ZION OIL & GAS INC Form FWP April 01, 2010

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| Zion Oil & Gas Newsletter April 1, 2010                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Dear Shareholder and/or Friend of Zion                                                                                                                                                                                                                                                                                                                                                                                                                      |
| My last update to you was on March 19, 2010. During the past two weeks, we have continued our completion work on the Ma'anit-Rehoboth #2 well.                                                                                                                                                                                                                                                                                                              |
| On Wednesday, March 24, 2010, we received visitors, Mr. Jonathan Friedman (Senior Adviser to Israel's Minister of National Infrastructures) and Dr. Victor Bariudin (Israel's Senior Coordinator of Oil & Gas Production at Israel's Ministry of National Infrastructures) to the Ma'anit wellsite. You can see photographs of their visit below. Their visit lasted almost two hours, during which time, they toured the site and reviewed the operations. |
| They were interested in the various visiting consultants and experts that we have brought to our drill sites. I commented that, whatever we do at Zion, we try and use the best techniques available. For that reason, we brought in oil & gas industry heavyweight companies, such as Schlumberger, Baker Hughes and Weatherford.                                                                                                                          |
| Even though Zion Oil & Gas, Inc. has a current market capitalization of only approximately US\$ 100 million, the combined market capitalization of the three companies mentioned above is approximately US\$ 100 billion. So, if we need specific expertise, they can readily supply it.                                                                                                                                                                    |
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| Here is this week's operations update                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Left to Right: Jonathan Friedman, Dr. Victor Bariudin, Rasim Yoruk (Drilling Manager)                                                                                                                                                                                                                                                                                                                                                                       |
| On the Floor of the Rig                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Schlumberger's Neil Galloway                                                                                                                                                                                                                                                                                                                                                                                                                                |

Explaining some of the completion testing procedure

Inspecting pipe in front of the Rig

The Ma'anit-Rehoboth #2 Wellsite on Wednesday March 24, 2010

The Ma'anit-Rehoboth #2 Well

In the previous report, I noted that our first production test (of several tests) planned for the Ma'anit-Rehoboth #2 well would be underway by the time the report was published. True to this plan, we did carry out this first test over an approximate two day period. The test interval was a 20 meter zone selected by our geologists as one of several that were deemed to be potentially hydrocarbon bearing.

This first test consisted of three separate flow periods and two separate shut-in periods. Reservoir pressure 'draw down' and fluid/gas flow rates are monitored during the flow periods and reservoir pressure 'build up' is measured during the shut-in periods. The flow periods are used to determine a well's instantaneous flow rates whereas the pressure data is used, in part, to assess long-term productivity and reservoir size. We are using Schlumberger Oilfield Services equipment and personnel during our testing operations to ensure high quality and reliability in the test results.

Operationally, the first test was executed very well although the results were disappointing in that no clear evidence of hydrocarbons was detected. We did, however, gain some especially useful information about reservoir pressures that will help us fine-tune the test design for all subsequent tests in this well.

Currently, we are preparing the well for the second production test in a deeper interval. Traditionally, production tests are started in the deepest part of the well with ensuing tests done successively up-hole. Given the mechanical configuration of the well relative to the target test intervals, we needed to somewhat modify this traditional approach and start our testing in one of the middle target intervals.

Prior to initiating our second production test, we recently installed and cemented in place an inner casing "liner" through most of the well's open hole section. The second interval to be tested, the deepest of all intervals to be tested, will then be that portion of the well that remains as an open hole. For this test, which we anticipate will begin this weekend, the perforating process will not be necessary since there is no casing and cement sheath separating the wellbore from the reservoir rock. All subsequent tests will be done through casing where the perforating process will again be employed.

So while the first test results were less than we had hoped, several additional targets remain in this well. We have gained much momentum since starting this operation and have already gleaned some useful pressure data from the reservoir rocks. We remain hopeful and will continue to use every tool in our testing arsenal in our ongoing hunt for the elusive hydrocarbons that potentially lurk deep within our license areas.

Operations at the Elijah #3 Well

The Elijah #3 well was drilled to a depth of approximately 10,938 feet (3,334 meters) when the drill string became stuck within the Asher Volcanics section of the hole. After recovering a significant portion of the stuck drill pipe, progress in recovering the remainder of the pipe slowed and the decision was made to temporarily suspend drilling operations pending further analysis of the situation and to relocate the rig to the Ma'anit-Rehoboth #2 well.

We are currently assessing various options that should enable us to proceed with the 'next steps' for this well and are looking into the option of acquiring additional field seismic data (at the same time that we acquire the seismic for Zion's Issachar-Zebulun Permit area) that will help us to resolve certain questions regarding the geology of the area surrounding the Elijah #3 well.

The Issachar-Zebulun Permit Area

As reported previously, Zion and the Geophysical Institute of Israel (GII) have signed an Agreement for GII, on behalf of Zion, to acquire approximately 30 kilometers of seismic data in Zion's Issachar-Zebulun Permit area.

The timing for the field work is scheduled to take place mid-summer 2010.

"In your good pleasure, make Zion prosper..."

Psalm 51:18

Thank you for your support of Zion, and

Shalom from Israel

Richard Rinberg

CEO of Zion Oil & Gas, Inc.

www.zionoil.com

FORWARD LOOKING STATEMENTS: Statements in this communication that are not historical fact, including statements regarding Zion's planned operations, geophysical and geological data and interpretation, anticipated attributes of geological strata being drilled, drilling efforts and locations, the presence or recoverability of hydrocarbons, timing and potential results thereof and plans contingent thereon and sufficiency of cash reserves are forward-looking statements as defined in the "Safe Harbor" provisions of the Private Securities Litigation Reform Act of 1995. These forward looking statements are based on assumptions that are subject to significant known and unknown risks, uncertainties and other unpredictable factors, many of which are described in Zion's periodic reports filed with the SEC and are beyond Zion's control. These risks could cause Zion's actual performance to differ materially from the results predicted by these forward-looking statements. Zion can give no assurance that the expectations reflected in these statements will prove to be correct and assumes no responsibility to update these statements.

### **Contact Information**

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