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**APPENDIX 2.4:**

**NOTES OF INFORMATION-SHARING MEETING**

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## RHINO OIL AND GAS EXPLORATION SOUTH AFRICA (PTY) LTD

### APPLICATION FOR EXPLORATION RIGHTS TO UNDERTAKE OIL AND GAS EXPLORATION ACTIVITIES IN TWO EXPLORATION LICENCE AREAS OFF THE SOUTH-WEST COAST OF SOUTH AFRICA

NOTES OF INFORMATION-SHARING MEETING HELD ON 20 AUGUST 2015, 17H30,  
AT THE TWO OCEANS AQUARIUM, CAPE TOWN

No.	Item
<b>1.</b>	<b>WELCOME AND INTRODUCTIONS</b>
1.1	Jeremy Blood (JB) of CCA Environmental (CCA) opened the meeting and introduced himself and the project team, including Jonathan Crowther (JC) and Nicholas Arnott of CCA and Phillip Steyn (PS) of Rhino Oil and Gas Exploration South Africa (Pty) Ltd (Rhino).
1.2	JB explained that the main purpose of the meeting was to present information on the two projects proposed by Rhino, located inshore and offshore of the South-West Coast of South Africa. JB indicated that CCA has been appointed by Rhino to undertake a Scoping and Environmental Impact Assessment (S&EIA) process for both projects.
<b>2.</b>	<b>PRESENTATION</b>
2.1	JB explained that the objectives of the meeting were to provide an opportunity for interested and affected parties (I&APs) to be involved in the projects, provide a description of the proposed exploration activities and S&EIA processes, detail the legislative processes that Rhino is required to comply with, ensure that all potential key environmental issues and impacts are identified, and to identify any potential environmental issues and impacts requiring further investigation.
2.2	PS of Rhino provided an overview of the projects covering the location of both licence areas, a brief overview of the oil and gas exploration activities which have been undertaken in South Africa to date and a description of the proposed exploration activities which include multi-beam bathymetry and seismic surveys (refer to Appendix B).
2.3	JB then presented an overview of the impact assessment process for both projects covering the legislative requirements, impact assessment focus areas and identified specialist studies that will be undertaken. He also presented an overview of the public participation process that will be followed for the S&EIA process for each project (refer to Appendix B).
<b>3.</b>	<b>DISCUSSION</b>
3.1	<p>Johan Augustyn (JA) of the South African Deep Sea Trawling Industry Association (SADSTIA) noted that the area between Cape Point and Saldanha Bay is an area of high fishing activity for the trawl and pelagic fisheries. JA asked if the proposed exploration activities would avoid periods of high fishing activity for these fisheries.</p> <p><i>JB noted that Capricorn Marine Environmental (Pty) Ltd (CapMarine) will be appointed to assess the potential impact of the exclusion zones around the survey vessels on the fisheries operating in the area. This assessment will identify periods of high activity and may recommend that the surveys avoid these periods. It will, however, be necessary to consider other important periods (e.g. key cetacean migration and breeding periods). The S&amp;EIA will need to weigh up all sensitive periods.</i></p>

No.	Item
	Shaheen Moolla (SM) of Feike Natural Resource Management Advisors emphasised that combined value of the trawl and pelagic fisheries make up a significant proportion of the Western Cape fisheries GDP and create 22 000 direct jobs. In addition there are numerous smaller companies which are dependent on these industries.
3.2	<p>JA asked whether Rhino would be prepared to collaborate with DAFF to undertake surveys before and after the proposed seismic surveys.</p> <p><i>JB noted that this would need to be discussed directly with Rhino.</i></p>
3.3	<p>JA noted that as CCA has undertaken a number of S&amp;EIAs for seismic surveys in the past, SADSTIA may request that an independent review of the Fisheries Assessment be undertaken.</p> <p><i>JC noted that independent reviews of S&amp;EIAs can occur and are not uncommon. For example, in the case where a financing institution (World Bank or International Monetary Fund) is funding the proposed project it is a requirement that the S&amp;EIA is independently reviewed. The possibility of obtaining an independent review of the S&amp;EIAs would need to be discussed with Rhino.</i></p>
3.4	<p>SM stated that the Background Information Document (BID) and presentation focussed on the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act 28 of 2002) and Chapter 5 of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998). He indicated that there was no mention of the National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act No. 57 of 2003) and the fact that recent amendments thereto prohibit exploration activities within Marine Protected Areas.</p> <p><i>JB indicated that the BID and presentation only highlighted key legislation which governs the EIA process being followed for the proposed projects. An outline of other legislation which needs to be considered for the proposed projects will be provided in the Scoping Report.</i></p>
3.5	<p>SM stated that in the inshore areas there are also high levels of shark-cage diving and whale watching activities. He noted that the proposed exploration activities can have possible impacts on these activities as well.</p> <p><i>JB stated that the potential impacts on tourism / recreational activities within the inshore exploration licence area will be assessed as part of the S&amp;EIA process.</i></p>
3.6	<p>Belinda Williams (BW) of the South African Oil &amp; Gas Alliance indicated that this was not the first time that seismic activities have been undertaken offshore and that these issues should be taken into consideration and been resolved in previous EIA processes.</p> <p><i>JB acknowledged that there have been several EIAs undertaken for seismic surveys in the past, however these were not necessarily as close to shore as proposed for the inshore exploration licence area.</i></p>
3.7	<p>BW asked whether there is a record of the previous seismic surveys and related impacts on fishing industry?</p> <p><i>JC noted that there is a record of seismic surveys undertaken previously, most recently by Anardarko undertaken approximately 3 years ago.</i></p>
3.8	<p>Rob Landman (RL) from Irvin and Johnson stated that a lot of seismic data has been collected previously and asked whether or not there is enough existing data to determine if there is oil and gas present in the proposed inshore and offshore exploration licence areas.</p> <p><i>PS noted that the older seismic data available is not as detailed as the information which can be obtained using current technologies. Furthermore, different geologists have different interpretations of the data obtained. From the review of the existing data, Rhino believe that undertaking new surveys within the proposed exploration licence areas will provide a better understanding of the seabed geology.</i></p>

No.	Item
3.9	<p>RL asked whether the data obtained from the proposed surveys will be publically available?</p> <p><i>JB noted that the Petroleum Agency of South Africa (PASA) will take ownership of the data collected within the exploration licence areas. He also indicated that PASA would provide available data to a new applicant for an Exploration Right in a particular exploration licence area.</i></p>
3.10	<p>RL asked whether the proposed project entails any drilling of exploration wells.</p> <p><i>JB indicated that the proposed project only includes multi-beam bathymetry and seismic surveys. Should the interpretation of the collected data be favourable, there is a possibility that Rhino could explore undertaking well-drilling at a later stage. However, any future well-drilling activities would require Environmental Authorisation and be subject to a separate S&amp;EIA process.</i></p>
3.11	<p>RL asked how oil and gas would be transported to land in the event that exploration and subsequent well-drilling is successful.</p> <p><i>JB noted that it would be premature to speculate how the oil and gas would be transported to shore. It would be dependent on the nature of the resource found (gas or oil) within the exploration licence area and associated financial implications of the preferred method. JB noted that both a pipeline or FPSO facility were possibilities.</i></p>
3.12	<p>RL queried whether the fisheries specialist assessment would quantify the economic impact of the possible decreased fishing effort and / or loss of catch as a result of the proposed projects.</p> <p><i>JB noted that the specialist study would look at all active fisheries within the exploration licence areas and consider the area of overlap with the exclusion zone and fishing grounds and would determine the associated percentage loss of effort and catch.</i></p> <p><i>Sarah Wilkinson (SW) of CapMarine indicated that an economic impact assessment could be done at a later stage should the fisheries assessment show that there would be significant impacts on fisheries as a result of the proposed exploration activities. However, the current assessment will focus on the overall impact on fisheries related to the percentage effort and catch within the survey area.</i></p>
3.13	<p>SM noted that although the exclusion zone is small (500 m) it could result in a significant period of fishing time being lost to an individual vessel. This could potentially be a significant impact for a mid-sized trawl company. SM indicated that the specialist assessment should consider the economic impact.</p> <p><i>JB stated that the proposed survey activities would not sterilise the whole exploration licence area. Only a portion of the area would be excluded at any one time over the survey period of 15 to 20 days. He noted that there were only a few survey lines and once a line had been surveyed, the area would be available to fishing again.</i></p>
3.14	<p>JA noted that for some fisheries, there are limited periods of time where the fisheries are active. These limited opportunities are likely to coincide with the timing for the proposed surveys. The specialist assessment must consider the pulse-nature of the fishing industry.</p>
3.15	<p>SM stated that the theoretical study does not consider real impacts on fisheries. He noted that last year no anchovies were caught and that the catch this season would make-up for the lost effort from last year. Such possible impacts on a seasonal basis should be taken into consideration into account by the study.</p>

No.	Item
3.16	<p>SM asked whether the time frames for the surveys are known.</p> <p><i>JB stated that the surveys would take approximately 15 - 20 days in the summer of 2017.</i></p> <p><i>JC noted that there are several other factors which would also influence the timing of the proposed seismic surveys, in addition to periods of high fishing activity, including availability of survey vessels, suitable weather and migration patterns of cetaceans.</i></p> <p><i>SW noted that the specialist investigation would recommend which months to avoid from a fisheries point of view.</i></p>
3.17	<p>RL asked if the fisheries specialist assessment does find a correlation between fishing and the flight response of fish from seismic surveys, would the economic impact be quantified?</p> <p><i>JB indicated that the start and end dates of previous seismic surveys are known. He stated that it may be possible to consider the average catch over these periods and see if there if any correlation could be drawn when considering past catches and previous seismic surveys. He also noted that there are many other variables that can influence total fishing catch (e.g. water temperatures, food availability, possible over-fishing) which would not be able to be considered in such an assessment.</i></p> <p><i>SW noted that a literature review will be included as part of the specialist study which will consider the findings from other studies on the impacts of seismic surveys on fisheries undertaken in other parts of the world. However, the results from these studies are not conclusive.</i></p> <p><i>JC noted that the terms of reference for the proposed specialist studies would be included in the Scoping Report which would be made available to I&amp;APs for comment.</i></p>
<b>5.</b>	<b><u>CLOSURE</u></b>
5.1	JB thanked everyone for attending and formally closed the meeting at approximately 19h00.

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**ATTACHMENT A**

**LIST OF ATTENDEES AND SIGNED ATTENDANCE REGISTER**

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## LIST OF ATTENDEES AS PER ATTENDANCE REGISTER

<b>NAME</b>	<b>ORGANISATION</b>	<b>ABBR.</b>
Johan Augustyn	The South African Deep Sea Trawling Industry Association	JA
Craig Butcher	Transnet National Ports Authority	CB
Belinda Willims	South African Oil & Gas Alliance	BW
Sihle Magubane	PWC	SM
Ulrike Finckh	PWC	UF
Sarah Wilkinson	CapMarine	SW
Paul Lowe	Cape Boat and Ski Boat Club	PL
Shaheen Moolla	Feike	SM
Rob Landman	Irvin and Johnson	RL
Jonathan Crowther	CCA Environmental	JC
Jeremy Blood	CCA Environmental	JB
Nicholas Arnott	CCA Environmental	NA

RHINO OIL AND GAS EXPLORATION SOUTH AFRICA (PTY) LTD

SCOPING AND EIA FOR PROPOSED EXPLORATION FOR OIL AND GAS IN  
TWO EXPLORATION LICENCE AREAS OFF THE SOUTH-WEST COAST OF SOUTH AFRICA

PUBLIC INFORMATION-SHARING MEETING / OPENBARE INLIGTINGSVERGADERING: TWO OCEANS AQUARIUM: 20 AUGUST 2015, 17H30

ATTENDANCE REGISTER / BYWONINGSREGISTER

PLEASE WRITE CLEARLY / SKRYF ASSEBLIEF DUIDELIK

NAME / NAAM	ORGANISATION / ORGANISASIE	FULL POSTAL ADDRESS / VOLLE POSADRES	TEL & FAX / TEL & FAKS	E-MAIL / E-POS
Craig Butcher	Tanore International Porto Authority	TNPA HOUSE South Arm Road POCT	0314494077 0832941800	Craig.Butcher @transnet.net
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Beninda	SAGOFA	CONVENTION TOWER	0824215111	williams@sagofa.org.za
Phillip	Reber		0820907429	phillip@reber.co.za
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Ulukete Fikah	TT	"	"	ulrike.fikah@ za.pwc.com

SCOPING AND EIA FOR PROPOSED EXPLORATION FOR OIL AND GAS IN  
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NAME / NAAM	ORGANISATION / ORGANISASIE	FULL POSTAL ADDRESS / VOLLE POSADRES	TEL & FAX / TEL & FAKS	E-MAIL / E-POS
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Nicholas Amott	CCA	Unit 39 Roeland Square CAPE TOWN	021 461 1118 021 461 1120	Nicholas@caenironmental. co.za
Sarah Wilkinson	CCMTRWJE			Sarah@capfish.co.za
Paul Wade	CAPE BAIT #SKE BAIT CLUB	4 OYSTER CLOVE KEMPTENHUIS STRAIT	082 452 2083	paul@oyster@oysterclub. co.za
Jonathan Coentjes	CCA	Unit 39 Roeland Sq. CAPE TOWN	021 461-1118	Jonathan@caenironmental. co.za
Shahen Moolla	Ferike	4 Hiddingh Ave Newlands	082 443 2110	Smoolla@ferike.co.za
Rob Landman	IAS	1 Santa Aron Rd. V/A WATERFRONT	021 402 9723	Rob.Landman@ias.co.za



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**ATTACHMENT B**

**PRESENTATION**

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## SCOPING AND EIA FOR PROPOSED EXPLORATION ACTIVITIES IN TWO EXPLORATION LICENCE AREAS OFF THE SOUTH-WEST COAST OF SOUTH AFRICA

### Information-Sharing Meeting

Cape Town  
20 August 2015



## AGENDA

1. Introduction and Objectives of the Meeting (CCA)
2. Presentations
  - Project Overview (RHINO)
  - Scoping and EIA Overview (CCA)
3. Question and Answer Session (All)
4. Way Forward and Closure (CCA)

## MEETING PROCEDURES

- Please turn off cell phones
- Points of clarity only during presentations
- Please identify yourself and which organisation you represent (if applicable)
- Notes are being taken
- Please sign the Attendance Register



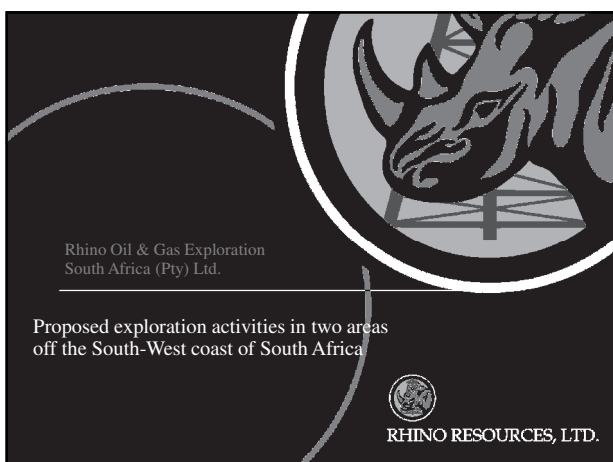
## GENERAL INTRODUCTION



1. Rhino Oil and Gas Exploration South Africa (Pty) Ltd ("Rhino") lodged separate applications for Exploration Rights for two areas in April 2015:
  - Inshore exploration licence area: various inshore blocks adjacent to the coast roughly between Saldanha Bay and Cape Agulhas
  - Offshore exploration licence area: Licence Blocks 3617 & 3717 approximately 190 km off the coast
2. Rhino is required to comply with the requirements of the MPRDA (No. 28 of 2002) and NEMA (No. 107 of 1998)
3. CCA has been appointed by Rhino to undertake the required S&EIA processes for the proposed exploration activities

## OBJECTIVES OF MEETING

1. Provide a description of the proposed exploration activities
2. Inform I&APs about the legislative processes that Rhino is required to comply with
3. Provide I&APs with a reasonable opportunity to be involved in the S&EIA processes
4. Ensure that all potential key environmental issues and impacts are identified
5. Identify any potential environmental issues and impacts requiring further investigation



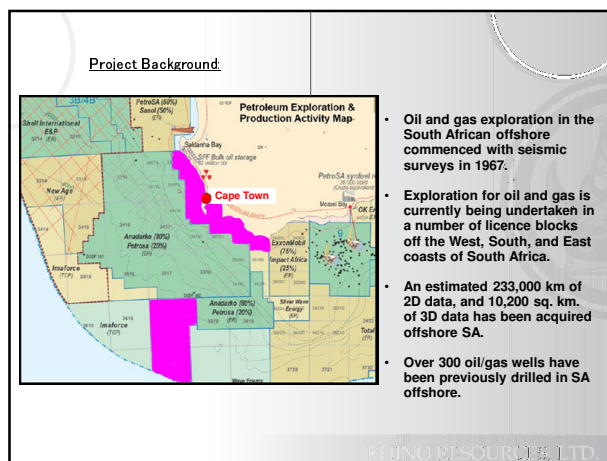
**South Africa Shallow and Deep Offshore Exploration Projects**

Contents:

1. Company Background
2. Project Background
3. Multi-beam bathymetry surveys
4. 2D / 3D Seismic Surveys

Company Background:

- **Rhino Resources Ltd** is an independent oil and gas exploration and development company focused on Africa.
- **Rhino Resources Ltd** has a portfolio oil & gas assets with a primary focus on West Africa, East Africa, and Southern Africa.
- **Rhino Resources Ltd's** goal is to develop the natural resources of Africa and provide enhanced prosperity for our host countries and local communities.
- **Rhino Resources Ltd** operates as Rhino Oil and Gas Exploration South Africa (Pty) Ltd.



Project Background:

- In 2014/2015 Rhino conducted a Technical Study to assess petroleum potential of the Shallow and Deep Offshore Basins
- This study used existing data available from PASA and public sources (seismic surveys and data from existing exploration wells). The study indicated there may be a possibility to discover oil or gas reservoirs in this area.
- Rhino subsequently applied for Exploration Rights over the two areas which covers a total of approximately 28,000 sq. km. A technical geological and geophysical work programme is planned over a three year period.
- Rhino may also apply for a Reconnaissance Permit on neighbouring blocks to tie in existing seismic lines. This would be undertaken as a separate process.

Seismic Surveys:

- Seismic surveys are proven technology that help make offshore energy development more efficient. [DB11](#)
- Governments and the private sector have used this method of exploration in the U.S. and around the world for over 50 years.
- In addition to the oil and natural gas industry, seismic surveys are commonly used by the U.S. Geological Survey, the National Science Foundation, and the offshore wind industry.

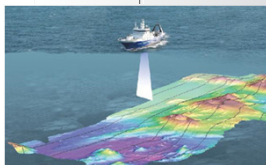


**Seismic Surveys:**

- Scientists analyse the collected data and use it to create maps of geological structures that could contain hydrocarbon resources beneath the ocean floor.
- Survey operations are normally conducted at a speed of approximately 4.5 to 5 knots (~5.5 mph), with the sound source typically activated at 10-15 second intervals. As a result, the sound is of short duration in any one location.

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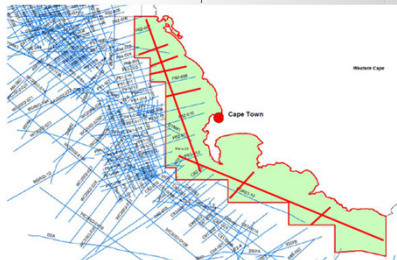
**Multi-Beam Bathymetry:**



- Multi-beam bathymetry survey is conducted at the same time the 2D seismic program is conducted. Its just another instrument that is used on the acquisition vessel to acquire detailed depth readings.

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**Seismic Surveys – Shallow Water Block:**

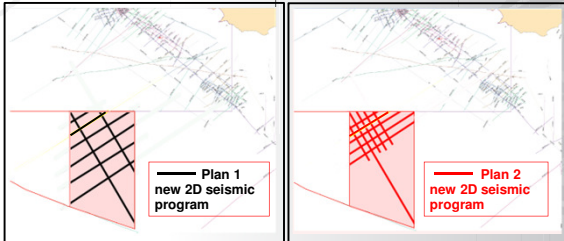


— Existing multi-beam bathymetry and seismic survey lines in the inshore exploration licence area

— Planned new 2D seismic programme

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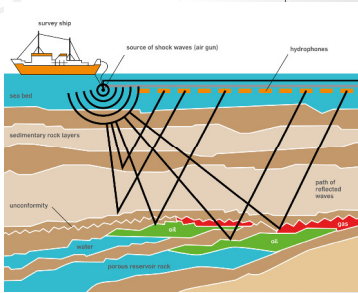
**Two Possible Plans for 2D Seismic Surveys – Deep Water Block:**



- Two Alternative Seismic Programme Plans for the multi-beam bathymetry and 2D seismic survey lines in the offshore exploration licence area.

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**2D Seismic Surveys:**



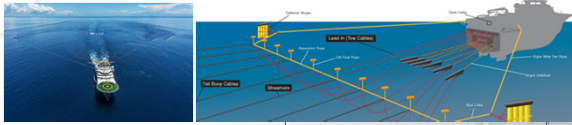
- Seismic surveys are carried out to search for reserves of oil and gas in the subsea rock formations.
- Seismic survey vessels tow streamers which carry receivers that are suspended below the surface of the water.
- Sound waves are transmitted from the vessel using compressed air guns.
- These sound waves travel down through the seabed and reflect back from the different layers of rock (at different time intervals).
- These reflected sound waves are recorded by the receivers in the towed streamer.

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- No airgun shooting would be undertaken within 10 km of the coast or in any Marine Protected Area and National Parks.
- The vessel would need to sail within 6 km of the coast and Park for the purpose of turning the vessel.
- The streamer is typically between 6,000 to 10,000 meters long.
- At the end of each streamer is a tail buoy carrying radar reflector and flashing lights. The vessel needs to be on a straight line whilst surveying.
- 2D seismic surveys are typically comprised of a series of lines on a regular grid with lines being 10 to 40 km apart.
- The seismic vessel is typically accompanied by a "Chase Boat" which assists in notifying other vessels of the seismic operation and maintaining statutory 500 m safety zones and safe operational limits.


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**3D Seismic Surveys:**

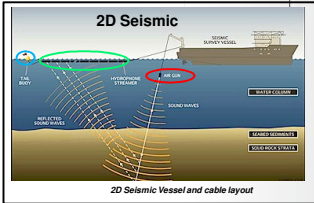


- After data analysis, further possible target areas may be identified for the offshore exploration licence area for 3D seismic surveying.
- A 2D survey typically involves a single streamer, whereas 3D surveys use multiple streamers (up to 12 streamers spaced 100 m apart). The array can be up to 12 000 m long. The streamer/s would be towed at a depth of between 6 m and 30 m and would not be visible, except for the tail-buoy at the far end of the cable.

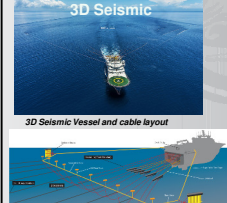
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**2D Seismic**



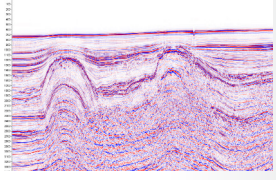
**3D Seismic**



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**Seismic Surveys: Representation Data Examples**

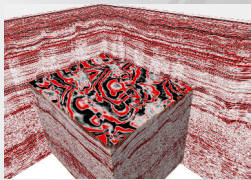
**2D Seismic**



2D Seismic sample line (Source: spectrumgeo.com)

**Provides only a single two-dimensional cross section image of the subsurface of the earth.**

**3D Seismic**



3D Seismic sample (Source: spectrumgeo.com)

**Provides a full three-dimensional image of the subsurface of the earth.**

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THANK YOU

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## SCOPING AND EIA OVERVIEW

1. Legislative requirements
2. S&EIA process
3. Impact assessment focus areas
4. Specialist studies

## LEGISLATIVE REQUIREMENTS



Mineral & Petroleum Resources Development Act, 2002 (MPRDA):

- Application for an Exploration Right
- A requirement for obtaining an Exploration Right is compliance with Chapter 5 of NEMA
- Rhino lodged separate applications to PASA in April 2015. Applications were accepted on 22 May 2015

## LEGISLATIVE REQUIREMENTS (cont.)

National Environmental Management Act, 1998:

- NEMA provides for the control of certain listed activities, which are prohibited until Environmental Authorisation is obtained
- EIA Regulations 2014 requires that a S&EIA process be undertaken for an application for an Exploration Right
- CCA has been appointed to undertake the S&EIA process

## SCOPING & EIA (S&EIA) PROCESS

1. Scoping Phase
  - Ensure all potential key environmental issues are identified
  - Ensure any environmental issues that require further investigation are identified
  - Define the Terms of Reference for the specialist studies
2. EIA Phase
  - Specialist studies
  - Impact Assessment Report and EMP

## SCOPING PHASE

### Pre-Application:

1. First round of public consultation:
  - Identify key stakeholders and I&APs
  - Authority meetings with PASA
  - Adverts placed in Cape Times, Die Burger, Hermanus Times, Suidernuus and Weslander
  - BID distributed for a 30-day comment period (**closes 7 Sep**)
  - Information-sharing meeting in Cape Town

## SCOPING PHASE (cont.)

### Application and Scoping:



2. Compile Application Form and Scoping Report
3. Submit Application Form to PASA (Sep 2015)
4. Second round of public consultation (Sep - Oct 2015):
  - Release Scoping Report for a **30-day** comment period
  - Written notification (incl. Exec Summ) to registered I&APs
5. Submit revised Scoping Report to PASA for acceptance (43 days)

## EIA PHASE

1. Compile specialist studies and EIR
2. Third round of public consultation (Jan 2016):
  - Distribute reports for 30-day comment
  - Written notification (incl. Exec Summ) to registered I&APs
3. Submit revised EIR to PASA
4. PASA decision period (107 days)
5. Distribute decision and statutory appeal period

## IMPACT ASSESSMENT FOCUS AREAS

Key focus areas that will be addressed include:

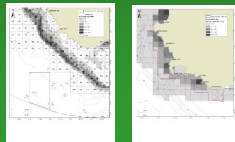
1. Noise effects on marine fauna, in particular fish and cetaceans
2. Effects on the fishing industry, including effects on fish behaviour and temporary loss of access to fishing grounds
3. Temporary interference with marine traffic
4. Impact on tourism and recreation as a result of noise effects and presence of survey vessels
5. Waste discharges to sea from normal operations

## SPECIALIST STUDIES

### 1. Marine Fauna Assessment



### 2. Fishing Industry Assessment



## PROPOSED EXPLORATION ACTIVITIES IN TWO EXPLORATION LICENCE AREAS OFF THE SOUTH-WEST COAST OF SOUTH AFRICA

QUESTION AND ANSWER SESSION