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RÉSUMÉ

Phanthakarn Manirat

Petroleum Engineer

PROFESSIONAL PROFILE

Results-driven and highly motivated Petroleum Engineering Graduate with a proven track of academic achievement, completing a Bachelor of Engineering (Petroleum Engineering) with Second Class Honours and a credit average with a thirst for lifelong learning and proven expertise in engineering design, technology and a hands-on approach to issue resolution. Whilst undertaking my university studies including a final year thesis on Evaluation of Skua Field Discovery, I have remained active in the workplace as a dedicated team member and leader both locally and internationally. Recent contributions includes work as a Reservoir Engineer during which time I applied sound critical thinking and problem solving skills whilst further enhancing my communication, interpersonal and written skills in a deadline-driven team environment. I am currently pursuing a new career opportunity on an oil & gas project where I can utilise and expand my skills and experience.

TERTIARY QUALIFICATIONS

2011 - 2016

Bachelor of Engineering (Petroleum Engineering)
University of New South Wales | Sydney, New South Wales
* *Successfully attained a Credit average and Second Class Honours*

Academic Achievements:

- Reservoir Engineering A [High Distinction]
- Well Drilling Equipment & Operations [High Distinction]
- Petroleum Production Engineering [High Distinction]
- Integrated Oil/Gas Evaluation “Thesis A&B” [Distinction]
- Well Technology [Distinction]
- Natural Gas Engineering [Distinction]
- Introduction to Petrophysics [Distinction]
- Formation Evaluation [Distinction]
- Engineering Design and Innovation [Distinction]
- Enhanced Oil & Gas Recovery [Credit]

DEMONSTRATED SKILLS & ABILITIES

- Exceptional knowledge of petroleum engineering and activities related to the production of hydrocarbons including crude oil and natural gas coupled with skills in Exploration and Production within the upstream and downstream sectors of the oil & gas industry.
- Advanced understanding of petroleum geology and geophysics, focused on the estimation of the recoverable volume of resources with a knowledge of the specific physical behaviour of oil, water and gas within porous rock at very high pressure.
- Skilled in creating create 3D geological models based on fluid type, fluid and rock properties, reservoirs data and production data.
- Sound fluid and rock properties knowledge with the capacity to present project outcomes and undertake results discussions.
- Ability to create Petro-physical modelling by using suitable stochastic simulation method based on reservoir properties.
- Strong analytical and problem solving skills with the ability to develop and achieve positive outcomes.
- Highly skilled in performing accurate data analysis based on relevant well data and well correlation.
- Experience undertaking Economic Evaluations and perform waterflood plan incorporating economic results.
- Proficient using Microsoft Excel including advanced formulas and function for data entry, analysis and reporting.
- Excellent communication, interpersonal and relationship building skills with internal and external stakeholders.
- Proven ability to assist in the safe operation and maintenance of the MODU's drilling equipment.
- Strong leadership skills with experience mentoring, managing and supporting new crew members.
- Thrives in a high pressure and challenging environment with a can-do approach and positive attitude.
- Committed to participating in safety initiative programs and promotes a strong safety culture.

FINAL YEAR THESIS - BACHELOR OF ENGINEERING

Feb 2016 - Oct 2016 — UNSW FINAL YEAR THESIS A&B, PETROLEUM ENGINEERING
Project: Evaluation of Skua Field Discovery | Achieved: Distinction

Project Objectives:

- Create 3D geological model (Static & Dynamic models), based on fluid type, fluid and rock properties, reservoir data & production data.
- Design the best development scenario based on assumptions, production data, reservoir drive mechanism and run simulation.
- Optimise the best development scenario and perform economic analysis based on cost estimation assumption and historical data to determine Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period (PO), Capital Expenditure (CAPEX), and Operating Cost (OPEX) and assess the value of the Skua discovery using the probabilistic approach aimed to making a bid to acquire it.

Software Utilised:

- Petrel Software, Eclipse and @Risk7

Static Model

Key Duties & Responsibilities:

- Utilised Petrel software to create a 3D static model by performed a seismic interpretation to determine a top and bottom surface of the Plover formation and determine faults based on seismic data.
- Utilised well logging data to analyse and determine the formation, pay zone, rock and fluid type using gamma ray log, neutron log and density log using input data i.e. porosity and water saturation based on a Skua Field well completion report.
- Created the well correlation based on the fluid and rock type, gamma ray log data, neutron log data and density log data to correlate the layering and zoning of each formation as per Skua Field well logging data.
- Utilised up-scale function to up-scale the data including porosity and water saturation.
- Performed an in-depth data analysis based on the well data and well correlation.
- Created Petro-physical modelling by using the suitable stochastic simulation method based on reservoir properties.
- Utilised the input PVT data from the well completion report including reservoir pressure, reservoir temperature, solution gas oil ratio (Rs), oil and gas formation volume factor (Bo & Bg) to estimate the original oil in place (OOIP) and original gas in place (OGIP).

Dynamic Model:

Key Duties & Responsibilities:

- Created a Dynamic Model using Petrel software based on the static model by calibrating the hydrocarbon in place with the input of capillary pressure to create a transition zone at GOC and OWC to match the hydrocarbon volume.
- Performed a sensitivity analysis to assess and determine the uncertainty of reservoir data including vertical permeability, fault transmissibility and aquifer size.
- Performed a single well analysis to determine the sweet spot based on the highest oil recovery using Petrel & Eclipse software.
- Following the single well analysis, analysed the sweet spots and select the sweet area for the further development scenario.
- Designed the best development scenario based on assumption/production data and ran a simulation which included primary recovery:
  - (i) Depletion strategies based on reservoir drive mechanism, secondary recovery
  - (ii) Waterflooding strategies based on geological structure, mobility ratio and sweep efficiency, tertiary recovery
  - (iii) Polymer flooding and Horizontal well drilling
- Performed economic analysis using economic model based on cost estimation assumptions and historical data to determine Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period (PO), Capital Expenditure (CAPEX), and Operating Cost (OPEX), and assess the value of the Skua discovery using the deterministic approach probabilistic approach.
- Utilised @Risk7 software (Monte Carlo Simulation) to find NPV to reduce the risk and uncertainties from assumption and historical data.

COMPUTER & TECHNICAL SKILLS

Petrel	Intermediate Proficiency
Eclipse	Intermediate Proficiency
Material Balance Equation (Mbal)	Intermediate Proficiency
@Risk7	Intermediate Proficiency
MATLAB	Basic Proficiency
Aspen Hysis	Basic Proficiency
Microsoft Office (Word, Excel, PowerPoint & Outlook)	Advanced Proficiency

INTERNATIONAL ENGINEERING EXPERIENCE

Nov 2015 - Feb 2016

PTTEP | www.pttep.com
Waterflood Feasibility Study | Bangkok, Thailand

Reservoir Engineer (Intern)

Company Profile:
PTT Exploration and Production Public Company Limited (PTTEP) is an oil & gas exploration and production company based in Thailand. It is a subsidiary of the state-owned PTT Public Company Limited. The company was founded on 20 June 1985, and currently has operations in eleven countries worldwide. A top-ten publicly-listed company in the Stock Exchange of Thailand, PTTEP operates E&P projects around the world and has a workforce of 4,000.

Project Scope:
- The Waterflood feasibility study was arranged for the high potential prospects of the mature and marginal oil field in Thailand with the objective to recommend whether the waterflood was a feasible method to improve recovery for the given 24 drilled prospects of mature and marginal oil fields in Thailand as at quarter 2/2015.

Key Duties & Responsibilities:
- Performed Preliminary Screening based on reservoirs data and screening out criteria which involved applying Technical Screening, implementing screening out criteria to screen out the low potential prospects by using the following methods:
  - Fluid type (gas reservoir)
  - Trap mechanism (combination trap)
  - Reservoir connectivity (poor connectivity defined from pressure and well correlation)
  - Tight reservoirs (K<1)
  - Drive mechanism (Strong water drive)
- Conducted the Material Balance Equation using Material Balance Equation (Mbal) software to define the drive mechanism index.
  - Reservoirs with a water drive index greater than 0.8, which implies strong water drive reservoir was be ruled out. The model was constructed using the production data, reservoir rock, and fluid properties, reservoir pressure and geological data of reservoir such as estimate aquifer size and aquifer properties.
- Generated waterflood plan and production profile for each specific prospect, determining water flood plan from the following:
  - The number of injectors based on mobility ratio assumption, sweep efficiency, displacement efficiency and recovery efficiency.
  - Defined injection pattern and location of injectors from geological structure, reservoir structure, well correlation, oil and water contact, well location and structure of surrounding area.
  - Determined drill injector or converted a producer to an injector by reviewing well potential, production data, reservoir permeability, thickness (kh), distance of injector to producer, geological structure and pressure data.
  - Defined injection requirements from void replacement ratio(VRR) calculation based on reservoir data and material balance equation.
- Developed and implemented an accurate production profile from cumulative production and water flood gain prediction, water cut rates, reservoir pressure and production data.
- Conducted an economic evaluation and performed a waterflood plan incorporating economic results which determine the project value was worthwhile for investment and defined cost assumptions to calculate project value including NPV, IRR, CAPEX and OPEX.

Skills & Expertise Enhanced:
- Applied and enhanced technical skills and time management skills to perform on the company project and completed the project within the designated timeframe by using an organised approach and prioritising tasks accurately.
- Developed a fluid and rock properties knowledge and the ability to present the project outcome and undertake results discussions.
- Prepared and submitted quarterly reports to the Manager and Supervisor, receiving positive feedback for communicating succinctly.
- Utilised and enhanced critical thinking and problem solving abilities with the ability to achieve positive and desired results.
- Demonstrated expertise in Microsoft Excel using advanced formulas and functions for data entry, analysis and reporting.
- Communicated effectively and worked closely with my Manager, Supervisor and internal staff to achieve effective project outcomes.

VOLUNTARY WORK

Sep 2016 — UNSW OPEN DAY 2016
Open Day Class Organiser

Overview:

- Contributed as class organiser of the UNSW Open Day 2016 (Pumping Activity) in September 2016 for the school of Petroleum Engineering. Volunteered to participate in UNSW Open Day 2016 activities including delivering advice, presenting and sharing various study experiences and providing the school activity offer to future students and visitors

Mar 2016 - Jun 2016 — UNSW SPE MENTORING PROGRAM
Class Student Mentor

Overview:

- Mentored students within the UNSW SPE Mentoring Program, advising first and second year students about the courses and university experiences, while sharing the various experiences. In addition I offered insights on the local and international intern programs in both industry and research.

HOSPITALITY EXPERIENCE

Dec 2016 - Current	St George Motor Boat Club - Chef De Partie
Aug 2016 - Dec 2016	Coco Cubano - Qualified Chef
Mar 2014 - May 2015	West Illawarra Leagues Club - Chef de Partie
Nov 2013 - Mar 2014	Towradgi Beach Hotel - Qualified Chef
Jun 2013 - Nov 2013	The Illawarra Brewery - Chef De Partie
Nov 2010 - Jun 2013	Thai Carnation Restaurant - Sous Chef
May 2007 - Nov 2010	The Old Siam - Cook

CERTIFICATIONS

2016	Industrial Training Certificate, PTTEP
2014	NSW Food Safety Supervisor, Franklyn Scholar
2009	Advance Diploma of Hospitality Management, Carrick Institute of Education Sydney Campus
2009	Trade Recognition Australia (Skill Assessment)
2008	Certificate III Commercial Cookery, Carrick Institute of Education Sydney Campus

MEMBERSHIPS & ASSOCIATIONS

2015 - Current	Petroleum Exploration Society of Australia (PESA)
2015 - Current	American Associations of Petroleum Geologists (AAPG)
2014 - Current	Engineers Australia
2012 - Current	Society of Petroleum Engineering (SPE)

EXTRA CURRICULAR ACTIVITIES

Jun 2006 - Mar 2007	University Rugby Player - King's Mong Kut's University of Technology Thonburi (KMUTT)
Mar 2005 - Feb 2006	Student Prefect - King's College
Aug 2003 - Sep 2003	Thai Government Scholarship for Cultural Exchange - Pyongyang, North Korea
Jul 2002 - Jul 2006	U-14, U-16 & U-18 School Soccer Player - King's College
Dec 2002 - Jan 2003	National Scout Representative - Chonburi, Thailand
Mar 2001 - Apr 2001	U.C.E. Scholarship, Cultural Exchange Program - Gore, New Zealand

PERSONAL DETAILS

Nationality:	Australian Citizen
Date of Birth:	5 September 1987
Languages:	Fluent English & Thai
Passport:	Current Australian Passport
Availability:	Willing and able to travel
Health:	Excellent, physically fit, non-smoker
Interests & Hobbies:	Movies, sport, keeping fit, computer software, new technology and music
Social Activities:	UNSW SPE Student Chapter, UNSW Petroleum Engineering Student Society (PESS)

ACADEMIC REFEREES

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