

**ESTIMATES**  
**of**  
**UNRISKED GROSS (100 PERCENT)**  
**PROSPECTIVE RESOURCES**  
**for the**  
**OZ DRILLING LICENSE**  
**located**  
**OFFSHORE ISRAEL**  
**as of**  
**FEBRUARY 1, 2014**

Prepared for  
**LAPIDOTH-HELETZ LIMITED PARTNERSHIP,**  
**LAPIDOTH ISRAEL OIL PROSPECTORS CORP. LTD,**  
**FRENDUM INVESTMENTS LIMITED,**  
**ISRAEL OPPORTUNITY-ENERGY RESOURCES, LP,**  
**and PLACIDA INVESTMENTS LIMITED**

**NSAI**  
**NETHERLAND, SEWELL**  
**& ASSOCIATES, INC.**  
**WORLDWIDE PETROLEUM**  
**CONSULTANTS**  
**ENGINEERING • GEOLOGY**  
**GEOPHYSICS • PETROPHYSICS**

April 24, 2014

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Ladies and Gentlemen:

In accordance with your request, we have estimated the unrisks gross (100 percent) prospective resources, as of February 1, 2014, for prospects located in the Oz Drilling License, offshore Israel. We completed our evaluation on or about the date of this letter. Prospective resources are those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. The prospective resources included in this report should not be construed as reserves or contingent resources; they represent exploration opportunities and quantify the development potential in the event a petroleum discovery is made. A geologic risk assessment was performed for these prospects, as discussed in subsequent paragraphs. There is no certainty that any portion of the prospective resources will be discovered. If they are discovered, there is no certainty that it will be commercially viable to produce any portion of the prospective resources. This report does not include economic analysis for these prospects. Based on analogous field developments, it appears that, assuming a discovery is made, the unrisks best estimate prospective resources in this report have a reasonable chance of being economically viable. The estimates in this report have been prepared in accordance with the definitions and guidelines set forth in the 2007 Petroleum Resources Management System (PRMS) approved by the Society of Petroleum Engineers (SPE) and in accordance with internationally recognized standards, as stipulated by the Israel Securities Authority (ISA). Definitions are presented immediately following this letter. Following the definitions is a list of abbreviations used in this report. This report has been prepared for use by Lapidoth-Heletz Limited Partnership and Lapidoth Israel Oil Prospectors Corp. Ltd (Lapidoth), Frendum Investments Limited (Frendum), Israel Opportunity-Energy Resources, LP (IOER), and Placida Investments Limited (Placida) in filing with the ISA; in our opinion the assumptions, data, methods, and procedures used in the preparation of this report are appropriate for such purpose.

Resources estimates may be prepared using either deterministic or probabilistic methods. In the deterministic method, a discrete value or array of values for each parameter is selected based on the estimator's choice of the values that are most appropriate for the corresponding resources category. A single outcome of recoverable quantities is derived for each deterministic increment or scenario. In the probabilistic method, the estimator defines a distribution representing the full range of possible values for each input parameter. These distributions may be randomly sampled (typically using Monte Carlo simulation) to compute a full range and distribution of potential outcome of results of recoverable quantities. This approach is most often applied to volumetric resources calculations in the early phases of an exploitation and development project. The prospective resources shown in this report have been estimated using probabilistic methods and are dependent on a petroleum discovery being made. If a discovery is made and development is undertaken, the probability that the recoverable volumes will equal or exceed the unrisks estimated amounts is 90 percent for the low estimate, 50 percent for the best estimate, and 10 percent for the high estimate. As described in more detail in the 2007 PRMS, the low, best, and high estimate volumes correspond to the 90 percent confidence level (P90), the 50 percent confidence level (P50), and the 10 percent confidence level (P10) of the probability distributions, respectively.

Totals of unrisks prospective resources beyond the prospect and lead levels are not reflective of volumes that can be expected to be recovered and are therefore not shown. Because of the geologic risk associated with each prospect and lead, meaningful totals beyond these levels can be defined only by summing risks prospective resources. Such risk is often significant.

We estimate the unrisks gross (100 percent) prospective resources for these prospects, as of February 1, 2014, to be:

Prospect	Unrisks Gross (100 Percent) Prospective Resources					
	Low Estimate (P90)		Best Estimate (P50)		High Estimate (P10)	
	Oil (MMBBL)	Gas (BCF)	Oil (MMBBL)	Gas (BCF)	Oil (MMBBL)	Gas (BCF)
Oligocene/Miocene North	0.0	376.6	0.0	977.8	0.0	2,300.5
Oligocene/Miocene South	0.0	192.5	0.0	437.5	0.0	952.5
Intra-Oligocene	0.0	404.8	0.0	1,115.1	0.0	2,967.3
Lower Cretaceous Central	66.5	66.5	183.9	138.0	440.6	220.3
Lower Cretaceous West	26.2	26.2	71.9	53.9	166.5	83.2

The oil resources shown include crude oil only. Oil volumes are expressed in millions of barrels (MMBBL); a barrel is equivalent to 42 United States gallons. Gas volumes are expressed in billions of cubic feet (BCF) at standard temperature and pressure bases. For the two oil prospects, the Lower Cretaceous Central and the Lower Cretaceous West, we assumed a gas-oil ratio of 1,000 standard cubic feet per barrel (scf/bbl) for the low estimate, 750 scf/bbl for the best estimate, and 500 scf/bbl for the high estimate.

Unrisks prospective resources are estimated ranges of recoverable oil and gas volumes assuming their discovery and development and are based on estimated ranges of undiscovered in-place volumes. Geologic risk of prospective resources addresses the probability of success for the discovery of a significant quantity of potentially moveable petroleum; this risk analysis is conducted independent of estimations of petroleum volumes and without regard to the chance of development. Principal geologic risk elements of the petroleum system include (1) trap and seal characteristics; (2) reservoir presence and quality; (3) source rock capacity, quality, and maturity; and (4) timing, migration, and preservation of petroleum in relation to trap and seal formation. Risk assessment is a highly subjective process dependent upon the experience and judgment of the evaluators and is subject to revision with further data acquisition or interpretation. The primary geologic risk for the Oligocene/Miocene North and Oligocene/Miocene South Prospects is trap integrity. The primary geologic risk for the Intra-Oligocene, Lower Cretaceous Central, and Lower Cretaceous West Prospects is reservoir quality. The geologic risk elements and overall probability of geologic success for each prospect are shown in the following table:

Prospect	Geologic Risk Element (Percent)				Probability of Geologic Success (Percent)
	Trap Integrity	Reservoir Quality	Source Evaluation	Timing/ Migration	
Oligocene/Miocene North	50	95	60	80	23
Oligocene/Miocene South	50	95	60	80	23
Intra-Oligocene	80	60	70	80	27
Lower Cretaceous Central	80	40	70	80	18
Lower Cretaceous West	70	40	70	80	16

Each prospect was evaluated to determine ranges of in-place and recoverable petroleum and was risks as an independent entity without dependency between potential prospect drilling outcomes. If petroleum discoveries are made, smaller-volume prospects may not be commercial to independently develop, although they may become candidates for satellite developments and tie-backs to existing infrastructure at some future date. The

development infrastructure and data obtained from early discoveries will alter both geologic risk and future economics of subsequent discoveries and developments.

It should be understood that the prospective resources discussed and shown herein are those undiscovered, highly speculative resources estimated beyond reserves or contingent resources where geological and geophysical data suggest the potential for discovery of petroleum but where the level of proof is insufficient for classification as reserves or contingent resources. The unrisks prospective resources shown in this report are the range of volumes that could reasonably be expected to be recovered in the event of the discovery and development of these prospects.

As shown in the Table of Contents, this report includes a Technical Discussion followed by pertinent figures. The Technical Discussion includes an overview of the license area, a review of the data available for this evaluation, and a discussion of the technical approach used in our evaluation.

For the purposes of this report, we did not perform any field inspection of the prospects. We have not investigated possible environmental liability related to the prospects; however, we are not currently aware of any possible environmental liability that would have any material effect on the resources quantities estimated in this report or the commerciality of such resources estimates.

For the purposes of this report, we used technical data including, but not limited to, offset well logs, geologic maps, and seismic data. We were provided with all of the necessary data to prepare the estimates for these prospects, and we were not limited from access to any material we believe may be relevant. The resources in this report have been estimated using probabilistic methods; these estimates have been prepared in accordance with generally accepted petroleum engineering and evaluation principles set forth in the Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the SPE (SPE Standards). We used standard engineering and geoscience methods, or a combination of methods, including volumetric analysis and analogy, that we considered to be appropriate and necessary to classify, categorize, and estimate resources in accordance with the 2007 PRMS definitions and guidelines. These resources are for undeveloped locations; such resources are based on estimates of reservoir volumes and recovery efficiencies along with analogy to properties with similar geologic and reservoir characteristics. Our estimates are based on the assumption that the relative ages of the potential reservoirs evaluated in this report are correct. As in all aspects of oil and gas evaluation, there are uncertainties inherent in the interpretation of engineering and geoscience data; therefore, our conclusions necessarily represent only informed professional judgment. The prospective information is not an assessment regarding the reserves and contingent resources, which can be assessed only after exploratory drilling, if at all.

Netherlands, Sewell & Associates, Inc. (NSAI) was engaged on December 5, 2013, by Mr. Eli Kamar, General Manager of Lapidoth; Mr. Ori Rosen, Director of Frendum; Mr. Eyal Shuker, Chief Executive Officer of IOER; and Mr. Kikis Treppides, Director of Placida, to perform this assessment. The data used in our estimates were obtained from Lapidoth and the nonconfidential files of NSAI and were accepted as accurate. Supporting work data are on file in our office. We have not examined the contractual rights to the prospects or independently confirmed the actual degree or type of interest owned. We are independent petroleum engineers, geologists, geophysicists, and petrophysicists; we do not own an interest in these prospects nor are we employed on a contingent basis. Furthermore, no limitations or restrictions were placed upon NSAI by officials of Lapidoth, Frendum, IOER, or Placida.

## QUALIFICATIONS

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NSAI performs consulting petroleum engineering services under Texas Board of Professional Engineers Registration No. F-2699. We provide a complete range of geological, geophysical, petrophysical, and engineering services, and we have the technical expertise and ability to perform these services in any oil and gas producing area in the world. The staff is familiar with the recognized industry reserves and resources definitions, specifically those promulgated by the U.S. Securities and Exchange Commission, by the Alberta Securities Commission, and by the SPE, Society of Petroleum Evaluation Engineers, World Petroleum Council, and

American Association of Petroleum Geologists. The technical persons responsible for preparing the estimates presented herein meet the requirements regarding qualifications, independence, objectivity, and confidentiality set forth in the SPE Standards.

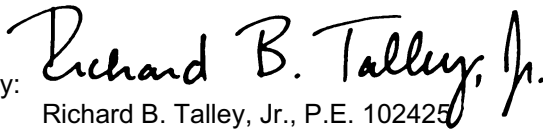
This evaluation has been led by Mr. Richard B. Talley, Jr. and Mr. David E. Nice. Mr. Talley and Mr. Nice are Vice Presidents in the firm's Houston office at 1221 Lamar Street, Suite 1200, Houston, Texas 77010, USA. Mr. Talley is a Licensed Professional Engineer (Texas Registration No. 102425). He has been practicing petroleum engineering consulting at NSAI since 2004 and has over 5 years prior industry experience. Mr. Nice is a Licensed Professional Geoscientist (Texas Registration No. 346). He has been practicing petroleum geoscience consulting at NSAI since 1998 and has over 13 years prior industry experience.

Sincerely,

**NETHERLAND, SEWELL & ASSOCIATES, INC.**  
Texas Registered Engineering Firm F-2699


By: 

C.H. (Scott) Rees III, P.E.  
Chairman and Chief Executive Officer

By:   
Richard B. Talley, Jr., P.E. 102425  
Vice President

Date Signed: April 24, 2014

DEN:HRM

By:   
David E. Nice, P.G. 346  
Vice President

Date Signed: April 24, 2014



## PETROLEUM RESERVES AND RESOURCES CLASSIFICATION AND DEFINITIONS

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Commerciality", that is, the chance that the project that will be developed and reach commercial producing status. The following definitions apply to the major subdivisions within the resources classification:

**TOTAL PETROLEUM INITIALLY-IN-PLACE** is that quantity of petroleum that is estimated to exist originally in naturally occurring accumulations. It includes that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production plus those estimated quantities in accumulations yet to be discovered (equivalent to "total resources").

**DISCOVERED PETROLEUM INITIALLY-IN-PLACE** is that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production.

**PRODUCTION** is the cumulative quantity of petroleum that has been recovered at a given date. While all recoverable resources are estimated and production is measured in terms of the sales product specifications, raw production (sales plus non-sales) quantities are also measured and required to support engineering analyses based on reservoir voidage (see Production Measurement, section 3.2).

Multiple development projects may be applied to each known accumulation, and each project will recover an estimated portion of the initially-in-place quantities. The projects shall be subdivided into Commercial and Sub-Commercial, with the estimated recoverable quantities being classified as Reserves and Contingent Resources respectively, as defined below.

**RESERVES** are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: they must be discovered, recoverable, commercial, and remaining (as of the evaluation date) based on the development project(s) applied. Reserves are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by development and production status.

**CONTINGENT RESOURCES** are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be subclassified based on project maturity and/or characterized by their economic status.

**UNDISCOVERED PETROLEUM INITIALLY-IN-PLACE** is that quantity of petroleum estimated, as of a given date, to be contained within accumulations yet to be discovered.

**PROSPECTIVE RESOURCES** are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.

**UNRECOVERABLE** is that portion of Discovered or Undiscovered Petroleum Initially-in-Place quantities which is estimated, as of a given date, not to be recoverable by future development projects. A portion of these quantities may become recoverable in the future as commercial circumstances change or technological developments occur; the remaining portion may never be recovered due to physical/chemical constraints represented by subsurface interaction of fluids and reservoir rocks.

Estimated Ultimate Recovery (EUR) is not a resources category, but a term that may be applied to any accumulation or group of accumulations (discovered or undiscovered) to define those quantities of petroleum estimated, as of a given date, to be potentially recoverable under defined technical and commercial conditions plus those quantities already produced (total of recoverable resources).

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### 1.2 Project-Based Resources Evaluations

The resources evaluation process consists of identifying a recovery project, or projects, associated with a petroleum accumulation(s), estimating the quantities of Petroleum Initially-in-Place, estimating that portion of those in-place quantities that can be recovered by each project, and classifying the project(s) based on its maturity status or chance of commerciality.

This concept of a project-based classification system is further clarified by examining the primary data sources contributing to an evaluation of net recoverable resources (see Figure 1-2) that may be described as follows:

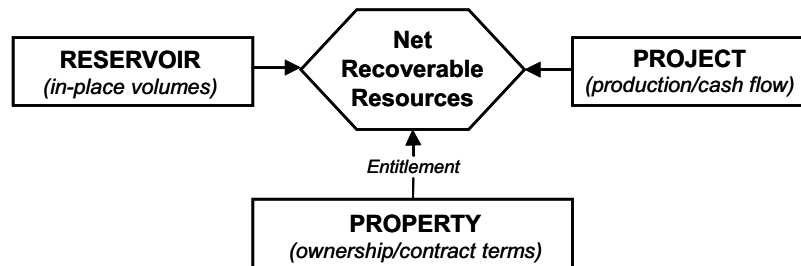


Figure 1-2: Resources Evaluation Data Sources.

- The Reservoir (accumulation): Key attributes include the types and quantities of Petroleum Initially-in-Place and the fluid and rock properties that affect petroleum recovery.
- The Project: Each project applied to a specific reservoir development generates a unique production and cash flow schedule. The time integration of these schedules taken to the project's technical, economic, or contractual limit defines the estimated recoverable resources and associated future net cash flow projections for each project. The ratio of EUR to Total Initially-in-Place quantities defines the ultimate recovery efficiency for the development project(s). A project may be defined at various levels and stages of maturity; it may include one or many wells and associated production and processing facilities. One project may develop many reservoirs, or many projects may be applied to one reservoir.
- The Property (lease or license area): Each property may have unique associated contractual rights and obligations including the fiscal terms. Such information allows definition of each participant's share of produced quantities (entitlement) and share of investments, expenses, and revenues for each recovery project and the reservoir to which it is applied. One property may encompass many reservoirs, or one reservoir may span several different properties. A property may contain both discovered and undiscovered accumulations.

In context of this data relationship, "project" is the primary element considered in this resources classification, and net recoverable resources are the incremental quantities derived from each project. Project represents the link between the petroleum accumulation and the decision-making process. A project may, for example, constitute the development of a single reservoir or field, or an incremental development for a producing field, or the integrated development of several fields and associated facilities with a common ownership. In general, an individual project will represent the level at which a decision is made whether or not to proceed (i.e., spend more money) and there should be an associated range of estimated recoverable quantities for that project.

An accumulation or potential accumulation of petroleum may be subject to several separate and distinct projects that are at different stages of exploration or development. Thus, an accumulation may have recoverable quantities in several resource classes simultaneously.

In order to assign recoverable resources of any class, a development plan needs to be defined consisting of one or more projects. Even for Prospective Resources, the estimates of recoverable quantities must be stated in terms of the sales products derived from a development program assuming successful discovery and commercial development. Given the major uncertainties involved at this early stage, the development program will not be of the detail expected in later stages of maturity. In most cases, recovery efficiency may be largely based on analogous projects. In-place quantities for which a feasible project cannot be defined using current, or reasonably forecast improvements in, technology are classified as Unrecoverable.

Not all technically feasible development plans will be commercial. The commercial viability of a development project is dependent on a forecast of the conditions that will exist during the time period encompassed by the project's activities (see



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Commercial Evaluations, section 3.1). "Conditions" include technological, economic, legal, environmental, social, and governmental factors. While economic factors can be summarized as forecast costs and product prices, the underlying influences include, but are not limited to, market conditions, transportation and processing infrastructure, fiscal terms, and taxes.

The resource quantities being estimated are those volumes producible from a project as measured according to delivery specifications at the point of sale or custody transfer (see Reference Point, section 3.2.1). The cumulative production from the evaluation date forward to cessation of production is the remaining recoverable quantity. The sum of the associated annual net cash flows yields the estimated future net revenue. When the cash flows are discounted according to a defined discount rate and time period, the summation of the discounted cash flows is termed net present value (NPV) of the project (see Evaluation and Reporting Guidelines, section 3.0).

The supporting data, analytical processes, and assumptions used in an evaluation should be documented in sufficient detail to allow an independent evaluator or auditor to clearly understand the basis for estimation and categorization of recoverable quantities and their classification.

## 2.0 Classification and Categorization Guidelines

### 2.1 Resources Classification

The basic classification requires establishment of criteria for a petroleum discovery and thereafter the distinction between commercial and sub-commercial projects in known accumulations (and hence between Reserves and Contingent Resources).

#### 2.1.1 Determination of Discovery Status

A discovery is one petroleum accumulation, or several petroleum accumulations collectively, for which one or several exploratory wells have established through testing, sampling, and/or logging the existence of a significant quantity of potentially moveable hydrocarbons.

In this context, "significant" implies that there is evidence of a sufficient quantity of petroleum to justify estimating the in-place volume demonstrated by the well(s) and for evaluating the potential for economic recovery. Estimated recoverable quantities within such a discovered (known) accumulation(s) shall initially be classified as Contingent Resources pending definition of projects with sufficient chance of commercial development to reclassify all, or a portion, as Reserves. Where in-place hydrocarbons are identified but are not considered currently recoverable, such quantities may be classified as Discovered Unrecoverable, if considered appropriate for resource management purposes; a portion of these quantities may become recoverable resources in the future as commercial circumstances change or technological developments occur.

#### 2.1.2 Determination of Commerciality

Discovered recoverable volumes (Contingent Resources) may be considered commercially producible, and thus Reserves, if the entity claiming commerciality has demonstrated firm intention to proceed with development and such intention is based upon all of the following criteria:

- Evidence to support a reasonable timetable for development.
- A reasonable assessment of the future economics of such development projects meeting defined investment and operating criteria.
- A reasonable expectation that there will be a market for all or at least the expected sales quantities of production required to justify development.
- Evidence that the necessary production and transportation facilities are available or can be made available.
- Evidence that legal, contractual, environmental and other social and economic concerns will allow for the actual implementation of the recovery project being evaluated.

To be included in the Reserves class, a project must be sufficiently defined to establish its commercial viability. There must be a reasonable expectation that all required internal and external approvals will be forthcoming, and there is evidence of firm intention to proceed with development within a reasonable time frame. A reasonable time frame for the initiation of development depends on the specific circumstances and varies according to the scope of the project. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. In all cases, the justification for classification as Reserves should be clearly documented.

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To be included in the Reserves class, there must be a high confidence in the commercial producibility of the reservoir as supported by actual production or formation tests. In certain cases, Reserves may be assigned on the basis of well logs and/or core analysis that indicate that the subject reservoir is hydrocarbon-bearing and is analogous to reservoirs in the same area that are producing or have demonstrated the ability to produce on formation tests.

### 2.2 Resources Categorization

The horizontal axis in the Resources Classification (Figure 1.1) defines the range of uncertainty in estimates of the quantities of recoverable, or potentially recoverable, petroleum associated with a project. These estimates include both technical and commercial uncertainty components as follows:

- The total petroleum remaining within the accumulation (in-place resources).
- That portion of the in-place petroleum that can be recovered by applying a defined development project or projects.
- Variations in the commercial conditions that may impact the quantities recovered and sold (e.g., market availability, contractual changes).

Where commercial uncertainties are such that there is significant risk that the complete project (as initially defined) will not proceed, it is advised to create a separate project classified as Contingent Resources with an appropriate chance of commerciality.

#### 2.2.1 Range of Uncertainty

The range of uncertainty of the recoverable and/or potentially recoverable volumes may be represented by either deterministic scenarios or by a probability distribution (see Deterministic and Probabilistic Methods, section 4.2).

When the range of uncertainty is represented by a probability distribution, a low, best, and high estimate shall be provided such that:

- There should be at least a 90% probability (P90) that the quantities actually recovered will equal or exceed the low estimate.
- There should be at least a 50% probability (P50) that the quantities actually recovered will equal or exceed the best estimate.
- There should be at least a 10% probability (P10) that the quantities actually recovered will equal or exceed the high estimate.

When using the deterministic scenario method, typically there should also be low, best, and high estimates, where such estimates are based on qualitative assessments of relative uncertainty using consistent interpretation guidelines. Under the deterministic incremental (risk-based) approach, quantities at each level of uncertainty are estimated discretely and separately (see Category Definitions and Guidelines, section 2.2.2).

These same approaches to describing uncertainty may be applied to Reserves, Contingent Resources, and Prospective Resources. While there may be significant risk that sub-commercial and undiscovered accumulations will not achieve commercial production, it is useful to consider the range of potentially recoverable quantities independently of such a risk or consideration of the resource class to which the quantities will be assigned.

#### 2.2.2 Category Definitions and Guidelines

Evaluators may assess recoverable quantities and categorize results by uncertainty using the deterministic incremental (risk-based) approach, the deterministic scenario (cumulative) approach, or probabilistic methods (see "2001 Supplemental Guidelines," Chapter 2.5). In many cases, a combination of approaches is used.

Use of consistent terminology (Figure 1.1) promotes clarity in communication of evaluation results. For Reserves, the general cumulative terms low/best/high estimates are denoted as 1P/2P/3P, respectively. The associated incremental quantities are termed Proved, Probable and Possible. Reserves are a subset of, and must be viewed within context of, the complete resources classification system. While the categorization criteria are proposed specifically for Reserves, in most cases, they can be equally applied to Contingent and Prospective Resources conditional upon their satisfying the criteria for discovery and/or development.

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For Contingent Resources, the general cumulative terms low/best/high estimates are denoted as 1C/2C/3C respectively. For Prospective Resources, the general cumulative terms low/best/high estimates still apply. No specific terms are defined for incremental quantities within Contingent and Prospective Resources.

Without new technical information, there should be no change in the distribution of technically recoverable volumes and their categorization boundaries when conditions are satisfied sufficiently to reclassify a project from Contingent Resources to Reserves. All evaluations require application of a consistent set of forecast conditions, including assumed future costs and prices, for both classification of projects and categorization of estimated quantities recovered by each project (see Commercial Evaluations, section 3.1).

Based on additional data and updated interpretations that indicate increased certainty, portions of Possible and Probable Reserves may be re-categorized as Probable and Proved Reserves.

Uncertainty in resource estimates is best communicated by reporting a range of potential results. However, if it is required to report a single representative result, the "best estimate" is considered the most realistic assessment of recoverable quantities. It is generally considered to represent the sum of Proved and Probable estimates (2P) when using the deterministic scenario or the probabilistic assessment methods. It should be noted that under the deterministic incremental (risk-based) approach, discrete estimates are made for each category, and they should not be aggregated without due consideration of their associated risk (see "2001 Supplemental Guidelines," Chapter 2.5).

**Table 1: Recoverable Resources Classes and Sub-Classes**

Class/Sub-Class	Definition	Guidelines
<b>Reserves</b>	Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions.	<p>Reserves must satisfy four criteria: they must be discovered, recoverable, commercial, and remaining based on the development project(s) applied. Reserves are further subdivided in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their development and production status.</p> <p>To be included in the Reserves class, a project must be sufficiently defined to establish its commercial viability. There must be a reasonable expectation that all required internal and external approvals will be forthcoming, and there is evidence of firm intention to proceed with development within a reasonable time frame.</p> <p>A reasonable time frame for the initiation of development depends on the specific circumstances and varies according to the scope of the project. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. In all cases, the justification for classification as Reserves should be clearly documented.</p> <p>To be included in the Reserves class, there must be a high confidence in the commercial producibility of the reservoir as supported by actual production or formation tests. In certain cases, Reserves may be assigned on the basis of well logs and/or core analysis that indicate that the subject reservoir is hydrocarbon-bearing and is analogous to reservoirs in the same area that are producing or have demonstrated the ability to produce on formation tests.</p>
On Production	The development project is currently producing and selling petroleum to market.	<p>The key criterion is that the project is receiving income from sales, rather than the approved development project necessarily being complete. This is the point at which the project "chance of commerciality" can be said to be 100%.</p> <p>The project "decision gate" is the decision to initiate commercial production from the project.</p>

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Class/Sub-Class	Definition	Guidelines
Approved for Development	All necessary approvals have been obtained, capital funds have been committed, and implementation of the development project is under way.	<p>At this point, it must be certain that the development project is going ahead. The project must not be subject to any contingencies such as outstanding regulatory approvals or sales contracts. Forecast capital expenditures should be included in the reporting entity's current or following year's approved budget.</p> <p>The project "decision gate" is the decision to start investing capital in the construction of production facilities and/or drilling development wells.</p>
Justified for Development	Implementation of the development project is justified on the basis of reasonable forecast commercial conditions at the time of reporting, and there are reasonable expectations that all necessary approvals/contracts will be obtained.	<p>In order to move to this level of project maturity, and hence have reserves associated with it, the development project must be commercially viable at the time of reporting, based on the reporting entity's assumptions of future prices, costs, etc. ("forecast case") and the specific circumstances of the project. Evidence of a firm intention to proceed with development within a reasonable time frame will be sufficient to demonstrate commerciality. There should be a development plan in sufficient detail to support the assessment of commerciality and a reasonable expectation that any regulatory approvals or sales contracts required prior to project implementation will be forthcoming. Other than such approvals/contracts, there should be no known contingencies that could preclude the development from proceeding within a reasonable timeframe (see Reserves class).</p> <p>The project "decision gate" is the decision by the reporting entity and its partners, if any, that the project has reached a level of technical and commercial maturity sufficient to justify proceeding with development at that point in time.</p>
<b>Contingent Resources</b>	Those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable due to one or more contingencies.	Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.
Development Pending	A discovered accumulation where project activities are ongoing to justify commercial development in the foreseeable future.	<p>The project is seen to have reasonable potential for eventual commercial development, to the extent that further data acquisition (e.g. drilling, seismic data) and/or evaluations are currently ongoing with a view to confirming that the project is commercially viable and providing the basis for selection of an appropriate development plan. The critical contingencies have been identified and are reasonably expected to be resolved within a reasonable time frame. Note that disappointing appraisal/evaluation results could lead to a re-classification of the project to "On Hold" or "Not Viable" status.</p> <p>The project "decision gate" is the decision to undertake further data acquisition and/or studies designed to move the project to a level of technical and commercial maturity at which a decision can be made to proceed with development and production.</p>
Development Unclarified or on Hold	A discovered accumulation where project activities are on hold and/or where justification as a commercial development may be subject to significant delay.	<p>The project is seen to have potential for eventual commercial development, but further appraisal/evaluation activities are on hold pending the removal of significant contingencies external to the project, or substantial further appraisal/evaluation activities are required to clarify the potential for eventual commercial development. Development may be subject to a significant time delay. Note that a change in circumstances, such that there is no longer a reasonable expectation that a critical contingency can be removed in the foreseeable future, for example, could lead to a reclassification of the project to "Not Viable" status.</p> <p>The project "decision gate" is the decision to either proceed with additional evaluation designed to clarify the potential for eventual commercial development or to temporarily suspend or delay further activities pending resolution of external contingencies.</p>

## PETROLEUM RESERVES AND RESOURCES CLASSIFICATION AND DEFINITIONS

Excerpted from the Petroleum Resources Management System Approved by  
the Society of Petroleum Engineers (SPE) Board of Directors, March 2007

Class/Sub-Class	Definition	Guidelines
Development Not Viable	A discovered accumulation for which there are no current plans to develop or to acquire additional data at the time due to limited production potential.	The project is not seen to have potential for eventual commercial development at the time of reporting, but the theoretically recoverable quantities are recorded so that the potential opportunity will be recognized in the event of a major change in technology or commercial conditions.  The project "decision gate" is the decision not to undertake any further data acquisition or studies on the project for the foreseeable future.
<b>Prospective Resources</b>	Those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.	Potential accumulations are evaluated according to their chance of discovery and, assuming a discovery, the estimated quantities that would be recoverable under defined development projects. It is recognized that the development programs will be of significantly less detail and depend more heavily on analog developments in the earlier phases of exploration.
Prospect	A project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target.	Project activities are focused on assessing the chance of discovery and, assuming discovery, the range of potential recoverable quantities under a commercial development program.
Lead	A project associated with a potential accumulation that is currently poorly defined and requires more data acquisition and/or evaluation in order to be classified as a prospect.	Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to confirm whether or not the lead can be matured into a prospect. Such evaluation includes the assessment of the chance of discovery and, assuming discovery, the range of potential recovery under feasible development scenarios.
Play	A project associated with a prospective trend of potential prospects, but which requires more data acquisition and/or evaluation in order to define specific leads or prospects.	Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to define specific leads or prospects for more detailed analysis of their chance of discovery and, assuming discovery, the range of potential recovery under hypothetical development scenarios.

**Table 2: Reserves Status Definitions and Guidelines**

Status	Definition	Guidelines
<b>Developed Reserves</b>	Developed Reserves are expected quantities to be recovered from existing wells and facilities.	Reserves are considered developed only after the necessary equipment has been installed, or when the costs to do so are relatively minor compared to the cost of a well. Where required facilities become unavailable, it may be necessary to reclassify Developed Reserves as Undeveloped. Developed Reserves may be further sub-classified as Producing or Non-Producing.
Developed Producing Reserves	Developed Producing Reserves are expected to be recovered from completion intervals that are open and producing at the time of the estimate.	Improved recovery reserves are considered producing only after the improved recovery project is in operation.
Developed Non-Producing Reserves	Developed Non-Producing Reserves include shut-in and behind-pipe Reserves.	Shut-in Reserves are expected to be recovered from (1) completion intervals which are open at the time of the estimate but which have not yet started producing, (2) wells which were shut-in for market conditions or pipeline connections, or (3) wells not capable of production for mechanical reasons. Behind-pipe Reserves are expected to be recovered from zones in existing wells which will require additional completion work or future re-completion prior to start of production.  In all cases, production can be initiated or restored with relatively low expenditure compared to the cost of drilling a new well.

## PETROLEUM RESERVES AND RESOURCES CLASSIFICATION AND DEFINITIONS

Excerpted from the Petroleum Resources Management System Approved by  
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Status	Definition	Guidelines
<b>Undeveloped Reserves</b>	Undeveloped Reserves are quantities expected to be recovered through future investments:	(1) from new wells on undrilled acreage in known accumulations, (2) from deepening existing wells to a different (but known) reservoir, (3) from infill wells that will increase recovery, or (4) where a relatively large expenditure (e.g. when compared to the cost of drilling a new well) is required to (a) recomplete an existing well or (b) install production or transportation facilities for primary or improved recovery projects.

**Table 3: Reserves Category Definitions and Guidelines**

Category	Definition	Guidelines
<b>Proved Reserves</b>	Proved Reserves are those quantities of petroleum, which by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operating methods, and government regulations.	<p>If deterministic methods are used, the term reasonable certainty is intended to express a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate.</p> <p>The area of the reservoir considered as Proved includes (1) the area delineated by drilling and defined by fluid contacts, if any, and (2) adjacent undrilled portions of the reservoir that can reasonably be judged as continuous with it and commercially productive on the basis of available geoscience and engineering data.</p> <p>In the absence of data on fluid contacts, Proved quantities in a reservoir are limited by the lowest known hydrocarbon (LKH) as seen in a well penetration unless otherwise indicated by definitive geoscience, engineering, or performance data. Such definitive information may include pressure gradient analysis and seismic indicators. Seismic data alone may not be sufficient to define fluid contacts for Proved reserves (see "2001 Supplemental Guidelines," Chapter 8).</p> <p>Reserves in undeveloped locations may be classified as Proved provided that:</p> <ul style="list-style-type: none"> <li>• The locations are in undrilled areas of the reservoir that can be judged with reasonable certainty to be commercially productive.</li> <li>• Interpretations of available geoscience and engineering data indicate with reasonable certainty that the objective formation is laterally continuous with drilled Proved locations.</li> </ul> <p>For Proved Reserves, the recovery efficiency applied to these reservoirs should be defined based on a range of possibilities supported by analogs and sound engineering judgment considering the characteristics of the Proved area and the applied development program.</p>
<b>Probable Reserves</b>	Probable Reserves are those additional Reserves which analysis of geoscience and engineering data indicate are less likely to be recovered than Proved Reserves but more certain to be recovered than Possible Reserves.	<p>It is equally likely that actual remaining quantities recovered will be greater than or less than the sum of the estimated Proved plus Probable Reserves (2P). In this context, when probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the 2P estimate.</p> <p>Probable Reserves may be assigned to areas of a reservoir adjacent to Proved where data control or interpretations of available data are less certain. The interpreted reservoir continuity may not meet the reasonable certainty criteria.</p> <p>Probable estimates also include incremental recoveries associated with project recovery efficiencies beyond that assumed for Proved.</p>

## PETROLEUM RESERVES AND RESOURCES CLASSIFICATION AND DEFINITIONS

Excerpted from the Petroleum Resources Management System Approved by  
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Category	Definition	Guidelines
<b>Possible Reserves</b>	Possible Reserves are those additional reserves which analysis of geoscience and engineering data indicate are less likely to be recoverable than Probable Reserves.	<p>The total quantities ultimately recovered from the project have a low probability to exceed the sum of Proved plus Probable plus Possible (3P), which is equivalent to the high estimate scenario. When probabilistic methods are used, there should be at least a 10% probability that the actual quantities recovered will equal or exceed the 3P estimate.</p> <p>Possible Reserves may be assigned to areas of a reservoir adjacent to Probable where data control and interpretations of available data are progressively less certain. Frequently, this may be in areas where geoscience and engineering data are unable to clearly define the area and vertical reservoir limits of commercial production from the reservoir by a defined project.</p> <p>Possible estimates also include incremental quantities associated with project recovery efficiencies beyond that assumed for Probable.</p>
<b>Probable and Possible Reserves</b>	(See above for separate criteria for Probable Reserves and Possible Reserves.)	<p>The 2P and 3P estimates may be based on reasonable alternative technical and commercial interpretations within the reservoir and/or subject project that are clearly documented, including comparisons to results in successful similar projects.</p> <p>In conventional accumulations, Probable and/or Possible Reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from Proved areas by minor faulting or other geological discontinuities and have not been penetrated by a wellbore but are interpreted to be in communication with the known (Proved) reservoir. Probable or Possible Reserves may be assigned to areas that are structurally higher than the Proved area. Possible (and in some cases, Probable) Reserves may be assigned to areas that are structurally lower than the adjacent Proved or 2P area.</p> <p>Caution should be exercised in assigning Reserves to adjacent reservoirs isolated by major, potentially sealing, faults until this reservoir is penetrated and evaluated as commercially productive. Justification for assigning Reserves in such cases should be clearly documented. Reserves should not be assigned to areas that are clearly separated from a known accumulation by non-productive reservoir (i.e., absence of reservoir, structurally low reservoir, or negative test results); such areas may contain Prospective Resources.</p> <p>In conventional accumulations, where drilling has defined a highest known oil (HKO) elevation and there exists the potential for an associated gas cap, Proved oil Reserves should only be assigned in the structurally higher portions of the reservoir if there is reasonable certainty that such portions are initially above bubble point pressure based on documented engineering analyses. Reservoir portions that do not meet this certainty may be assigned as Probable and Possible oil and/or gas based on reservoir fluid properties and pressure gradient interpretations.</p>

The 2007 Petroleum Resources Management System can be viewed in its entirety at  
<http://www.spe.org/spe-app/spe/industry/reserves/prms.htm>.

## ABBREVIATIONS

°	degrees
API	American Petroleum Institute
BCF	billions of cubic feet
C <sub>2</sub>	ethane
C <sub>4</sub>	butane
Frendum	Frendum Investments Limited
IOER	Israel Opportunity-Energy Resources, LP
ISA	Israel Securities Authority
km	kilometers
Lapidoth	Lapidoth-Heletz Limited Partnership and Lapidoth Israel Oil Prospectors Corp. Ltd
m	meters
MMBBL	millions of barrels
Noble	Noble Energy, Inc.
NSAI	Netherland, Sewell & Associates, Inc.
OHIP	original hydrocarbons-in-place
P10	10 percent confidence level
P50	50 percent confidence level
P90	90 percent confidence level
Placida	Placida Investments Limited
PRMS	Petroleum Resources Management System
scf/bbl	standard cubic feet per barrel
SPE	Society of Petroleum Engineers
SPE Standards	Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the SPE
ST	sidetrack



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## TECHNICAL DISCUSSION

## **TECHNICAL DISCUSSION PROSPECTIVE RESOURCES OZ DRILLING LICENSE, OFFSHORE ISRAEL**

### **1.0 OVERVIEW**

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Netherland, Sewell & Associates, Inc. (NSAI) has estimated the unrisks gross (100 percent) prospective resources, as of February 1, 2014, for prospects located in the Oz Drilling License, offshore Israel. Prospective resources are those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. The prospective resources included in this report should not be construed as reserves or contingent resources; they represent exploration opportunities and quantify the development potential in the event a petroleum discovery is made. A geologic risk assessment was performed for these prospects. This report does not include economic analysis for these prospects. Based on analogous field developments, it appears that, assuming a discovery is made, the unrisks best estimate prospective resources in this report have a reasonable chance of being economically viable.

The estimates in this report have been prepared in accordance with the definitions and guidelines set forth in the 2007 Petroleum Resources Management System approved by the Society of Petroleum Engineers and in accordance with internationally recognized standards, as stipulated by the Israel Securities Authority.

### **2.0 HISTORY – OZ DRILLING LICENSE**

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The Oz Drilling License is located in the Levant Basin, offshore Israel, as shown on the location map in Figure 1. The eastern edge of the license is approximately 49 kilometers (km) west-northwest of Tel Aviv. The Oz Drilling License has an area of approximately 400 square km. Water depth is shallowest on the eastern side of the license at approximately 930 meters (m); it is deepest on the western side of the license at approximately 1,300 m. There are no well penetrations on the Oz Drilling License.

Three well penetrations occur to the north of the Oz Drilling License on the Myra and Sara Drilling Licenses. These wells appear to target the same Oligocene/Miocene sands that produce gas at Tamar Field located approximately 72 km to the northwest of the Oz Drilling License. The Myra 1 well, located about 31 km northwest of the Oz Drilling License, was drilled on the Jonah High. This well penetration was abandoned. The Myra 1 sidetrack (ST) was drilled as a sidetrack of the original hole to the east where it found wet Tamar-equivalent sands. The Sara 1 well, located about 22 km north of the Oz Drilling License, is also reported to have found Tamar-equivalent sands east of the Myra 1 ST well. The Oligocene/Miocene sands that produce gas at Tamar Field are a target for drilling on the Oz Drilling License.

The Hannah 1 well was drilled by Noble Energy, Inc. (Noble) in 2003 at a location approximately 6.5 km southeast of the Oz Drilling License. The well reached a total depth of 4,305 m in the Cretaceous Gevar Am Formation. Although the well encountered reservoir-quality sands and carbonates, an insufficient amount of hydrocarbons were detected, and the well was abandoned. The Hannah 1 well did find two sands with gross thicknesses of 7 m and 2 m in a canyon complex of Oligocene age. This canyon enters into a basinal setting on the southeast corner of the Oz Drilling License. It is thought that the presence of sand in the canyon shows that the canyon was an area of bypass and that thicker sands should be found in the basinal setting on the Oz Drilling License further to the west of the Hanna 1 well. This Intra-Oligocene section is a target for drilling on the Oz Drilling License.

The Leviathan Deep 1 well was drilled by Noble on the Rachel License, located 92 km to the northwest of the Oz Drilling License. There are indications that the deeper gas encountered by the well appears to have a thermogenic source, because the gas is heavier than what is found in the Tamar-equivalent sands. The Tamar-equivalent sands are thought to have a biogenic source, whereas the deeper prospective intervals of the Oz Drilling License are probably thermogenic and sourced from Senonian or Jurassic age rocks. This emphasizes the potential for an oil- or condensate-rich source in the Levant Basin. The Lower Cretaceous interval is another prospective zone on the Oz Drilling License and has been assessed to be oil.

The Oz Drilling License is covered by 3-D seismic data. The seismic survey covering the block was shot by Petroleum Geo-Services in 2012, and the pre-stack depth migration performed by ION Geophysical Corporation's GX Technology was delivered in August 2013.

## **3.0 GEOLOGY**

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### **3.1 REGIONAL OVERVIEW**

The Oz Drilling License is located in the Levant Basin of the eastern Mediterranean region. The eastern extent of the basin is marked by the Levant Transform Zone (Dead Sea Transform), the western edge of the basin is delineated by the Nile Delta Cone and the Eratosthenes Seamount, and the northern border is defined by the Taurus Fault Zone (Cyprian Arc). The basin has undergone at least three different episodes of structural deformation. The first phase of deformation started in the Late Paleozoic, with rifting creating a series of horst and graben structures that evolved in several pulses. The rifting was followed by post-rift cooling and subsidence of the basin. From the Middle Jurassic to Early Tertiary, the basin was a major depocenter for the area. Late Cretaceous convergence of the Eurasian and Afro-Arabian plates may have caused compression of the Levant Basin margin and triggered the formation of a fold belt known as the Syrian Arc in the northeast corner of the basin. Reactivation, in a reverse motion, of normal faults created during the rifting stage accentuated the anticlines created by the convergence and preexisting rift blocks.

Uplift to the east of the Levant Basin and to the south on the Arabian platform is evidenced by an Eocene-aged regional unconformity. This unconformity separates the older carbonate section from the overlying Oligocene/Miocene siliclastics and marks the onset of widespread erosion, canyon development, and basinward transport of sediments on the shelf and into older parts of the basin. The Oligocene/Miocene sediments are capped by a thick Late Miocene halite and anhydrite deposit formed during a major drop in sea level. This deposit is, in turn, covered by a Plio-Pleistocene fine-grained siliclastic wedge formed during gradual sea level rise.

### **3.2 STRATIGRAPHY**

Permo-Triassic rocks sit on crystalline basement in the nearshore Israel. These rocks probably thin toward the west such that Early Jurassic shallow marine carbonates are unconformably deposited on top of crystalline basement in the offshore, as shown on the stratigraphic column included as Figure 2. The Jurassic section is only partially penetrated in wells in offshore Israel. The oldest rock penetrated in offshore Israel is of Early Jurassic age in the Yam West 1 well, where the well penetrated several cycles of oolitic pelletal and intraclast grainstones and skeletal grainstones separated by thin shales. These carbonates are thought to be allochthonous deposits from the shelf edge to the east. The carbonates penetrated in the Yam 2 well are of the Zohar Formation and are younger than the basal carbonates in the Yam Yafo and Yam West wells. The Zohar Formation carbonates are thought to be Late Bathonian to Callovian in age and consist of oolitic, pelletal, intraclast, and skeletal grainstones, mudstones, and

packstones. Above the Callovian are Oxfordian-to-Kimmeridgian age rocks of the Delta Formation. The basal part of this section is a transgressive unit that marks the end of the Middle Jurassic carbonate platform. The Delta Formation is composed predominantly of claystone with some limestones, which are occasionally chalky, and dolomites. The Tithonian Yam Formation lies conformably above the Delta Formation. This unit, interpreted as slope and basin deposits, is composed of dark, laminated shale and siltstone generally barren of fauna.

Unconformably overlying the Yam Formation is the Gevar Am Formation of Early Cretaceous age. This formation is composed of marine shales with conglomerate and sandstone intercalations. The sandstone deposits are thought to represent channel levee and crevasse splay deposits of proximal slope fans, which were deposited during a relative sea level fall caused by tectonic uplift. Unconformably overlying the Gevar Am Formation is the Talme Yafe Formation, which is a deposit of carbonate debris marked by a coarse conglomerate at the base. The carbonate is thought to be from platform deposits on the shelf that were possibly deposited as debris flows during a pronounced drop in sea level.

The Late Cretaceous is represented by the Negba and Daliya Formations of the Judea Group and the Ein Zetim and Ghareb Formations of the Mount Scopus Group. The basal Negba and Daliya Formations are pelagic chalks thought to represent the drowning of the offshore area during an extensive sea level rise. These pelagic chalks are overlain by a series of chalky limestones, separated by shales, which were deposited during periods of sea level rise that persisted until Middle Miocene time. Above the Mount Scopus Group is the Avedat Group, which is composed of the Taqiye and Adulam Formations of Early to Middle Eocene age. The formations are composed of hemipelagic marls and shales.

During the late Middle Eocene to early Middle Miocene time, sea level dropped abruptly and erosion and canyon development was renewed and deepwater turbidites were deposited in the basin. These turbidites are a primary reservoir target because of the recent Dalit, Leviathan, and Tamar discoveries by Noble. This lowstand is the start of the Late Miocene Messinian salinity crisis in the Mediterranean area and is represented by the Lakhish Formation composed of thick, sandy turbidites in the deeper parts of the basin and a dark, grey-green, silty claystone overlying the turbidites and extending to the shore. The Messinian Mavqim Formation was deposited unconformably above the Lakhish Formation and is a thick evaporitic series found throughout much of the Mediterranean area. The Mavqim Formation is composed of halite and anhydrite. It is thought that the Mediterranean area was isolated from the Atlantic Ocean because the sea level curves of the Mediterranean depart from the worldwide sea level curves. The waters in the isolated Mediterranean slowly evaporated, leaving the salts in the large topographic low of the greater Mediterranean Basin.

Sea levels in the Mediterranean again rose during the Pliocene because the feature that was isolating the area was breached, and marine waters again filled the basin. This resulted in the deposition of hemipelagic clays and marls of the Plio-Pleistocene Yafo Formation. The base of the Yafo Formation is marked by a highly condensed hemipelagic marl of the initial transgression. Another drop in sea level led to the deposition of potentially gas-bearing turbidite sands as seen in the Mari, Nir, and Noa Discoveries. Sea levels again rose, and hemipelagic deposition resumed. As the rate of sedimentation increased, progradation of highstand deposits occurred. In some areas, this resulted in over 1,000 m of sediment thickness of the Yafo Formation. The Pleshet Formation lies conformably above the Yafo Formation. The Pleshet Formation is a sequence of clays, sands, silts, and marls of Pleistocene age.

### 3.3 STRUCTURE AND HYDROCARBON MIGRATION

Structural trap formation in the Levant Basin occurred during the Late Cretaceous compressional event with inversion of previous structural lows into structural highs. This folding event is called Syrian Arc I and has created large anticlinal features in pre-Plio-Pleistocene sediments. A second tectonic event occurred during Middle to Late Miocene time with broad folding outboard of the Syrian Arc I folds. This event is

called Syrian Arc II. Large faults that extend down to basement serve as conduits for the migration of hydrocarbon into these features. There is some seismic evidence that the compressional event has relaxed during Plio-Pleistocene to Recent times, which may suggest a chance for remigration of hydrocarbons from deeper to shallower traps.

### 3.4 SOURCE EVALUATION

To date, the only commercial discoveries in the Levant Basin have been gas, and no liquids associated with these discoveries have been reported. These gas deposits are thought to be biogenic in origin. However, oil has been found in three wells (Delta 1/1A, Yam 2, and Yam Yafo 1) drilled in the offshore area, and numerous seafloor seeps are documented in the eastern Mediterranean. Senonian age source rocks are thought to be in the prime oil generation window now, but only gas shows with minor levels of ethane (C<sub>2</sub>) to butane (C<sub>4</sub>) have been observed in offshore wells from the Cretaceous section. In the deepest part of the basin, Jurassic and Senonian age source rocks are thought to be in the early gas window at this time, and the oil found in the wells mentioned above is very light oil with gravities of 44° to 46° API reported. A 2011 assessment of undiscovered oil and gas resources of the Levant Basin, published by the United States Geological Survey, reports that there is potential to discover a mean estimate of 1.7 billion barrels of oil (10.2 trillion cubic feet of gas equivalent) and 122 trillion cubic feet of gas. Thus the basin appears to be predominantly a gas play with a slight chance for finding oil.

### 4.0 DATA AND METHODOLOGY

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Data for the resources evaluation were transferred to NSAI from Lapidoth-Heletz Limited Partnership, Tel Aviv, Israel. Included in the data transfer were (1) digital log data for the Hannah 1 well; (2) a Kingdom project with 2-D and 3-D seismic data, well data, horizon and fault interpretations, and time, amplitude, and depth structure maps; and (3) a report titled "3D Seismic Interpretation and Prospectivity Evaluation of the Oz License, offshore Israel" by RPS Energy of the United Kingdom.

For this resources evaluation, three reservoirs have been evaluated for the Oz Drilling License: the Oligocene/Miocene, the Intra-Oligocene, and the Lower Cretaceous. There are five prospects, which are illustrated on the map in Figure 3. A single well could penetrate three of the prospective intervals in a structurally advantageous position; the two other prospects would have to be drilled as single objective wells.

For the low estimate case, gross rock volume was determined for the area with a minimum of structural complexity or faulting. For the high estimate case, gross rock volume was determined for the area 100 m above the spill point of the structure.

Petrophysical evaluation was performed using digital log curves for the Hanna 1 well, and ranges for reservoir parameters such as porosity, net-to-gross ratio, and water saturation were determined. The Hannah 1 well did not have a complete suite of log curves across the entire logged interval, and it also lacked a photoelectric curve, which makes lithology determination using log porosity data alone difficult. Shale volumes were predicted using a linear gamma ray conversion when the gamma ray log was available. Total porosity was calculated predominantly from sonic log measurements or, where available, from bulk density or density/neutron measurements. Water saturation calculations were performed using two models, the standard Archie model and the Simandoux shaly sand model. A formation water resistivity of 0.04 ohm-meters was calculated from Pickett plot analysis.

To determine net reservoir intervals the following criteria were used: shale volume less than 50 percent and porosity greater than 8 percent. Gross interval thicknesses were determined for those intervals that calculated net reservoir. Net-to-gross values were calculated by dividing the net reservoir interval

thickness by the gross interval thicknesses. Average zone porosity was determined for each interval, and a range of water saturation was assumed by analogy from wells within the Levant Basin with shows. Ranges for porosity and net-to-gross ratios were then determined for input into the Monte Carlo simulation.

## **5.0 RESERVOIR PARAMETERS**

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Reservoir parameters used to estimate resources were based on available data for the Oz Drilling License and our experience with similar depositional environments. Bottomhole pressure and temperature data were based on a regional geothermal gradient map and formation pressure test data. Values were estimated for each prospect based on estimated depths to formation. Fluid properties were based on black oil and Z-factor correlations using estimated input values for pressure, temperature, oil/condensate and gas gravity, and total gas-oil ratio or yield. Primary recovery factors associated with original hydrocarbons-in-place (OHIP) were estimated based on anticipated fluid type, expected drive mechanism, depositional environment, and analogy to fields under similar development and operational conditions.

For each prospect, probabilistic ranges for porosity, hydrocarbon saturation, and recovery factor of OHIP were estimated for input into the Monte Carlo simulation. The Monte Carlo input parameters are shown in Figure 4.

## FIGURES



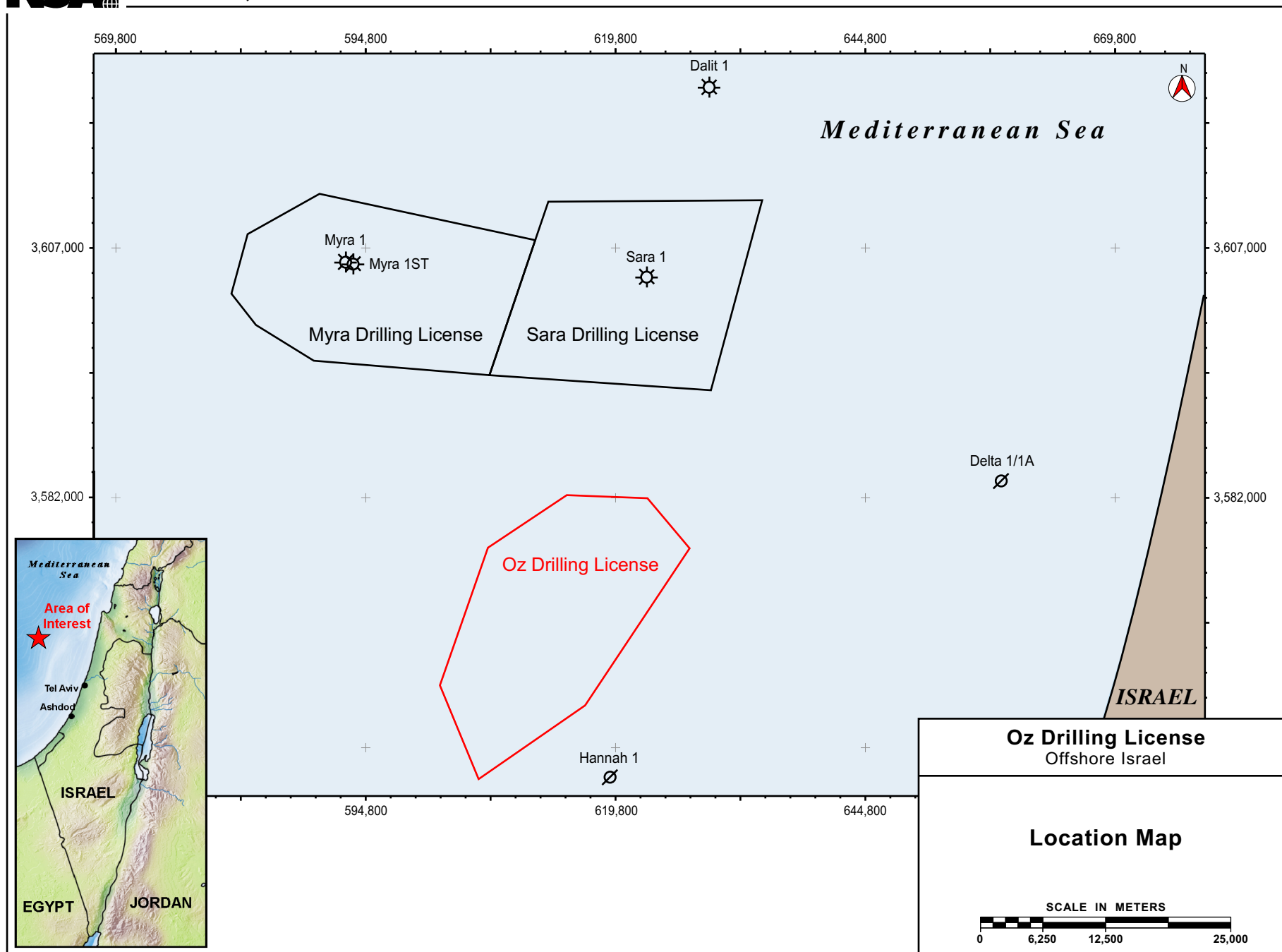


Figure 1

All estimates and exhibits herein are part of this NSAI report and are subject to its parameters and conditions.

Stratigraphic Column  
Levant Basin  
Offshore Israel

Chronostratigraphy			Group	Formation
				Sea Bed
QUATERNARY	PLEISTOCENE		KURKAR	Pleshet
TERTIARY	PLIO-PLEISTOCENE		SAQIYE	Yafo
	LATE MIOCENE	Messinian	SAQIYE	Mavqim
	L. M. MIO. P. M. Olig. E. M. MIO. E. M. EOC.	Tortonian	AVEDAT	Lakhish
				Adulam
CRETACEOUS	PALEO.		MOUNT SCOPUS	Jaqive
				Ghareb
	LATE SENONIAN	Maast.	MOUNT SCOPUS	Ein Zetim
		Maast. - Con.		
	EARLY	Tur. Cen.	JUDEA	Daliya
				Negba
		Albian	KURNUB	Talme Yafe
		Aptian		
		Barremian		
		Hauterivian		Gevat Am
		Val.		
		Berr.		
JURASSIC	LATE	Tithonian	ARAD	Yam
		Kimmeridgian-Oxfordian		Delta
	MID.	Bathonian		Zohar
PERMO-TRIASSIC	?	?	?	?
PRE-C				Crystalline Basement

Adapted from a figure in "East Mediterranean - Well Data Report", Spectrum Energy and Technology Limited, 2001, p. 53.

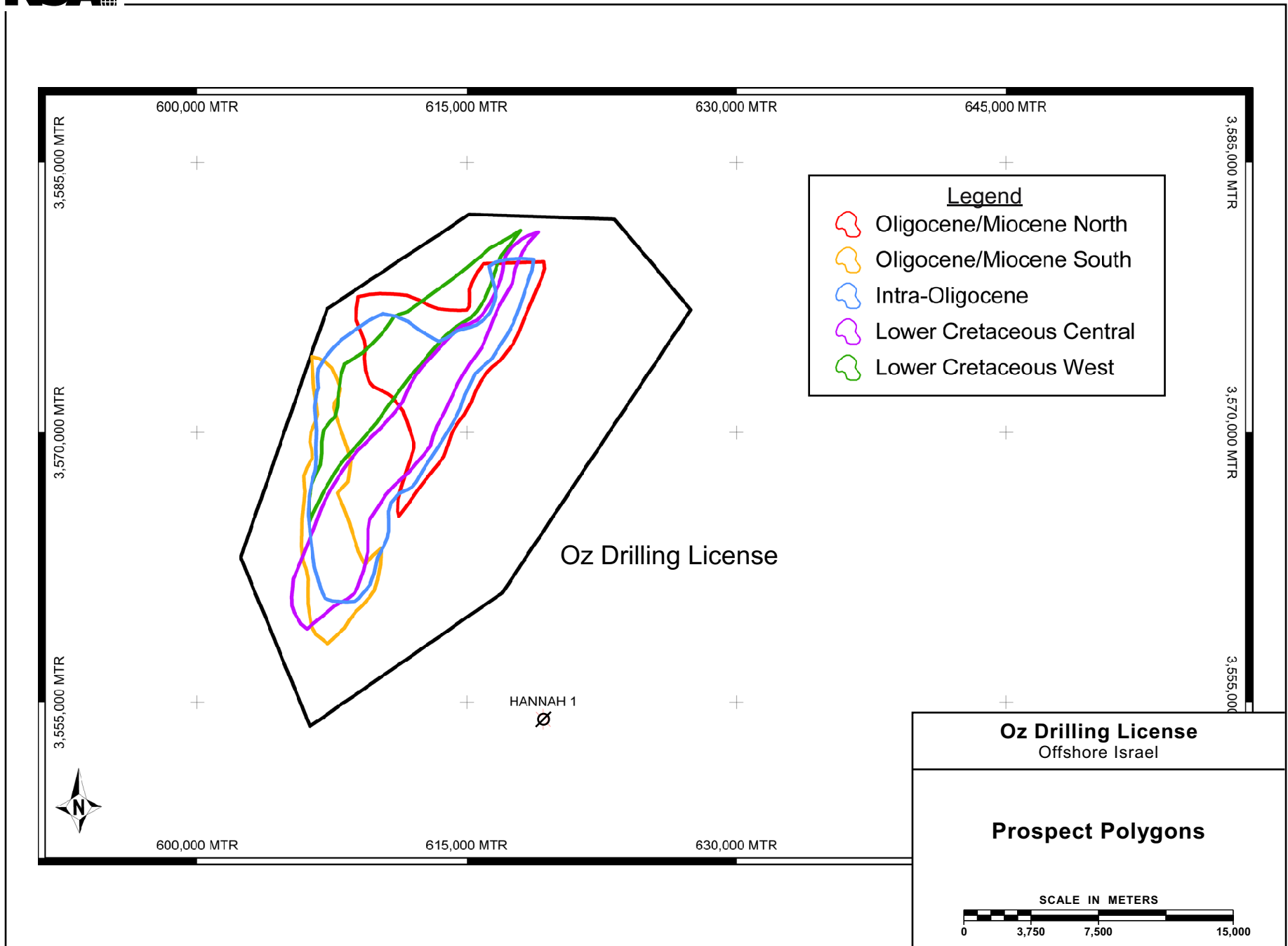


Figure 3

All estimates and exhibits herein are part of this NSAI report and are subject to its parameters and conditions.

MONTE CARLO INPUT DISTRIBUTION SUMMARY  
PROSPECTIVE RESOURCES  
OZ DRILLING LICENSE, OFFSHORE ISRAEL  
AS OF FEBRUARY 1, 2014

Prospect	Measured Depth (Feet)	Gross Rock Volume (Acre-feet)		Net-to-Gross Ratio (Decimal)		Porosity (Decimal)	
		Lognormal Distribution		Normal Distribution		Normal Distribution	
		Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Oligocene/Miocene North	9,187	812,526	4,270,244	0.40	0.60	0.16	0.27
Oligocene/Miocene South	10,007	399,857	1,575,689	0.40	0.60	0.16	0.27
Intra-Oligocene	11,418	731,560	12,060,682	0.20	0.60	0.12	0.27
Lower Cretaceous Central	14,765	849,874	7,786,900	0.20	0.80	0.12	0.24
Lower Cretaceous West	16,569	380,255	2,869,320	0.20	0.80	0.12	0.24

Drilling License/ Reservoir	Primary Hydrocarbon Type	Hydrocarbon Saturation (Decimal)		Recovery Factor (Decimal)	
		Normal Distribution		Normal Distribution	
		Low Estimate	High Estimate	Low Estimate	High Estimate
Oligocene/Miocene North	Gas	0.50	0.80	0.55	0.75
Oligocene/Miocene South	Gas	0.50	0.80	0.55	0.75
Intra-Oligocene	Gas	0.50	0.80	0.55	0.75
Lower Cretaceous Central	Oil	0.50	0.80	0.15	0.40
Lower Cretaceous West	Oil	0.50	0.80	0.15	0.40

Note: For the purposes of this report, we used technical data including, but not limited to, offset well logs, geologic maps, and seismic data.