Competent Persons Report for Certain Assets in Offshore Guyana

Date of this Report: March 15, 2019

Prepared for:

ECO (Atlantic) Oil & Gas Ltd

Prepared By:

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1. EXECUTIVE SUMMARY

The report addresses the ECO (Atlantic) Oil and Gas Ltd ("ECO Atlantic", "ECO", "The Company") exploratory oil and gas assets in offshore Guyana. The assets owned by ECO Atlantic are summarized in Table 1-1. This report covers only the assets on the Orinduik Block offshore Guyana and does not cover the Company's assets in Namibia.

Table 1-1 Summary of Assets owned by ECO (Atlantic) Oil and Gas Ltd

Asset	Operator	Working Interest (%)	Status	Expiry Date	License Area (km2)[1]	Water Depth, meters
Orinduik Block	Tullow	15.0	Exploration	January 2026	1,800	70 to 1,450

This report is an update to the report dated September 11, 2018 and reflects a change in Working Interest and additional Leads. Based on probabilistic estimates, the Gross (100%) and Net (15%) Unrisked Prospective Resources for the Orinduik Block of Guyana in millions of barrels of oil equivalent ($MMBOE_6$) are listed below in Table 1-2. This is based on a 6:1 gas to oil equivalency. The Gross Unrisked Prospective Resources are presented in Table 1-3 and the Net Unrisked Prospective Resources for the Orinduik Block of Guyana are listed in Table 1-4 below.

Table 1-2 Gross and Net Barrels of Oil Equivalent Unrisked Prospective Resources

	Gross Prospective Oil Equivalent Resources, $MMBOE_6$			**Net Prospective Oil Equivalent Resources, $MMBOE_6$**		
Orinduik Block	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate
TOTAL	2,015.8	3,981.9	7,215.0	302.4	597.3	1,082.3

[1] Approximate

Table 1-3 Gross Unrisked Prospective Resource Estimates for Orinduik Block

	Oil in Place, MMBbl			Prospective Oil Resources, MMBbl			Prospective Associated Gas Resources, BCF		
	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate
Orinduik Block	6,720.2	12,978.3	22,928.7	1,782.3	3,508.1	6,326.9	1,401.2	2,842.6	5,328.9
TOTAL	6,720.2	12,978.3	22,928.7	1,782.3	3,508.1	6,326.9	1,401.2	2,842.6	5,328.9

(MMBbl = million barrels of oil; BCF = billion cubic feet)

Table 1-4 Net Unrisked Prospective Resource Estimates for Orinduik Block and Risk %

	Oil in Place, MMBbl			Prospective Oil Resources, MMBbl			Prospective Associated Gas Resources, BCF			Risk*
	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate	**POS Range, %**
Orinduik Block	1,008.0	1,946.7	3,439.3	267.3	526.2	949.0	210.2	426.4	799.3	16.8 – 81.0
TOTAL	1,008.0	1,946.7	3,439.3	267.3	526.2	949.0	210.2	426.4	799.3	

(MMBbl = million barrels of oil; BCF = billion cubic feet)
* - Risk for each Lead and Prospect is detailed on page 23

Note that these estimates do not include consideration for the risk of failure in exploring for these resources. Prospective Resources are defined as "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." [2] There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources. The Low Estimate represents the P_{90} values from the probabilistic analysis (in other words, the value is greater than or equal to the P_{90} value 90% of the time), while the Best Estimate represents the P_{50} and the High Estimate represents the P_{10}. The totals given are simple arithmetic summations of values and are not themselves P_{90}, P_{50}, or P_{10} probabilistic values.

[2] Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition,* Volume 1, September 1, 2007, pg 5-7.

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2. INTRODUCTION

2.1 AUTHORIZATION

Gustavson Associates LLC (the Consultant) has been retained by ECO (Atlantic) Oil and Gas Ltd ("ECO Atlantic", "ECO", "The Company", "The Client") to prepare a Competent Persons Report for them prepared in accordance with the AIM Note for Mining and Oil and Gas Companies. This report covers only the assets on the Orinduik Block offshore Guyana and does not cover the Company's assets in Namibia.

2.2 INTENDED PURPOSE AND USERS OF REPORT

The purpose of this Report is to update the Client's Prospective Resources on their assets in Guyana based on new and additional data analysis and future operations.

2.3 OWNER CONTACT AND PROPERTY INSPECTION

This Consultant has had frequent contact with the Client. This Consultant has not personally inspected the subject property.

2.4 SCOPE OF WORK

This report is intended to describe and quantify the Prospective Resources contained within the Orinduik Block in the offshore of Guyana that is subject to a petroleum license agreement with the government of Guyana.

2.5 APPLICABLE STANDARDS

This report has been prepared in accordance with Canadian National Instrument 51-101 and the AIM rules for Companies, which includes specifically the Note for Mining and Oil and Gas Companies. The National Instrument requires disclosure of specific information concerning prospects, as are provided in this Report. The Prospective Resources on the areas in Guyana have been estimated in accordance with the Petroleum Resources Management System 2007, as set out in Appendix A.

2.6 ASSUMPTIONS AND LIMITING CONDITIONS

The accuracy of any estimate is a function of available time, data and of geological, engineering, and commercial interpretation and judgment. While the interpretation and estimates presented herein are believed to be reasonable, they should be viewed with the understanding that additional analysis or new data may justify their revision. Gustavson Associates reserves the right to revise its opinions, if new information is deemed sufficiently credible to do so.

2.7 INDEPENDENCE/DISCLAIMER OF INTEREST

Gustavson Associates LLC has acted independently in the preparation of this Report. The company and its employees have no direct or indirect ownership in the property appraised or the area of study described. Mr. Kevin Weller is signing off on this Report, which has been prepared by him as a Qualified Reserves Evaluator, with the assistance of others on Gustavson's staff. Our fee for this Report and the other services that may be provided is not dependent on the amount of resources estimated.

3. DISCLOSURES REGARDING ASSETS

3.1 LOCATION AND BASIN NAME: GUYANA

The Guyana-Suriname Basin is located in the northeastern offshore of South America off the countries of Venezuela, Guyana, Suriname and French Guiana (Figure 3-1). The Orinduik Block is located offshore of the country of Guyana in the Guyana-Suriname Basin (Figure 3-2).

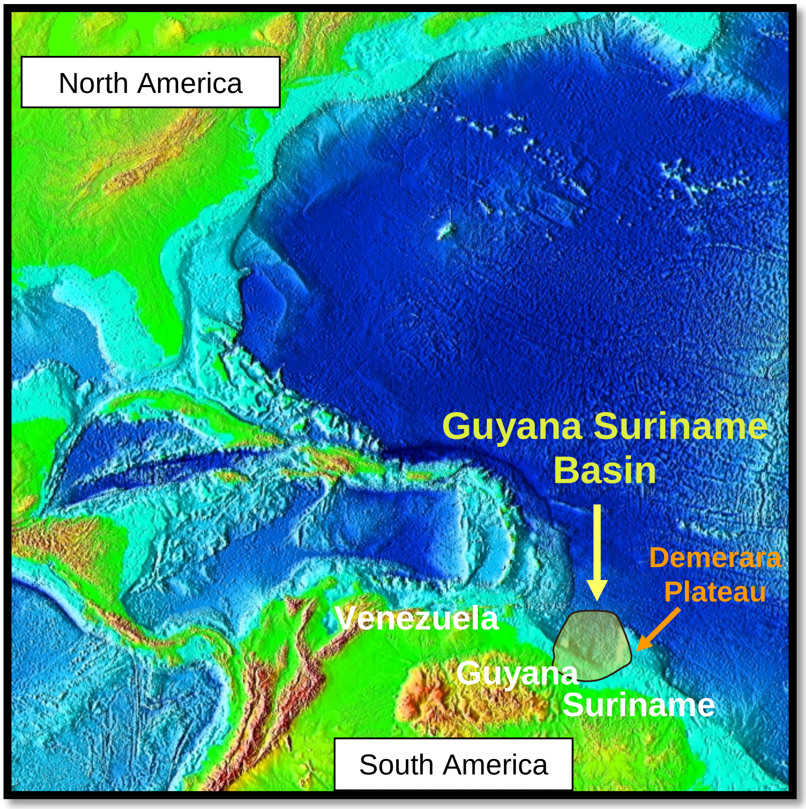


Figure 3-1 Location map of the Guyana Suriname Basin

The Guyana-Suriname Basin had been a lightly explored basin with eleven wells drilled between 1967 and 2000. Three additional wells were drilled between mid-2000 and 2012 but in 2015, activity increased dramatically with the Liza oil and gas discovery by ExxonMobil in the Stabroek Block, which is adjacent to the Orinduik Block. As of the date of this report, ExxonMobil has discovered 12 accumulations of oil and gas including the Hammerhead that is located seven kilometers east of the Orinduik block. The potential for large conventional accumulations in stratigraphic and subtle structural traps in this area has been proven with recent drilling with an estimated 5.5 Billion Barrels in the Stabroek Block. The basin is characterized by moderate to high-risk, high-reward exploration potential in a low-risk, favorable political and economic environment.

3.1.1 Gross and Net Interest in the Property

The Orinduik Block license area is 1,800 square kilometers (444,789 acres) where ECO Guyana Inc., after buying out the minority interest partners, had a 40.0% net working interest (WI) (Figure 3-2). Since the last report dated 11 September 2018, ECO has sold a 25.0% Working Interest to Total E&P Activités Pétrolières SA (Total) a subsidiary of Total Petroleum for US$ 12.5MM to reduce the ECO interest to 15.0%. Tullow Oil Plc (Tullow) is the designated Operator holding the remaining WI and has carried ECO Guyana Inc. for a portion of the initial exploration program work commitment. ECO Guyana Inc. is owned 100.0% by ECO (Guyana) Barbados Ltd. who in turn is wholly owned by ECO (Atlantic) Oil and Gas Ltd.

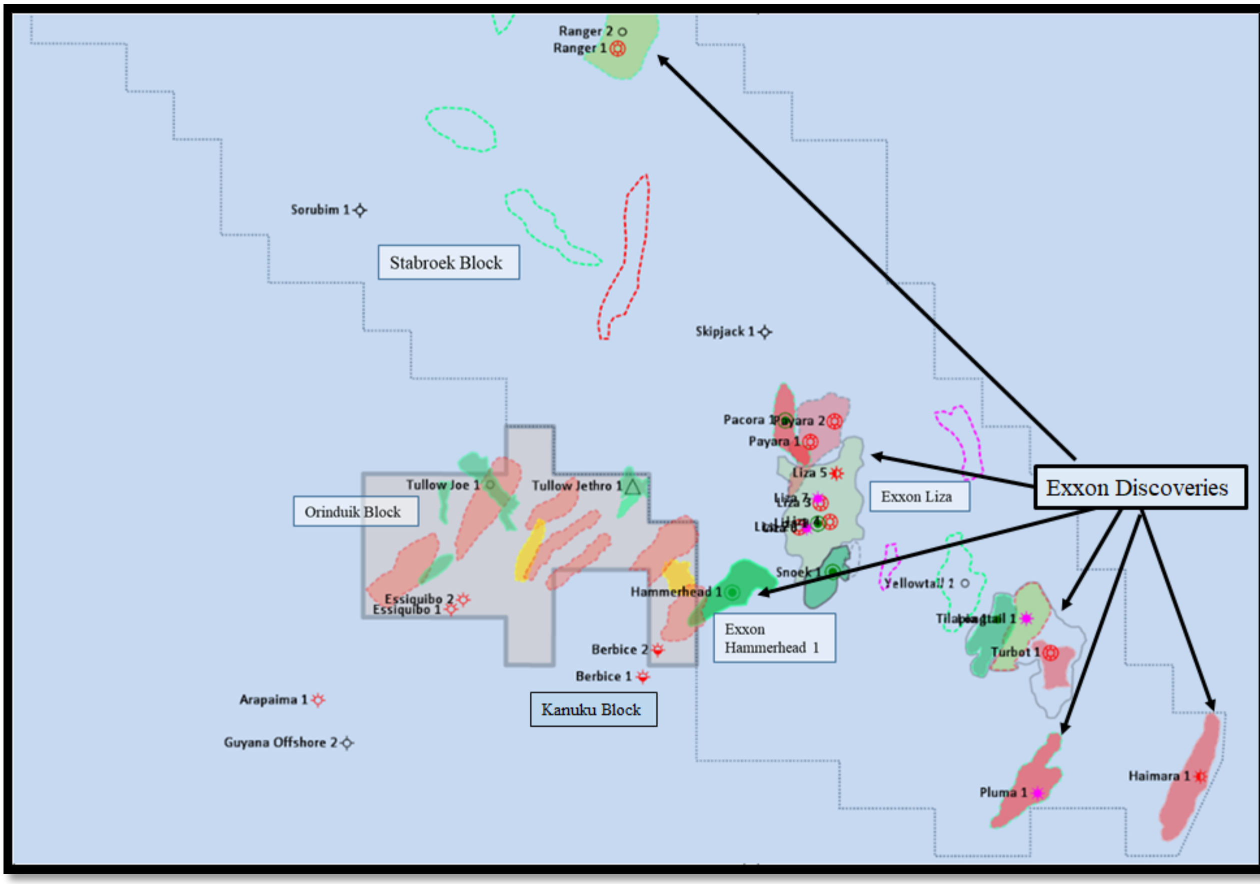


Figure 3-2 Index map of Offshore Guyana Orinduik Block

3.1.2 Expiry Date of Interest

The license was awarded in January 2016 for an initial term of four years in which the work obligations were to review the existing 2D seismic data and by the end of the fourth year acquire and process a 3D seismic survey over the area of interest. The partners, to date, have fulfilled these obligations and have interpreted a 3D seismic survey that covers the majority of the Block. The seismic interpretation work is ongoing at this time. The initial term can be extended for six additional years and by year nine a well would need to be drilled on the Block. The current plan by the partners includes the drilling of two wells by the third quarter of 2019.

3.1.3 Range of Water Depths

The Orinduik Block has water depths ranging from less than 300 meters to the southwest to 1,450 meters to the northeast. (Figure 3-3) The majority of the block is in water depths of less than 500 meters.

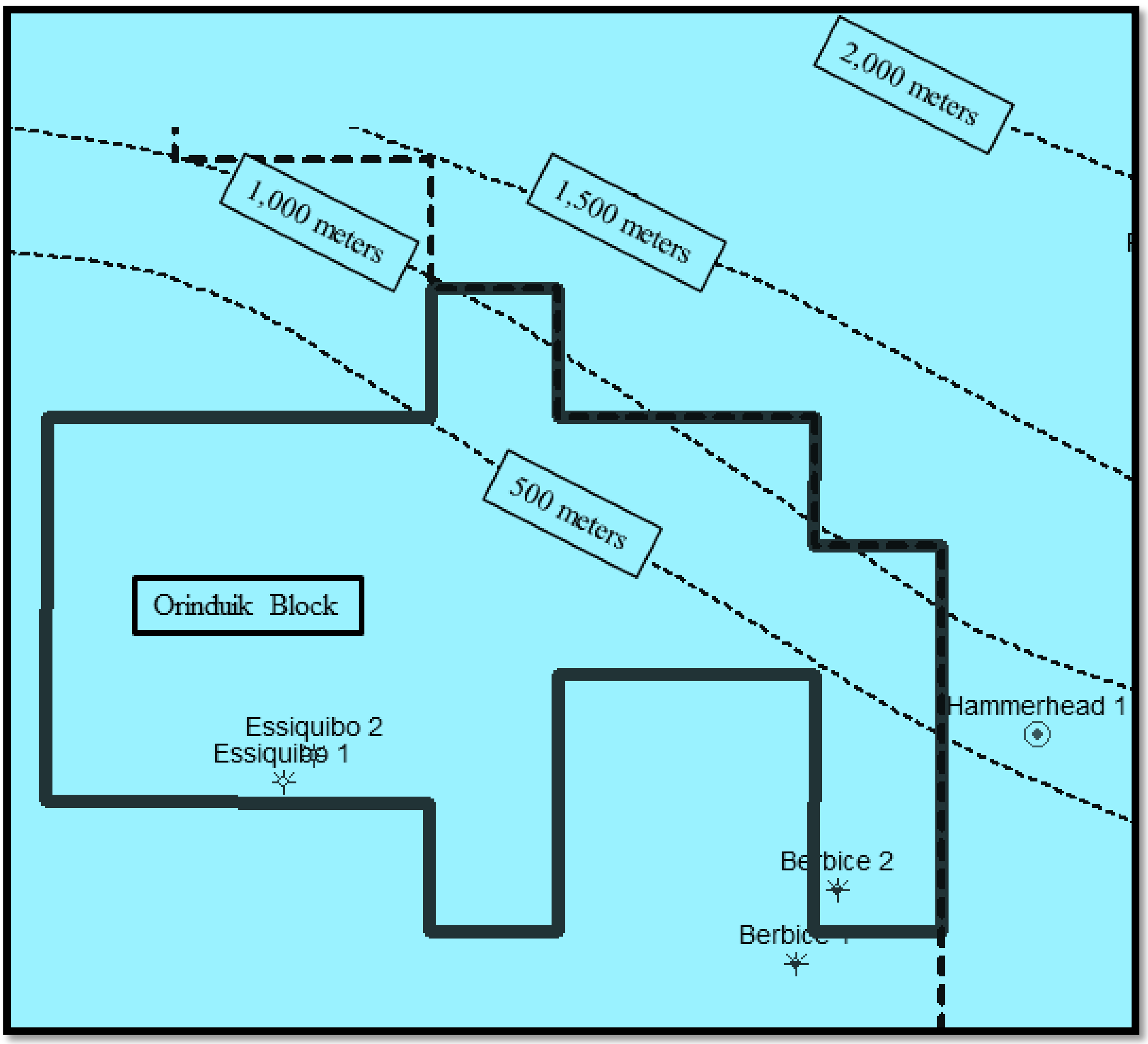


Figure 3-3 Bathymetry Map

3.1.4 Description of Target Zones

The Guyana-Suriname Basin is a passive margin basin resulting from the Jurassic aged rifting apart of Africa and South America followed by Cretaceous time drifting of the continents to form the Atlantic Ocean. The basin has received clastic deposits in shelf, slope, and basin depositional environments during the Cretaceous to Recent times. The Guyana basin has more than 7,000 meters of sedimentary fill in certain areas.

The target reservoir rocks for the Orinduik Block are sandstones deposited as shelf margin, slope and basin turbidite fans as well as carbonates in the form of reefs and shallow water limestones. These rocks are of Cretaceous and younger age and are expected to be similar to the Cretaceous and Tertiary age reservoirs discovered on the neighboring Stabroek Block by ExxonMobil at Liza, Liza Deep, Payara, Pecora, Ranger, Tilapia, Haimara, Hammerhead, Pluma, Snoek, Longtail and Turbot. These sandstones and limestones are interbedded and capped with shales and marls, which provide seals to these reservoir units. A schematic section from Tullow (Figure 3-4) depicts an interpretation that shows the relationship of the Exxon Liza discovery projected into a section line that goes through the updip Amatuk lead evaluated by the partners on 2D data and confirmed on the 3D seismic data. Figure 3-5 shows the location of the Hammerhead Tertiary discovery and the updip portion on the Orinduik block as well as the leads and prospects addressed in this report on the Orinduik Block.

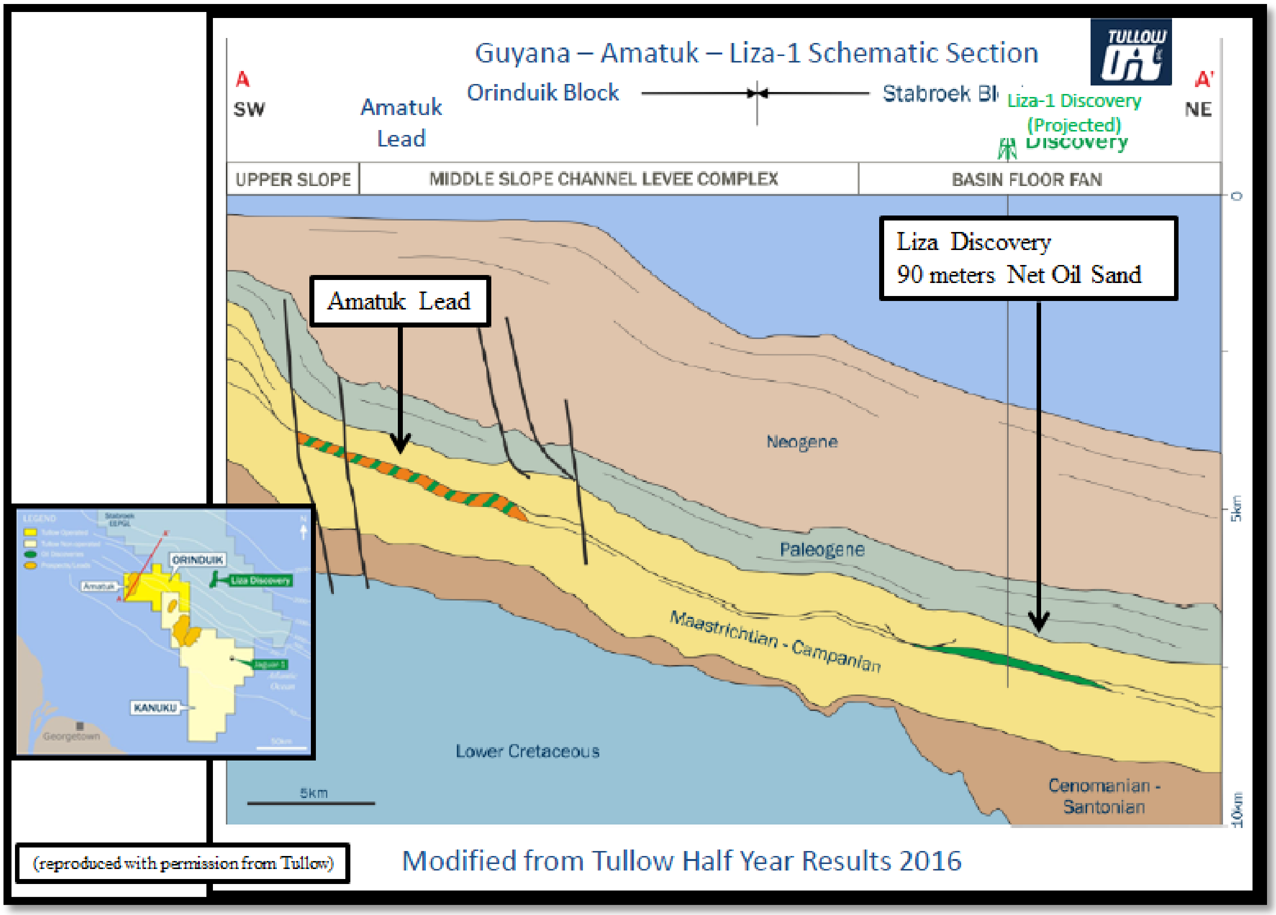


Figure 3-4 Schematic Section from Tullow (courtesy of Tullow Oil Plc)

The Upper Cretaceous section includes Slope Channel Complex deposits, which are dependent on stratigraphic pinchouts as well as well-developed basin floor fan deposystems. Additional targets are characterized as terraced slopes where sand has 'pooled' in a flat spot or a gradient change along the slope. (Figure 3-6) The Liza sand fan complex analog has been identified as being specifically Maastrichtian in age in the Late Cretaceous. The Hammerhead discovery less than 7 kilometers east of the Orinduik Block boundary has proven that the Tertiary section has commercial accumulations of hydrocarbons in stratigraphic sand traps. This analog has been evaluated by ECO and the partners and as a result Tertiary drilling targets including the Jethro prospect has been refined and will be tested in mid-June of this year. An additional drilling target is currently being discussed for the third quarter of 2019. Figure 3-7 shows the relative positions of the various Orinduik, Stabroek and Kanuku Block leads, prospects, and discoveries.

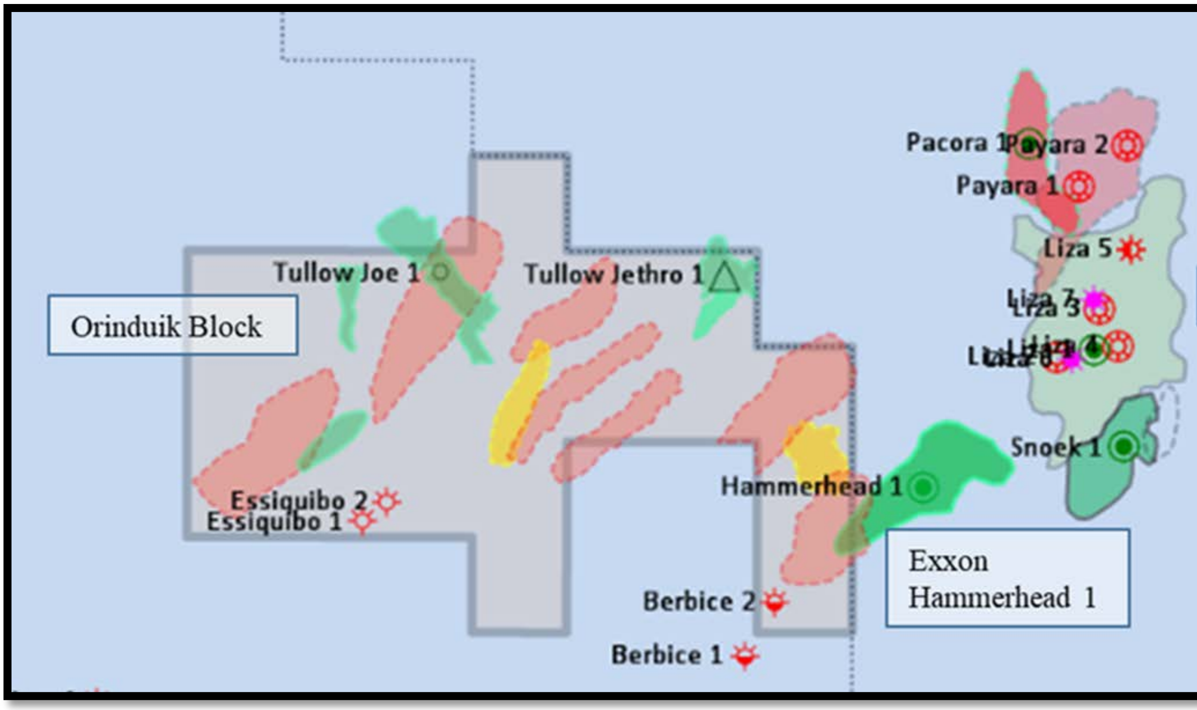


Figure 3-5 Orinduik Leads and Exxon Discoveries Index Map

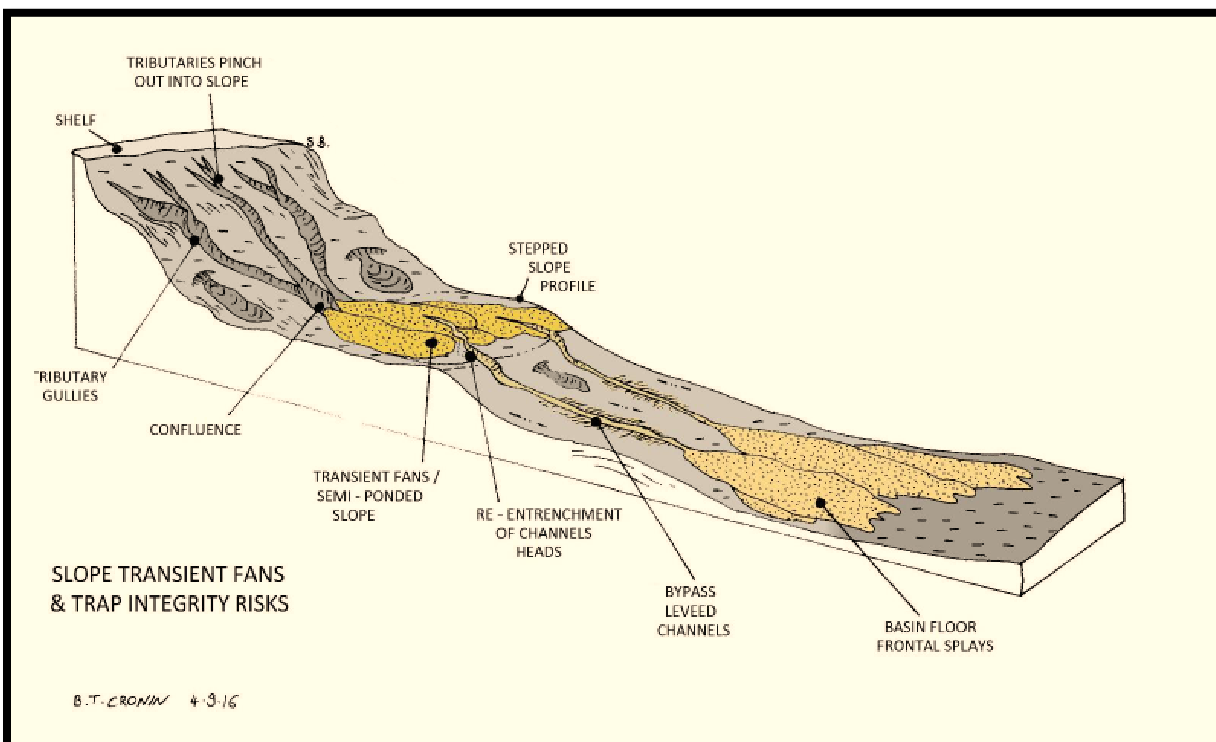


Figure 3-6 Diagram of Terraced or Stepped Slope Sand Accumulations

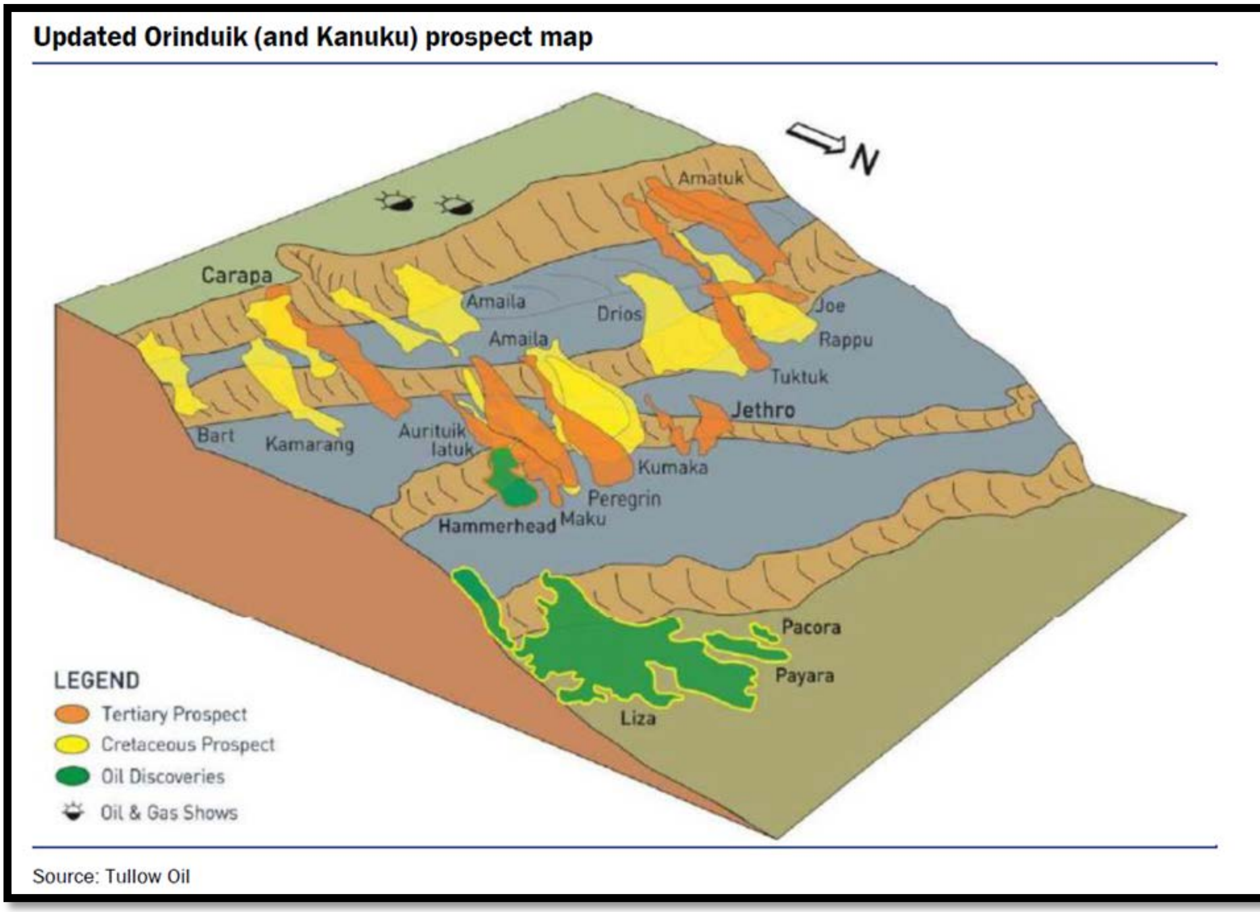


Figure 3-7 Relative Positions of the Orinduik, Stabroek and Kanuku Block Leads and Discoveries

The merged PSTM 3D volume was conditioned and processed by the InsightEarth® software and the Instantaneous Amplitude of the Cretaceous erosional surface was extracted and rendered in Figure 3-8 below. Several of the leads can be seen as amplitudes on this surface as well as the feeder canyon for the Jethro Prospect.

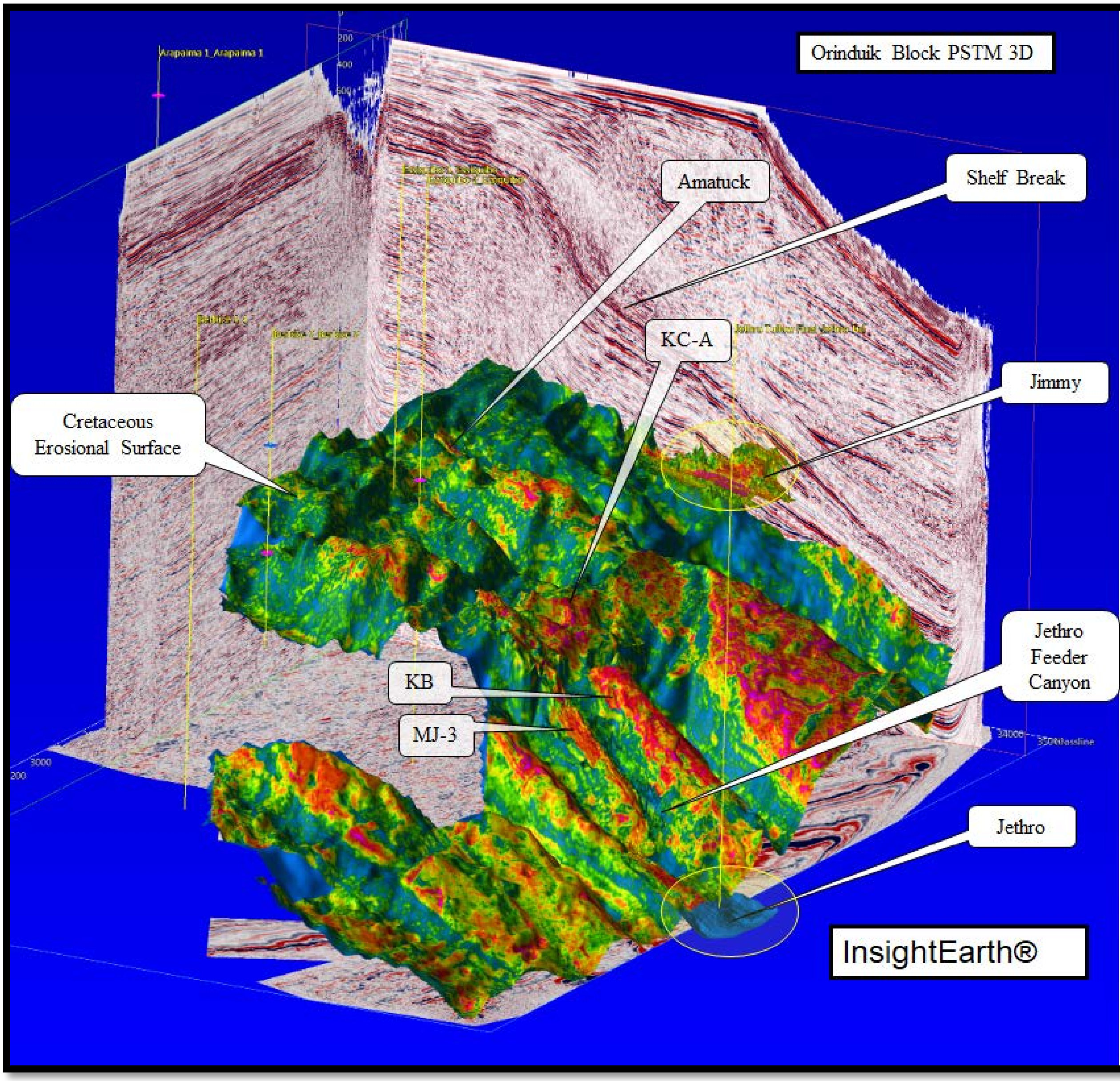


Figure 3-8 Instantaneous Amplitude of the Cretaceous Erosional Surface and Leads

3.1.5 Distance to Nearest Commercial Production

The nearest current hydrocarbon production is located to the southeast, onshore in Suriname in the Tambaredjo field and the adjacent Calcutta field just to the west. The Tambaredjo, Tambaredjo Northwest and Calcutta fields that are located onshore in Suriname are currently producing 16,000 BOPD from an estimated STOIIP of 1 billion barrels.[3] These fields are more than 300 kilometers

[3] http://opportunities.staatsolie.com/en/geology-of-the-guyana-suriname-basin

southeast of the prospective area. Venezuela has reported numerous, recent, offshore gas discoveries ranging in size from 0.5 to 7.0 trillion cubic feet, which are in the process of undergoing commercial development.

The discovery by ExxonMobil of Liza, Payara, Pecora, Ranger, Snoek, Longtail, Pluma, Haimara, Hammerhead and Turbot which are just to the east and north of the Orinduik Block is reportedly significant with more than 5.5 Billion barrels of recoverable oil equivalent resources contained in thick oil bearing Upper Cretaceous and Tertiary sandstone and limestone reservoirs. The map below (Figure 3-9) shows the location of each field discovered on the Stabroek Block at the time of this report. The recent Hammerhead discovery, which is less than 7 kilometers away from the Orinduik Block boundary, found a significant oil sand in the Tertiary aged section. The Liza Phase 1 development, sanctioned June 2017, is progressing rapidly, laying the foundation for first production in early 2020. Liza Phase 1 will consist of 17 wells connected to a floating production, storage and offloading (FPSO) vessel designed to produce up to 120,000 barrels of oil per day. The second phase of the Liza development will utilize a second FPSO with gross production capacity of approximately 220,000 barrels of oil per day, with start-up expected by mid-2022. Planning is underway for a third phase of development, which is targeted to be sanctioned in 2019 and will use an FPSO designed to produce approximately 180,000 barrels of oil per day, with first production as early as 2023. Up to five production units are expected to be on line by 2025 with production of 750,000 barrels of oil per day anticipated.

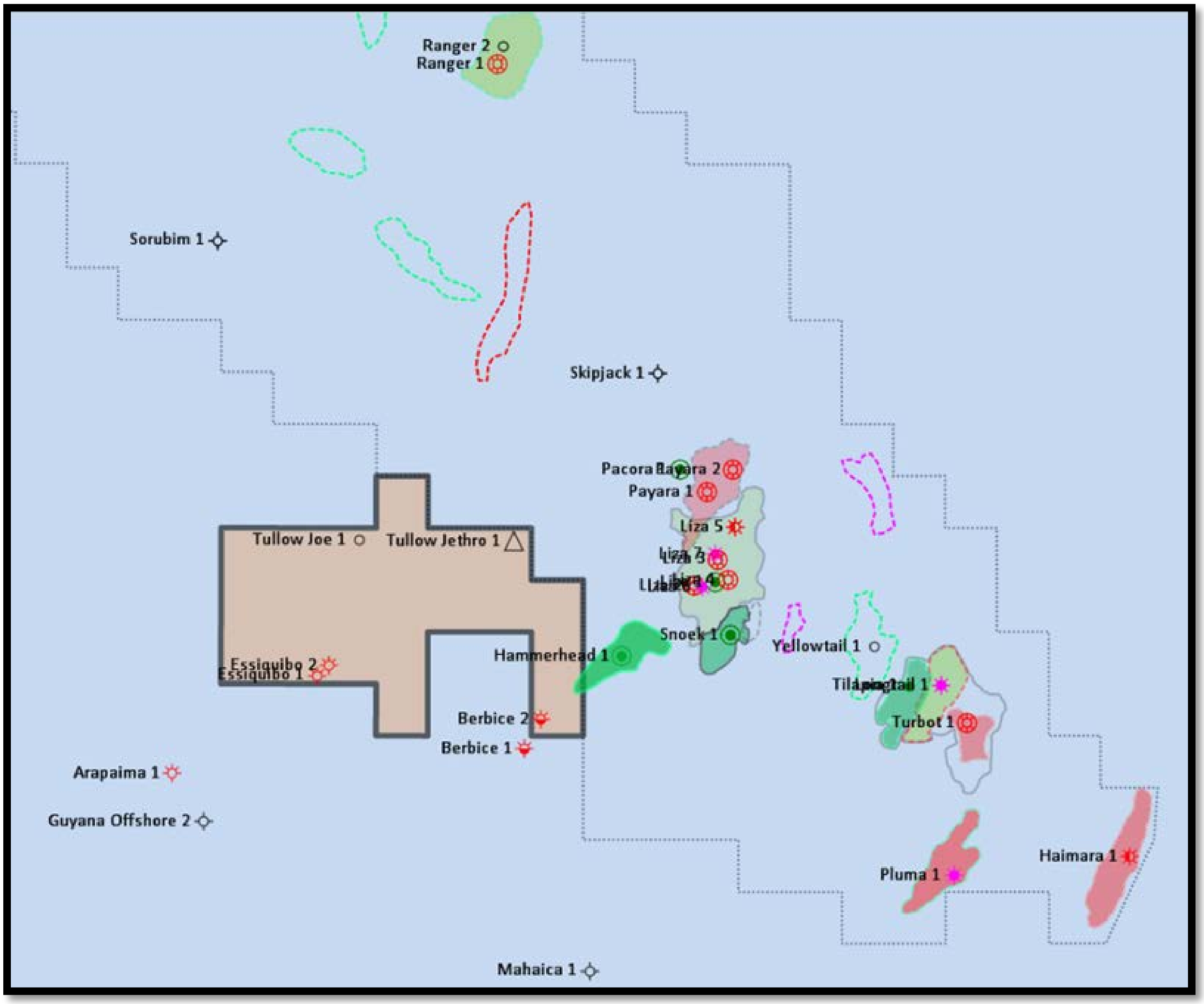


Figure 3-9 Index Map of Orinduik Block and Proximity to Exxon Discoveries

3.1.6 Product Types Reasonably Expected

Oil and associated gas would be expected to be encountered on the Orinduik Block based on the discoveries on the neighboring Stabroek Block.

3.1.7 Range of Pool or Field Sizes

The current leads in this report are based on areas from maps derived from the interpretation of the time and depth 3D seismic data and the areas range from 90 to 0.75 square kilometers. These areas are the parameters used in the estimate of the Prospective Resources in this report.

3.1.8 Depth of the Target Zones

The depth ranges for the target zones for the leads described in this report are based on the PSDM 3D seismic data, where available, and estimated by converting time to depth for the leads on the PSTM data. These depths, which are the parameters used in the estimate of Prospective Resources range from 1,950 to 5,150 meters.

3.1.9 Identity and Relevant Experience of the Operator

Tullow Oil Plc is the designated operator of the Orinduik Block. Tullow is an independent international oil and gas company headquartered in London UK. Tullow has over 30 years of experience in the exploration and development to production of offshore and onshore assets around the world. Tullow has had numerous meetings with the partners relative to the ongoing technical work and has provided the seismic data products utilized in the interpretations.

ECO (Atlantic) Oil and Gas Ltd, in their own right, has been evaluated, prequalified and been approved as Operator by the Government in Guyana. ECO with a team of highly experienced exploration scientists and technologists has operated its own offshore 2D and 3D seismic surveys on behalf of the Company and its partners.

3.1.10 Risks and Probability of Success

Although recent drilling activity has confirmed the presence of commercial accumulations of hydrocarbons, the data from these discoveries is not yet available to the Orinduik partners. Therefore, due to the paucity of available data, the subject leads have a relatively high level of risk although the modeling work done by the partners from the Hammerhead results has mitigated some of the risk in the Tertiary. The database is limited to several 3D seismic data sets and derivatives and the information from the few 'legacy' wells drilled in the area and public information. The lead sections, Upper to Lower Cretaceous and Tertiary, have been evaluated in several wells drilled in the area with oil shows and reservoir quality rock present. The wells drilled by Exxon have reportedly found hydrocarbons in the Upper Cretaceous and Tertiary; however, no commercial production has been established in the immediate area as of the date of this report. The quantification of risk or the chance of finding commercial quantities of hydrocarbons in any single lead for the plays in this area can be characterized with the following variables:

Trap: defined as the presence of a structural or stratigraphic feature that could act as a trap for hydrocarbons;
Seal: defined as an impermeable barrier that would prevent hydrocarbons from leaking out of the structure;
Reservoir: defined as the rock that is in a structurally favorable position having sufficient void space present whether it be matrix porosity or fracture porosity to accumulate hydrocarbons in sufficient quantities to be commercial; and
Presence of Hydrocarbons: defined as the occurrence of hydrocarbon source rocks that could have generated hydrocarbons during a time that was favorable for accumulation in the structure.

The Probability of Success (POS) or favorability that the above defined variables would occur and the Overall POS for any single Lead is the product of all four variables.

Due to the stratigraphic nature of the traps, the predominant risk in the subject block relate to the presence of intact seals both vertical and lateral, and the quality of the reservoir rock for the creation of commercial accumulations of oil and gas. This range of risk values is typical of leads for wildcat exploratory prospects where data is scarce but commercial hydrocarbons have been discovered in the same environmental system nearby. The variations in POS numbers are generally based on the type of seismic data that support the Leads and Prospect. There is higher confidence in the leads interpreted and modeled on the various data that was calibrated to the Hammerhead discovery.

Table 3-1 Leads with Probability of Success Values, in %

Lead	KB	DJ	KG	Kumaka	IatukD	KC	Amatuk	MJ-3	Jimmy
Trap	70	70	80	80	80	80	80	80	80
Seal	50	40	40	40	40	40	40	40	40
Reservoir	80	75	70	70	70	60	60	60	60
Presence of HC	100	100	100	100	100	100	100	100	100
Overall	**28.0%**	**21.0%**	**22.4%**	**22.4%**	**22.4%**	**19.2%**	**19.2%**	**19.2%**	**19.2%**

Lead	KC-A	Jethro	HH	Joe	Rappu	Jethro Ext
Trap	80	90	90	90	70	90
Seal	35	60	90	60	60	60
Reservoir	60	80	100	80	60	80
Presence of HC	100	100	100	100	100	100
Overall	**16.8%**	**43.2%**	**81.0%**	**43.2%**	**25.2%**	**43.2%**

Table 3-1 shows the Orinduik Leads and the resulting Probability or Chance of Success in percent based on the risk variables. Table 3-2 is a list of the Orinduik Leads with the Minimum, Most Likely, and Maximum areas in square kilometers along with the Gross Unrisked (P50) Prospective Oil Resources in MMBOE6 and the associated risk

Table 3-2 Orinduik Block Leads and Areas and P50 Gross Unrisked Prospective Resources with POS

Lead	Minimum (P90) km^2	Most Likely (P50) km^2	Maximum (P10) km^2	Gross Unrisked Prospective Oil Resources (P50) MMBOE$_6$	Risk POS%
Jethro	12	15	18	214.5	43.2%
Hammerhead	0.75	1	1..5	11.0	81.0%
Joe	12	25	32	148.3	43.2%
Rappu	35	65	95	535.6	25.2%
Jethro Ext	2	5	7	46.1	43.2%
KB	17	27	43	349.5	28.0%
DJ	14	24	30	150.0	21.0%
KG	17	30	34	633.5	22.4%
Kumaka	32	51	77	667.5	22.4%
IatukD	37	50	73	627.2	22.4%
KC	6	11	15	41.1	19.2%
Amatuk	35	68	90	228.3	19.2%
MJ-3	18	25	37	230.1	19.2%
Jimmy	3	5	12	35.5	43.2%
KC-A	7	9	12	63.5	16.8%

Several additional leads have been identified by ECO and their partners, which have not been evaluated at the time of this report.

3.1.11 Future Work Plans and Expenditures

The current plan by the partners is to commence the drilling of a well, the Tullow Jethro #1 by mid-June of 2019. The net estimated cost to ECO Guyana Inc. (15% WI) is approximately US$6.75 Million based on the anticipated well depths and water depths. The well will be drilled by the Stena

Forth drillship (Figure 3-10). ECO Guyana Inc. is responsible for its working interest share of overheads, license fees and general operating costs, which are minimal and shared between all working interests. An additional drilling target is currently being discussed for the third quarter of 2019.

Stena Forth drillship; Source: Stena Drilling Ltd – www.stena-drilling.com

Figure 3-10 The Stena Forth Drillship

3.1.12 Market and Infrastructure

Infrastructure for the transport and marketing of hydrocarbons is currently not present in the offshore shelf areas of Guyana and Suriname. The large oil discovery on the Stabroek Block will spur development of an offshore production network to bring that crude and associated gas to market. Produced oil could be stored either in a Fixed Storage Platform (FSP) or a guyed or anchored Floating Storage and Offloading (FSO) tanker. Oil could then be transported by tanker from the FSO or FSP to markets in North America, Europe, Asia, or South America. The refinery operated by Staatsolie in Suriname does not have the capacity to process large amounts of oil and the existing markets in Guyana and Suriname are small.

3.1.13 Geology

The Guyana-Suriname Basin is a passive margin basin formed by Triassic to Jurassic rifting and separation of South America from Africa (Figure 3-11). This basin is primarily offshore and is bounded to the south by crystalline basement and to the east by the Demerara High, a remnant of continental crust from the separation, (Schwarzer and Krabbe, 2009). The basin fill includes clastic deposits from the South American continent, which formed deltas along a passive margin shelf and slope (Figure 3-12). Carbonate depositional settings were located on the shelf edge. Miocene uplift changed the drainage of the continent and reduced the clastic sedimentation from the continent replacing the coarse-grained clastics and shelf edge carbonates with fine-grained clastics such as turbidites and seafloor fans. More than 7,000 meters of sedimentary fill has occurred in certain areas of the Guyana Basin.

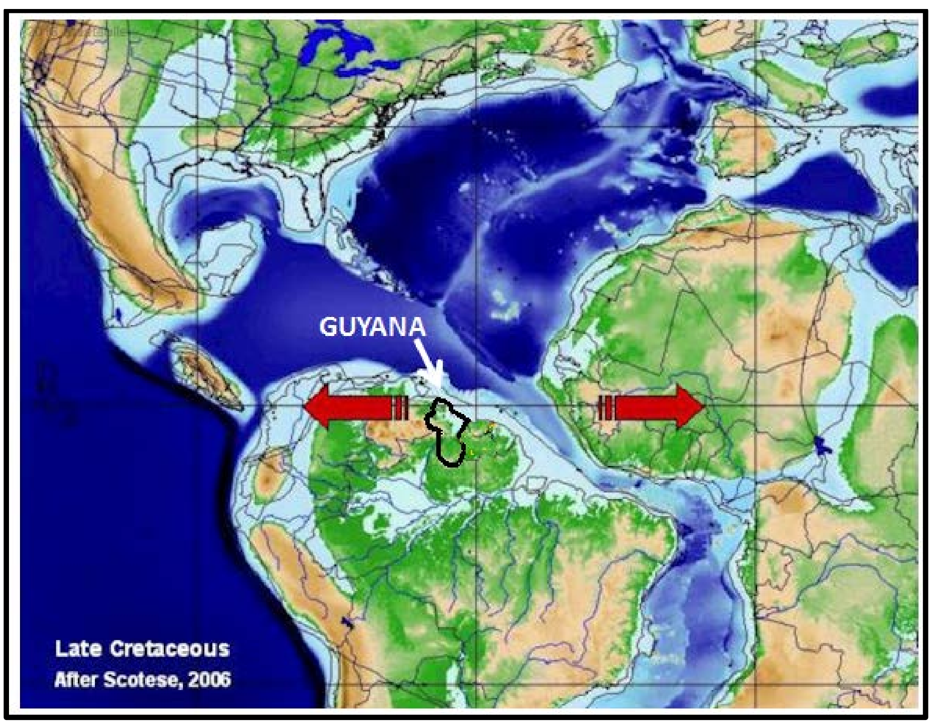


Figure 3-11 Paleotectonic Map Showing the Location of Guyana and Plate Tectonics in the Late Cretaceous

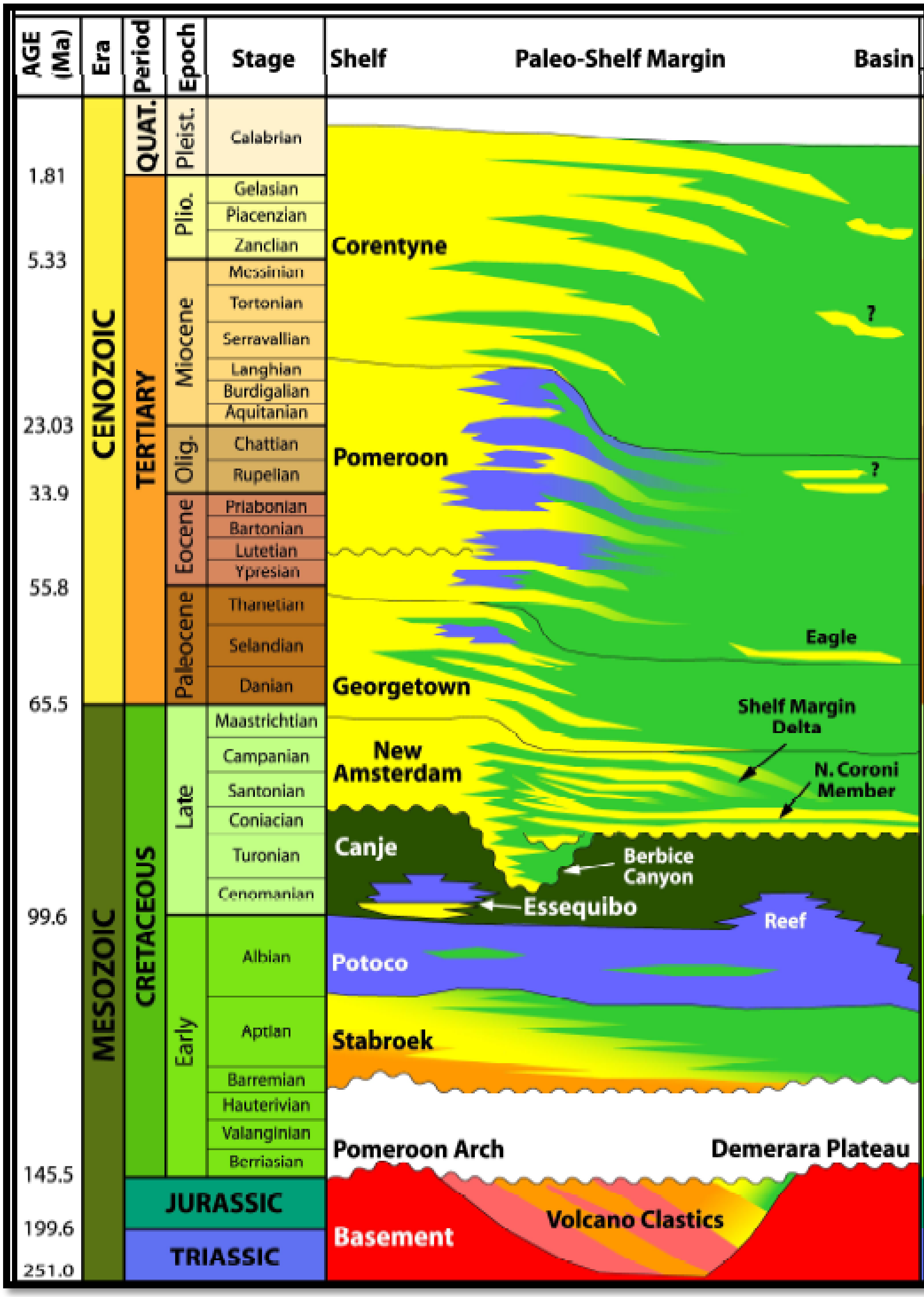


Figure 3-12 Stratigraphic Column for the Guyana - Suriname Basin

3.1.14 Petroleum Systems

Oil production from the onshore Tambaredjo, Tambaredjo Northeast and Calcutta fields and that of the newly discovered Liza field indicate that a proven active petroleum system (Magoon, 1988) or systems are present in the Guyana-Suriname Basin.

Two source rock intervals have been identified in the Guyana-Suriname Basin, the Upper Albian to Santonian Canje Formation and an unnamed Jurassic interval (Figure 3-12). Oils in the Tambaredjo, Tambaredjo Northwest, and Calcutta fields located onshore in Suriname have been sourced from rocks in the Canje Formation.[4] The Canje Formation is presently in the oil window in the offshore Guyana and Suriname area (Schwarzer and Krabbe, 2009) (Figure 3-13). Significant oil generation from this source rock began during the Late Paleocene and continues.

The Canje Formation source rock (Figure 3-12) consists dominantly of organic-rich black mudstones with Total Organic Carbon (TOC) contents ranging from 2% to 5%. Values as high as 20% have been measured in equivalent Cenomanian to Santonian age black mudstones drilled during ODP Leg 207 (Erbacher, 2004) on the Demerara Plateau. Source rocks are dominantly algal Type II marine organic material with increasing terrestrial components in nearshore locations. Equivalent age source rocks of the Guyana Suriname Basin are now within the oil generation window with many ‘shows’ of oil and gas from several wells indicating the presence of hydrocarbons (Ginger, 1990). In this portion of the Guyana Suriname basin, the top of the oil window may be near 3,500 meters based on a locally higher thermal gradient than other areas in the basin. The mature pod of Cretaceous source rocks is located offshore in an area of the basin along the Guyana and Suriname coast (Figure 3-13). This source rock is up to 550 meters thick. Migration to the producing oil fields onshore has been primarily lateral and updip for 100 to 150 kilometers (Ginger, 1990; Staatsolie.com, 2016).

[4] http://opportunities.staatsolie.com/en/geology-of-the-guyana-suriname-basin/petroleum-systems/

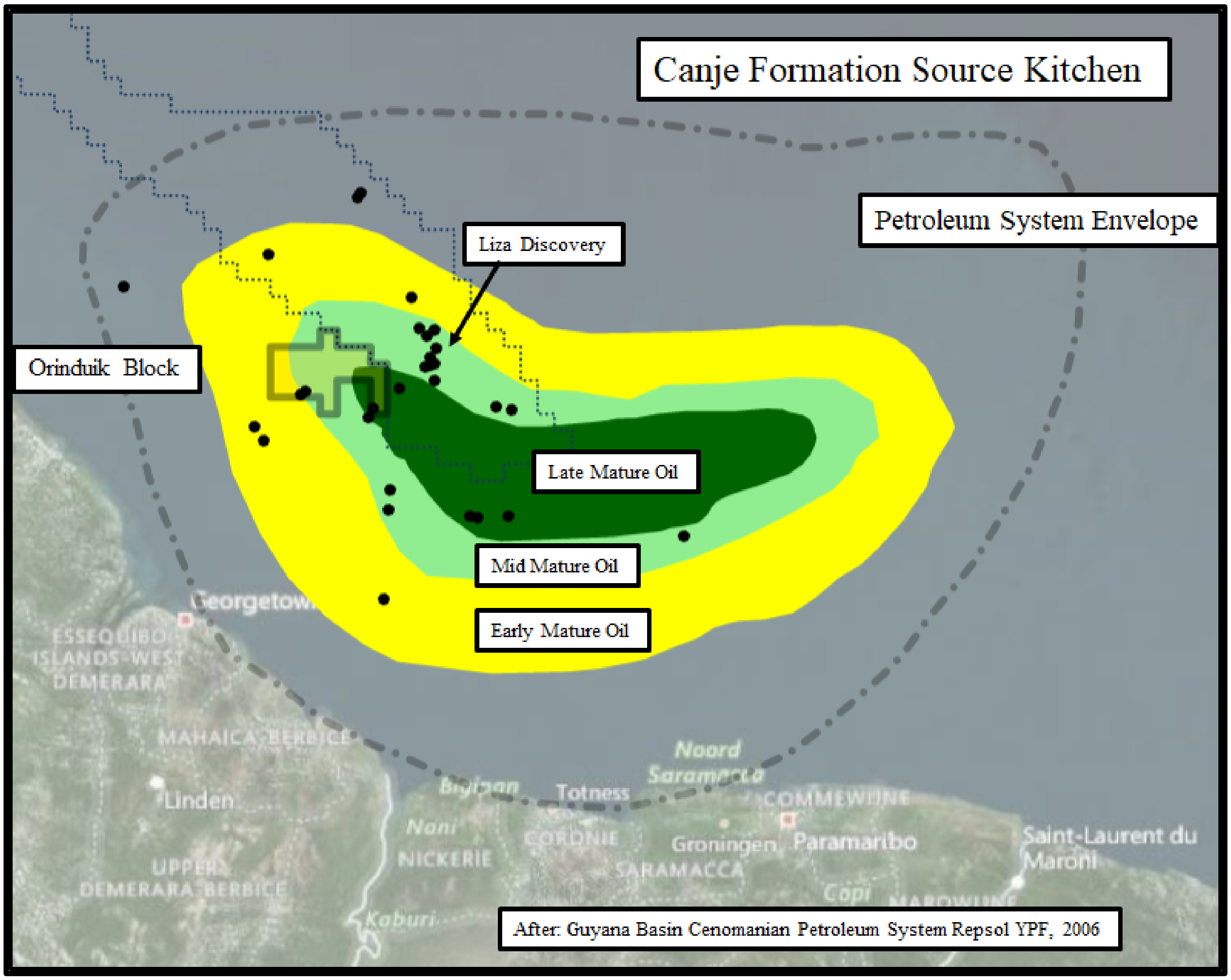


Figure 3-13 Map of Offshore Suriname Showing Mature Canje Formation Source Rock Maturation Level

Evidence of Jurassic source rocks in the basin comes from analysis of oil in Suriname that is unlike the Cretaceous sourced oil (Bihariesingh, 2014). These Jurassic source rocks are interpreted to have been deposited in pre-rift and rift depositional environments. These rocks include lacustrine shales with Type I oil-prone organic material. More than one rift half-graben may be present under the basin where lacustrine or restricted marine source rocks are mature and generating oil.

3.1.15 Analogous Fields

Exxon has discovered several accumulations of oil and gas in the neighboring Stabroek Block. The Liza fields and other discoveries including the recent Hammerhead #1 well, located less than 7 kilometers from the Orinduik Block, establish the presence of hydrocarbon accumulations in the area and on the Orinduik Block. Figure 3-14 illustrates the proximity of the Hammerhead discovery to the Orinduik Block and their leads.

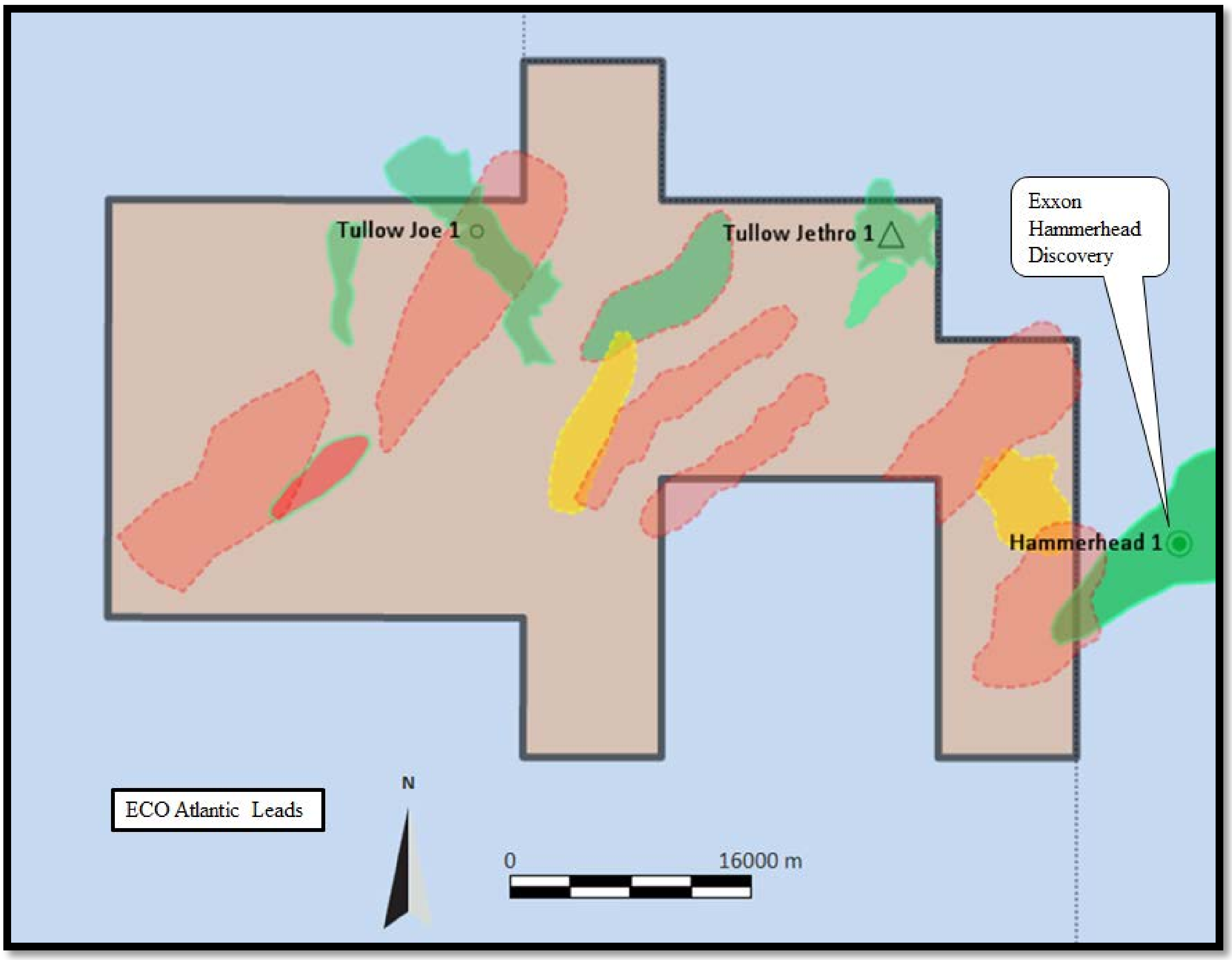


Figure 3-14 Map Illustrating the Proximity of the Orinduik Block to the Exxon Hammerhead Discovery

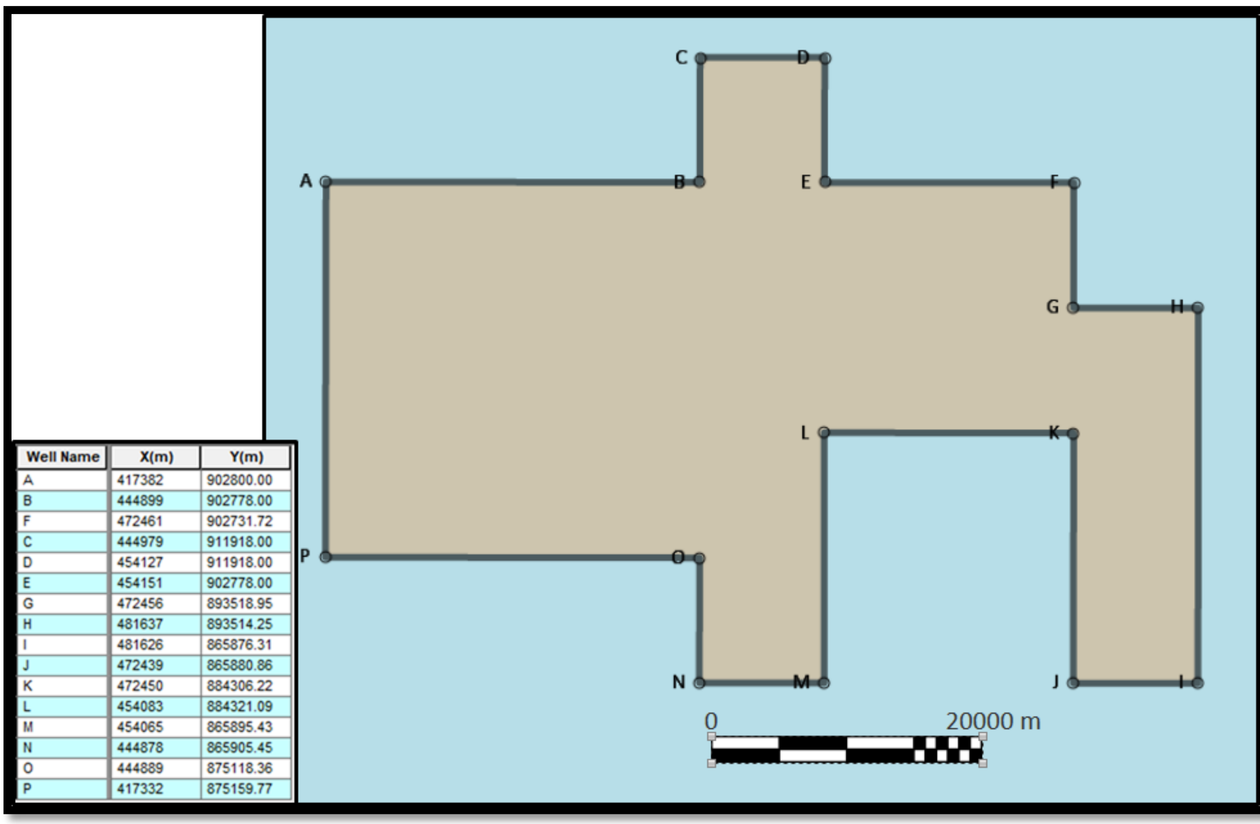
The leads in Figure 3-14 that are colored green are the Tertiary leads, the red are Cretaceous and the yellow are shallow Cretaceous.

3.1.16 Exploration History for the Offshore of Guyana

Exploration activity in the offshore of Guyana began in 1958 when the California Oil Company conducted seismic surveys but did not drill a well. The first wells in the Guyana offshore area was drilled by Conoco and Tenneco in 1967. The Guyana Offshore #1 well encountered gas shows while the subsequent Guyana Offshore #2 well was a dry hole. Shell and Conoco drilled the Berbice #1 well in 1971 that had oil and gas shows in the Miocene but was abandoned after a gas kick at 2,171 meters (7,124 feet) in the Eocene. The Berbice #2 well found minor gas shows and oil stains in the Pliocene and Oligocene. Shell drilled the Mahaica #1 and #2 wells in 1974 with no success. In 1975, Shell drilled the Abary #1 well which found oil and gas shows and flowed 37^{o} API oil from a turbidite at a depth of 3,990 meters (13,091 feet). Deminex drilled the Essequibo #1 well which had several oil and gas shows in the Miocene and Upper Cretaceous in 1977 but the subsequent well, the Essiquibo #2 drilled nearby had only minor shows of methane in the Upper Cretaceous. The Essiquibo wells and the Berbice wells were located on the extreme southern part of the Orinduik Block. The Arapaima #1 was drilled by Total in 1992 with gas tested in the Lower Cretaceous. In mid-2000, CGX Energy was prepared to drill the Eagle #1 well but the rig had to abandon the location because a Surinamese gunboat threatened to fire on it. The rig was moved to the Horseshoe West #1 location closer to shore which was abandoned as a dry hole. Drilling activity resumed in 2012, after the 2007 agreement between Guyana and Suriname to resolve the border dispute, with the drilling of the Eagle #1 and Jaguar #1 wells. The Eagle well found reservoir quality sands with shows of hydrocarbons in the Eocene and Upper Cretaceous while the Jaguar well was abandoned due to unexpected high pressures encountered in the well. Exxon then drilled the Liza #1 well which discovered commercial quantities of oil and gas in 2015 in the Stabroek Block, which is adjacent to the Orinduik Block. This discovery was followed by several additional successes which resulted in an estimated recoverable resource of 4 billion oil-equivalent barrels. Exxon has drilled over 15 wells to date on the Stabroek Block including the Hammerhead #1 well and has plans to develop the discovered fields and continue exploratory drilling.

3.1.17 Contract Areas

The Orinduik Block license area is 1,800 square kilometers (444,789 acres) where ECO Guyana Inc. has a 15.0% net working interest (WI) (Figure 3-15). Tullow Oil Plc (Tullow) is the designated Operator holding 60.0% WI and Total E&P Activités Pétrolières SA owns 25.0% WI by way of a Farm-In Agreement with ECO. ECO Guyana Inc. is owned 100.0% by ECO (Guyana) Barbados Ltd. who in turn is wholly owned by ECO (Atlantic) Oil and Gas Ltd.



Well Name	X(m)	Y(m)
A	417382	902800.00
B	444899	902778.00
F	472461	902731.72
C	444979	911918.00
D	454127	911918.00
E	454151	902778.00
G	472456	893518.95
H	481637	893514.25
I	481626	865876.31
J	472439	865880.86
K	472450	884306.22
L	454083	884321.09
M	454065	865895.43
N	444878	865905.45
O	444889	875118.36
P	417332	875159.77

Figure 3-15 Map of the Orinduik Block License Area

3.1.18 Leads

At the time of this report, there were eight different 3D seismic data sets with various derivative volumes used as the basis for the interpretations for the Leads. The DJ, KG, KD, and Iatuk-D Leads are based on an early PSDM or depth converted data while the KB, KC, Amatuk, MJ-3, MJ-4 and KC-A are based on the early PSTM or time data. The majority of these leads are considered analogous to the Stabroek Liza plays. There are additional lead ideas observed on the seismic data that are not included in this report. In particular, it should be noted that the many Tertiary section Lead ideas have been developed in light of the Exxon Hammerhead discovery. These leads have been interpreted from the various data sets and their derivatives. The fifteen leads included in this report are listed in Table 3-3 List of Leads on Orinduik Block and depicted in Figure 3-16 below.

The images that show the details of the subject leads generally include a map of the extent of the potential hydrocarbon accumulation and selected seismic lines that show the event that makes up the lead. The seismic data is presented as an Inline, which is oriented southwest to northeast, generally in the dip direction, a Xline (Crossline) which is oriented northwest to southeast perpendicular to the Inline, and in some cases an Arbitrary or Random line located along the axis of the lead.

Table 3-3 List of Leads on Orinduik Block

Lead	Play type	Age	Average Depth, m	Minimum (P10) Area, km^2	Maximum (P90) Area, km^2
Jethro	Strat Trap	Tertiary	4,300	12	18
Joe	Strat Trap	Tertiary	2,025	12	32
Jethro Ext	Strat Trap	Tertiary	4,100	2	7
Hammerhead	Strat Trap	Tertiary	3,550	0.75	1.5
Rappu	Strat Trap	U. Cret	3,650	35	95
KB	Strat Trap	Tertiary	3,700	17	43
DJ	Strat Trap	U. Cret	4,160	14	30
KG	Strat Trap	U. Cret	3,900	17	34
Kumaka	Strat Trap	U. Cret	4,250	32	77
Iatuk-D	Strat Trap	U. Cret	4,850	37	73
KC	Strat Trap	U. Cret	2,460	6	15
Amatuk	Channel Fill	U. Cret	2,415	35	90
MJ-3	Strat Trap	U. Cret	3,700	18	37
MJ-4	Strat Trap	U. Cret	2,120	3	12
KC-A	Strat Trap	U. Cret	3,225	7	12

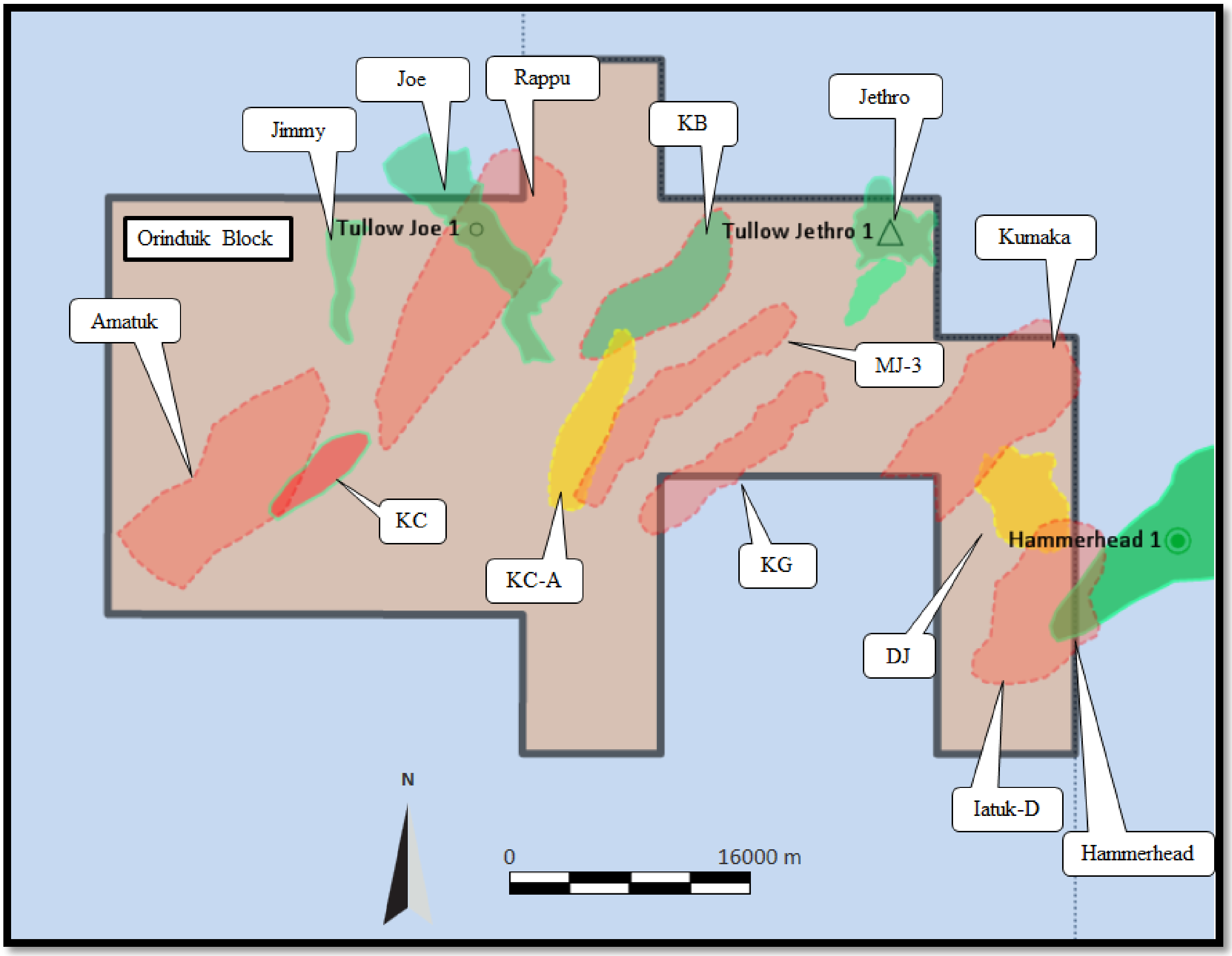


Figure 3-16 Map of Leads included in this report

The leads in Figure 3-16 that are colored green are the Tertiary leads, the red are Cretaceous and the yellow are shallow Cretaceous.

3.1.18.1 Jethro Prospect

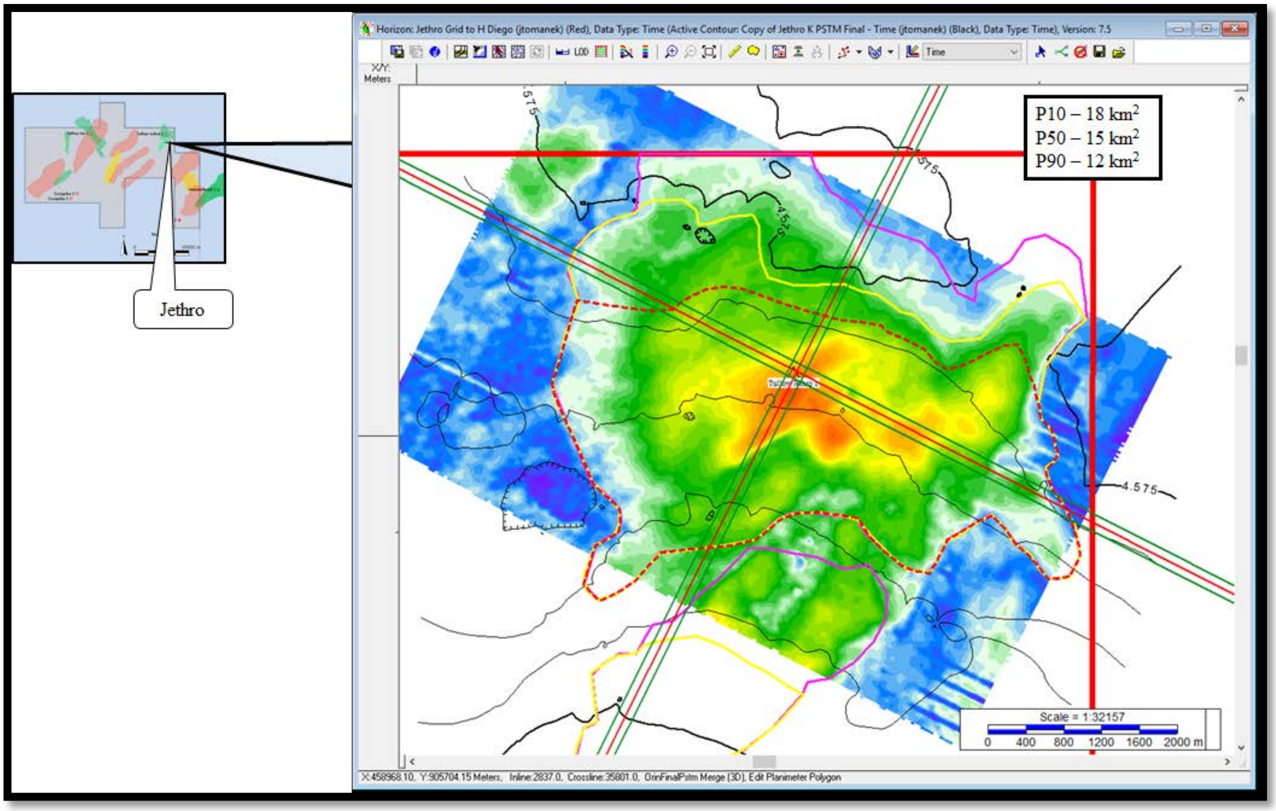


Figure 3-17 Amplitude Map with Time Contours of the Jethro Prospect

The Jethro Prospect is located in the northeastern part of Orinduik Block. It is a Tertiary age lead and will be the target of the first well drilled by ECO and their partners planned for mid-June 2019. The Stena Forth drillship (Figure 3-10) will be used for the drilling operations. If successful, the well will be temporarily abandoned and tested at a later date. Jethro is a sandstone stratigraphic trap that based on several seismic attributes is analogous to the Hammerhead discovery nearby. The amplitude map (Figure 3-17) indicates a hydrocarbon response with a stratigraphic limit. Figure 3-18 and Figure 3-19 are seismic lines that show the extent of the Jethro amplitude.

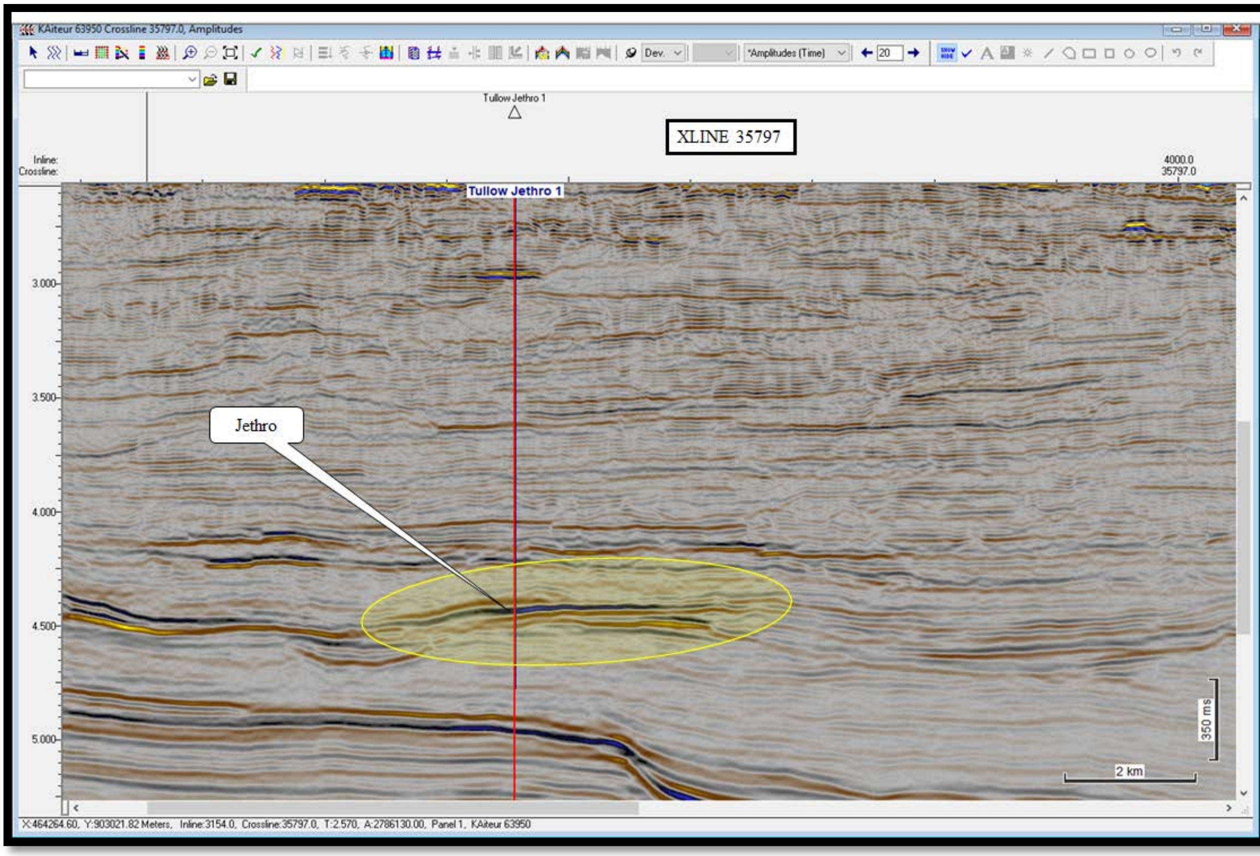


Figure 3-18 Xline 35797 Over the Jethro Prospect

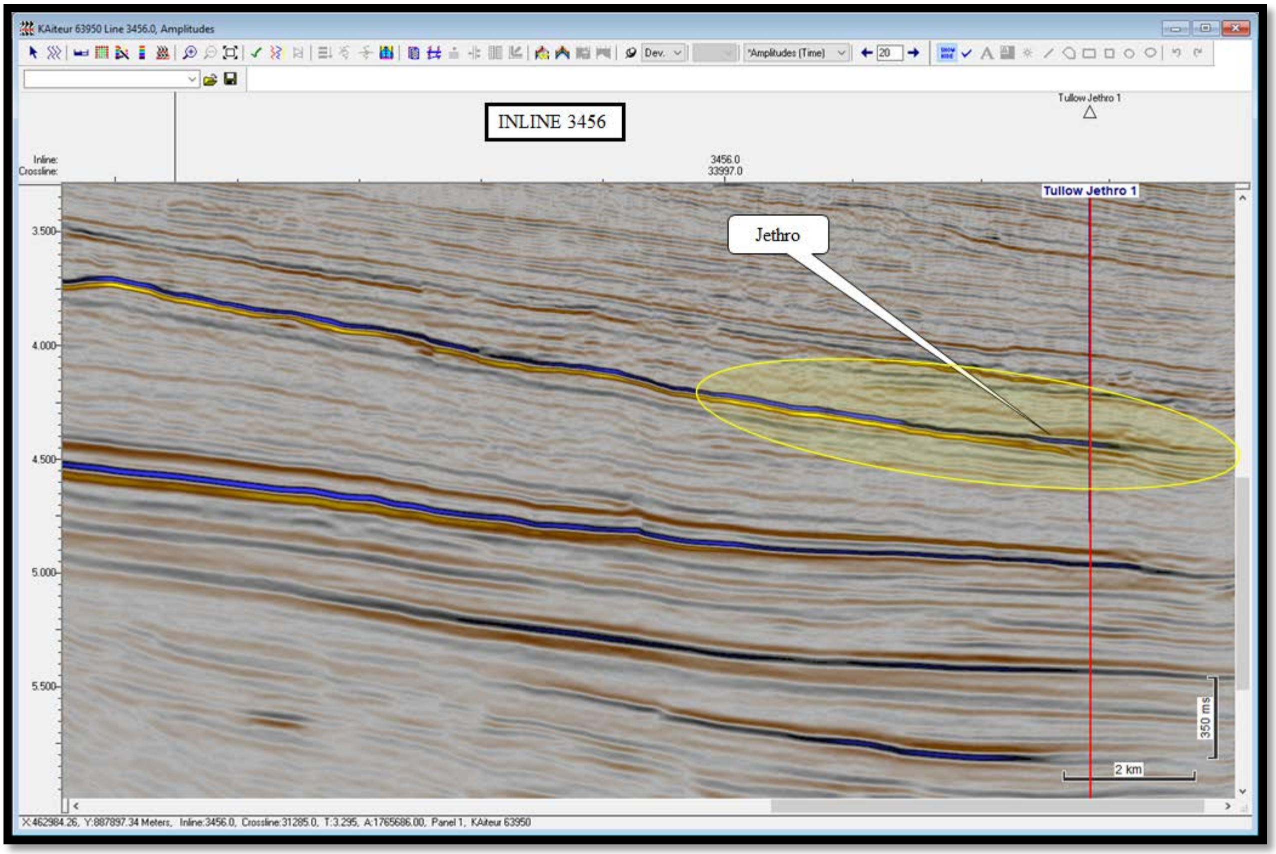


Figure 3-19 Inline 3456 Over the Jethro Prospect

3.1.18.2 Joe Prospect

The Joe Prospect is a stratigraphic channel fill and overbank sand body that trend to the northwest on the northern part of the Orinduik Block (Figure 3-20). This Tertiary feature has positive responses on AVO products and is analogous to the Hammerhead discovery. Inline 2141 (Figure 3-21) shows the feature which will be the target of the second well to be drilled on the Orinduik Block.

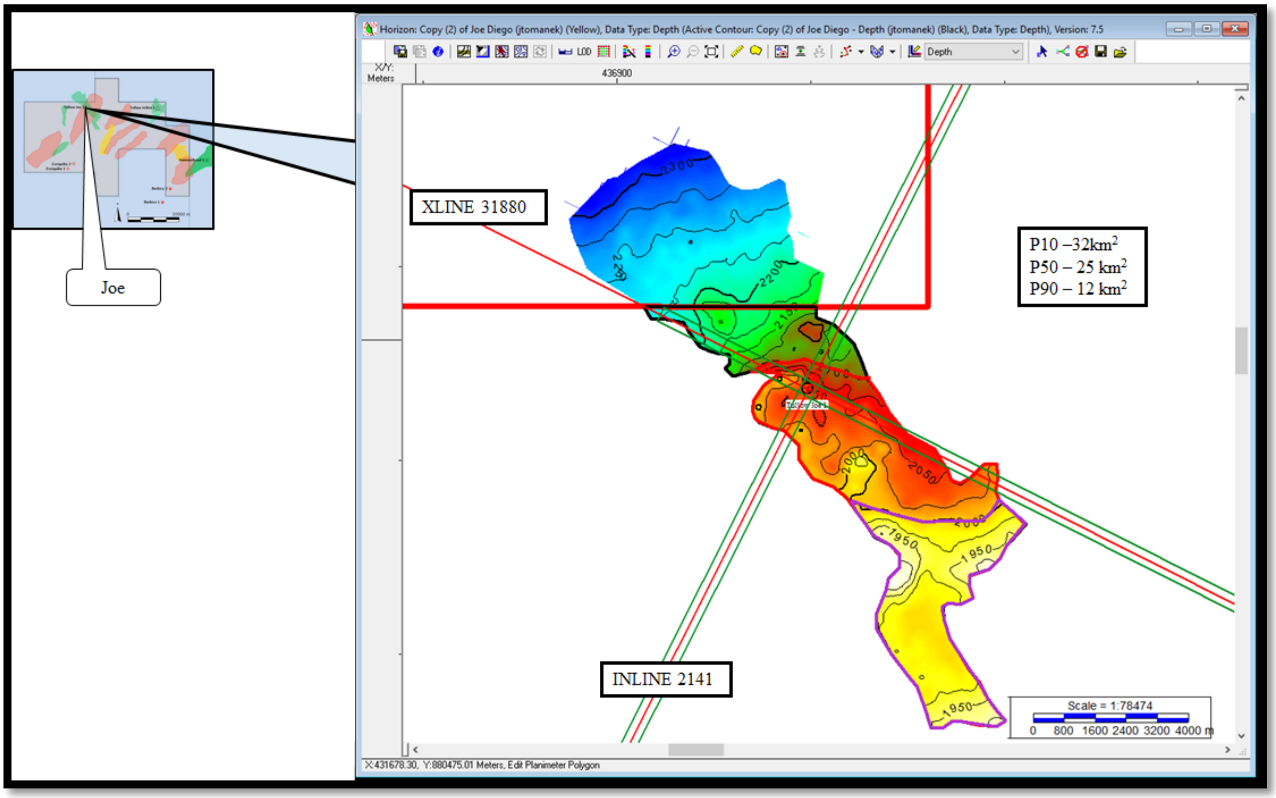


Figure 3-20 Depth Map with Depth Contours Over the Joe Prospect

The Spectral Decomposition image of the Joe and neighboring Jimmy features (Figure 3-22) shows the channel and fan nature of these sand deposits.

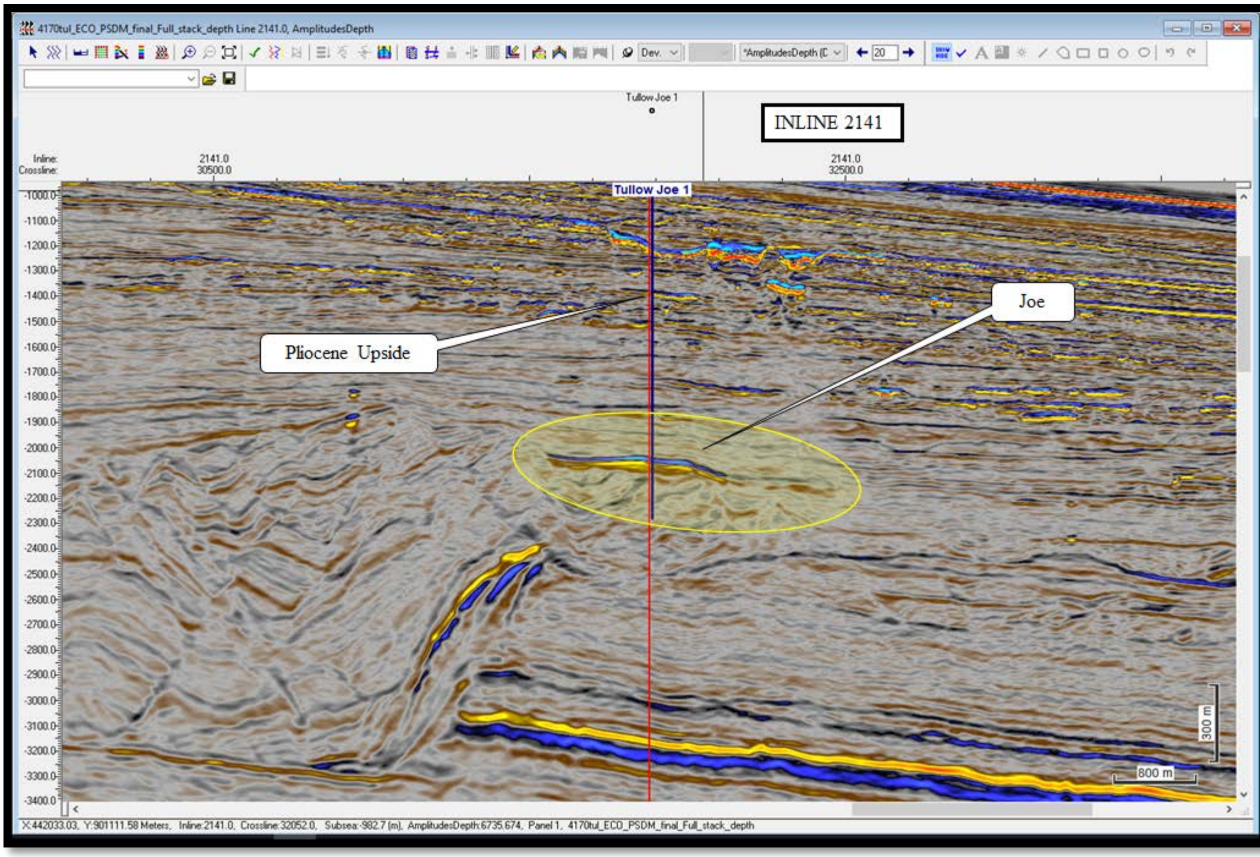


Figure 3-21 Inline 2141 Over the Joe Prospect

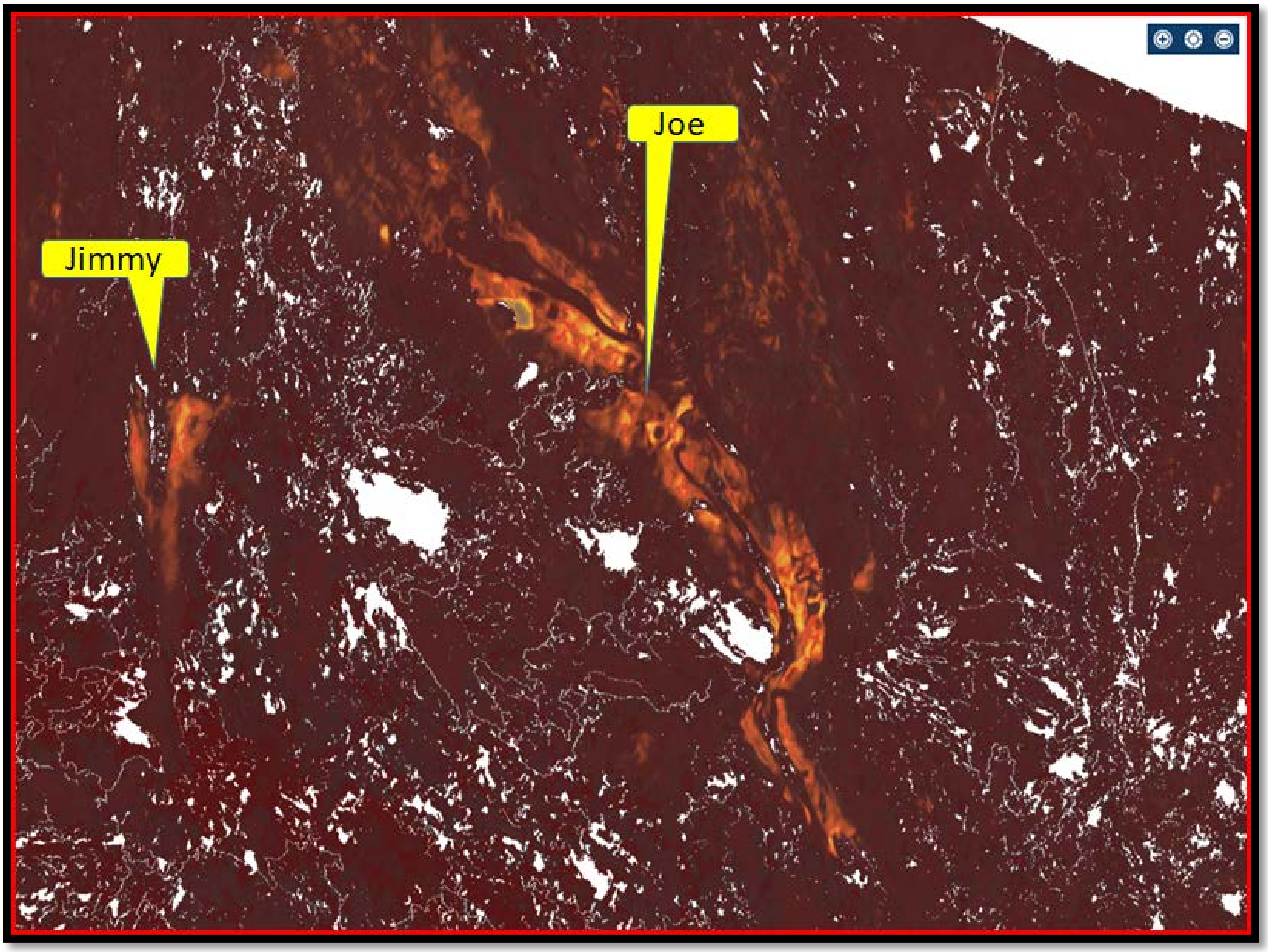


Figure 3-22 Spectral Decomposition Display of the Joe and Jimmy Prospects

3.1.18.3 Jethro Extension

The Jethro Extension is a Tertiary aged stratigraphic accumulation of sand associated with the Jethro Prospect. The amplitude (Figure 3-23) extends southwest of the Jethro accumulation and may be connected. Figure 3-24 and Figure 3-25 are seismic lines that show the extent of the event.

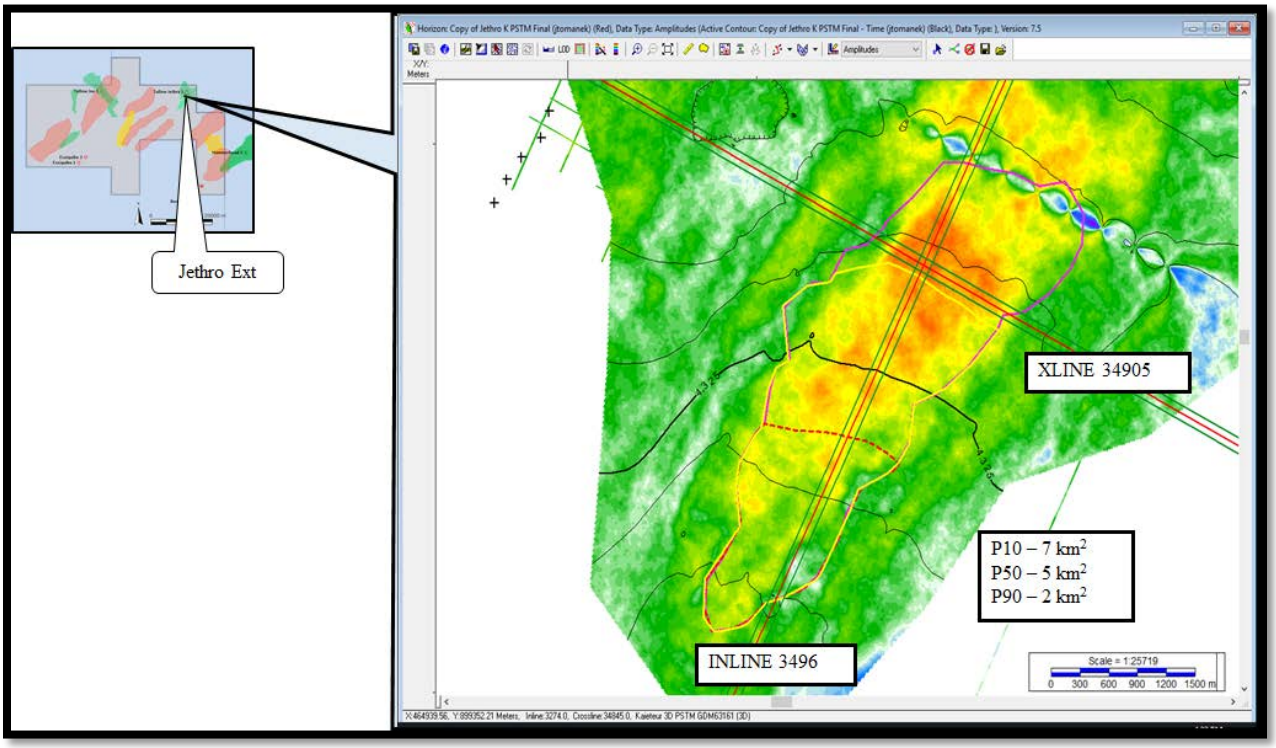


Figure 3-23 Amplitude Map with Time Contours of the Jethro Extension Lead

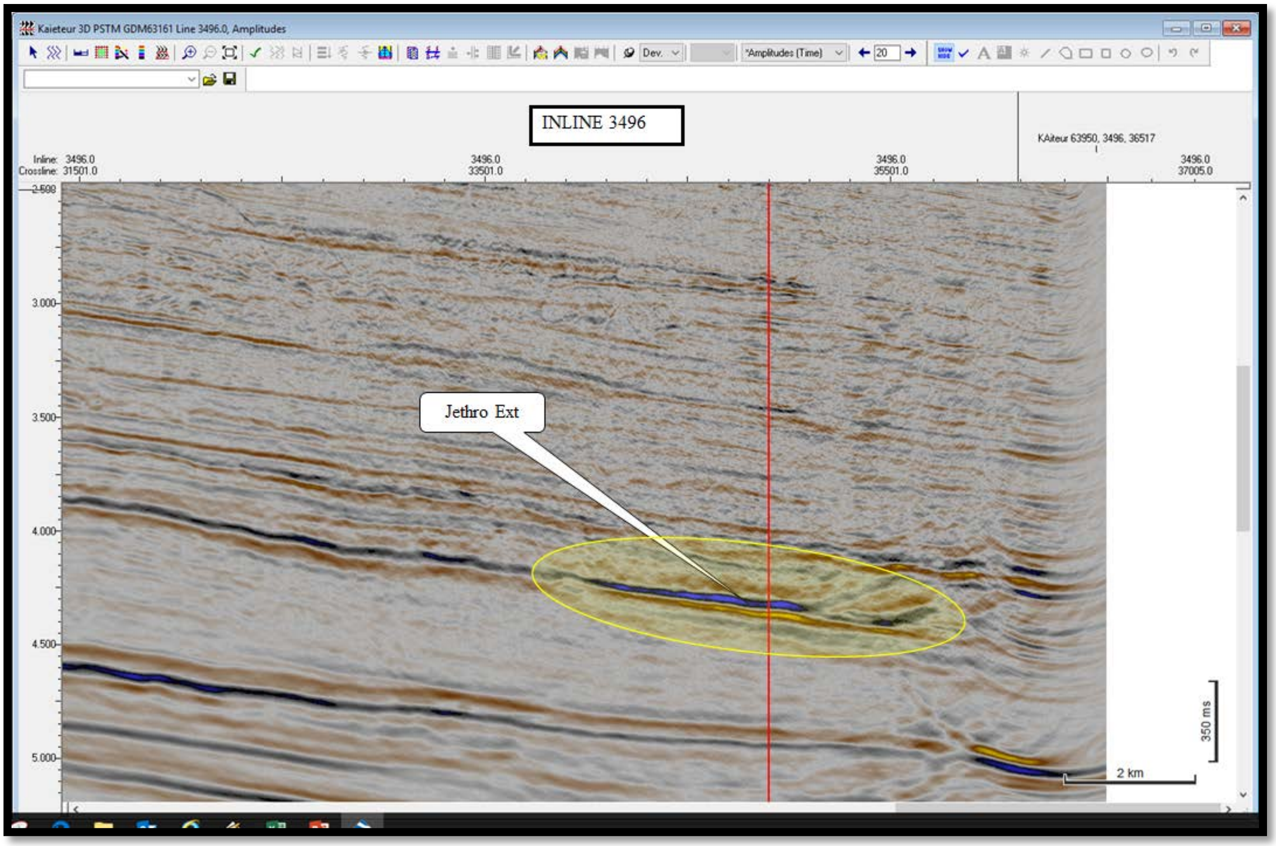


Figure 3-24 Inline 3496 over the Jethro extension Lead

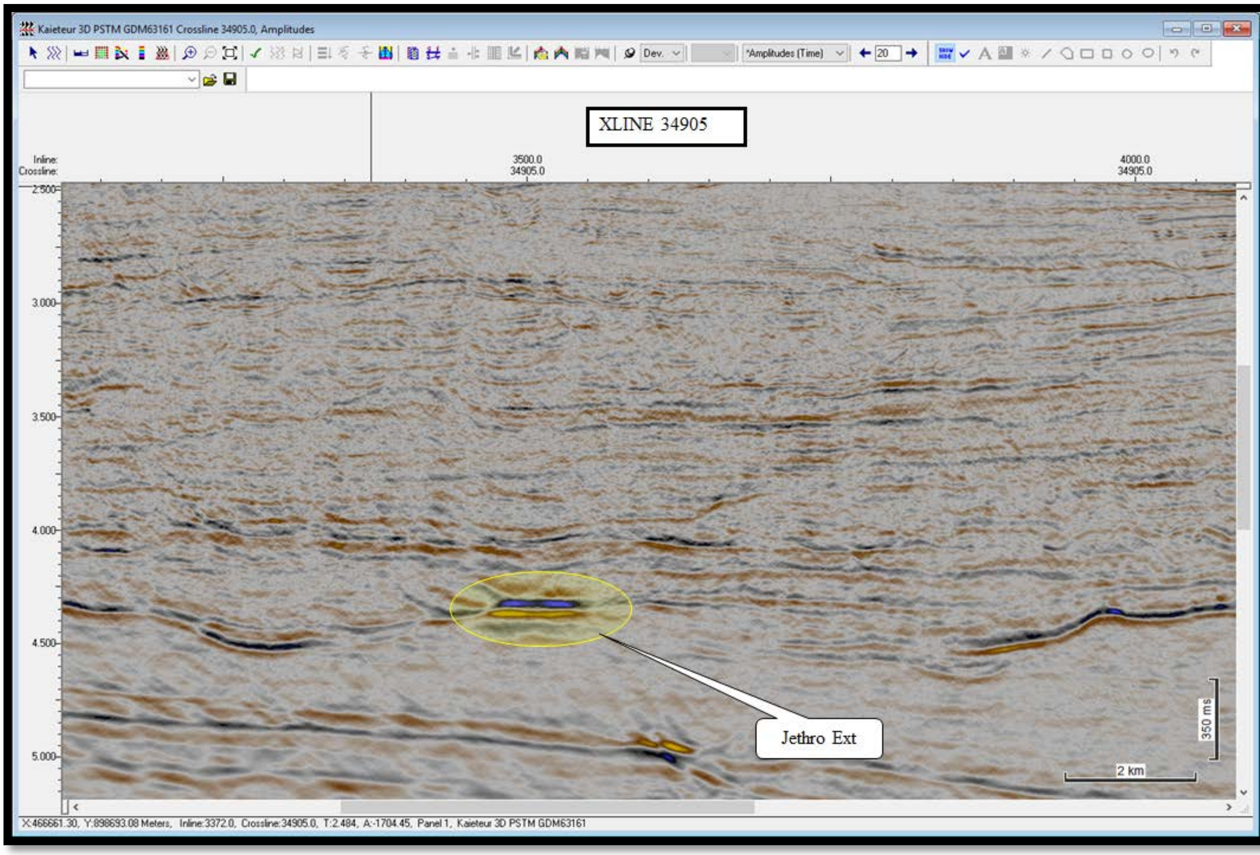


Figure 3-25 Crossline 34905 Over the Jethro Extension Lead

3.1.18.4 Rappu Lead

The Rappu Lead is an Upper Cretaceous age that lies underneath the Joe Prospect. This target is a broad and potentially thick target (Figure 3-26) the extent of which is shown on the seismic lines in Figure 3-27. This lead is considered a high risk target at this point therefore the current plan is to drill only the shallower Joe prospect and utilize the information from the Jethro well to reduce the risk of this deeper target.

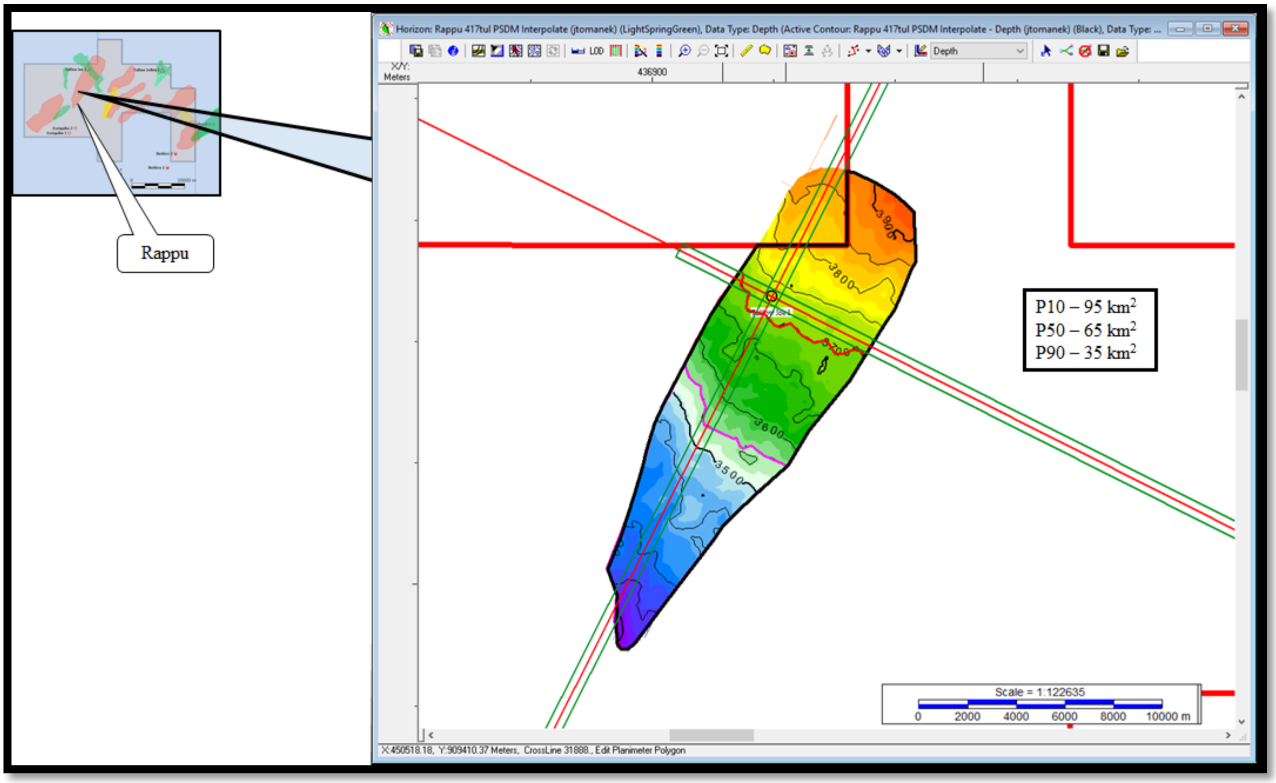


Figure 3-26 Depth Contour Map of the Rappu Lead

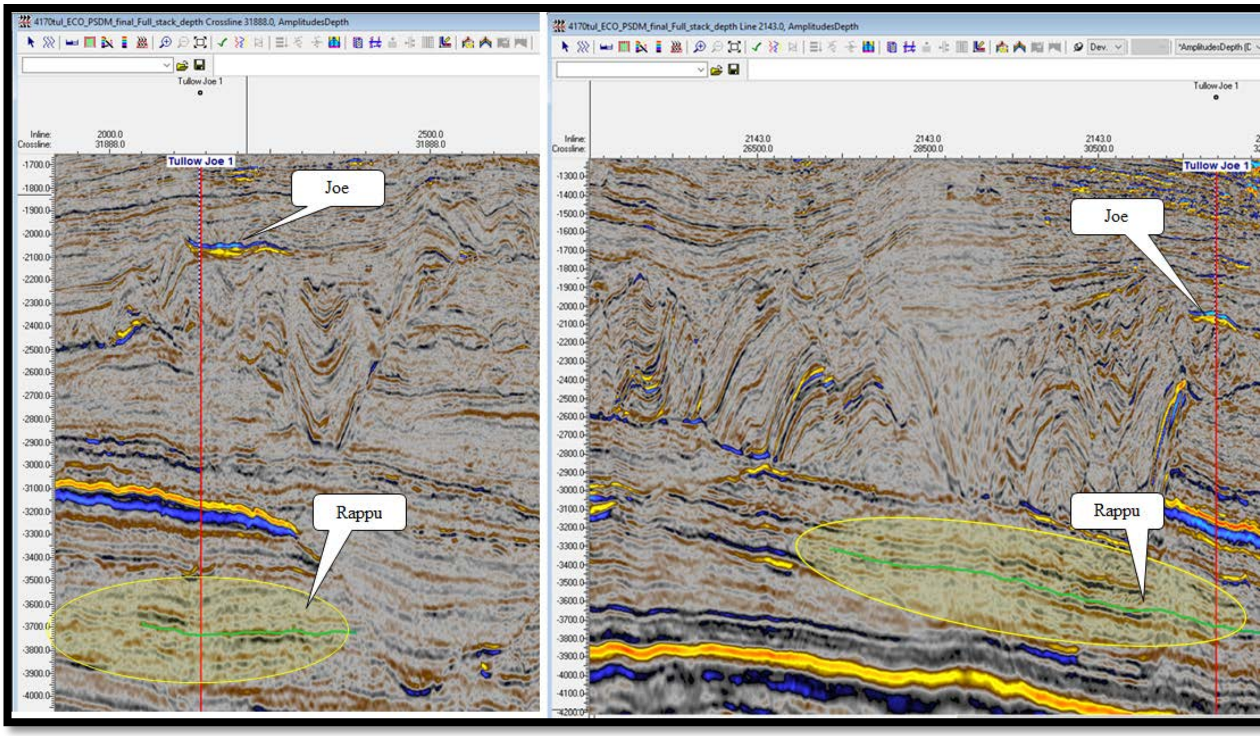


Figure 3-27 Crossline 31888 and Inline 2143 Over the Rappu Lead

3.1.18.5 Hammerhead Updip Prospect

The Exxon Hammerhead discovery well is only seven kilometers east of the Orinduik Block. The image seen in Figure 3-28 below is of a special processing provided by Tullow known as JiFi. This processing can show where on 3D seismic an oil bearing sand may be located. The bulk of the Tertiary age Hammerhead accumulation is on the neighboring Stabroek Block, but an estimated 1 square kilometer is on the Orinduik Block and thus becomes an excellent analog for Tertiary age leads and prospects.

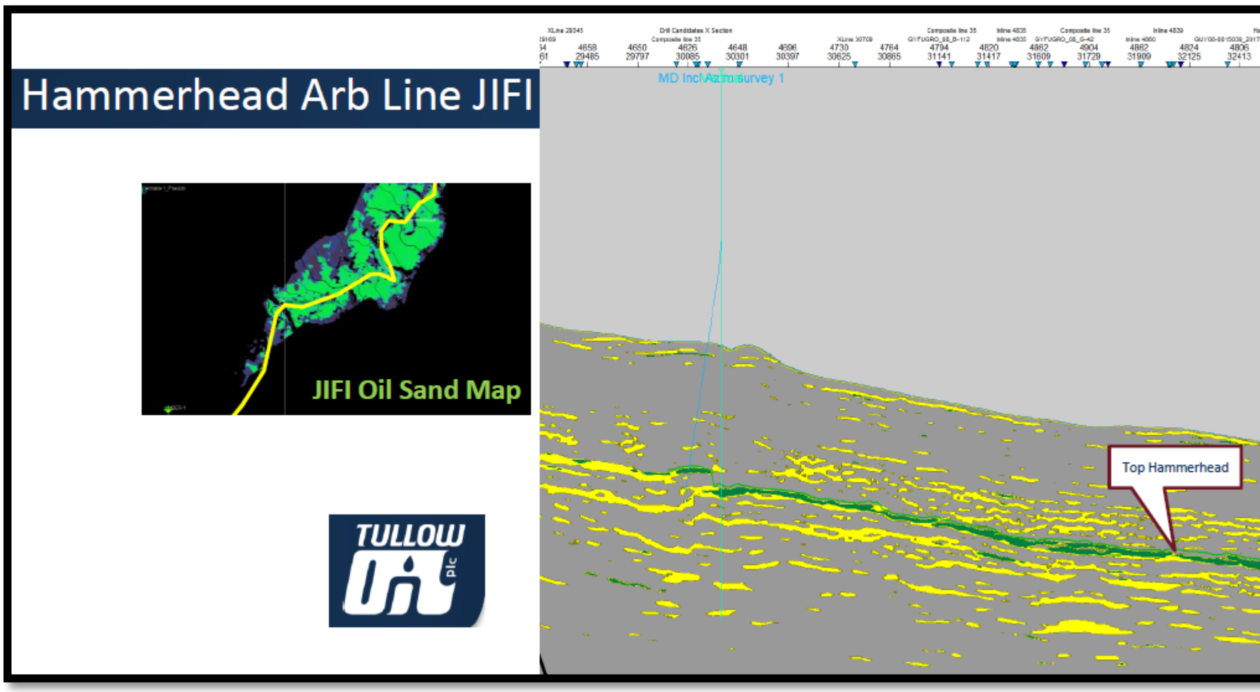


Figure 3-28 Arbitrary Line of the JiFi Processed Seismic of the Hammerhead Discovery
(Courtesy of Tullow)

The portion of the Hammerhead accumulation estimated to be located on the Orinduik Block is depicted in Figure 3-29. The 3D seismic volumes were processed to extract several different attributes including AVO in order to better image the leads.

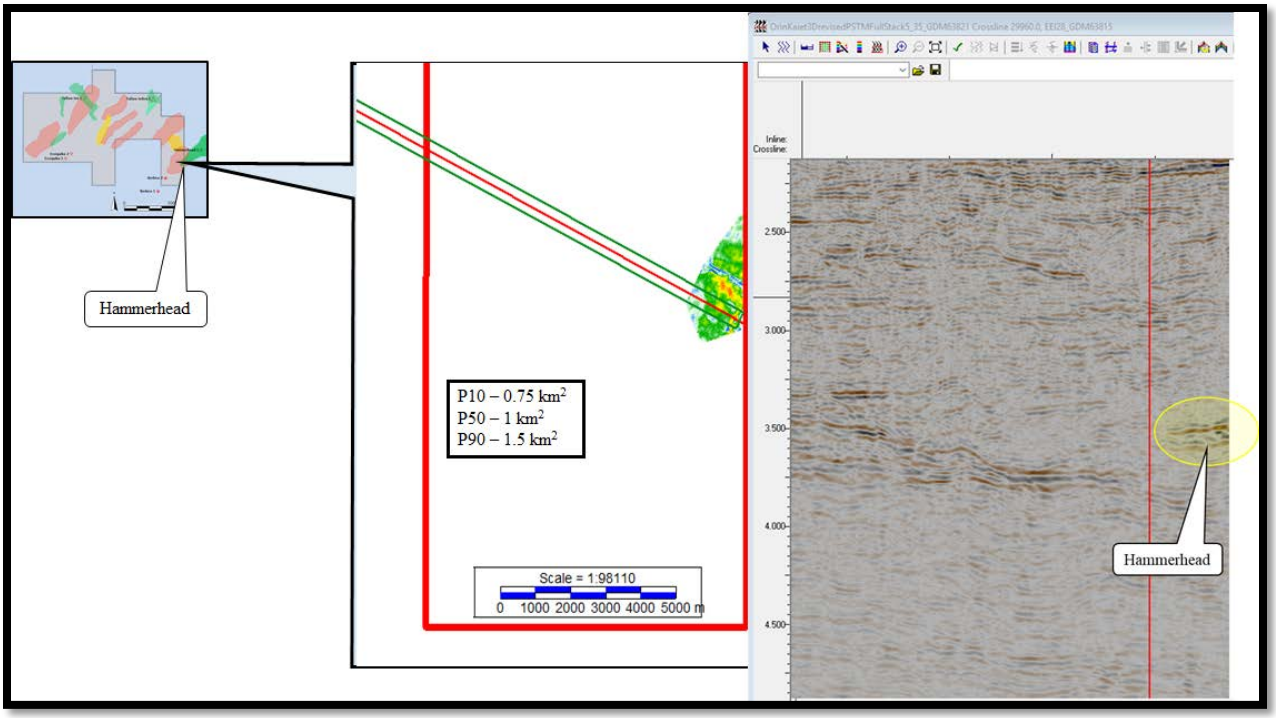


Figure 3-29 Updip Hammerhead Occurrence on Orinduik Block with PSTM Seismic Crossline

3.1.18.6 KB Lead

The interpretation is based on the time data showing a high amplitude response and appears to be a mound feature that dips to the north with a lateral closure at the crest. The areal extent of the feature is seen in Figure 3-30, an amplitude map, while Inline 2862 (Figure 3-31) shows the extent of the event in a dip direction and Xline 32528 (Figure 3-32) shows the cross section of the lead with channel cuts on either side. The channel fill sediments in these cuts may be prospective upon further study. The P10, P50 and P90 areas used in the Prospective Resource estimates are depicted in Figure 3-33.

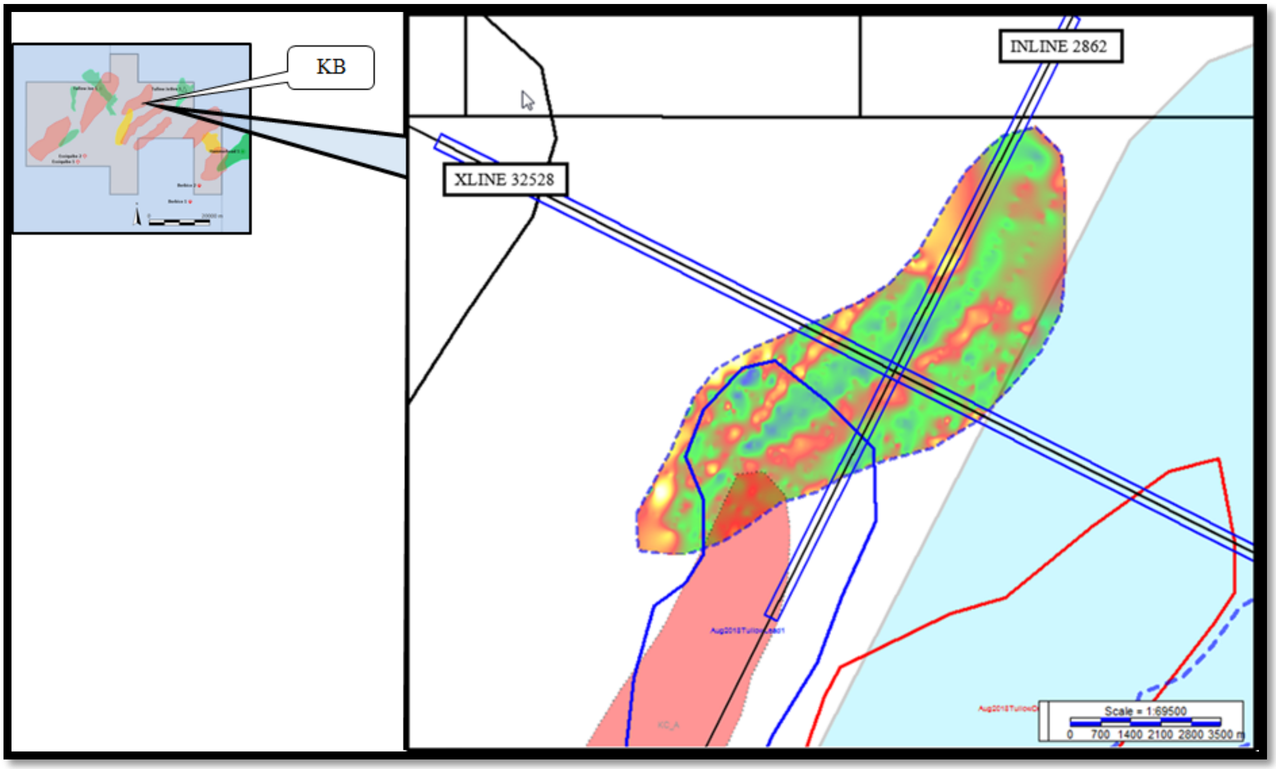


Figure 3-30 KB Lead Amplitude Map

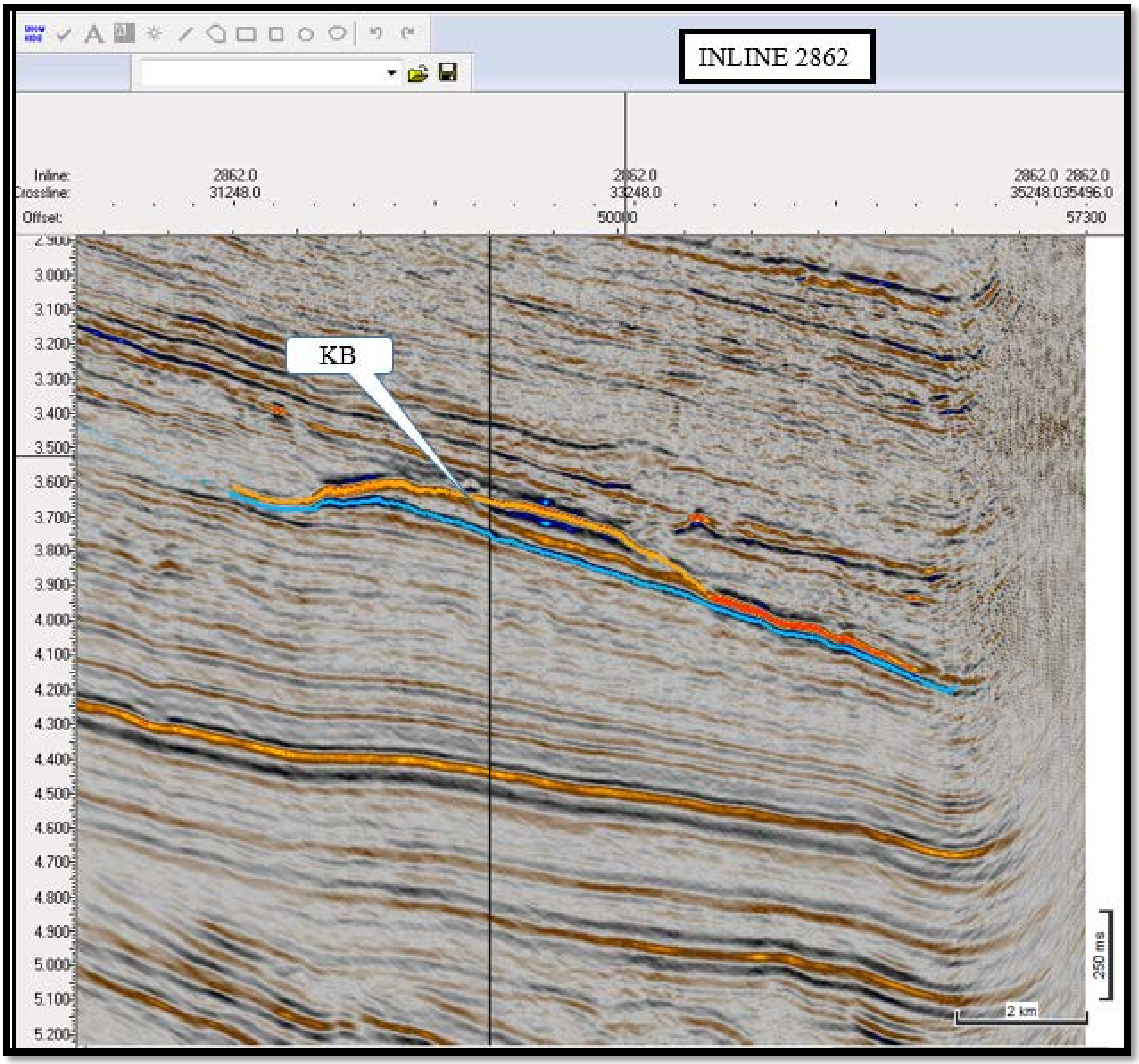


Figure 3-31 KB Lead Inline 2862

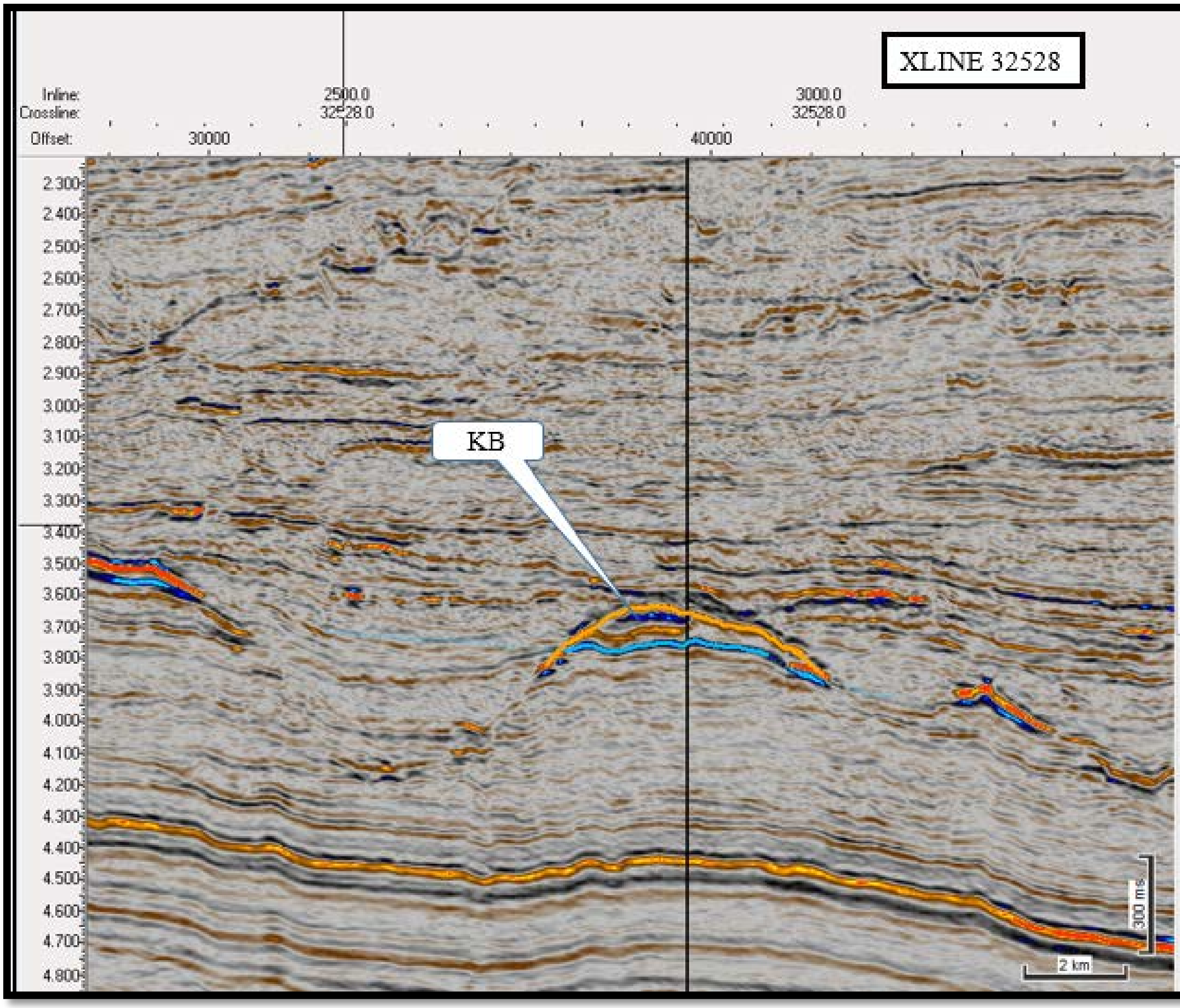


Figure 3-32 KB Lead Xline 32528

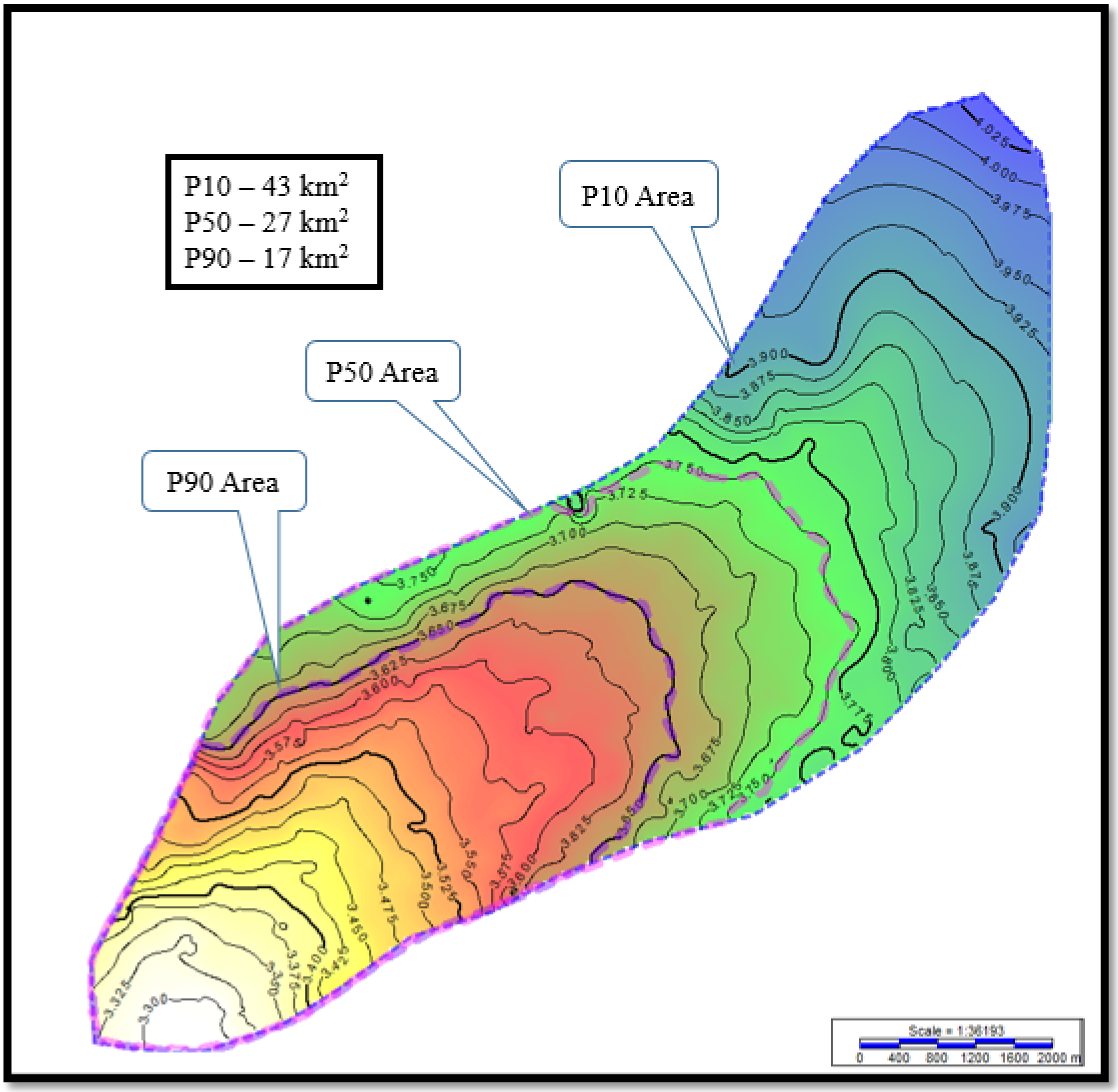


Figure 3-33 KB Lead Map with Areas

3.1.18.7 DJ Lead

This is interpreted to be a sand lens with a strong amplitude response (Figure 3-34) as seen on the PSDM 3D data on the Random Line (Figure 3-35). The areas used for this lead in the resource estimate are based on the P10 and P90 areas as depicted on the map with the P50 area determined by averaging the P10 and P90 areas.

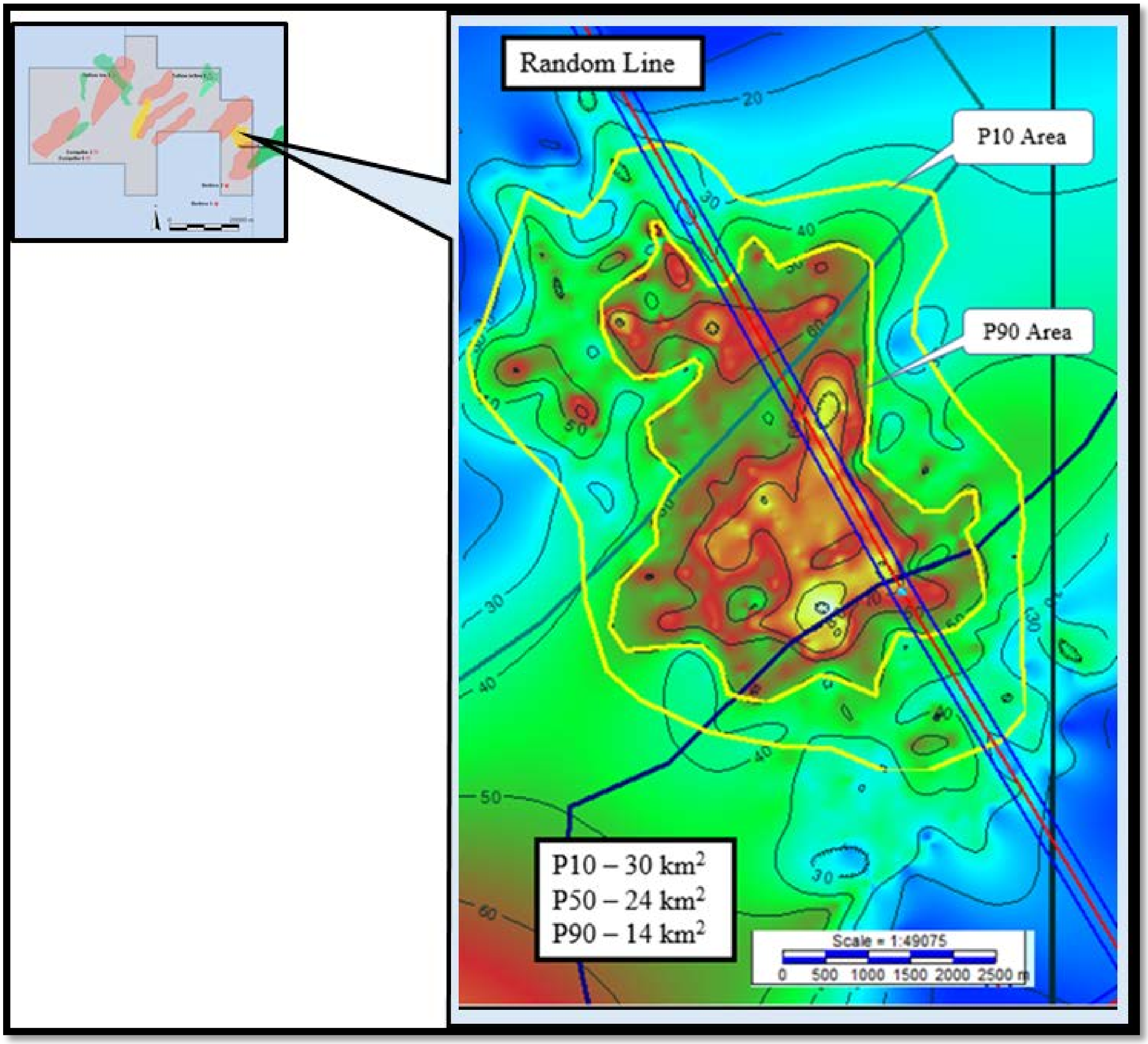


Figure 3-34 DJ Lead Amplitude Map with Area

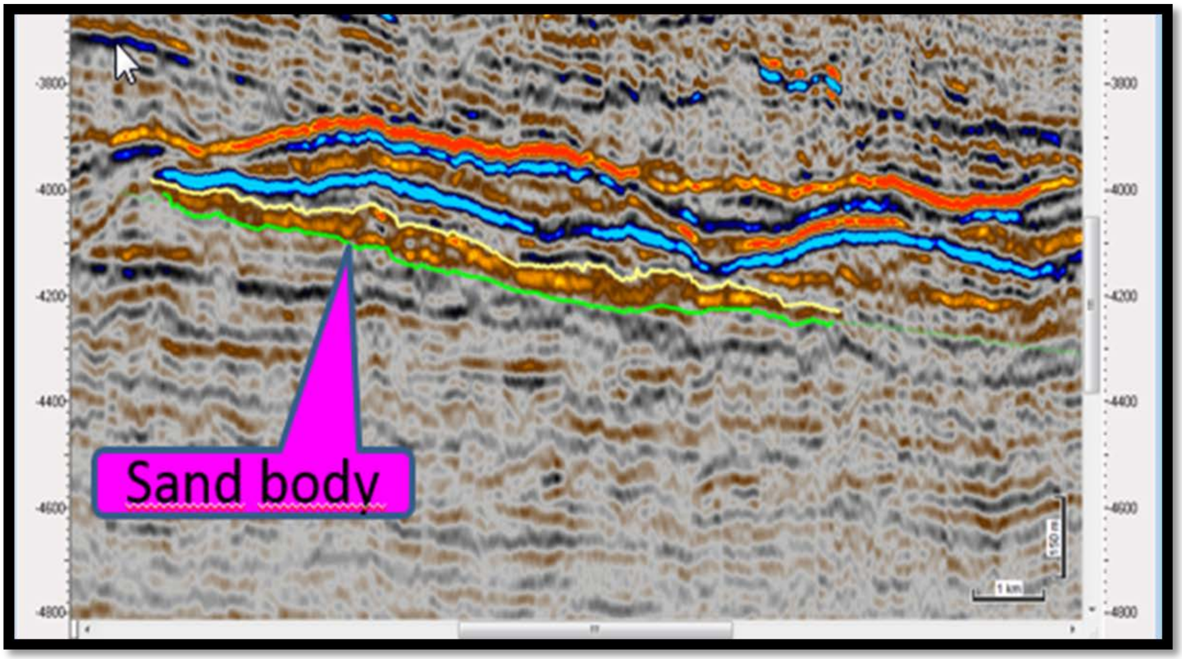


Figure 3-35 DJ Lead Arbitrary Line

3.1.18.8 KG Lead

The KG Lead is interpreted to be a small mound containing sand and carbonate of Upper Cretaceous age below an unconformity. The isopach map (Figure 3-36) indicates the thickness of the event, while the four seismic lines Figure 3-37, Figure 3-38, Figure 3-39, and Figure 3-40 show the event on the PSDM 3D data. Figure 3-41 depicts the depth structure map with the areas used for the Prospective Resource calculations.

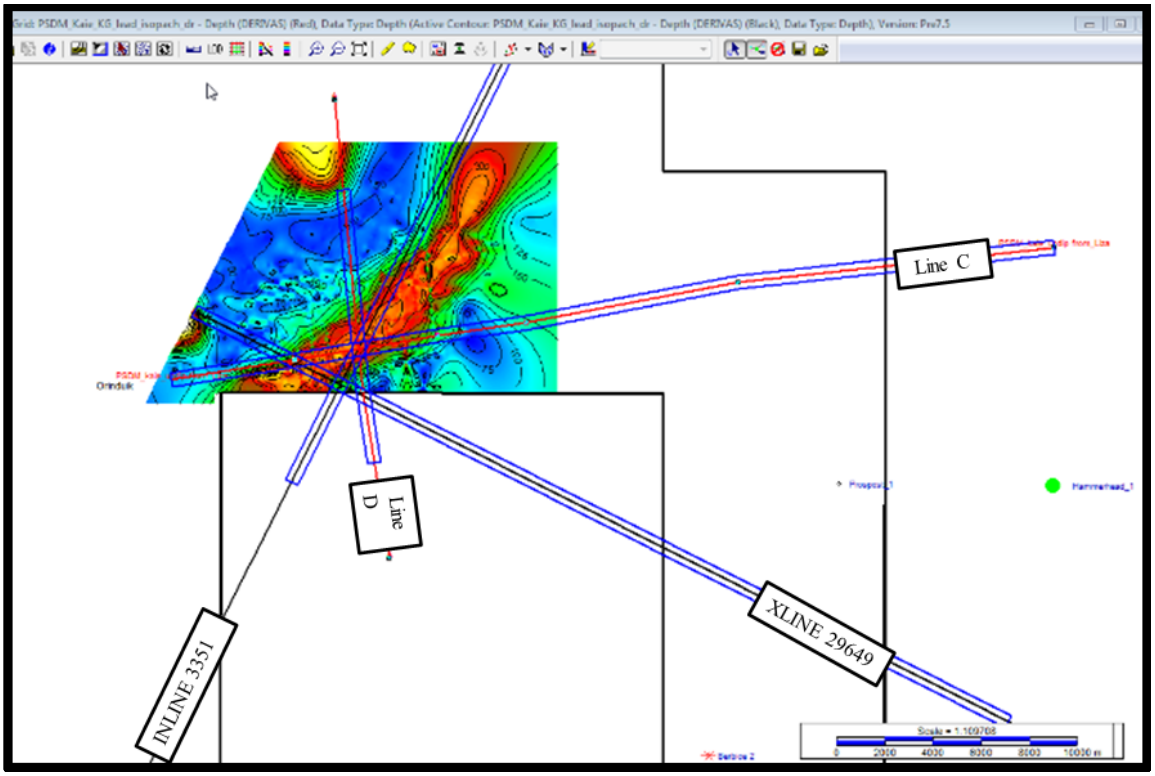


Figure 3-36 KG Lead Isopach Map from the PSDM 3D

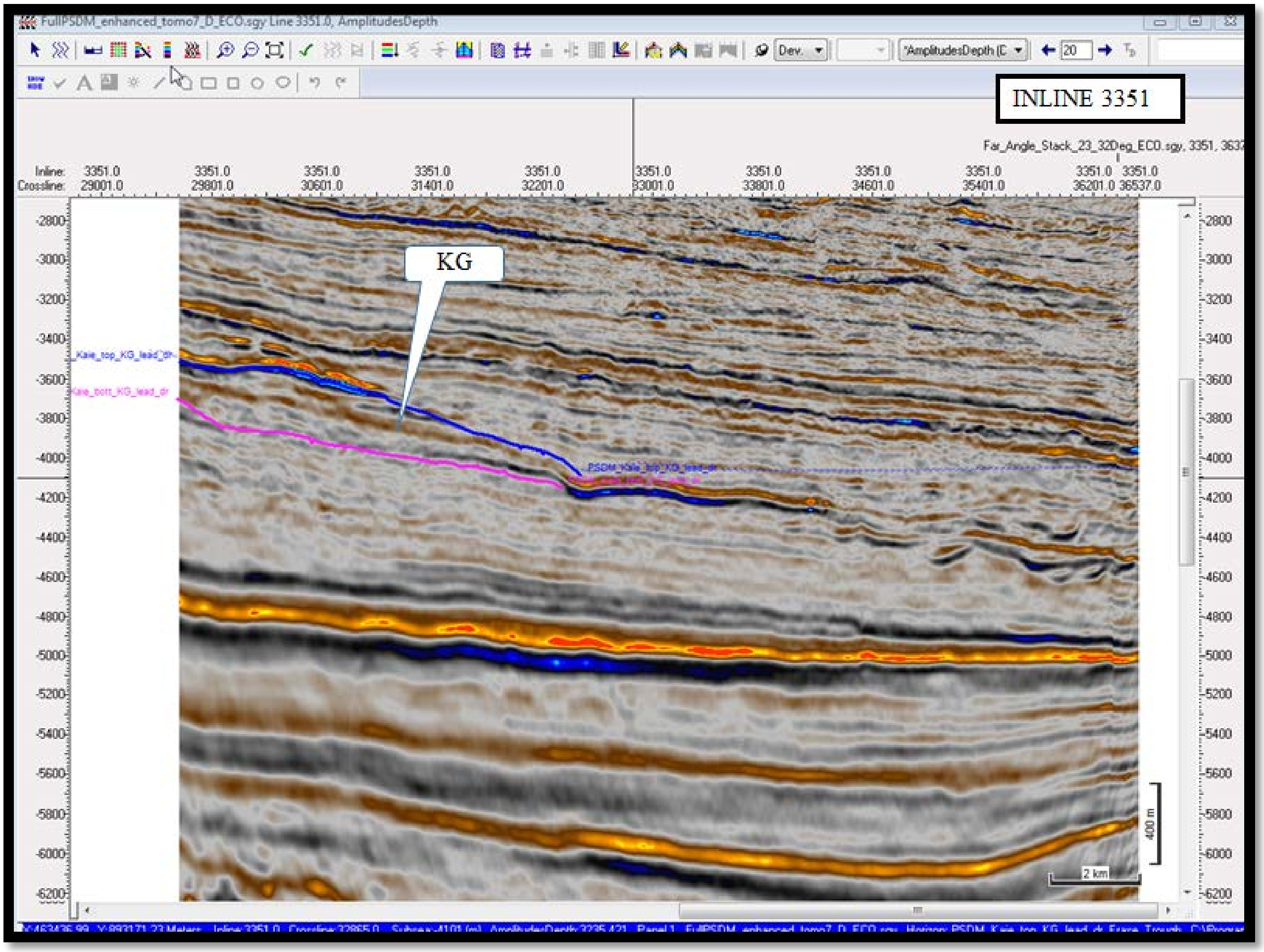


Figure 3-37 KG Lead Inline 3351

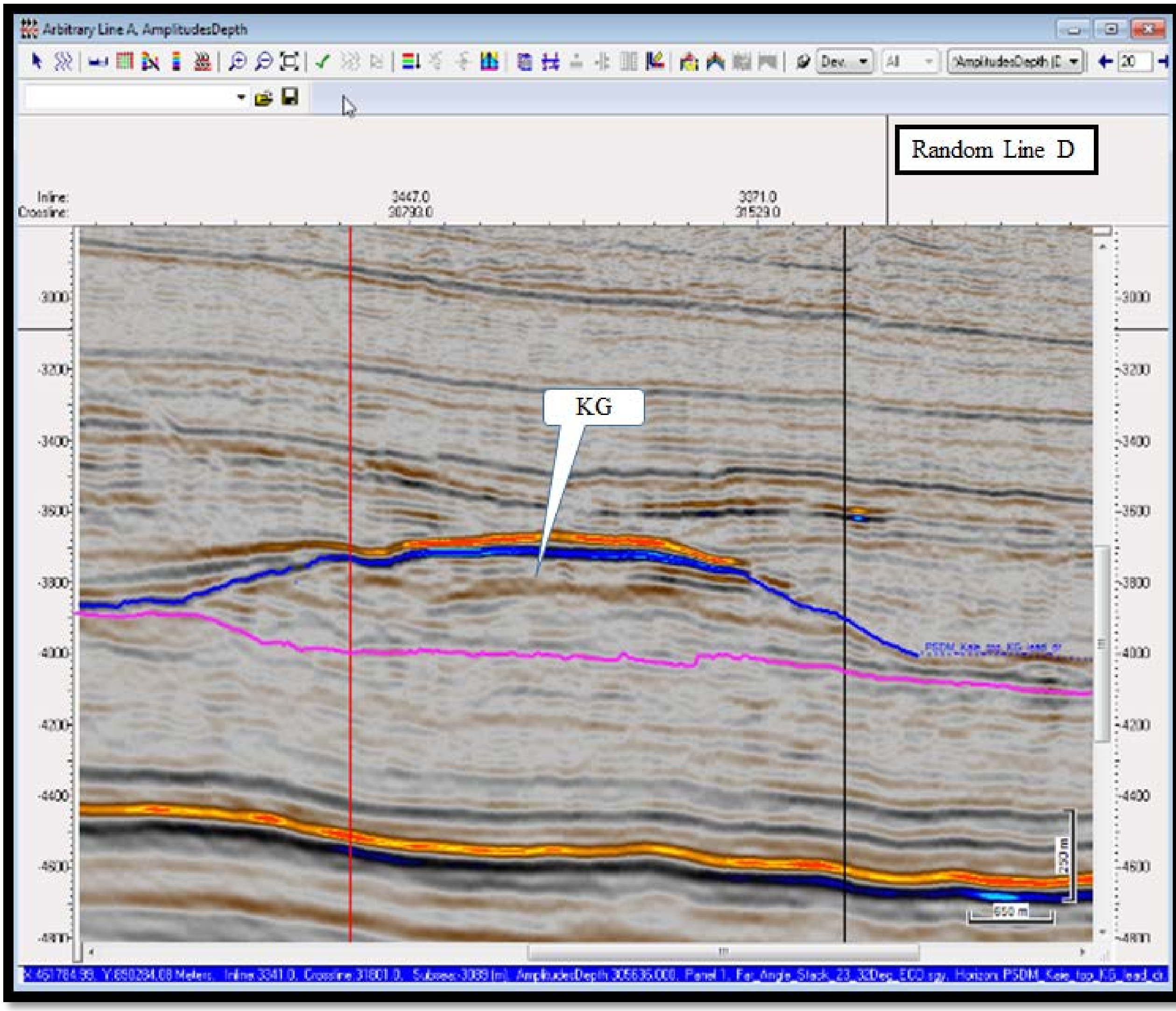


Figure 3-38 KG Lead Random Line D

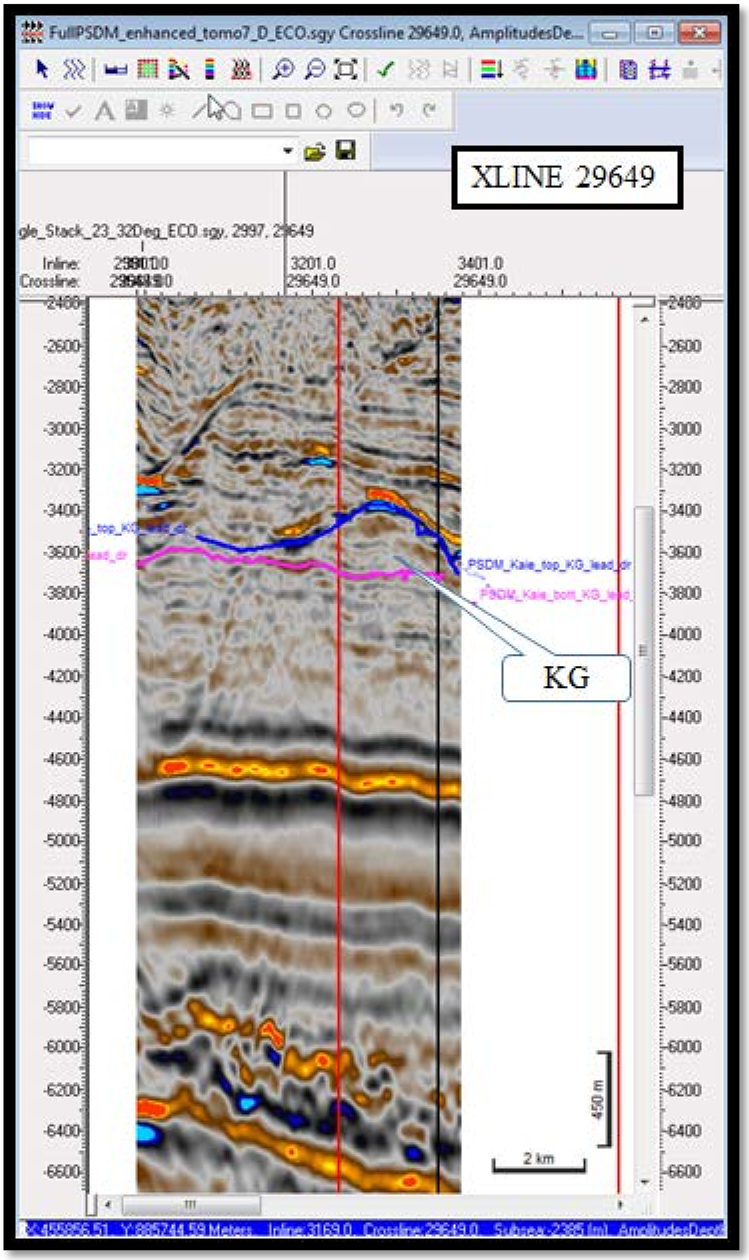


Figure 3-39 KG Lead Xline 29649

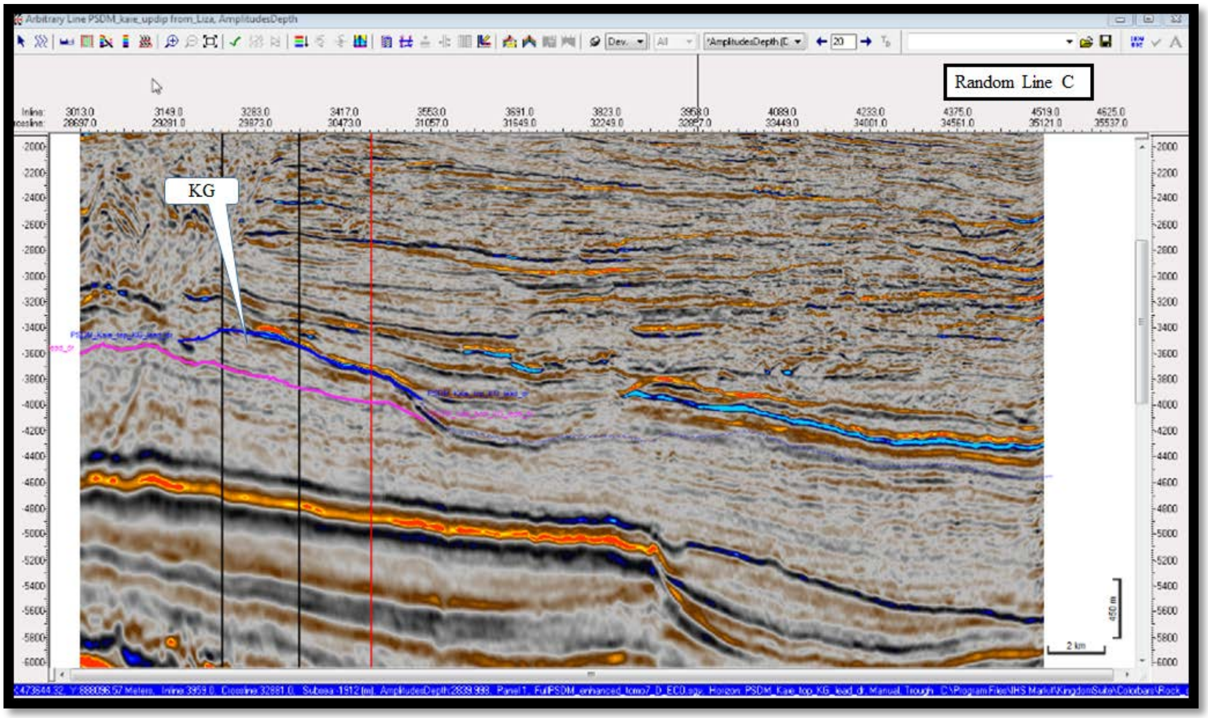


Figure 3-40 KG Lead Random Line C

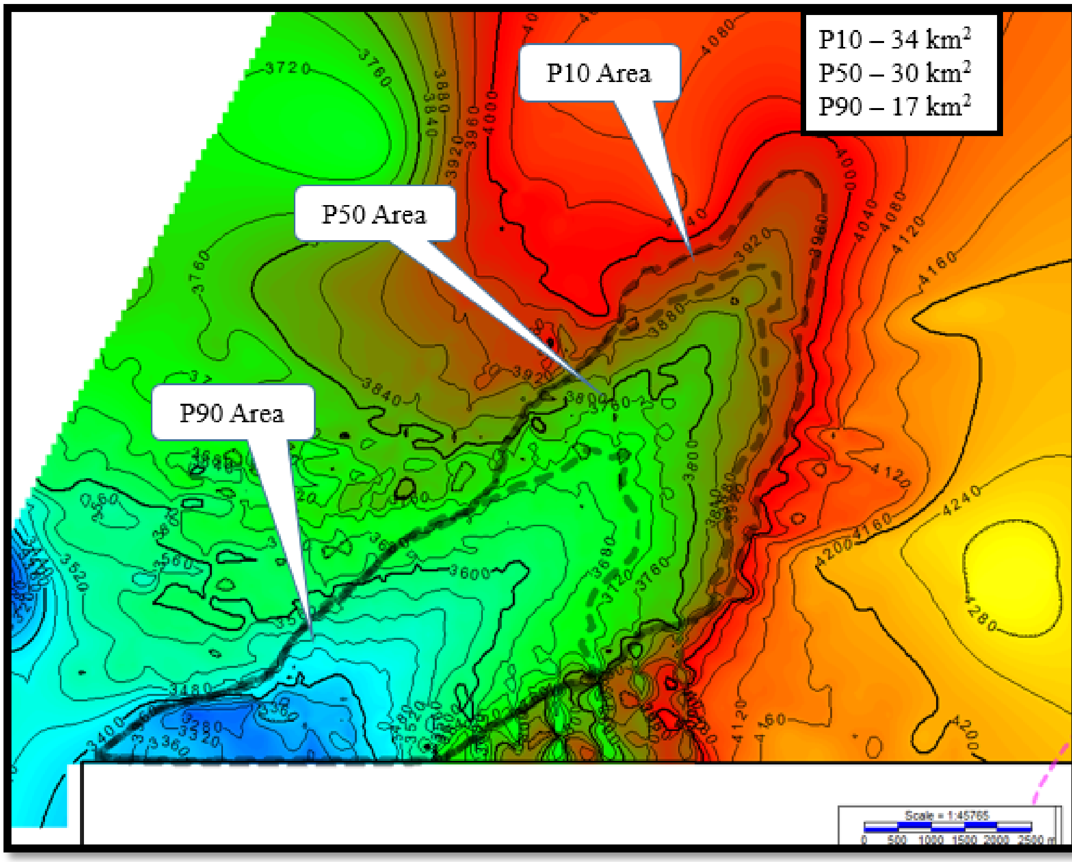


Figure 3-41 KG Lead Depth Map with Areas

3.1.18.9 Kumaka (KD) Lead

This lead is interpreted to be a stratigraphic trap pinching out below an unconformity located at the Upper Cretaceous level. An isopach map from the PSDM 3D data set is seen in Figure 3-42. Figure 3-43 are the Xline and Inline that demonstrate the geometry of this lead. Figure 3-44 depicts the depth structure map with the areas used for the Prospective Resource calculations. The Amalia Tertiary lead is above the Kumaka but has not been included in the resource estimates in this report.

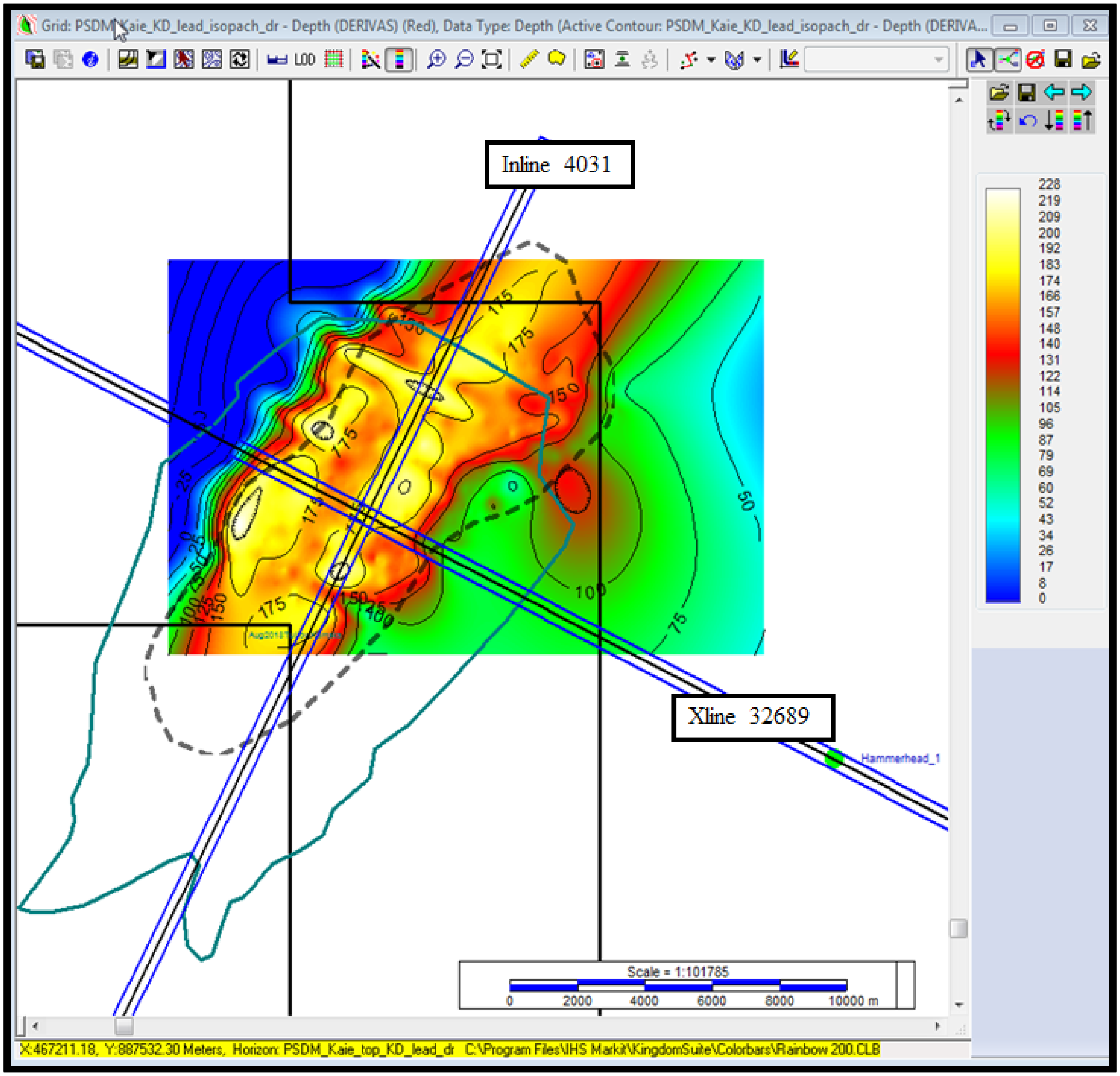


Figure 3-42 Kumaka Lead Isopach Map from the PSDM 3D

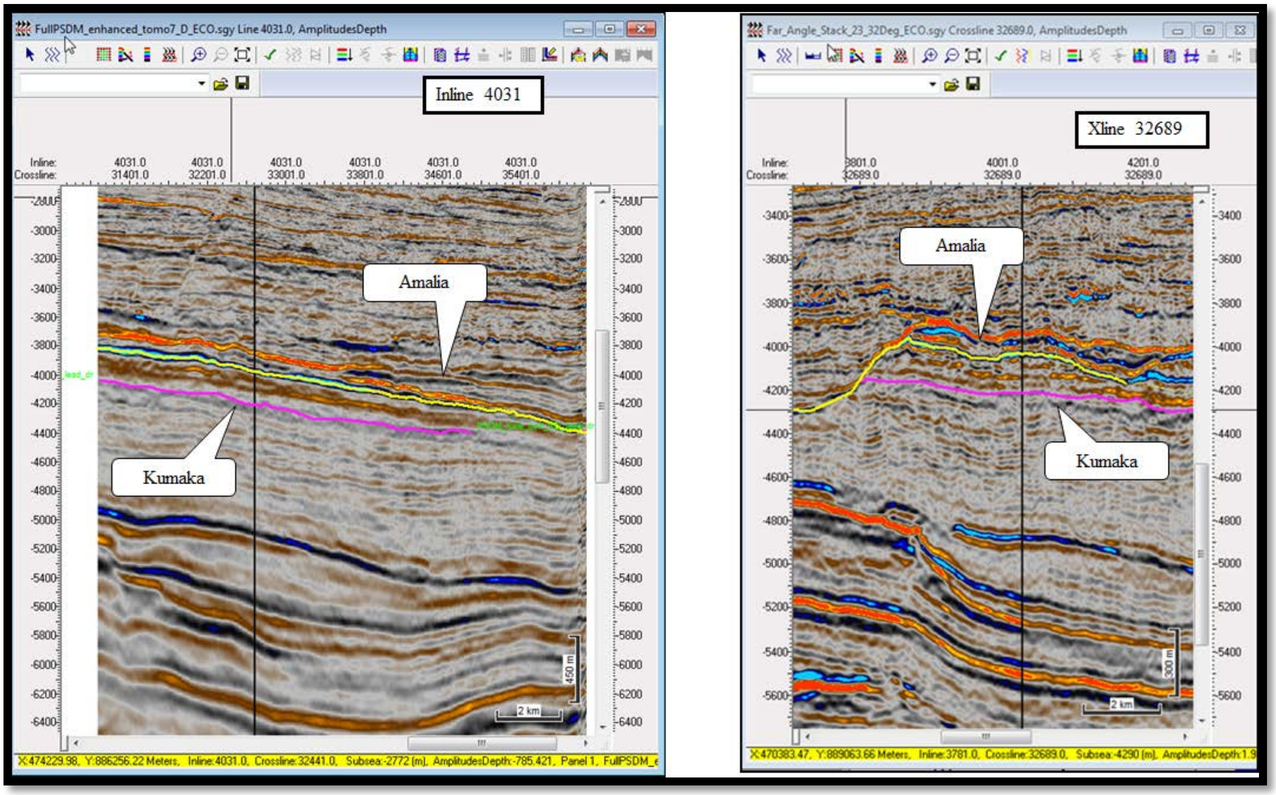


Figure 3-43 Kumaka and Amalia Lead Inline 4031X and line 32689

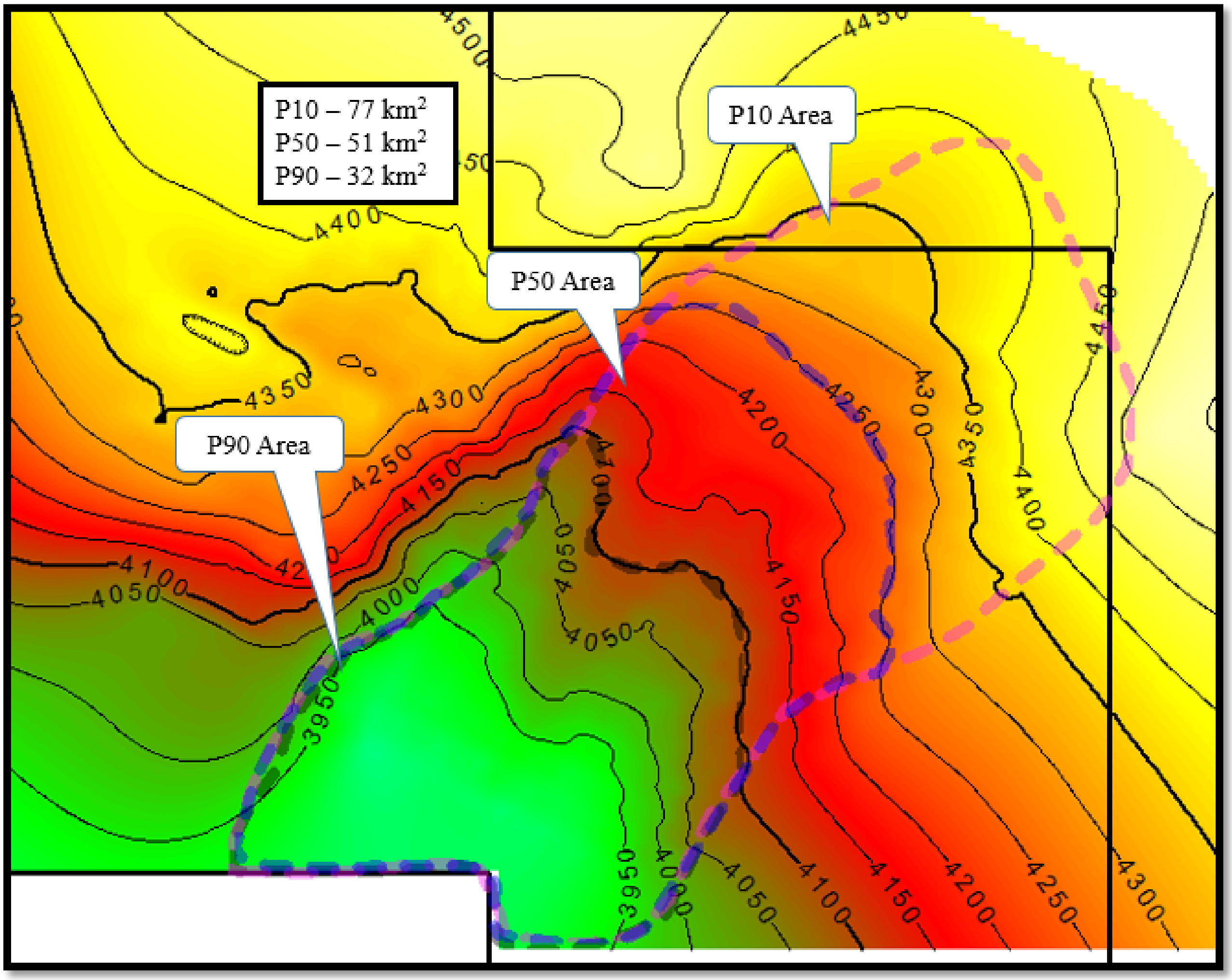


Figure 3-44 Kumaka Lead Depth Map with Areas

3.1.18.10 Iatuk-D Lead

This lead is interpreted as a stratigraphic trap pinching out up dip in the Cretaceous. A depth structure map interpreted on the PSDM 3D seismic data is shown in Figure 3-45. The Inline in Figure 3-46 goes along the crest of the feature while the Xline in Figure 3-47shows the cross section of the lead. Figure 3-48 depicts the depth structure map with the areas used for the Prospective Resource calculations.

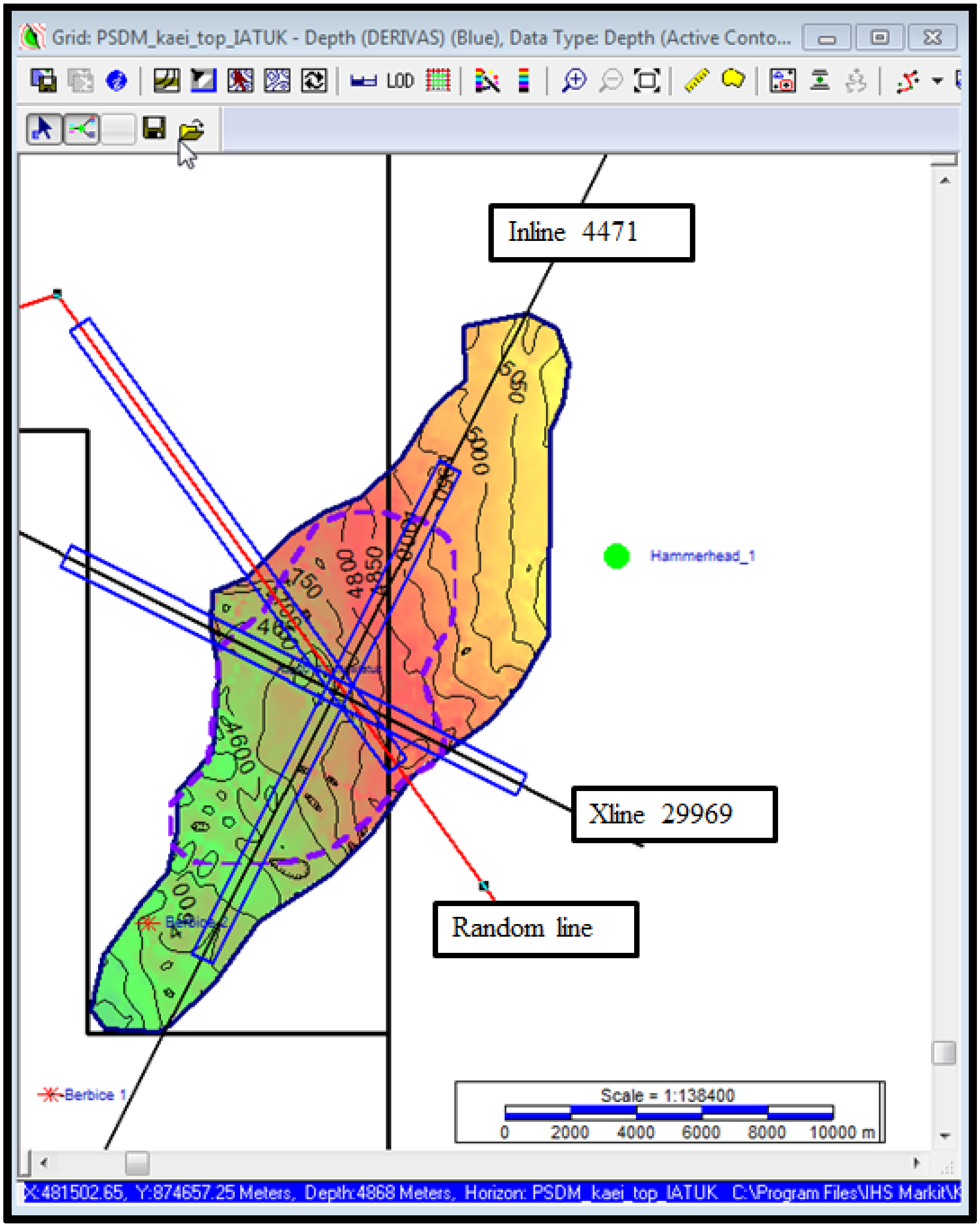


Figure 3-45 Iatuk-D Depth Structure Map with Tullow Polygon and ECO Polygon (Dashed)

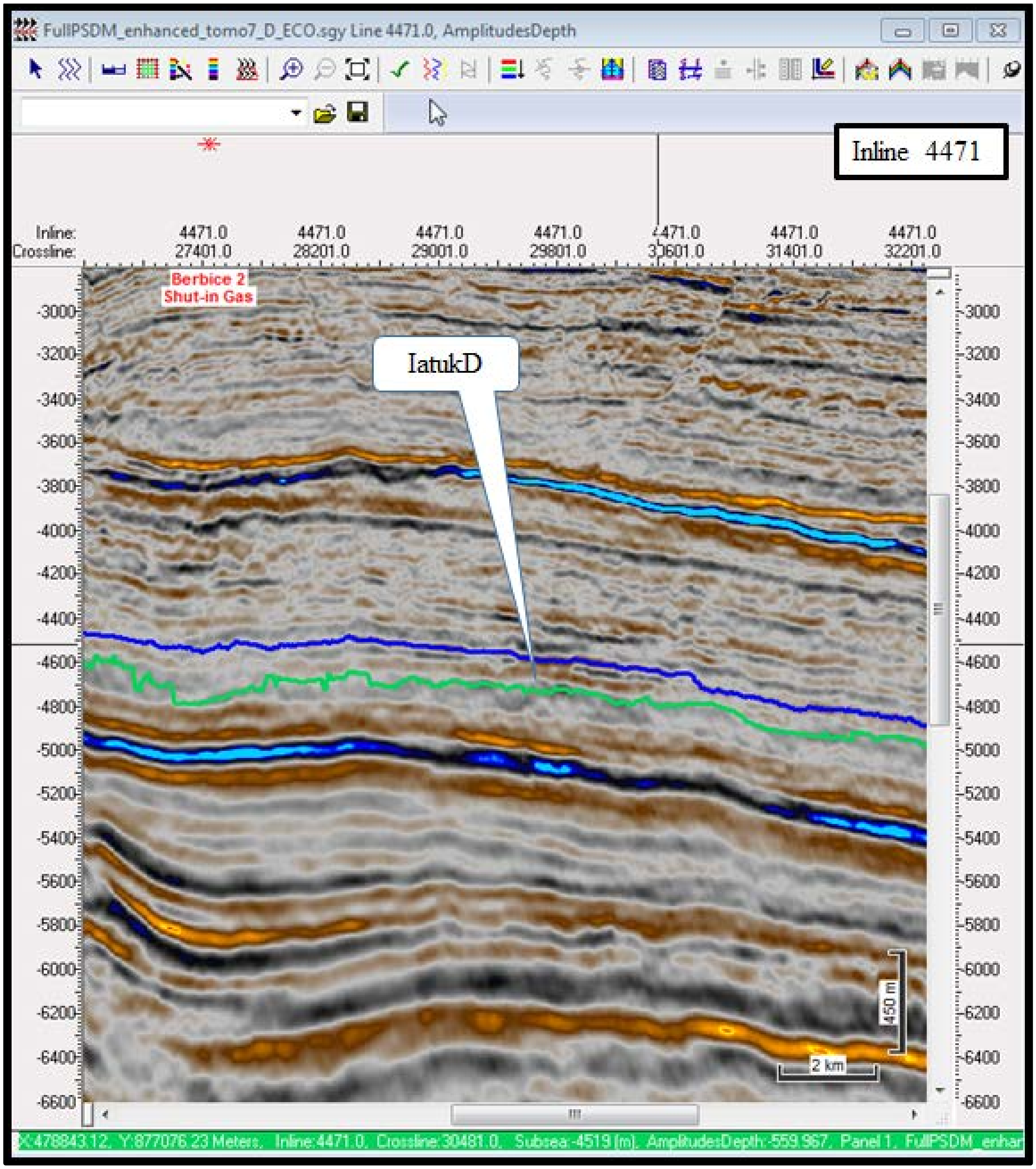


Figure 3-46 Iatuk-D Lead Inline 4471

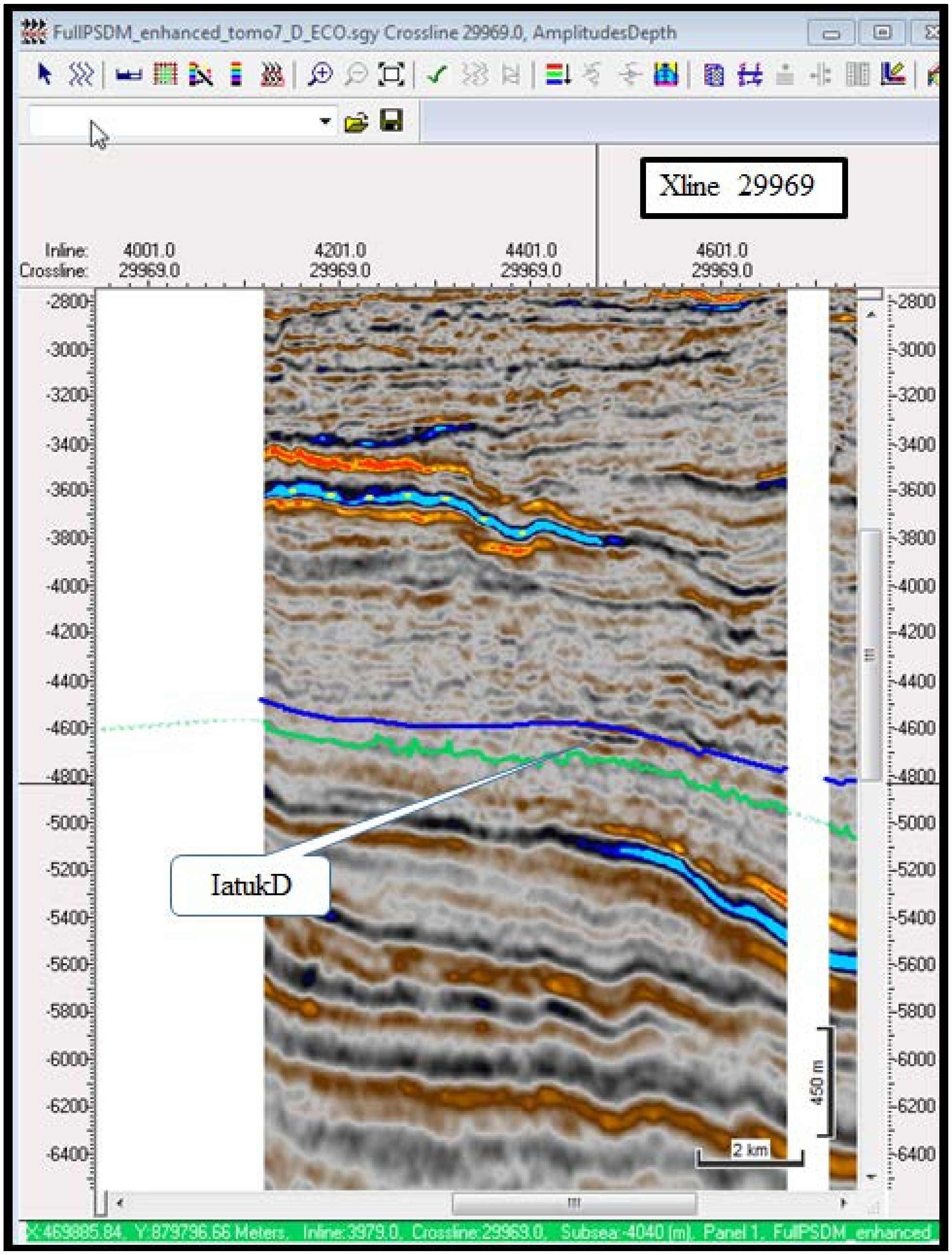


Figure 3-47 Iatuk-D Lead Xline 29969

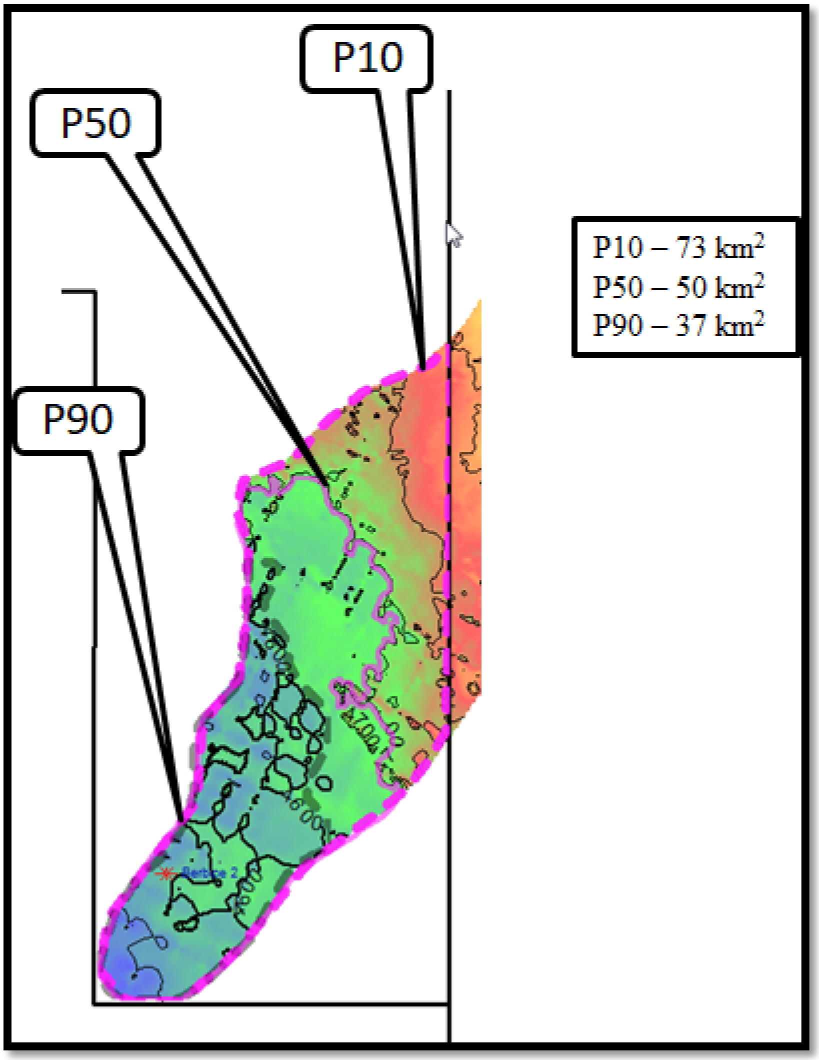


Figure 3-48 Iatuk-D Lead Map with Areas

3.1.18.11 KC Lead

Interpreted to be of Upper Cretaceous aged sand deposits as seen in the time structure map in Figure 3-49. The Xline in Figure 3-50 shows the cross section and the Inline in Figure 3-51 shows the extent of the event. Figure 3-52 depicts the depth structure map with the areas used for the Prospective Resource calculations.

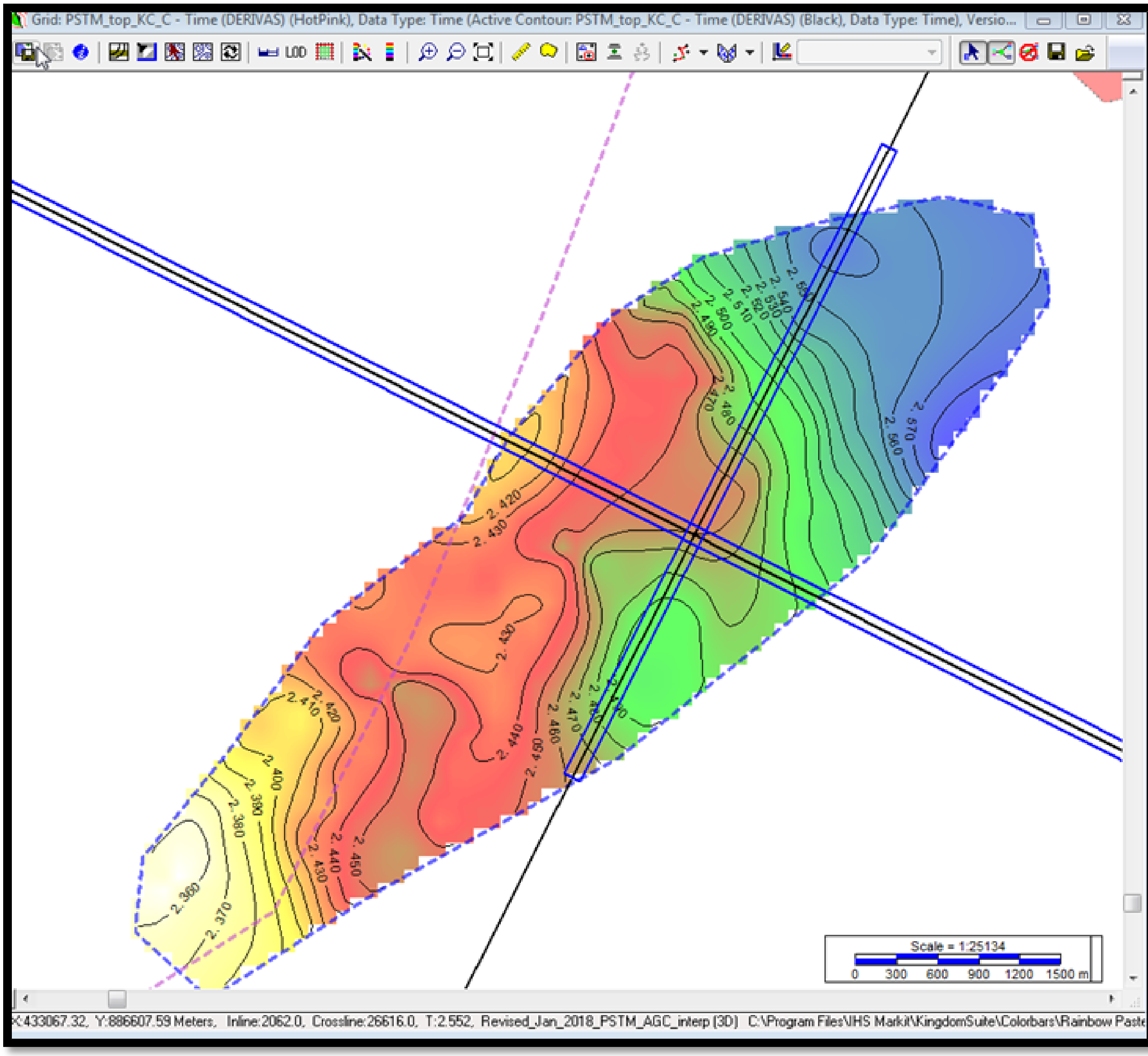


Figure 3-49 KC Lead Time Structure Map from the PSTM 3D

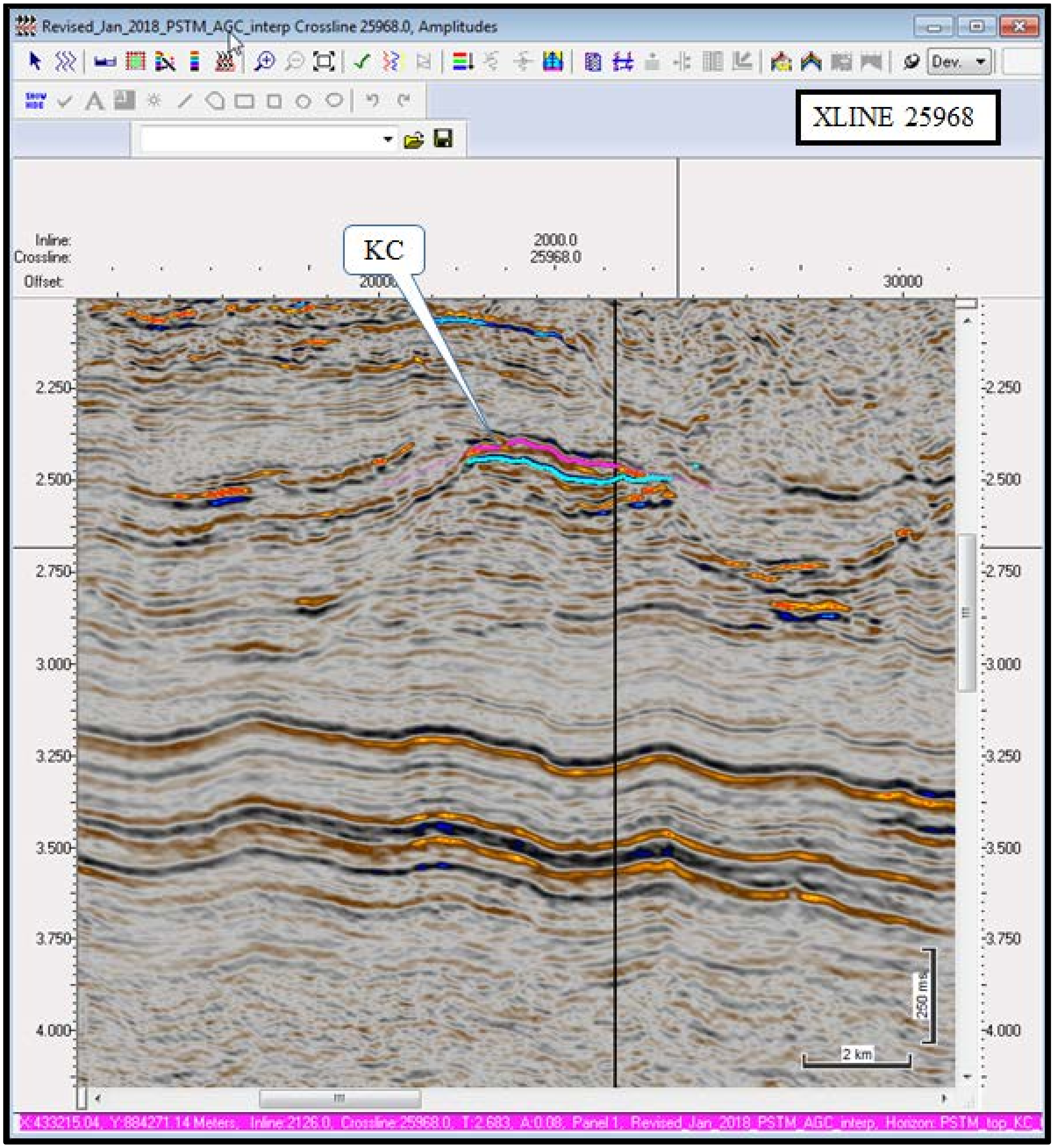


Figure 3-50 KC Lead Xline 25968

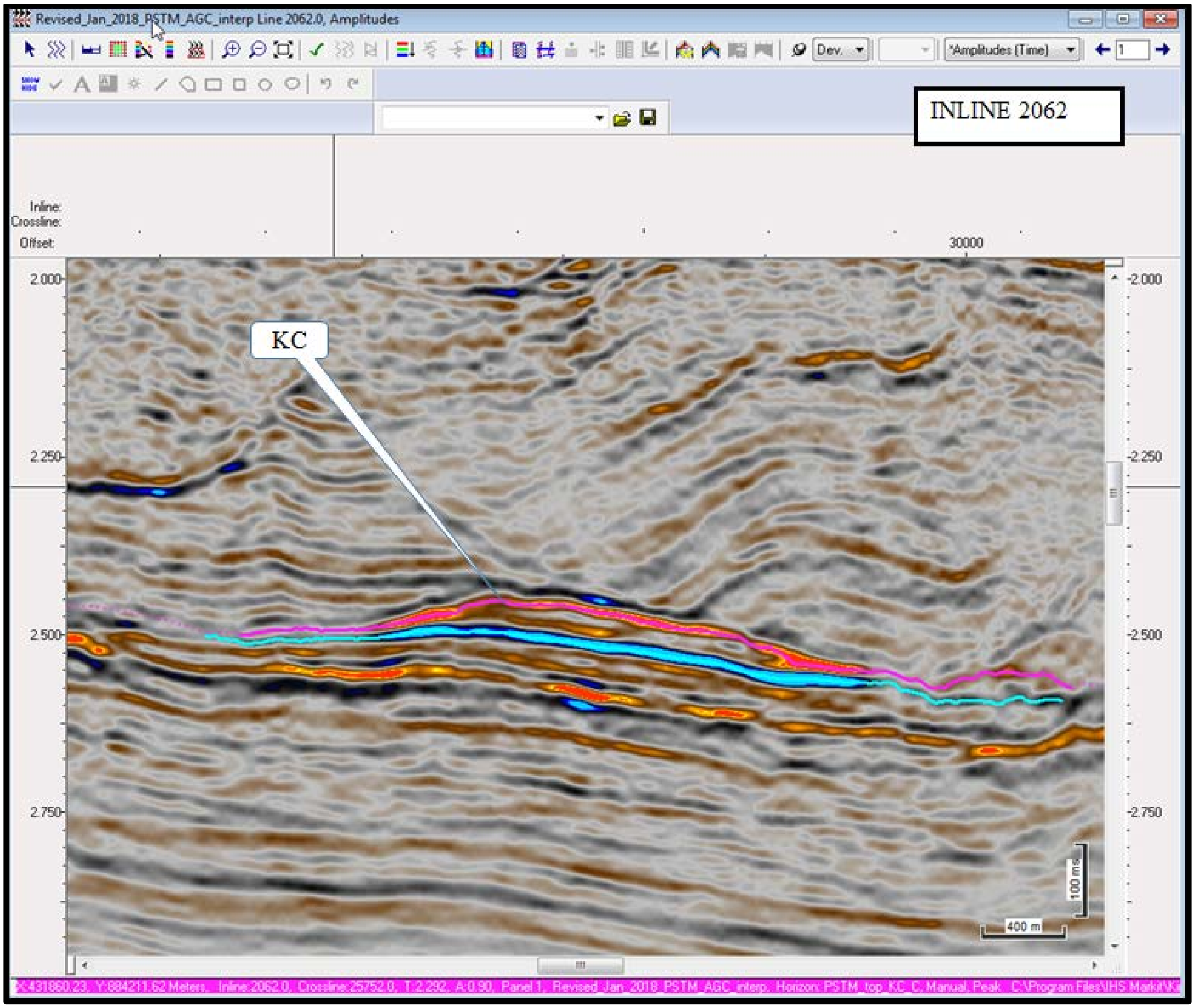


Figure 3-51 KC Lead Inline 2062

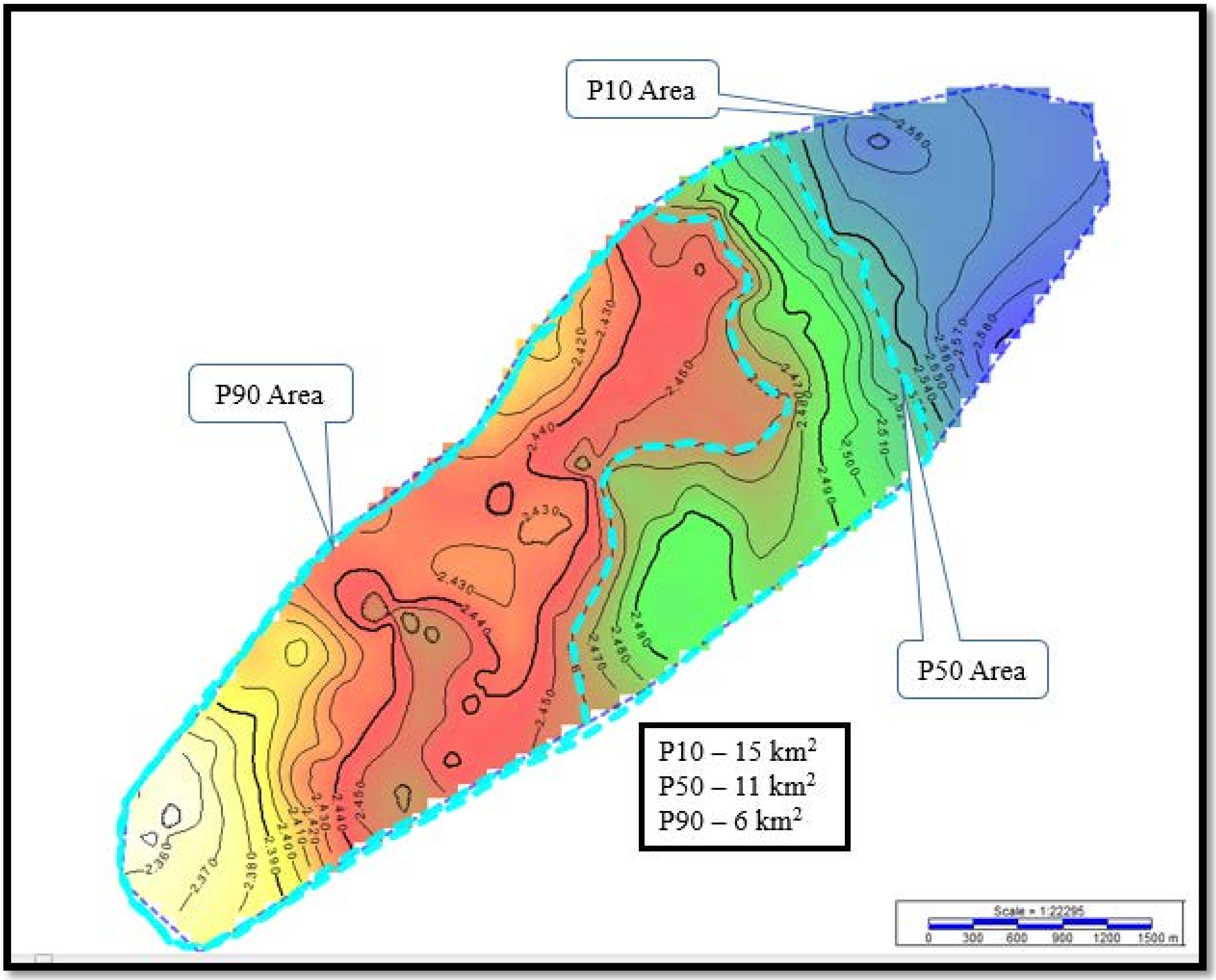


Figure 3-52 KC Lead Time Map with Areas

3.1.18.12 Amatuk Lead

This lead is above a channel infill of Upper Cretaceous age. The channel runs from the southwest to the North where it plunges onto the continental shelf. An amplitude map is depicted in Figure 3-53 and the seismic lines from the PSTM data in Figure 3-54 and show the length of the event and the cross section of the channel in Figure 3-55. The time structure map with the areas used is seen in Figure 3-56.

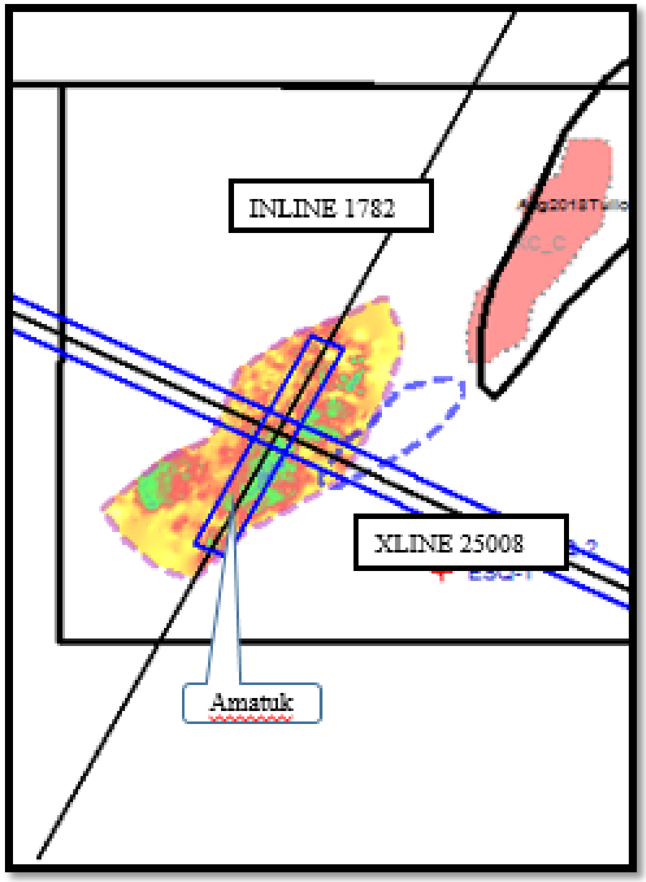


Figure 3-53 Amatuk Lead Amplitude Map from the PSTM 3D

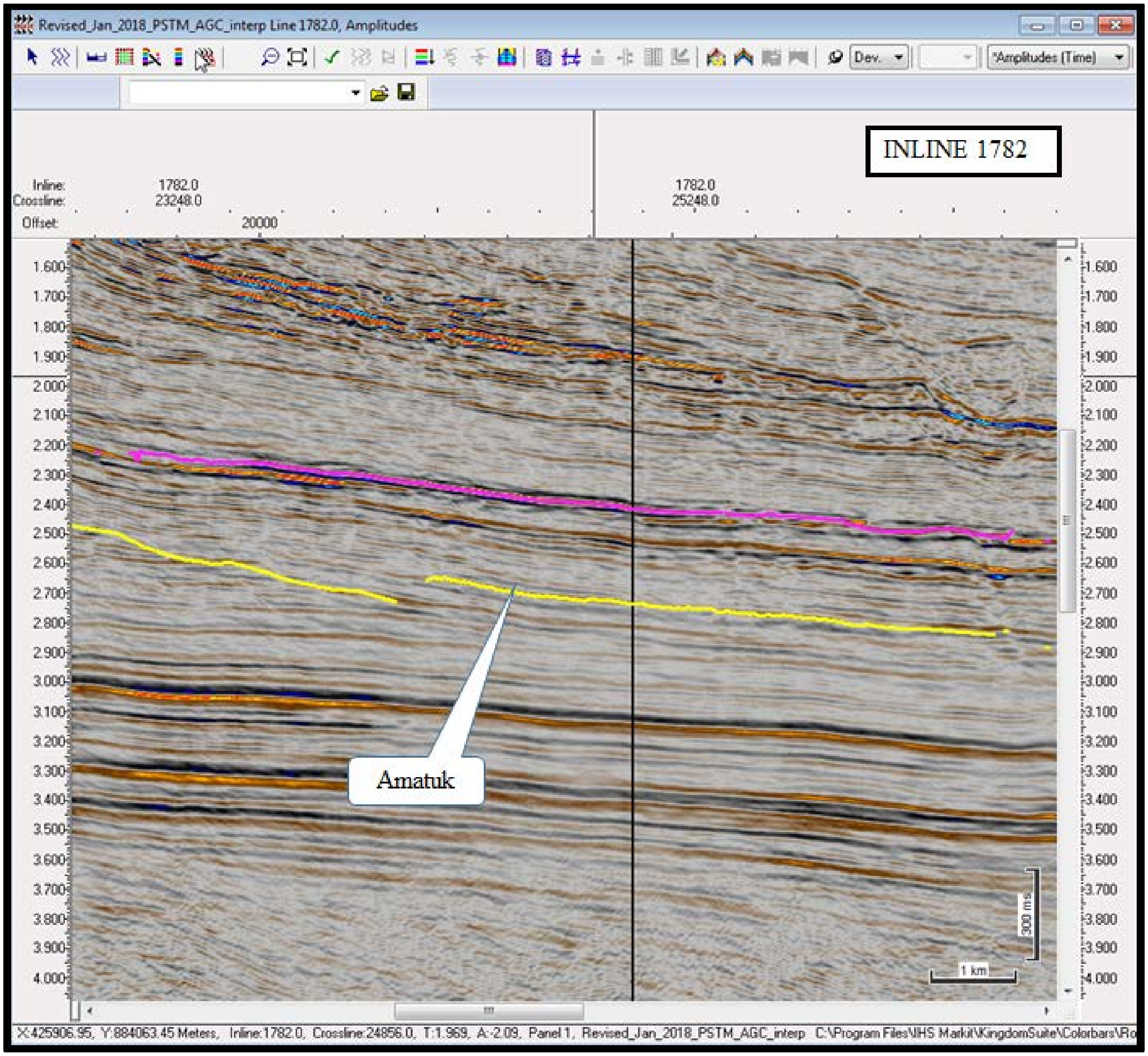


Figure 3-54 Amatuk Lead Inline 1782

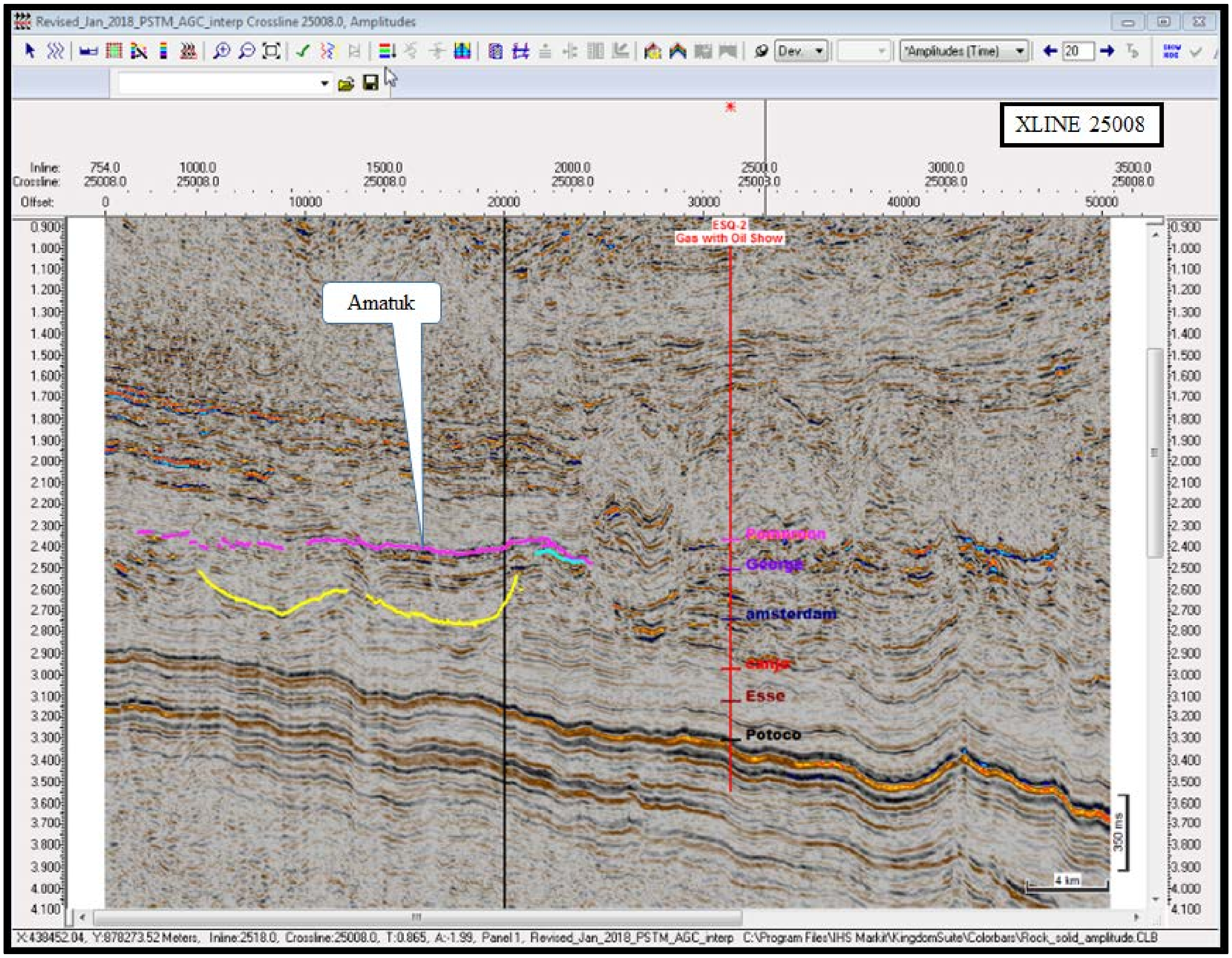


Figure 3-55 Amatuk Lead Xline 25008

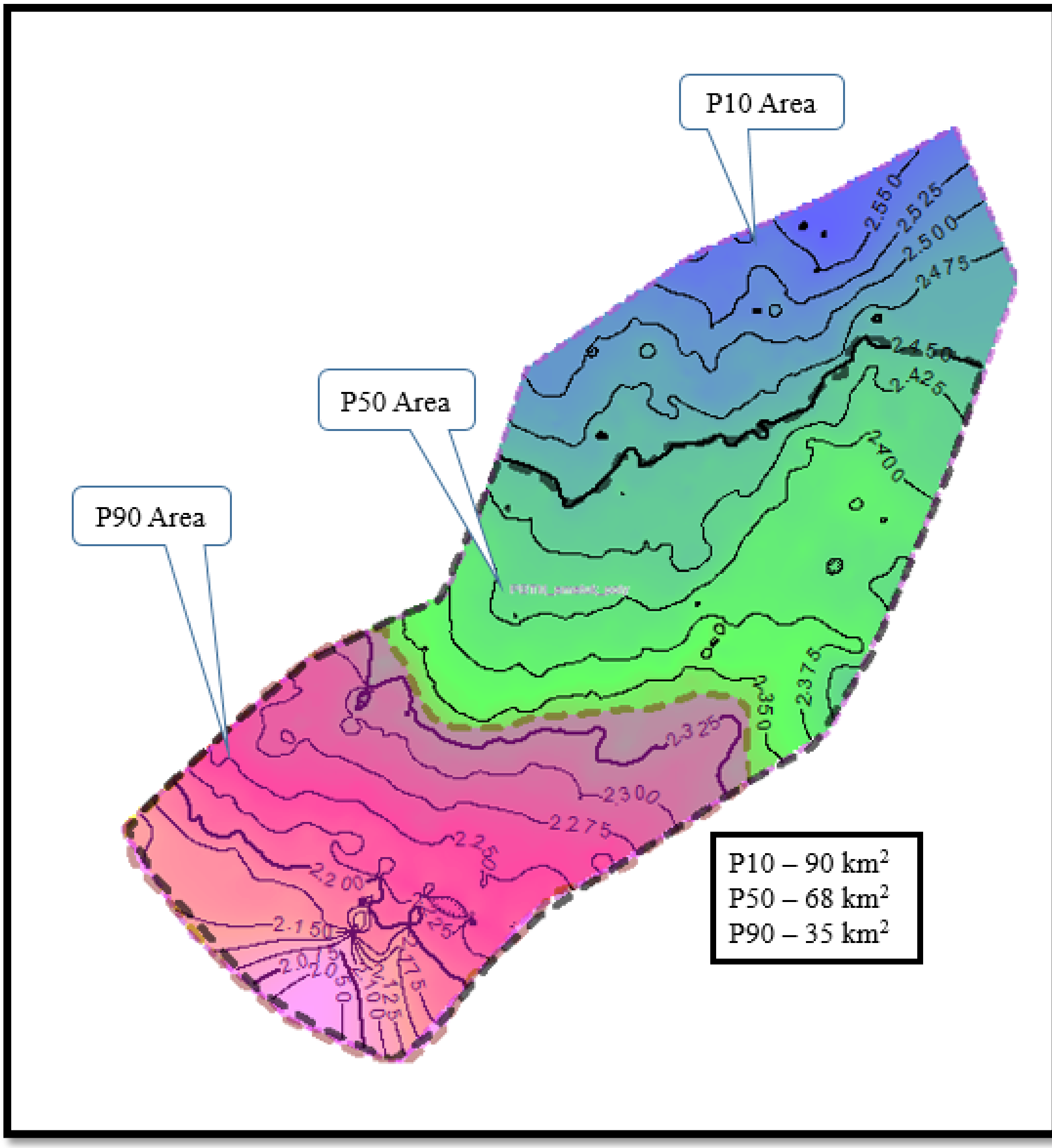


Figure 3-56 Amatuk Lead Area Map

3.1.18.13 MJ-3 Lead

This lead is interpreted to be an Upper Cretaceous stratigraphic trap likely containing sand and carbonates. Figure 3-57 shows the time structure with the areas used in the resource estimate. Figure 3-58 is a random line along the crest of this feature and Figure 3-59 is a Xline that shows the cross section of the event.

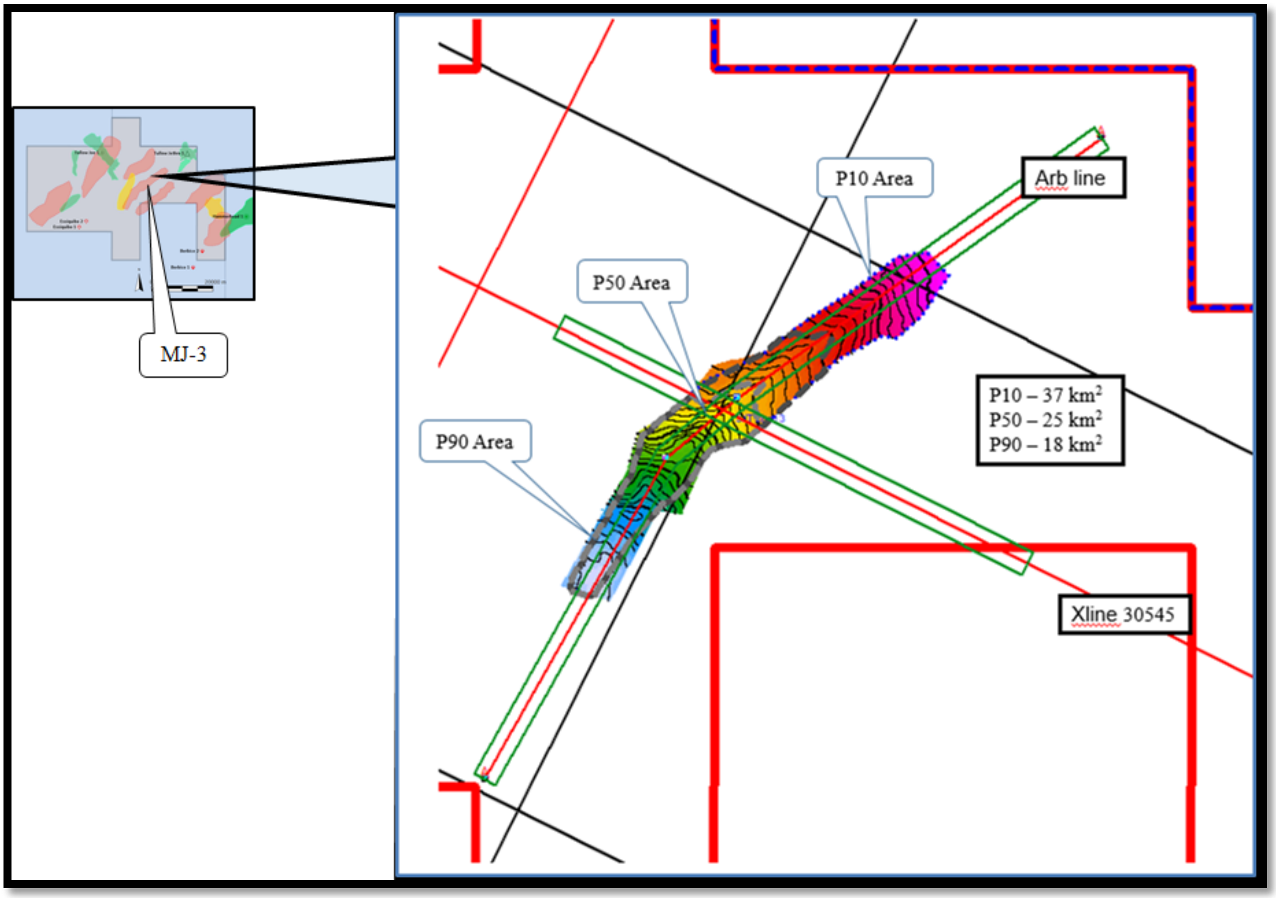


Figure 3-57 MJ-3 Lead Time Map with Areas from the PSTM 3D

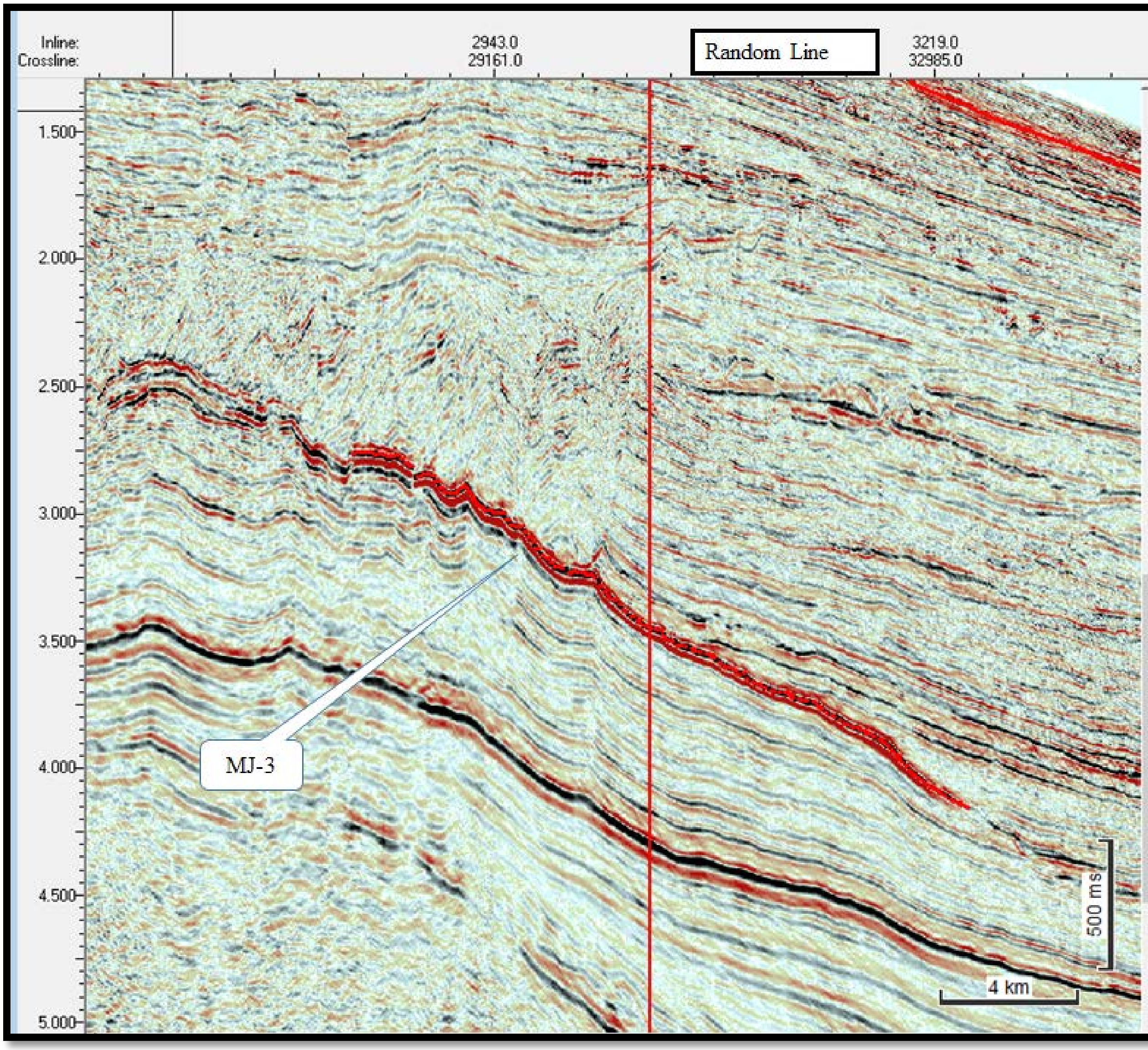


Figure 3-58 MJ-3 Lead Random Line along the Crest of the Feature from the PSTM

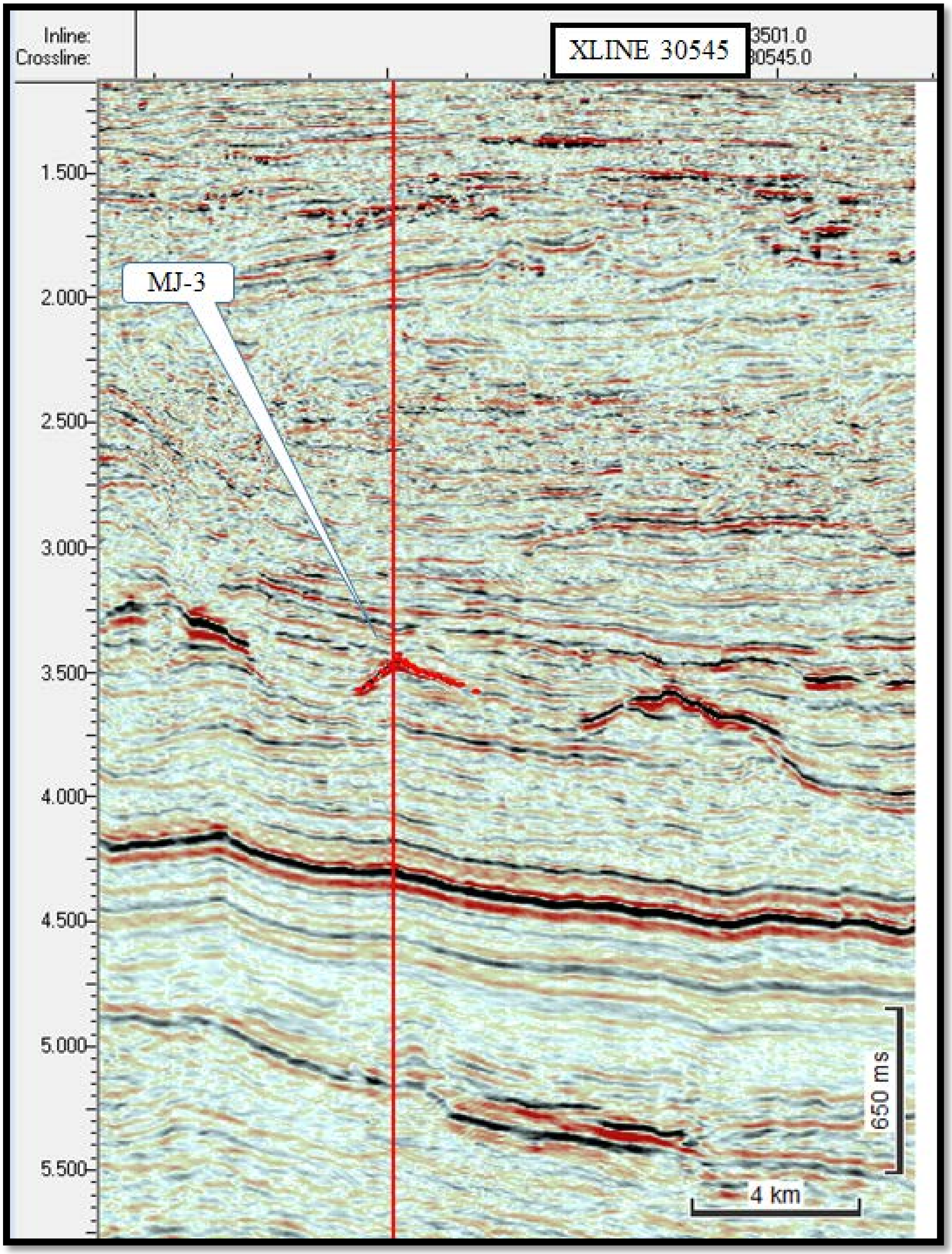


Figure 3-59 MJ-3 Lead Xline 30545

3.1.18.14 Jimmy (MJ-4) Lead

This lead is interpreted to be an Upper Cretaceous stratigraphic trap likely containing sand and carbonates. The time structure maps with areas used to estimate the Prospective resources is in Figure 3-60 while Figure 3-61 shows the cross section of the lead on Xline 29569 and the Random Line shows the extent of the lead along the crest.

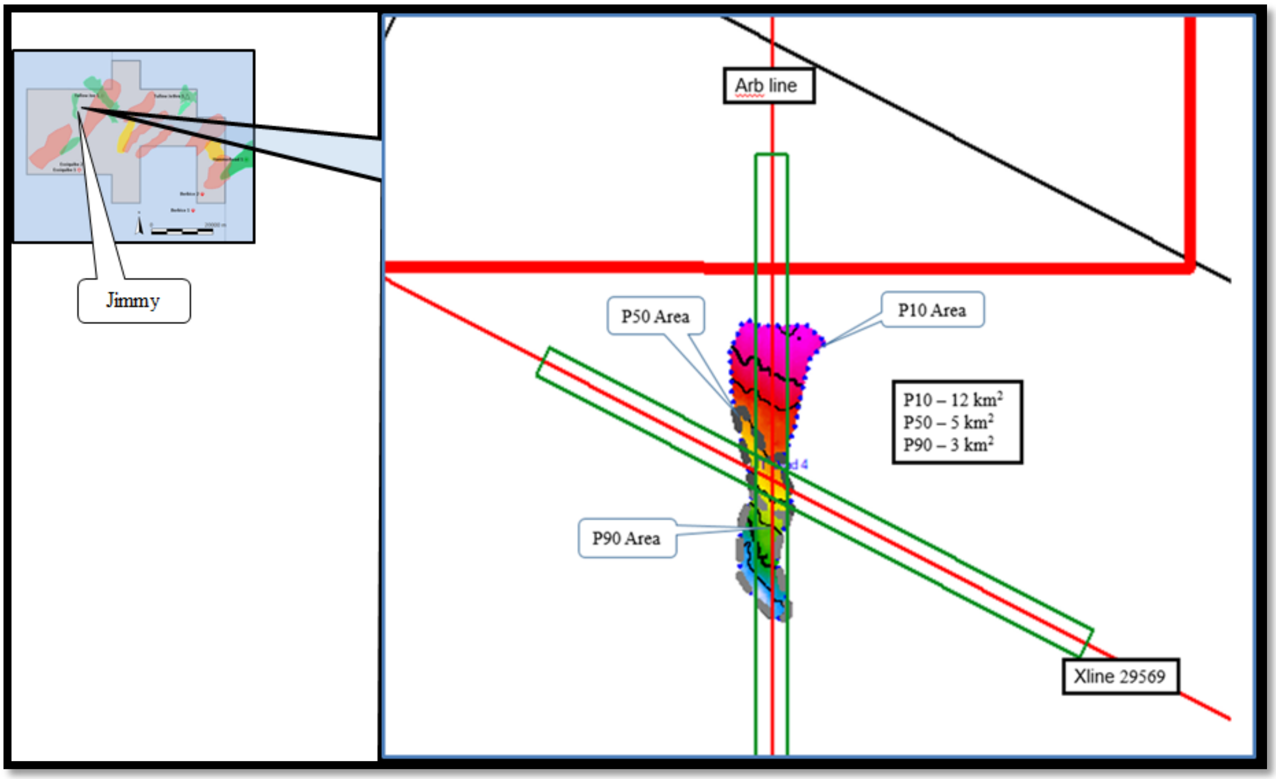


Figure 3-60 MJ-4 Lead Time Map with Areas from the PSTM 3D

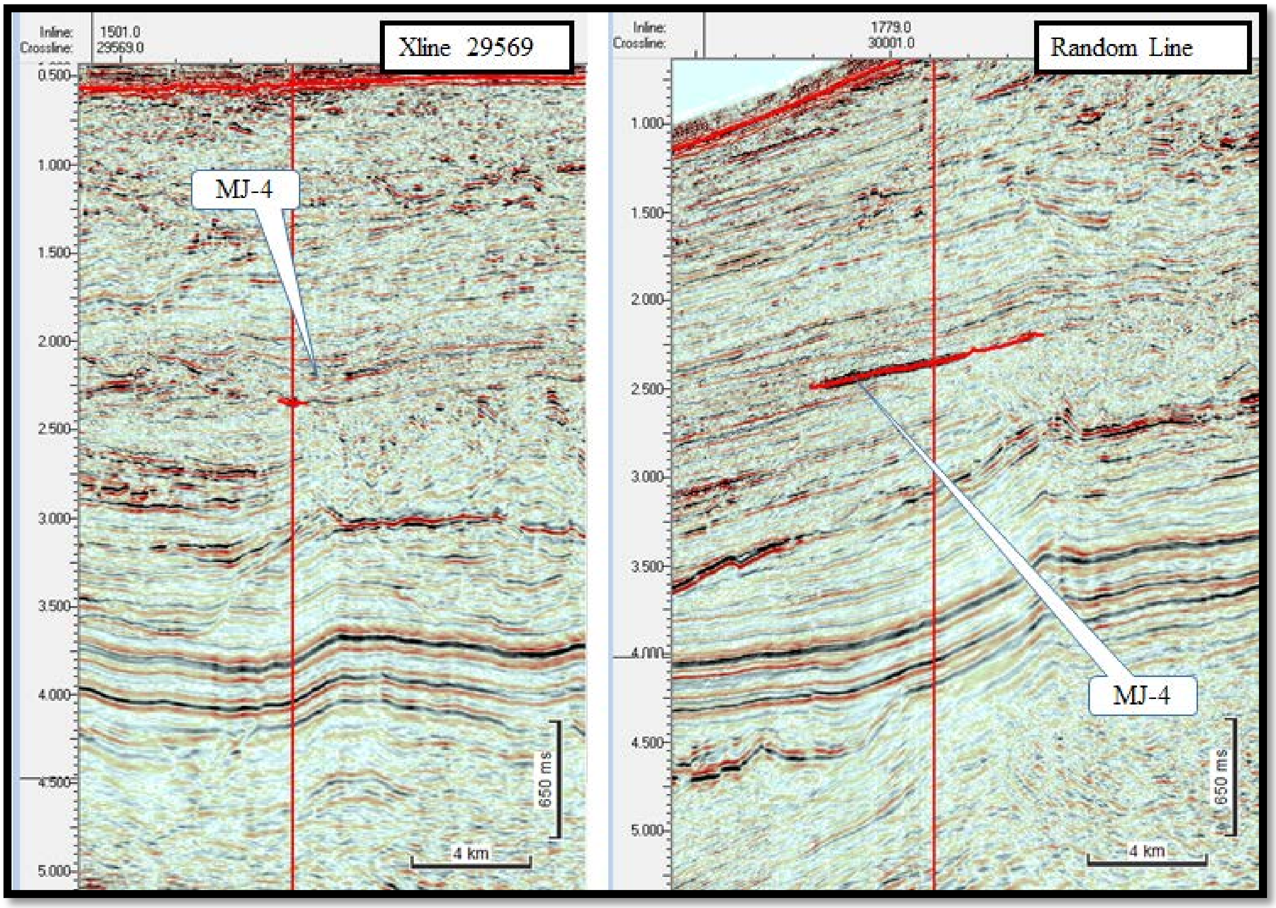


Figure 3-61 MJ-4 Lead Xline 29569 and Random Line along the Crest of the Feature

3.1.18.15 KC-A Lead

This lead is interpreted to be an Upper Cretaceous accumulation of sand trapped by an unconformity. It lies below a chaotic zone composed of a turbidite sequence that slide down slope along the unconformity. The time structure map with the areas used in the Prospective Resources estimate is seen in Figure 3-62.

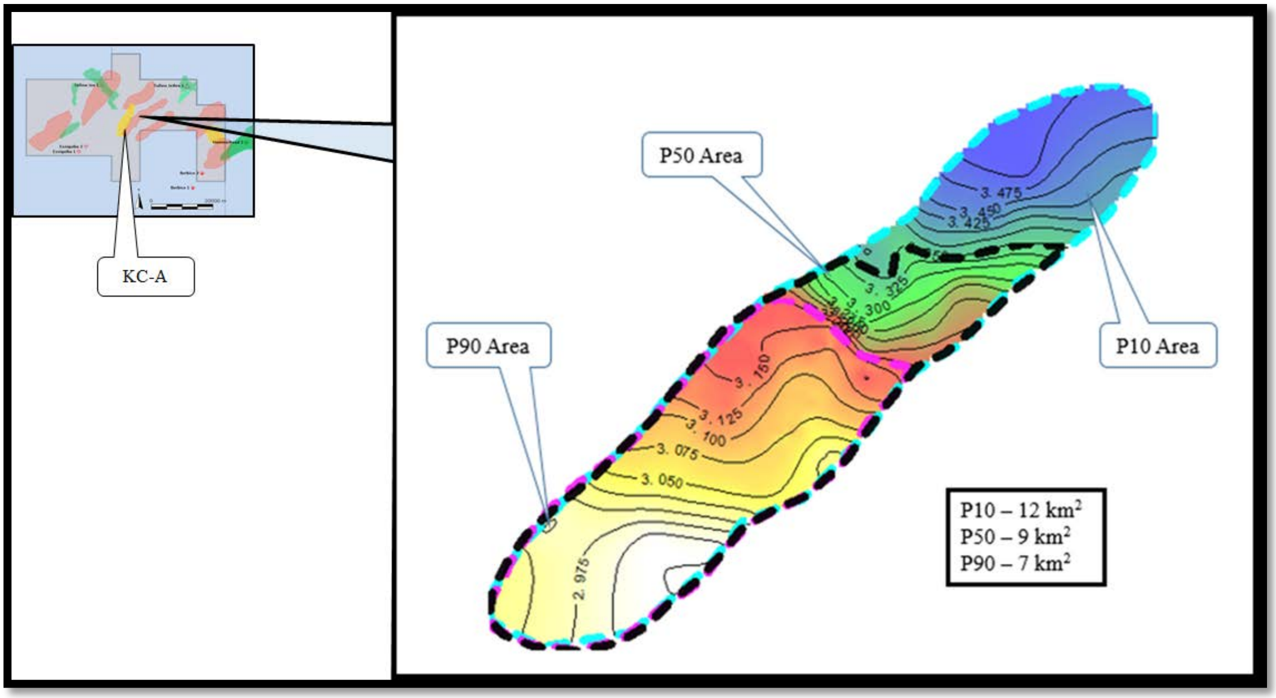


Figure 3-62 KC-A Lead Time Map with Areas

3.1.19 Database

3.1.19.1 Seismic Data

Eco has a license to 2,395 line kilometers of 2D seismic data over the Orinduik Block area (Figure 3-63). Tullow and ECO acquired a 3D seismic dataset and in a trade with Repsol was able to cover the vast majority of the Orinduik Block with a 3,160 square kilometer PSTM data set. (Figure 3-64).

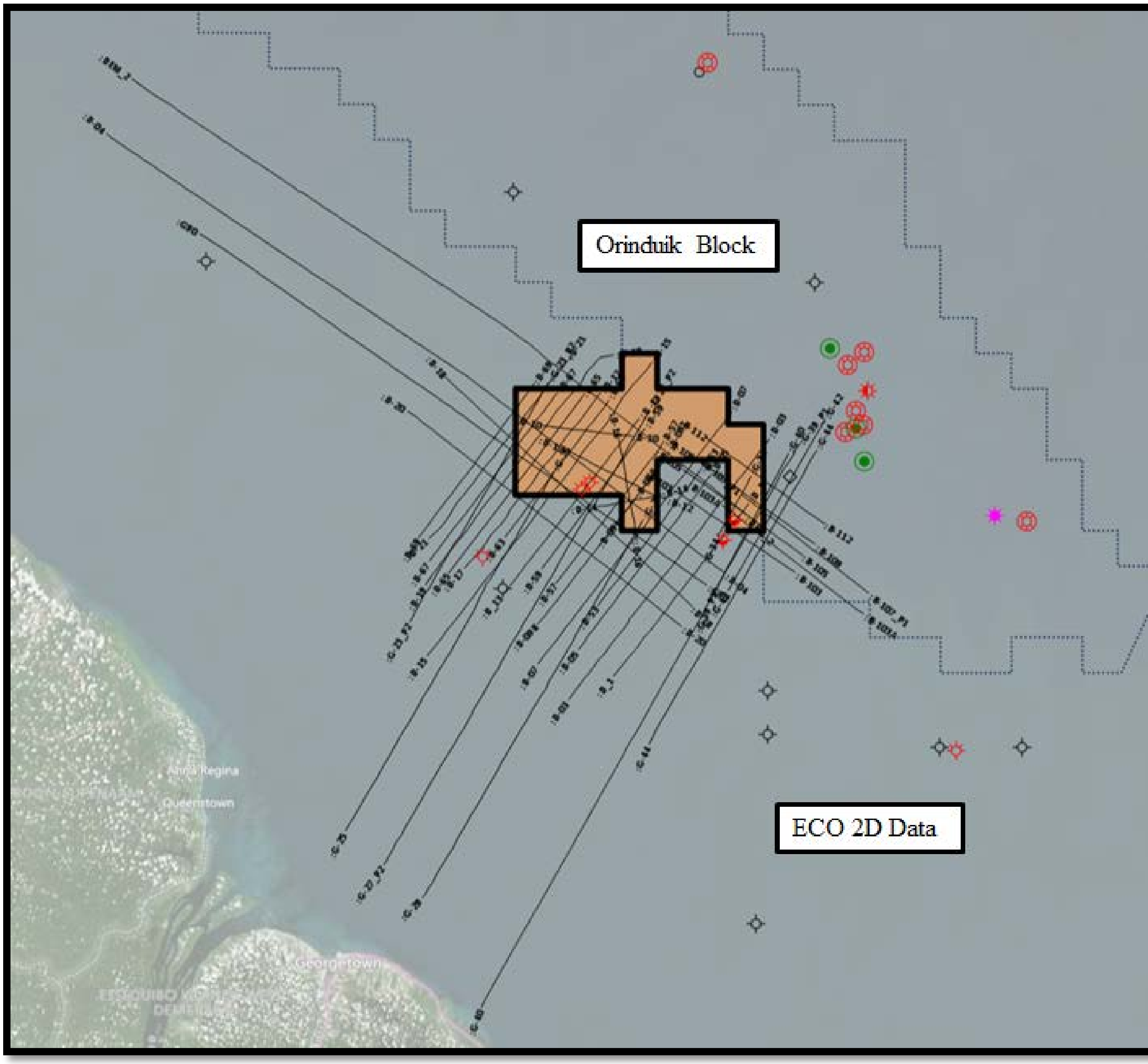


Figure 3-63 Eco Atlantic 2D Seismic Data - 2,395 Line Kilometers

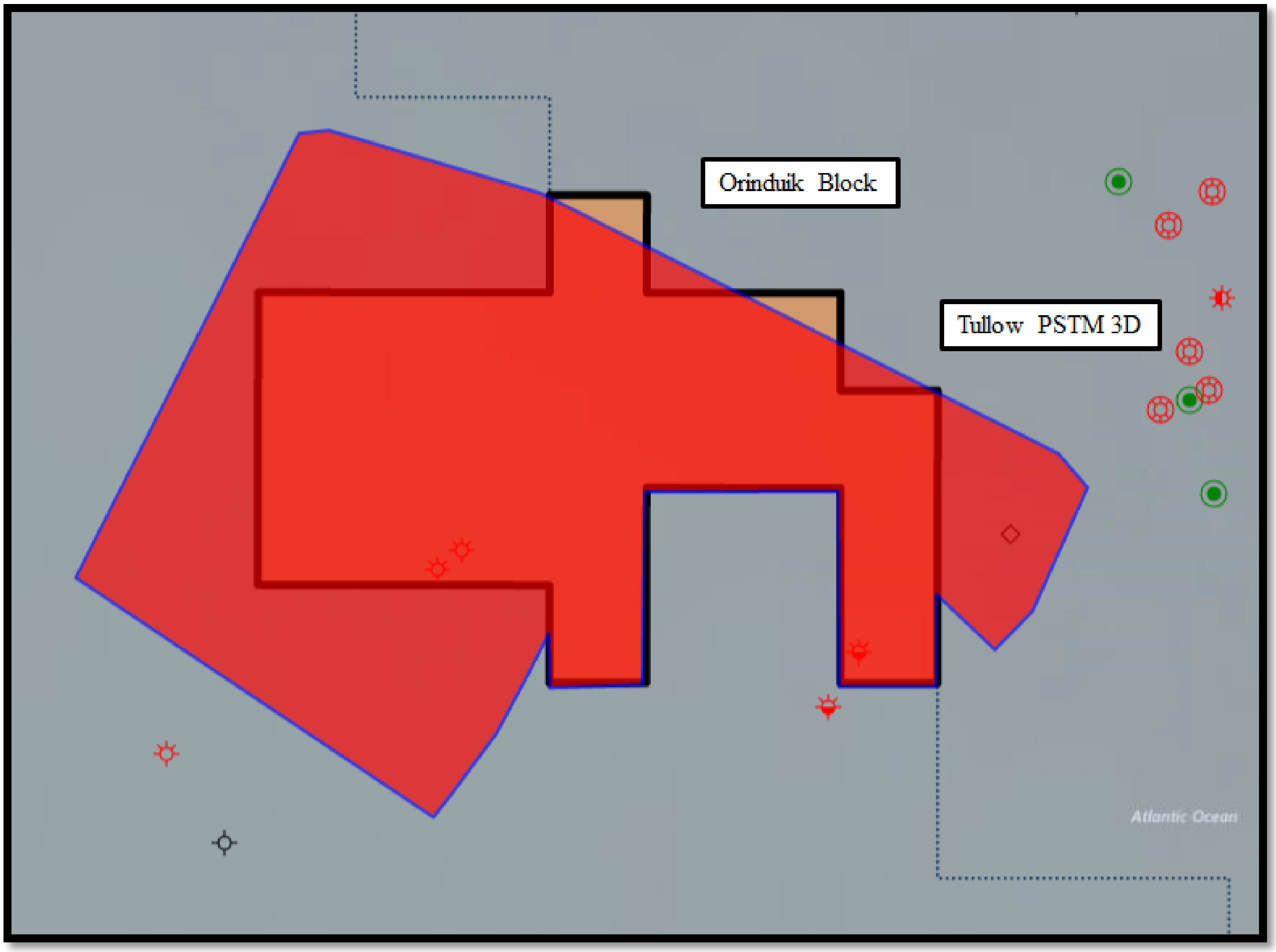


Figure 3-64 ECO Atlantic PSTM 3D Data Coverage – 3,160 Square Kilometers

During 2018, the Repsol portion on the eastern part of the block, 930 square kilometers (Figure 3-66), of the 3D data in time has been converted to a PSDM volume while Tullow has produced a preliminary PSDM on the 2,480 square kilometers on the western part of the block (Figure 3-65). Tullow will produce a final PSDM volume soon with plans to merge the two final PSDM volumes before the end of the year.

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The large part of the 3D, the Orinduik 3D, was made up of 2,055 square kilometers and covered the bulk of the western part of the block. This volume was acquired in 2017 by Tullow followed by Repsol acquiring their 4,000 square kilometer Kaieteur 3D over the neighboring Kanuku block to the south and during this acquisition they shot the Kaieteur 3D Extension of 400 square kilometers over the northeast part of the Orinduik Block. ECO was able to also get the 400 square kilometer portion of the main Kaieteur 3D to fill out the rest of the Orinduik Block. Tullow merged these three pieces of 3D data into a single PSTM volume complete with several attribute volumes. Since then the Repsol portion of the data has been reprocessed by CGG into a PSDM volume. Tullow has finished the final PSDM processing on the Orinduik 3D. The 3D seismic volumes were processed to extract several different attributes including AVO in order to better image the leads.

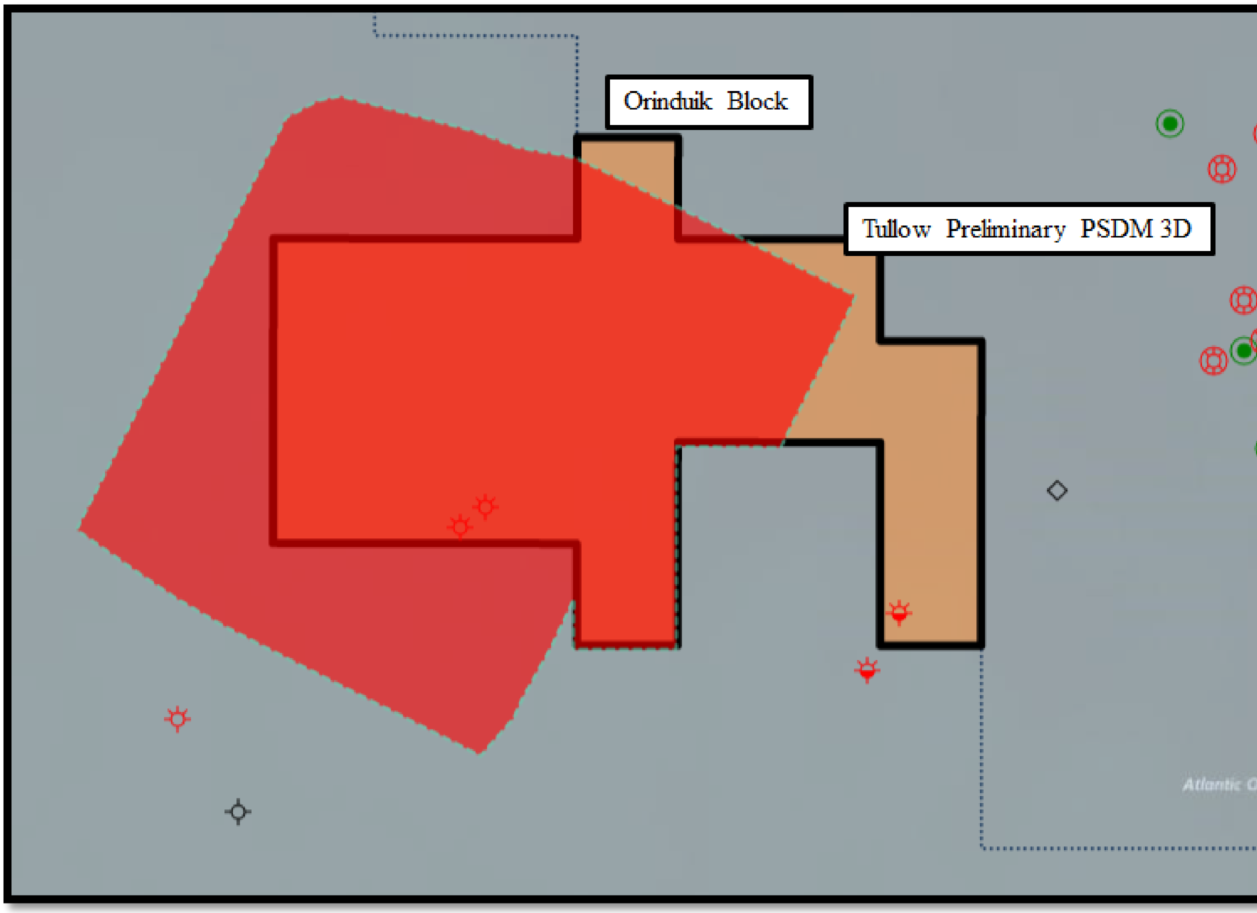

Figure 3-65 Tullow Preliminary PSDM 3D Data Coverage – 2,480 Square Kilometers

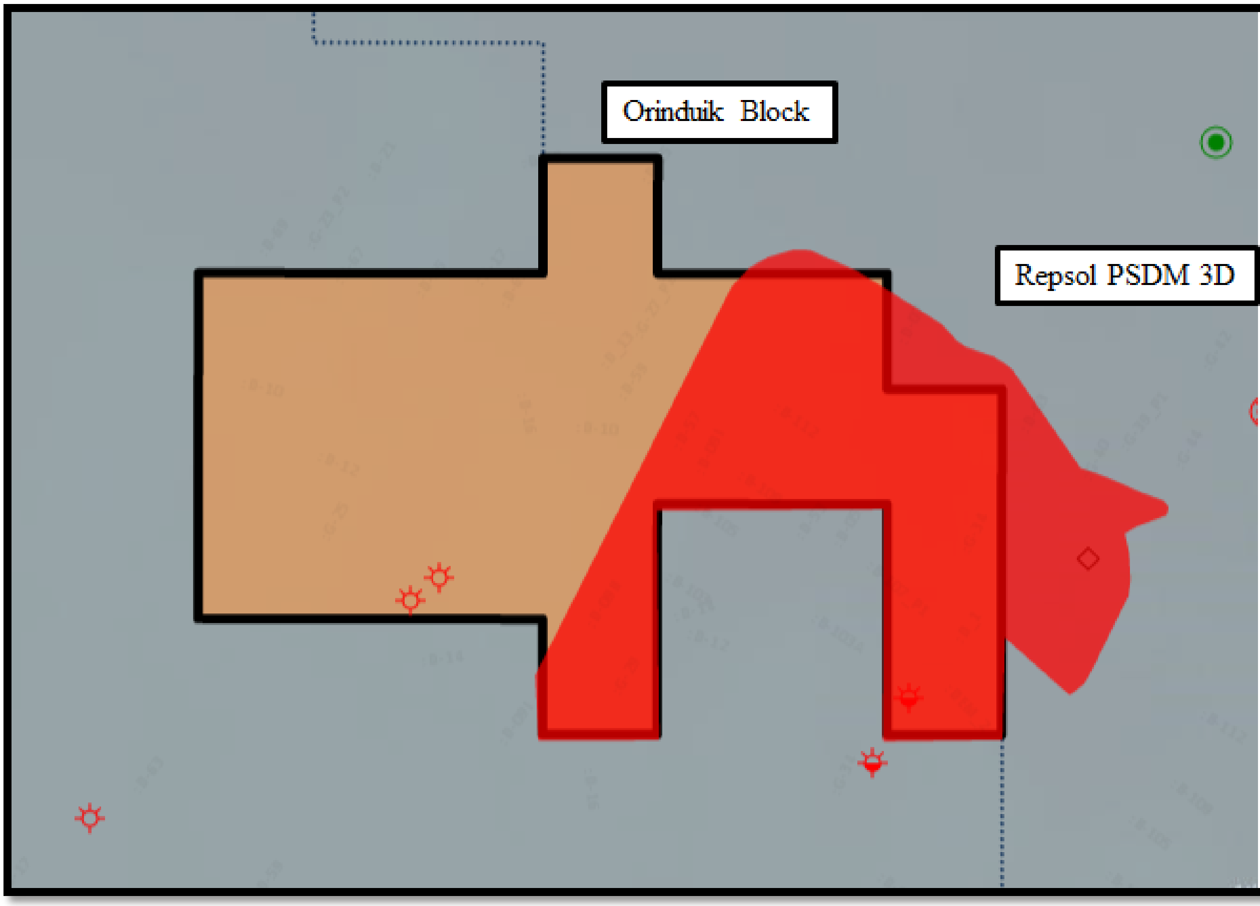

Figure 3-66 Repsol PSDM 3D Data Coverage – 930 Square Kilometers

3.1.19.2 Well Data

The wells drilled from 1967 through 1992 would be considered Legacy wells (Figure 3-67). The data from these wells includes well reports, logs, time-depth estimates, petrophysical, geochemical and other various information. As is the case with older wells in many other places, the data is not consistent nor complete. The Essiquibo 1, Essiquibo 2, and the Berbice 2 wells are located within the block and 3D seismic data boundaries. The Essiquibo 2 well, which had minor gas shows in the Cretaceous, was drilled down to the early Cretaceous aged Potoco limestone formation at a depth of 3,850 meters.

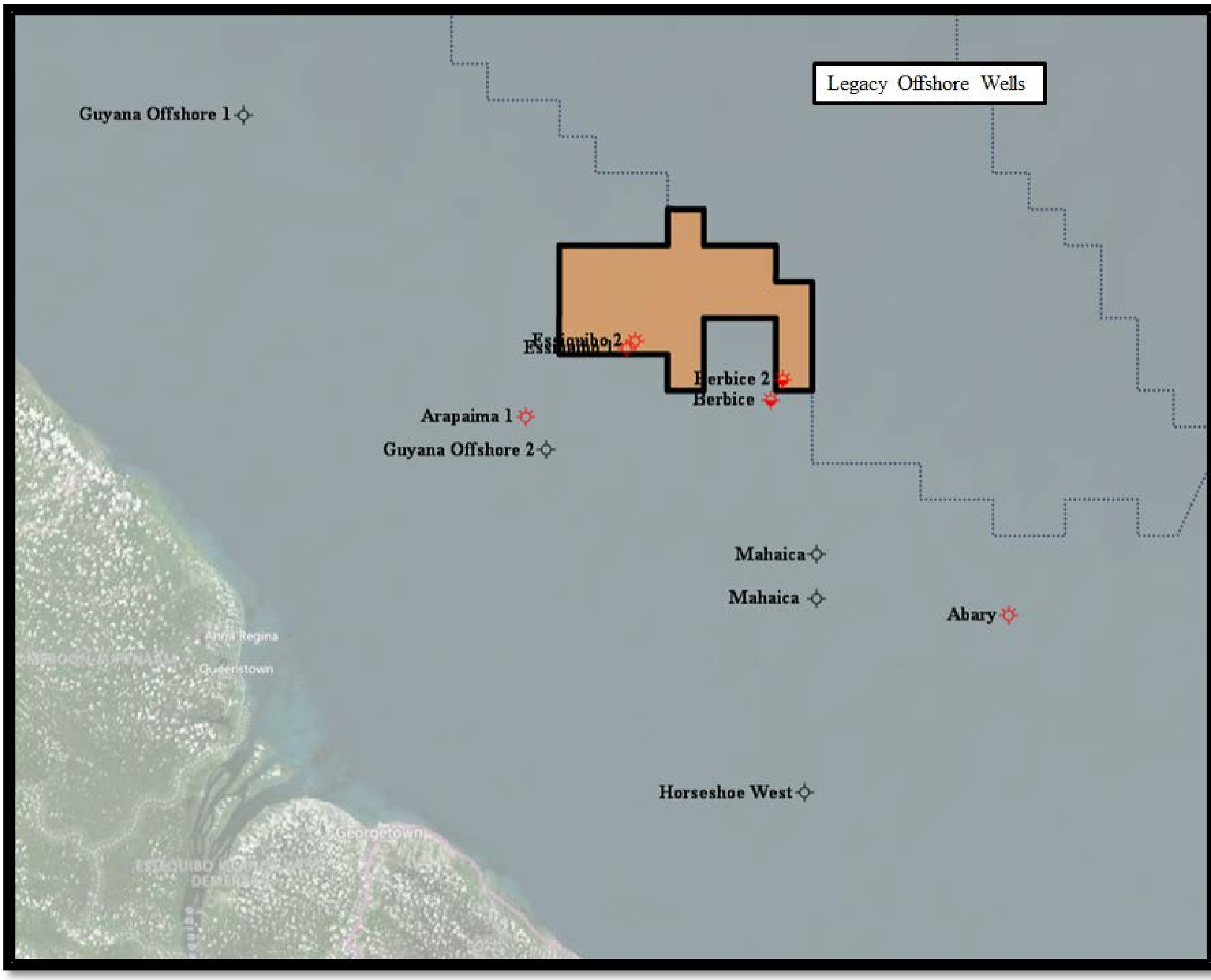

Figure 3-67 Location of Legacy Wells

The CGX Jaguar 1 and Eagle 1 wells drilled in 2012 reportedly had oil and gas shows but no commercial accumulations were found. The numerous Exxon wells (Figure 3-68) drilled since 2015 have discovered in excess of an estimated 5.5 Billion barrels of oil equivalent resources from mid-Tertiary to early Cretaceous reservoirs. The data from these recent wells is held confidential by the operators and their partners at this time.

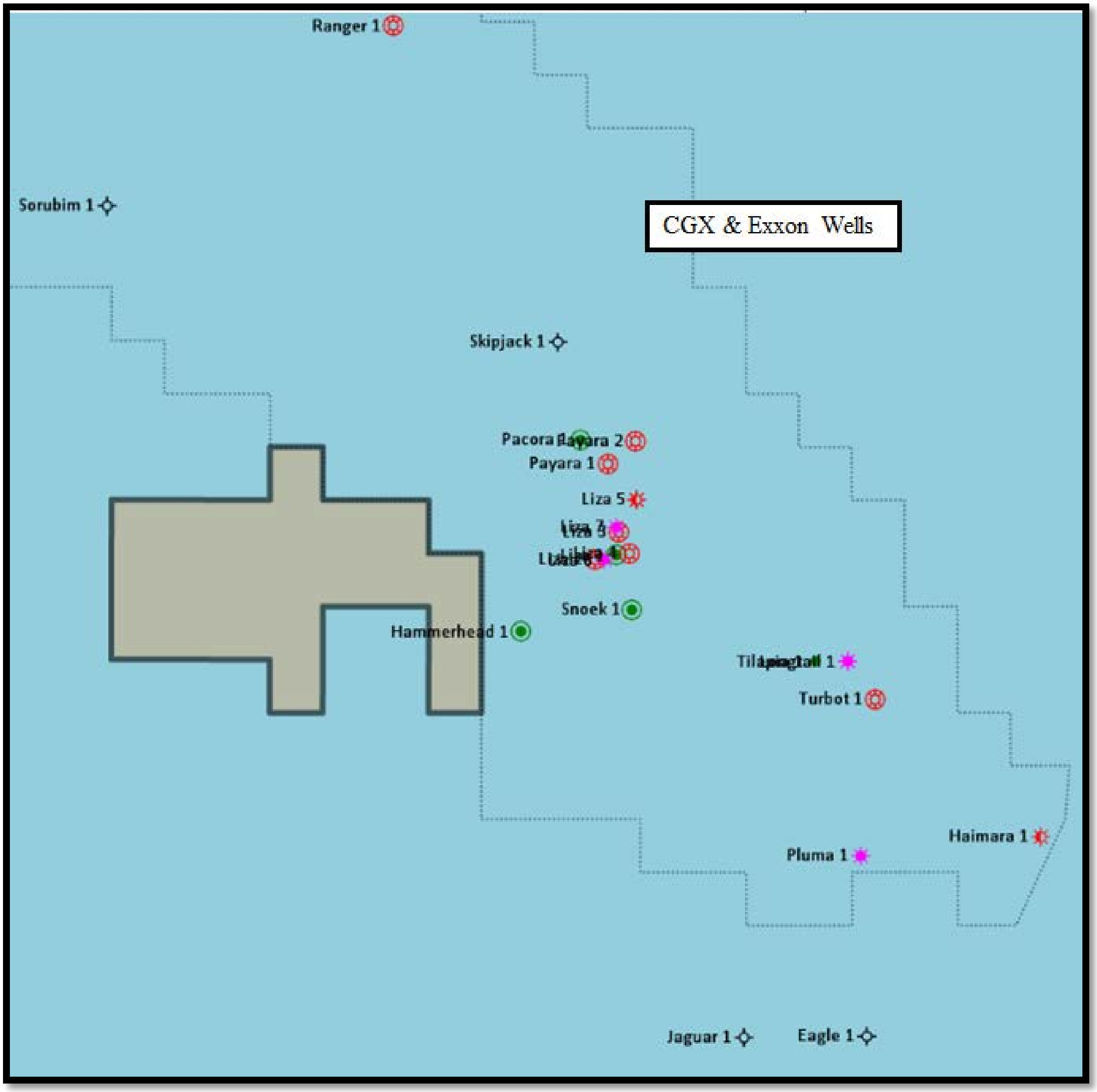

Figure 3-68 Location of Exxon and CGX Wells

4. PROBABILISTIC RESOURCE ANALYSIS

4.1 GENERAL

A probabilistic resource analysis is most applicable for projects such as evaluating the potential resources of an exploratory area like the Orinduik Block, where a range of values exists in the reservoir parameters. The range of the expected reservoir data is quantified by probability distributions, and an iterative approach yields an expected probability distribution for potential resources. This approach allows consideration of most likely resources for planning purposes, while gaining an understanding of what volumes of resources may have higher certainty, and what potential upside may exist for the project. The analysis for this project was carried out considering the range of values for all parameters in the volumetric resource equations. Resource estimates were calculated only for the Orinduik Block in Guyana for this report.

4.2 INPUT PARAMETERS

This method involves estimating probability distributions for the range of reservoir parameters and performing a statistical risk analysis involving multiple iterations of resource calculations generated by random numbers and the specified distributions of reservoir parameters. To do this, each parameter incorporated in our resource calculation was evaluated for its expected probability distribution. The parameters for porosity, water saturation, pressure, temperature, GOR, and Net/Gross are based on data from similar depositional environments and reservoirs to the subject leads.

Because few data are available about the likely distribution of the reservoir parameters, simple triangular distributions with specification of minimum, most likely or mode, and maximum values were used for most of the parameters. Note that these parameters represent average parameters over the entire lead or prospect. So, for example, the porosity ranges do not represent the range of what porosity might be in a particular well or a particular interval, but rather the reasonable range of the average porosity for the whole lead or prospect. A summary of input parameters is shown in Table 4-1.

Table 4-1 Input Parameters for All Leads

LEAD	KB (Tert)			DJ (U Cret)			KG (U Cret)		
	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum
Oil Gravity	30	35	40	30	35	40	30	35	40
Gas-Oil Ratio	100	500	1,000	500	1,000	1,500	500	1,000	1,500
Gas Gravity	0.65	0.70	0.75	0.65	0.70	0.75	0.65	0.70	0.75
Pgr, psi	0.44	0.45	0.48	0.44	0.45	0.48	0.44	0.45	0.48
Depth, m	3,660	3,700	3,740	4,060	4,160	4,230	3,400	3,900	4,050
Porosity	15	25	30	15	22	30	15	22	30
Water Sat.	20	30	40	20	30	40	20	30	40
Drainage area, km^2	17	27	43	14	24	30	17	30	34
Gross Thickness, m	60	70	125	40	50	60	200	275	325
Net/Gross, fraction	0.45	0.55	0.75	0.50	0.70	0.80	0.25	0.45	0.65
% Recovery	19.00	28.00	35.00	19.00	28.00	35.00	19.00	28.00	35.00
LEAD	**Kumaka (U Cret)**			**Iatuk-D (U Cret)**			**KC (U Cret)**		
	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum
Oil Gravity	30	35	40	30	35	40	30	35	40
Gas-Oil Ratio	500	1,000	1,500	500	1,000	1,500	500	1,000	1,500
Gas Gravity	0.65	0.70	0.75	0.65	0.70	0.75	0.65	0.70	0.75
Pgr, psi	0.44	0.45	0.48	0.44	0.45	0.48	0.44	0.45	0.48
Depth, m	4,000	4,250	4,550	4,625	4,850	5,150	2,360	2,460	2,560
Porosity	15	22	30	15	22	30	15	22	30
Water Sat.	20	30	40	20	30	40	20	30	40
Drainage area, km^2	32	51	77	37	50	73	6	11	15
Gross Thickness, m	100	140	180	100	125	175	30	40	50
Net/Gross, fraction	0.25	0.45	0.65	0.25	0.45	0.65	0.25	0.45	0.65
% Recovery	19.00	28.00	35.00	18.00	28.00	35.00	19.00	28.00	35.00
LEAD	**Amatuk (U Cret)**			**MJ-3 (U Cret)**			**Jimmy (Tert)**		
	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum
Oil Gravity	30	35	40	30	35	40	30	35	40
Gas-Oil Ratio	500	1,000	1,500	500	1,000	1,500	100	500	1,000
Gas Gravity	0.65	0.70	0.75	0.65	0.70	0.75	0.65	0.70	0.75
Pgr, psi	0.44	0.45	0.48	0.44	0.45	0.48	0.44	0.45	0.48
Depth, m	2,360	2,415	2,470	2,780	3,700	4,130	2,000	2,120	2,245
Porosity	15	22	30	15	22	30	15	22	30
Water Sat.	20	30	40	20	30	40	20	30	40
Drainage area, km^2	35	68	90	18	25	37	3	5	12
Gross Thickness, m	20	40	50	70	95	120	20	40	60
Net/Gross, fraction	0.25	0.45	0.65	0.25	0.45	0.65	0.45	0.55	0.75
% Recovery	19.00	28.00	35.00	19.00	28.00	35.00	19.00	28.00	35.00
LEAD	**KC-A (U Cret)**			**Joe (Tert)**			**Jethro (Tert)**		
	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum
Oil Gravity	30	35	40	30	35	40	30	35	40
Gas-Oil Ratio	500	1,000	1,500	100	500	1,000	100	500	1,000
Gas Gravity	0.65	0.70	0.75	0.65	0.70	0.75	0.65	0.70	0.75
Pgr, psi	0.44	0.45	0.48	0.44	0.45	0.48	0.44	0.45	0.48
Depth, m	2,950	3,225	3,500	1,950	2,025	2,150	4,170	4,300	4,340
Porosity	15	22	30	15	22	30	20	25	30
Water Sat.	20	30	40	20	30	40	15	20	30
Drainage area, km^2	7	9	12	12	25	32	12	15	18
Gross Thickness, m	50	75	100	20	40	60	30	65	120
Net/Gross, fraction	0.25	0.45	0.65	0.60	0.75	0.85	0.60	0.75	0.85
% Recovery	19.00	28.00	35.00	19.00	28.00	35.00	19.00	28.00	35.00
	Jethro Ext (Tert)			**Rappu (U Cret)**			**Hammerhead (Tert)**		
	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum	Minimum	Most Likely	Maximum
Oil Gravity	30	35	40	30	35	40	30	35	40
Gas-Oil Ratio	100	500	1,000	500	1,000	1,500	100	500	1,000
Gas Gravity	0.65	0.70	0.75	0.65	0.70	0.75	0.65	0.70	0.75
Pgr, psi	0.44	0.45	0.48	0.44	0.45	0.48	0.44	0.45	0.48
Depth, m	4,000	4,100	4,200	3,400	3,650	3,850	3,200	3,550	3,700
Porosity	15	22	30	15	22	30	20	28	32
Water Sat.	15	20	30	20	30	40	10	20	30
Drainage area, km^2	2	5	7	35	65	95	0.75	1	1..5
Gross Thickness, m	20	60	80	50	75	100	30	45	60
Net/Gross, fraction	0.60	0.75	0.85	0.25	0.45	0.65	0.60	0.75	0.90
% Recovery	19.00	28.00	35.00	19.00	28.00	35.00	19.00	28.00	35.00

In a probabilistic analysis, dependent relationships can be established between parameters if appropriate. For example, portions of a reservoir with the lowest effective porosity generally may be expected to have the highest connate water saturation, whereas higher porosity sections have lower water saturation. In such a case, it is appropriate to establish an inverse relationship between porosity and water saturation, such that if a high porosity is randomly estimated in a given iteration, corresponding low water saturation is estimated. The degree of such a correlation can be controlled to be very strong or weak. This type of dependency, with a medium strength of -0.7, was used in this study for porosity with water saturation and with net/gross ratio. Similarly, the low end of the gross thickness distributions for this prospective accumulation would generally be expected to occur when the productive area is small; therefore, a positive correlation of 0.95 was assigned to gross thickness and productive area.

4.3 PROBABILISTIC SIMULATION

Probabilistic resource analysis was performed using the Monte Carlo simulation software called "@ Risk". This software allows for input of a variety of probability distributions for any parameter. Then the program performs a large number of iterations, either a large number specified by the user, or until a specified level of stability is achieved in the output. The results include a probability distribution for the output, sampled probability for the inputs, and sensitivity analysis showing which input parameters have the most effect on the uncertainty in each output parameter.

After distributions and relationships between input parameters were defined, a series of simulations were run wherein points from the distributions were randomly selected and used to calculate a single iteration of estimated potential resources. The iterations were repeated until stable statistics (mean and standard deviation) result from the resulting output distribution. This occurred after 5,000 iterations.

4.4 RESULTS

The output distributions from the Probabilistic simulation were then used to characterize the Prospective Resources. The Gross 100% Results are summarized in Table 4-2. Note that these estimates do not include consideration for the risk of failure in exploring for these resources. The Net to ECO Interest, which is 15.0% at the time of this report, Prospective Unrisked Resource Estimates by Lead are tabulated in Table 4-3.

Table 4-2 Gross Prospective Unrisked Resource Estimates by Lead

	Oil in Place, MMBbl			Prospective Oil Resources, MMBbl			Prospective Associated Gas Resources, BCF		
Lead	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate
Joe (Tert)	218.5	508.2	921.8	58.3	137.1	256.7	26.3	67.5	144.0
Jimmy (Tert)	44.2	120.6	268.3	11.7	32.8	74.2	5.4	16.2	40.4
Amatuk (U Cret)	325.2	725.8	1,327.9	87.1	196.6	364.8	81.2	190.4	380.3
KC (U Cret)	66.4	130.3	226.0	17.6	35.2	62.9	16.5	35.2	62.9
KC-A (U Cret)	116.4	202.7	338.9	30.7	54.6	93.6	28.9	53.3	95.7
Hammerhead (Tert)	21.8	37.6	62.9	5.8	10.2	17.4	2.5	5.1	9.7
MJ-3 (U Cret)	404.8	725.1	1,241.7	107.2	198.0	343.8	101.5	192.6	350.7
KB (Tert)	579.7	1,184.5	2,313.1	156.0	322.5	631.0	69.8	162.2	348.6
KG (U Cret)	1,104.4	2,010.9	3,251.4	293.2	544.8	906.2	279.4	532.5	912.7
Jethro Ext (Tert)	53.7	157.7	304.5	14.5	42.6	83.9	6.7	21.0	46.7
Rappu (U Cret)	869.4	1,824.0	3,320.3	230.0	494.4	918.4	102.7	247.4	507.2
DJ (U Cret)	274.9	477.4	755.6	73.3	128.6	209.9	73.3	128.6	209.9
Kumaka (U Cret)	1,091.7	2,123.5	3,840.7	289.3	573.6	1,059.2	274.2	563.6	1,065.1
Jethro (Tert)	400.9	730.8	1,224.5	107.1	197.9	340.4	46.9	99.5	190.0
Iatuk-D (U Cret)	1,148.5	2,019.2	3,531.2	300.5	539.3	964.6	285.8	527.4	964.9
Total	**6,720.2**	**12,978.3**	**22,928.7**	**1,782.3**	**3,508.1**	**6,326.9**	**1,401.2**	**2,842.6**	**5,328.9**

Table 4-3 Net To ECO Interest Unrisked Prospective Resource Estimates by Lead

	Oil in Place, MMBbl			Prospective Oil Resources, MMBbl			Prospective Associated Gas Resources, BCF		
Lead	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate
Joe (Tert)	32.8	76.2	138.3	8.7	20.6	38.5	3.9	10.1	21.6
Jimmy (Tert)	6.6	18.1	40.2	1.8	4.9	11.1	0.8	2.4	6.1
Amatuk (U Cret)	48.8	108.9	199.2	13.1	29.5	54.7	12.2	28.6	57.1
KC (U Cret)	10.0	19.6	33.9	2.6	5.3	9.4	2.5	5.3	9.4
KC-A (U Cret)	17.5	30.4	50.8	4.6	8.2	14.0	4.3	8.0	14.4
Hammerhead (Tert)	3.3	5.6	9.4	0.9	1.5	2.6	0.4	0.8	1.5
MJ-3 (U Cret)	60.7	108.8	186.3	16.1	29.7	51.6	15.2	28.9	52.6
KB (Tert)	87.0	177.7	347.0	23.4	48.4	94.6	10.5	24.3	52.3
KG (U Cret)	165.7	301.6	487.7	44.0	81.7	135.9	41.9	79.9	136.9
Jethro Ext (Tert)	8.0	23.7	45.7	2.2	6.4	12.6	1.0	3.1	7.0
Rappu (U Cret)	130.4	273.6	498.0	34.5	74.2	137.8	15.4	37.1	76.1
DJ (U Cret)	41.2	71.6	113.3	11.0	19.3	31.5	11.0	19.3	31.5
Kumaka (U Cret)	163.7	318.5	576.1	43.4	86.0	158.9	41.1	84.5	159.8
Jethro (Tert)	60.1	109.6	183.7	16.1	29.7	51.1	7.0	14.9	28.5
Iatuk-D (U Cret)	172.3	302.9	529.7	45.1	80.9	144.7	42.9	79.1	144.7
Total	**1,008.0**	**1,946.7**	**3,439.3**	**267.3**	**526.2**	**949.0**	**210.2**	**426.4**	**799.3**

The Gross and Net Prospective Resource estimates expressed in Millions of Barrels of Oil Equivalent based on a 6:1 gas to oil equivalency are presented in Table 4-4 and Table 4-5 below.

Table 4-4 Gross Prospective Resources Oil Equivalent by Lead

	Prospective Oil Equivalent Resource, $MMBOE_6$		
Lead	Low Estimate	Best Estimate	High Estimate
Joe (Tert)	62.7	148.3	280.7
Jimmy (Tert)	12.6	35.5	81.0
Amatuk (U Cret)	100.6	228.3	428.2
KC (U Cret)	20.3	41.1	73.3
KC-A (U Cret)	35.5	63.5	109.5
Hammerhead (Tert)	6.2	11.0	19.0
MJ-3 (U Cret)	124.1	230.1	402.3
KB (Tert)	167.6	349.5	689.1
KG (U Cret)	339.7	633.5	1,058.3
Jethro Ext (Tert)	15.6	46.1	91.7
Rappu (U Cret)	247.1	535.6	1,002.9
DJ (U Cret)	85.6	150.0	244.9
Kumaka (U Cret)	335.0	667.5	1,236.7
Jethro (Tert)	114.9	214.5	372.0
Iatuk-D (U Cret)	348.2	627.2	1,125.4
Total	**2,015.8**	**3,981.9**	**7,215.0**

Table 4-5 Net Prospective Resources Oil Equivalent by Lead

	Net Prospective Oil Equivalent Resource, MMBOE[6]		
Lead	Low Estimate	Best Estimate	High Estimate
Joe (Tert)	9.4	22.3	42.1
Jimmy (Tert)	1.9	5.3	12.1
Amatuk (U Cret)	15.1	34.2	64.2
KC (U Cret)	3.0	6.2	11.0
KC-A (U Cret)	5.3	9.5	16.4
Hammerhead (Tert)	0.9	1.7	2.9
MJ-3 (U Cret)	18.6	34.5	60.3
KB (Tert)	25.1	52.4	103.4
KG (U Cret)	51.0	95.0	158.7
Jethro Ext (Tert)	2.3	6.9	13.8
Rappu (U Cret)	37.1	80.3	150.4
DJ (U Cret)	12.8	22.5	36.7
Kumaka (U Cret)	50.2	100.1	185.5
Jethro (Tert)	17.2	32.2	55.8
Iatuk-D (U Cret)	52.2	94.1	168.8
Total	**302.4**	**597.3**	**1,082.3**

Prospective Resources are defined as "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."[5] There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources. The Low Estimate represents the P_{90} values from the

[5] Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition*, Volume 1, September 1, 2007, pg 5-7.

probabilistic analysis (in other words, the value is greater than or equal to the P_{90} value 90% of the time), while the Best Estimate represents the P_{50} and the High Estimate represents the P_{10}.[6]

Note that a deterministic calculation with any set of the input parameters will not necessarily be close to any of the results shown in Table 4-2. Specifically, the most likely input parameters do not necessarily yield a result very close to the Best Estimate. This is because some of the distributions are skewed towards the minimum value rather than the maximum value where the minimum to maximum range is large, so that the mean is rather different from the most likely value.

The distribution graphs for the resource estimates can be found in Figure 4-1 through Figure 4-15. It should be noted that the shape of the probability distributions all result in wide spacing between the minimum and maximum expected resources. This is reflective of the high degree of uncertainty associated with any evaluation such as this one prior to actual field discovery, development, and production. Also note that, in general, the high probability resource estimates at the left side of these distributions represents downside risk, while the low probability estimates on the right side of the distributions represent upside potential. These distributions do not include consideration of the probability of success of discovering commercial quantities of oil, but rather represent the likely distribution of oil discoveries, if successfully found.

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[6] Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition,* Volume 1, September 1, 2007, pg 5-7.

4.4.1 Orinduik Block Distribution Plots

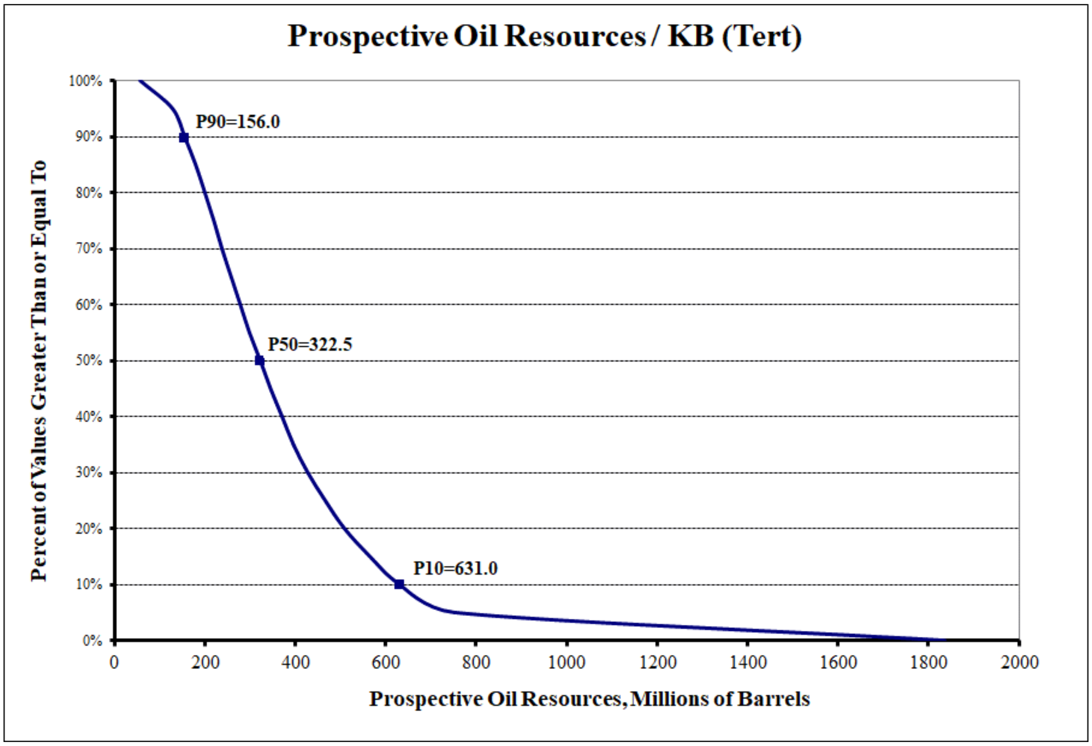

Figure 4-1 Prospective Oil Resources / KB Lead

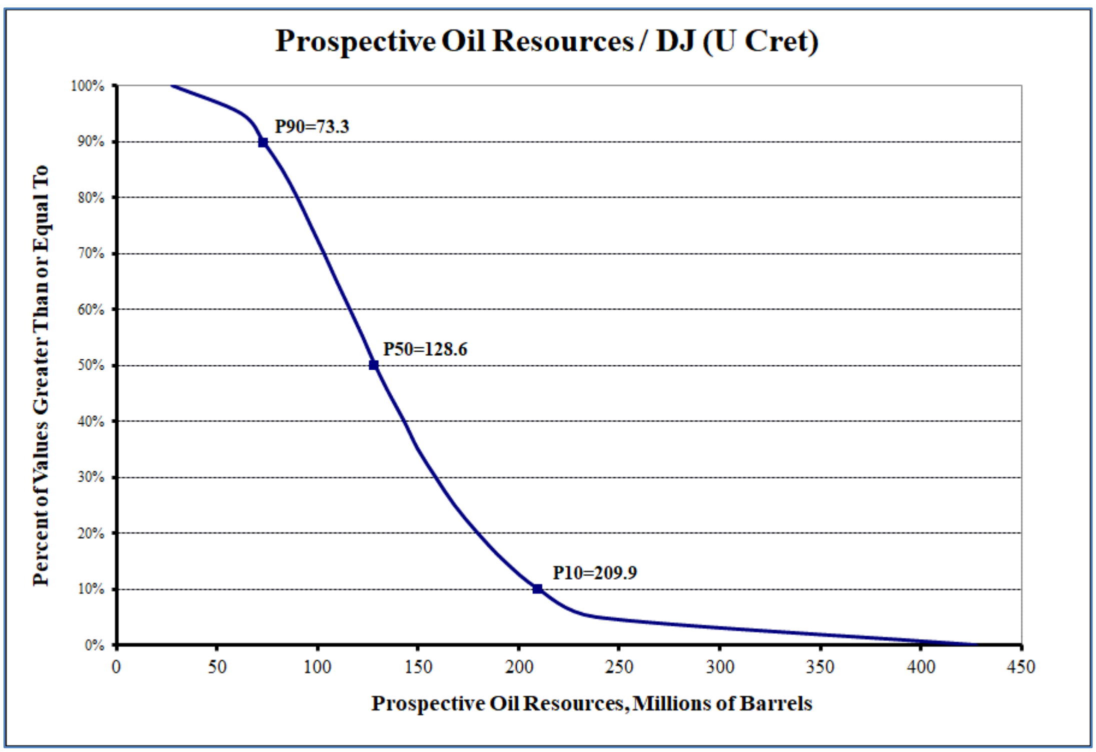

Figure 4-2 Prospective Oil Resources / DJ Lead

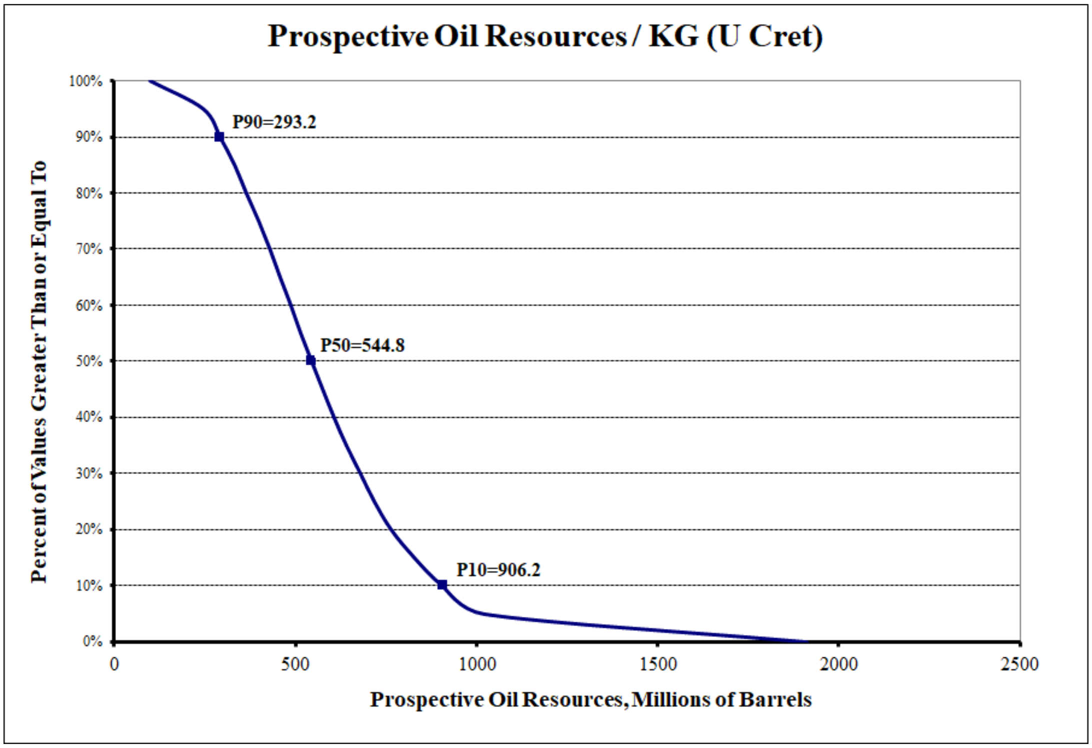

Figure 4-3 Prospective Oil Resources / KG Lead

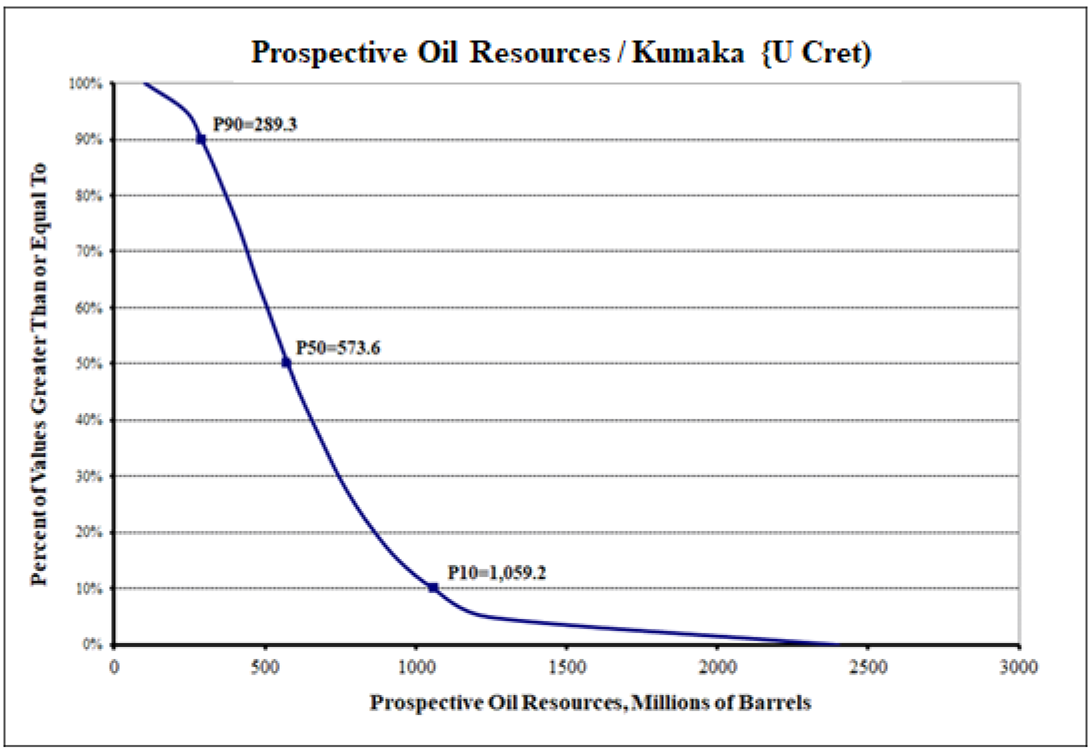

Figure 4-4 Prospective Oil Resources / Kumaka Lead

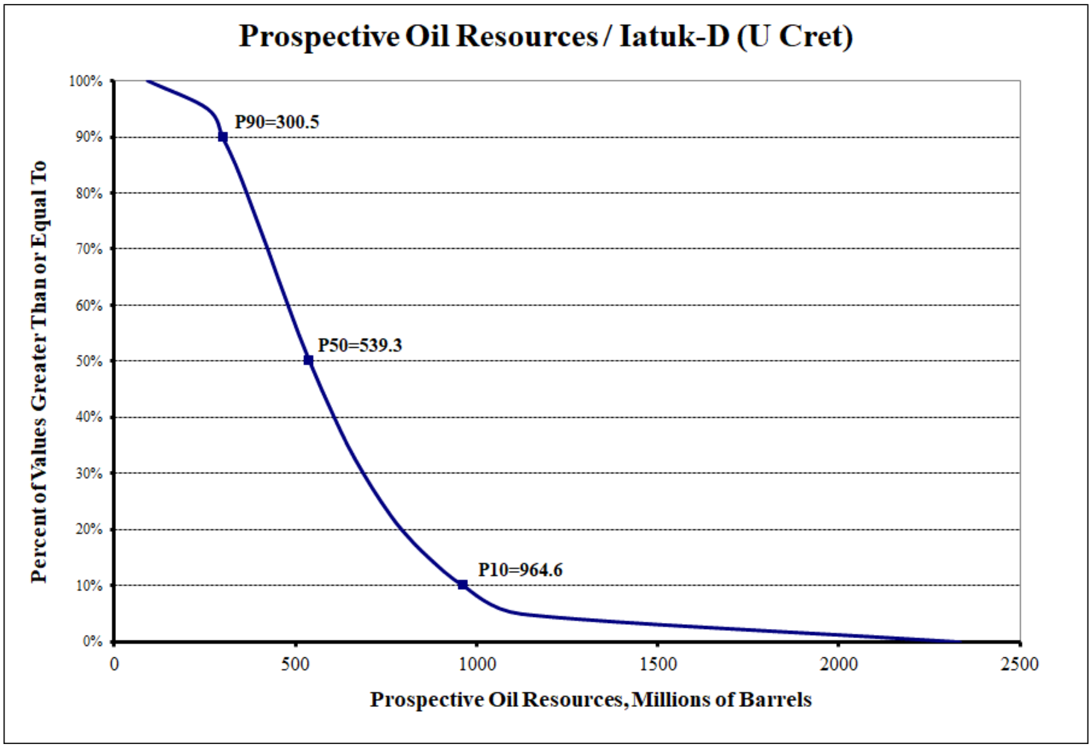

Figure 4-5 Prospective Oil Resources / Iatuk-D Lead

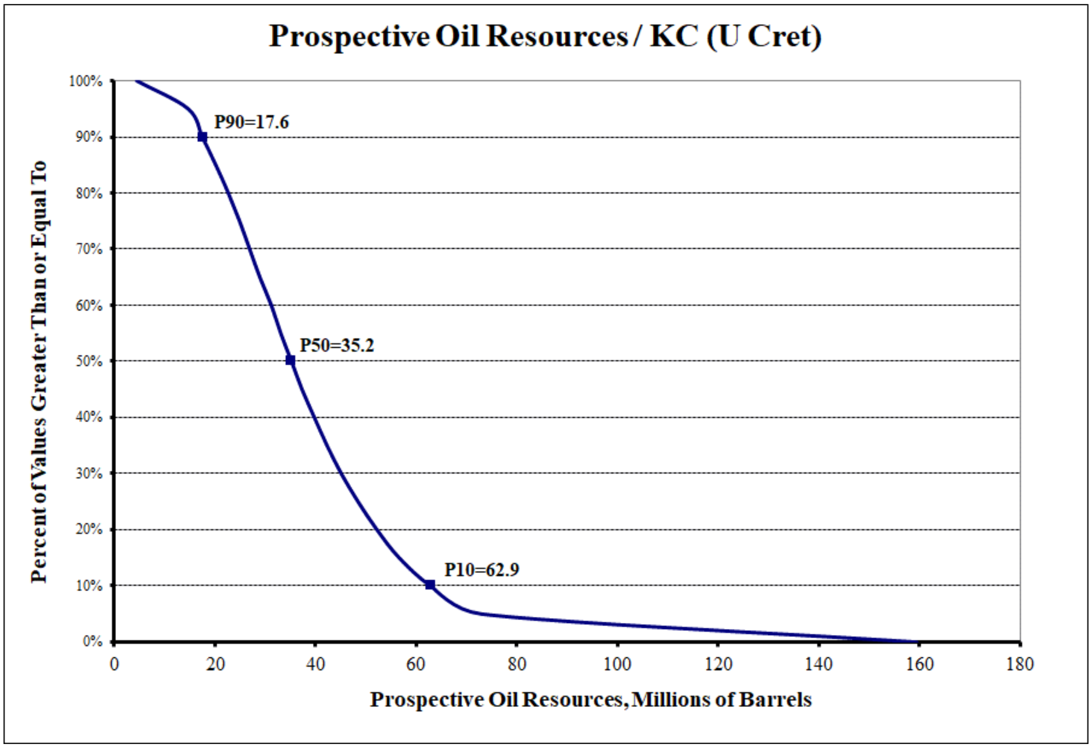

Figure 4-6 Prospective Oil Resources / KC Lead

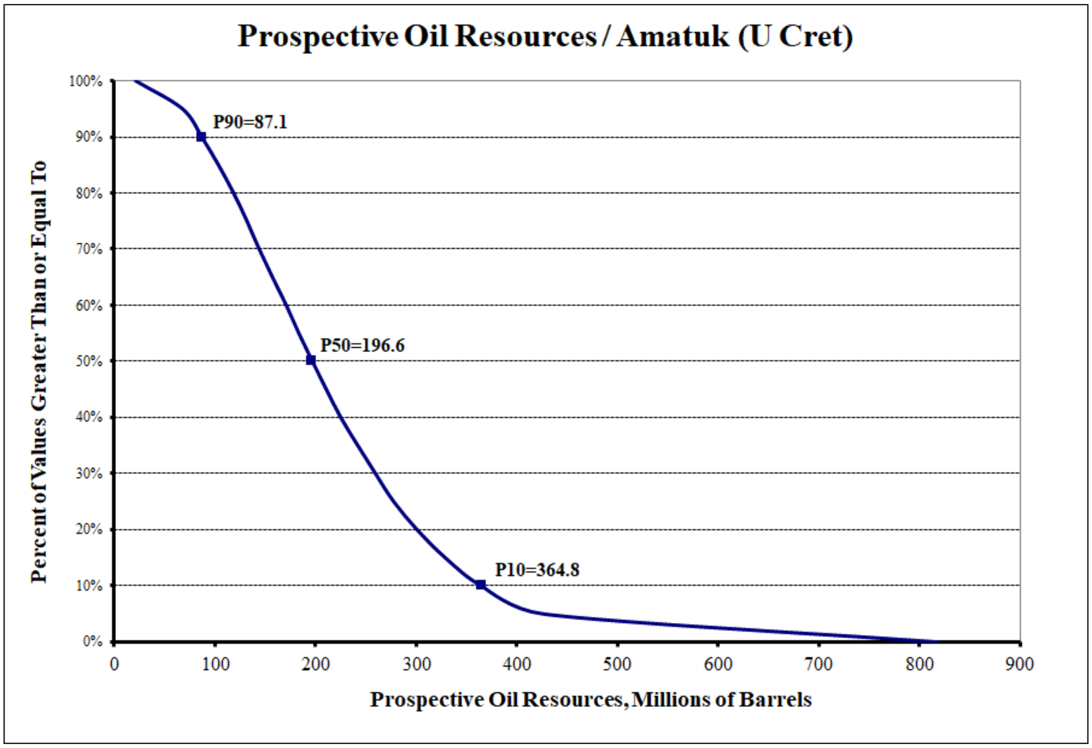

Figure 4-7 Prospective Oil Resources / Amatuk Lead

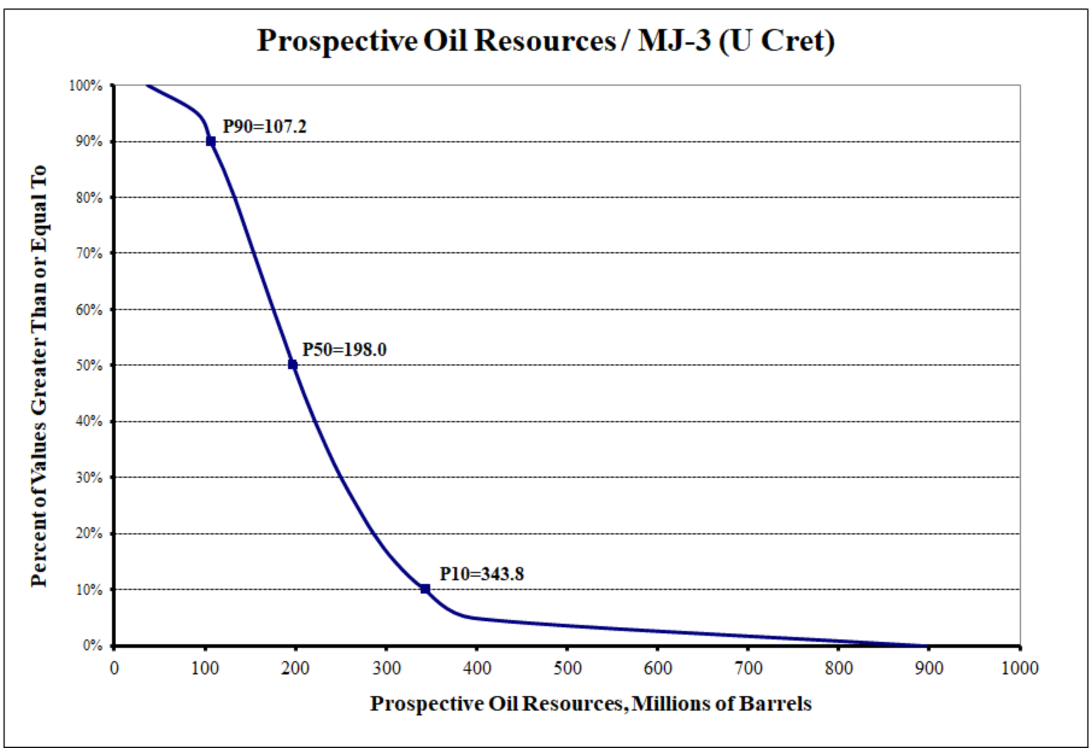

Figure 4-8 Prospective Oil Resources / MJ-3 Lead

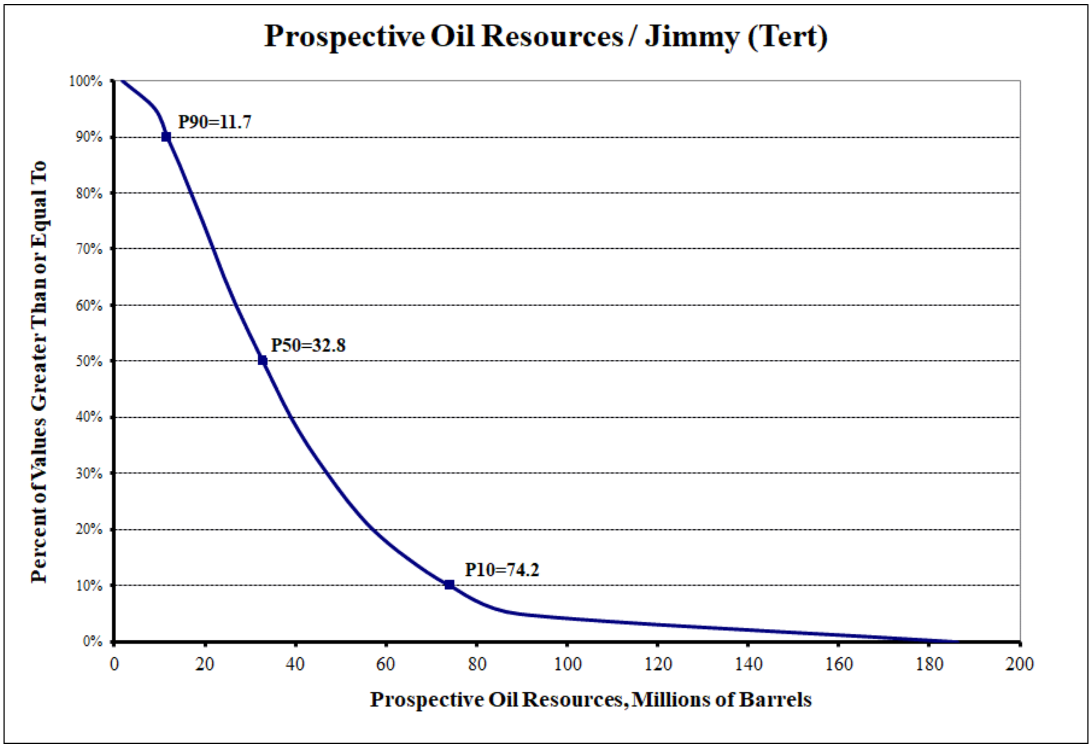

Figure 4-9 Prospective Oil Resources / Jimmy Lead

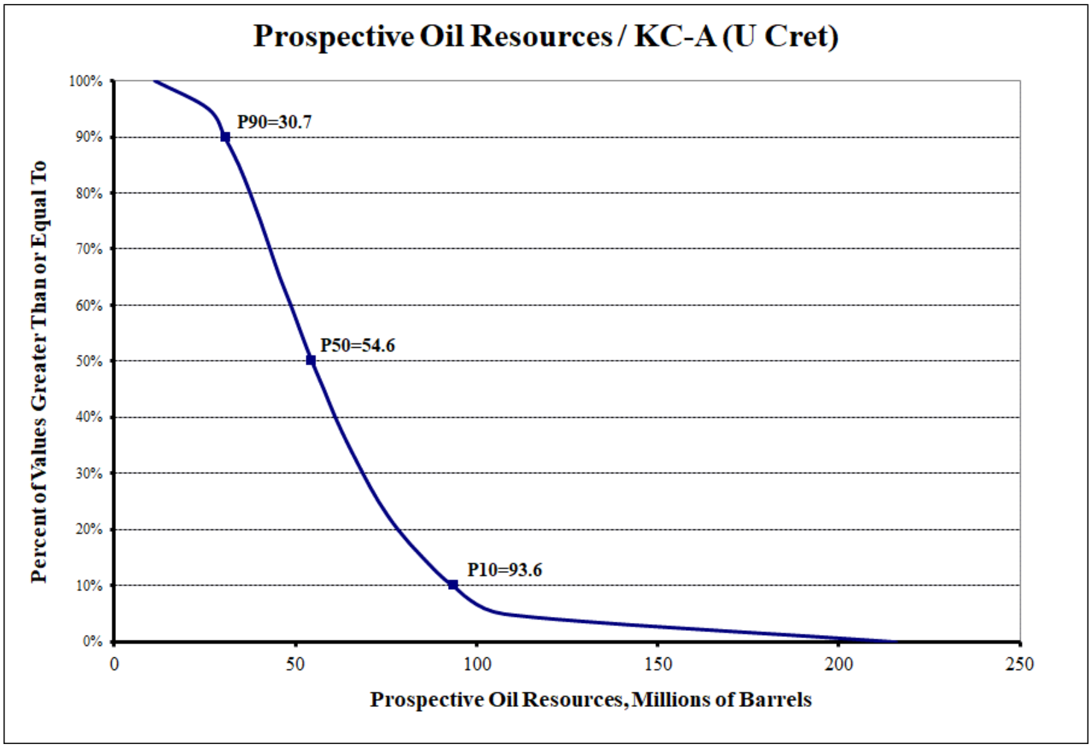

Figure 4-10 Prospective Oil Resources / KC-A Lead

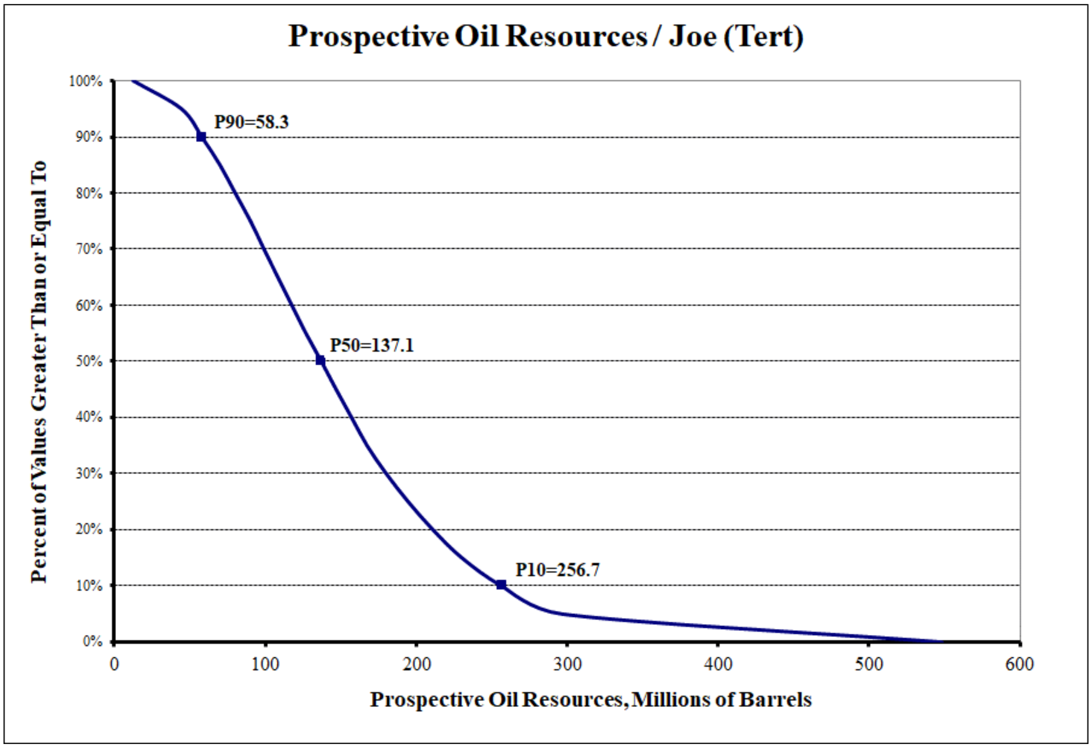

Figure 4-11 Prospective Oil Resources / Joe Lead

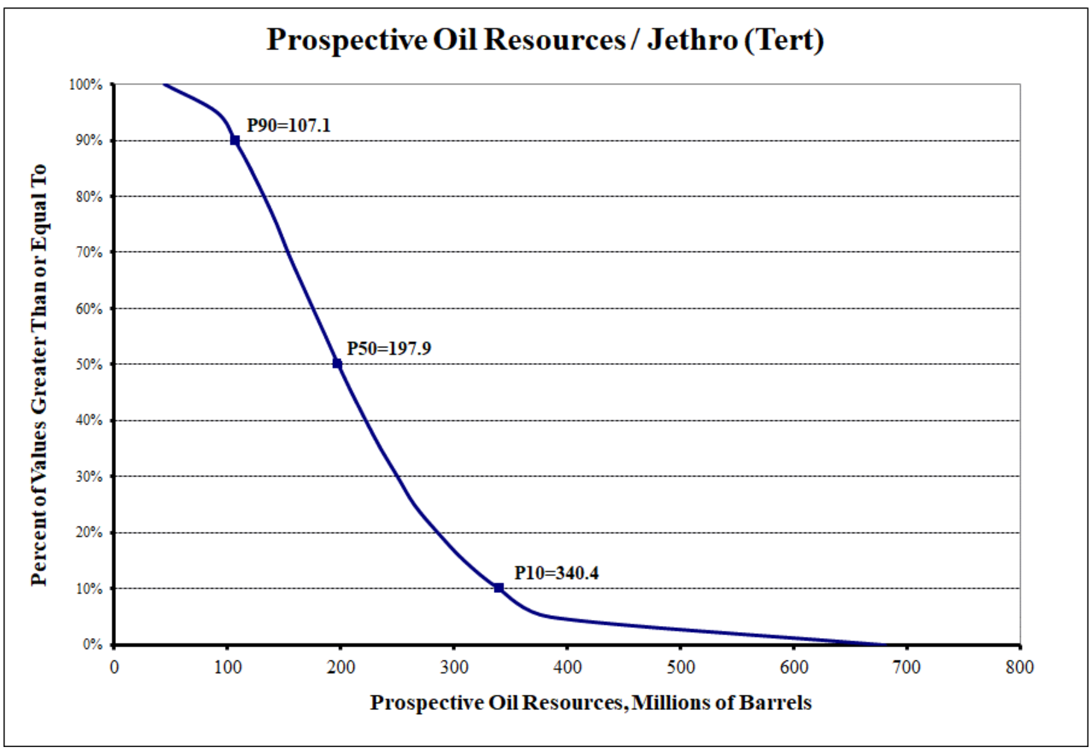

Figure 4-12 Prospective Oil Resources / Jethro

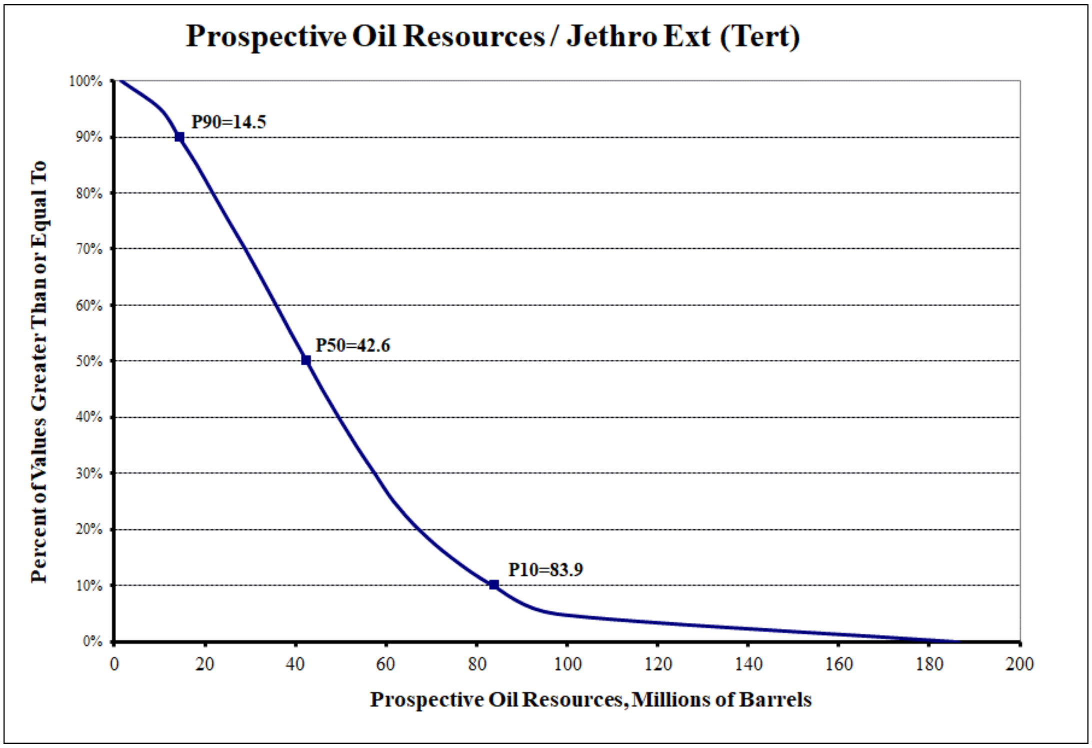

Figure 4-13 Prospective Oil Resources / Jethro Ext Lead

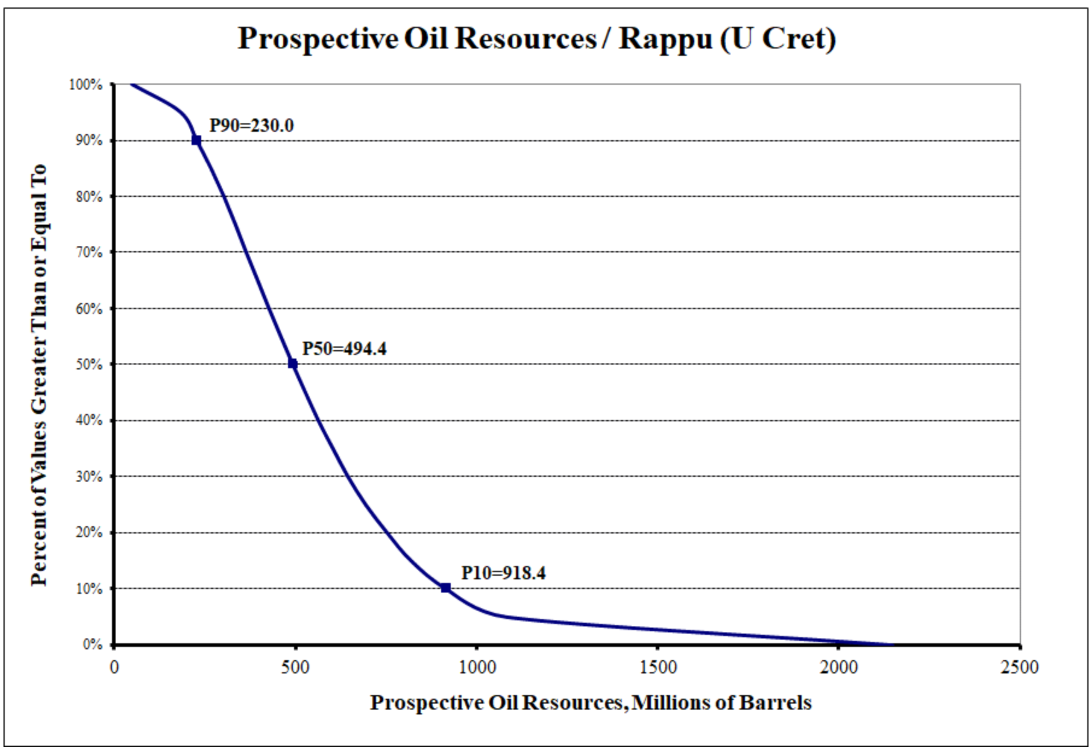

Figure 4-14 Prospective Oil Resources / Rappu Lead

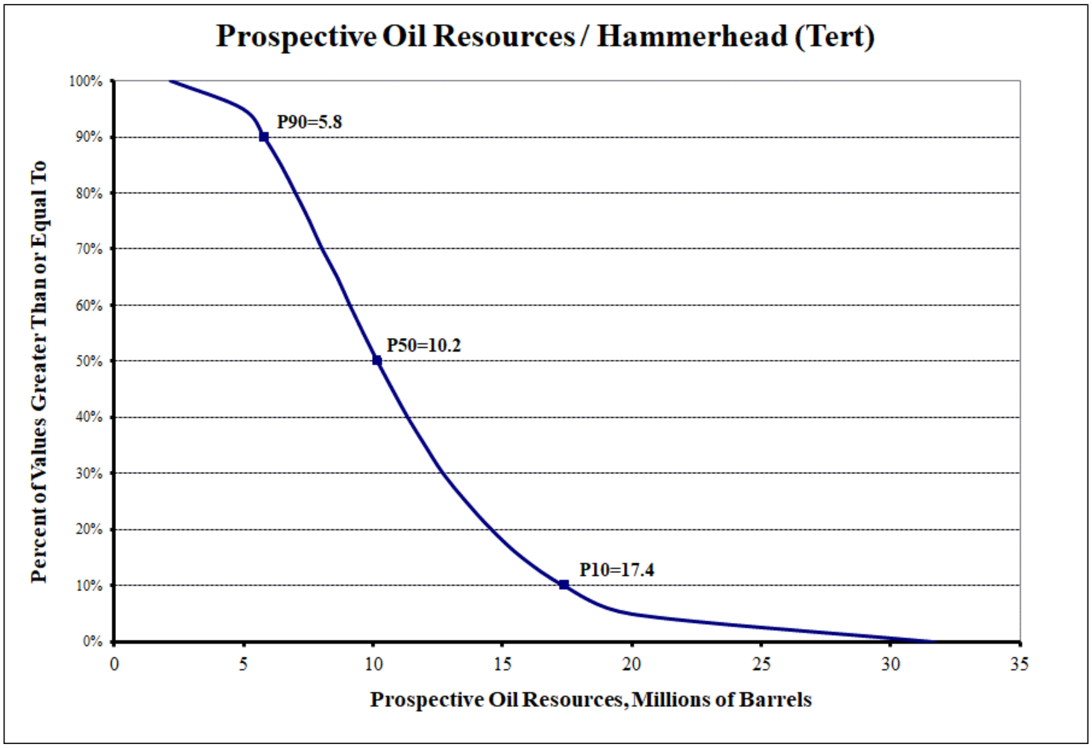

Figure 4-15 Prospective Oil Resources / Hammerhead

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6. CONSENT LETTER

Gustavson Associates LLC hereby consents to the use of all or any part of this Lead Evaluation Report for the Orinduik Block concession, as of March 15, 2019, in any document filed with any London Stock Exchange (AIM) by ECO (Atlantic) Oil and Gas Ltd.

Prepared By:

Kevin S. Weller
Registered Petroleum Engineer
State of Colorado #34214

7. CERTIFICATE OF QUALIFICATION

I, Kevin S. Weller, Professional Engineer of 5665 Flatiron Pkwy, Suite 250, Boulder, Colorado, 80301, USA, hereby certify:

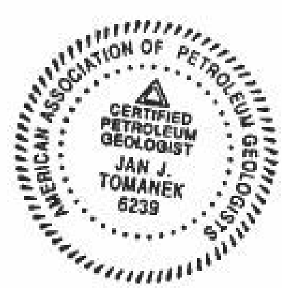
1. I am an employee of Gustavson Associates, which prepared a detailed analysis of the oil and gas properties of ECO (Atlantic) Oil and Gas Ltd. The effective date of this evaluation is March 15, 2019.
2. I do not have, nor do I expect to receive, any direct or indirect interest in the securities of ECO (Atlantic) Oil and Gas Ltd. or their affiliated companies, nor any interest in the subject property.
3. I attended the Colorado School of Mines and I graduated with a Bachelor of Science Degree in Geological Engineering in 1981; I am a Registered Professional Engineer in the State of Colorado, and I have in excess of 35 years' experience in the conduct of evaluation and engineering studies relating to oil and gas fields.
4. A personal field inspection of the properties was not made; however, such an inspection was not considered necessary in view of information available from public information and records, and the files of ECO (Atlantic) Oil and Gas Ltd.

Prepared By:

Kevin S. Weller
Registered Petroleum Engineer
State of Colorado #34214

I, Jan Joseph Tomanek, Certified Petroleum Geologist of 5665 Flatiron Pkwy, Suite 250, Boulder, Colorado, 80301, USA, hereby certify:

1. I am an employee of Gustavson Associates, which prepared a detailed analysis of the oil and gas properties of ECO (Atlantic) Oil and Gas Ltd. The effective date of this evaluation is March 15, 2019.
2. I do not have, nor do I expect to receive, any direct or indirect interest in the securities of ECO (Atlantic) Oil and Gas Ltd. or their affiliated companies, nor any interest in the subject property.
3. I attended the University of Connecticut and I graduated with a Bachelor of Science Degree in Geology in 1975; I am an American Association of Petroleum Geologists Certified Petroleum Geologist and an American Institute of Professional Geologist Certified Professional Geologist, and I have in excess of 35 years' experience in the oil and gas field.
4. A personal field inspection of the properties was not made; however, such an inspection was not considered necessary in view of information available from public information and records, and the files of ECO (Atlantic) Oil and Gas Ltd.



Jan Joseph Tomanek
Vice-President, Oil and Gas
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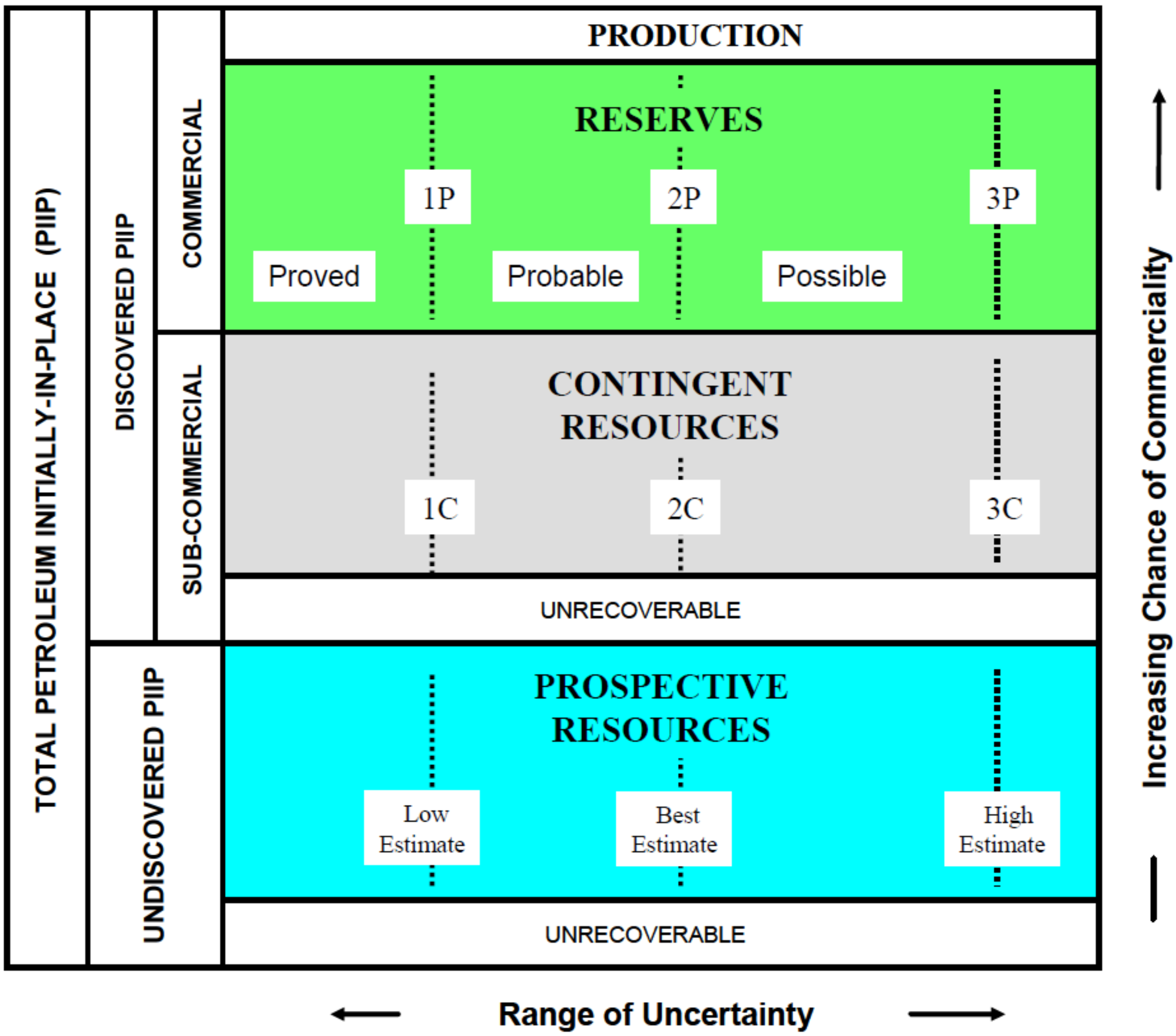
AIPG CPG #11566
AAPG CPG # 6239

Appendix A

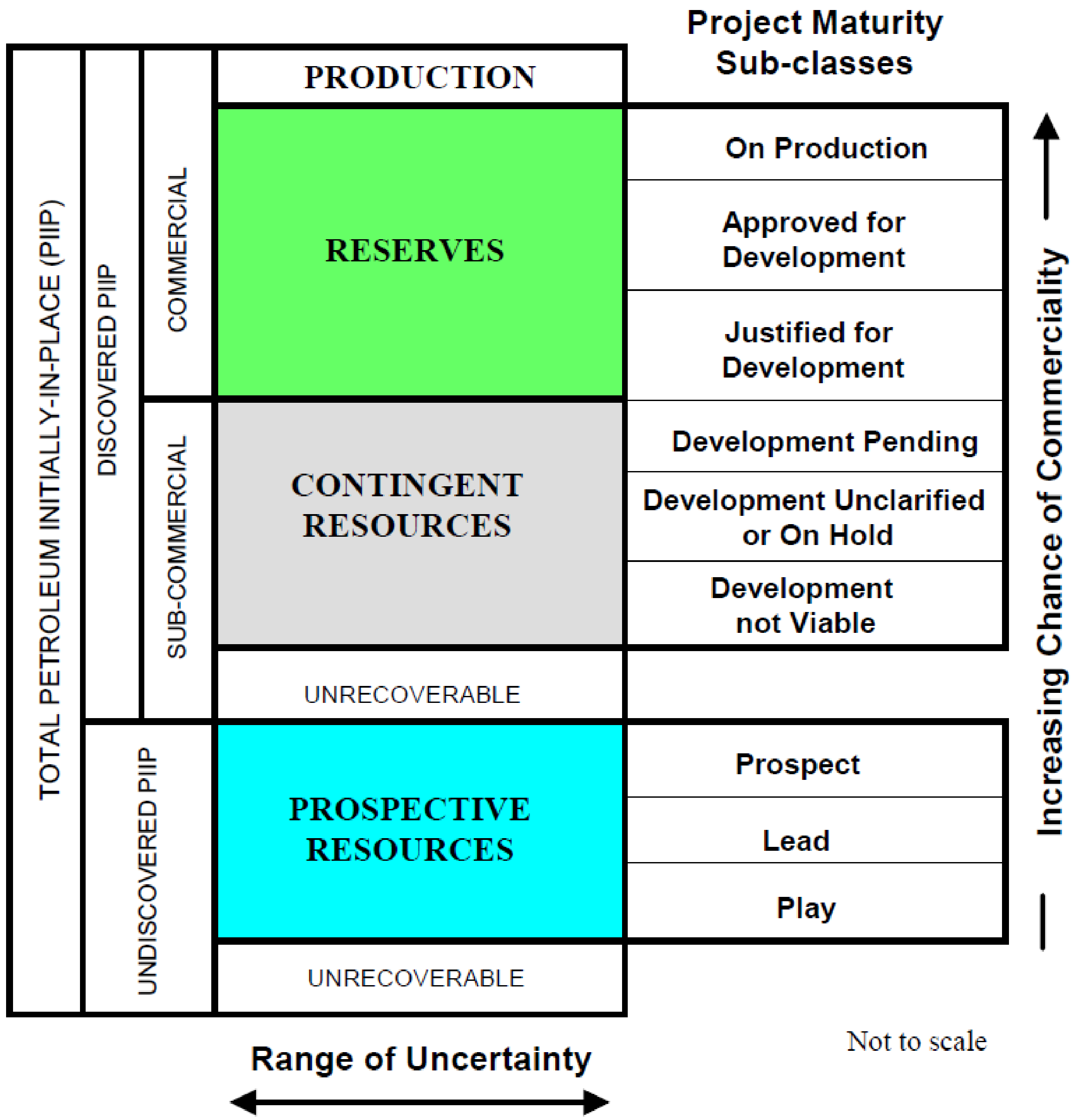
Glossary of Terms and Abbreviations

The following are select terms or phrases as defined by Society of Petroleum Engineers (SPE), American Association of Petroleum Geologists (AAPG), World Petroleum Council (WPC), and Society of Petroleum Evaluation Engineers (SPEE) in Petroleum Resources Management System, 2007, see figures below. Note that these figures and definitions are consistent with the figures and definitions provided in the COGEH[7]: the PRMS versions are reproduced here due to their completeness.



Resources Classification Framework

[7] Canadian Oil and Gas Evaluation Handbook as referenced earlier in this report.



Sub-Classes based on Project Maturity

An **Accumulation** is an individual body of naturally occurring petroleum in a reservoir.

Contingent Resources are 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.

Conventional Resources exist in discrete petroleum accumulations related to localized geological structural features and/or stratigraphic conditions, typically with each accumulation bounded by a downdip contact with an aquifer, and which is significantly affected by hydrodynamic influences such as buoyancy of petroleum in water.

Developed Reserves are expected quantities to be recovered from existing wells and facilities.

Developed Producing Reserves are expected to be recovered from completion intervals that are open and producing at the time of estimate.

Developed Non-Producing Reserves include shut-in and behind-pipe Reserves.

Estimated Ultimate Recovery (EUR) are those quantities of petroleum which are estimated, on a given date, to be potentially recoverable from an accumulation, plus those quantities already produced therefrom.

A **Lead** is 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.

Low/Best/High Estimates are the range of uncertainty that reflects a reasonable range of estimated potentially recoverable volumes at varying degrees of uncertainty (using the cumulative scenario approach) for an individual accumulation or a project.

A **Play** is 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. A Pool is an individual and separate accumulation of petroleum in a reservoir.

Possible Reserves are those additional Reserves which analysis of geoscience and engineering data indicate are less likely to be recoverable that Probable Reserves.

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.

Probabilistic Estimate is the method of estimation used when the known geoscience, engineering, and economic data are used to generate a continuous range of estimates and their associated probabilities.

A **Prospect** is a project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target.

Prospective Resources are those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.

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.

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.

Unconventional Resources exist in petroleum accumulations that are pervasive throughout a large area and that are not significantly affected by hydrodynamic influences (also called "continuous-type deposits"). Examples include coalbed methane (CBM), basic-centered gas, shale gas, gas hydrate, natural bitumen (tar sands), and oil shale deposits. Typically, such accumulations require specialized extraction technology (e.g., dewatering of CBM, massive fracturing programs for shale gas, steam and/or solvents to mobilize bitumen for in-situ recovery, and, in some cases, mining activities). Moreover, the extracted petroleum may require significant processing prior to sale (e.g., bitumen upgraders). (Also termed "Non-Conventional" Resources and "Continuous Deposits".)

Undeveloped Reserves are quantities expected to be recovered through future investments.

The following are abbreviations and definitions for common petroleum terms.

10^3m^3	thousands of cubic meters
AVO	amplitude versus offset
Bbl, Bbls	barrel, barrels
BCF	billions of cubic feet
BCM	billions of cubic meters
B_g	gas formation volume factor
BHT	bottom hole temperature
BHP	bottom hole pressure
B_o	oil formation volume factor
BOE	barrels of oil equivalent
BOPD	barrels of oil per day
BPD	barrels per day
Btu	British thermal units
BV	bulk volume
CNG	compressed natural gas
CO_2	carbon dioxide
DHI	direct hydrocarbon indicators
DHC	dry hole cost
DST	drill-stem test
E & P	exploration and production
EOR	enhanced oil recovery
EUR	estimated ultimate recovery
ft	feet
ft^2	square feet
FVF	formation volume factor
G & A	general and administrative
G & G	geological and geophysical
g/cm^3	grams per cubic centimeter
Ga	billion (10^9) years
GIIP	gas initially in place
GOC	gas-oil contact
GOR	gas-oil ratio
GR	gamma ray (log)
GRV	gross rock volume
GWC	gas-water contact
ha	hectare
Hz	hertz
IDC	intangible drilling cost
IOR	improved oil recovery
IRR	internal rate of return
J & A	junked and abandoned
km	kilometers
km^2	square kilometers
LoF	life of field

M & A	mergers and acquisitions
m	meters
M	thousands
MM	million
m^3/day	cubic meters per day
Ma	million years (before present)
max	maximum
MBOPD	thousand barrels of oil per day
MCFD	thousand cubic feet per day
MCFGD	thousand cubic feet of gas per day
MD	measured depth
mD	millidarcies
MDSS	measured depth subsea
min	minimum
ML	most likely
MMBO	million barrels of oil
MMBOE	million barrels of oil equivalent
MMBOPD	million barrels of oil per day
MMCFGD	million cubic feet of gas per day
MMTOE	million tons of oil equivalent
mSS	meters subsea
NGL	natural gas liquids
NPV	net present value
NTG	net-to-gross ratio
OGIP	original gas in place
OOIP	original oil in place
OWC	oil-water contact
P10	high estimate
P50	best estimate
P90	low estimate
P & A	plugged and abandoned
ppm	parts per million
PRMS	Petroleum Resources Management System
PSDM	Pre-Stack Depth Migrated Seismic Data
PSTM	Pre-Stack Time Migrated Seismic Data
psi	pounds per square inch
RB	reservoir barrels
RCF	reservoir cubic feet
RF	recovery factor
ROI	return on investment
ROP	rate of penetration
SCF	standard cubic feet
SS	subsea
STB	stock tank barrel
STOIIP	stock tank oil initially in place
S_g	gas saturation

S_o	oil saturation
S_w	water saturation
TCF	trillion cubic feet
TD	total depth
TDC	tangible drilling cost
TVD	true vertical depth
TVDSS	true vertical depth subsea
TWT	two-way time
US$	US dollar