -- | -- |
| Corrie Crofts Craig | 500,000(12) | * | 500,000 | -- | -- |
| Damon Suter Malinda Suter TR The Suter Family Trust U/A 4/12/02 | 1,000,000(13) | * | 1,000,000 | -- | -- |
| Daniel Patrick McCormack TOD John W McCormack Subject To STA TOD Rules | 10,951,210(14) | 3.38% | 500,000 | 10,451,210 | 3.23% |
| David Brisbin P/ADM White Pine Productions DBPP David Brisbin | 500,000(15) | * | 500,000 | -- | -- |
| David Kratochvil | 512,444(16) | * | 512,444 | -- | -- |
| Donald Girard Clark JR + Debra L. Clark JT TEN | 500,000(17) | * | 500,000 | -- | -- |
| Earl Peoples P/ADM Ortho Arkansas PSP | 500,000(18) | * | 500,000 | -- | -- |
| Firebird Global Master Fund II LTD | 32,302,955(19) | 9.98% | 3,000,000 | 29,302,955 | 9.06% |
| George Feldman | 1,000,000(20) | * | 1,000,000 | -- | -- |
| Heidi W. Kiene + Kevin Kiene JT TEN | 1,000,000(21) | * | 1,000,000 | -- | -- |

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| | | | | | |
|--|---------------|---|-----------|----|----|
| Hemant Kathuria P/ADM H. Kathuria Investments II P Plan | 300,000(22) | * | 300,000 | -- | -- |
| Henry Louis Schairer Jr. | 500,000(23) | * | 500,000 | -- | -- |
| James Bacon TR James V. Bacon Trust U/A 9/14/95 UAD 03/26/09 | 1,500,000(24) | * | 1,500,000 | -- | -- |
| James E. & James K. Furber TR Furber Family U/A 1/18/07 FBO Trust A Restated | 1,000,000(25) | * | 1,000,000 | -- | -- |
| James E. & James K. Furber TR Furber Family U/A 1/18/07 FBO Trust B Restated | 1,000,000(2) | * | 1,000,000 | -- | -- |
| James Howard Thomas | 250,000 (27) | * | 250,000 | -- | -- |

| Name of Selling Shareholder | Shares of Common Stock | | Number of Shares of Common Stock Being Registered for Resale | Shares of Common Stock | |
|--|------------------------|------------|--|--------------------------------|------------|
| | Beneficially Owned | | | to be Beneficially Owned After | |
| | Prior to Offering(1) | | | Offering(2) | |
| | Number | Percentage | | Number | Percentage |
| James Kevin Furber & Laura Phipps Furber TTEE Furber Family Trust U/A 7/25/01 | 500,000(28) | * | 500,000 | -- | -- |
| Jeff Blackburn | 500,000(29) | * | 500,000 | -- | -- |
| John M. McCormack + Maryanne McCormack JT TEN | 63,342,730(30) | 19.57% | 500,000 | 62,842,730 | 19.42% |
| John Paul Dejoria TR John Paul Dejoria Family Trust U/A 4/21/04, | 2,830,296(31) | * | 2,000,000 | 830,296 | -- |
| John R. Downs | 250,000(32) | * | 250,000 | -- | -- |
| John W. McCormack TOD Daniel Patrick McCormack Subject to STA TOD Rules | 63,342,730(33) | 19.57% | 500,000 | 62,842,730 | 19.42% |
| Jonathan Edwards + Virginia C. Adams JT TEN | 500,000(34) | * | 500,000 | -- | -- |
| Joseph A. & Pamela M. Panella TR Joseph A. & Pamela M. Panella Living TR 1 U/A 5/11/04 | 750,000(35) | * | 750,000 | -- | -- |
| Joseph McCarthy + Miki McCarthy TEN COM TOD Fiona McCarthy Subject to STA TOD Rules | 500,000(36) | * | 500,000 | -- | -- |
| Josh D. Bradbury & Susan Bradbury TR Bradbury | 1,500,000(37) | * | 1,500,000 | -- | -- |

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Revocable TR U/A 12/28/93

| | | | | | |
|--|----------------|-------|-----------|------------|-------|
| Josh D. Bradbury Jr. TR Josh D. Bradbury Jr. IRREV Trust U/A 5/1/01 | 1,500,000(38) | * | 1,500,000 | -- | -- |
| Karen Head | 1,000,000(39) | * | 1,000,000 | -- | -- |
| KK Swogger Asset Management | 800,000(40) | * | 800,000 | -- | -- |
| Manuel Cohen | 250,000(41) | * | 250,000 | -- | -- |
| NFS/FMTC Rollover IRA FBO Mark Dugger | 1,000,000(42) | * | 1,000,000 | -- | -- |
| Meagan Anne McCormack TOD Daniel Patrick McCormack Subject to STA TOD Rules | 10,951,210(43) | 3.38% | 500,000 | 10,451,210 | 3.23% |

| Name of Selling Shareholder | Shares of Common Stock | | Number of Shares of Common Stock Being Registered for Resale | Shares of Common Stock | |
|---|------------------------|------------|--|--------------------------------|------------|
| | Beneficially Owned | | | to be Beneficially Owned After | |
| | Prior to Offering(1) | Percentage | | Offering(2) | Percentage |
| | Number | | | Number | Percentage |
| Michael J. Hanratty + Lynsay F. Hanratty TEN ENT | 1,000,000(44) | * | 1,000,000 | -- | -- |
| Mitchell F. Mayer TOD Janine Jameson Mayer Subject to STA TOD Rules | 640,000(45) | * | 500,000 | -- | -- |
| Mitchell Martin + Deborah Martin TEN ENT | 500,000(46) | * | 500,000 | -- | -- |
| NFS/FMTC IRA FBO Bert Jude Huntsinger | 500,000(47) | * | 500,000 | -- | -- |
| NFS/FMTC IRA FBO Diane D. Spolum | 500,000(48) | * | 500,000 | -- | -- |
| NFS/FMTC IRA FBO George Bernard Feldman | 1,000,000(49) | * | 1,000,000 | -- | -- |
| NFS/FMTC IRA FBO Helga L. Fuenfhausen | 1,000,000(50) | * | 1,000,000 | -- | -- |
| NFS/FMTC Rollover IRA FBO Paul Harper Zink | 500,000(51) | * | 500,000 | -- | -- |
| NFS/FMTC Rollover IRA FBO Gerald Mona | 500,000(52) | * | 500,000 | -- | -- |
| NFS/FMTC Rollover IRA FBO Kenneth Henry Nass | 1,200,000(53) | * | 1,200,000 | -- | -- |
| NFS/FMTC Rollover IRA FBO Mark Stefanelli | 500,000(54) | * | 500,000 | -- | -- |
| | 500,000(55) | * | 500,000 | -- | -- |

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NFS/FMTC Rollover IRA FBO
Ralph Dale Edson

NFS/FMTC Rollover IRA FBO
Robert M. Weissberg

500,000(56)

* 500,000

--

--

NFS/FMTC Rollover IRA FBO
Thomas Aaron Ladner

500,000(57)

* 500,000

--

--

NFS/FMTC Rollover IRA FBO
William Gordon McBean

1,012,444(58)

* 1,012,444

--

--

NFS/FMTC SEP IRA FBO
Carter Laren

1,000,000(59)

* 1,000,000

--

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| Name of Selling Shareholder | Shares of Common Stock | | Number of Shares of Common Stock Being Registered for Resale | Shares of Common Stock | |
|---|--------------------------------|------------|--|--------------------------------|------------|
| | Beneficially Owned | | | to be Beneficially Owned After | |
| | Prior to Offering(1) Number | Percentage | | Offering(2) Number | Percentage |
| NFS/FMTC SEP IRA FBO James Curtis Brown | 500,000(60) | * | 500,000 | -- | -- |
| NFS/FMTC SEP IRA FBO Terry Alan Crews | 600,000(61) | * | 600,000 | -- | -- |
| Pamela Harrington Munro | 500,000(62) | * | 500,000 | -- | -- |
| Patrick Mullen TR Patrick Mullen Separate PRPRTY TR U/A 7/13/01 | 500,000(63) | * | 500,000 | -- | -- |
| Paul DiPaolo & Nancy L. Worthington TR DiPaolo Worthington Family TR U/A 1/31/08 | 500,000(64) | * | 500,000 | -- | -- |
| Peter D. Schiff | 2,412,445(65) | * | 2,312,445 | 100,000 | * |
| PWC Holdings | 500,000(66) | * | 500,000 | -- | -- |
| Quincy Murphy Inc. | 500,000(67) | * | 500,000 | -- | -- |
| Reisner Millennium INVST LLC | 500,000(68) | * | 500,000 | -- | -- |
| Richard Potapchuk | 3,000,000(69) | * | 3,000,000 | -- | -- |
| Robert Neal Spady + Linda Spady JT TEN | 500,000(70) | * | 500,000 | -- | -- |
| Steve Smith | 500,000(71) | * | 500,000 | -- | -- |
| Susan K. Hurt & Mark A. Hurt TR Susan K. Hurt Living Trust | 500,000(72) | * | 500,000 | -- | -- |

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U/A 4/30/00

| | | | | | |
|---|---------------|-------|-----------|----|----|
| Taslimi Construction Co Inc. | 5,000,000(73) | 1.55% | 5,000,000 | -- | -- |
| Thomas E. Thompson | 250,000 (74) | * | 250,000 | -- | -- |
| Thomas John Pray | 500,000(75) | * | 500,000 | -- | -- |
| Timothy Crane TR Timothy R. Crane Trust U/A 12/6/04 | 1,000,000(76) | * | 1,000,000 | -- | -- |
| William Bradley P/ADM Bradley Anesthesiology PSP | 500,000(77) | * | 500,000 | -- | -- |
| William Wiley Marianne Wiley TR Wiley Family Living Trust U/A 7/19/95 | 500,000(78) | * | 500,000 | -- | -- |
| Yellowstone Holdings | 500,000(79) | * | 500,000 | -- | -- |

* Represents beneficial ownership of less than 1% of our outstanding common stock.

(1) Except as otherwise indicated, each selling shareholder named in the table has sole voting and investment power with respect to all shares of common stock beneficially owned by it. The numbers and percentages shown include (a) the shares of common stock actually owned as of October 20, 2010, and (b) the shares of common stock which

the person or group had the right to acquire upon the exercise of warrants. In calculating the percentage of ownership, all shares of common stock that the identified person or group had the right to acquire upon the exercise of the warrants are deemed to be outstanding for the purpose of computing the percentage of the shares of common stock owned by such person or group, but are not deemed to be outstanding for the purpose of computing the percentage of the shares of common stock owned by any other person or group.

(2) We do not know the extent to which the selling shareholders will sell any of the securities being registered hereby.

(3) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(4) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(5) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(6) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(7) Includes 50,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(8) Includes 50,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(9) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(10) Includes 125,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(11) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(12) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(13) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(14) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(15) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(16) Includes 512,444 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(17) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(18) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(19) Represents shares reported on Schedule 13D/A dated October 29, 2010 and held by Firebird Global Master Fund II, Ltd., FG2 Advisors, LLC, James Passin and Harvey Sawikin. Excludes 10,555,555 shares of common stock subject to warrants which are immediately exercisable except to the extent that such conversion or exercise would result in beneficial ownership by the holder thereof of more than 9.9999% of the shares of common stock then issued and outstanding.

(20) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(21) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(22) Includes 150,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

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- (23) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (24) Includes 750,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (25) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (26) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (27) Includes 125,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (28) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (29) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (30) Includes 22,402,420 shares beneficially owned by family members. Includes 3,300,000 shares of common stock subject to warrants exercisable within 60 days of June 28, 2011 held by Mr. McCormack and family members and 1,500,000 shares subject to debentures convertible within 60 days of June 28, 2011.
- (31) Includes 1,000,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (32) Includes 125,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (33) Includes 22,402,420 shares beneficially owned by family members. Includes 3,300,000 shares of common stock subject to warrants exercisable within 60 days of June 28, 2011 held by Mr. McCormack and family members and 1,500,000 shares subject to debentures convertible within 60 days of June 28, 2011.
- (34) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (35) Includes 375,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (36) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (37) Includes 750,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (38) Includes 750,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (39) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (40) Includes 400,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (41) Includes 125,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (42) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (43) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

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- (44) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (45) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (46) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (47) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (48) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (49) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (50) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (51) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (52) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (53) Includes 600,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (54) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (55) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (56) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (57) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (58) Includes 762,444 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (59) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (60) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (61) Includes 300,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (62) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (63) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (64) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (65) Includes 1,412,445 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (66) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (67) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (68) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.
- (69) Includes 1,500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

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(70) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(71) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(72) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(73) Includes 2,500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(74) Includes 125,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(75) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(76) Includes 500,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(77) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(78) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

(79) Includes 250,000 of shares subject to warrants exercisable within 60 days of June 28, 2011.

PLAN OF DISTRIBUTION

The selling shareholders and any of their pledgees, donees, transferees, assignees and successors-in-interest may, from time to time, sell any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or quoted or in private transactions. These sales may be at fixed or negotiated prices. The selling shareholders may use any one or more of the following methods when selling shares:

.
ordinary brokerage transactions and transactions in which the broker-dealer solicits investors;

.
block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;

.
purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

.
an exchange distribution in accordance with the rules of the applicable exchange;

.
privately negotiated transactions;

.
to cover short sales made after the date that this registration statement is declared effective by the Commission;

broker-dealers may agree with the selling shareholders to sell a specified number of such shares at a stipulated price per share;

a combination of any such methods of sale; and

any other method permitted pursuant to applicable law.

The selling shareholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling shareholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling shareholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling shareholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved.

The selling shareholders may from time to time pledge or grant a security interest in some or all of the shares owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell shares of common stock from time to time under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling shareholders to include the pledgee, transferee or other successors in interest as selling shareholders under this prospectus.

Upon the Company being notified in writing by a selling shareholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling shareholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of common stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In addition, upon the Company being notified in writing by a selling shareholder that a donee or pledgee intends to sell more than 500 shares of common stock, a supplement to this prospectus will be filed if then required in accordance with applicable securities law.

The selling shareholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling shareholders and any broker-dealers or agents that are involved in selling the shares may be deemed to be underwriters within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Discounts, concessions, commissions and similar selling expenses, if any, that can be attributed to the sale of securities will be paid by the selling shareholder and/or the purchasers. Each selling shareholder has represented and warranted to the Company that it acquired the securities subject to this registration statement in the ordinary course of such selling shareholder's business and, at the time of its purchase of such securities such selling shareholder had no agreements or understandings, directly or indirectly, with any person to distribute any such securities.

The Company has advised each selling shareholder that it may not use shares registered on this registration statement to cover short sales of common stock made prior to the date on which this registration statement shall have been declared effective by the SEC. If a selling shareholder uses this prospectus for any sale of the common stock, it will be subject to the prospectus delivery requirements of the Securities Act. The selling shareholders will be responsible to comply with the applicable provisions of the Securities Act and Exchange Act, and the rules and regulations thereunder promulgated, including, without limitation, Regulation M, as applicable to such selling shareholders in connection with resales of their respective shares under this registration statement.

The Company is required to pay all fees and expenses incident to the registration of the shares, but the Company will not receive any proceeds from the sale of the common stock. The Company has agreed to indemnify the selling shareholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

DESCRIPTION OF SECURITIES

Our authorized capital stock consists of 750,000,000 shares of common stock, \$0.01 par value per share, and 5,000,000 shares of preferred stock, \$0.01 par value per share. The following summary of some of the terms relating to our common stock, preferred stock, Restated Certificate of Formation and bylaws is not complete and may not contain all the information you should consider before investing in our common stock. You should read carefully and consider our Certificate of Formation and bylaws, which are filed as exhibits to the registration statement, of which this prospectus forms a part, and the applicable provisions of the Texas Business Organizations Code.

Common Stock

The holders of common stock are entitled to one vote per share on all matters to be voted on by the common shareholders. The holders of our common stock are not entitled to cumulative voting in the election of our directors, which means that the holders of a majority of the outstanding shares of our common stock will be entitled to elect all of the directors standing for election. Subject to preferences of any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably any dividends our board of directors may declare out of funds legally available for the payment of dividends. If we are liquidated, dissolved or wound up, the holders of common stock are entitled to share pro rata all assets remaining after payment of or provision for our liabilities and liquidation preferences of any outstanding shares of preferred stock. Holders of common stock have no preemptive rights or rights to convert their common stock into any other securities. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

Our board of directors has the authority, without further action by the shareholders, to issue up to 5,000,000 shares of preferred stock from time to time in one or more series. The board of directors also has the authority to fix the designations, voting powers, preferences, privileges and relative rights and the limitations of any series of preferred stock, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights of the common stock. The board of directors, without shareholder approval, can issue preferred stock with voting, conversion or other rights that could adversely affect the voting power and other rights of the holders of common stock. Preferred stock could thus be issued quickly with terms that could delay or prevent a change of control of us or make removal of management more difficult. Additionally, the issuance of preferred stock may decrease the market price of the common stock and may adversely affect the voting, economic and other rights of the holders of common stock.

Anti-Takeover Effects of Certain Provisions of our Restated Certificate of Formation, Bylaws and Texas Law

Provisions of our Restated Certificate of Formation, our bylaws and Texas law could have the effect of delaying or preventing a third party from acquiring us, even if the acquisition would benefit our shareholders. These provisions may delay, defer or prevent a tender offer or takeover attempt of our company that a shareholder might consider in his or her best interest, including those attempts that might result in a premium over the market price for the shares held by our shareholders. These provisions are intended to enhance the likelihood of continuity and stability in the composition of our board of directors and in the policies formulated by the board of directors and to discourage types of transactions that may involve our actual or threatened change of control. These provisions are designed to reduce our vulnerability to an unsolicited proposal for a takeover that does not contemplate the acquisition of all of our outstanding shares, or an unsolicited proposal for the restructuring or sale of all or part of us.

Authorized but Unissued Shares of Common Stock and Preferred Stock. Our authorized but unissued shares of common stock and preferred stock are available for our board of directors to issue without shareholder approval. As noted above, our board of directors, without shareholder approval, has the authority under our Restated Certificate of Formation to issue preferred stock with rights superior to the rights of the holders of common stock. As a result, preferred stock could be issued quickly and easily, could adversely affect the rights of holders of common stock and could be issued with terms calculated to delay or prevent a change of control or make removal of management more difficult. We may use the additional authorized shares of common or preferred stock for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of our authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of our company by means of a proxy contest, tender offer, merger or other transaction.

Special Meetings of Shareholders. Our bylaws provide that special meetings of our shareholders may be called only by the Chairman of the board of directors, by a majority of our board of directors or by the holders of not less than 10% of the shares entitled to vote at such meeting.

Amendment of Bylaws. Our directors are expressly authorized to amend our bylaws.

Business Combinations Under Texas Law. Section 21.606 of the Texas Business Organizations Code (the "TBOC") imposes a special voting requirement for the approval of certain business combinations and related party transactions between public corporations and affiliated shareholders unless the transaction or the acquisition of shares by the affiliated shareholder is approved by the board of directors of the corporation prior to the affiliated shareholder becoming an affiliated shareholder. Section 21.606 prohibits certain mergers, sales of assets, reclassifications and other transactions (defined as business combinations) between a shareholder beneficially owning 20% or more of the outstanding stock of a Texas public corporation (such shareholder being defined as an affiliated shareholder) for a period of three years following the date the shareholder acquired the shares representing 20% or more of the corporation's voting power unless two-thirds of the unaffiliated shareholders approve the transaction at a meeting held no earlier than six months after the shareholder acquires that ownership. The provisions requiring such a vote of shareholders do not apply to a transaction with an affiliated shareholder if such transaction or the purchase of shares by the affiliated shareholder is approved by the board of directors before the affiliated shareholder acquires beneficial ownership of 20% of the shares or if the affiliated shareholder was an affiliated shareholder prior to December 31, 1996 and continued as such through the date of the transaction. Section 21.607 contains a provision that allows a corporation to elect out of the statute by an amendment to its articles of incorporation or bylaws prior to December 31, 1997. Section 21.606 could have the effect of delaying, deferring or preventing a change in control of the Company.

The above discussion of the Texas Business Organizations Code, our Restated Certificate of Formation, and bylaws is not intended to be exhaustive and is qualified in its entirety by such statute, the Restated Certificate of Formation and bylaws, respectively.

Registration Rights

Pursuant to certain securities purchase agreements between us and purchasers of our securities, certain shareholders are entitled to registration rights if they are unable, at any time following the six-month holding period provided in Rule 144, to sell their common stock pursuant to Rule 144. Upon the demand by such shareholders, we are required to register all of the common stock held by such shareholders within 45 days from such demand. The registration must be effective 120 days after the date of such demand. Such shareholders are also entitled to piggyback registration rights, which are subject to conditions and limitations, including the right of the underwriters of a public offering to limit the number of shares included in the registration statement and the ineligibility of such shareholders to piggyback if the shares are eligible for sale pursuant to Rule 144. The registration rights provisions contain customary indemnification and contribution provisions.

A majority of the holders of such securities that are entitled to piggyback registration rights have waived their rights to participate in this offering or have their shares included in the registration statement of which this prospectus forms a part.

Pre-emptive Rights

Our shareholders are not entitled to pre-emptive rights.

Transfer Agent and Registrar

The transfer agent and registrar for the common stock is Computershare Shareholder Services, Inc. Its address is 250 Royall Street, Canton, Massachusetts 02021.

OTC Bulletin Board® Quotation

Our common stock is quoted on the OTC Bulletin Board® under the ticker symbol INIS.OB.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon for us by Perkins Coie LLP, Denver, Colorado.

EXPERTS

The financial statements incorporated in this prospectus by reference to our Annual Report on Form 10-K for the year ended December 31, 2010 have been so incorporated in reliance on the report of Hansen, Barnett & Maxwell, P.C., independent accountants, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information electronically with the SEC. You may read and copy these reports, proxy statements and other information at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549, on official business days during the hours of 10:00 am to 3:00 pm. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room. You can request copies of these documents by writing to the SEC and paying a fee for the copying costs. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us. The SEC's Internet site can be found at www.sec.gov. In addition, we make available on or through our Internet site copies of these reports as soon as reasonably practicable after we electronically file or furnish them to the SEC. Our Internet site can be found at www.internationalisotopes.com. Information contained on our website does not constitute, and shall not be deemed to constitute, part of this prospectus and shall not be deemed to be incorporated by reference into the registration statement of which this prospectus is part.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are allowed to incorporate by reference information contained in documents that we file with the SEC. This means that we can disclose important information to you by referring you to those documents and that the information in this prospectus is not complete. You should read the information incorporated by reference for more detail. We list below certain documents that we have already filed with the SEC. The information in these documents is considered part of this prospectus.

We incorporate by reference into this prospectus the documents listed below:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2010, filed on March 31, 2011;

the description of the Common Stock that is contained in the Company's Registration Statement on Form 8-A dated August 1, 1997, filed pursuant to Section 12 of the Exchange Act, and all amendments thereto and reports which have been filed for the purpose of updating such description;

our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 29, 2011 in connection with the 2011 annual meeting of shareholders;

our Quarterly Report on Form 10-Q for the period ended March 31, 2011, filed on May 18, 2011; and

our Current Report on Form 8-K filed with the SEC on July 14, 2011.

We will provide each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference into this prospectus but not delivered with this prospectus upon written or oral request at no cost to the requester. Requests should be directed to Steve Laflin, President and Chief Executive Officer, at our principal offices, which are located at 4137 Commerce Circle, Idaho Falls, Idaho 83401; telephone number (208) 524-5300; or to the Company's general email address: admin@intisoid.com.

This prospectus is part of a registration statement on Form S-1 that we filed with the SEC. That registration statement contains more information than this prospectus regarding us and our common stock, including certain exhibits and schedules. You can obtain a copy of the registration statement from the SEC at the address listed above or from the SEC's Internet website.

You should rely only on the information provided in and incorporated by reference into this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front cover of these documents.

INTERNATIONAL ISOTOPES INC.

59,687,333 Shares

Common Stock, par value \$0.01

PROSPECTUS

July 20, 2011