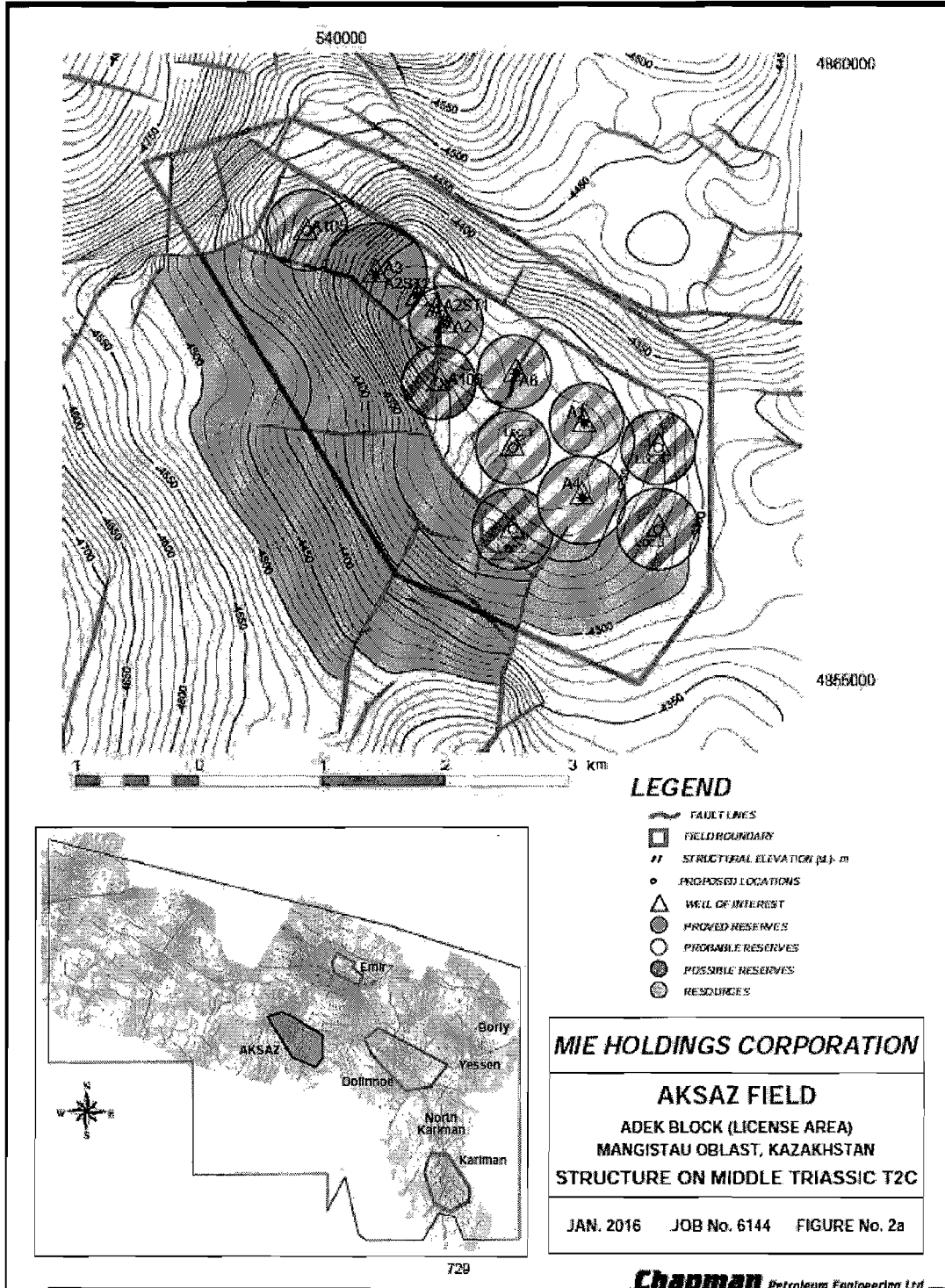




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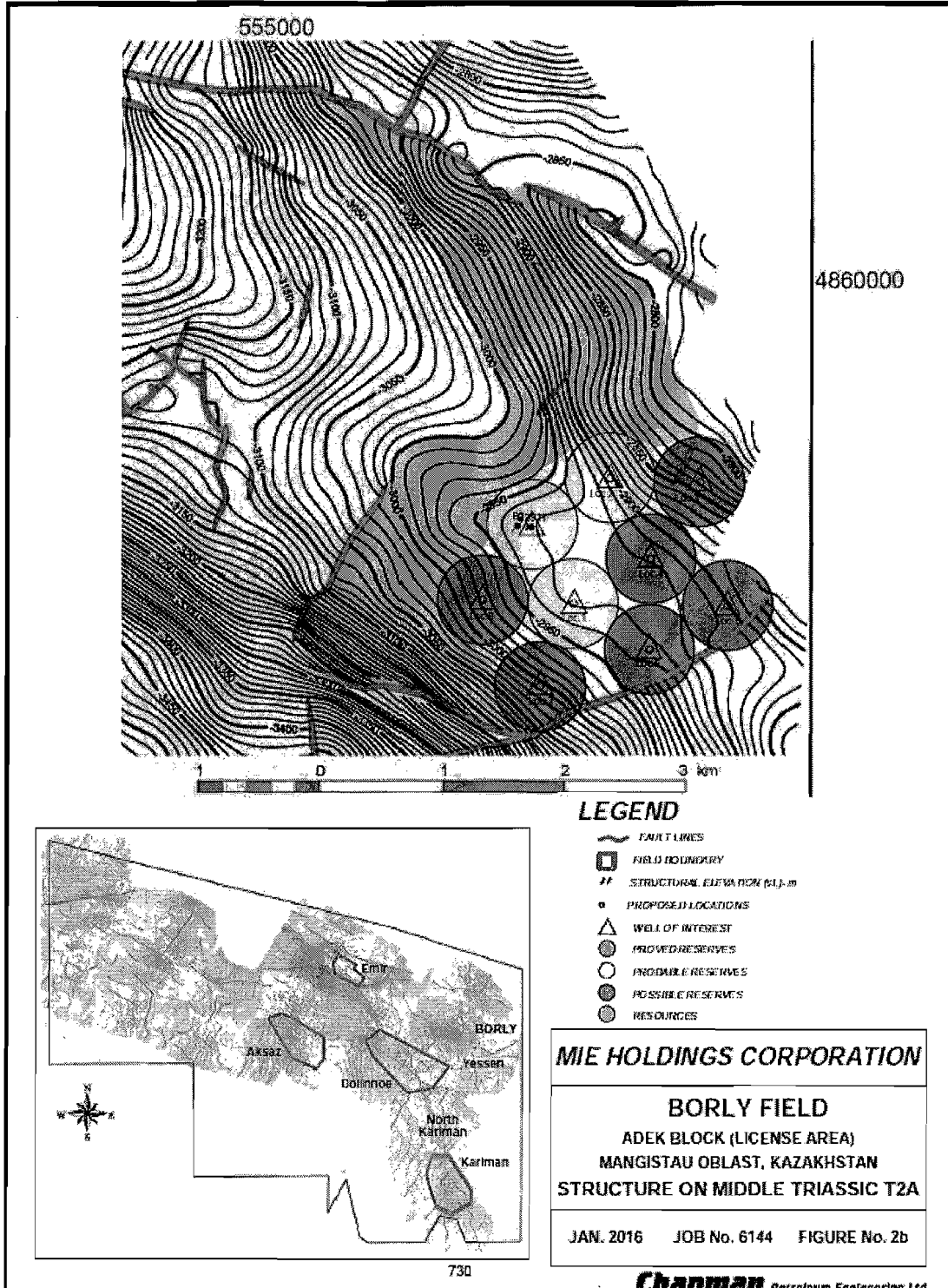
Source : Evaluation of Reserves and Prospective Resources Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2016; report dated March 9, 2016 by Chapman Petroleum Engineering Ltd.

Figure 2-69 – Aksaz Prospect Chapman's Middle Triassic T2C Depth Map



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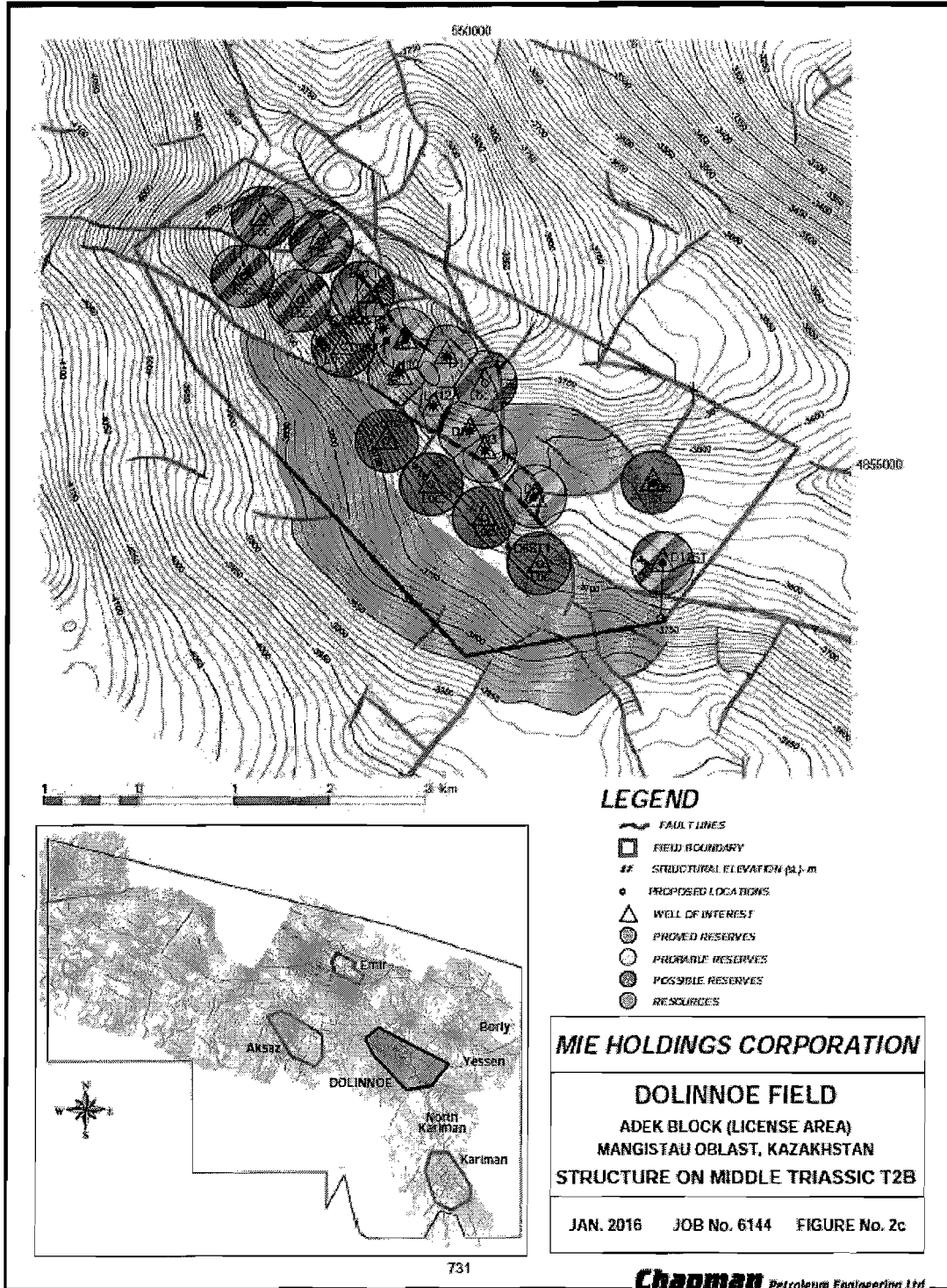
Source : Evaluation of Reserves and Prospective Resources Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2016; report dated March 9, 2016 by Chapman Petroleum Engineering Ltd.

Figure 2-70 – Borly Prospect Chapman’s Middle Triassic T2A Depth Map



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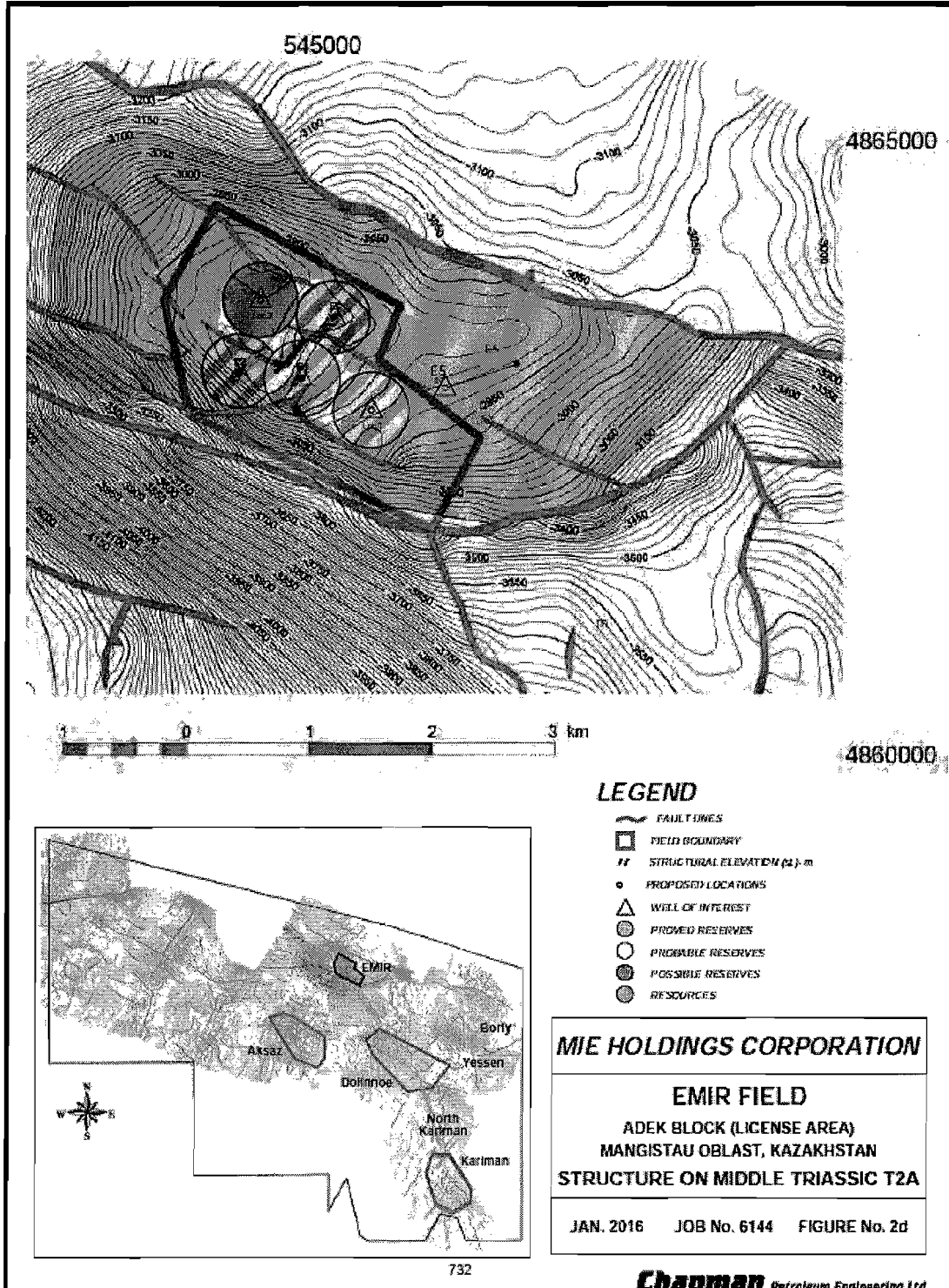
Source : Evaluation of Reserves and Prospective Resources Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2016; report dated March 9, 2016 by Chapman Petroleum Engineering Ltd.

Figure 2-71 – Dolinnoe Prospect Chapman's Middle Triassic T2B Depth Map



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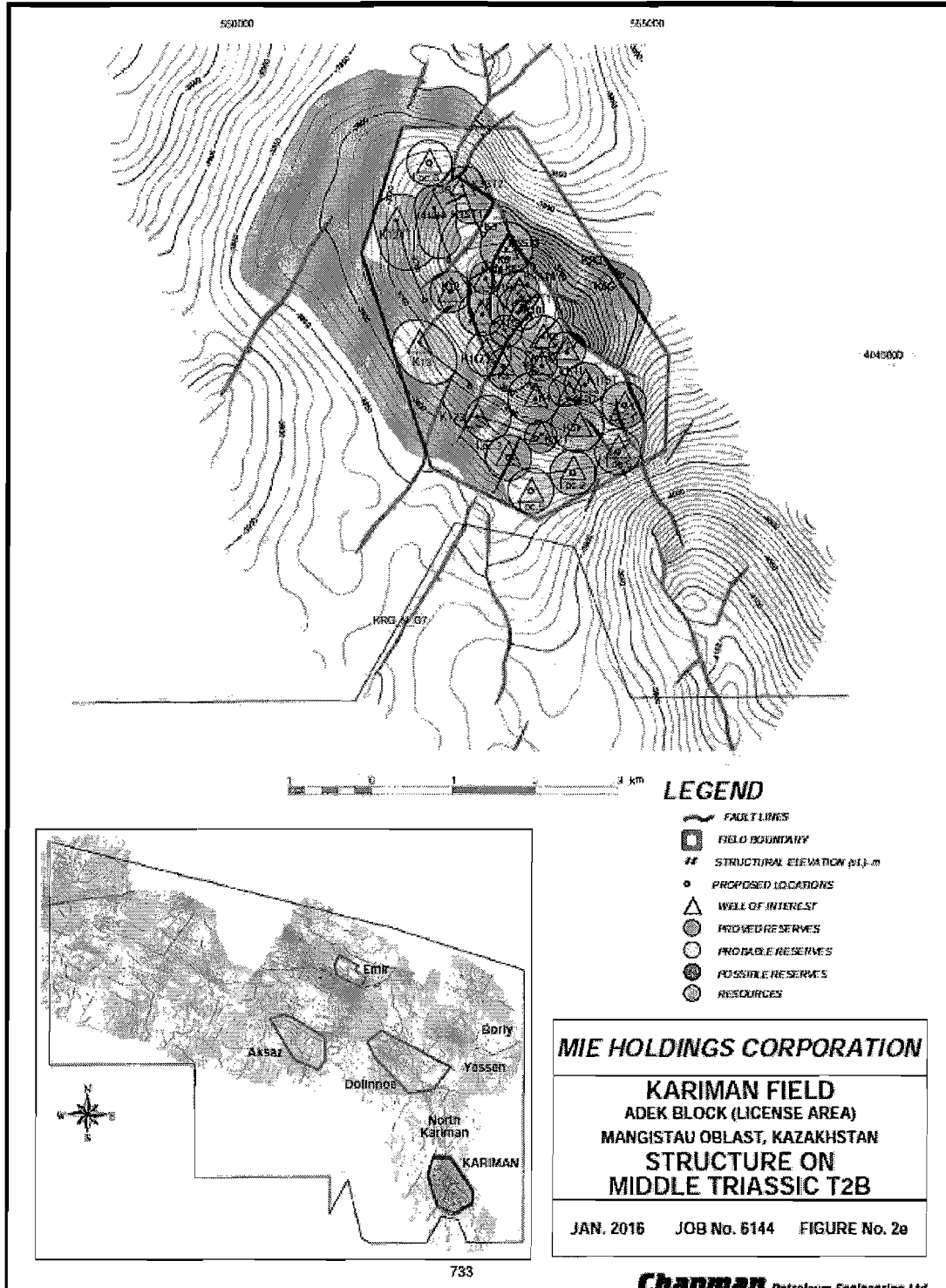
Source : Evaluation of Reserves and Prospective Resources Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2016; report dated March 9, 2016 by Chapman Petroleum Engineering Ltd.

Figure 2-72 – Emir Prospect Chapman’s Middle Triassic T2A Depth Map



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Source : Evaluation of Reserves and Prospective Resources Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2016; report dated March 9, 2016 by Chapman Petroleum Engineering Ltd.

Figure 2-73 – Kariman Prospect Chapman's Middle Triassic T2B Depth Map



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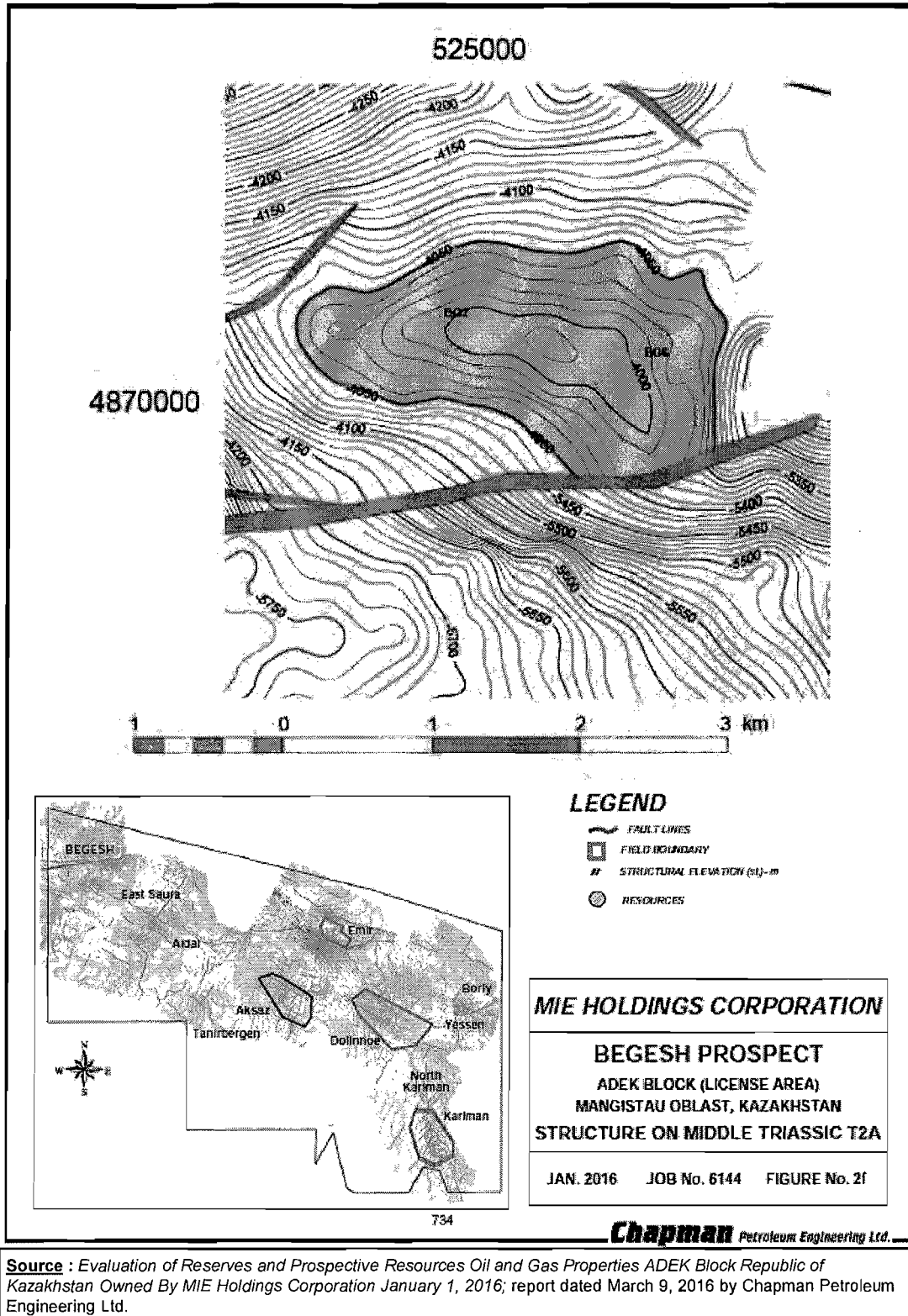
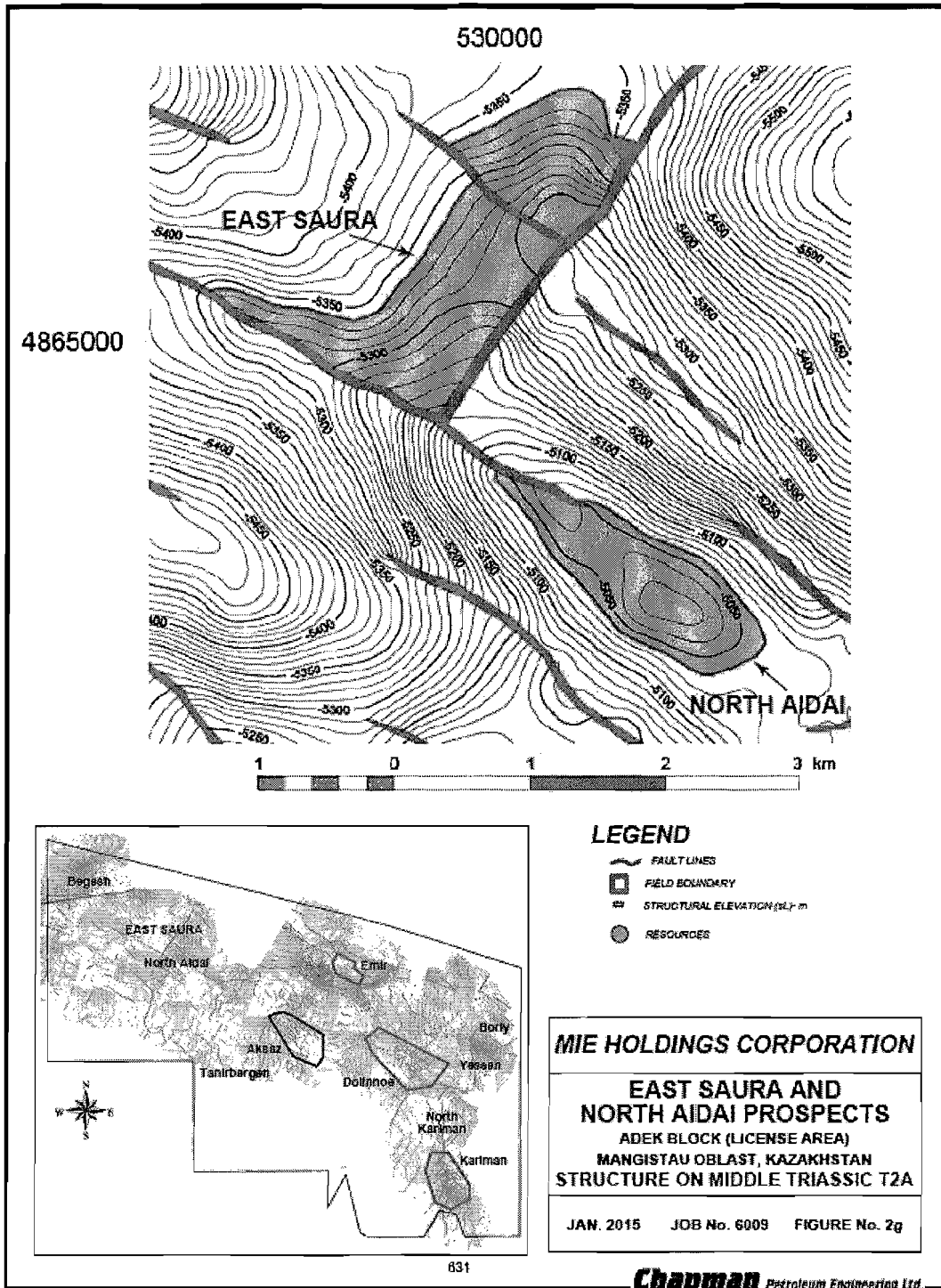


Figure 2-74 – Begesh Prospect Chapman’s Middle Triassic T2A Depth Map



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Source : Reserve and Economic Evaluation Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2015; report dated March 4, 2015 by Chapman Petroleum Engineering Ltd.

Figure 2-75 – East Saura and North Aidai Prospects Chapman’s Middle Triassic T2A Depth Map



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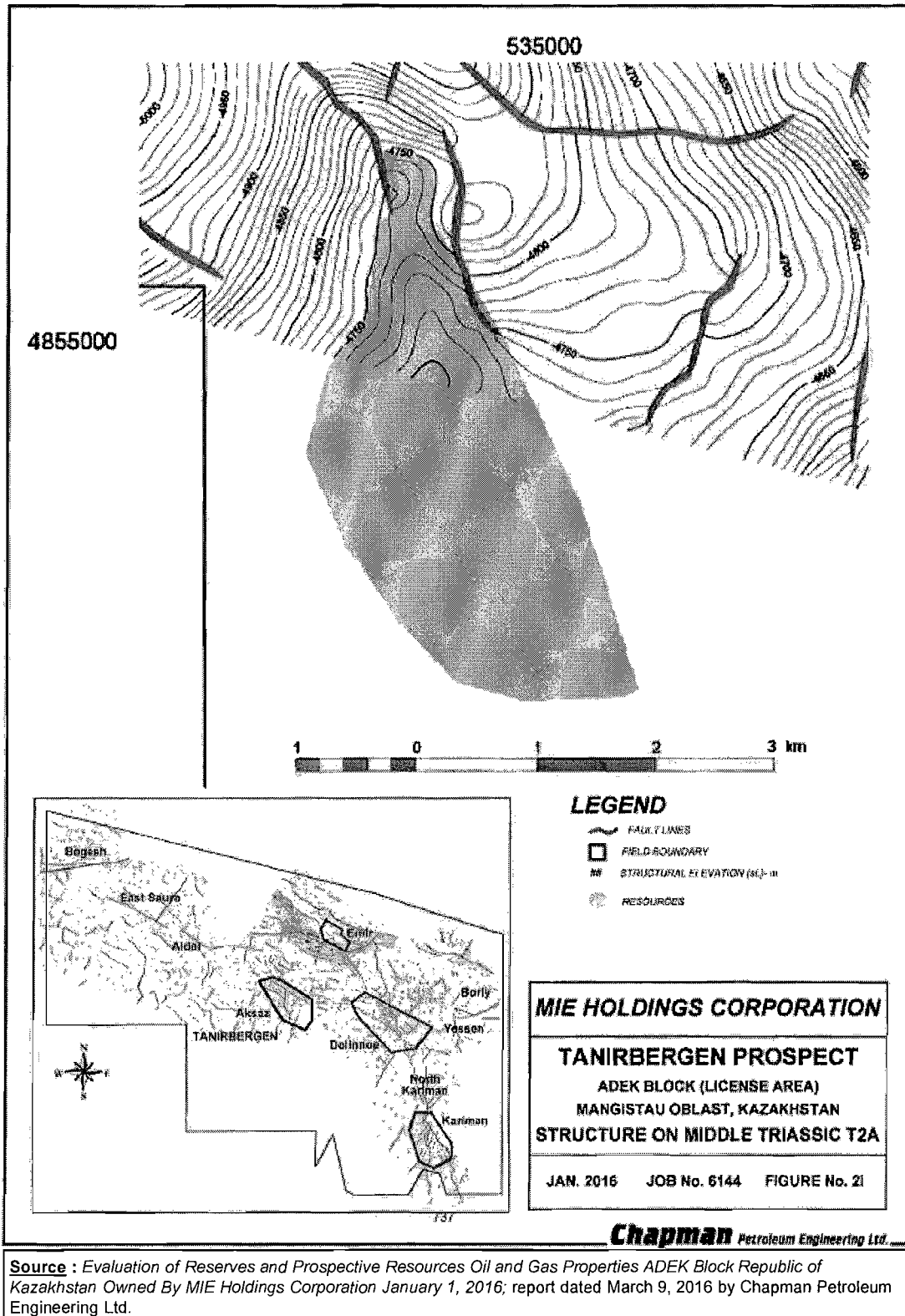


Figure 2-76 – Tanirbergen Prospect Chapman’s Middle Triassic T2A Depth Map



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3 Petroleum Engineering

3.1 Historical Production

3.1.1 Aksaz Gas-Condensate Field

Aksaz gas-condensate field was discovered in 1995 and began production in 2005. As of June 30, 2016, a total of seven wells have been drilled in the field, of which three are producing and four are shut-in. Current production is approximately 168 stb/day of condensate, and the cumulative condensate production as of June 30, 2016 is 979 Mstb.

The main pay zone is the Middle Triassic carbonate with six reservoir units (T2B, T2C, T2C-1, T2C-2, T2C-3 and T1). The reservoirs depth range from approximately 4,100 to 4,320 m TVDSS. Porosity varies from 5.5% to 17.0%. Due to limited gas processing capacity, only condensate is being produced. **Table 3-1** provides the field status as of June 30, 2016. **Figure 3-1** shows the historical production from Aksaz field.

Table 3-1– Status of Aksaz Field as of June 30, 2016

Status as of June 30, 2016	
Total Wells	7
Current Producing Wells ¹	3
Current Oil Rate (stb/d)	168
Cumulative Oil (Mstb)	979
Current Water Rate (stb/d)	2
Maximum Water Cut (%)	17
Cumulative Gas (MMscf) ²	11,451
Current GOR (scf/stb)	11,766
Note:	
1) Aksaz-2, -4 and -6 are currently in production as of June 30, 2016, and Aksaz-1 is shut; however, the well has produced intermittently including in May and July.	
2) No gas production was recorded from March 2011 to December 2013 and June 2015 to December 2015.	

The condensate to gas ratio ("CGR") ranges between 65.9 and 185 stb/MMscf for various reservoir units. The condensate gravity is 55° API. PVT analysis on Aksaz-3 indicates that the dew point pressure is 30% under-saturated and maximum condensate build-up in the reservoir is 28.8%. Based on this information, the dew point pressure and CGR trend throughout field life for Low, Best and High Estimates were derived and used to forecast the condensate production.

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3.1.2 Dolinnoe Oil Field

Dolinnoe field was discovered in 1994 and began production in 2004. As of June 30, 2016, ten wells have been drilled in the field, with five wells producing, four suspended and a new exploration/appraisal well (Dollinoe-8) which was spudded on June 29, 2016 and is currently being drilled. Current production is approximately 465 stb/day of oil, and the cumulative oil production as of June 30, 2016 is 1,923 Mstb.

There are two main reservoirs from Middle Triassic carbonate; T2B and T2C with low porosity, ranging between 9% and 11%. The reservoirs depth range from approximately 3,500 to 3,650 m TVDSS. **Table 3-2** provides the field status as of June 30, 2016. **Figure 3-2** shows the historical production from Dolinnoe field.

Table 3-2 – Status of Dolinnoe Field as of June 30, 2016

Total Wells	10
Current Producing Wells	5
Current Oil Rate (stb/d)	465
Cumulative Oil (Mstb)	1,923
Current Water Rate (stb/d)	13
Maximum Water Cut (%)	9
Cumulative Gas (MMscf)	3,799
Current GOR (scf/stb)	6,601 ¹
Note:	
1) GOR estimated based on Dolinnoe-1, -2 and -7 oil and gas streams, there was no recorded gas production from Dolinnoe-110 and -112.	

This is a high GOR oil field, with the GOR ranging between 1,500 and 10,000 scf/stb and the oil gravity ranging between 45 and 55° API. The industry standard empirical correlations indicate that the oil saturation pressure is close to reservoir pressure. This is expected due to high GOR and high gravity nature of the oil. The initial oil formation volume factor is estimated to be between 1.79 and 2.76 rb/stb (using industry standard empirical correlations).

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3.1.3 Emir Oil Field

Emir was discovered and put into production in 2004. As of June 30, 2016, four wells have been drilled with none currently producing. Cumulative oil production, as of June 30, 2016 is 21 Mstb. Emir-6 only produced on ten isolated days on since December 31, 2015. The field is effectively shut-in due to the relatively low productivity of the oil wells compared with other wells in the block and to avoid gas flaring. The Operator does not report the produced gas volumes for some periods, including for June 30, 2016.

The reservoirs depth range from approximately 2,350 to 3,030 m TVDSS, and the main pay zone is the Middle Triassic carbonate. **Table 3-3** provides the field status summary as of June 30, 2016 and **Figure 3-3** shows the historical production from the Emir field.

Table 3-3 – Status of Emir Field as of June 30, 2016

Total Wells	4
Current Producing Wells	0
Current Oil Rate (stb/d)	62.9 ¹
Cumulative Oil (Mstb)	21
Current Water Rate (stb/d)	0 ²
Maximum Water Cut (%)	9
Cumulative Gas (MMscf)	4
Current GOR (scf/stb)	0 ³
<p>Note:</p> <p>1) Emir-6 produced 62.9 stb for one day on June 22nd, 2016. The field is effectively shut-in due to the relatively low productivity of the oil wells compared with other wells in the block and to avoid gas flaring.</p> <p>2) Separator test indicated that the water production was too low to be measured in the field.</p> <p>3) No gas production was reported by the Operator during 2016.</p>	

This is a low GOR oil field as the GOR varies between 104 and 235 scf/stb with an oil gravity of 40° API. The industry standard empirical correlations indicate that the oil is extremely under-saturated as is expected due to the low GOR. The initial oil formation volume factor is estimated to be approximately 1.11 rb/stb.

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3.1.4 Kariman Oil Field

Kariman was discovered in 2006 and began production in 2006. As of June 30, 2016, a total of 22 wells have been drilled in the field of which four are currently on production and 18 shut-in. Current production is approximately 1,927 stb/day of oil, and the cumulative oil production as of June 30, 2016 is 7,306 Mstb.

The main pay zone is the Middle Triassic carbonate and consists of five reservoir units: Upper T3, T2 Upper, T2A, T2B and T2C with porosity ranging from 5.0% to 16.2%. The reservoirs depth range from approximately 3,060 to 3,710 m TVDSS. Reservoir unit T2A has the poorest porosity (5.0% to 7.4%) and T2B has the highest porosity (12.3% to 16.2%). **Table 3-4** provides the field status as of June 30, 2016, and **Figure 3-4** shows the historical production from Kariman field.

Table 3-4 – Status of Kariman Field as of June 30, 2016

Total Wells	22
Current Producing Wells ¹	4
Current Oil Rate (stb/d)	1,927
Cumulative Oil (Mstb)	7,306
Current Water Rate (stb/d)	15
Maximum Water Cut (%)	14
Cumulative Gas (MMscf)	2,455
Current GOR (scf/stb)	503
Note:	
1) Although only four are currently producing as of June 30, 2016; however, wells Kariman-3, Kariman-12, Kariman-118, Kariman-123 and Kariman-124 have produced during 2016 and are available for production	

This is a low GOR oil field, as the GOR varies between 262 and 562 scf/stb with an oil gravity of 36° API. The industry standard empirical correlations indicate that the oil is extremely under-saturated, as expected due to the low GOR. The initial oil formation volume factor is estimated to be approximately 1.24 rb/stb.

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3.1.5 North Kariman Oil Field

North Kariman-2 well has been producing since June 2012 on pilot oil production under the exploration contract. The produced oil is piped into current production system. Since the exploration contract is expiring in January 2017, the Operator is currently applying to extend the current Kariman production contract area to the North, to include the North Kariman Field. As of June 30, 2016, a total of two wells have been drilled in the field and one is currently producing. Current production is approximately 482 stb/day of oil, and the cumulative oil production as of June 30, 2016 is 621 Mstb. The Operator does not report the produced gas volumes for certain periods, including for June 30, 2016.

The Operator's recent press release indicates that North Kariman-1 tested 1,520 stb/d oil over an 82 hour period in September 2015. The main pay zone is the Middle Triassic carbonate and consists of three reservoir units: T2A, T2B and T2C. The reservoirs depth ranges from approximately 3,590 to 3,870 m TVDSS. **Table 3-5** provides the field status as of June 30, 2016 and **Figure 3-5** shows the historical production from North Kariman field.

Table 3-5 – Status of North Kariman Field as of June 30, 2016

Total Wells	2
Current Producing Wells	1
Current Oil Rate (stb/d)	482
Cumulative Oil (Mstb)	621
Current Water Rate (stb/d)	5
Maximum Water Cut (%)	14
Cumulative Gas (MMscf)	153
Current GOR (scf/stb) ¹	504
Note:	
1) No gas production was reported by the Operator in early January 2016.	

This is a low GOR oil field, with the GOR reported to be 350 scf/stb and an oil gravity of 40° API. The industry standard empirical correlations indicate that the oil is extremely under-saturated as expected due to the low GOR nature of the oil. The initial oil formation volume factor is estimated to be 1.22 rb/stb.

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3.1.6 Yessen Oil Field

As of June 30, 2016 three wells have been drilled in the Yessen Field: Yessen-1, Yessen-2, and Yessen-3. Yessen-1 and -2 are currently shut-in and Yessen-3 is a new exploration/appraisal well that was spudded June 29, 2016 and is currently being drilled. The field has been put on production since April 2013 on pilot oil production under the exploration contract. Since the exploration contract is expiring in January 2017, the Operator is currently applying to extend the Dolinnoe production contract area to the East, to include the Yessen Field. As of June 30, 2016, a total of three wells have been drilled in the field and all are currently shut-in. Cumulative oil production for the field is 40 Mstb. The Operator does not report the produced gas volumes for certain periods.

The main pay zone is the Middle Triassic carbonate and consists of five reservoir units: T2 Upper, T2A, T2B, T2C and T1. The reservoirs depth range from approximately 3,240 to 3,540 m TVDSS. The Yessen-2 well is temporarily shut in and the Operator is currently working over the well to fish out the ESP pump, in order for the well to resume production. Currently, the Operator has no plans to workover Yessen-1. **Table 3-6** provides the field status as of June 30, 2016 and **Figure 3-6** shows the historical production from Yessen field.

Table 3-6 – Status of Yessen Field as of June 30, 2016

Total Wells	3
Current Producing Wells	0
Current Oil Rate (stb/d)	0 ¹
Cumulative Oil (Mstb)	40
Current Water Rate (stb/d)	0
Maximum Water Cut (%)	42
Cumulative Gas (MMscf)	11.3
Current GOR (scf/stb) ²	0
<p>Note:</p> <p>1) Expected to be put on production as soon as the ESP pump change out is completed.</p> <p>2) No gas production was reported by the Operator in June 2016 as the field is shut-in.</p>	

This is a low GOR oil field, with a reported GOR of 272 scf/stb and an oil gravity of 40° API. The industry standard empirical correlations indicate that the oil is extremely under-saturated. This is expected due to low GOR nature of oil. The initial oil formation volume factor is estimated to be approximately 1.17 rb/stb.

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3.1.7 Emir-Oil Concession Block

Status of all six producing fields as of June 30, 2016 is tabulated in **Table 3-7** and **Figure 3-7** shows the historical production from all six fields in the Emir-Oil Concession Block. The majority of the wells are shut-in due to producing at relatively high gas-oil ratios ("GOR"). Low GOR wells are produced in preference to high GOR wells due limited gas handling capacity in order to maximize oil production. Completion of Phase I will increase the gas handling capacity from 4.9 MMscf/d (sales) to 19 MMscf/d (sales), thus, allowing more wells to be brought on production including the currently shut-in wells.

Table 3-7 – Status of Emir-Oil Concession Block as of June 30, 2016

Total Wells ¹	50
Current Producing Wells ²	13
Current Oil Rate (stb/d) ³	3,025
Cumulative Oil (Mstb)	10,890
Current Water Rate (stb/d)	35
Maximum Water Cut (%)	13
Cumulative Gas (MMscf)	17,873
Current GOR (scf/stb)	2311
Note: 1) Inclusive of 1 well in Borly and 1 well in Aidai. 2) A total of 22 well have produced in 2016; however, only 13 wells are producing on June 30, 2016. 3) Average oil rate for month of June 2016.	

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3.2 Decline Curve Analysis

The remaining recoverable oil volume was estimated from Decline Curve Analysis (“DCA”) for 21 producing wells. DCA was conducted using historical oil rate trends only. A contract cut-off date of August 31, 2036 was applied for all fields, except for Emir, where the contract cut-off date of February 28, 2030 was applied.

RPS estimated the remaining recoverable oil volumes for Low and High Estimates based on the oil decline trends. The Best Estimate is the average of Low and High Estimates. Production forecasts were estimated from July 1, 2016 and truncated at the end of the contract at August 31, 2036, except for Emir, where the contract cut-off date of February 28, 2030 was applied. For report completeness purpose, since only condensate production data were provided for the Aksaz gas field, RPS performed the DCA based on the condensate rates, and the estimated remaining recoverable condensate volumes are reported in **Table 3-8**.

Figure 3-8 to Figure 3-13 show the DCA plots for Low and High Estimates of each field. Note that the plots for Emir (**Figure 3-10**) and Yessen (**Figure 3-13**) show the production from the fields only, as no decline curve analysis was performed on these fields due to the sparsity of the data.

Table 3-8 – Results of Decline Curve Analysis for All Six Fields

DCA - Remaining Recoverable Oil Volumes (Mstb)			
Until August 31, 2036			
Field	Low Est.	Best Est.¹	High Est.
Aksaz (Condensate)	155	450	745
Dolinnoe	568	768	968
Emir			
Kariman	1953	3102	4251
North Kariman	482	1307	2131
Yessen ²			
Emir-Oil³ Concession Block	3158	5626	8094
Note:			
1) The Best Estimate is the average of Low and High Estimates.			
2) Currently Yessen field is shut-in.			
3) Total may not add exactly due to rounding-off error.			



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3.3 Development Plan

Currently the Operator rents the surface crude oil storage and processing facilities (**Figure 3-14**). The oil storage facilities were expanded in 2010 resulting in the current storage capacity of 54,100 barrels and a processing capacity of 7,540 bbl oil per day. However, the Operator's share of processing capacity is only 6,458 bbl of oil per day. Crude oil is currently transported to the nearby oil storage and processing facilities by truck, and then transported by train to the point of sale at Mangyshlak Train Station. Euro-Asian Oil is the current purchaser of oil and the final price is settled on a FOB (Free On Board) basis with the sales volume and price determined monthly as the export volume needs to be approved and verified by the Kazakhstan government. Oil price is indexed to Brent crude price and the price is on a discounted basis to account for transportation. The Operator is constructing a new central processing facility ("CPF") with an oil processing capacity of 12,000 bbl of oil per day; and a 25 km oil transportation pipeline will be built from the CPF to KazTransOil ("KTO") Oil Pipeline. Once the upgrade is completed, oil transportation will be purely based on pipelines.

Gas processing facilities were initially established between 2008 and 2009 with processing capacity of 100,000 m³/d or 3.5 MMscf/d (**Figure 3-15**). In 2009 the plant capacity was increased to current level of 140,000 m³/d or sales gas at 4.9 MMscf/d (5.5 MMscf/d for raw gas), of which 105,000 m³/d (3.7 MMscf/d) and 35,000 m³/d (1.2 MMscf/d) is for Aksaz and Dolinnoe (including Kariman) fields, respectively. Produced gas is sold to KazTransGas Aimak JSC and the sales contract stipulates that the buyer takes 4.65 million m³/month, about 152,000 m³/d or around 5.4 MMscf/d. The gas sales contract is re-negotiated on an annual basis. As oil production is constrained by the limited gas handling facilities, the Operator intends to upgrade the gas processing facilities by building a central processing facility with gas processing capacity of 600,000 m³/d or 21.2 MMscf/d. In addition, a 35 km natural gas transportation pipeline from the central processing facility to KazTransGas Aimak Gas Pipeline is planned, and that will result in increased gas sales volumes.

The new CPF (including processing facilities) is being developed over two phases. Phase 1 of the CPF is scheduled for completion by end of 2016 and will commence operations once the pipelines are ready, which is expected to be at the end of 2018. Phase 2 is targeted for commencement of construction in 2019 and is expected to be completed by end of 2020. As Phase 2 has been taken into account in the design and implementation of Phase 1, Emir-Oil will only be required to seek approval for, amongst others, installing an additional modular facility to cater for the increase in capacity for Phase 2, additional new oil and gas pipelines and drilling of additional wells to implement Phase 2. Furthermore, the fields are located onshore, as opposed to offshore, which provides flexibility in terms of the project schedule.

Phase 1 expansion is based on producing Kariman, Dolinnoe and Aksaz fields; and will increase crude oil production capacity to 12,000 stb/d and sales gas to 19 MMscf/d by January 2019. The plan was submitted to the Kazakhstan government in November 2013 and was approved in June 20, 2014. Surface infrastructure expansion (only the Central Processing Facility) is already in construction and at the advanced stage of completion.

Phase 2 well locations are defined within existing producing fields and reservoirs. Phase 2 expansion is based on new "step-out" discoveries for the Kariman, Dolinnoe, and Aksaz fields, and production from the North Kariman field. Phase 2 well locations are defined within existing producing fields and reservoirs and the majority of the wells would be classified as in-fill wells. The plan is to expand crude oil production capacity to 23,000 stb/d and wellhead gas to 31 MMscf/d. The above peak capacity is expected to be reached in 2022. The Phase 1 surface infrastructure currently being built has taken into account Phase 2 expansion. Phase 2 construction is targeted for completion by the end of 2020. In order to implement Phase 2 development, the Operator will be required to seek approval to, amongst others, install additional facility to cater for the increase in capacity for Phase 2, additional new oil and gas pipelines and drill additional wells. The fields are located onshore which allows the Operator the flexibility in terms of timing to commence Phase 2. Further, RPS has also reviewed the Operator's actions and plans to proceed with Phase 2.



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Based on the date of the evaluation and the Operator's future plans, RPS is of the opinion that Phase 2 is more likely to proceed than not within the next five years. The SPE PRMS Guidelines for Application of the Petroleum Resources Management System (November, 2011) states that if one anticipates that the development would be expected to be initiated within 5 years of assignment, the projects can be classified as Reserves that are classified as Justified for Development subclass. If market conditions remain as they are now or improve, then the Operator can accelerate the Phase 2 development.

In addition to Phase 1 and Phase 2, the Operator has tentatively planned for Phase 3 which is based on full production of the Emir and Yessen fields; and two prospects (Borly and Aidai), to increase crude oil production capacity to 35,000 stb/d of oil and wellhead gas rate to 45 MMscf/d. RPS has not included Phase 3 in the evaluation as the resource base for this investment is speculative at this stage.

3.4 Production Forecast

The oil and gas production profiles for Emir-Oil Concession Block were generated from six fields (Dolinnoe, Emir, Kariman, North Kariman, Yessen and Aksaz). Borly Structure had been excluded as Borly-2 did not flow hydrocarbon to surface. The basis for generating production profile for each field was based on:

- Independently estimated STOIP and GIIP by RPS.
- Development plan described in the Chapman Report⁵.
- English translation of Aksaz, Dolinnoe and Kariman full field reports that were made available in the Beijing physical data room.
- RPS estimated oil recovery factor using industry accepted standard correlations (based on fluids and reservoir properties) and RPS's material balance modelling for solution gas drive mechanism. Aksaz field was treated as gas-condensate field and production profiles were generated using material balance software (MBal™).
- Well performance and generation of "Type Wells" based on historical production data (details are in **Section 3.4.1**).

RPS had made some adjustments to the data obtained from the Chapman Report in generating the production profiles for this evaluation:

- The reported initial solution GOR for various reservoirs has a range for all five oil fields. RPS had varied the initial solution GOR for Low, Best and High Estimates.
- RPS had modelled the producing GOR to increase once reservoir pressure declines below saturation pressure. The increasing producing GOR trends were generated using material balance software (MBal™) for all three estimates.
- Since the GOR varies across the field, RPS had used a range of oil FVF (a function of GOR) for Dolinnoe field, ranging from 1.79 to 2.76 rb/stb, to estimate STOIPs for all three estimates.
- RPS independently estimated oil recovery factors for all fields based on reservoir pressure and temperature, fluid properties and drive mechanism for all three estimates.

⁵ Evaluation of Reserve and Prospective Resources Oil and Gas Properties, ADEK Block (Licence Area), Mangistau Oblast, Republic of Kazakhstan for MIE Holdings Corporation, December 31, 2015 (January 1, 2016), Chapman Petroleum Engineering Ltd.



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The production profiles were generated using network modelling proprietary software assuming oil and gas from all these fields are pipelined to process at Central Processing Facility with oil target rate and gas rate being limited by plant capacity, i.e. once the maximum gas rate is reached, the oil rate will be curtailed to maintain the maximum gas production rate. The sales gas volume is estimated after applying fuel shrinkage of 7% (single value) to the wellhead gas.

The production profiles of technically recoverable oil and gas volumes are terminated at the production contract expiry date.

3.4.1 Historical Well and Field Performance

In the historical production dataset, no information was provided for the breakdown of production from each reservoir for a particular well. However, this is not an uncommon situation where multiple reservoirs produce from a single completion within a wellbore. The industry term for this production strategy is “comingled production”. Comingled production is a common approach to reduce well completion costs at the expense of not knowing the exact production of each zone or reservoir. Production reporting is based on a well’s production. If there are multiple completion strings in a well (a dual completion for example) then production will be reported for each completion. With comingled production, one cannot report the production of each zone, that is, one can only report what the well has produced. RPS extracted the information on historical production from the Chapman Report and have summarised them in **Figure 3-16** to **Figure 3-18**. The Estimated Ultimate Recovery (“EUR) of oil per well (EUR/Well) was estimated (**Table 3-9**) from decline curve analysis for three fields with sufficient production data. As Emir and Yessen Fields had limited production data, they have been omitted from these analyses.

Since the current wells are only targeting limited STOIIIP; 32.4%, 74.6% and 25.2% for Kariman, Dolinnoe and North Kariman, respectively as shown from **Figure 3-16** and **Figure 3-17**, the EUR/well had been pro-rated up to target 100% (all reservoirs) of the STOIIIP volumes. The resulting EUR/well for these three fields if 100% of STOIIIP volume is targeted is shown in **Table 3-10**.

A set of “Type Wells” for the Low, Best and High Estimates for all fields were generated based on field performance and the EUR/well per well in **Table 3-10**. The oil recovery from oil fields “Type Wells” was adjusted accordingly to forecast:

- Production from existing wells (after taking into account of cumulative production) and reactivation wells, which was based on the remaining ultimate recoverable volumes.
- Production from infill wells and opening of new reservoir zones are based on EUR/well.

The production forecast for infill wells were generated based on estimated EUR/well assuming all reservoirs are put on production. However, for the old wells that are planned to be reactivated, the resulting remaining EUR/well had been adjusted to account for the production up to and including June 30, 2016.

A similar approach was used for the Aksaz gas field.

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Table 3-9 – EUR/Well Estimation (Currently Targeted STOIP - Producing Reservoirs)

Field	Expected Ultimate Recovery (MMstb)			Total Producing Wells ¹	Expected Ultimate Recovery Per Well (MMstb)		
	Low Est.	Best Est.	High Est.		Low Est.	Best Est.	High Est.
Dolinnoe	1.898	2.098	2.298	5	0.380	0.420	0.460
Kariman	5.534	6.683	7.829	12	0.461	0.557	0.652
North Kariman	1.040	1.864	2.688	1	1.040	1.864	2.688
Average	2.824	3.548	4.272	6	0.627	0.947	1.267

Note:
1) Number of wells used to forecast Expected Ultimate Recoverable.

Table 3-10 – EUR/Well Estimation (Targeting 100% STOIP - All Reservoirs)

Field	Expected Ultimate Recovery Per Well (MMstb)		
	Low Est.	Best Est.	High Est.
Dolinnoe	0.506	0.566	0.617
Kariman	1.429	1.731	2.020
North Kariman	4.129	7.409	10.689
Average	2.022	3.235	4.442

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3.4.2 Aksaz Gas Condensate Field

Aksaz Field was treated as oil field in the Chapman Report. However, the Aksaz full field review report (translated in English) by the Operator indicates that Aksaz is a gas-condensate field. In their reserve evaluation Chapman has considered the field to be oil field with a high gas oil ratio. RPS has generated production profiles for the Aksaz as a gas-condensate field.

The production profiles for various estimates were generated using MBal™ software and tuned to the observed GOR for the field (Figure 3-19). The initial CGR range was assumed to be 126, 153 and 185 stb/MMscf. However, the producing CGR trend below dew point pressure was based on CGR trend seen from the Aksaz-3 PVT report. For various estimates, the CGR decline trend is kept the same but the initial CGR was using 126, 153 and 185 stb/MMscf.

The well deliverability was generated from current well performance, assuming pressure drawdown is approximately 50%. The gas recovery factor was estimated to be between 69% and 75%. The well schedule and cumulative well count is shown in Table 3-11.

Table 3-11 – Aksaz Well Schedule and Cumulative Wells Counts

Year	Aksaz		
	Low	Best	High
2016	4	4	4
2017	4	4	4
2018	4	4	4
2019	4	4	4
2020	5	7	7
2021	5	8	8
2022	5	9	9
Total Infill Well Count	1	5	5
Reopening Old Wells	0		
Note:			
1) Planned wells as of June 30, 2016.			

The field's "well type" and type curve comparison with the actual well production data is illustrated in Figure 3-20 and the potential development well locations are illustrated for the Aksaz Field in Figure 3-21 and Figure 3-22.

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3.4.3 Dolinnoe Oil Field

The production profiles were generated based on current well performance. Since no development plan was submitted to RPS, it had been assumed that the development plan is similar to that as reported in the Chapman Report. The Operator had indicated that they plan to drill two wells in 2016: D-6ST and D-109H. Since CAPEX spending was deferred, these two wells are postponed to 2019. RPS had included these two wells in the drilling plan and production profiling.

The Dolinnoe Field is a high GOR oil, ranging between 1,500 to 3,000 scf/stb. Gas production was estimated by generating GOR profiles for the Low, Best and High estimates using MBal™ software and tuned to the observed GOR for the field, as depicted in **Figure 3-23**

The oil recovery factors were estimated using correlations and material balance modelling for solution gas drive mechanism. The estimated oil recovery factor ranges between 18.4% to 36.0% assuming the cumulative producing GOR ratio at the end of field life ranges between 2.6 (High Estimate) to 4.5 (Low Estimate) times the initial solution GOR. It was reported in the Chapman report that there is a possibility of edge water drive, which is represented by the High Estimate oil recovery factor (36%). The well schedule and cumulative well count is shown in **Table 3-12**.

Table 3-12 – Dolinnoe Well Schedule and Cumulative Wells Counts

Year	Dolinnoe		
	Low	Best	High
2016 ¹	5	5	5
2017	7	7	7
2018	7	9	9
2019	8	10	10
2020	9	11	11
2021	9	11	11
2022	9	11	11
2023	9	13	13
2024	9	13	13
2025	9	15	15
2026	9	16	16
Total Infill Well Count	2	7	7
Reopening Old Wells	2	4	4
Note:			
1) Producing wells as of June 30, 2016.			

The derived “well type” and type curve comparison with the actual well production data for the field is illustrated in **Figure 3-24** and **Figure 3-25** to **Figure 3-26** show the potential development well locations for the Dolinnoe Field.



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3.4.4 Emir Oil Field

The production profiles were generated based on current well performance and data from the Chapman report. Since no development plan was submitted to RPS, it had been assumed that the development plan is similar to that as reported in the Chapman report.

The Emir Oil Field has a low GOR oil, ranging between 150 and 272 scf/stb. Gas production was estimated by generating GOR profiles for the Low, Best and High estimates using MBal™ software and tuned to the observed GOR for the field, as shown in **Figure 3-27**.

The oil recovery factors were estimated using correlations and material balance modelling for solution gas drive mechanism. The estimated recovery factor ranges between 12.2% and 24.4%. As an example, the lognormal distribution of estimated oil recovery factors for the low GOR oil is depicted in **Figure 3-28**. The well schedule and cumulative well count is shown in **Table 3-13** for the field.

Table 3-13 – Emir Well Schedule and Cumulative Wells Counts

Year	Emir		
	Low	Best	High
2016 ¹	-	-	-
2017	-	-	-
2018	-	-	-
2019	2	2	2
2020	4	4	4
2021	4	5	5
Total Infill Well Count	3	4	4
Reopening Old Wells	1	1	1
Note:			
1) Producing wells as of June 30, 2016			

The derived “well type” and type curve comparison with the actual well production data for the field is illustrated in **Figure 3-29** and potential development well locations for the Emir Field are shown in **Figure 3-30**.



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3.4.5 Kariman Oil Field

The production profiles were generated based on current well performance and data from the Chapman Report. Since no development plan was submitted to RPS, it had been assumed that the development plan is similar to that as reported in the Chapman report. The Operator had indicated that they plan to drill two wells in 2016: K-15 and K-126H. Since CAPEX spending was deferred, these two wells are postponed to 2019. RPS had included these two wells in the drilling plan and production profiling.

Kariman oil is characterized as moderate to low GOR oil, ranging between 350 and 425 scf/stb. Gas production was estimated by generating GOR profiles for the Low, Best and High estimates using MBal™ software and tuned to the observed GOR for the field, as illustrated in **Figure 3-31**.

The oil recovery factors were estimated using correlations and material balance modelling for solution gas drive mechanism. The estimated oil recovery factor ranges between 15.4% and 25.6%, assuming the cumulative producing GOR ratio at the end of field life ranges between 2.8 (High Estimate) to 4.3 (Low Estimate) times the initial solution GOR.

The well schedule and cumulative well count is shown in **Table 3-14**.

Table 3-14 – Kariman Well Schedule and Cumulative Wells Counts

Year	Kariman		
	Low	Best	High
2016 ¹	9	9	9
2017	12	12	12
2018	15	15	15
2019	17	17	17
2020	21	21	21
2021	24	27	27
2022	24	28	28
2023	24	29	29
Total Infill Well Count	9	14	14
Reopening Old Wells	6		
Note:			
1) Producing wells as of June 30, 2016.			

The derived “well type” and type curve comparison with the actual well production data for the field is illustrated in **Figure 3-32** and potential development well locations for the Kariman Field are shown in **Figure 3-33** and **Figure 3-34**.

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3.4.6 North Kariman Oil Fields

The North Kariman Field is similar to the Karimann Field and was therefore treated in a similar manner, with the production profiles generated based on current well performance and data from the Chapman Report. Since no development plan was submitted to RPS, it had been assumed that the development plan is similar to that as reported in the Chapman report.

The field has moderate to low GOR oil, ranging between 350 and 425 scf/stb. Gas production was estimated by generating GOR profiles for the Low, Best and High estimates using MBal™ software and tuned to the observed GOR for the field, as depicted in **Figure 3-35**.

The oil recovery factors were estimated using correlations and material balance modelling for solution gas drive mechanism. The estimated oil recovery factor ranges between 14.9% and 24.5%, assuming the cumulative producing GOR ratio at the end of field life ranges between 2.8 (High Estimate) to 4.3 (Low Estimate) times the initial solution GOR.

North Kariman-1 which tested 1,520 stb/d of oil in September 2015 was included in the best and high estimates only as the pilot production contract needs to be secured to commence production from this well.

The well schedule and cumulative well count is shown in **Table 3-14**.

Table 3-15 – North Kariman Well Schedule and Cumulative Wells Counts

Year	North Kariman		
	Low	Best	High
2016 ¹	2	2	2
2017	2	2	2
2018	2	2	2
2019	3	3	3
2020	3	3	3
2021	3	5	5
2022	3	6	6
Total Infill Well Count	1	4	4
Reopening Old Wells	0		
Note:			
1) Producing wells as of June 30, 2016.			

The derived “well type” and type curve comparison with the actual well production data for the field is illustrated in **Figure 3-36** and potential development well locations for the North Kariman Field are shown in **Figure 3-37**.

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3.4.7 Yessen Oil Field

The production profiles were generated based on current well performance and data from the Chapman report. Since no development plan was submitted to RPS, it had been assumed that the development plan is similar to that as reported in the Chapman report.

Yessen oil has a low GOR oil ranging between 150 and 272 scf/stb. . Gas production was estimated by generating GOR profiles for the Low, Best and High estimates using MBal™ software and tuned to the observed GOR for the field, as depicted in **Figure 3-38**.

The oil recovery factors were estimated using correlations and material balance modelling for solution gas drive mechanism. The estimated recovery factor ranges between 9.6% and 17.1%. As an example, the lognormal distribution of estimated oil recovery factors for the low GOR oil is depicted in . The well schedule and cumulative well count is shown in **Table 3-16**.

Table 3-16 – Yessen Well Schedule and Cumulative Wells Counts

Year	Yessen		
	Low	Best	High
2016 ¹	-	-	-
2017	-	-	-
2018	-	-	-
2019	2	2	2
2020	2	2	2
2021	2	2	2
2022	2	2	2
2023	2	3	4
2024	2	4	6
Total Infill Well Count	0	2	4
Reopening Old Wells	2		
Note:			
1) Producing wells as of June 30, 2016.			

The derived “well type” and type curve comparison with the actual well production data for the field is illustrated in **Figure 3-39** and potential development well locations for the Yessen Field are shown in **Figure 3-40**.

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3.4.8 Production Profile (Scenario-1)

REB had initially specified various development forecast scenarios during the valuation exercise, with each scenario consisting of Low, Best and High volumes and profiles estimates. However, only the final scenario is presented herein. The final scenario target oil and gas rates were derived based on the Operator's Central Processing Facility and infrastructure upgrade plan as described in **Section 3.3**. Note that RPS only considered Phase 1 and Phase 2 expansion plans in the evaluation, as the resource base used to justify the Phase 2 development is speculative at this stage. Based on the Capex optimisation discussions between MIE and REB, the CAPEX spending (i.e. infill drilling and facility upgrading) has been postponed for two to three years compared to the outlined development plan described in **Section 3.3**. RPS has generated the production profiles based on this CAPEX deferment case.

Table 3-17 summarizes the oil and gas rates for Scenario-1. The target oil and wellhead gas rates being 3,025 stb/d and 5.5 MMscf/d, respectively from July 1, 2016 to January 1, 2017, using the rented facility (which has capacity of maximum oil rate of 6,458 stb/d. Note that at the beginning of July 1, 2016, the initial oil production was set to the historical average oil rate for June 2016 (i.e. 3,025 stb/d).

The facility maximum oil rate of 6,458 stb/d commences from January 1, 2017 until December 31, 2018. Facility leasing ceases on December 31, 2018 and Phase 1 increased maximum throughput of 12,000 stb/d of oil and 21.2 MMscf/d of wellhead gas will be available from January 1, 2019 onwards once the 25 km oil pipeline and 35 km gas pipeline are completed. Phase 2 facility increased capacity commences in January 1, 2021 with the target oil rate being 23,000 stb/d and maximum wellhead gas of 31 MMscf/d. Previously, shut-in wells are reactivated from January 1, 2017 onwards to meet various target rates. RPS notes that the aforementioned oil and gas rates appear reasonable based on the development schedule.

Table 3-17 – Scenario-1 Target Rates and Description

Date	Scenario-1		
	Oil Rate/Limit stb/d	Raw Gas Rate MMscf/d	Remarks
1-Jul-2016	3,025 ¹	5.5	Existing wells.
1-Jan-2017	5,000	5.5	Rented facility maximum oil rate and gas rate is 6,458 stb/d and 5.5 MMscf/d, respectively. Reactivation of old wells.
1-Jan-2018	5,250	5.5	Rented facility maximum oil rate and gas rate is 6,458 stb/d and 5.5 MMscf/d, respectively. Reactivation of old wells.
1-Jan-2019 ²	12,000	21.2	Phase 1 postponed to January 2019. No facility leasing.
1-Jan-2021 ²	23,000	31.0	Phase 2 delayed for 2.5 years.
Note:			
1) June 2016 average historical oil rate used for forecast.			
2) Facilities constrained.			

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The Aksaz gas-condensate field results of production forecasts for Scenario I is summarized in **Table 3-18** and the results for oil fields are summarized in **Table 3-19**. Condensate recovery factor for High Estimate is lower as there is more condensate to be recovered beyond the contract expiry period.

Table 3-18 – Aksaz Gas Field Production Forecast Results (Based on Scenario-1)

GAS	Aksaz Field		
	Low	Best	High
Gas Initially In-Place, Bscf	22.13	56.50	155.18
Gas Recovery Factor, %	69.5%	71.0%	75.0%
Wellhead Gas EUR, Bscf	15.371	40.115	116.39
Cumulative Gas, Bscf (Dec 31, 2015)	-11.451	-11.451	-11.451
Remaining Recoverable WH Gas Vol., Bscf	3.920	28.664	104.93
Profile Cumulative Wellhead Gas, Bscf	3.920	28.612	91.122
Remaining Gas Not Produced, Bscf	0.000	0.052	13.812
CONDENSATE			
Initial Condensate Gas Ratio, stb/MMscf	65	125.5	185
Condensate Initially In-Place, MMstb	3.117	9.563	31.987
Condensate Rec. Fac., % (at Aug 31, 2036)	82.2%	61.3%	60.1%
Condensate EUR, MMstb	1.183	4.350	17.250
Cumulative Condensate, MMstb (Dec 31, 2015)	-0.979	-0.979	-0.979
Profile Cumulative Condensate, MMstb	0.204	3.371	16.271

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Table 3-19 – Oil Fields Production Forecast Results (Based on Scenario-1)

Field	Dolinnoe			Emir			Kariman			North Kariman			Yessen		
	Low	Best	High	Low	Best	High	Low	Best	High	Low	Best	High	Low	Best	High
OIL															
STOIP, MMstb	24.40	45.60	84.90	13.01	37.10	65.47	144.30	241.90	430.10	12.80	29.01	51.19	41.87	69.28	114.60
Oil Recovery Factor, %	18.40%	28.60%	36.00%	14.20%	21.60%	28.90%	15.38%	20.47%	25.58%	17.40%	23.20%	29.00%	9.63%	13.64%	17.07%
Oil EUR, MMstb	4.4896	13.0416	30.564	1.848	8.014	18.921	22.196	49.511	110.012	2.227	6.730	14.845	4.033	9.448	19.565
Cumulative Oil, MMstb (at Dec 31, 2015)	-1.922	-1.922	-1.922	-0.021	-0.021	-0.021	-7.307	-7.307	-7.307	-0.621	-0.621	-0.621	-0.040	-0.040	-0.040
Remaining Recov. Oil Volume, MMstb	2.567	11.119	28.642	1.827	7.993	18.900	14.888	42.204	102.704	1.606	6.109	14.224	3.993	9.408	19.526
Profile Cumulative Oil, MMstb	2.547	9.977	7.382	1.794	3.527	1.858	14.828	39.723	58.439	1.606	6.109	14.224	3.786	7.309	17.969
Remaining Oil Volume Not Produced, MMstb	0.020	1.142	21.260	0.033	4.466	17.042	0.060	2.481	44.265	0.000	0.000	0.000	0.207	2.099	1.557
ASSOCIATED GAS															
Initial Solution GOR, scf/stb	1658	2072	2486	118	148	177	383	425	468	315	350	385	267	297	327
Gas Initially In-Place, Bscf	41.0	94.4	209.5	1.5	8.3	17.4	48.8	90.7	177.3	2.0	8.3	16.1	7.6	13.0	22.1
Cumulative Gas, Bscf (at Dec 31, 2015) ¹⁾	-3.799	-3.799	-3.799	-0.005	-0.005	-0.005	-2.455	-2.455	-2.4547	-0.152	-0.152	-0.152	-0.0113	-0.011	-0.011
Profile Cumulative Raw Gas, Bscf	8.518	73.159	53.087	0.205	0.557	0.389	5.174	18.641	40.254	0.434	1.961	6.836	0.956	2.1	6.246
Resulting Recovery Factor, %	30.04%	81.52%	27.15%	13.99%	6.77%	2.26%	15.63%	23.26%	24.09%	29.32%	25.46%	43.41%	12.73%	16.24%	28.31%
Note:	1) Cumulative gas production may be incorrect as the gas rates were not reported during production.														

The remaining recoverable oil volumes and sales gas volumes for Scenario 1 for Low, Best and High Estimates prior to economic limit test ("ELT") are tabulated from **Table 3-20** to **Table 3-31**.

The production profile plots for Scenario 1 are included in **Figure 3-41** to **Figure 3-46**.

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Table 3-20 – Low Estimate Oil Rate (Scenario-1)

Low Estimate Oil Rate (stb/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	191.3	426.2	-	2,191.3	196.7	-	3,005.5
2017	365	24.7	1,200.0	-	3,600.0	175.3	-	5,000.0
2018	365	-	865.8	-	4,000.0	260.3	-	5,126.0
2019	365	-	1,054.8	479.5	5,553.4	1,726.0	1,271.2	10,084.9
2020	366	161.2	1,229.5	1,071.0	5,259.6	953.6	1,352.5	10,027.3
2021	365	142.5	778.1	871.2	5,438.4	526.0	1,197.3	8,953.4
2022	365	71.2	495.9	665.8	4,298.6	293.2	1,052.1	6,876.7
2023	365	35.6	326.0	506.8	3,178.1	161.6	926.0	5,134.2
2024	366	13.7	218.6	385.2	2,267.8	87.4	808.7	3,781.4
2025	365	8.2	153.4	293.2	1,638.4	52.1	684.9	2,830.1
2026	365	2.7	106.8	224.7	1,189.0	27.4	578.1	2,128.8
2027	365	2.7	82.2	169.9	865.8	16.4	487.7	1,624.7
2028	366	-	60.1	131.1	631.1	8.2	407.1	1,237.7
2029	365	-	46.6	98.6	463.0	5.5	345.2	958.9
2030	365	-	38.4	13.7	339.7	2.7	290.4	684.9
2031	365	-	27.4	-	252.1	-	243.8	523.3
2032	366	-	21.9	-	183.1	-	207.7	412.6
2033	365	-	19.2	-	134.2	2.7	172.6	328.8
2034	365	-	13.7	-	98.6	-	145.2	257.5
2035	365	-	13.7	-	74.0	-	123.3	211.0
2036	244	-	12.3	-	57.4	-	106.6	176.2

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Table 3-21 – Low Estimate Cumulative Oil Volume (Scenario-1)

Low Estimate Cumulative Oil Volume (MMstb)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.035	0.078	0.000	0.401	0.036	0.000	0.550
2017	365	0.044	0.516	0.000	1.715	0.100	0.000	2.375
2018	365	0.044	0.832	0.000	3.175	0.195	0.000	4.246
2019	365	0.044	1.217	0.175	5.202	0.825	0.464	7.927
2020	366	0.103	1.667	0.567	7.127	1.174	0.959	11.597
2021	365	0.155	1.951	0.885	9.112	1.366	1.396	14.865
2022	365	0.181	2.132	1.128	10.681	1.473	1.780	17.375
2023	365	0.194	2.251	1.313	11.841	1.532	2.118	19.249
2024	366	0.199	2.331	1.454	12.671	1.564	2.414	20.633
2025	365	0.202	2.387	1.561	13.269	1.583	2.664	21.666
2026	365	0.203	2.426	1.643	13.703	1.593	2.875	22.443
2027	365	0.204	2.456	1.705	14.019	1.599	3.053	23.036
2028	366	0.204	2.478	1.753	14.250	1.602	3.202	23.489
2029	365	0.204	2.495	1.789	14.419	1.604	3.328	23.839
2030	365	0.204	2.509	1.794	14.543	1.605	3.434	24.089
2031	365	0.204	2.519	1.794	14.635	1.605	3.523	24.280
2032	366	0.204	2.527	1.794	14.702	1.605	3.599	24.431
2033	365	0.204	2.534	1.794	14.751	1.606	3.662	24.551
2034	365	0.204	2.539	1.794	14.787	1.606	3.715	24.645
2035	365	0.204	2.544	1.794	14.814	1.606	3.760	24.722
2036	244	0.204	2.547	1.794	14.828	1.606	3.786	24.765

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Table 3-22 – Low Estimate Sales Gas Rate (Scenario-1)

Low Estimate Sales Gas Rate (MMscf/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	3.354	0.808	-	0.640	0.046	-	4.848
2017	365	0.466	2.767	-	1.093	0.041	-	4.367
2018	365	0.008	2.650	-	1.248	0.064	-	3.970
2019	365	-	2.856	0.048	1.781	0.410	0.293	5.389
2020	366	2.782	3.413	0.114	1.685	0.236	0.315	8.545
2021	365	2.535	2.668	0.092	1.720	0.140	0.278	7.432
2022	365	1.335	1.936	0.071	1.384	0.084	0.247	5.058
2023	365	0.629	1.361	0.054	1.050	0.046	0.217	3.356
2024	366	0.292	0.953	0.041	0.770	0.028	0.188	2.272
2025	365	0.138	0.675	0.033	0.573	0.015	0.161	1.595
2026	365	0.064	0.492	0.023	0.420	0.008	0.138	1.144
2027	365	0.028	0.364	0.018	0.313	0.005	0.115	0.843
2028	366	0.013	0.277	0.015	0.231	0.003	0.099	0.638
2029	365	0.008	0.217	0.010	0.168	0.003	0.082	0.487
2030	365	-	0.168	0.003	0.127	-	0.069	0.367
2031	365	-	0.130	-	0.092	-	0.059	0.280
2032	366	-	0.104	-	0.069	-	0.051	0.224
2033	365	-	0.089	-	0.051	-	0.041	0.181
2034	365	-	0.071	-	0.036	-	0.036	0.143
2035	365	-	0.061	-	0.028	-	0.031	0.120
2036	244	-	0.050	-	0.023	-	0.027	0.099

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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Table 3-23 – Low Estimate Cumulative Sales Gas Volume (Scenario-1)

Low Estimate Cumulative Sales Gas Volume (Bscf)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.614	0.148	0.000	0.117	0.008	0.000	0.887
2017	365	0.784	1.158	0.000	0.516	0.023	0.000	2.481
2018	365	0.787	2.125	0.000	0.972	0.047	0.000	3.930
2019	365	0.787	3.168	0.018	1.622	0.196	0.107	5.897
2020	366	1.805	4.417	0.060	2.239	0.283	0.222	9.025
2021	365	2.730	5.390	0.093	2.866	0.334	0.324	11.738
2022	365	3.218	6.097	0.119	3.371	0.365	0.414	13.584
2023	365	3.448	6.594	0.139	3.754	0.381	0.493	14.808
2024	366	3.554	6.942	0.153	4.036	0.392	0.562	15.640
2025	365	3.605	7.189	0.166	4.245	0.397	0.620	16.222
2026	365	3.628	7.368	0.174	4.399	0.400	0.671	16.640
2027	365	3.638	7.501	0.180	4.513	0.402	0.712	16.947
2028	366	3.643	7.603	0.186	4.598	0.403	0.749	17.181
2029	365	3.646	7.682	0.190	4.659	0.404	0.778	17.358
2030	365	3.646	7.743	0.191	4.706	0.404	0.804	17.492
2031	365	3.646	7.791	0.191	4.739	0.404	0.825	17.595
2032	366	3.646	7.829	0.191	4.764	0.404	0.844	17.677
2033	365	3.646	7.861	0.191	4.783	0.404	0.858	17.743
2034	365	3.646	7.887	0.191	4.796	0.404	0.871	17.795
2035	365	3.646	7.910	0.191	4.806	0.404	0.883	17.838
2036	244	3.646	7.922	0.191	4.812	0.404	0.889	17.863

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Table 3-24 – Best Estimate Oil Rate (Scenario-1)

Best Estimate Oil Rate (stb/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	409.8	398.9	-	1,792.3	404.4	-	3,005.5
2017	365	-	1,041.1	-	3,600.0	358.9	-	5,000.0
2018	365	-	967.1	-	3,600.0	498.6	-	5,065.8
2019	365	501.4	1,200.0	147.9	6,884.9	347.9	879.5	9,961.6
2020	366	1,404.4	1,196.7	-	8,983.6	98.4	84.7	11,767.8
2021	365	1,208.2	2,594.5	1,501.4	11,380.8	2,882.2	1,334.2	20,901.4
2022	365	1,857.5	1,438.4	1,471.2	10,857.5	3,553.4	1,016.4	20,194.5
2023	365	1,394.5	2,304.1	1,350.7	10,246.6	2,424.7	1,761.6	19,482.2
2024	366	1,051.9	2,163.9	1,172.1	8,710.4	1,745.9	2,319.7	17,163.9
2025	365	772.6	2,874.0	1,016.4	7,331.5	1,323.3	1,838.4	15,156.2
2026	365	597.3	2,895.9	882.2	6,213.7	1,038.4	1,531.5	13,158.9
2027	365	186.3	2,186.3	767.1	5,304.1	835.6	1,334.2	10,613.7
2028	366	49.2	1,609.3	669.4	4,565.6	685.8	1,194.0	8,773.2
2029	365	-	1,227.4	589.0	3,994.5	504.1	1,087.7	7,402.7
2030	365	-	956.2	90.4	3,517.8	216.4	1,002.7	5,783.6
2031	365	-	687.7	-	3,117.8	13.7	934.2	4,753.4
2032	366	-	554.6	-	2,778.7	-	871.6	4,204.9
2033	365	-	441.1	-	2,460.3	-	824.7	3,726.0
2034	365	-	350.7	-	2,002.7	-	780.8	3,134.2
2035	365	-	282.2	-	1,435.6	-	742.5	2,460.3
2036	244	-	221.3	-	1,311.5	-	709.0	2,241.8

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Table 3-25 – Best Estimate Cumulative Oil Volume (Scenario-1)

Best Estimate Cumulative Oil Volume (MMstb)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.075	0.073	0.000	0.328	0.074	0.000	0.550
2017	365	0.075	0.453	0.000	1.642	0.205	0.000	2.375
2018	365	0.075	0.806	0.000	2.956	0.387	0.000	4.224
2019	365	0.258	1.244	0.054	5.469	0.514	0.321	7.860
2020	366	0.772	1.682	0.054	8.757	0.550	0.352	12.167
2021	365	1.213	2.629	0.602	12.911	1.602	0.839	19.796
2022	365	1.891	3.154	1.139	16.874	2.899	1.210	27.167
2023	365	2.400	3.995	1.632	20.614	3.784	1.853	34.278
2024	366	2.785	4.787	2.061	23.802	4.423	2.702	40.560
2025	365	3.067	5.836	2.432	26.478	4.906	3.373	46.092
2026	365	3.285	6.893	2.754	28.746	5.285	3.932	50.895
2027	365	3.353	7.691	3.034	30.682	5.590	4.419	54.769
2028	366	3.371	8.280	3.279	32.353	5.841	4.856	57.980
2029	365	3.371	8.728	3.494	33.811	6.025	5.253	60.682
2030	365	3.371	9.077	3.527	35.095	6.104	5.619	62.793
2031	365	3.371	9.328	3.527	36.233	6.109	5.960	64.528
2032	366	3.371	9.531	3.527	37.250	6.109	6.279	66.067
2033	365	3.371	9.692	3.527	38.148	6.109	6.580	67.427
2034	365	3.371	9.820	3.527	38.879	6.109	6.865	68.571
2035	365	3.371	9.923	3.527	39.403	6.109	7.136	69.469
2036	244	3.371	9.977	3.527	39.723	6.109	7.309	70.016

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Table 3-26 – Best Estimate Sales Gas Rate (Scenario-1)

Best Estimate Sales Gas Rate (MMscf/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	3.070	1.286	-	0.590	0.117	-	5.062
2017	365	-	3.756	-	1.220	0.099	-	5.076
2018	365	-	3.720	-	1.259	0.138	-	5.116
2019	365	3.720	5.318	0.020	2.497	0.097	0.242	11.894
2020	366	10.497	5.697	-	3.418	0.028	0.023	19.662
2021	365	9.089	14.042	0.211	4.334	0.785	0.367	28.827
2022	365	14.368	8.752	0.211	4.268	0.953	0.275	28.827
2023	365	11.142	12.187	0.196	4.171	0.657	0.482	28.835
2024	366	8.708	15.068	0.173	3.667	0.503	0.633	28.751
2025	365	6.564	17.983	0.150	3.221	0.415	0.494	28.827
2026	365	5.170	19.678	0.132	2.872	0.357	0.410	28.619
2027	365	1.626	17.609	0.117	2.576	0.313	0.357	22.598
2028	366	0.427	14.479	0.102	2.315	0.274	0.315	17.911
2029	365	-	11.861	0.089	2.102	0.214	0.285	14.551
2030	365	-	9.677	0.015	1.906	0.094	0.262	11.955
2031	365	-	7.045	-	1.740	0.008	0.245	9.038
2032	366	-	5.793	-	1.596	-	0.226	7.615
2033	365	-	4.678	-	1.445	-	0.214	6.337
2034	365	-	3.723	-	1.192	-	0.201	5.116
2035	365	-	3.009	-	0.846	-	0.194	4.049
2036	244	-	2.355	-	0.789	-	0.183	3.327

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Table 3-27 – Best Estimate Cumulative Sales Gas Volume (Scenario-1)

Best Estimate Cumulative Sales Gas Volume (Bscf)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.562	0.235	0.000	0.108	0.021	0.000	0.926
2017	365	0.562	1.606	0.000	0.553	0.058	0.000	2.779
2018	365	0.562	2.964	0.000	1.013	0.108	0.000	4.646
2019	365	1.920	4.905	0.007	1.924	0.143	0.088	8.988
2020	366	5.761	6.990	0.007	3.175	0.153	0.097	16.184
2021	365	9.079	12.115	0.085	4.757	0.440	0.231	26.706
2022	365	14.323	15.310	0.162	6.315	0.788	0.331	37.228
2023	365	18.390	19.758	0.233	7.837	1.028	0.507	47.753
2024	366	21.577	25.273	0.297	9.179	1.212	0.738	58.276
2025	365	23.973	31.837	0.352	10.355	1.363	0.919	68.798
2026	365	25.860	39.019	0.400	11.403	1.494	1.069	79.243
2027	365	26.453	45.446	0.443	12.343	1.608	1.199	87.492
2028	366	26.609	50.745	0.480	13.190	1.708	1.314	94.047
2029	365	26.609	55.075	0.512	13.957	1.787	1.418	99.358
2030	365	26.609	58.607	0.518	14.653	1.821	1.514	103.722
2031	365	26.609	61.178	0.518	15.288	1.824	1.603	107.021
2032	366	26.609	63.299	0.518	15.872	1.824	1.686	109.808
2033	365	26.609	65.006	0.518	16.400	1.824	1.764	112.121
2034	365	26.609	66.365	0.518	16.835	1.824	1.838	113.988
2035	365	26.609	67.463	0.518	17.144	1.824	1.908	115.466
2036	244	26.609	68.038	0.518	17.336	1.824	1.953	116.278

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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Table 3-28 – High Estimate Oil Rate (Scenario-1)

High Estimate Oil Rate (stb/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	590.2	229.5	-	1,792.3	388.0	-	3,000.0
2017	365	594.5	54.8	-	4,000.0	350.7	-	5,000.0
2018	365	621.9	57.5	-	3,501.4	1,000.0	-	5,180.8
2019	365	739.7	2,000.0	147.9	5,832.9	728.8	1,112.3	10,561.6
2020	366	2,398.9	614.8	-	7,478.1	560.1	918.0	11,969.9
2021	365	2,958.9	1,008.2	432.9	13,816.4	3,027.4	1,600.0	22,843.8
2022	365	3,512.3	323.3	-	14,101.4	3,575.3	1,487.7	23,000.0
2023	365	3,408.2	317.8	-	13,611.0	2,926.0	2,737.0	23,000.0
2024	366	3,368.9	382.5	-	12,314.2	2,748.6	4,123.0	22,937.2
2025	365	3,167.1	641.1	-	11,238.4	3,868.5	4,082.2	22,997.3
2026	365	3,049.3	712.3	68.5	10,471.2	3,638.4	5,057.5	22,997.3
2027	365	2,893.2	778.1	1,191.8	9,545.2	3,243.8	5,230.1	22,882.2
2028	366	2,745.9	833.3	1,494.5	8,680.3	2,923.5	4,912.6	21,590.2
2029	365	2,627.4	860.3	1,501.4	7,972.6	2,671.2	4,682.2	20,315.1
2030	365	2,517.8	901.4	249.3	7,350.7	2,457.5	4,479.5	17,956.2
2031	365	2,416.4	874.0	-	6,821.9	2,271.2	4,309.6	16,693.2
2032	366	2,316.9	1,158.5	-	6,347.0	1,759.6	3,464.5	15,046.4
2033	365	2,238.4	1,471.2	-	5,835.6	772.6	997.3	11,315.1
2034	365	1,383.6	2,619.2	-	4,742.5	230.1	-	8,975.3
2035	365	904.1	2,726.0	-	3,353.4	-	-	6,983.6
2036	244	582.0	2,643.4	-	3,139.3	-	-	6,364.8

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Table 3-29 – High Estimate Cumulative Oil Volume (Scenario-1)

High Estimate Cumulative Oil Volume (MMstb)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.108	0.042	0.000	0.328	0.071	0.000	0.549
2017	365	0.325	0.062	0.000	1.788	0.199	0.000	2.374
2018	365	0.552	0.083	0.000	3.066	0.564	0.000	4.265
2019	365	0.822	0.813	0.054	5.195	0.830	0.406	8.120
2020	366	1.700	1.038	0.054	7.932	1.035	0.742	12.501
2021	365	2.780	1.406	0.212	12.975	2.140	1.326	20.839
2022	365	4.062	1.524	0.212	18.122	3.445	1.869	29.234
2023	365	5.306	1.640	0.212	23.090	4.513	2.868	37.629
2024	366	6.539	1.780	0.212	27.597	5.519	4.377	46.024
2025	365	7.695	2.014	0.212	31.699	6.931	5.867	54.418
2026	365	8.808	2.274	0.237	35.521	8.259	7.713	62.812
2027	365	9.864	2.558	0.672	39.005	9.443	9.622	71.164
2028	366	10.869	2.863	1.219	42.182	10.513	11.420	79.066
2029	365	11.828	3.177	1.767	45.092	11.488	13.129	86.481
2030	365	12.747	3.506	1.858	47.775	12.385	14.764	93.035
2031	365	13.629	3.825	1.858	50.265	13.214	16.337	99.128
2032	366	14.477	4.249	1.858	52.588	13.858	17.605	104.635
2033	365	15.294	4.786	1.858	54.718	14.140	17.969	108.765
2034	365	15.799	5.742	1.858	56.449	14.224	17.969	112.041
2035	365	16.129	6.737	1.858	57.673	14.224	17.969	114.590
2036	244	16.271	7.382	1.858	58.439	14.224	17.969	116.143

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Table 3-30 – High Estimate Sales Gas Rate (Scenario-1)

High Estimate Sales Gas Rate (MMscf/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	2.983	1.174	-	0.666	0.127	-	4.950
2017	365	2.991	0.273	-	1.524	0.115	-	4.902
2018	365	3.126	0.285	-	1.386	0.316	-	5.114
2019	365	3.720	10.811	0.028	2.443	0.232	0.336	17.571
2020	366	12.057	3.285	-	3.324	0.173	0.280	19.118
2021	365	14.880	5.784	0.082	6.311	0.935	0.479	28.471
2022	365	17.670	1.857	-	6.958	1.093	0.436	28.015
2023	365	17.132	1.643	-	7.246	0.854	0.820	27.696
2024	366	16.946	2.132	-	6.795	0.795	1.240	27.908
2025	365	15.935	3.419	-	6.327	1.157	1.208	28.045
2026	365	15.384	3.982	0.013	6.395	1.198	1.460	28.433
2027	365	14.783	4.673	0.229	6.352	1.251	1.488	28.776
2028	366	14.270	5.140	0.290	6.276	1.357	1.413	28.746
2029	365	13.922	5.448	0.298	6.232	1.513	1.417	28.830
2030	365	13.583	5.809	0.051	6.186	1.697	1.503	28.830
2031	365	13.295	5.786	-	6.156	1.901	1.694	28.833
2032	366	13.023	7.849	-	6.119	1.695	1.611	30.296
2033	365	12.842	10.301	-	5.934	0.782	0.517	30.377
2034	365	7.850	19.387	-	4.859	0.280	-	32.377
2035	365	5.027	21.724	-	3.244	-	-	29.994
2036	244	3.122	22.488	-	3.144	-	-	28.754

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Table 3-31 – High Estimate Cumulative Sales Gas Volume (Scenario-1)

High Estimate Cumulative Sales Gas Volume (Bscf)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.546	0.215	0.000	0.122	0.023	0.000	0.906
2017	365	1.638	0.314	0.000	0.678	0.065	0.000	2.695
2018	365	2.779	0.419	0.000	1.184	0.180	0.000	4.562
2019	365	4.137	4.364	0.010	2.076	0.265	0.123	10.975
2020	366	8.549	5.567	0.010	3.292	0.328	0.225	17.972
2021	365	13.981	7.678	0.040	5.596	0.670	0.400	28.364
2022	365	20.430	8.356	0.040	8.136	1.069	0.559	38.589
2023	365	26.684	8.956	0.040	10.781	1.380	0.858	48.699
2024	366	32.886	9.736	0.040	13.267	1.671	1.312	58.913
2025	365	38.702	10.984	0.040	15.577	2.093	1.753	69.149
2026	365	44.317	12.438	0.045	17.911	2.531	2.286	79.527
2027	365	49.713	14.143	0.128	20.229	2.987	2.829	90.031
2028	366	54.936	16.025	0.234	22.526	3.484	3.346	100.552
2029	365	60.018	18.013	0.343	24.801	4.036	3.863	111.075
2030	365	64.975	20.134	0.362	27.059	4.656	4.412	121.598
2031	365	69.828	22.246	0.362	29.306	5.349	5.030	132.121
2032	366	74.594	25.118	0.362	31.546	5.970	5.620	143.210
2033	365	79.282	28.878	0.362	33.712	6.255	5.809	154.297
2034	365	82.147	35.955	0.362	35.485	6.357	5.809	166.115
2035	365	83.982	43.884	0.362	36.669	6.357	5.809	177.063
2036	244	84.743	49.371	0.362	37.436	6.357	5.809	184.079

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3.5 Remaining Recoverable Volumes Based on Scenario-1 (Prior to Economic Limit Test)

The remaining recoverable oil volumes and sales gas volumes for Scenario 1 for the Low, Best and High Estimates, prior to applying the Economic Limit Test ("ELT"), are tabulated in **Table 3-32**.

Table 3-32 – Estimated Remaining Recoverable Volumes (Based on Scenario-1) as of July 1, 2016

Remaining Recoverable Volumes Gross 100% License Basis (Prior to Economic Limit Test)			
Field	Low Estimate	Best Estimate	High Estimate
Oil Volumes (MMstb)			
Aksaz	0.204	3.371	16.271
Dolinnoe ¹	2.547	9.977	7.382
Emir ¹	1.794	3.527	1.858
Kariman	14.828	39.723	58.439
North Kariman	1.606	6.109	14.224
Yessen	3.786	7.309	17.969
Emir-Oil Concession Block²	24.765	70.016	116.143
Sales Gas Volumes (Bscf)			
Aksaz	3.646	26.609	84.743
Dolinnoe	7.922	68.038	49.371
Emir	0.191	0.518	0.362
Kariman	4.812	17.336	37.436
North Kariman	0.404	1.824	6.357
Yessen	0.889	1.953	5.809
Emir-Oil Concession Block²	17.863	116.278	184.079
Notes:			
1) RPS's Best EUR values for the Dolinnoe and Emir fields are greater than the High estimates. This is due to the raw gas handling capacity of 31 MMscf/d curtailing oil production more severely in the High case compared with the Best scenario for these fields.			
2) Totals may not sum to individual values due to rounding.			

The new CPF (including processing facilities) is being developed over two phases and **Table 3-33** defines the Best estimated remaining oil volumes for Phase 1 and Phase 2 by volume status; that is

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by: Developed Producing, Developed Nonproducing, and Undeveloped status, as per the SPE-PRMS guidelines.

Table 3-33 – Best Estimated Remaining Recoverable Oil Volumes for the Emir-Oil Concession Block as of July 1, 2016

Best Estimated Remaining Recoverable Oil Volumes by Phase and Volume Status Gross 100% License Basis (MMstb) (Prior to Economic Limit Test)								
	Phase 1			Phase 2	Phase 1 and 2			
Field	Developed Producing	Developed Non-Producing	Undeveloped	Undeveloped	Developed Producing	Developed Non-Producing	Undeveloped	Total ³
Aksaz	0.744	-	-	2.627	0.744	-	2.627	3.371
Dolinnoe	2.147	2.162	0.815	4.852	2.147	2.162	5.668	9.977
Emir	0.709	-	0.711	2.106	0.709	-	2.818	3.527
Kariman	10.989	7.321	3.154	18.258	10.989	7.321	21.413	39.723
North Kariman	1.622	-	1.121	3.366	1.622	-	4.487	6.109
Yessen	-	3.637	-	3.672	-	3.637	3.672	7.309
TOTAL³	16.212	13.120	5.802	34.881	16.212	13.120	40.683	70.016

Notes:

- 1) Gross Concession Reserves (100% basis) before economic limit test.
- 2) Note that if market conditions deteriorate or if there is delay in obtaining the required approvals, the implementation plan for Phase 2 may be deferred. Any significant deferral of Phase 2 may result in a revision of the reported volumes.
- 3) Totals may not sum to individual values due to rounding.

Similarly, **Table 3-34** breakdowns the Best estimated remaining recoverable gas volumes for Phase 1 and Phase 2 by project phase and volumes status.

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INDEPENDENT TECHNICAL EXPERT REPORT

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Table 3-34 – Best Estimated Remaining Recoverable Sales Gas Volumes for the Emir-Oil Concession Block as of July 1, 2016

Best Estimated Remaining Recoverable Sales Gas Volumes by Phase and Volume Status Gross 100% License Basis (Bscf) (Prior to Economic Limit Test)								
Field	Phase 1			Phase 2	Phase 1 and 2			Total ³
	Developed Producing	Developed Non-Producing	Undeveloped	Undeveloped	Developed Producing	Developed Non-Producing	Undeveloped	
Aksaz	5.816	-	-	20.793	5.816	-	20.793	26.609
Dolinnoe	13.162	15.215	5.742	33.918	13.162	15.215	39.660	68.038
Emir	0.104	-	0.104	0.309	0.104	-	0.414	0.518
Kariman	4.924	3.280	1.363	7.770	4.924	3.280	9.132	17.336
North Kariman	0.484	-	0.335	1.005	0.484	-	1.340	1.824
Yessen	-	0.975	-	0.978	-	0.975	0.978	1.953
TOTAL³	24.490	19.471	7.543	64.773	24.490	19.471	72.317	116.278

Notes:

- 1) Gross Concession Reserves (100% basis) before economic limit test.
- 2) Note that if market conditions deteriorate or if there is delay in obtaining the required approvals, the implementation plan for Phase 2 may be deferred. Any significant deferral of Phase 2 may result in a revision of the reported volumes.
- 3) Totals may not sum to individual values due to rounding.

Note that Chapman⁶ does not provide a consolidated EUR estimate by field, or by volume status, and therefore RPS is unable to provide a direct comparison between the two companies. However, RPS has shown a direct comparison of the Reserves estimated by the two companies in RPS's valuation report⁷. The comparison is made with Chapman's 2016 report⁸, which was included in MIE's circular dated May 26, 2016, as it is available in the public domain and pertains to the same Asset on similar evaluation dates.

⁶ Reserve and Economic Evaluation Oil and Gas Properties, ADEK Block, Republic of Kazakhstan for MIE Holdings Corporation, January 1, 2015, Chapman Petroleum Engineering Ltd.

⁷ Independent Valuation Report of Emir-Oil Concession Block, Onshore Kazakhstan as of January 1, 2016 RPS Energy Consultants Limited.

⁸ Evaluation of Reserve and Prospective Resources Oil and Gas Properties, ADEK Block (Licence Area), Mangistau Oblast, Republic of Kazakhstan for MIE Holdings Corporation, December 31, 2015 (January 1, 2016), Chapman Petroleum Engineering Ltd.



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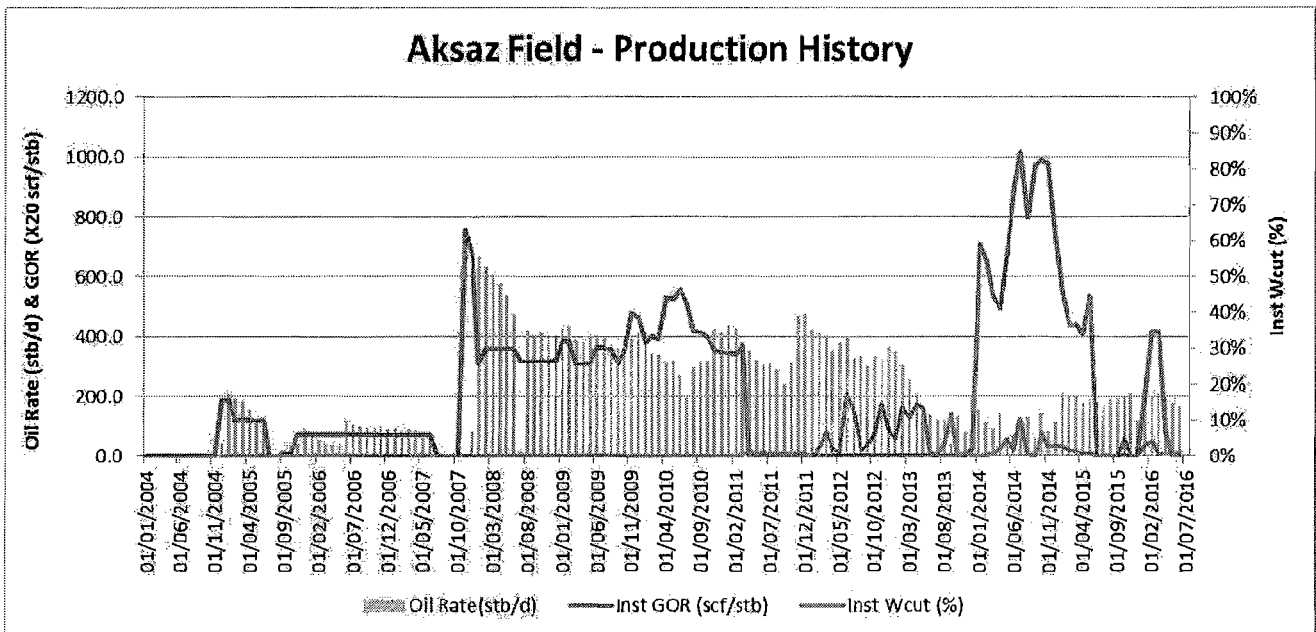


Figure 3-1 – Aksaz Field (Gas Condensate) Historical Production

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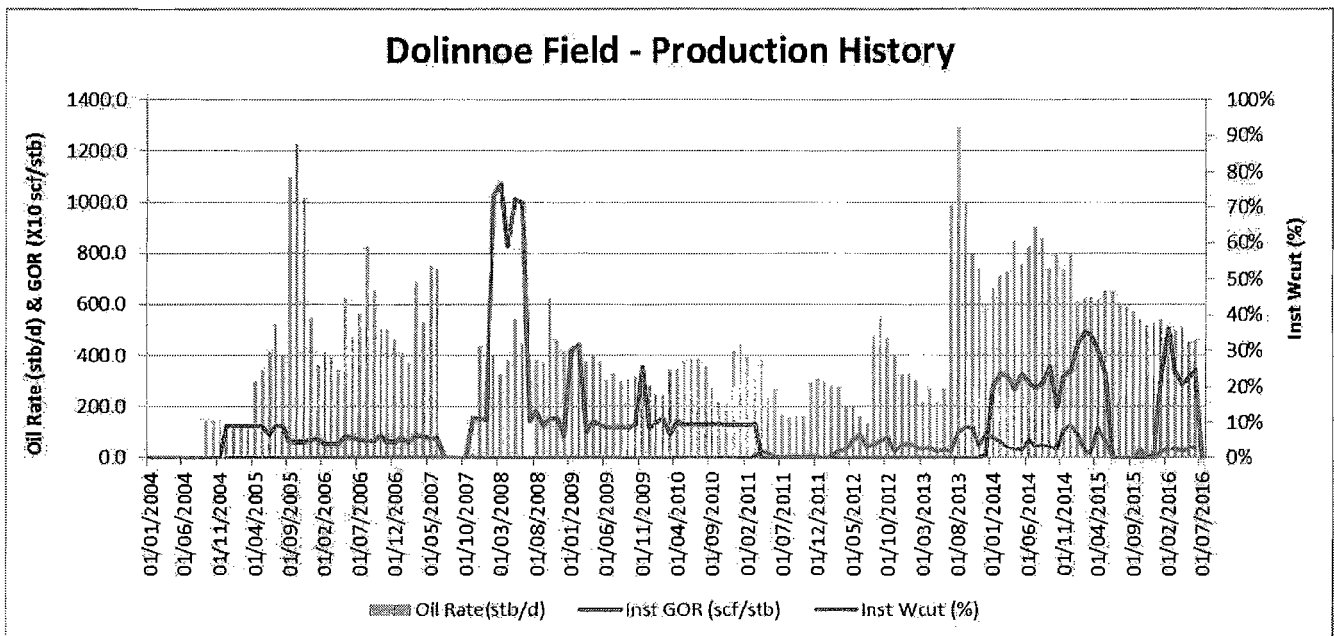


Figure 3-2 – Dolinnoe Oil Field Historical Production

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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

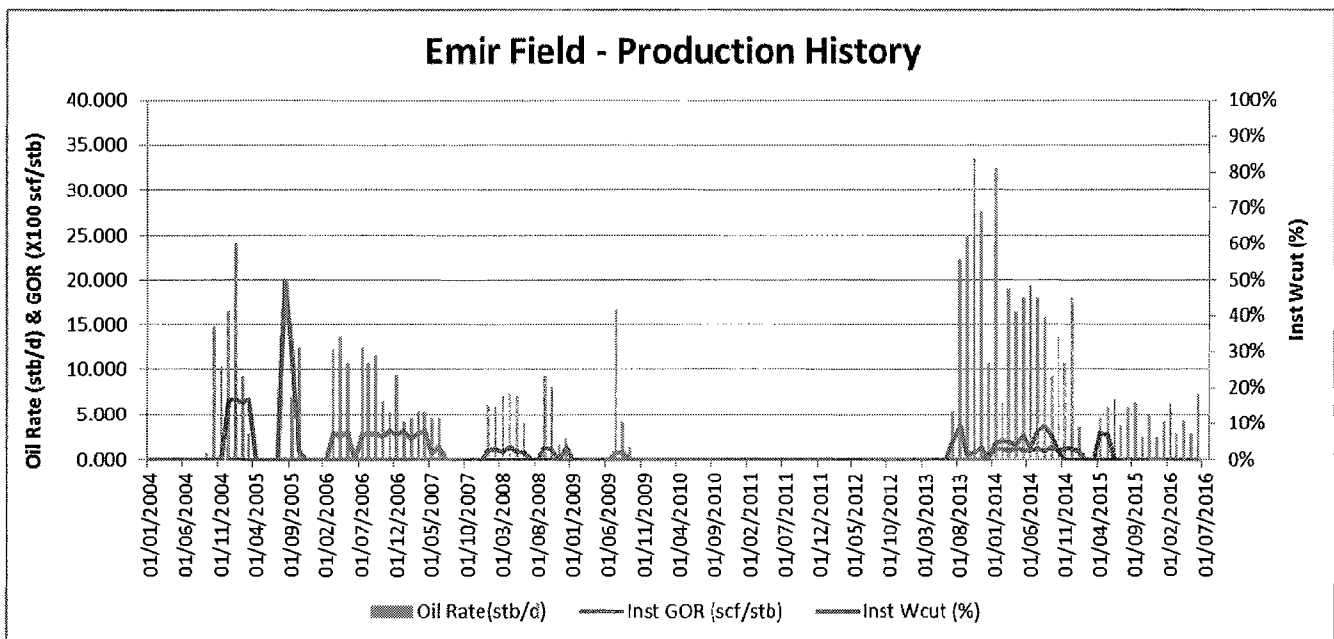


Figure 3-3 – Emir Oil Field Historical Production

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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

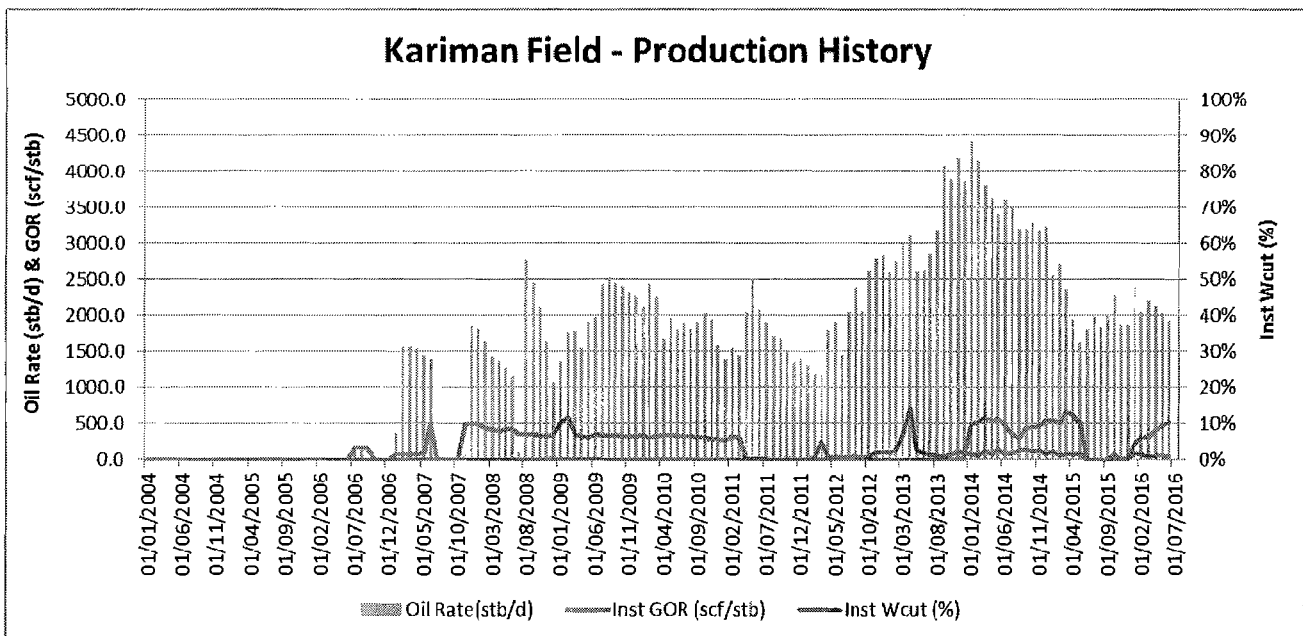


Figure 3-4 – Kariman Oil Field Historical Production

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

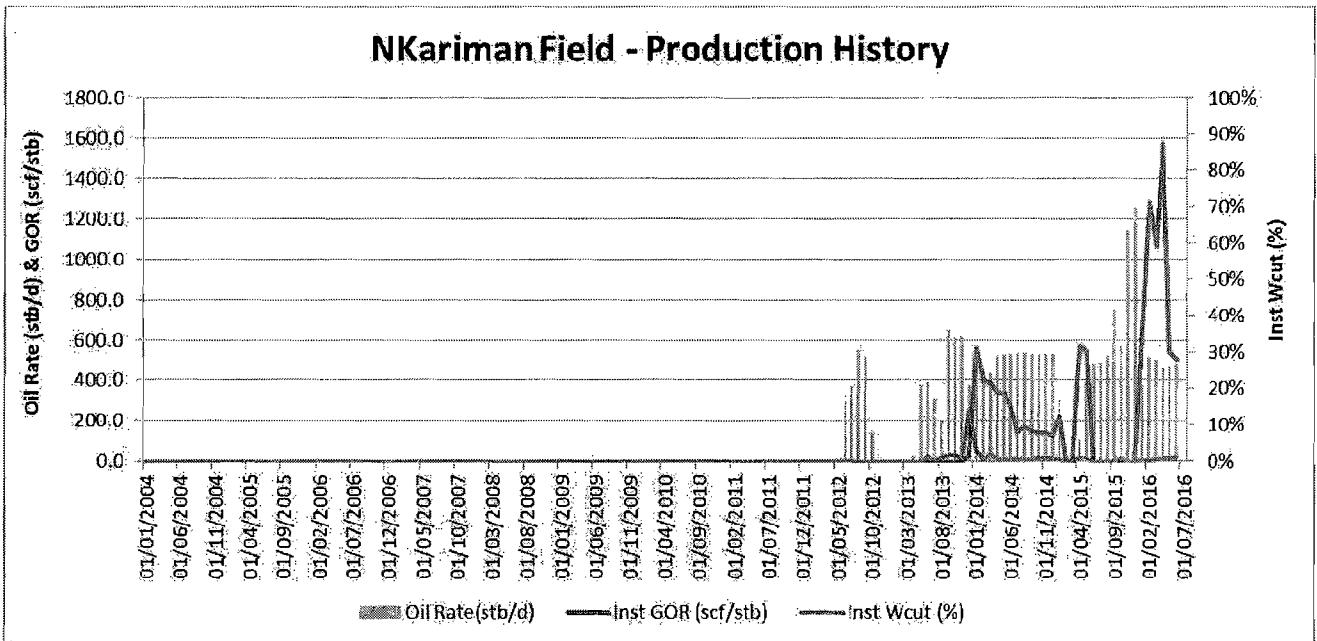


Figure 3-5 – North Kariman Oil Field Historical Production

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

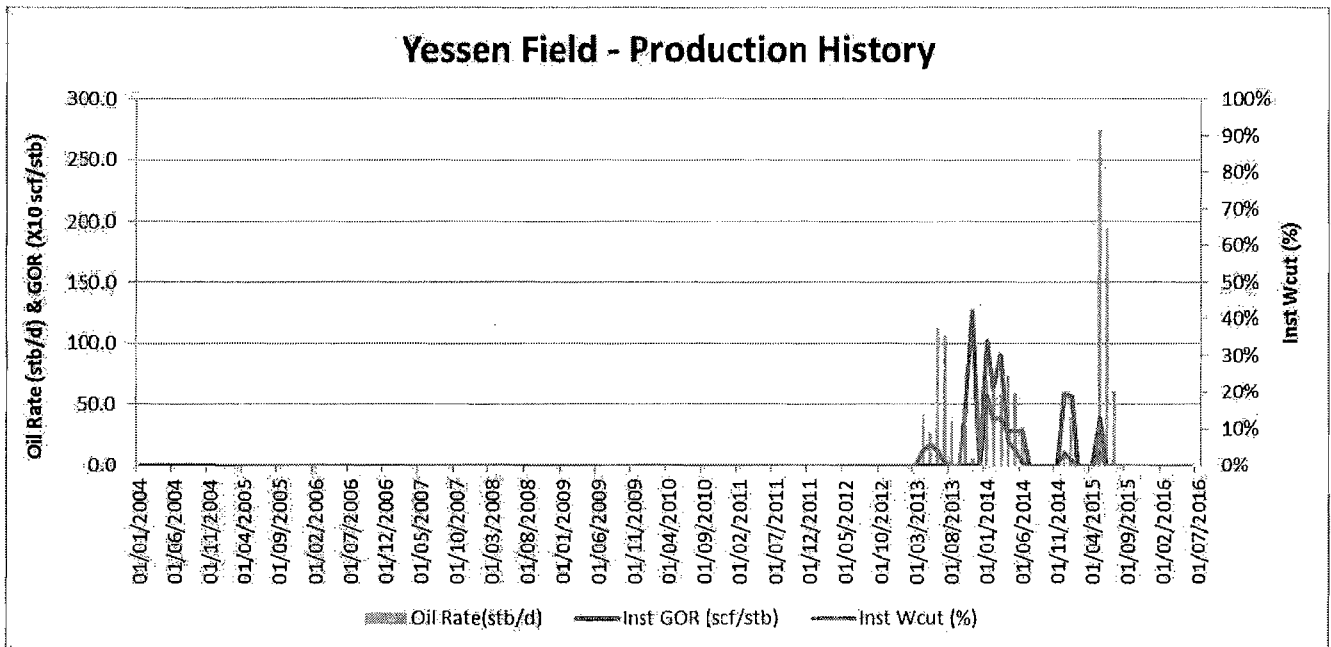


Figure 3-6 – Yessen Oil Field Historical Production

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

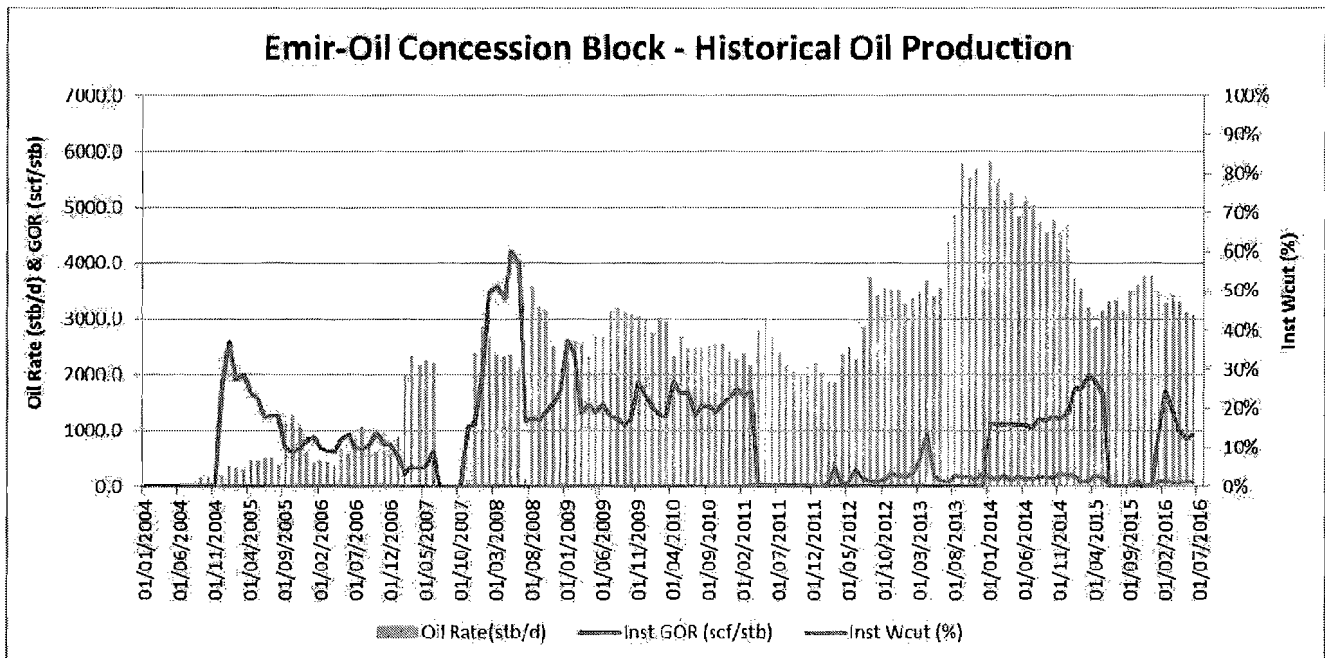


Figure 3-7 Emir-Oil Fields Historical Oil Production

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INDEPENDENT TECHNICAL EXPERT REPORT
OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

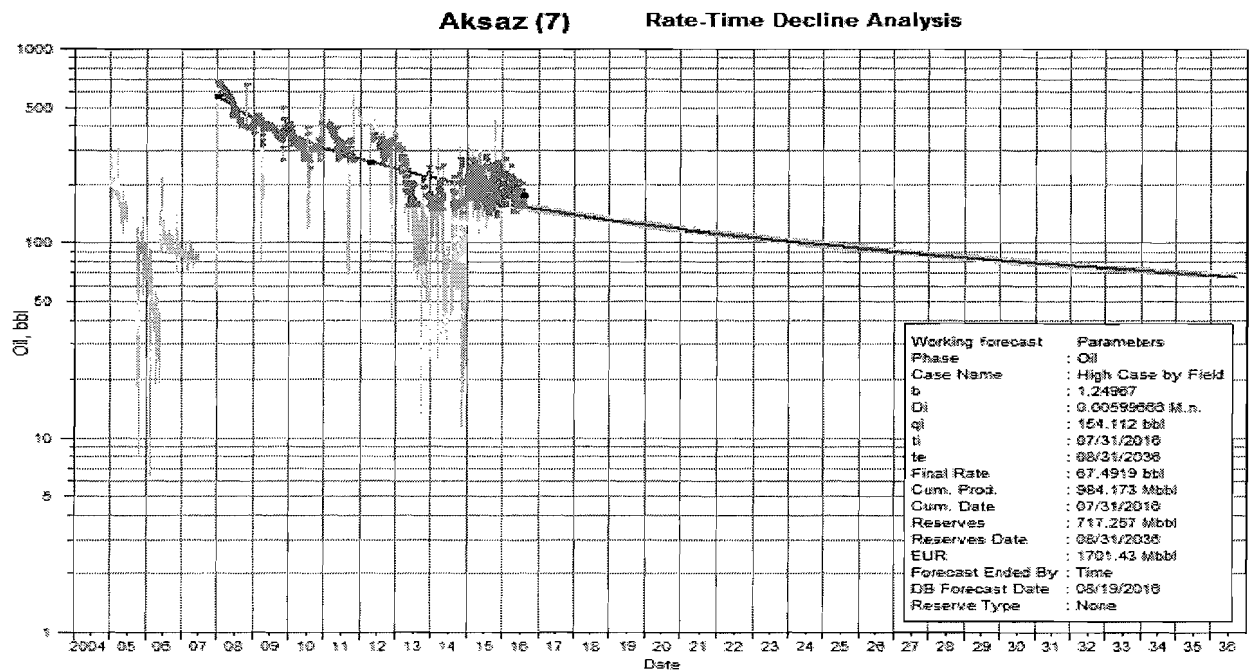
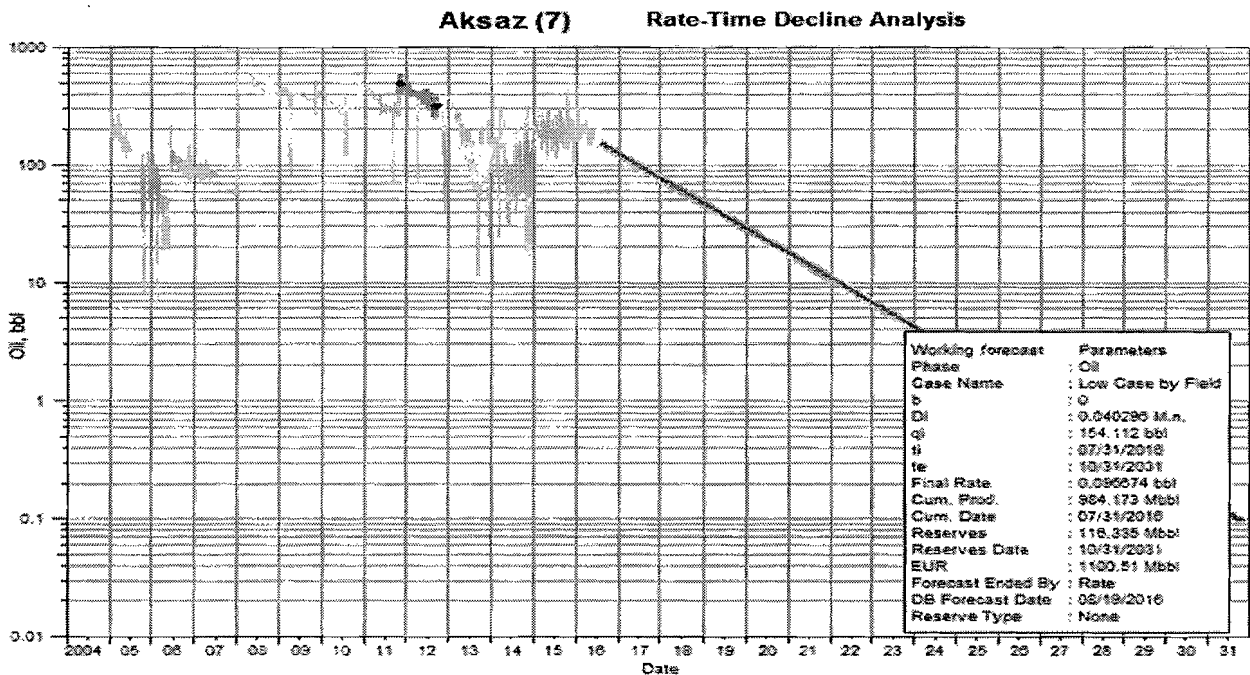


Figure 3-8 – Aksaz Field Condensate DCA – Low and High Estimates

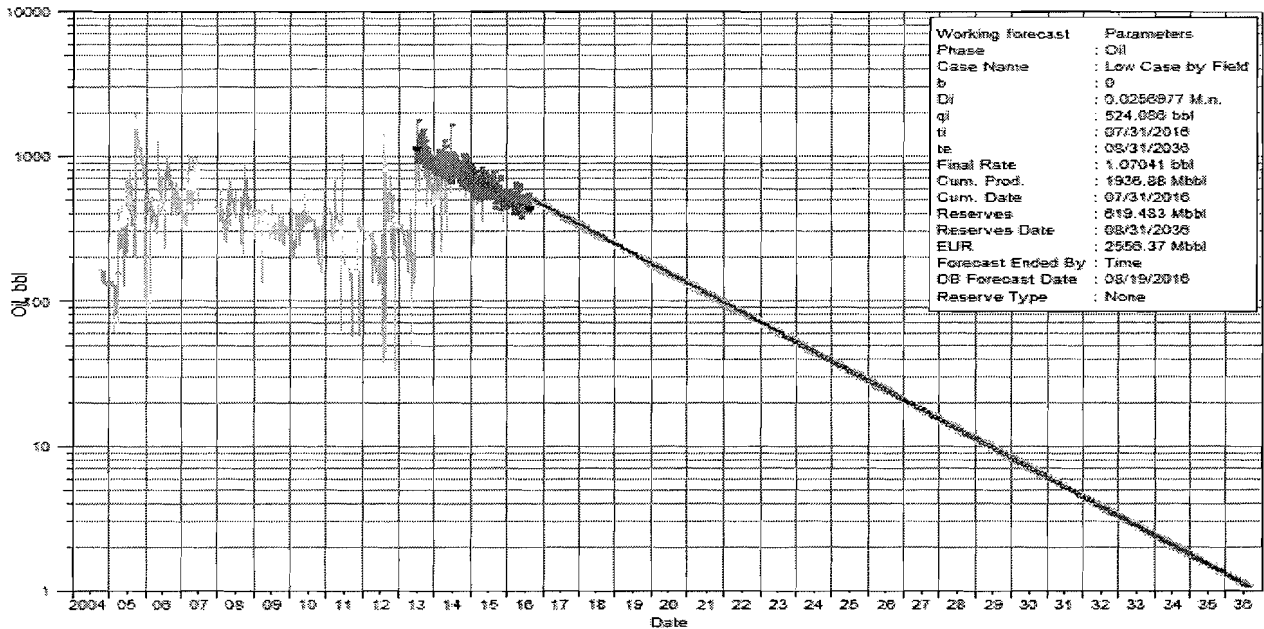
INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



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Dolinnoe (9) Rate-Time Decline Analysis



Dolinnoe (9) Rate-Time Decline Analysis

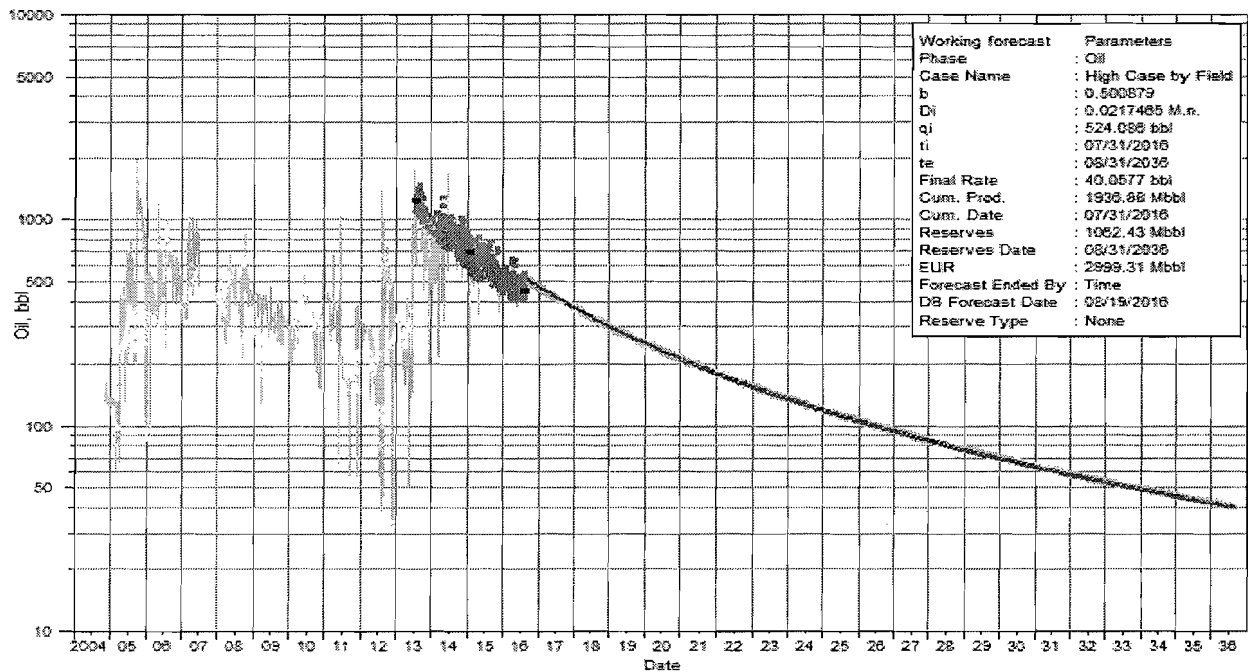


Figure 3-9 – Dolinnoe Oil Field DCA – Low and High Estimates



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Emir (4) Rate-Time Decline Analysis

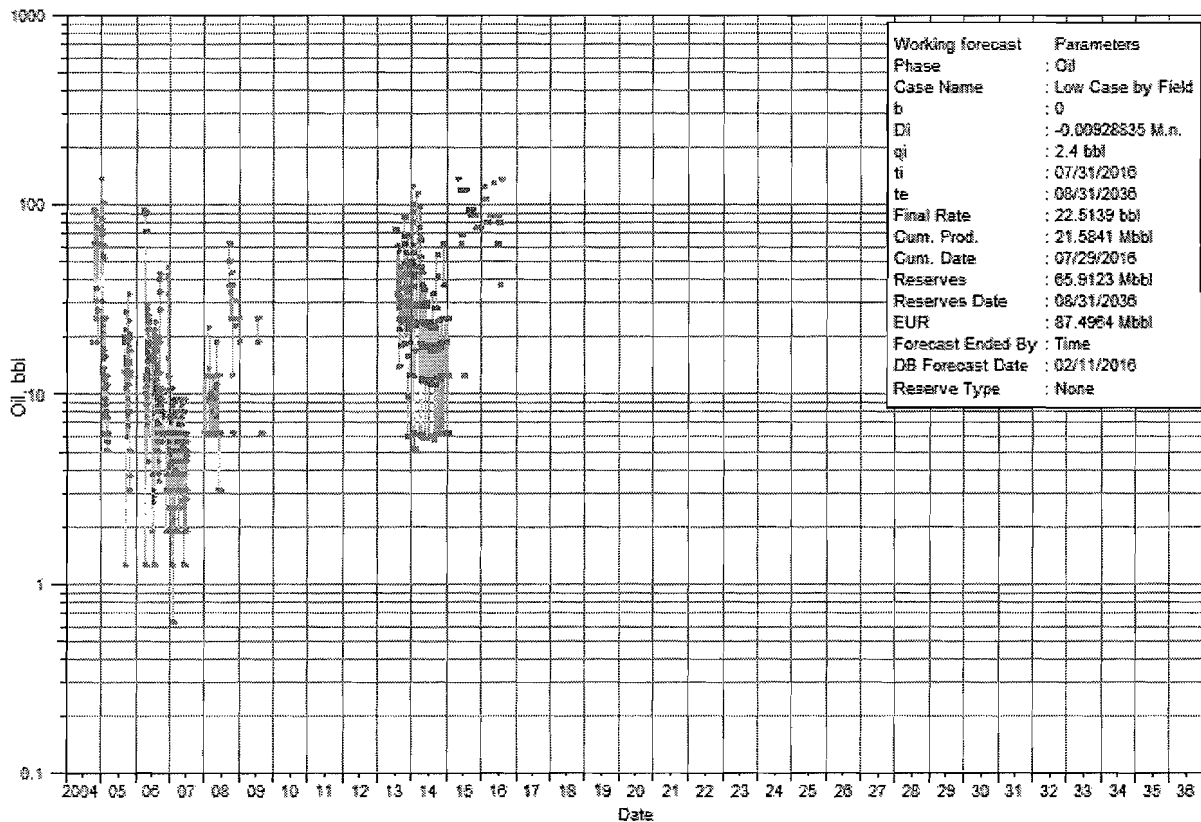


Figure 3-10 – Emir Oil Field Production Plot

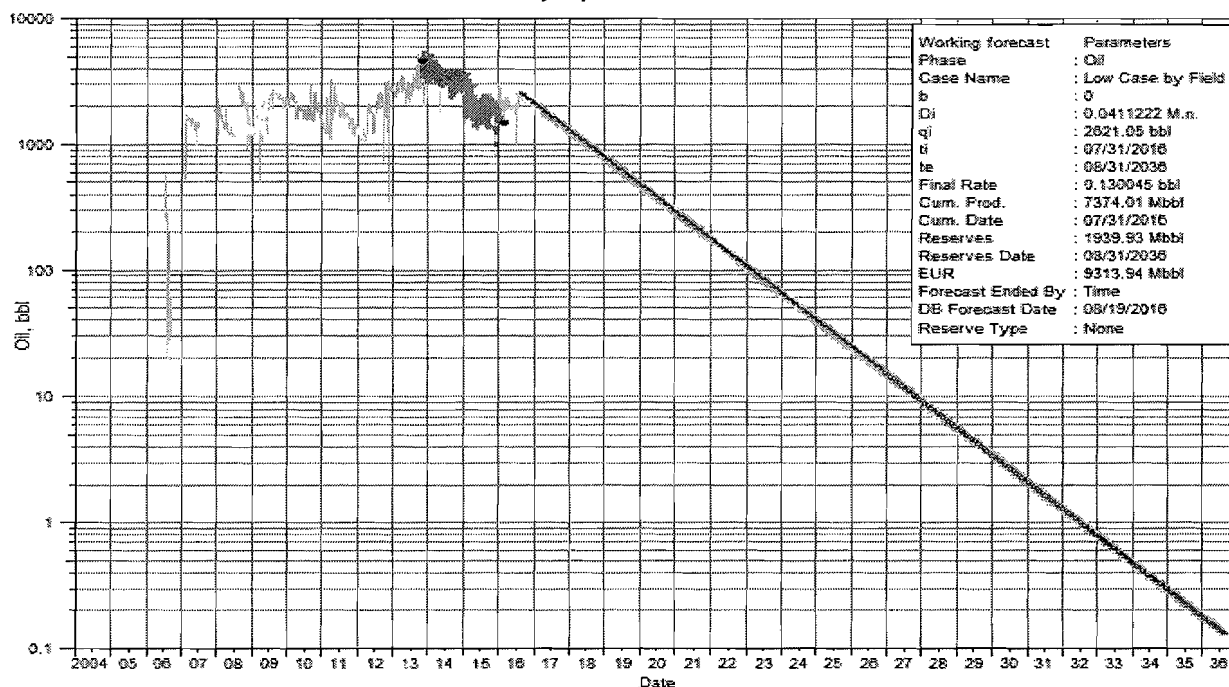
INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

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Kariman (21) Rate-Time Decline Analysis



Kariman (21) Rate-Time Decline Analysis

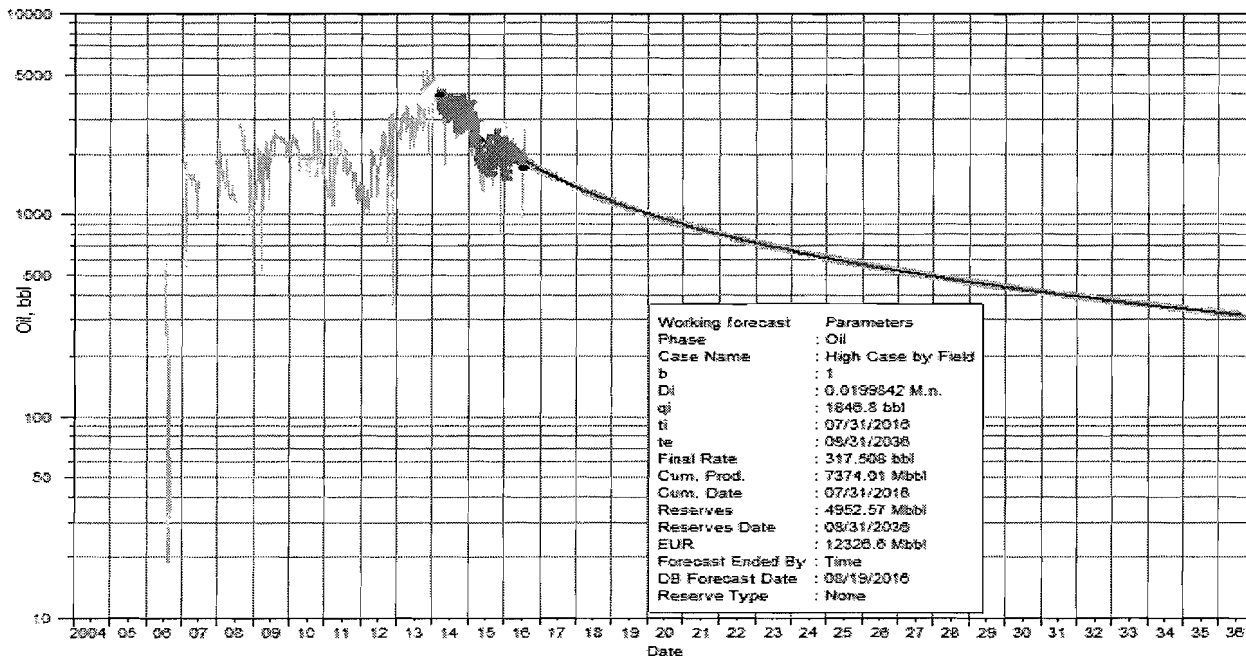


Figure 3-11 – Kariman Oil Field DCA – Low and High Estimates

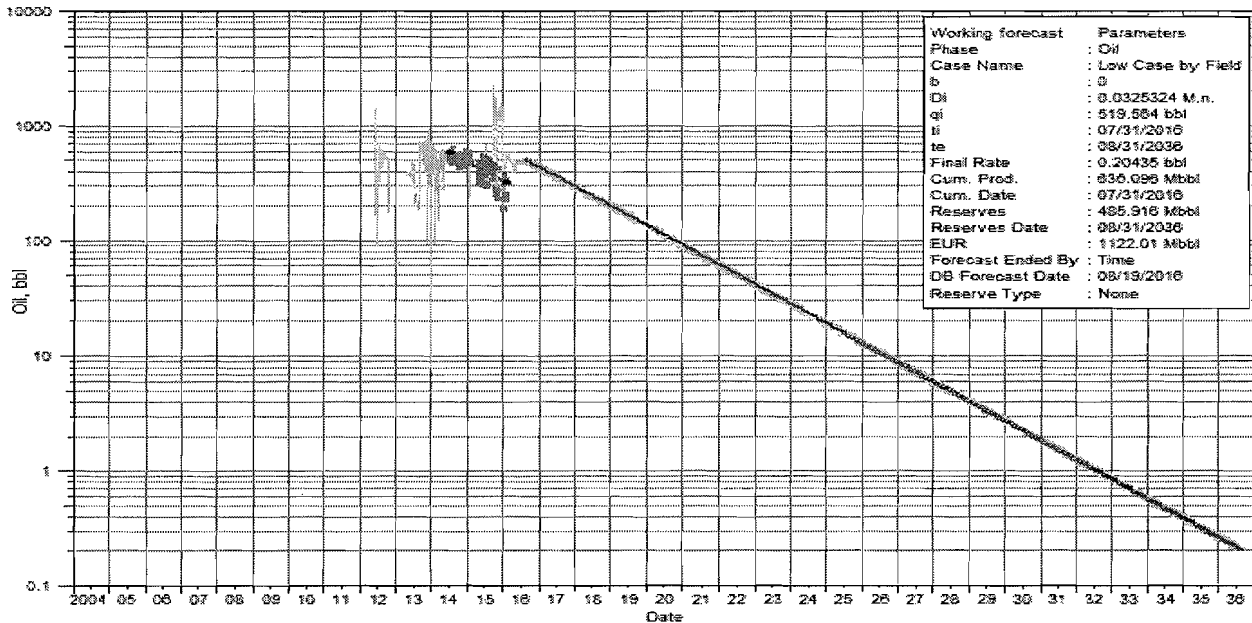
INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

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North Kariman (2) Rate-Time Decline Analysis



North Kariman (2) Rate-Time Decline Analysis

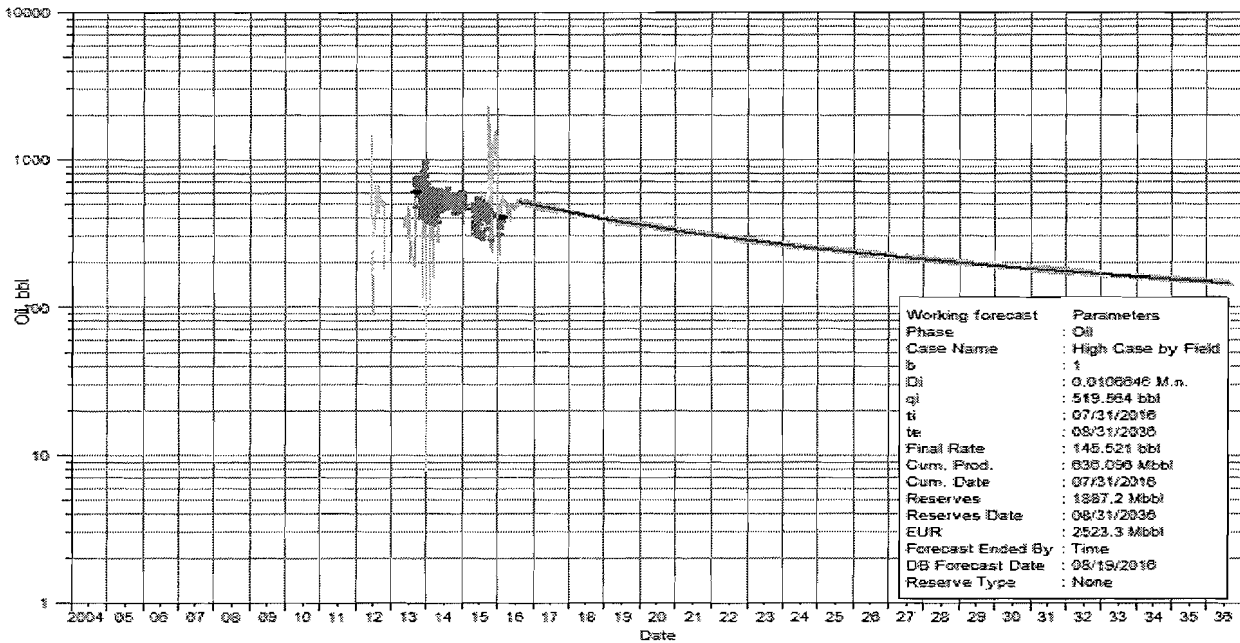


Figure 3-12 – North Kariman Oil Field DCA – Low and High Estimates

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INDEPENDENT TECHNICAL EXPERT REPORT
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Emir (4) Rate-Time Decline Analysis

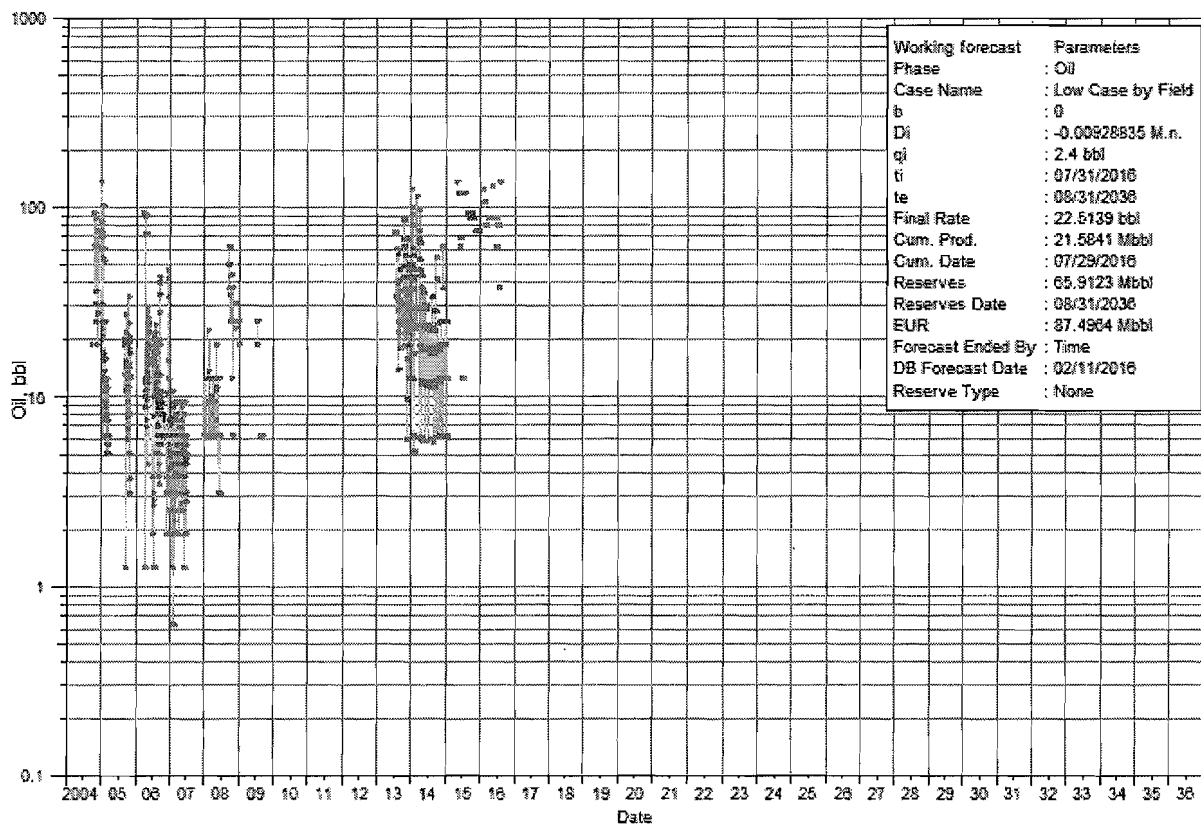


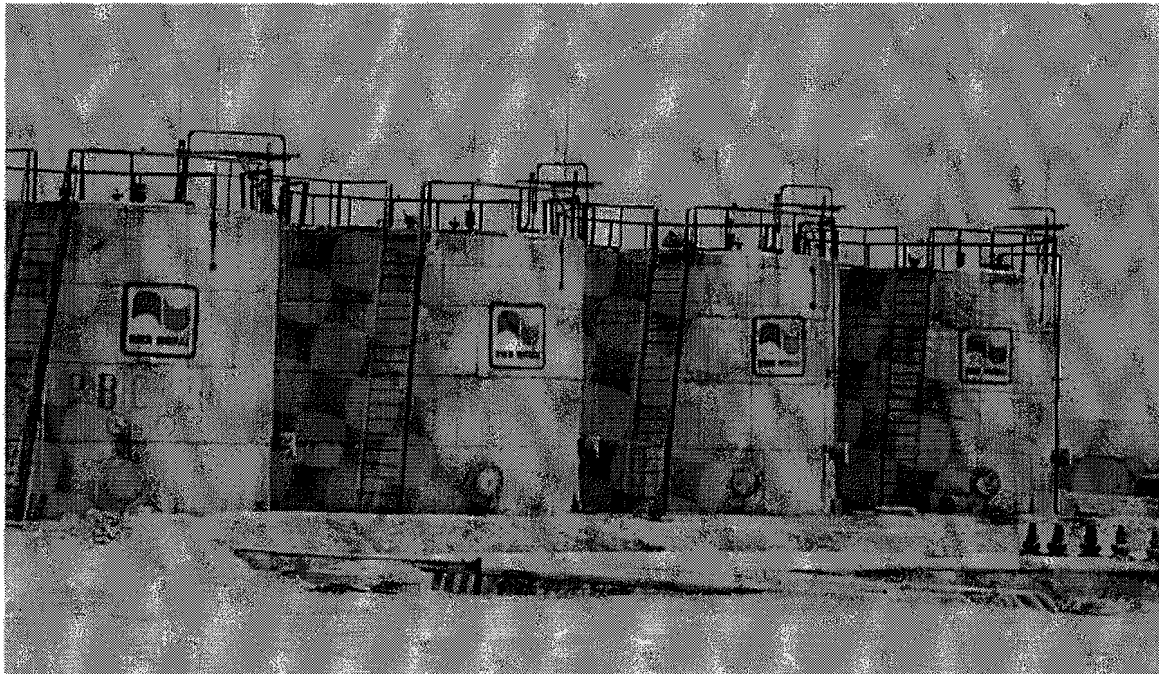
Figure 3-13 – Yessen Oil Field Production Plot



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Existing Crude Oil Storage Facilities



Existing Railway for Crude Oil Transportation



Figure 3-14 – Surface Crude Oil Storage and Processing Facilities (Source: MIE)



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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Existing Aksaz Natural Gas Processing



Existing Aksaz Surface Facilities

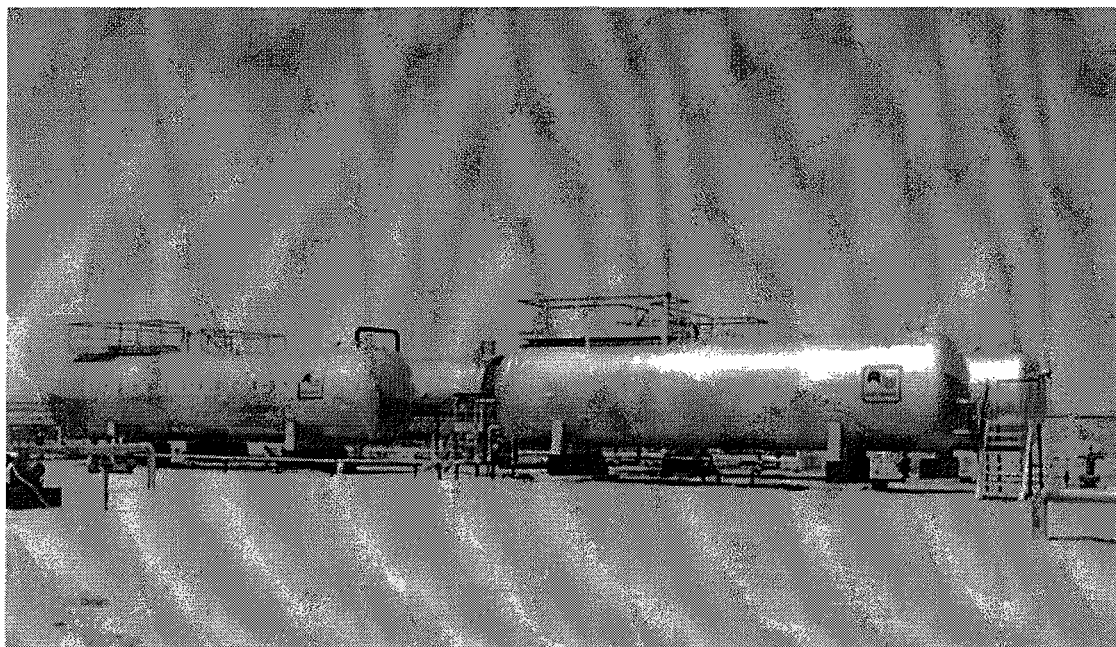


Figure 3-15 – Gas Processing Facilities (Source: MIE)

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INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Field	Count	Wellname	Zone	T2B	UT3
Kariman	1	Kariman-2		Yes	
Kariman	2	Kariman-4		Yes	
Kariman	3	Kariman-5			Yes
Kariman	4	Kariman-6ST3		Yes	Yes
Kariman	5	Kariman-8		Yes	
Kariman	6	Kariman-10		Yes	Yes
Kariman	7	Kariman-11ST1		Yes	Yes
Kariman	8	Kariman-12		Yes	Yes
Kariman	9	Kariman-113		Yes	
Kariman	10	Kariman-114		Yes	Yes
Kariman	11	Kariman-116			Yes
Kariman	12	Kariman-118		Yes	Yes
Kariman	13	Kariman-119		Yes	Yes
Kariman	14	Kariman-120		Yes	Yes
Kariman	15	Kariman-121		Yes	
Kariman	16	Kariman-124		Yes	
Kariman	17	Kariman-1	Producing - but zones unknown		
Kariman	18	Kariman-3	Producing - but zones unknown		
Kariman	19	Kariman-7	Producing - but zones unknown		
Kariman	20	Kariman-13	Production commenced on Dec 28, 2015		
Kariman	21	Kariman-117	Produced for 1 month (Sept 2015)		
	STOIIIP (MMstb)	Wells	% Total wells		
UT3	26.2	14	74%		
T2U	15.8				
T2A	36.0				
T2B	94.6	10	53%		
T2C	40.8				
Total	213.4		19		
Targeted STOIIIP	32.4%				

Figure 3-16 – Kariman Field Producing Wells and Zones

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INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Field	Count	Wellname	Zone	
			T2B	T2C
Dolinnoe	1	Dolinnoe-1		Yes
Dolinnoe	2	Dolinnoe-2	Yes	Yes
Dolinnoe	3	Dolinnoe-3	Yes	Yes
Dolinnoe	4	Dolinnoe-5		Yes (Min Production)
Dolinnoe	5	Dolinnoe-6	Yes	Yes (Min Production)
Dolinnoe	6	Dolinnoe-7	Yes	Yes
Dolinnoe	7	Dolinnoe-12ST	Min Production	
Dolinnoe	8	Dolinnoe-110		Yes
Dolinnoe	9	Dolinnoe-112		Yes
	STOIIP (MMstb)	Wells	% Total wells	
T2B	17.8	4	57%	
T2C	27.8	6	86%	
Total	45.6		7	
Targeted STOIIP	74.6%			

Field	Count	Wellname	Zone	
			T2B	T2C
Yessen	1	Yessen-2		Yes
Yessen		Yessen-1	Log (Perf = 6m)	
	STOIIP (MMstb)	Wells	% Total wells	
T2U	5.3			
T2A	14.2			
T2B	8.2			
T2C	10.6	1	50%	
T1	5.4			
Total	43.7			
Targeted STOIIP	12.2%		2	

Figure 3-17 – Dolinnoe and Yessen Fields Producing Wells and Zones

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INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Field	Count	Wellname	Zone	
			T2A	T2C
Emir	1	Emir-1	Yes	
Emir	2	Emir-6		Yes
	3	Emir-2 (No Perfs in log)		
		STOIIP (MMstb)	Wells	% Total wells
T3+T2U		15.9		
		0.0		
T2A		20.9	1	50%
T2B		15.9		
T2C		3.4	1	50%
Total		56.10		2
Targeted STOIP		21.7%		

Field	Count	Wellname	Zone	
			T2B	
N.Kariman	1	N.Kar-2	Yes	
N.Kariman	2	N.Kar-1	Log (Perf = 2m)	
		STOIIP (MMstb)	Wells	% Total wells
T2A		2.9		
T2B		12.0	1	50%
T2C		9.0		
Total		23.8		
Targeted STOIP		25.2%		2

Figure 3-18 – Emir and North Kariman Fields Producing Wells and Zones

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INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

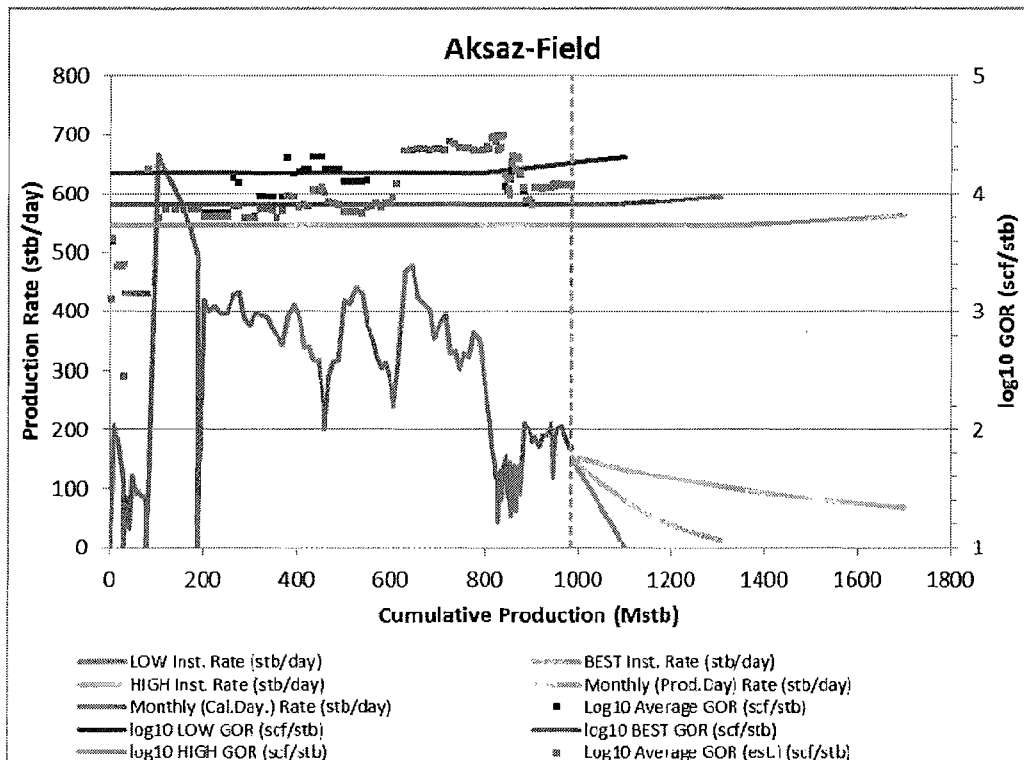
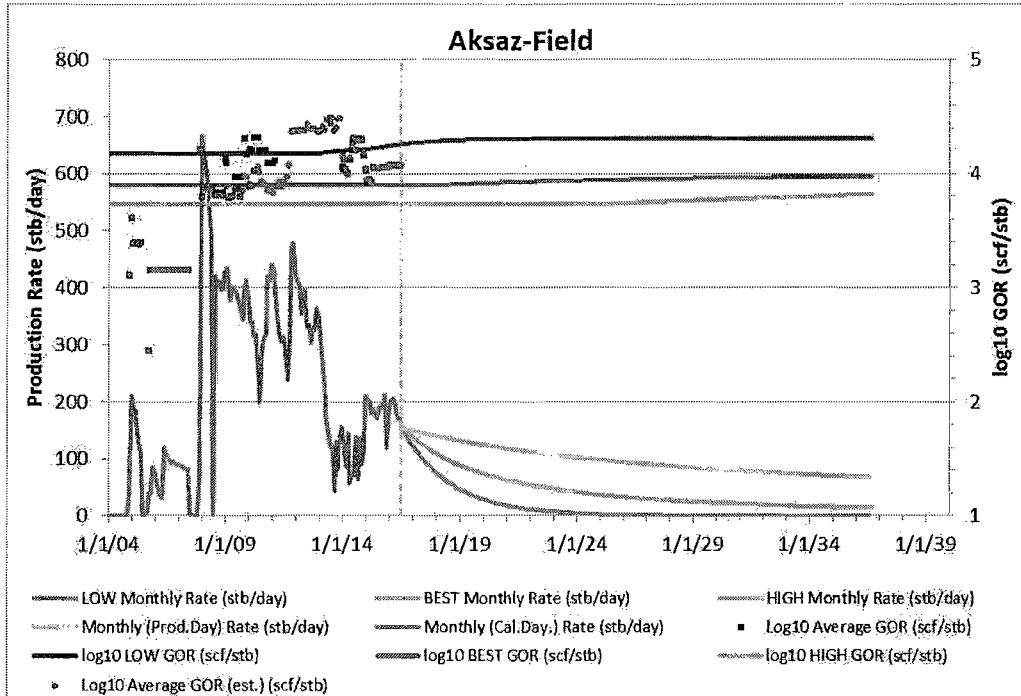


Figure 3-19 – Aksaz Field Decline and GOR Match

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INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

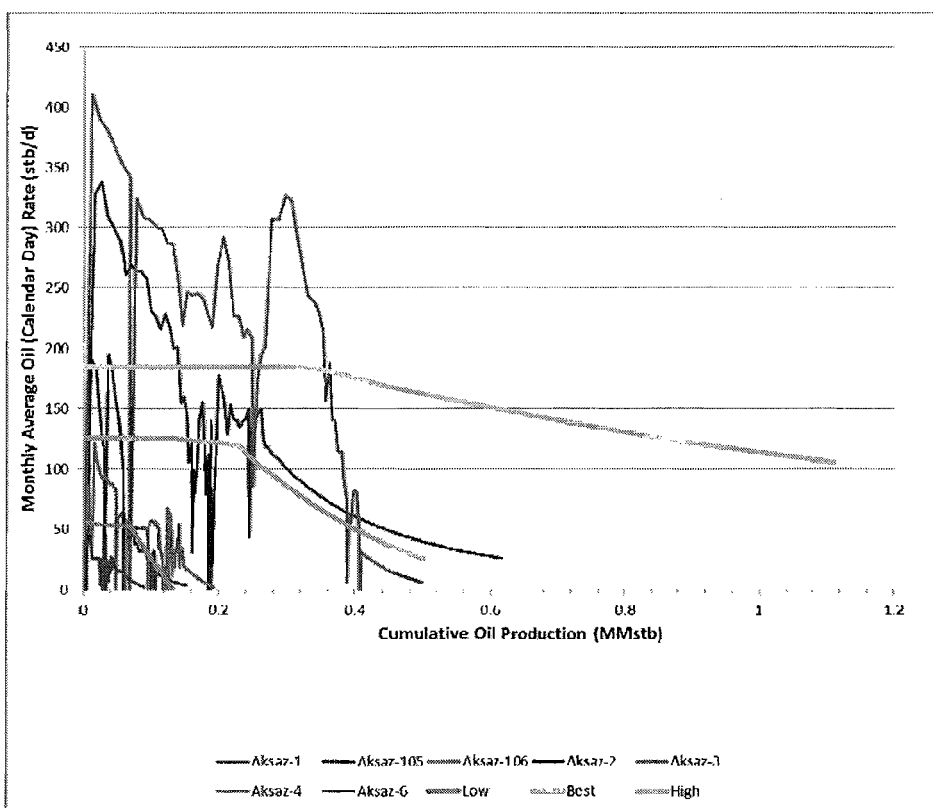
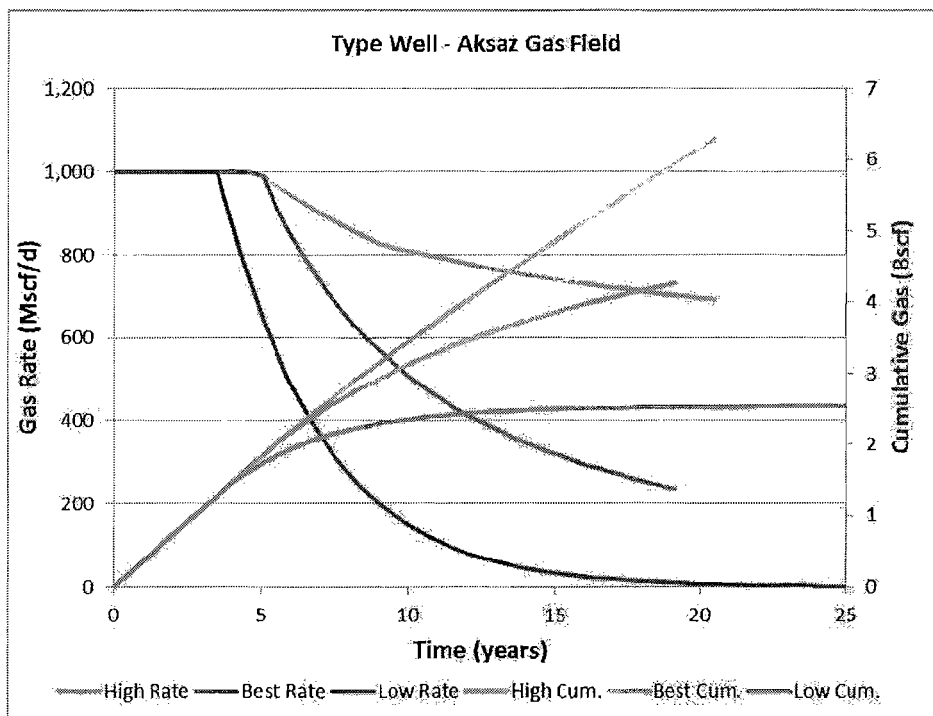
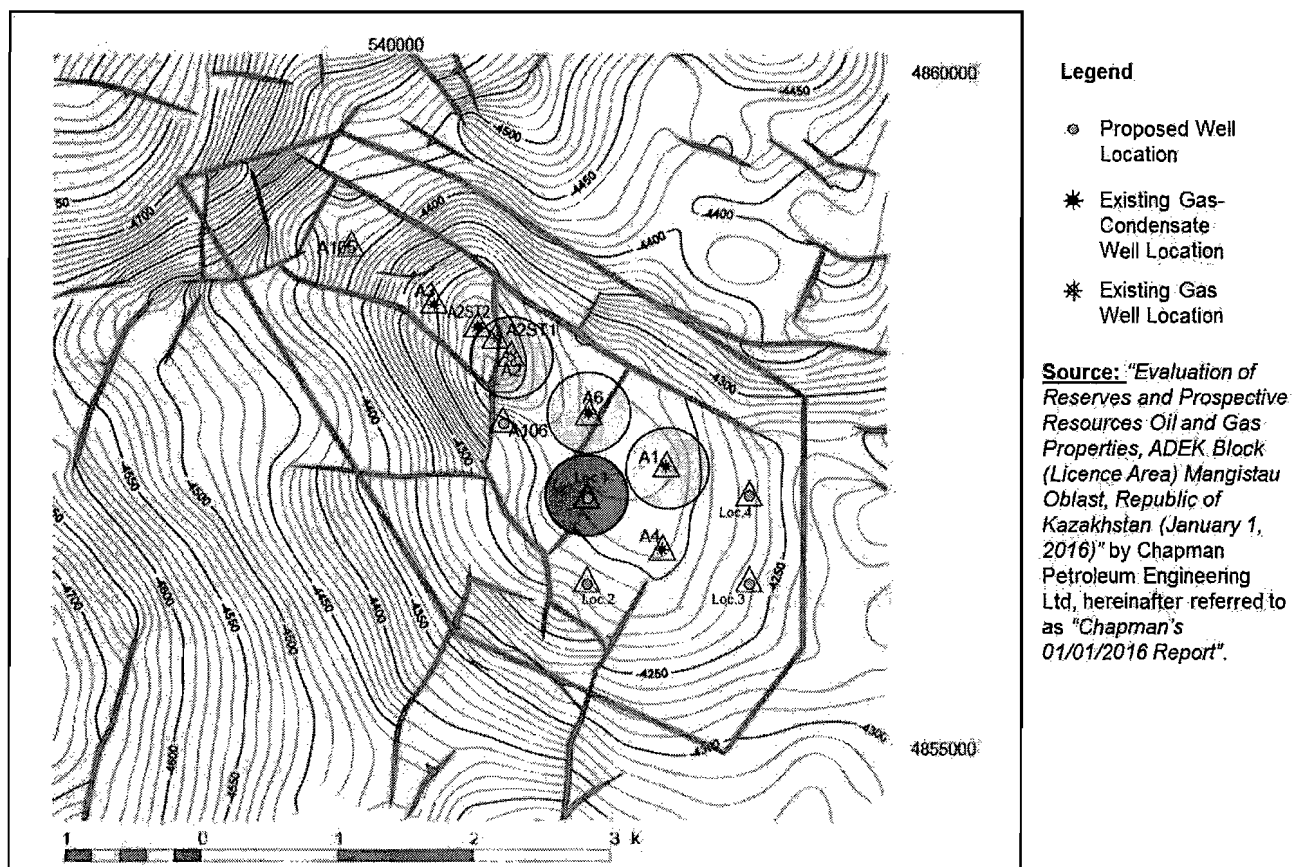


Figure 3-20 – Aksaz Field “Type Well” and Type Curve Comparison



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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



- Legend**
- ● Proposed Well Location
 - * Existing Gas-Condensate Well Location
 - * Existing Gas Well Location

Source: "Evaluation of Reserves and Prospective Resources Oil and Gas Properties, ADEK Block (Licence Area) Mangistau Oblast, Republic of Kazakhstan (January 1, 2016)" by Chapman Petroleum Engineering Ltd, hereinafter referred to as "Chapman's 01/01/2016 Report".

Figure 3 21 – Aksaz Field Middle Triassic T2B Well Location Map



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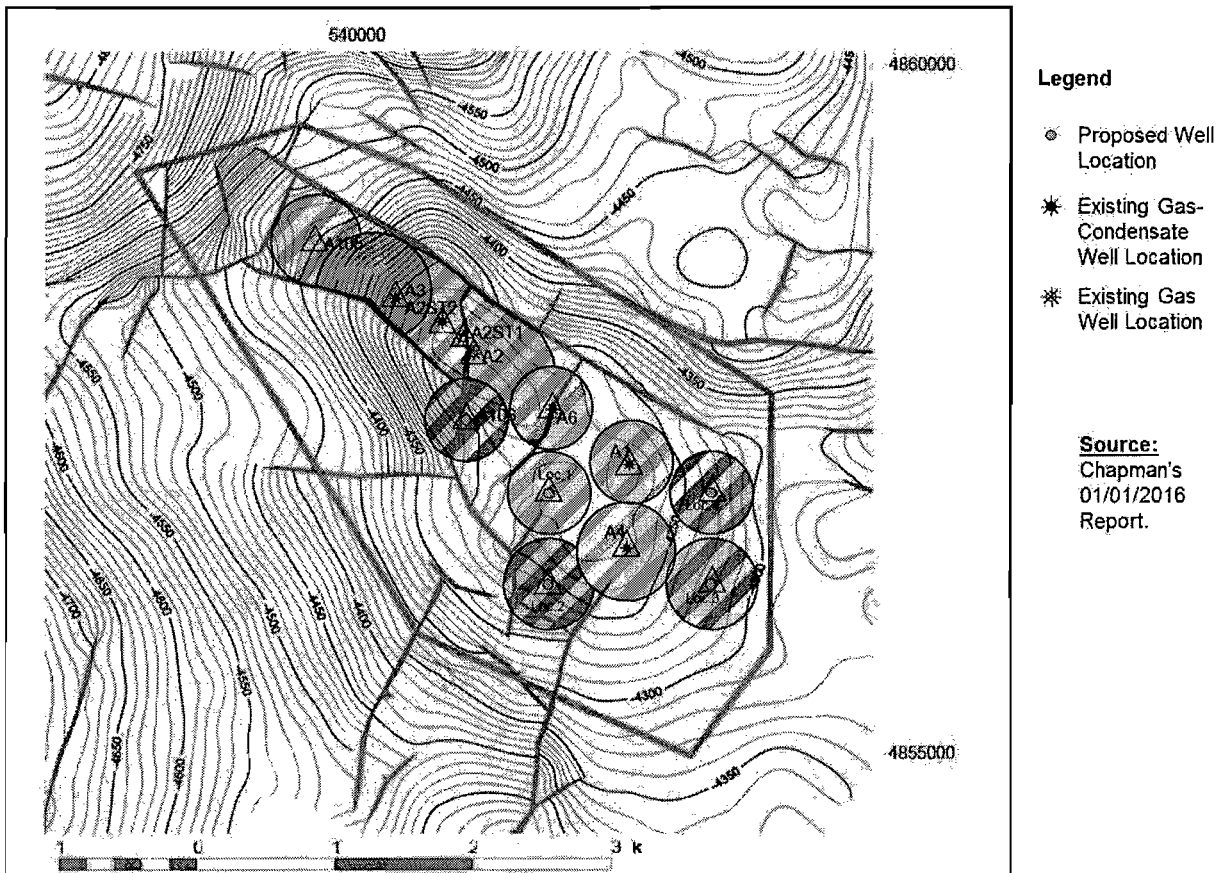


Figure 3 22 – Aksaz Field Middle Triassic T2C Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

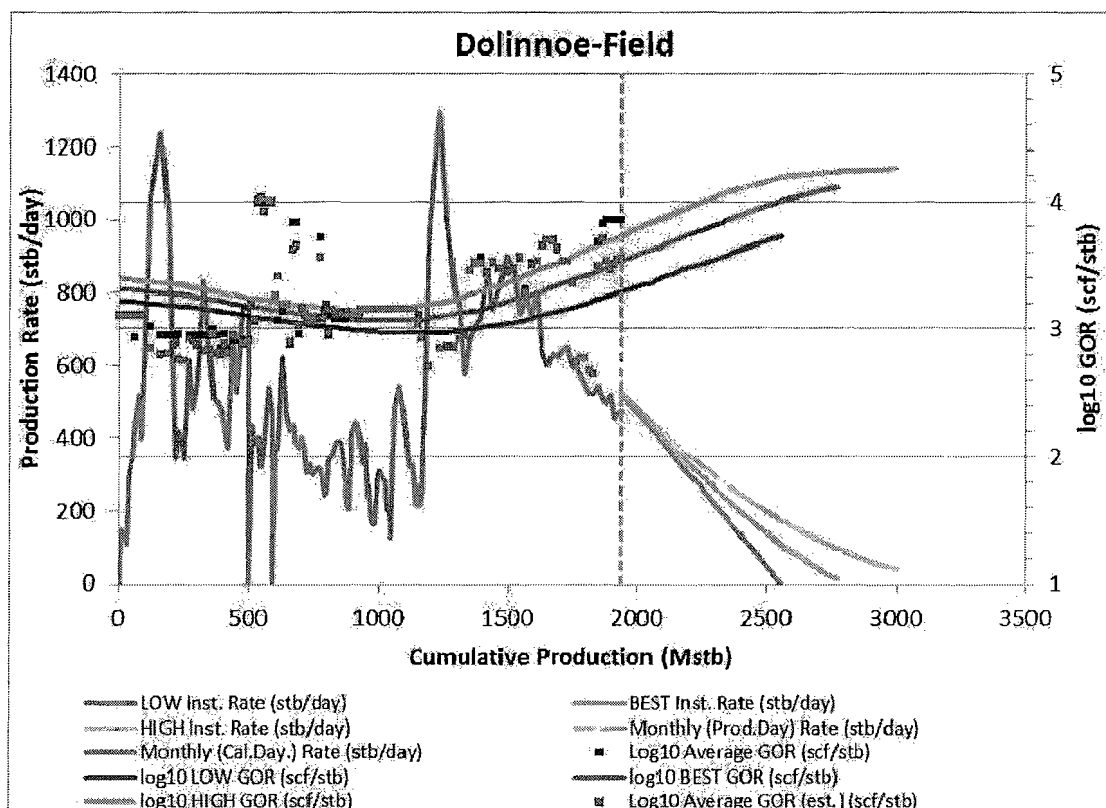
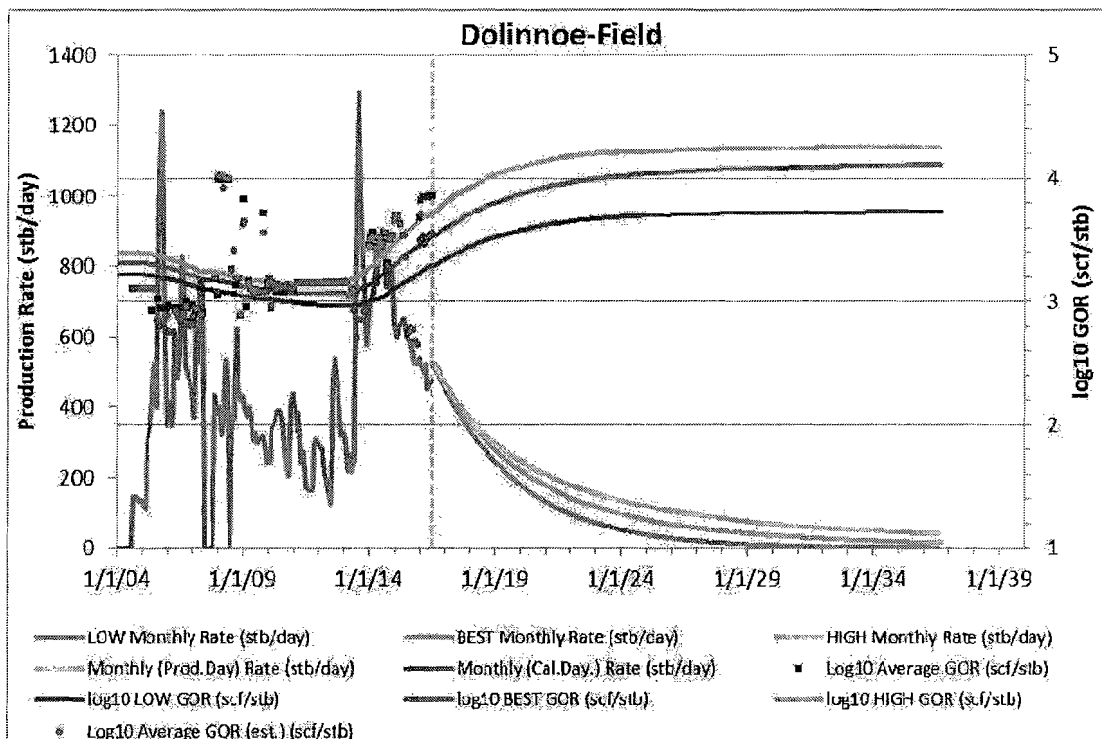


Figure 3-23 – Dolinnoe Field Decline and GOR Match



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

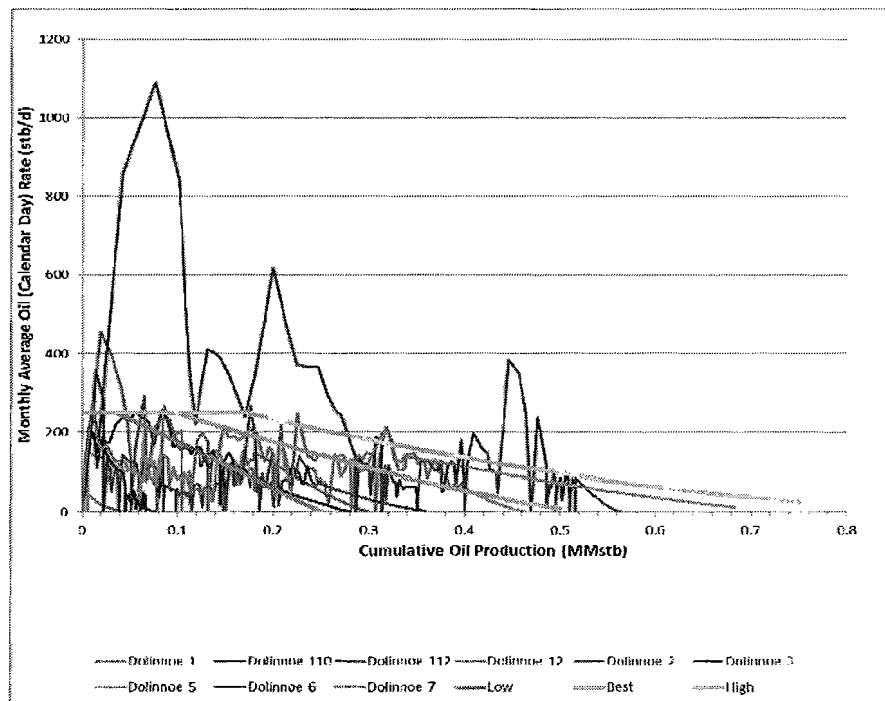
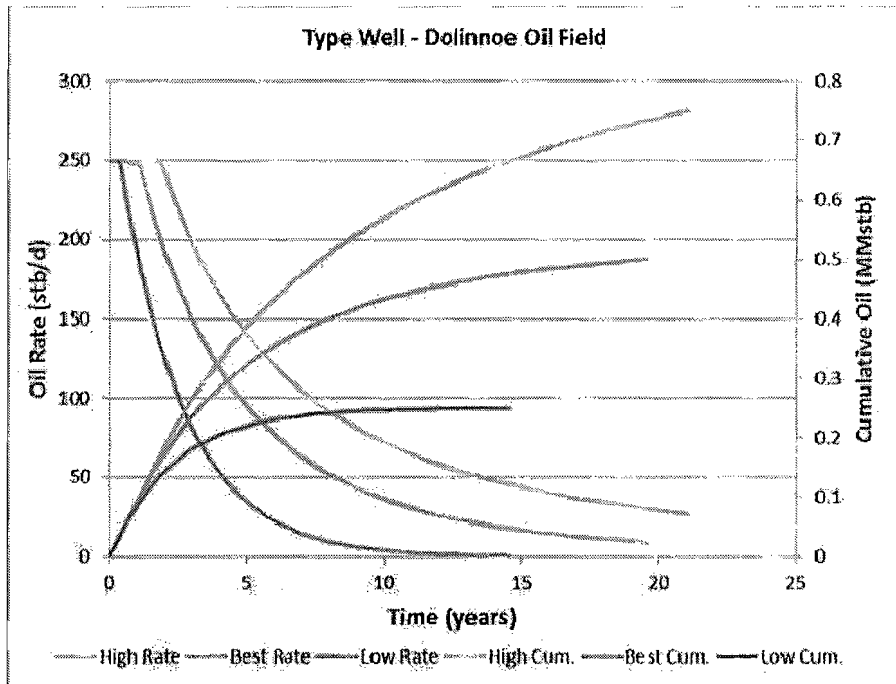
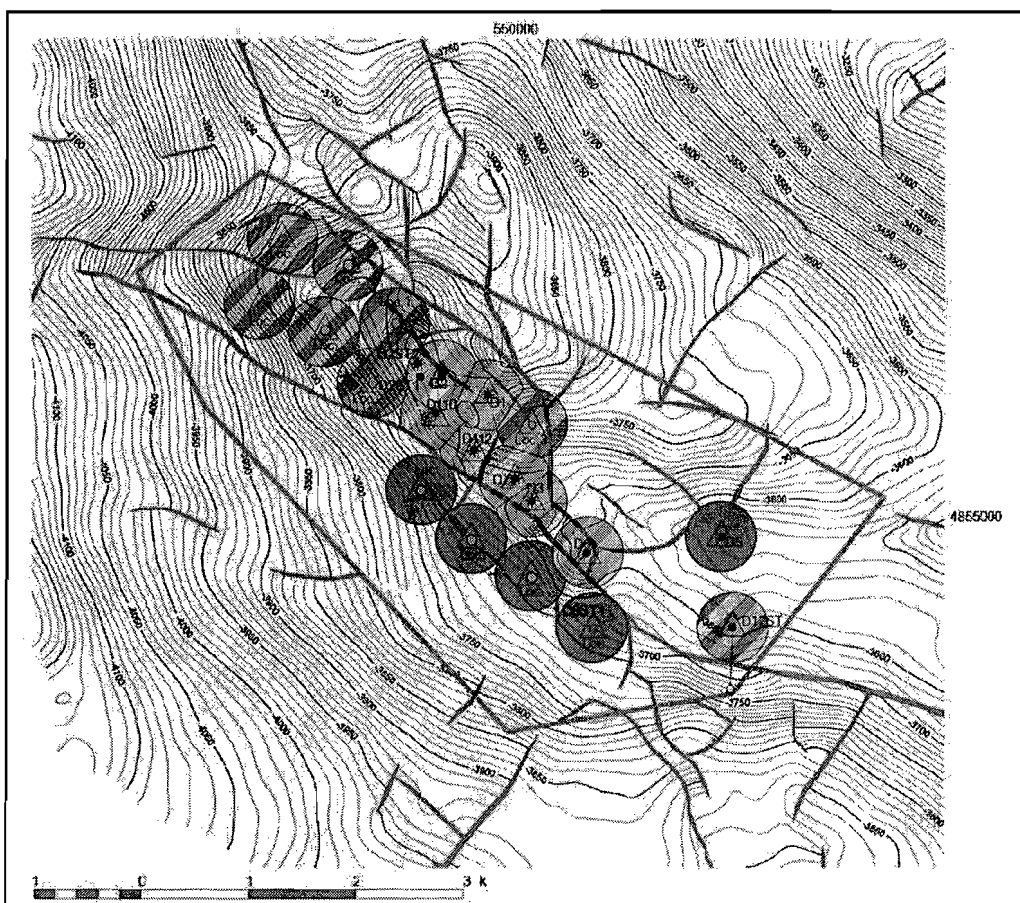


Figure 3-24 – Dolinnoe Field “Type Well” and Type Curve Comparison



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- * Existing Oil and Gas Well Location
- Existing Oil Well Location

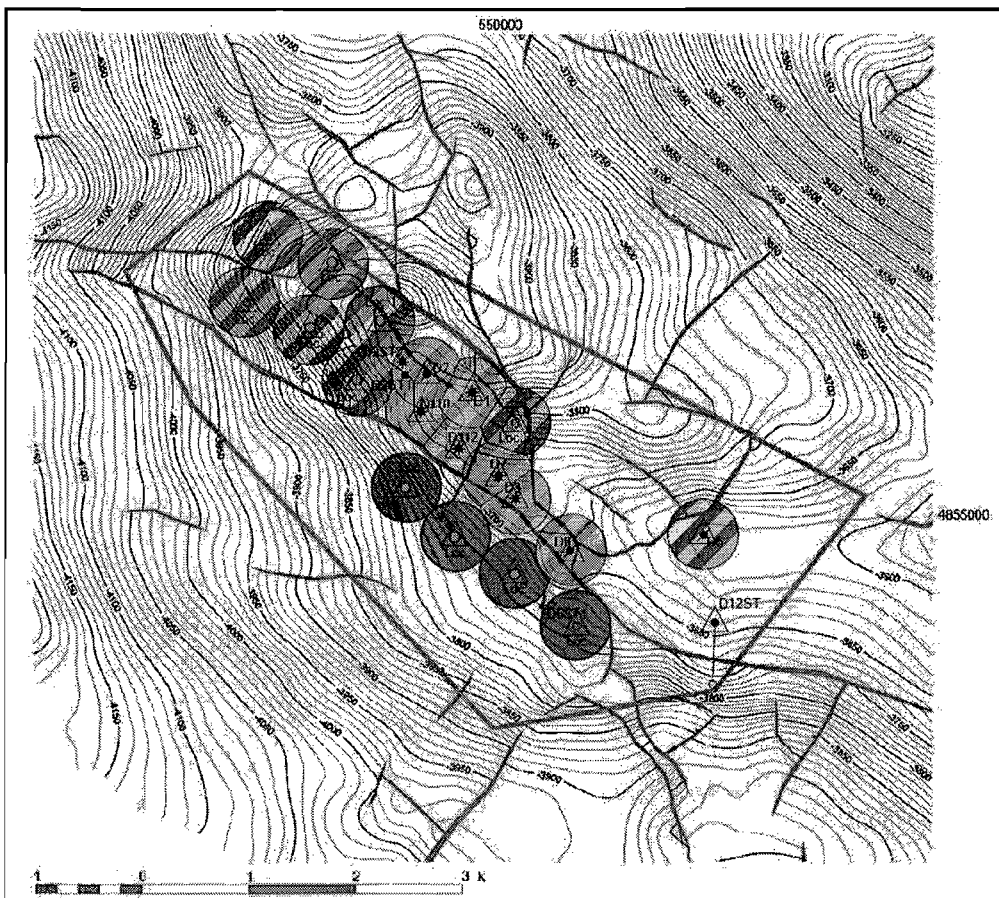
Source:
Chapman's
01/01/2016
Report.

Figure 3 25 – Dolinnoe Field Middle Triassic T2B Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- ★ Existing Oil and Gas Well Location
- Existing Oil Well Location

Source:
Chapman's
01/01/2016
Report.

Figure 3 26 – Dolinnoe Field Middle Triassic T2C Well Location Map

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

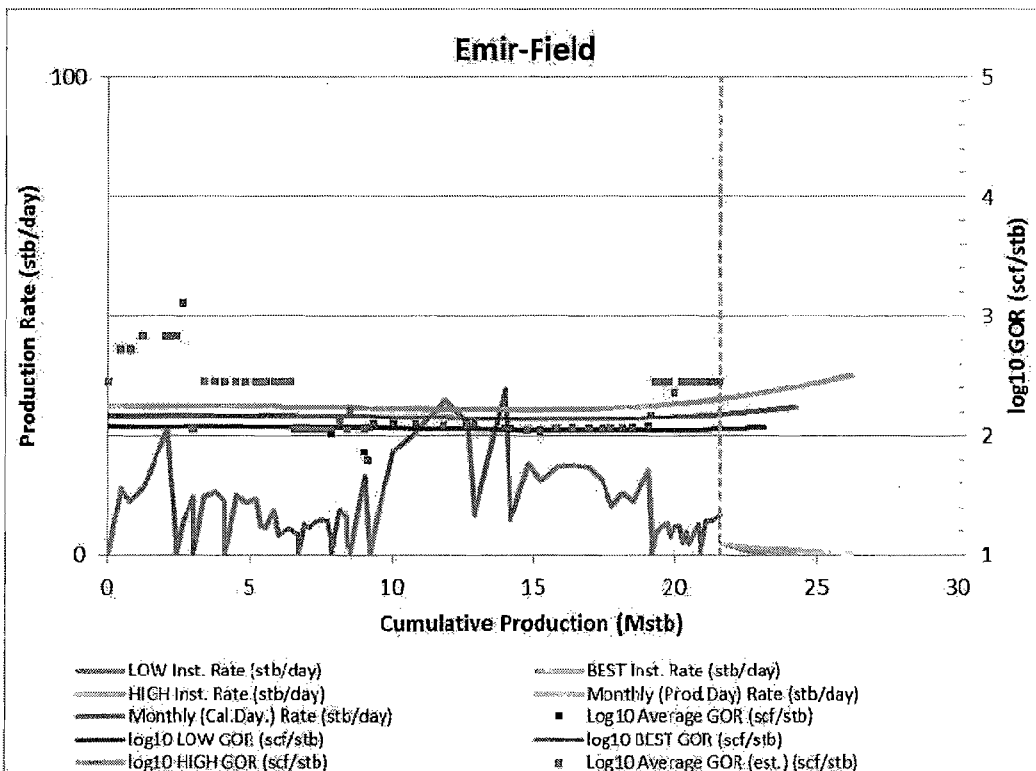
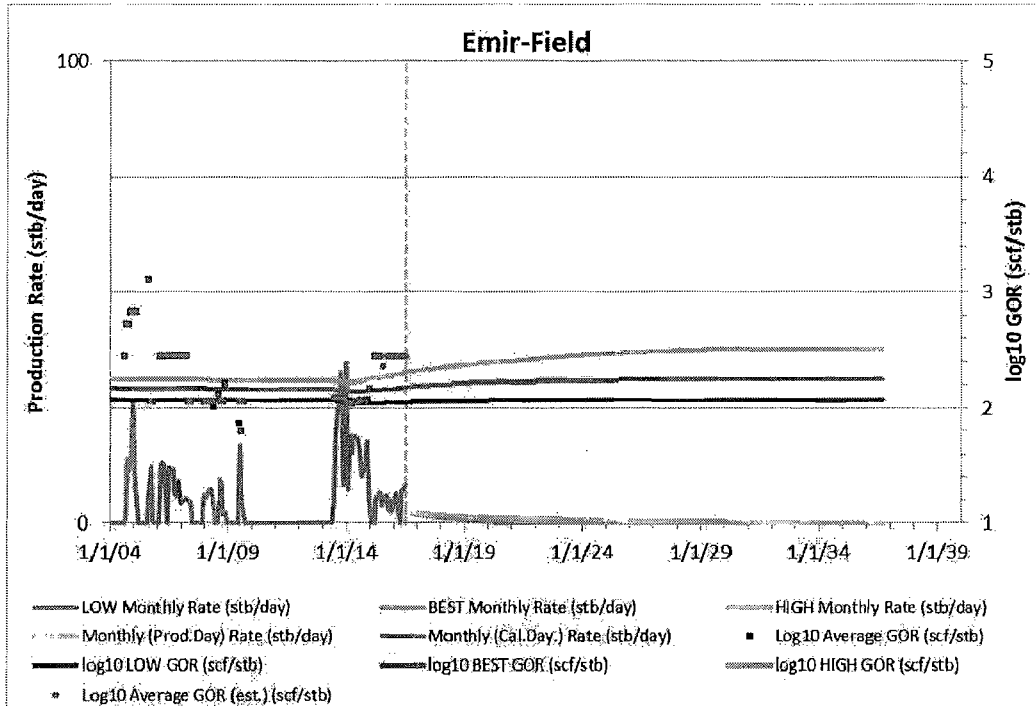


Figure 3-27 – Emir Field Decline and GOR Match



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

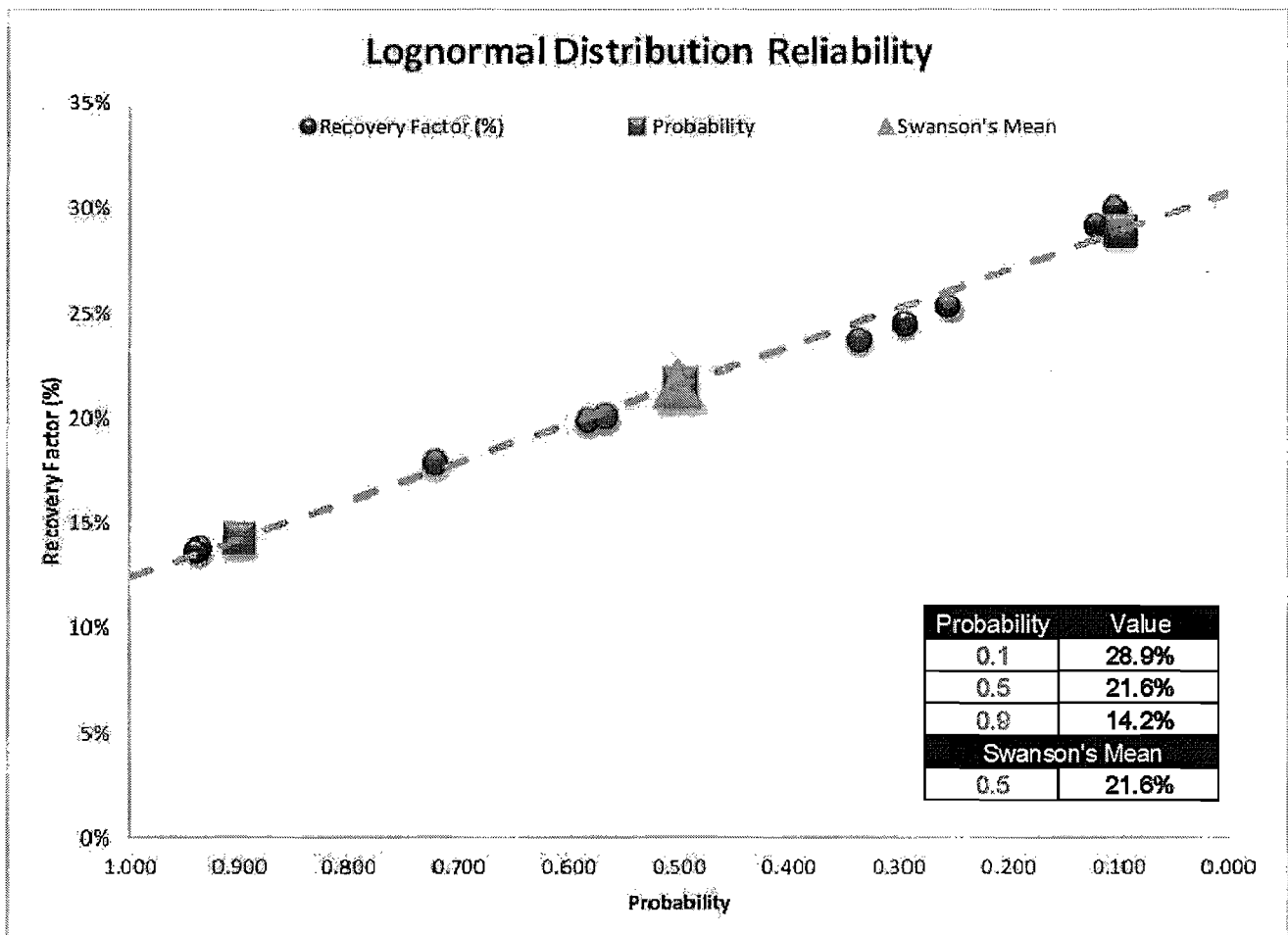


Figure 3-28 – Lognormal Distribution of Low GOR Oil Recovery Factor



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

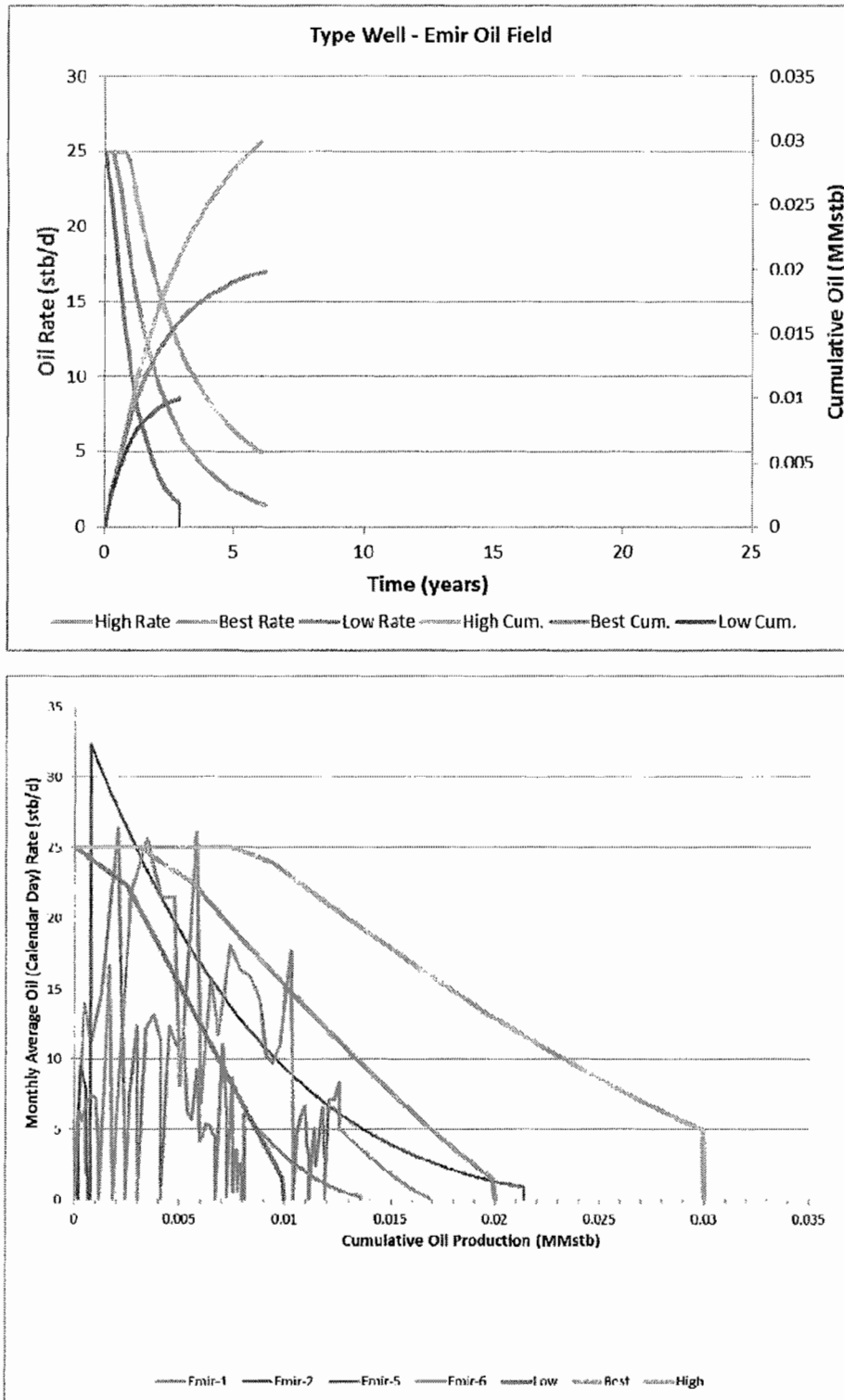
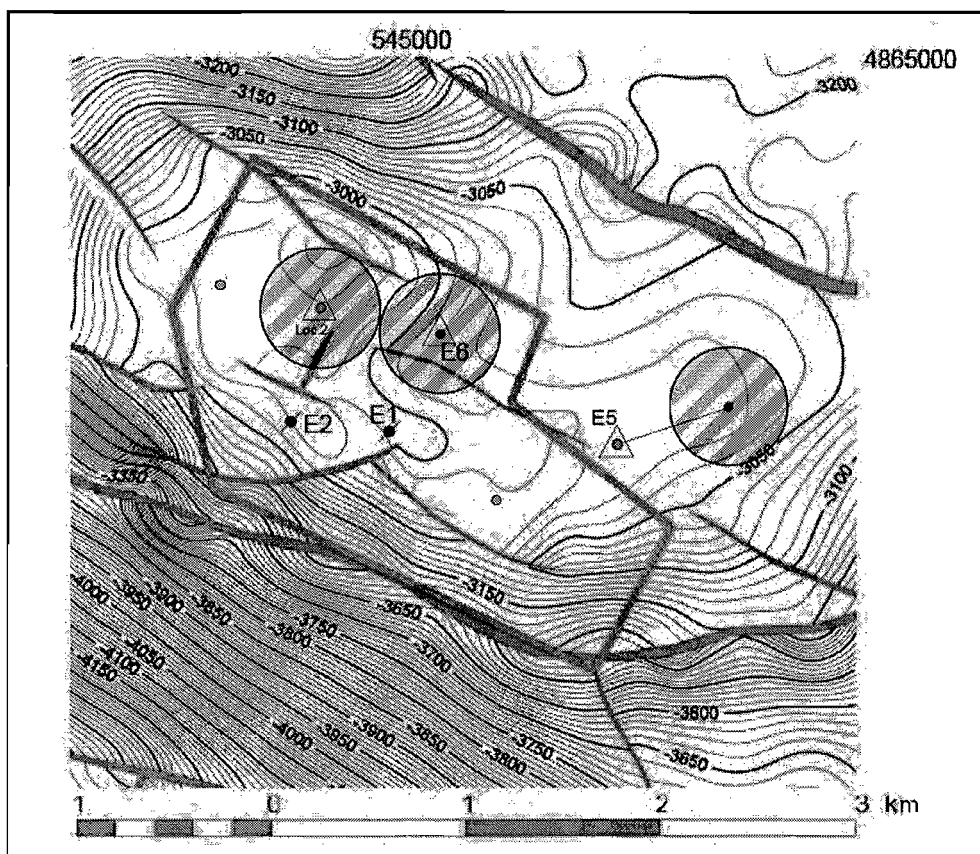


Figure 3-29 – Emir Field “Type Well” and Type Curve Comparison



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- ⊙ RPS's Identified Additional Well Location
- Existing Oil Well Location

Source:
Chapman's
01/01/2016
Report.

Figure 3 30 – Emir Field Middle Triassic T2C Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

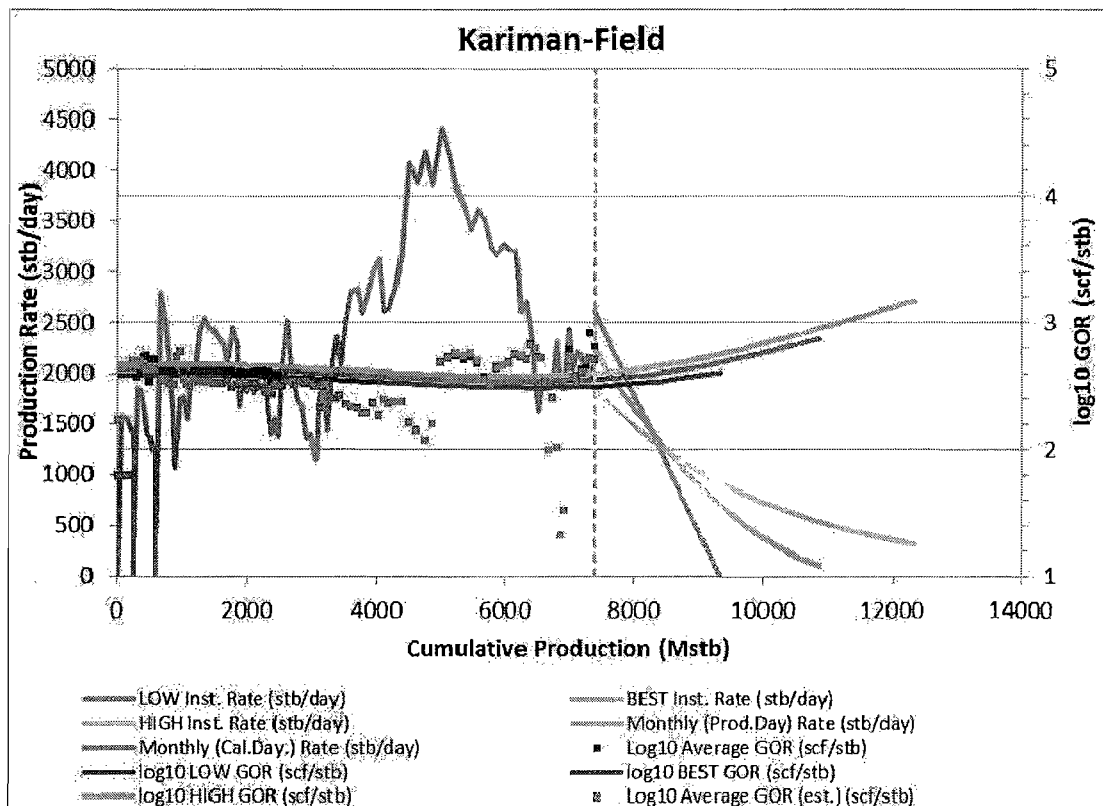
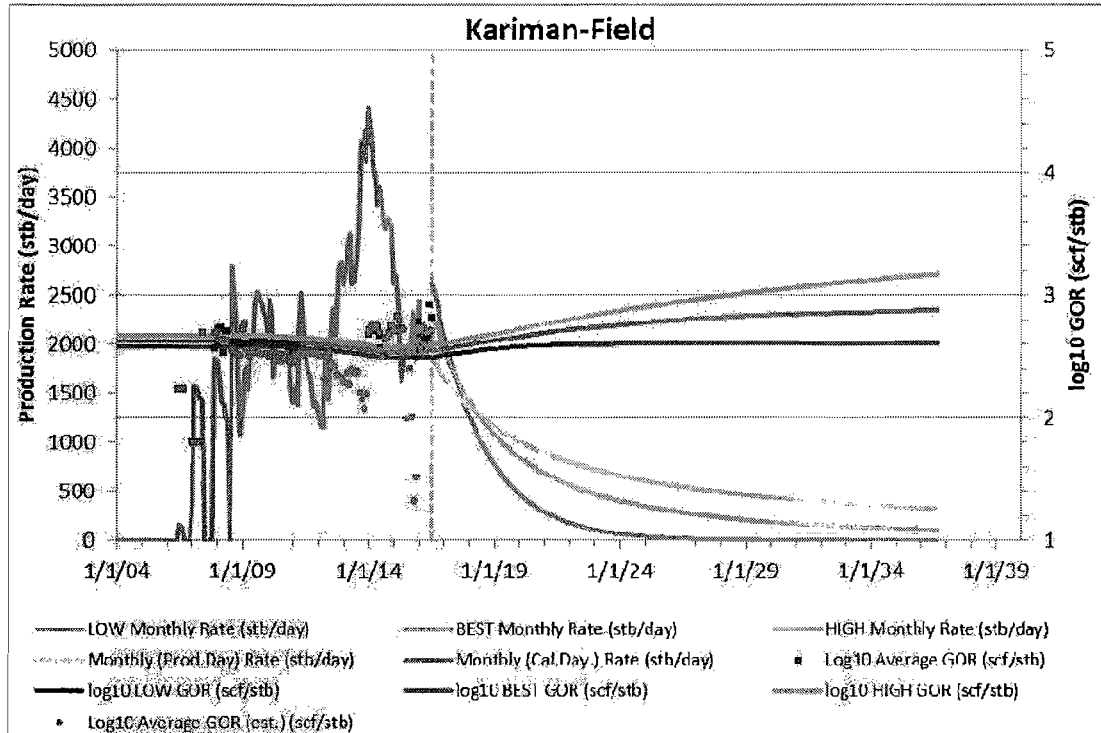


Figure 3-31– Kariman Field Decline and GOR Match



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

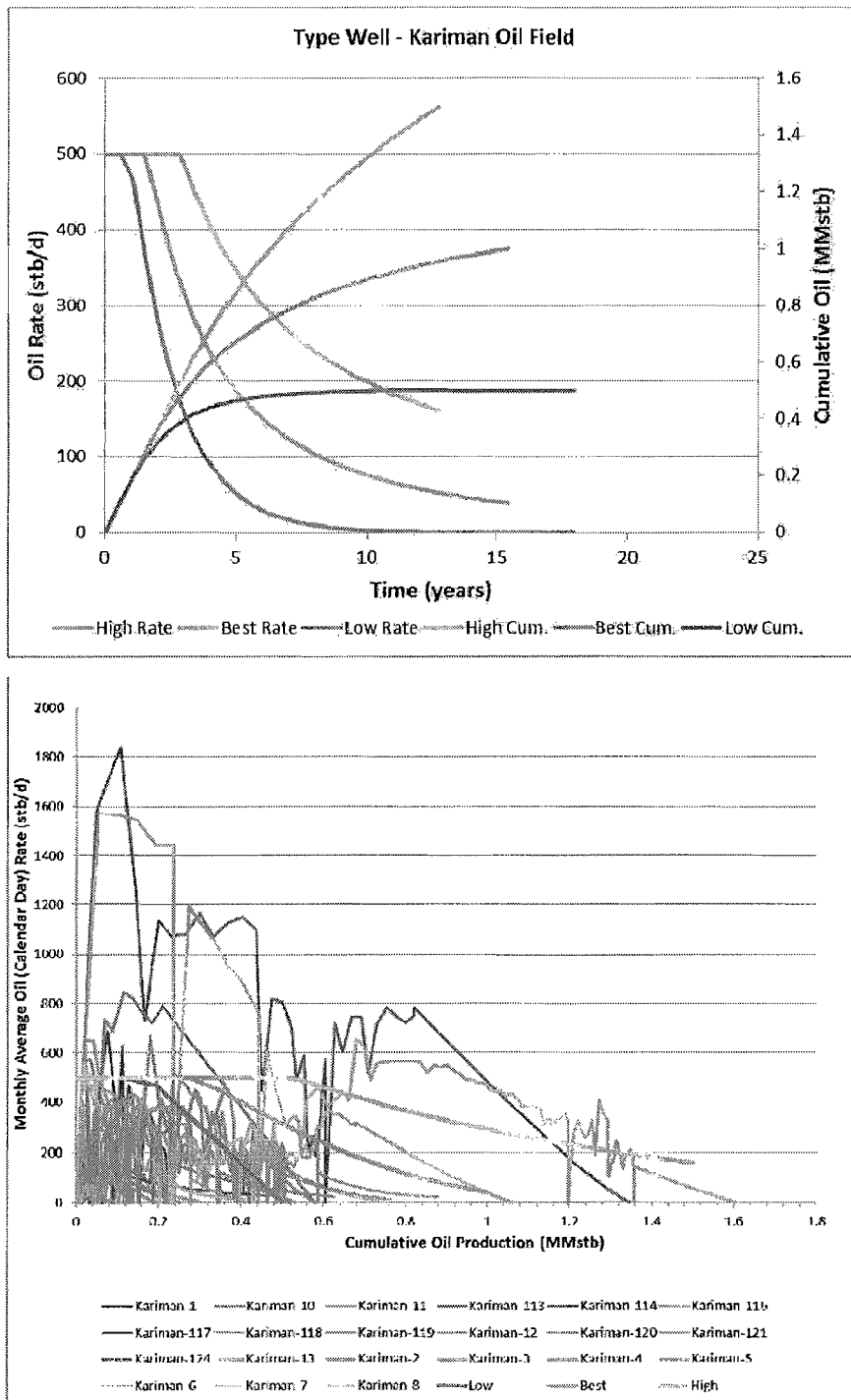
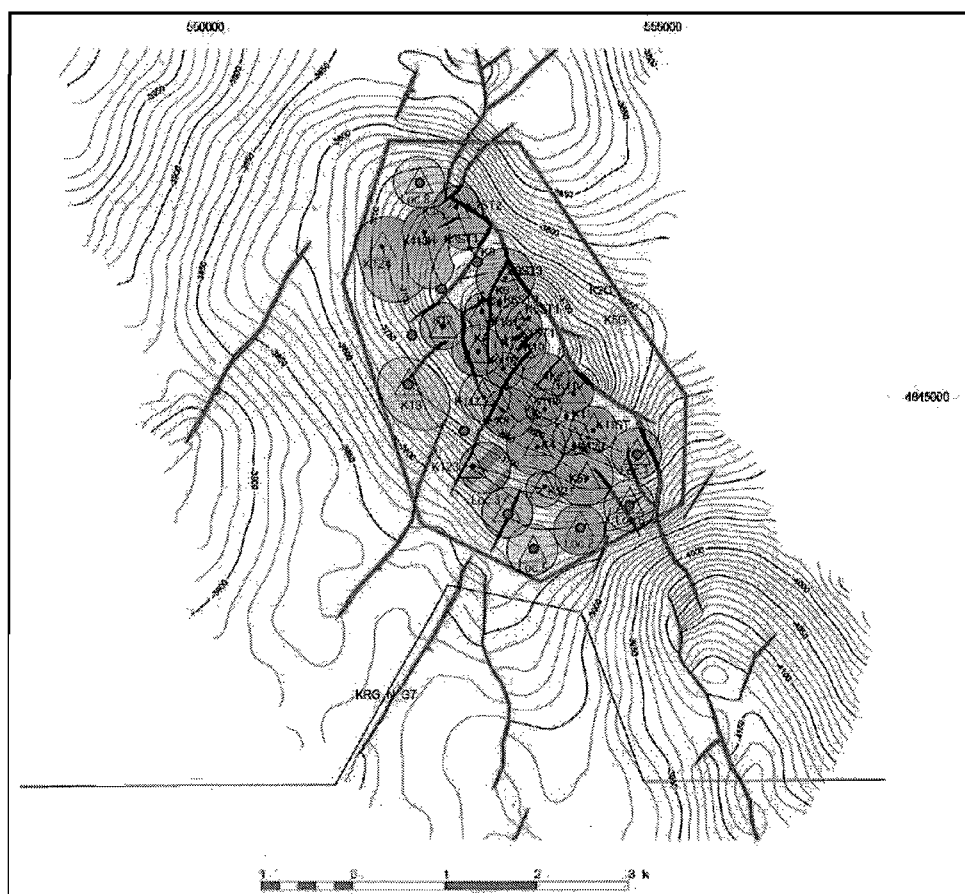


Figure 3-32 – Kariman Field “Type Well” and Type Curve Comparison



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- Existing Oil Well Location

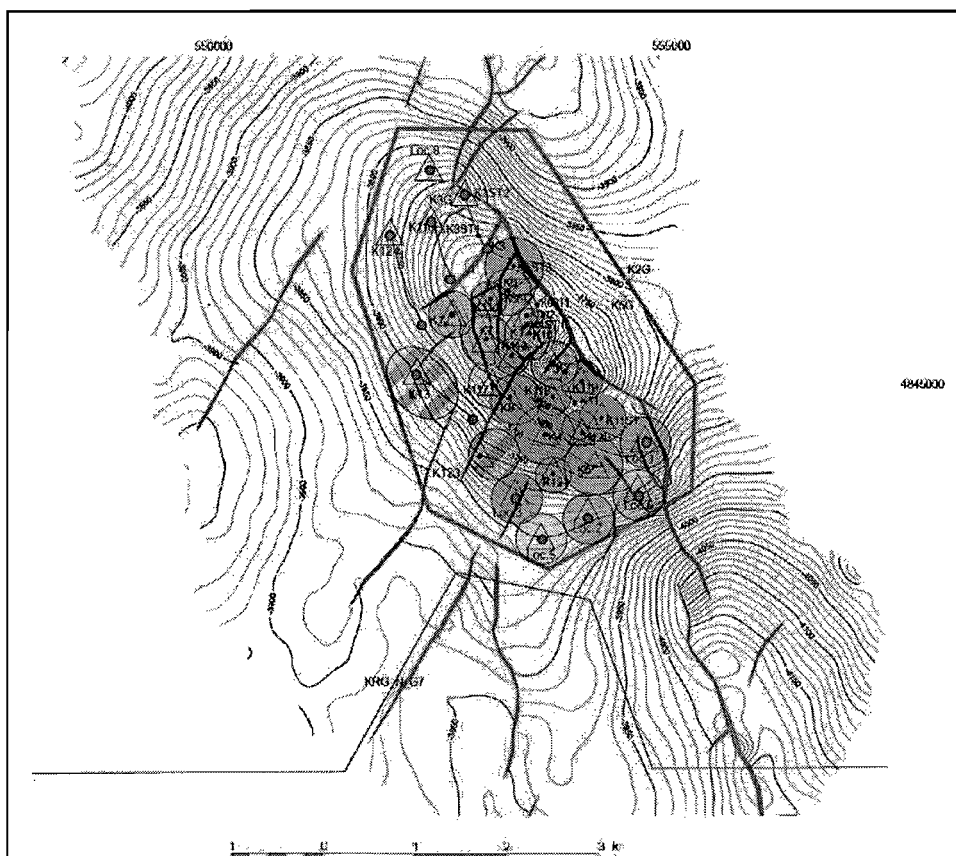
Source:
Chapman's
01/01/2016
Report.

Figure 3 33 – Kariman Field Middle Triassic T2B Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- Existing Oil Well Location

Source:
Chapman's
01/01/2016
Report.

Figure 3 34 – Kariman Field Middle Triassic T2C Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

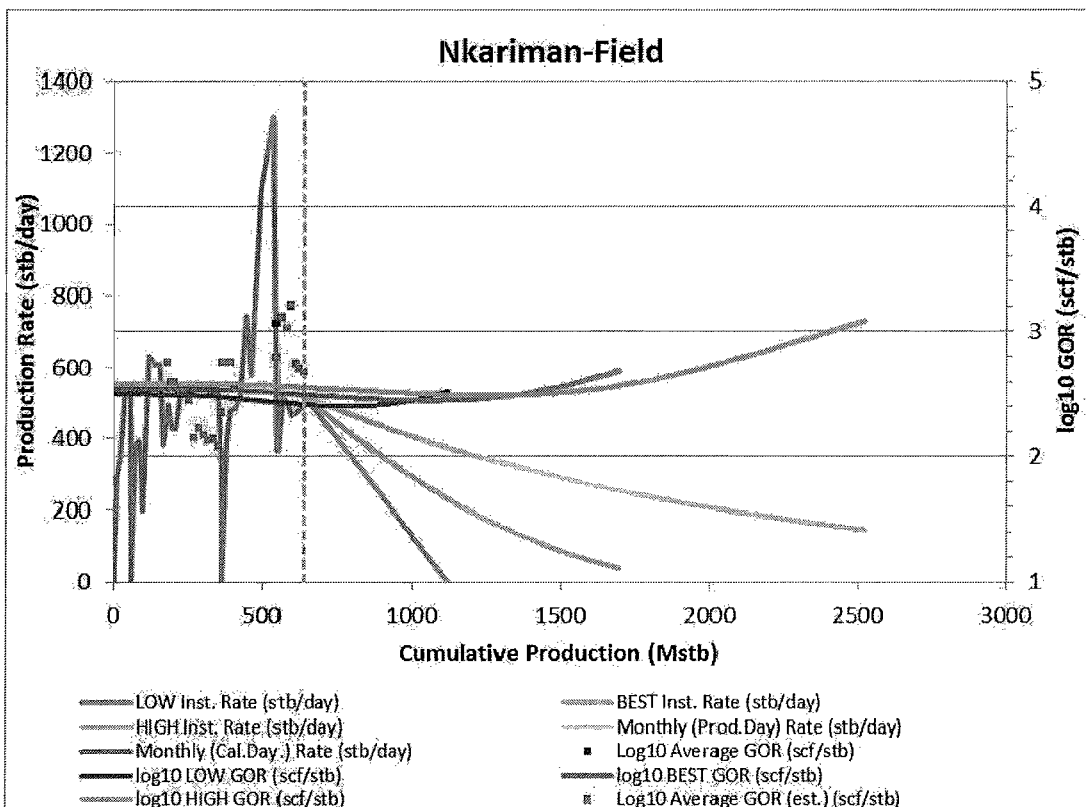
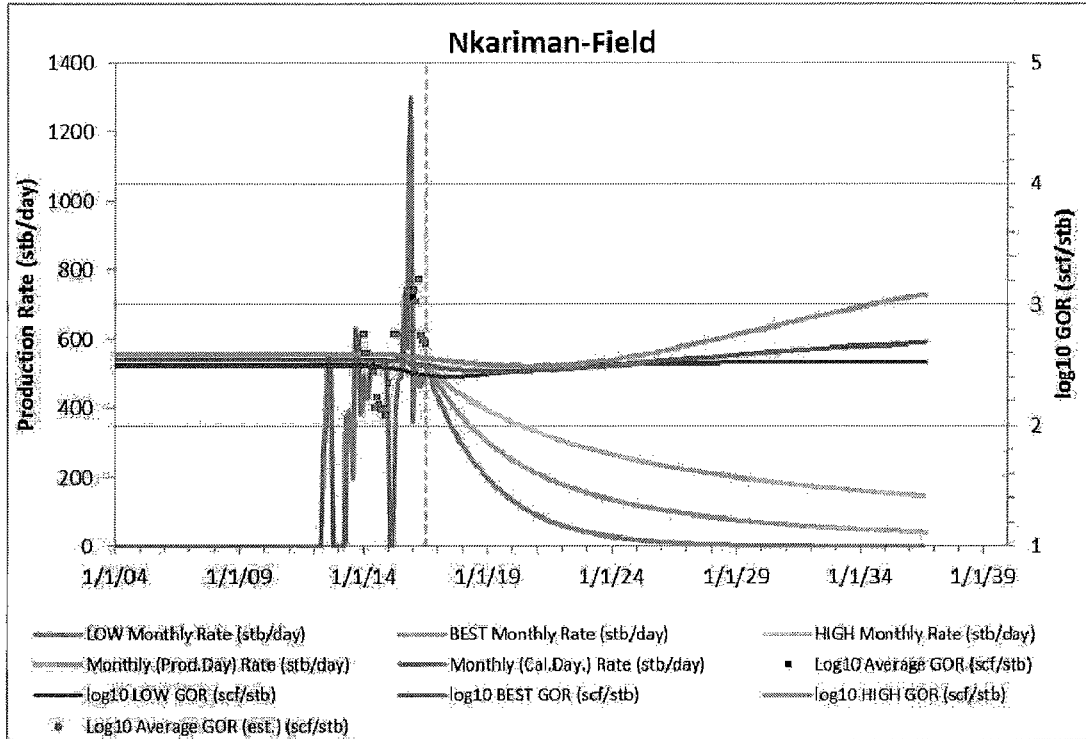


Figure 3-35 – North Kariman Field Decline and GOR Match



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

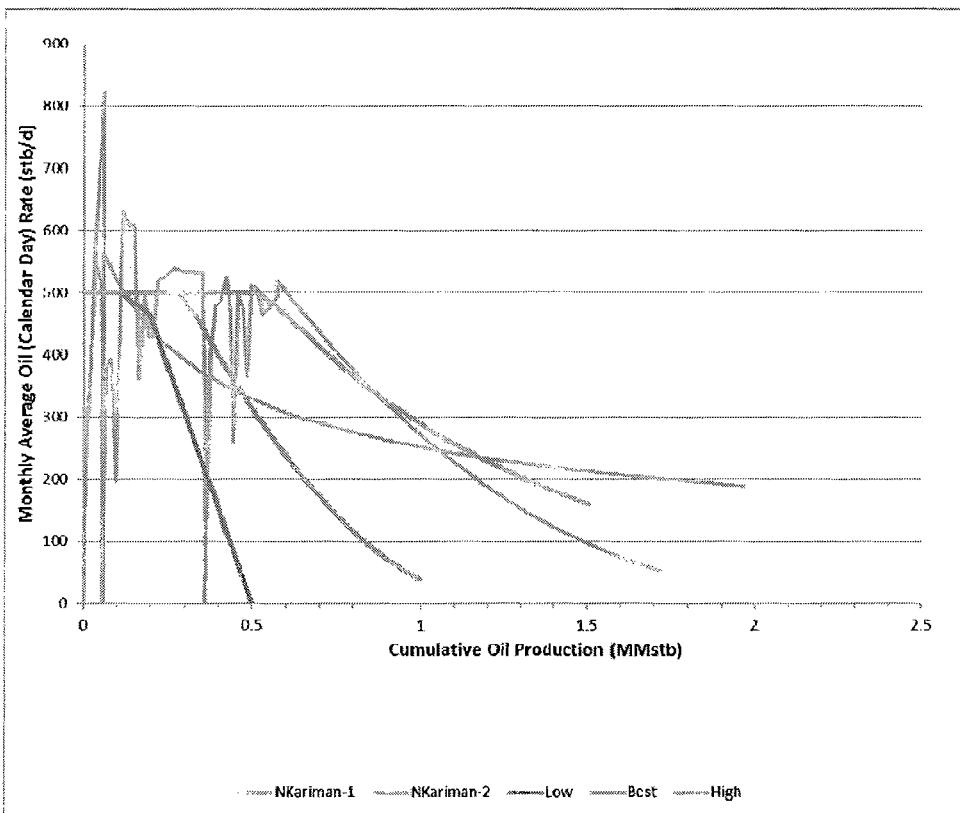
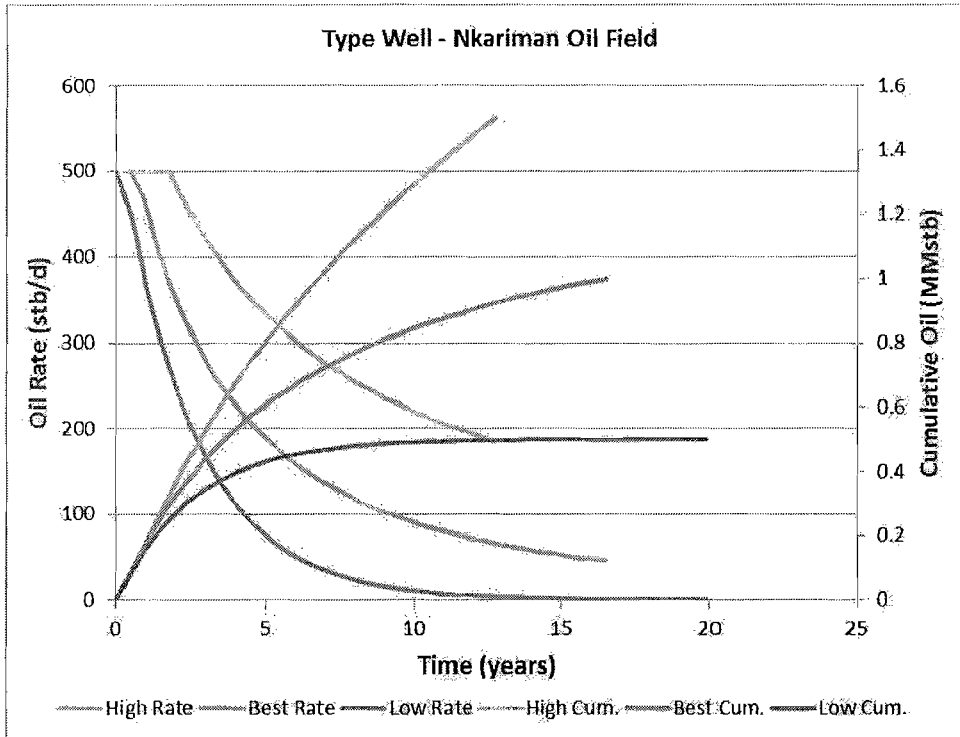
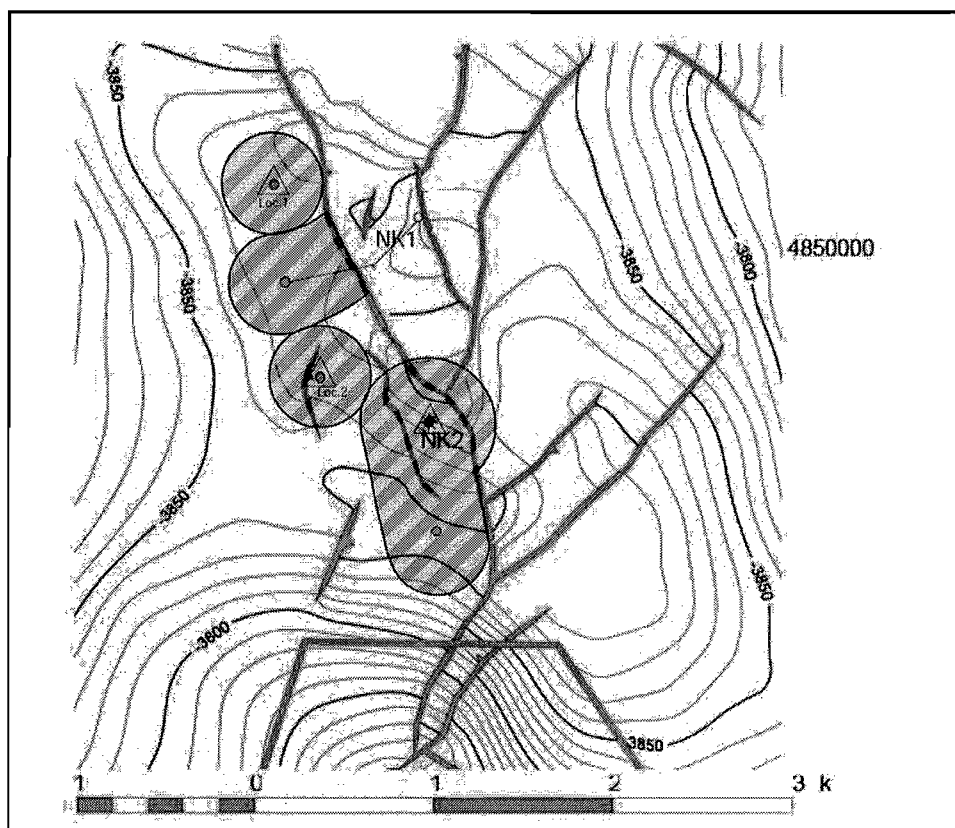


Figure 3-36 – North Kariman “Type Well” and Type Curve Comparison



INDEPENDENT TECHNICAL EXPERT REPORT
 OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- RPS's Identified Additional Well Location
- * Existing Oil and Gas Well Location

Source:
 Chapman's
 01/01/2016
 Report.

Figure 3 37 – North Kariman Field Middle Triassic T2B Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

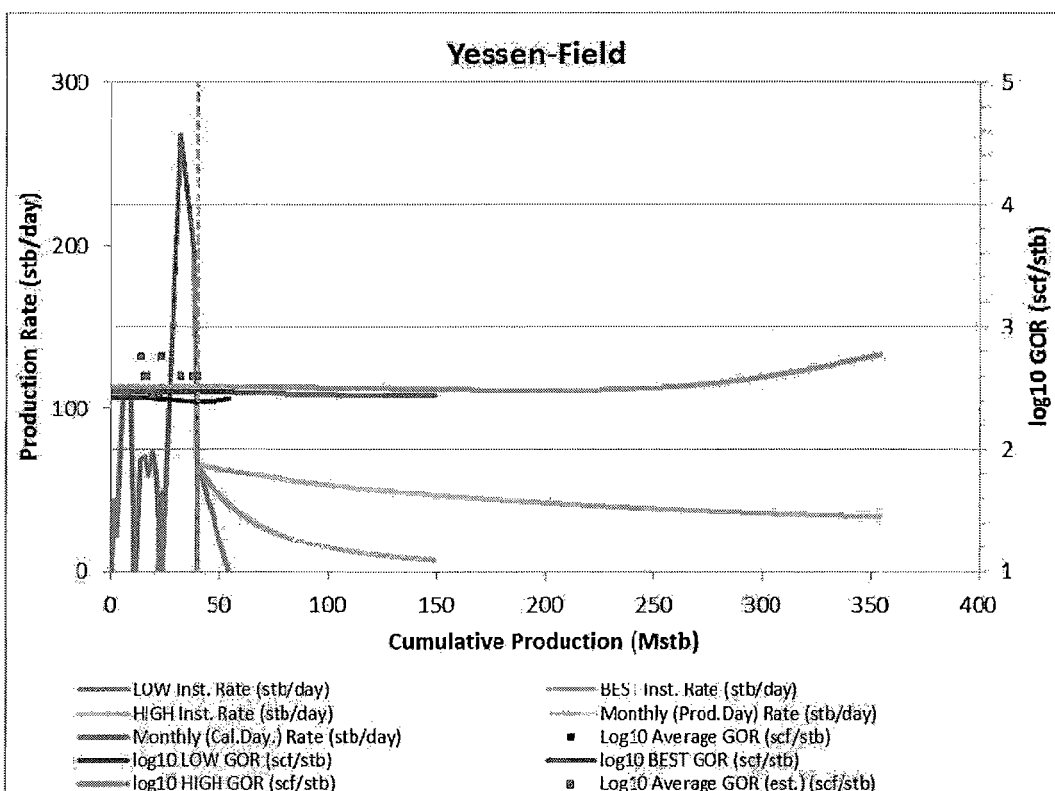
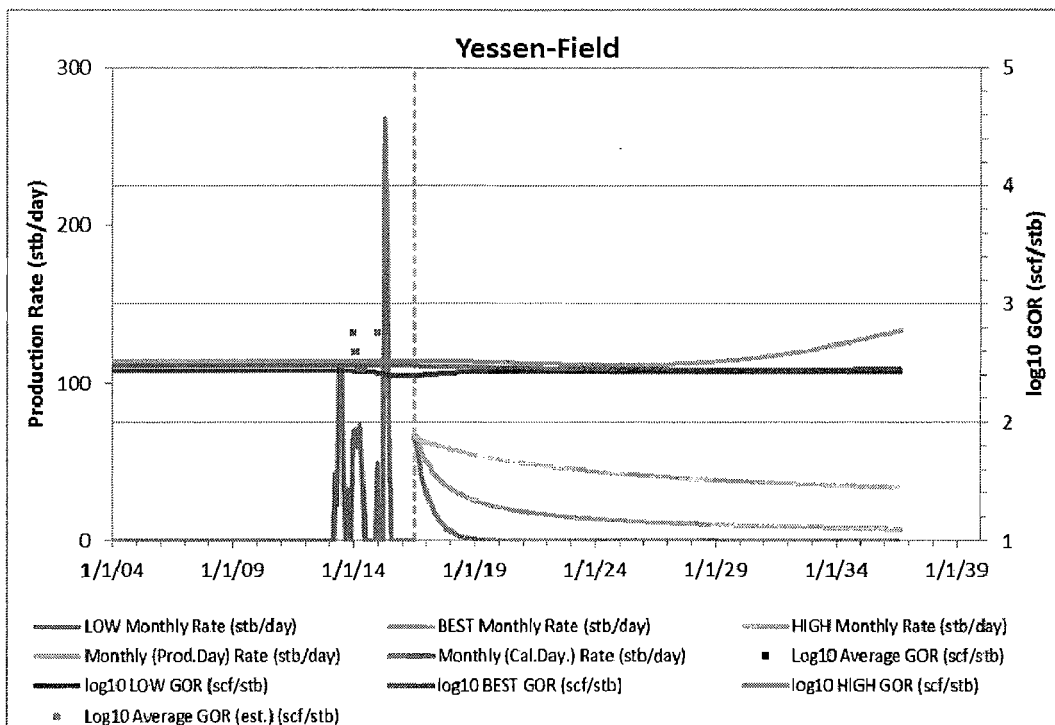


Figure 3-38 – Yessen Field Decline and GOR Match



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

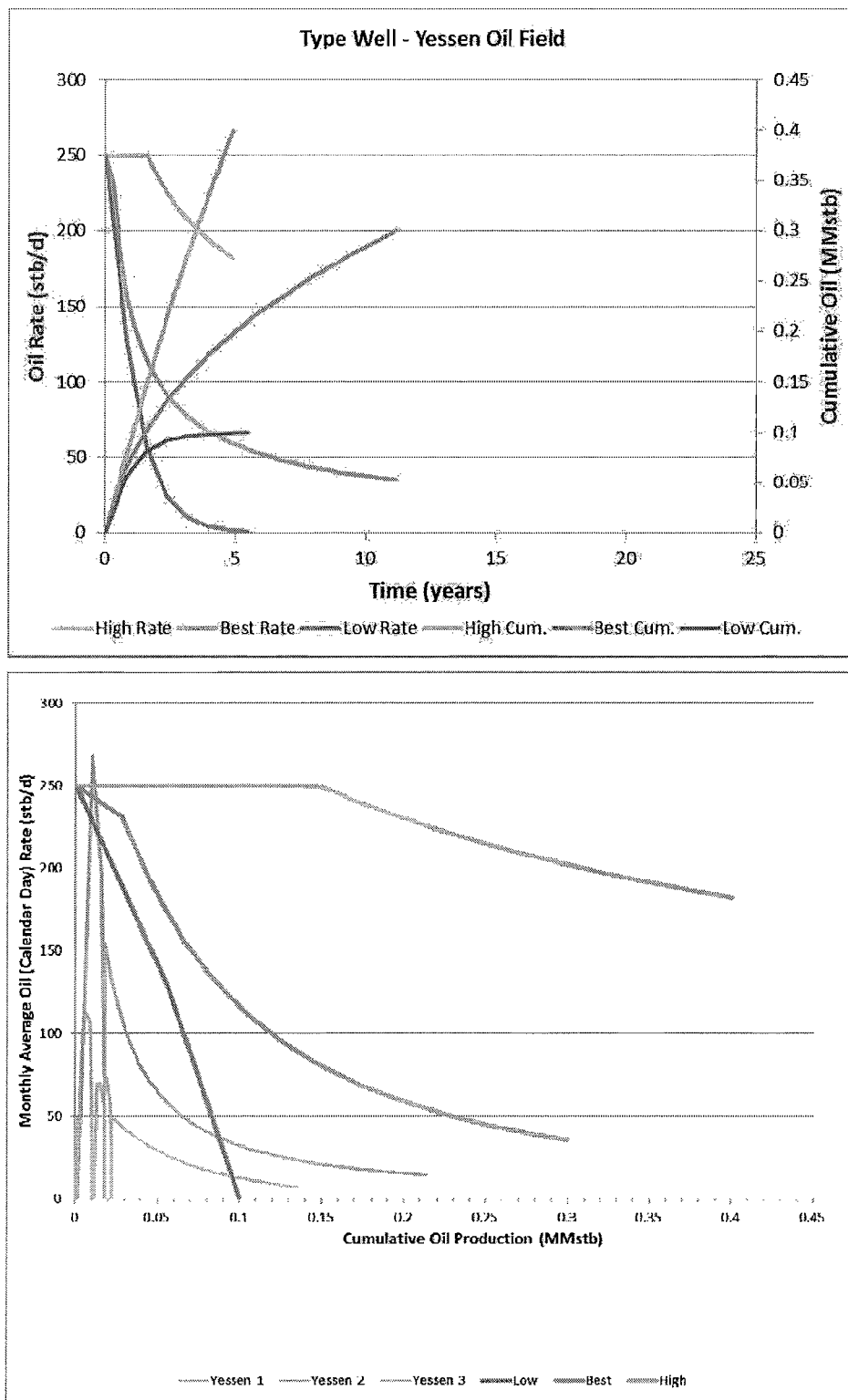
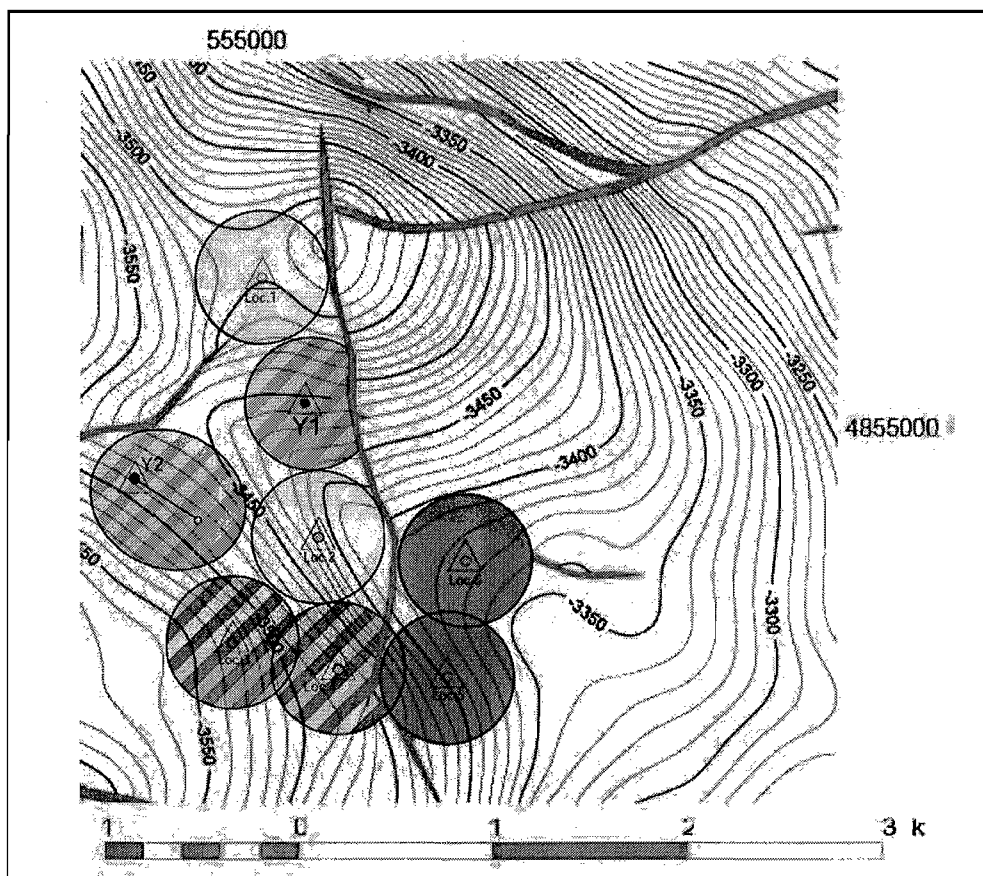


Figure 3-39 – Yessen “Type Well” and Type Curve Comparison



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Legend

- Proposed Well Location
- Existing Oil Well Location

Source:
Chapman's
01/01/2016
Report.

Figure 3 40 – Yessen Field Middle Triassic T2B Well Location Map



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

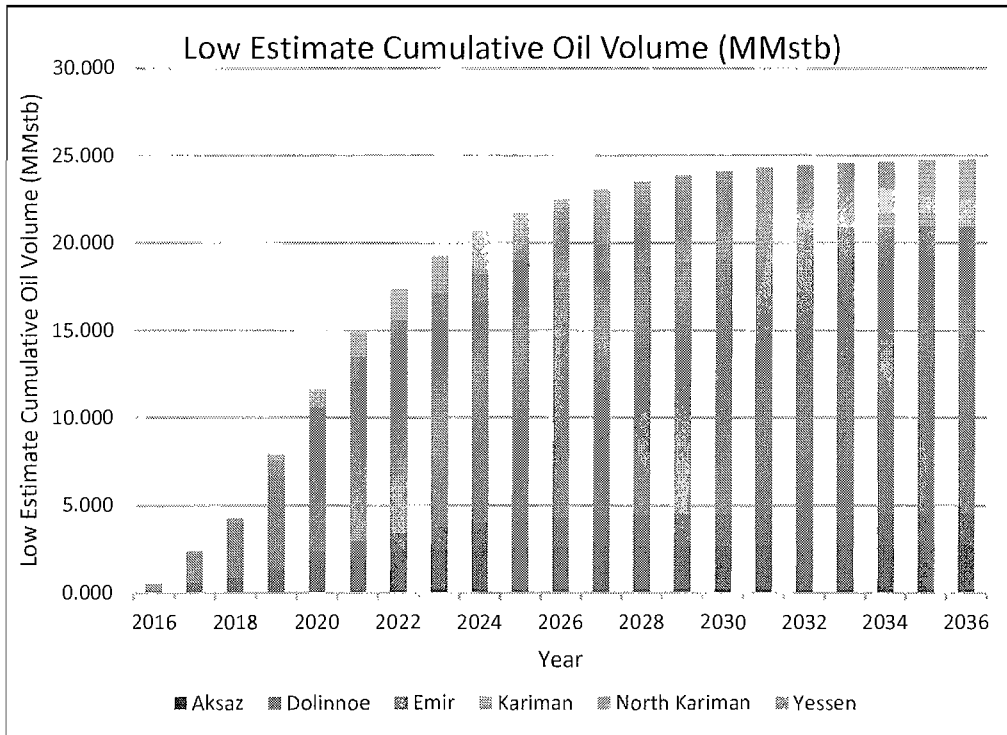
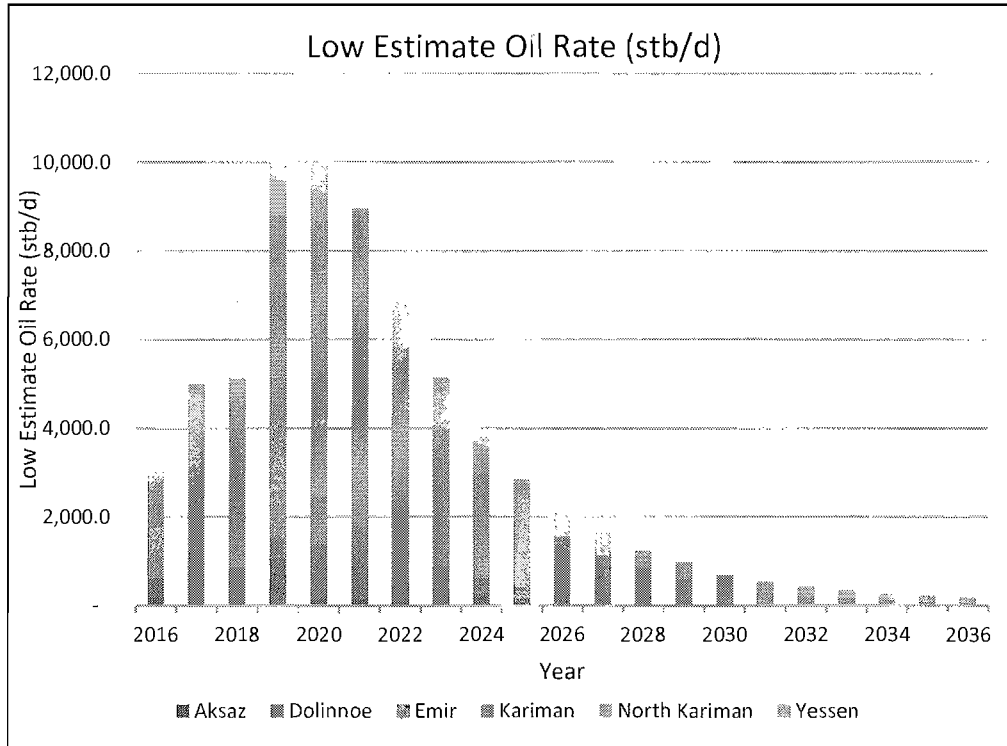


Figure 3-41– Production Forecast Results – Scenario 1 (Low Estimate Oil Profiles)

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

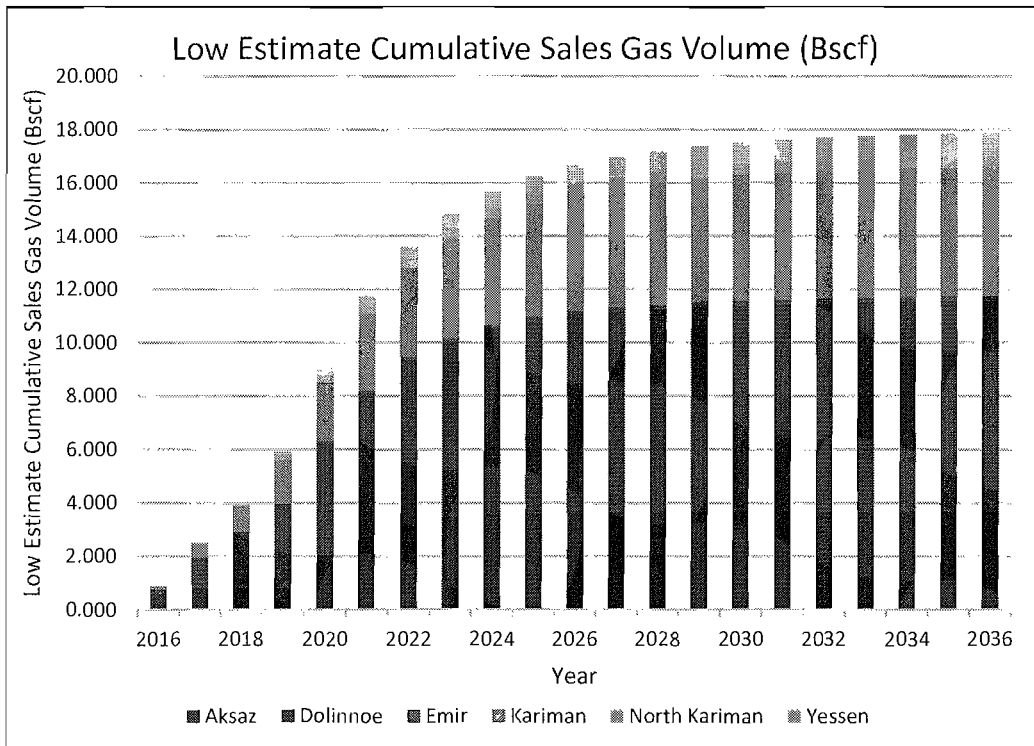
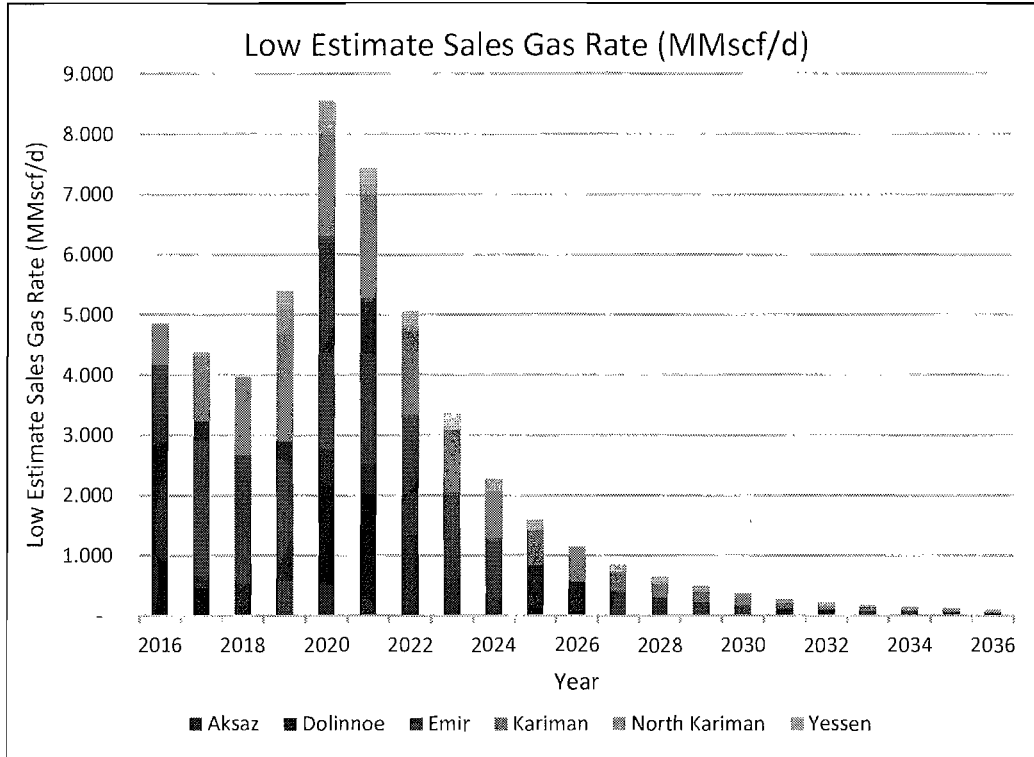


Figure 3-42 – Production Forecast Results – Scenario 1 (Low Estimate Gas Profiles)

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT
OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

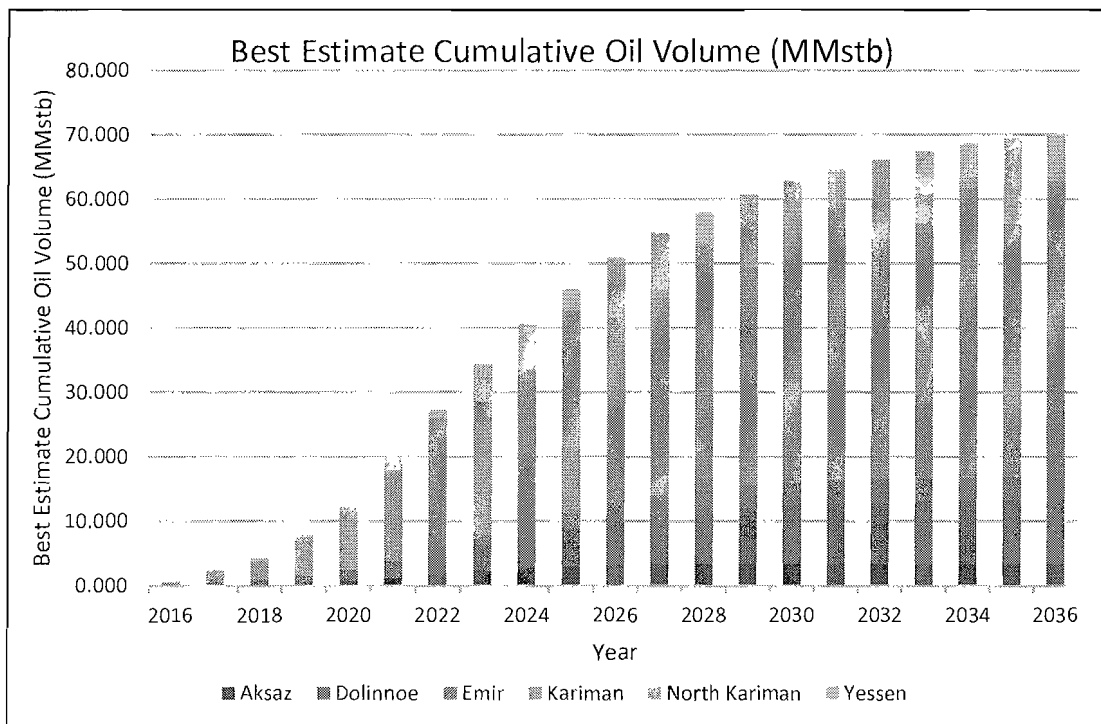
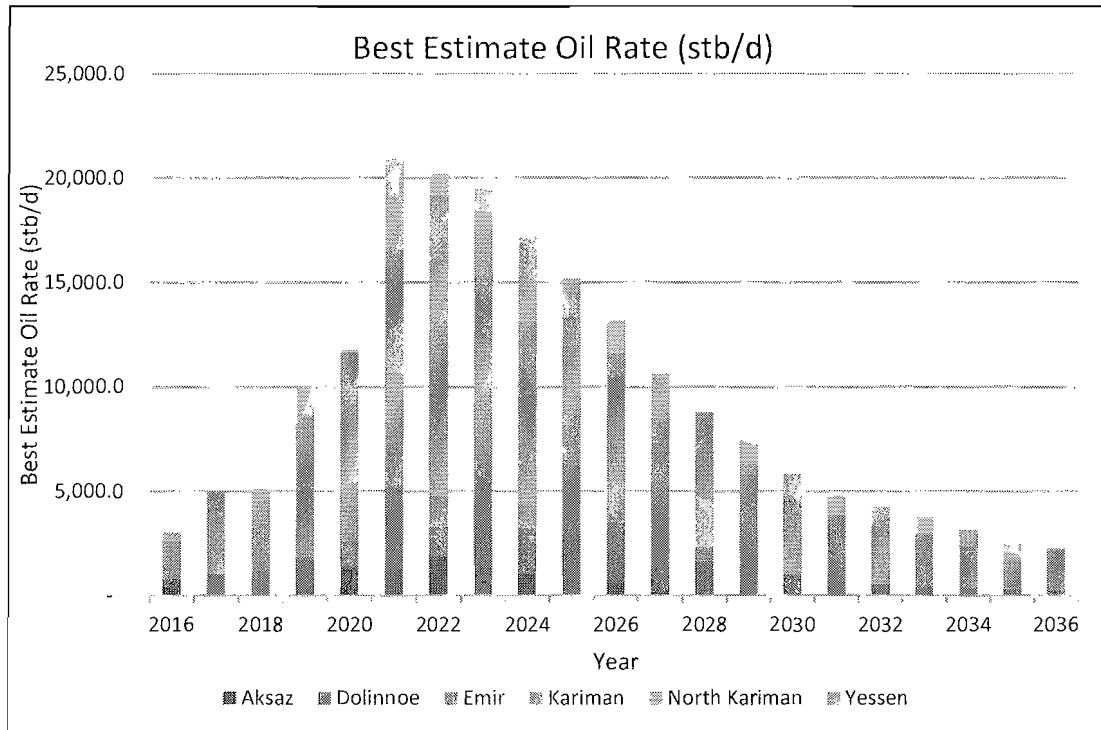


Figure 3-43– Production Forecast Results – Scenario 1 (Best Estimate Oil Profiles)

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

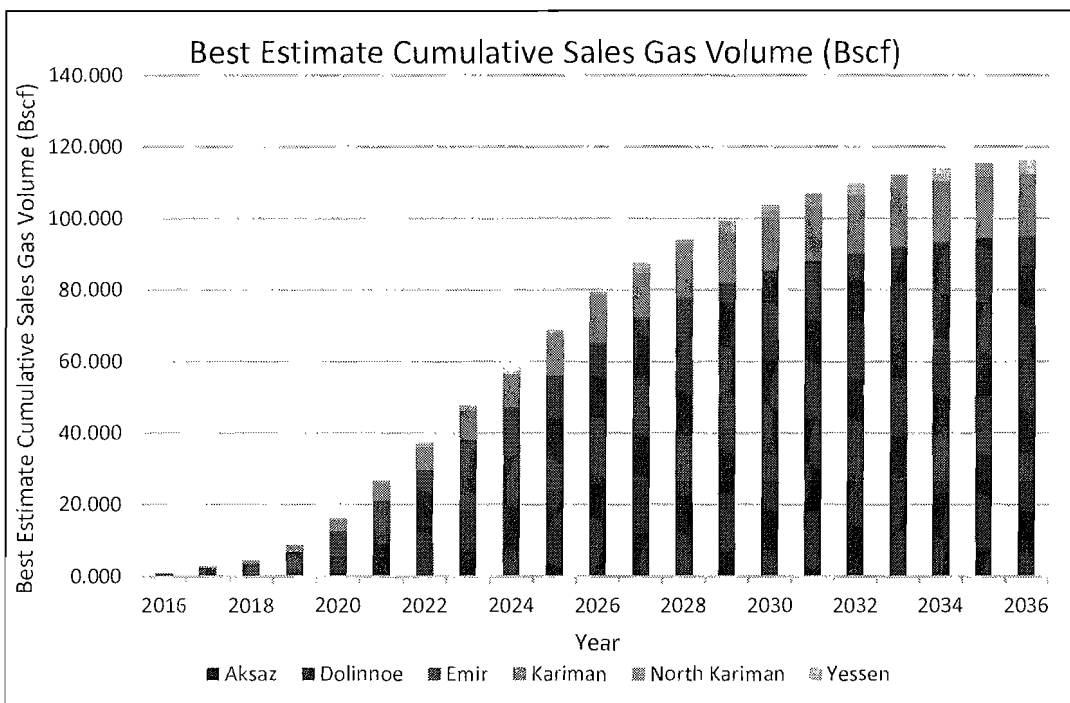
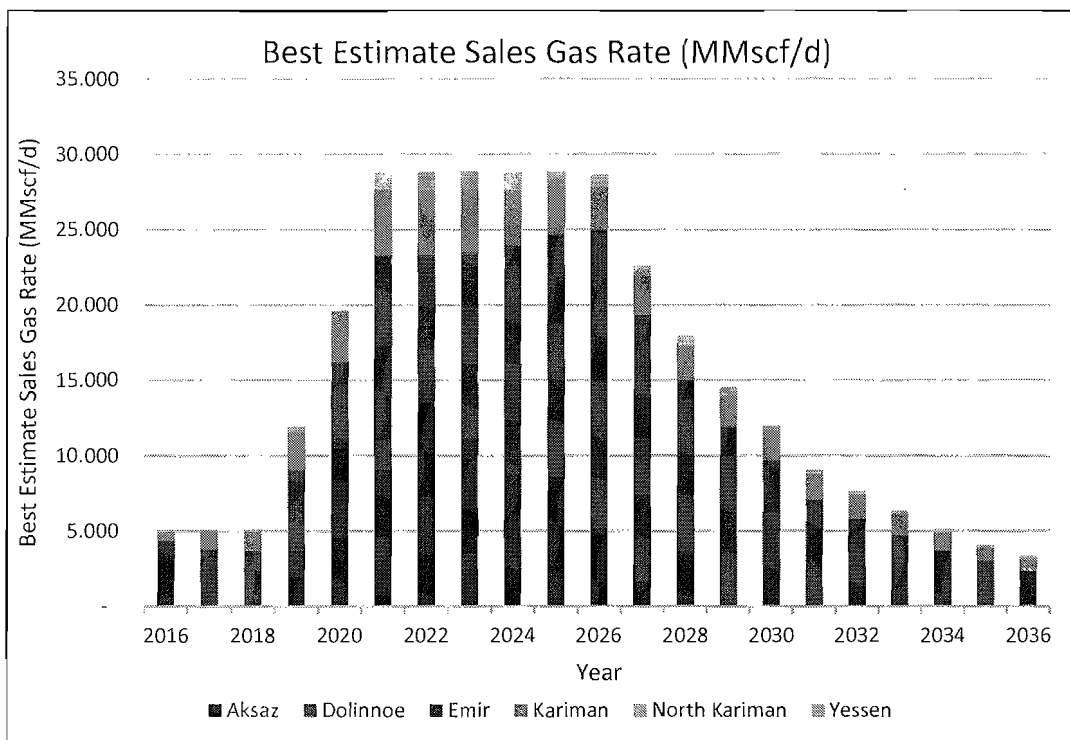


Figure 3-44– Production Forecast Results – Scenario 1 (Best Estimate Gas Profiles)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

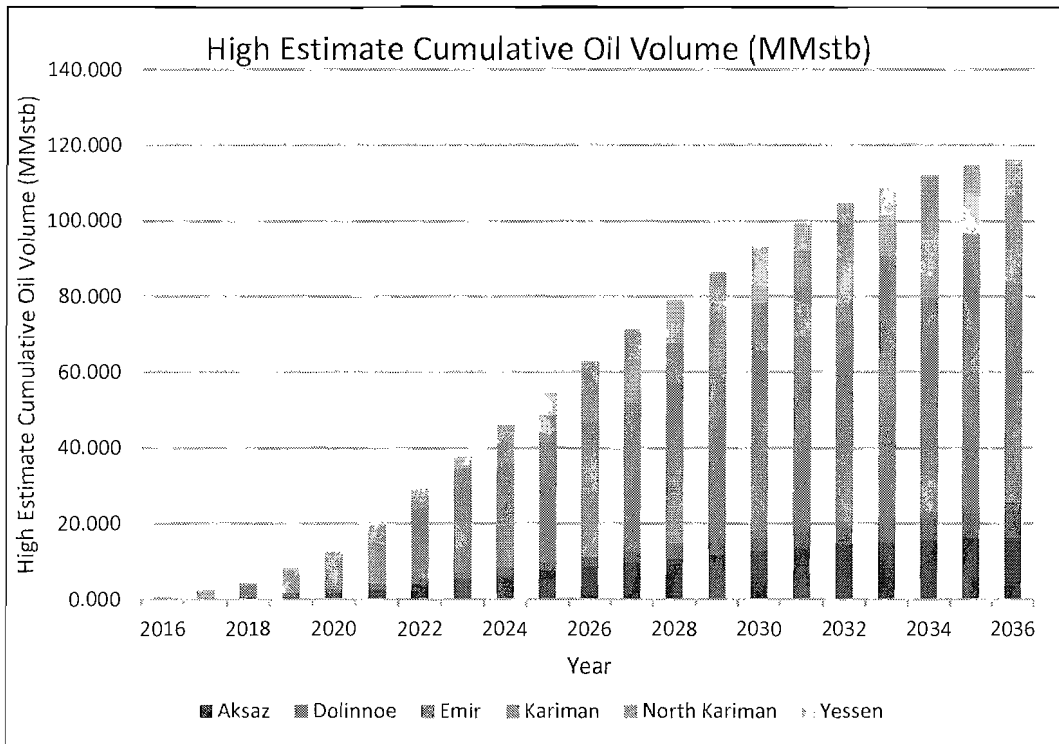
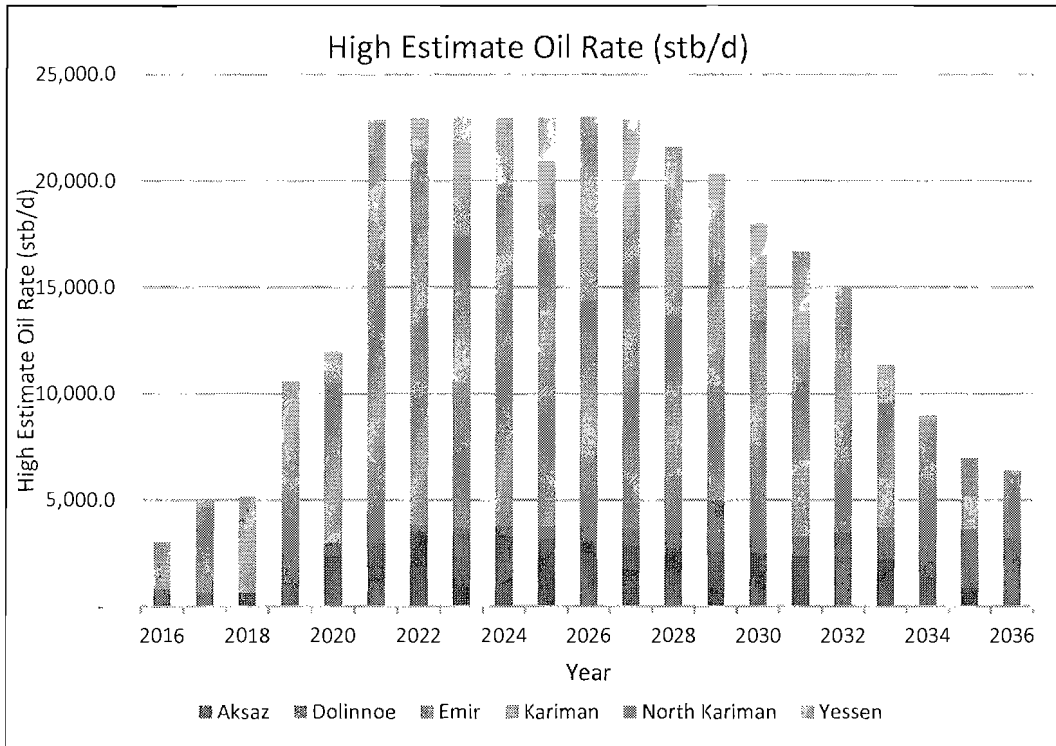


Figure 3-45 – Production Forecast Results – Scenario 1 (High Estimate Oil Profiles)

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

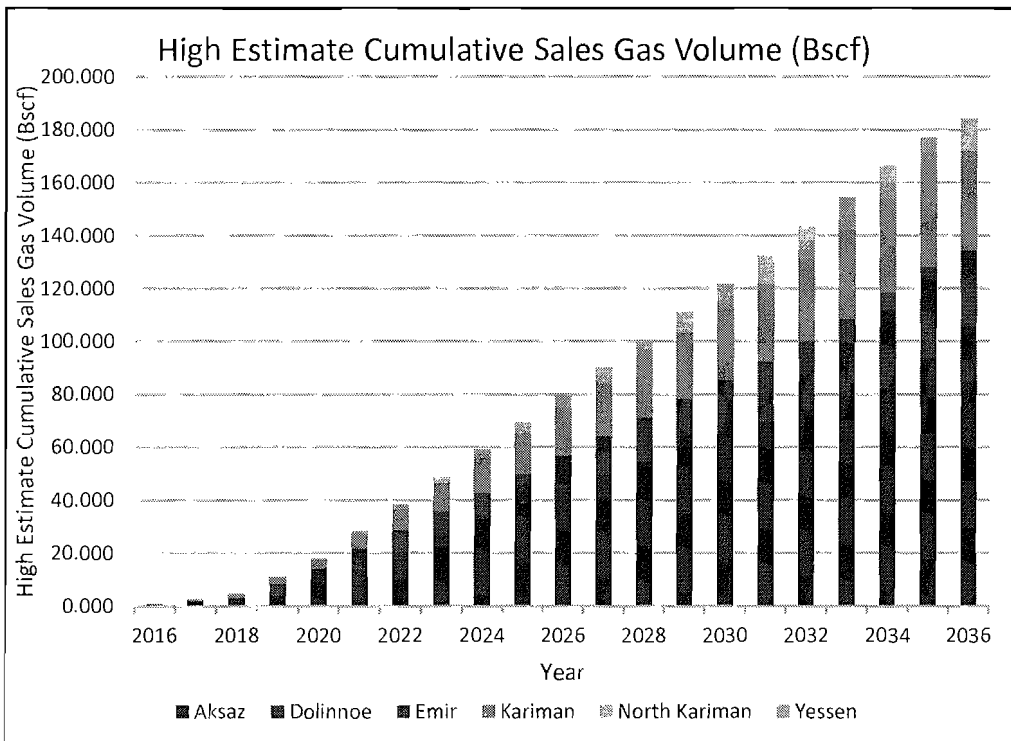
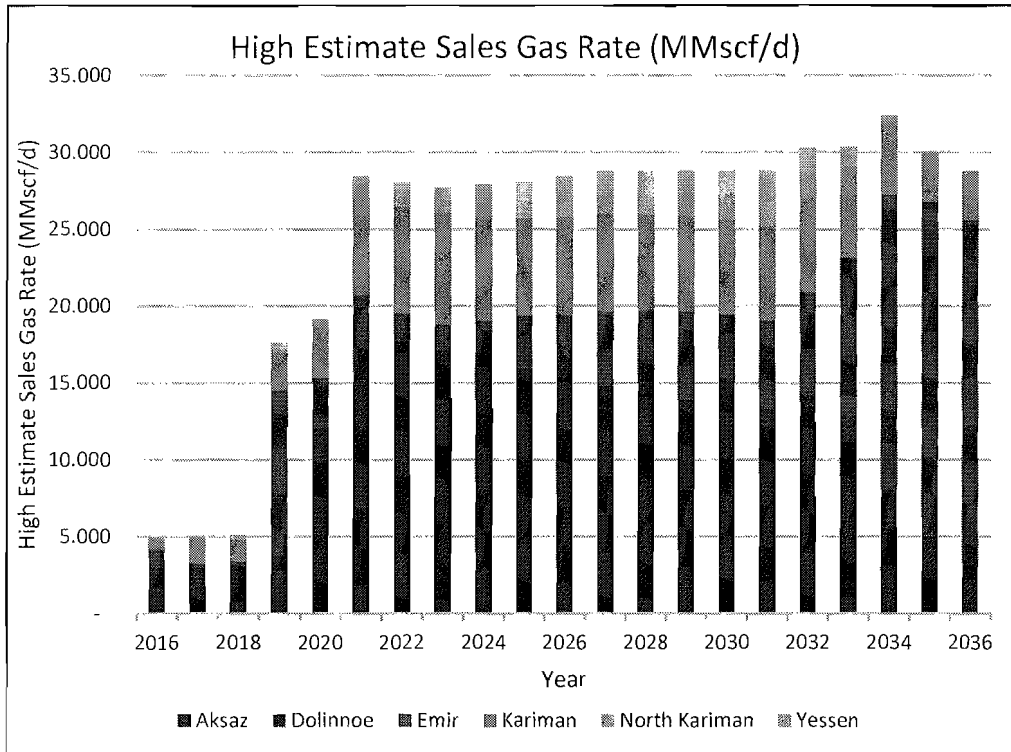


Figure 3-46– Production Forecast Results – Scenario 1 (High Estimate Oil and Gas Profiles)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

APPENDIX I

GLOSSARY OF TECHNICAL TERMS

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT *(Cont'd)*



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

APPENDIX - GLOSSARY OF TECHNICAL TERMS

1C	Low Estimate Contingent Resources
2C	Best Estimate Contingent Resources
3C	High Estimate Contingent Resources
1P	Proved Reserves
2P	Proved plus Probable Reserves
3P	Proved plus Probable plus Possible Reserve
Acre	Area in acre
AOF	Absolute Open Flow
API	American Petroleum Institute
B	billion
bbl	barrels
bbl/d	barrels per day
BBTUD	Billions of British Thermal Units per Day
bcpd	barrels of condensate per day
BOE	barrel of oil equivalent
B_g	gas formation volume factor
B_{gi}	gas formation volume factor (initial)
B_o	oil formation volume factor
B_{oi}	oil formation volume factor (initial)
B_w	water volume factor
bcpd	barrels of condensate per day
bopd	barrels of oil per day
BTU	British Thermal Unit
Bscf	billions of standard cubic feet
bwpd	barrels of water per day
°C	Temperature in Centigrade
cc	cubic centimeter
CGR	condensate gas ratio
cP	Viscosity in centiPoise
DCQ	daily contracted quantity direct
DST	Drill Stem Test
Entitlement Volumes	the volumes of oil and/or gas which a Contractor receives under the terms of a PSC
ELT	Economics Limit Test
EUR	Estimated Ultimate Recovery

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

APPENDIX - GLOSSARY OF TECHNICAL TERMS

°F	Temperature in Fahrenheit
FBHP	flowing bottom hole pressure
FTHP	flowing tubing head pressure
FTHT	flowing tubing head temperature
ft	Length in feet
ft ³	Volume in cubic feet
ftSS	depth in feet below sea level
GEF	Gas Expansion Factor
GIP	Gas in Place
GIIP	Gas Initially in Place
gm	Weight in grams
gm/cc	Density in grams per cubic centimeter
GOR	gas/oil ratio
GRV	gross rock volume
GSA	Gas Sales Agreement
GWC	gas water contact
lb	Weight in pounds
lb/cuft	Density in pounds per cubic feet
KB	Kelly Bushing
km	Length in kilometers
km ²	Area in square kilometers
km ³	Volume in cubic kilometers
m	Length in meter
MM	million
MM\$	million US dollars
MD	measured depth
mD	permeability in millidarcies
MDT	Modular Formation Dynamics Tester
m ³	cubic meters
m ³ /d	cubic meters per day
MMscf/d	millions of standard cubic feet per day
Money of the Day	Cash values calculated to include the effect of inflation
NTG	net to gross ratio
NPV	Net Present Value



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

APPENDIX - GLOSSARY OF TECHNICAL TERMS

OWC	oil water contact
P1	Proved Reserves
P2	Probable Reserves
P3	Possible Reserves
P ₁₀	Probability of 10% chance the value would be larger than the reported and considered high value
P ₅₀	Probability of 50% chance the value would be larger than the reported and considered best value
P ₉₀	Probability of 90% chance the value would be larger than the reported and considered low value
P _b	bubble point pressure
P _c	capillary pressure
petroleum	deposits of oil and/or gas
phi	porosity fraction
phia	Effective porosity fraction
p _i	initial reservoir pressure
PRMS	Petroleum Resources Management System (SPE Terminology)
PSC	Production Sharing Contract
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
rcf	Volume in reservoir cubic feet
Real	Cash values calculated to exclude the effects of inflation
scf	standard cubic feet measured at 14.7 pounds per square inch and 60°F
scfd	standard cubic feet per day
scf/stb	standard cubic feet per stock tank barrel
stb	stock tank barrels measured at 14.7 pounds per square inch and 60°F
stb/d	stock tank barrels per day
stb/MMscf	stock tank barrels per million standard cubic feet measured at 14.7 pounds per square inch and 60°F
STOIIP	stock tank oil initially in place
S _w	water saturation
US\$	United States Dollars
TAC	Technical Assistance Contract
TAN	Total Acid Number (of oil)

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)

**INDEPENDENT TECHNICAL EXPERT REPORT**

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

APPENDIX - GLOSSARY OF TECHNICAL TERMS

Tscf	trillion standard cubic feet
TVDSS	true vertical depth (sub-sea)
TVT	true vertical thickness
TWT	two-way time
US\$	United States Dollar
V _{sh}	shale volume
WI	Working Interest
WC	water cut
WHP	Well Head Pressure
φ	porosity



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

APPENDIX II

RESERVES AND RESOURCES DEFINITIONS AND GUIDELINES



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)


INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

RESERVES AND RESOURCES DEFINITIONS AND GUIDELINES
Society of Petroleum Engineers (SPE), World Petroleum Council (WPC), American Association of Petroleum Geologists (AAPG), and Society of Petroleum Evaluation Engineers (SPEE)
Petroleum Resources Management System (PRMS)
Definitions and Guidelines (9)
Preamble

Petroleum resources are the estimated quantities of hydrocarbons naturally occurring on or within the Earth's crust. Resource assessments estimate total quantities in known and yet-to-be-discovered accumulations; resources evaluations are focused on those quantities that can potentially be recovered and marketed by commercial projects. A petroleum resources management system provides a consistent approach to estimating petroleum quantities, evaluating development projects, and presenting results within a comprehensive classification framework.

International efforts to standardize the definition of petroleum resources and how they are estimated began in the 1930s. Early guidance focused on Proved Reserves. Building on work initiated by the Society of Petroleum Evaluation Engineers (SPEE), SPE published definitions for all Reserves categories in 1987. In the same year, the World Petroleum Council (WPC, then known as the World Petroleum Congress), working independently, published Reserves definitions that were strikingly similar. In 1997, the two organizations jointly released a single set of definitions for Reserves that could be used worldwide. In 2000, the American Association of Petroleum Geologists (AAPG), SPE and WPC jointly developed a classification system for all petroleum resources. This was followed by additional supporting documents: supplemental application evaluation guidelines (2001) and a glossary of terms utilized in Resources definitions (2005). SPE also published standards for estimating and auditing Reserves information (revised 2007).

These definitions and the related classification system are now in common use internationally within the petroleum industry. They provide a measure of comparability and reduce the subjective nature of resources estimation. However, the technologies employed in petroleum exploration, development, production and processing continue to evolve and improve. The SPE Oil and Gas Reserves Committee works closely with other organizations to maintain the definitions and issues periodic revisions to keep current with evolving technologies and changing commercial opportunities.

The SPE PRMS document consolidates, builds on, and replaces guidance previously contained in the 1997 Petroleum Reserves Definitions, the 2000 Petroleum Resources Classification and Definitions publications, and the 2001 "Guidelines for the Evaluation of Petroleum Reserves and Resources"; the latter document remains a valuable source of more detailed background information.

These definitions and guidelines are designed to provide a common reference for the international petroleum industry, including national reporting and regulatory disclosure agencies, and to support petroleum project and portfolio management requirements. They are intended to improve clarity in global communications regarding petroleum resources. It is expected that SPE PRMS will be supplemented with industry education programs and application guides addressing their implementation in a wide spectrum of technical and/or commercial settings.

It is understood that these definitions and guidelines allow flexibility for users and agencies to tailor application for their particular needs; however, any modifications to the guidance contained herein should be clearly identified. The definitions and guidelines contained in this document must not be construed as modifying the interpretation or application of any existing regulatory reporting requirements.

9 These Definitions and Guidelines are extracted from the Society of Petroleum Engineers / World Petroleum Council / American Association of Petroleum Geologists / Society of Petroleum Evaluation Engineers (SPE/WPC/AAPG/SPEE) Petroleum Resources Management System document ("SPE PRMS"), approved in March 2007, and available, free and in full, at: www.spe.org/spe-app/spe/industry/reserves/index.htm



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

RESERVES

Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions.

Reserves must satisfy four criteria: they must be discovered, recoverable, commercial, and remaining based on the development project(s) applied. Reserves are further subdivided in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their development and production status. To be included in the Reserves class, a project must be sufficiently defined to establish its commercial viability. There must be a reasonable expectation that all required internal and external approvals will be forthcoming, and there is evidence of firm intention to proceed with development within a reasonable time frame. A reasonable time frame for the initiation of development depends on the specific circumstances and varies according to the scope of the project. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. In all cases, the justification for classification as Reserves should be clearly documented. To be included in the Reserves class, there must be a high confidence in the commercial producibility of the reservoir as supported by actual production or formation tests. In certain cases, Reserves may be assigned on the basis of well logs and/or core analysis that indicate that the subject reservoir is hydrocarbon-bearing and is analogous to reservoirs in the same area that are producing or have demonstrated the ability to produce on formation tests.

Proved Reserves

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.

If deterministic methods are used, the term reasonable certainty is intended to express a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. The area of the reservoir considered as Proved includes:

- the area delineated by drilling and defined by fluid contacts, if any, and
- adjacent undrilled portions of the reservoir that can reasonably be judged as continuous with it and commercially productive on the basis of available geoscience and engineering data.

In the absence of data on fluid contacts, Proved quantities in a reservoir are limited by the lowest known hydrocarbon (LKH) as seen in a well penetration unless otherwise indicated by definitive geoscience, engineering, or performance data. Such definitive information may include pressure gradient analysis and seismic indicators. Seismic data alone may not be sufficient to define fluid contacts for Proved Reserves (see "2001 Supplemental Guidelines," Chapter 8). Reserves in undeveloped locations may be classified as Proved provided that the locations are in undrilled areas of the reservoir that can be judged with reasonable certainty to be commercially productive. Interpretations of available geoscience and engineering data indicate with reasonable certainty that the objective formation is laterally continuous with drilled Proved locations. For Proved Reserves, the recovery efficiency applied to these reservoirs should be defined based on a range of possibilities supported by analogs and sound engineering judgment considering the characteristics of the Proved area and the applied development program.



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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

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.

It is equally likely that actual remaining quantities recovered will be greater than or less than the sum of the estimated Proved plus Probable Reserves (2P). In this context, when probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the 2P estimate. Probable Reserves may be assigned to areas of a reservoir adjacent to Proved where data control or interpretations of available data are less certain. The interpreted reservoir continuity may not meet the reasonable certainty criteria. Probable estimates also include incremental recoveries associated with project recovery efficiencies beyond that assumed for Proved.

Possible Reserves

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

The total quantities ultimately recovered from the project have a low probability to exceed the sum of Proved plus Probable plus Possible (3P), which is equivalent to the high estimate scenario. When probabilistic methods are used, there should be at least a 10% probability that the actual quantities recovered will equal or exceed the 3P estimate. Possible Reserves may be assigned to areas of a reservoir adjacent to Probable where data control and interpretations of available data are progressively less certain. Frequently, this may be in areas where geoscience and engineering data are unable to clearly define the area and vertical reservoir limits of commercial production from the reservoir by a defined project. Possible estimates also include incremental quantities associated with project recovery efficiencies beyond that assumed for Probable.

Probable and Possible Reserves

(See above for separate criteria for Probable Reserves and Possible Reserves.)

The 2P and 3P estimates may be based on reasonable alternative technical and commercial interpretations within the reservoir and/or subject project that are clearly documented, including comparisons to results in successful similar projects. In conventional accumulations, Probable and/or Possible Reserves may be assigned where geoscience and engineering data identify directly adjacent portions of a reservoir within the same accumulation that may be separated from Proved areas by minor faulting or other geological discontinuities and have not been penetrated by a wellbore but are interpreted to be in communication with the known (Proved) reservoir. Probable or Possible Reserves may be assigned to areas that are structurally higher than the Proved area. Possible (and in some cases, Probable) Reserves may be assigned to areas that are structurally lower than the adjacent Proved or 2P area. Caution should be exercised in assigning Reserves to adjacent reservoirs isolated by major, potentially sealing, faults until this reservoir is penetrated and evaluated as commercially productive. Justification for assigning Reserves in such cases should be clearly documented. Reserves should not be assigned to areas that are clearly separated from a known accumulation by non-productive reservoir (i.e., absence of reservoir, structurally low reservoir, or negative test results); such areas may contain Prospective Resources. In conventional accumulations, where drilling has defined a highest known oil (HKO) elevation and there exists the potential for an associated gas cap, Proved oil Reserves should only be assigned in the structurally higher portions of the reservoir if there is reasonable certainty that such portions are initially above bubble point pressure based on documented engineering analyses. Reservoir portions that do not meet this certainty may be assigned as Probable and Possible oil and/or gas based on reservoir fluid properties and pressure gradient interpretations.



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

CONTINGENT RESOURCES

Those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable due to one or more contingencies.

Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

PROSPECTIVE RESOURCES

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

Potential accumulations are evaluated according to their chance of discovery and, assuming a discovery, the estimated quantities that would be recoverable under defined development projects. It is recognized that the development programs will be of significantly less detail and depend more heavily on analog developments in the earlier phases of exploration.

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

Project activities are focused on assessing the chance of discovery and, assuming discovery, the range of potential recoverable quantities under a commercial development program.

Lead- A project associated with a potential accumulation that is currently poorly defined and requires more data acquisition and/or evaluation in order to be classified as a prospect.

Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to confirm whether or not the lead can be matured into a prospect. Such evaluation includes the assessment of the chance of discovery and, assuming discovery, the range of potential recovery under feasible development scenarios.

Play- A project associated with a prospective trend of potential prospects, but which requires more data acquisition and/or evaluation in order to define specific leads or prospects.

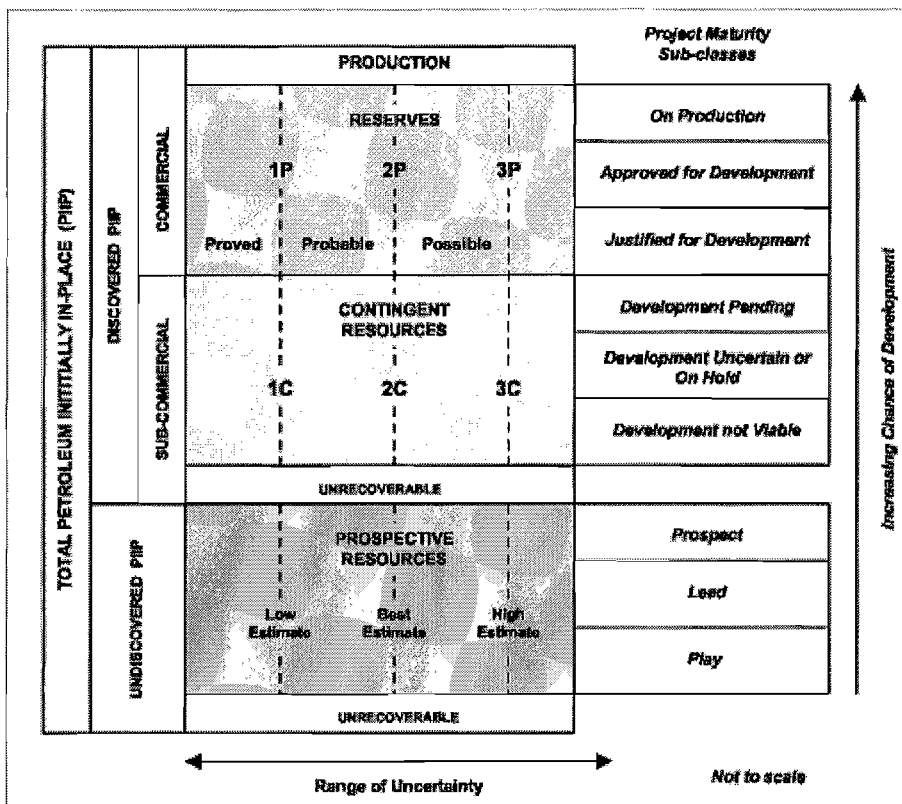
Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to define specific leads or prospects for more detailed analysis of their chance of discovery and, assuming discovery, the range of potential recovery under hypothetical development scenarios.

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT TECHNICAL EXPERT REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016





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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

END OF INDEPENDENT TECHNICAL EXPERT REPORT



**INDEPENDENT VALUATION REPORT
OF EMIR-OIL CONCESSION BLOCK,
ONSHORE KAZAKHSTAN
AS OF JULY 1, 2016**

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The opinions and interpretations presented in this report represent our best technical interpretation of the data made available to us. However, due to the uncertainty inherent in the estimation of all sub-surface parameters, we cannot, and do not guarantee the accuracy or correctness of any interpretation and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Except for the provision of professional services on a fee basis, RPS Energy Consultants Limited does not have a commercial arrangement with any other person or company involved in the interests that are the subject of this report.

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT VALUATION REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

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I Introduction

In response to Reach Energy Berhad's ("REB" or the "Company") request, RPS Energy Consultants Limited ("RPS") has completed a technical and commercial due diligence of the Emir-Oil Concession Block ("Asset" or the "Property") indirectly owned by MIE Holdings Corporation ("MIE") in relation to MIE's 100% working interest in Emir-Oil LLP ("Emir-Oil"). The Emir-Oil Concession Block, located onshore Kazakhstan consists of 850.3 square kilometers ("km²") petroleum concession areas divided into four production and one exploration contract areas. Subsequently, RPS has undertaken an independent valuation and conducted a Reserves evaluation of the Emir-Oil Concession Block.

RPS undertook this audit following the signing of a Letter of Engagement under a Call Off Agreement dated January 30, 2015 and Call Off Order dated August 3, 2016.

RPS has previously evaluated the Asset in the report entitled "Independent Valuation Report of Emir-Oil Concession Block, Onshore Kazakhstan as of January 1, 2016" by RPS Energy Consultants Limited, hereinafter referred to as the "RPS 2016 January Report". This report used various data provided by the company including third party reserves reports prepared by Chapman Petroleum Engineering Ltd, the latest of which was the January 1, 2015 report entitled "Reserve and Economic Evaluation Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned by MIE Holdings Corporation January 1, 2015" dated March 4, 2015 by Chapman Petroleum Engineering Ltd (hereinafter referred to as the "Chapman 2015 Report").

For this updated evaluation the Company provided RPS with the well production data in Excel file format. Additionally, the Company provided various third party reserves reports prepared by Chapman Petroleum Engineering Ltd. RPS derived its primary data source and formed its audit opinion based on the data associated with the report "Evaluation of Reserve and Prospective Resources Oil and Gas Properties, ADEK Block (Licence Area), Mangistau Oblast, Republic of Kazakhstan for MIE Holdings Corporation, December 31, 2015 (January 1, 2016), Chapman Petroleum Engineering Ltd.", dated March 9, 2016 by Chapman Petroleum Engineering Ltd (hereinafter referred to as the "Chapman Report"). However, the Chapman Report was only used as one of the sources of data and other data provided included production and exploration contracts, commercial data and economic models, selected well reports, well tests and PVT data, electric well logs LAS files, selected wells petrophysical interpretations and other relevant subsurface data. RPS has used these data as a source of information to form its audit opinion and derive at its interpretation and conclusions

1.1 Overview of the Asset

The Emir-Oil Concession Block ("Asset"), located onshore Kazakhstan being reviewed and audited by RPS consists of the following: Kariman oil field Production Contract, Dolinnoe oil field Production Contract, Aksaz gas-condensate field Production Contract, Emir oil field Production Contract, North Kariman oil field Discovery, Yessen oil field Discovery, and the prospects under the exploration contract. The Kariman, Dolinnoe, North Kariman and Aksaz fields are currently on production. The Asset location map is included in **Figure 1-1**.

The Asset production contracts and exploration contract map is shown in **Figure 1-2**, and the summary of contracts for each field is provided in **Table 1-1**.

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Table 1-1 – Overview of Emir-Oil Concession Production and Exploration Contracts

Contract Names	Acreage (km ²)	Contract Type	Effective Date	Duration (Years)	MIE's Net Working Interest
Kariman	12.24	Production	09 Sep 2011	25	100%
Dolinnoe	18.24	Production	09 Sep 2011	25	
Aksaz	11.48	Production	09 Sep 2011	25	
Emir	3.53	Production	01 Mar 2013	17	
Exploration	804.81	Exploration	The contract was extended for two years from 9 January 2015 to 9 January 2017.		

Aksaz gas field was discovered in 1995 and began production in 2005. As of **June 30, 2016**, a total of seven wells have been drilled in the field, of which three are producing and four are shut-in. Current production is approximately 168 stb/day of condensate, and the cumulative condensate production as of **June 30, 2016** is 979 Mstb.

Dolinnoe field was discovered in 1994 and began production in 2004. As of **June 30, 2016**, a total of ten wells have been drilled in the field, with five wells producing and four suspended and a new exploration/appraisal well (Dolinnoe-8) has been spudded on June 29, 2016 and is currently being drilled. Current production is approximately 465 stb/day of oil, and the cumulative oil production as of **June 30, 2016** is 1,923 Mstb.

Emir oil field was discovered in 1996 and put into production in 2004. As of **June 30, 2016**, four wells have been drilled with none currently producing. The cumulative oil production as of **June 30, 2016** is 21 Mstb.

Kariman oil field was discovered in 2006 and began production in 2006. As of **June 30, 2016**, a total of 22 wells have been drilled in the field of which four are currently on production. Current production is approximately 1,927 stb/day of oil, and the cumulative oil production as of **June 30, 2016** is 7,306 Mstb.

North Kariman-2 well has been producing since June 2012 on pilot oil production under an exploration contract. The produced oil is piped into the current production system. As the exploration contract is expiring in January 2017, the Operator has already submitted an application to extend the current Kariman production contract area to the north to include North Kariman Field. As of **June 30, 2016**, a total of two wells have been drilled in the field and one is currently producing. Current production is approximately 482 stb/day of oil, and the cumulative oil production as of **June 30, 2016** is 621 Mstb.

As of **June 30, 2016**, a total of three wells have been drilled in the Yessen field where two are currently temporarily shut-in and a new exploration/appraisal well (Yessen-3) has been spudded on June 29 2016 and is currently being drilled. The field has been on production since April 2013 on pilot oil production under the exploration contract. As the exploration contract is expiring in January 2017, the Operator has already submitted an application to extend the Dolinnoe production license area to the east to include the Yessen Field. The cumulative oil production for the field is 40 Mstb.

The Operator does not record the produced gas volumes for all the above fields consistently. There were only some periods where the produced gas was recorded. However, there were also lapsed periods where the produced gas was not recorded. Therefore, RPS is unable to report the cumulative gas volumes, which have been produced from the aforementioned fields.

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT (Cont'd)



INDEPENDENT VALUATION REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Currently the Operator rents the surface crude oil storage and processing facilities. The oil storage facilities were expanded in 2010 resulting in the current storage capacity of 54,100 barrels and a processing capacity of 7,540 bbl oil per day. However, the Operator's share of processing capacity is only 6,458 bbl of oil per day. Crude oil is currently transported to the nearby oil storage and processing facilities by truck, and then transported by train to the point of sale at Mangyshlak Train Station. Euro Asia Oil is the current purchaser of oil and the final price is settled on a FOB (Free On Board) basis with the sales volume and price determined monthly as the export volume needs to be approved and verified by the Kazakhstan government. Oil price is indexed to Brent crude price and the price is on a discounted basis to account for transportation. The Operator is constructing a new central processing facility ("CPF") with an oil processing capacity of 12,000 bbl of oil per day; and a 25 km oil transportation pipeline will be built from the CPF to KazTransOil ("KTO") Oil Pipeline. Once the upgrade is completed, oil transportation will be purely based on pipelines.

Gas processing facilities were initially established between 2008 and 2009 with processing capacity of 100,000 m³/d or 3.5 MMscf/d. In 2009 the plant capacity was increased to current level of 140,000 m³/d or sales gas at 4.9 MMscf/d (5.5 MMscf/d for raw gas), of which 105,000 m³/d (3.7 MMscf/d) and 35,000 m³/d (1.2 MMscf/d) is for Aksaz and Dolinnoe (including Kariman) fields, respectively. Produced gas is sold to KazTransGas Aimak JSC. The gas sales contract including the gas price and offtake volumes have historically been agreed on an annual basis. RPS's valuation assumes sales gas price to be US\$0.77/Mscf for the rest of 2016 based on the latest gas sales agreement for 2016 provided by MIE. The 2016 sales contract stipulates that the buyer takes 4.65 million m³/month, about 152,000 m³/d or around 5.4 MMscf/d. RPS notes that the gas sales contract is renewed annually. It should be noted that even though the gas price is considered low compared to other regions, the gas is associated gas from the developed oilfields and is therefore not subject to the commercial viability requirement. As the oil production is constrained by the limited gas handling facilities, the Operator intends to upgrade the gas processing facilities by building a central processing facility with gas processing capacity of 600,000 m³/d or 21.2 MMscf/d. In addition, a 35 km natural gas transportation pipeline from the CPF to KazTransGas Aimak Gas Pipeline is planned, and that will result in increased gas sales volumes.

1.2 Site Visit

RPS has not undertaken any site visit to the Emir-Oil Concession Block. Bureau Veritas Kazakhstan Industrial Services LLP was engaged by Reach Energy Berhad to conduct an independent facilities review, and a site inspection visit was conducted on April 28 - 30th, 2016. The RPS team gathered the data for the Independent Valuation Report of the Emir-Oil Concession Block As of January 1st, 2016 ("IVR") from the third party reserves reports prepared by Chapman Petroleum Engineering Ltd, virtual data room ("VDR"), physical data room in Beijing, and also discussed with MIE on the current and future plans of the Emir-Oil Concession Block.

1.3 Health Safety and Environment ("HSE")

REB has conducted a site operations visit to the Emir-Oil facilities in January 2016. Based on REB's desktop review and their site visit inspection, REB is of the opinion that the facilities are being managed, operated and maintained in accordance to standard oil and gas industry practices. In REB's opinion, the overall HSE practices in Emir-Oil are well structured and implemented. The HSE practices have been maintained to industry standards and adhere to the regulations imposed by the Ministry of Energy ("MOE") Kazakhstan. Based on REB's observation, Emir-Oil's personnel who handle HSE matters are competent. During the site visit, REB also felt that there was clear evidence that the personnel, contractors, communities and local authorities are satisfied with Emir-Oil activities, and its contributions to local aspirations. The Operator's staffing of some 210 personnel is highly localised with competent Kazakh staff.

INDEPENDENT TECHNICAL EXPERT AND VALUATION REPORT *(Cont'd)*



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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



INDEPENDENT VALUATION REPORT
 OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

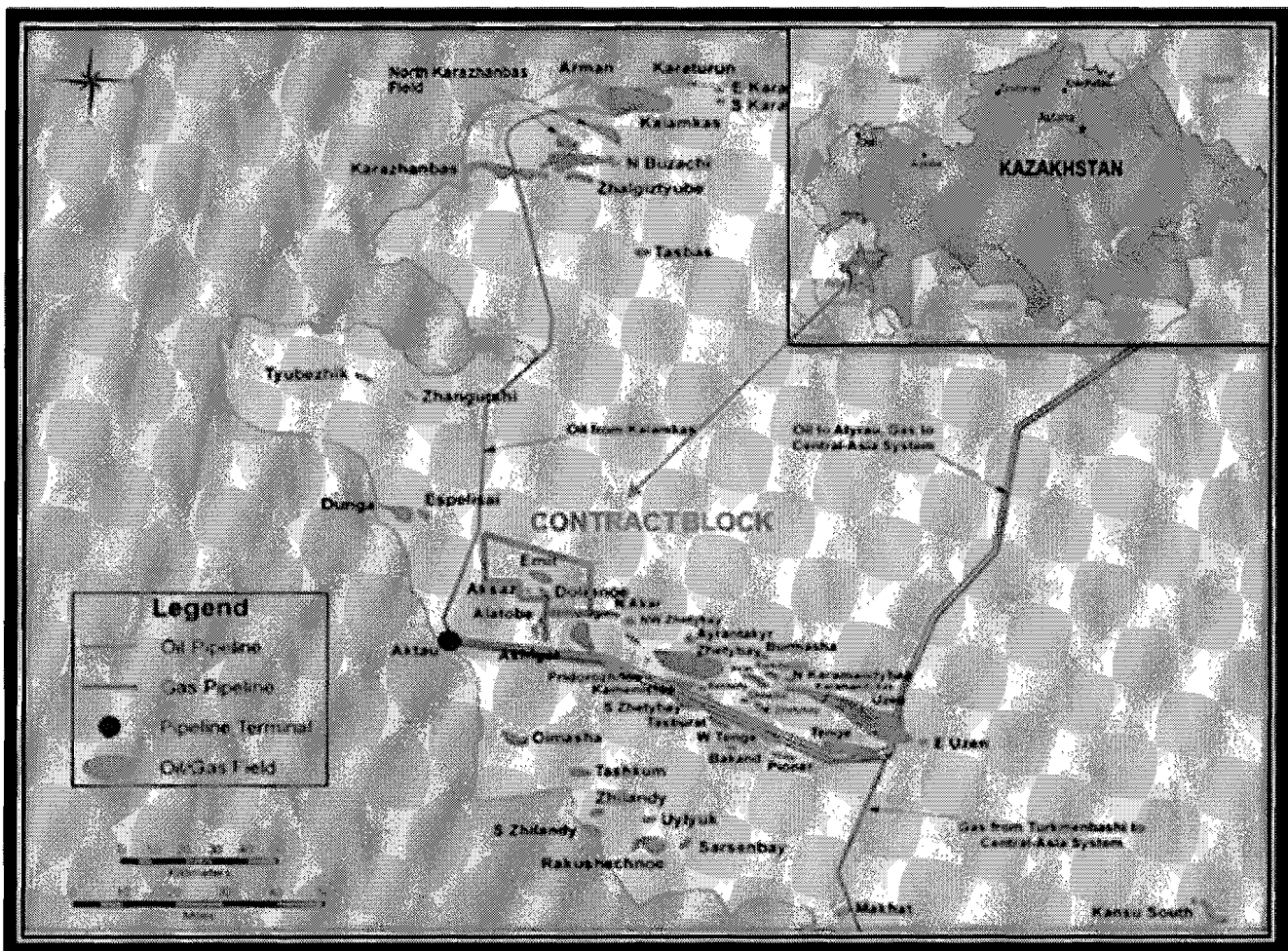
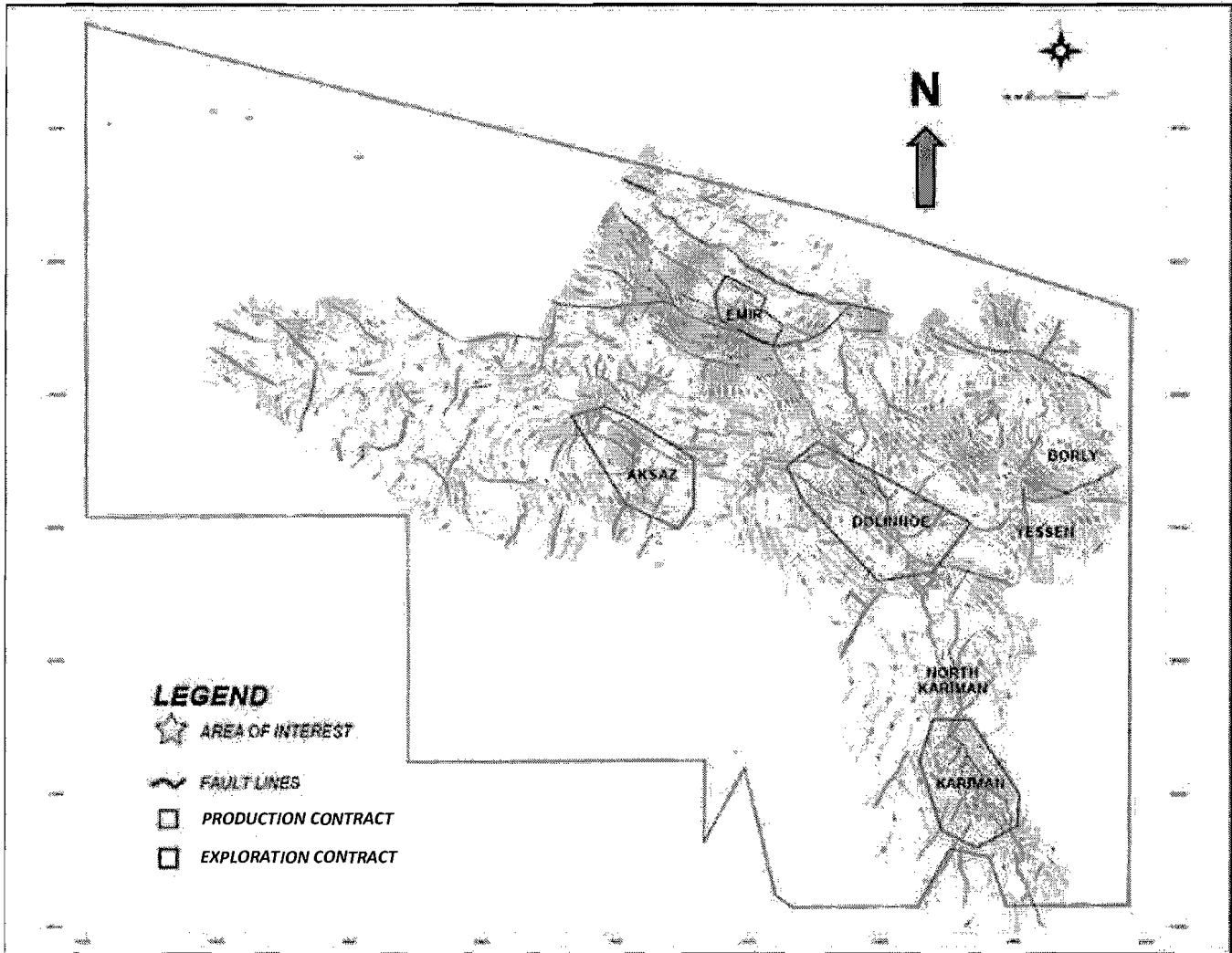


Figure 1-1 – Asset Location Map

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INDEPENDENT VALUATION REPORT
OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016



Source Modified from: Reserve and Economic Evaluation Oil and Gas Properties ADEK Block Republic of Kazakhstan Owned By MIE Holdings Corporation January 1, 2015; report dated March 4, 2015 by Chapman Petroleum Engineering Ltd.

Figure 1-2 – Asset Production Contracts and Exploration Contract Map



INDEPENDENT VALUATION REPORT

OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

2 Development Plan

Currently the Operator rents the surface crude oil storage and processing facilities. The oil storage facilities were expanded in 2010 resulting in the current storage capacity of 54,100 barrels and a processing capacity of 7,540 bbl oil per day. However, the Operator's share of processing capacity is only 6,458 bbl of oil per day. Crude oil is currently transported to the nearby oil storage and processing facilities by truck, and then transported by train to the point of sale at Mangyshlak Train Station. Euro Asia Oil is the current purchaser of oil and the final price is settled on a FOB (Free On Board) basis with the sales volume and price determined monthly as the export volume needs to be approved and verified by the Kazakhstan government. Oil price is indexed to Brent crude price and the price is on a discounted basis to account for transportation. The Operator is constructing a new central processing facility ("CPF") with an oil processing capacity of 12,000 bbl of oil per day; and a 25 km oil transportation pipeline will be built from the CPF to KazTransOil ("KTO") Oil Pipeline. Once the upgrade is completed, oil transportation will be purely based on pipelines.

Gas processing facilities were initially established between 2008 and 2009 with processing capacity of 100,000 m³/d or 3.5 MMscf/d. In 2009 the plant capacity was increased to current level of 140,000 m³/d or sales gas at 4.9 MMscf/d (5.5 MMscf/d for raw gas), of which 105,000 m³/d (3.7 MMscf/d) and 35,000 m³/d (1.2 MMscf/d) is for Aksaz and Dolinnoe (including Kariman) fields, respectively. Produced gas is sold to KazTransGas Aimak JSC. The gas sales contract including the gas price and offtake volumes have historically been agreed on an annual basis. RPS's valuation assumes sales gas price to be US\$0.77/Mscf for the rest of 2016 based on the latest gas sales agreement for 2016 provided by MIE. The 2016 sales contract stipulates that the buyer takes 4.65 million m³/month, about 152,000 m³/d or around 5.4 MMscf/d. RPS notes that the gas sales contract is renewed annually. It should be noted that even though the gas price is considered low compared to other regions, the gas is associated gas¹ from the developed oilfields and is therefore not subject to the commercial viability requirement. As oil production is constrained by the limited gas handling facilities, the Operator intends to upgrade the gas processing facilities by building a central processing facility with gas processing capacity of 600,000 m³/d or 21 MMscf/d. In addition, a 35 km natural gas transportation pipeline from the central processing facility to KazTransGas Aimak Gas Pipeline is planned, and that will result in increased gas sales volumes.

The new CPF (including processing facilities) is being developed over two phases. Phase 1 of the CPF is scheduled for completion by end of 2016 and will commence operations once the pipelines are ready, which is expected to be at the end of 2018. Phase 2 is targeted for commencement of construction in 2019 and is expected to be completed by end of 2020. As Phase 2 has been taken into account in the design and implementation of Phase 1, Emir-Oil will only be required to seek approval for, amongst others, installing an additional modular facility to cater for the increase in capacity for Phase 2, additional new oil and gas pipelines and drilling of additional wells to implement Phase 2. Furthermore, the fields are located onshore, as opposed to offshore, which provides flexibility in terms of the project schedule.

Phase 1 expansion is based on producing Kariman, Dolinnoe and Aksaz fields; and will increase crude oil production capacity to 12,000 stb/d and sales gas to 19 MMscf/d (21.2 MMscf/d for raw gas) by January 2019. The plan was submitted to the Kazakhstan government in November 2013 and was approved in June 20, 2014. Surface infrastructure expansion (only the Central Processing Facility) is already in construction and at the advanced stage of completion.

¹ Associated gas is gas produced as a by-product of the production of oil and associated gas reserves are typically developed for the production of crude oil, which pays for the field development costs.



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Phase 2 well locations are defined within existing producing fields and reservoirs. Phase 2 expansion is based on new “step-out” discoveries for the Kariman, Dolinnoe, and Aksaz fields, and production from the North Kariman field. Phase 2 well locations are defined within existing producing fields and reservoirs and the majority of the wells would be classified as in-fill wells. The plan is to expand crude oil production capacity to 23,000 stb/d and wellhead gas to 31 MMscf/d. The above peak capacity is expected to be reached in 2022. The Phase 1 surface infrastructure currently being built has taken into account Phase 2 expansion. Phase 2 construction is targeted for completion by the end of 2020. In order to implement Phase 2 development, the Operator will be required to seek approval to, amongst others, install additional facility to cater for the increase in capacity for Phase 2, additional new oil and gas pipelines and drill additional wells. The fields are located onshore which allows the Operator the flexibility in terms of timing to commence Phase 2. Further, RPS has also reviewed the Operator’s actions and plans to proceed with Phase 2.

Based on the date of the evaluation and the Operator’s future plans, RPS is of the opinion that Phase 2 is more likely to proceed than not within the next five years. The SPE PRMS Guidelines for Application of the Petroleum Resources Management System (November, 2011) states that if one anticipates that the development would be expected to be initiated within 5 years of assignment, the projects can be classified as Reserves that are classified as Justified for Development subclass. If market conditions remain as they are now or improve, then the Operator can accelerate the Phase 2 development.

In addition to Phase 1 and Phase 2, the Operator has tentatively planned for Phase 3 which is based on full production of the Emir and Yessen fields; and two prospects (Borly and Aidai), to increase crude oil production capacity to 35,000 stb/d of oil and wellhead gas rate to 45 MMscf/d. RPS has not included Phase 3 in the evaluation as the resource base for this investment is speculative at this stage.



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3 Resource Volumes and Production Forecast

3.1 Production Forecast Methodology

The oil and gas production profiles for Emir-Oil Concession Block were generated from six fields (Dolinnoe, Emir, Kariman, North Kariman, Yessen and Aksaz). Borly Prospect had been excluded as Borly-2 did not flow hydrocarbon to surface. The basis for generating production profile for each field was based on:

- Independently estimated STOIP and GIIP by RPS.
- Development plan described in the Chapman Report².
- English translation of Aksaz, Dolinnoe and Kariman full field reports that were made available in the Beijing physical data room.
- RPS estimated oil recovery factor using industry accepted standard correlations (based on fluids and reservoir properties) and RPS's material balance modelling for solution gas drive mechanism. Aksaz field was treated as gas-condensate field and production profiles were generated using material balance software (MBal™).
- Well performance and generation of "Type Wells" based on historical production data (further details can be found in the Independent Technical Expert Report³).

RPS had made some adjustments to the data obtained from the Chapman Report in generating the production profiles for this evaluation:

- The reported initial solution GOR for various reservoirs has a range for all five oil fields. RPS had varied the initial solution GOR for Low, Best and High Estimates.
- RPS had modelled the producing GOR to increase once reservoir pressure declines below saturation pressure. The increasing producing GOR trends were generated using material balance software (MBal™) for all three estimates.
- Since the GOR varies across the field, RPS had used a range of oil FVF (a function of GOR) for Dolinnoe field, ranging from 1.79 to 2.76 rb/stb, to estimate STOIPs for all three estimates.
- RPS independently estimated oil recovery factors for all fields based on reservoir pressure and temperature, fluid properties and drive mechanism for all three estimates.

The production profiles were generated using network modelling proprietary software assuming oil and gas from all these fields are pipelined to process at Central Processing Facility with oil target rate and gas rate being limited by plant capacity, i.e. once the maximum gas rate is reached, the oil rate will be curtailed to maintain the maximum gas production rate. The sales gas volume is estimated after applying fuel shrinkage of 7% (single value) to the wellhead gas.

The production profiles of technically recoverable oil and gas volumes are terminated at the production contract expiry date.

² Evaluation of Reserve and Prospective Resources Oil and Gas Properties, ADEK Block (Licence Area), Mangistau Oblast, Republic of Kazakhstan for MIE Holdings Corporation, December 31, 2015 (January 1, 2016), Chapman Petroleum Engineering Ltd..

³ Independent Technical Expert Report of Emir-Oil Concession Block, Onshore Kazakhstan as of January 1, 2016, RPS Energy Consultants Limited.

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3.2 Production Profile (Scenario-1)

REB had initially specified various development forecast scenarios during the valuation exercise, with each scenario consisting of Low, Best and High volumes and profiles estimates. However, only the final scenario is presented herein. The final scenario target oil and gas rates were derived based on the Operator's Central Processing Facility and infrastructure upgrade plan as described in the Independent Technical Expert Report⁴. Note that RPS only considered Phase 1 and Phase 2 expansion plans in the evaluation, as the resource base used to justify the Phase 3 development is speculative at this stage. Based on the Capex optimisation discussions between MIE and REB, the CAPEX spending (i.e. infill drilling and facility upgrading) has been postponed for two to three years compared to the outlined development plan described in the Independent Technical Expert Report³. RPS has generated the production profiles based on this CAPEX deferment case.

Table 3-1 summarizes the oil and gas rates for Scenario-1. The target oil and wellhead gas rates being 3,025 stb/d and 5.5 MMscf/d, respectively from July 1, 2016 to January 1, 2017, using the rented facility (which has capacity of maximum oil rate of 6,458 stb/d. Note that at the beginning of July 1, 2016, the initial oil production was set to the historical average oil rate for June 2016 (i.e. 3,025 stb/d).

The facility maximum oil rate of 6,458 stb/d commences from January 1, 2017 until December 31, 2018. Facility leasing ceases on December 31, 2018 and Phase 1 increased maximum throughput of 12,000 stb/d of oil and 21.2 MMscf/d of wellhead gas will be available from January 1, 2019 onwards once the 25 km oil pipeline and 35 km gas pipeline are completed. Phase 2 facility increased capacity commences in January 1, 2021 with the target oil rate being 23,000 stb/d and maximum wellhead gas of 31 MMscf/d. Previously, shut-in wells are reactivated from January 1, 2017 onwards to meet various target rates. The aforementioned oil and gas rates appear reasonable based on the development schedule.

Table 3-1 – Scenario-1 Target Rates and Description

Date	Scenario-1		
	Oil Rate/Limit stb/d	Raw Gas Rate MMscf/d	Remarks
1-Jul-2016	3,025 ¹	5.5	Existing wells.
1-Jan-2017	5,000	5.5	Rented facility maximum oil rate and gas rate is 6,458 stb/d and 5.5 MMscf/d, respectively. Reactivation of old wells.
1-Jan-2018	5,250	5.5	Rented facility maximum oil rate and gas rate is 6,458 stb/d and 5.5 MMscf/d, respectively. Reactivation of old wells.
1-Jan-2019 ²	12,000	21.2	Phase 1 postponed to January 2019. No facility leasing.
1-Jan-2021 ²	23,000	31.0	Phase 2 delayed for 2.5 years.

Note:

1) June 2016 average historical oil rate used for forecast.

2) Facilities constrained.

⁴ Independent Technical Expert Report of Emir-Oil Concession Block, Onshore Kazakhstan as of January 1, 2016, RPS Energy Consultants Limited.

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The remaining recoverable oil volumes and sales gas volumes for Scenario I for the Low and Best Estimates, prior to economic limit test ("ELT") are tabulated in **Table 3-2**.

Table 3-2 – Low and Best Estimates Remaining Recoverable Volumes (Based on Scenario-I) as of July 1, 2016

Low and Best Estimate – Remaining Recoverable Volumes		
Gross 100% License Basis		
(Prior to Economic Limit Test)		
Field	Low Estimate	Best Estimate
	Oil Volumes (MMstb)	Oil Volumes (MMstb)
Aksaz	0.204	3.371
Dolinnoe	2.547	9.977
Emir	1.794	3.527
Kariman	14.828	39.723
North Kariman	1.606	6.109
Yessen	3.786	7.309
Emir-Oil Concession Block¹	24.765	70.016
	Sales Gas Volumes (Bscf)	Sales Gas Volumes (Bscf)
Aksaz	3.646	26.609
Dolinnoe	7.922	68.038
Emir	0.191	0.518
Kariman	4.812	17.336
North Kariman	0.404	1.824
Yessen	0.889	1.953
Emir-Oil Concession Block¹	17.863	116.278
Notes:		
1) Totals may not sum to individual values due to rounding.		



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Table 3-3 and **Table 3-4** show the Low Estimate oil rate and oil cumulative production profiles for the fields as well as for the Emir-Oil Concession Block, respectively. And **Table 3-5** and **Table 3-6** tabulate the Low Estimate gas sales rate and gas sales cumulative production profiles for the fields as well as for the Emir-Oil Concession Block, respectively. Similarly, **Table 3-7** and **Table 3-8** show the Best Estimate oil rate and oil cumulative production profiles for the fields and the Concession, respectively. Finally, **Table 3-9** and **Table 3-10** tabulate the Best Estimate gas sales rate and gas sales cumulative production profiles for the fields and the Concession, respectively.

All the tables present the values prior to applying the economic limit test.

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Table 3-3 – Low Estimate Oil Rate (Scenario-1)

Low Estimate Oil Rate (stb/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	191.3	426.2	-	2,191.3	196.7	-	3,005.5
2017	365	24.7	1,200.0	-	3,600.0	175.3	-	5,000.0
2018	365	-	865.8	-	4,000.0	260.3	-	5,126.0
2019	365	-	1,054.8	479.5	5,553.4	1,726.0	1,271.2	10,084.9
2020	366	161.2	1,229.5	1,071.0	5,259.6	953.6	1,352.5	10,027.3
2021	365	142.5	778.1	871.2	5,438.4	526.0	1,197.3	8,953.4
2022	365	71.2	495.9	665.8	4,298.6	293.2	1,052.1	6,876.7
2023	365	35.6	326.0	506.8	3,178.1	161.6	926.0	5,134.2
2024	366	13.7	218.6	385.2	2,267.8	87.4	808.7	3,781.4
2025	365	8.2	153.4	293.2	1,638.4	52.1	684.9	2,830.1
2026	365	2.7	106.8	224.7	1,189.0	27.4	578.1	2,128.8
2027	365	2.7	82.2	169.9	865.8	16.4	487.7	1,624.7
2028	366	-	60.1	131.1	631.1	8.2	407.1	1,237.7
2029	365	-	46.6	98.6	463.0	5.5	345.2	958.9
2030	365	-	38.4	13.7	339.7	2.7	290.4	684.9
2031	365	-	27.4	-	252.1	-	243.8	523.3
2032	366	-	21.9	-	183.1	-	207.7	412.6
2033	365	-	19.2	-	134.2	2.7	172.6	328.8
2034	365	-	13.7	-	98.6	-	145.2	257.5
2035	365	-	13.7	-	74.0	-	123.3	211.0
2036	244	-	12.3	-	57.4	-	106.6	176.2

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Table 3-4 – Low Estimate Cumulative Oil Volume (Scenario-1)

Low Estimate Cumulative Oil Volume (MMstb)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.035	0.078	0.000	0.401	0.036	0.000	0.550
2017	365	0.044	0.516	0.000	1.715	0.100	0.000	2.375
2018	365	0.044	0.832	0.000	3.175	0.195	0.000	4.246
2019	365	0.044	1.217	0.175	5.202	0.825	0.464	7.927
2020	366	0.103	1.667	0.567	7.127	1.174	0.959	11.597
2021	365	0.155	1.951	0.885	9.112	1.366	1.396	14.865
2022	365	0.181	2.132	1.128	10.681	1.473	1.780	17.375
2023	365	0.194	2.251	1.313	11.841	1.532	2.118	19.249
2024	366	0.199	2.331	1.454	12.671	1.564	2.414	20.633
2025	365	0.202	2.387	1.561	13.269	1.583	2.664	21.666
2026	365	0.203	2.426	1.643	13.703	1.593	2.875	22.443
2027	365	0.204	2.456	1.705	14.019	1.599	3.053	23.036
2028	366	0.204	2.478	1.753	14.250	1.602	3.202	23.489
2029	365	0.204	2.495	1.789	14.419	1.604	3.328	23.839
2030	365	0.204	2.509	1.794	14.543	1.605	3.434	24.089
2031	365	0.204	2.519	1.794	14.635	1.605	3.523	24.280
2032	366	0.204	2.527	1.794	14.702	1.605	3.599	24.431
2033	365	0.204	2.534	1.794	14.751	1.606	3.662	24.551
2034	365	0.204	2.539	1.794	14.787	1.606	3.715	24.645
2035	365	0.204	2.544	1.794	14.814	1.606	3.760	24.722
2036	244	0.204	2.547	1.794	14.828	1.606	3.786	24.765

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Table 3-5 – Low Estimate Sales Gas Rate (Scenario-1)

Low Estimate Sales Gas Rate (MMscf/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	3.354	0.808	-	0.640	0.046	-	4.848
2017	365	0.466	2.767	-	1.093	0.041	-	4.367
2018	365	0.008	2.650	-	1.248	0.064	-	3.970
2019	365	-	2.856	0.048	1.781	0.410	0.293	5.389
2020	366	2.782	3.413	0.114	1.685	0.236	0.315	8.545
2021	365	2.535	2.668	0.092	1.720	0.140	0.278	7.432
2022	365	1.335	1.936	0.071	1.384	0.084	0.247	5.058
2023	365	0.629	1.361	0.054	1.050	0.046	0.217	3.356
2024	366	0.292	0.953	0.041	0.770	0.028	0.188	2.272
2025	365	0.138	0.675	0.033	0.573	0.015	0.161	1.595
2026	365	0.064	0.492	0.023	0.420	0.008	0.138	1.144
2027	365	0.028	0.364	0.018	0.313	0.005	0.115	0.843
2028	366	0.013	0.277	0.015	0.231	0.003	0.099	0.638
2029	365	0.008	0.217	0.010	0.168	0.003	0.082	0.487
2030	365	-	0.168	0.003	0.127	-	0.069	0.367
2031	365	-	0.130	-	0.092	-	0.059	0.280
2032	366	-	0.104	-	0.069	-	0.051	0.224
2033	365	-	0.089	-	0.051	-	0.041	0.181
2034	365	-	0.071	-	0.036	-	0.036	0.143
2035	365	-	0.061	-	0.028	-	0.031	0.120
2036	244	-	0.050	-	0.023	-	0.027	0.099

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Table 3-6 – Low Estimate Cumulative Sales Gas Volume (Scenario-1)

Low Estimate Cumulative Sales Gas Volume (Bscf)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.614	0.148	0.000	0.117	0.008	0.000	0.887
2017	365	0.784	1.158	0.000	0.516	0.023	0.000	2.481
2018	365	0.787	2.125	0.000	0.972	0.047	0.000	3.930
2019	365	0.787	3.168	0.018	1.622	0.196	0.107	5.897
2020	366	1.805	4.417	0.060	2.239	0.283	0.222	9.025
2021	365	2.730	5.390	0.093	2.866	0.334	0.324	11.738
2022	365	3.218	6.097	0.119	3.371	0.365	0.414	13.584
2023	365	3.448	6.594	0.139	3.754	0.381	0.493	14.808
2024	366	3.554	6.942	0.153	4.036	0.392	0.562	15.640
2025	365	3.605	7.189	0.166	4.245	0.397	0.620	16.222
2026	365	3.628	7.368	0.174	4.399	0.400	0.671	16.640
2027	365	3.638	7.501	0.180	4.513	0.402	0.712	16.947
2028	366	3.643	7.603	0.186	4.598	0.403	0.749	17.181
2029	365	3.646	7.682	0.190	4.659	0.404	0.778	17.358
2030	365	3.646	7.743	0.191	4.706	0.404	0.804	17.492
2031	365	3.646	7.791	0.191	4.739	0.404	0.825	17.595
2032	366	3.646	7.829	0.191	4.764	0.404	0.844	17.677
2033	365	3.646	7.861	0.191	4.783	0.404	0.858	17.743
2034	365	3.646	7.887	0.191	4.796	0.404	0.871	17.795
2035	365	3.646	7.910	0.191	4.806	0.404	0.883	17.838
2036	244	3.646	7.922	0.191	4.812	0.404	0.889	17.863

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Table 3-7 – Best Estimate Oil Rate (Scenario-1)

Best Estimate Oil Rate (stb/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	409.8	398.9	-	1,792.3	404.4	-	3,005.5
2017	365	-	1,041.1	-	3,600.0	358.9	-	5,000.0
2018	365	-	967.1	-	3,600.0	498.6	-	5,065.8
2019	365	501.4	1,200.0	147.9	6,884.9	347.9	879.5	9,961.6
2020	366	1,404.4	1,196.7	-	8,983.6	98.4	84.7	11,767.8
2021	365	1,208.2	2,594.5	1,501.4	11,380.8	2,882.2	1,334.2	20,901.4
2022	365	1,857.5	1,438.4	1,471.2	10,857.5	3,553.4	1,016.4	20,194.5
2023	365	1,394.5	2,304.1	1,350.7	10,246.6	2,424.7	1,761.6	19,482.2
2024	366	1,051.9	2,163.9	1,172.1	8,710.4	1,745.9	2,319.7	17,163.9
2025	365	772.6	2,874.0	1,016.4	7,331.5	1,323.3	1,838.4	15,156.2
2026	365	597.3	2,895.9	882.2	6,213.7	1,038.4	1,531.5	13,158.9
2027	365	186.3	2,186.3	767.1	5,304.1	835.6	1,334.2	10,613.7
2028	366	49.2	1,609.3	669.4	4,565.6	685.8	1,194.0	8,773.2
2029	365	-	1,227.4	589.0	3,994.5	504.1	1,087.7	7,402.7
2030	365	-	956.2	90.4	3,517.8	216.4	1,002.7	5,783.6
2031	365	-	687.7	-	3,117.8	13.7	934.2	4,753.4
2032	366	-	554.6	-	2,778.7	-	871.6	4,204.9
2033	365	-	441.1	-	2,460.3	-	824.7	3,726.0
2034	365	-	350.7	-	2,002.7	-	780.8	3,134.2
2035	365	-	282.2	-	1,435.6	-	742.5	2,460.3
2036	244	-	221.3	-	1,311.5	-	709.0	2,241.8

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Table 3-8 – Best Estimate Cumulative Oil Volume (Scenario-1)

Best Estimate Cumulative Oil Volume (MMstb)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.075	0.073	0.000	0.328	0.074	0.000	0.550
2017	365	0.075	0.453	0.000	1.642	0.205	0.000	2.375
2018	365	0.075	0.806	0.000	2.956	0.387	0.000	4.224
2019	365	0.258	1.244	0.054	5.469	0.514	0.321	7.860
2020	366	0.772	1.682	0.054	8.757	0.550	0.352	12.167
2021	365	1.213	2.629	0.602	12.911	1.602	0.839	19.796
2022	365	1.891	3.154	1.139	16.874	2.899	1.210	27.167
2023	365	2.400	3.995	1.632	20.614	3.784	1.853	34.278
2024	366	2.785	4.787	2.061	23.802	4.423	2.702	40.560
2025	365	3.067	5.836	2.432	26.478	4.906	3.373	46.092
2026	365	3.285	6.893	2.754	28.746	5.285	3.932	50.895
2027	365	3.353	7.691	3.034	30.682	5.590	4.419	54.769
2028	366	3.371	8.280	3.279	32.353	5.841	4.856	57.980
2029	365	3.371	8.728	3.494	33.811	6.025	5.253	60.682
2030	365	3.371	9.077	3.527	35.095	6.104	5.619	62.793
2031	365	3.371	9.328	3.527	36.233	6.109	5.960	64.528
2032	366	3.371	9.531	3.527	37.250	6.109	6.279	66.067
2033	365	3.371	9.692	3.527	38.148	6.109	6.580	67.427
2034	365	3.371	9.820	3.527	38.879	6.109	6.865	68.571
2035	365	3.371	9.923	3.527	39.403	6.109	7.136	69.469
2036	244	3.371	9.977	3.527	39.723	6.109	7.309	70.016

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Table 3-9 – Best Estimate Sales Gas Rate (Scenario-1)

Best Estimate Sales Gas Rate (MMscf/d)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	3.070	1.286	-	0.590	0.117	-	5.062
2017	365	-	3.756	-	1.220	0.099	-	5.076
2018	365	-	3.720	-	1.259	0.138	-	5.116
2019	365	3.720	5.318	0.020	2.497	0.097	0.242	11.894
2020	366	10.497	5.697	-	3.418	0.028	0.023	19.662
2021	365	9.089	14.042	0.211	4.334	0.785	0.367	28.827
2022	365	14.368	8.752	0.211	4.268	0.953	0.275	28.827
2023	365	11.142	12.187	0.196	4.171	0.657	0.482	28.835
2024	366	8.708	15.068	0.173	3.667	0.503	0.633	28.751
2025	365	6.564	17.983	0.150	3.221	0.415	0.494	28.827
2026	365	5.170	19.678	0.132	2.872	0.357	0.410	28.619
2027	365	1.626	17.609	0.117	2.576	0.313	0.357	22.598
2028	366	0.427	14.479	0.102	2.315	0.274	0.315	17.911
2029	365	-	11.861	0.089	2.102	0.214	0.285	14.551
2030	365	-	9.677	0.015	1.906	0.094	0.262	11.955
2031	365	-	7.045	-	1.740	0.008	0.245	9.038
2032	366	-	5.793	-	1.596	-	0.226	7.615
2033	365	-	4.678	-	1.445	-	0.214	6.337
2034	365	-	3.723	-	1.192	-	0.201	5.116
2035	365	-	3.009	-	0.846	-	0.194	4.049
2036	244	-	2.355	-	0.789	-	0.183	3.327

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Table 3-10 – Best Estimate Cumulative Sales Gas Volume (Scenario-1)

Best Estimate Cumulative Sales Gas Volume (Bscf)								
Year	Days	Aksaz	Dolinnoe	Emir	Kariman	North Kariman	Yessen	Emir-Oil Concession
2016	183	0.562	0.235	0.000	0.108	0.021	0.000	0.926
2017	365	0.562	1.606	0.000	0.553	0.058	0.000	2.779
2018	365	0.562	2.964	0.000	1.013	0.108	0.000	4.646
2019	365	1.920	4.905	0.007	1.924	0.143	0.088	8.988
2020	366	5.761	6.990	0.007	3.175	0.153	0.097	16.184
2021	365	9.079	12.115	0.085	4.757	0.440	0.231	26.706
2022	365	14.323	15.310	0.162	6.315	0.788	0.331	37.228
2023	365	18.390	19.758	0.233	7.837	1.028	0.507	47.753
2024	366	21.577	25.273	0.297	9.179	1.212	0.738	58.276
2025	365	23.973	31.837	0.352	10.355	1.363	0.919	68.798
2026	365	25.860	39.019	0.400	11.403	1.494	1.069	79.243
2027	365	26.453	45.446	0.443	12.343	1.608	1.199	87.492
2028	366	26.609	50.745	0.480	13.190	1.708	1.314	94.047
2029	365	26.609	55.075	0.512	13.957	1.787	1.418	99.358
2030	365	26.609	58.607	0.518	14.653	1.821	1.514	103.722
2031	365	26.609	61.178	0.518	15.288	1.824	1.603	107.021
2032	366	26.609	63.299	0.518	15.872	1.824	1.686	109.808
2033	365	26.609	65.006	0.518	16.400	1.824	1.764	112.121
2034	365	26.609	66.365	0.518	16.835	1.824	1.838	113.988
2035	365	26.609	67.463	0.518	17.144	1.824	1.908	115.466
2036	244	26.609	68.038	0.518	17.336	1.824	1.953	116.278



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4 Economics

4.1 Valuation Assumptions

4.1.1 General

The effective date of this report is July 1, 2016 and this has been used as the discount date for the valuation. All values are post-tax and have been expressed over a range of discount rates, using mid-year discounting.

An annual inflation rate of 2% (based on the United States Consumer Price Index, CPI, long term average rate) has been assumed from 2017 onwards and is applied to both costs and revenues.

4.1.2 Oil and Gas Prices

Emir-Oil had entered into a sales agreement with Euro Asia Oil in February 2015 ("2015 Sales Agreement") to change the transportation route for the export of oil from Batumi Port in Georgia, to Novorossiysk Port in Russia in order to reduce transportation cost. Under the 2015 Sales Agreement, the sales price is benchmarked to the Urals, which is a reference oil brand used as a basis for pricing of the Russian export oil mixture. Urals is generally traded at a discount to Brent where the discount is subject to fluctuations based on the inputs from traders and refiners. With the signing of a new sales agreement with Euro Asia Oil in 2016, the basis of pricing for the realised price of Emir-Oil's crude oil has reverted to Brent

Thus, the valuation has been based on the RPS's long term forecast for Brent as shown in **Table 4-I**. RPS's price forecasts are constructed by:

- Reviewing, from a macroeconomic prospective, the short term and long term Gross Domestic Product ("GDP") growth of the world economy as provided by the International Monetary Fund ("IMF").
- Reviewing short term and long term price influences including the world demand for crude oil as outlined by the International Energy Agency ("IEA"), as well as the supply of crude to the market, including US and OPEC production from the U.S. Energy Information Administration ("EIA") and other sources.
- A review of crude oil inventories and product stock builds as provided by EIA and IEA organizations.
- Review of the current financial markets and sentiment as per the EIA and RPS's review of the futures market.
- Review of price forecasts made by other companies.

A Low Price Case (long term price of US\$65/bbl) and High Price Case (long term price of \$95/bbl) are also shown in **Table 4-I** in Money of the Day ("MOD") and have been used for price sensitivity purposes. Recent oil prices over the last 5 years has demonstrated considerable variability and highlights the uncertainty in forecasting medium to long term oil prices. The main forecast price risk is expected to be on the positive side in the medium to long term (i.e. long term price resetting to the RPS 'high case') rather than on the negative side. RPS believes that it is unlikely that the price will reduce to at, or below the current RPS's 'low case' in the longer term).

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Table 4-1 – RPS Brent Price Forecasts (Q3 2016)

	Low Price Case	Base Price Case	High Price Case
	US\$/bbl, MOD	US\$/bbl, MOD	US\$/bbl, MOD
2016 H2	35.0	50.3	55.0
2017	42.0	53.0	64.0
2018	47.5	59.0	71.5
2019	53.0	66.0	79.0
2020	58.0	72.0	86.0
2021	63.0	78.0	93.0
2022	67.0	83.0	99.0
2023	71.0	88.0	105.0
2024	74.5	92.0	110.0
2025	77.6	95.6	113.5
2026	79.2	97.5	115.8
2027 onwards	+ 2% p.a.	+ 2% p.a.	+ 2% p.a.

Crude oil is currently transported to the nearby oil storage and processing facilities by truck, and then transported by train to the point of sale at Mangyshlak Train Station. Euro Asia Oil is the current purchaser of oil and the final price is settled on a FOB (Free On Board) basis with the sales volume and price determined monthly as the export volume needs to be approved and verified by the Kazakhstan government. In 2015, the realised crude price for export sales was indexed to Urals. However, from Jan 1, 2016, the sales contract with Euro Asia is reverted to Brent, and hence the differential between Urals and Brent is eliminated. Therefore, netback oil price equals Brent price less transportation tariff (US\$ 12.80/bbl before 2019; US\$ 10.62/bbl in 2019 and thereafter).

Assuming no supply shocks, RPS anticipates global oil price will remain at the bottom of market expectations, in the region of \$45-\$50/bbl, until the back end of 2016 when global demand growth is expected to result in an improved balance between supply and demand. In the medium to long term, RPS expects global oil price (Brent) to rise towards \$80/bbl (Base Case; our Low Case is \$65/bbl and High Case is \$95/bbl) as long term price reflects the marginal cost of exploration and production based on the current demand forecasts.

Produced gas is primarily associated gas from developed oil fields and the regulations in Kazakhstan restrict gas from being flared. Produced gas is sold to KazTransGas Aimak JSC. The gas sales contract including the gas price and offtake volumes have historically been agreed on an annual basis. RPS's valuation assumes sales gas price to be US\$0.77/Mscf for the rest of 2016 based on the latest gas sales agreement for 2016 provided by MIE. The 2016 sales contract stipulates that the buyer takes 4.65 million m³/month, about 152,000 m³/d or around 5.4 MMscf/d. RPS notes that the gas sales contract is renewed annually. It should be noted that even though the gas price is

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considered low compared to other regions, the gas is associated gas⁵ from the developed oilfields and is therefore not subject to the commercial viability requirement.

4.2 Valuation Methodology

RPS production and cost forecasts for the Aksaz, Dolinnoe, Emir, Kariman, North Kariman, and Yessen fields (collectively known as Emir-Oil fields) were generated for each field for the 1P, 2P and 3P Reserves categories in conjunction with the phased development cost estimates. The annual forecasts of production and costs were used in a Kazakhstan economic cash flow model and aggregated for the 1P, 2P and 3P Reserves cases.

The RPS Reserves cases were truncated at the economic limit, a point in time that defines the economic life of the project. The economic limit is determined when the Emir-Oil fields' cumulative gross operating cash flow turns irreversibly negative. The operating cash flow for this purpose is defined on a gross basis as production revenue less cash

In order to determine the fair market value, RPS has used the discounted cash flow method at various discount rates to establish the range of NPV values for the Emir-Oil Concession Block. However, the appropriate discount rates to arrive at a fair market value range of the Asset was determined by comparable recent transactions in Kazakhstan.

4.3 Fiscal Assumptions

The fiscal terms applicable for the Asset consists of a combination of mineral extraction tax, rent tax on export, crude oil export duty, property tax, and corporate income tax.

Mineral Extraction Tax

Mineral extraction tax ("MET") is similar to Royalty and applicable to produced crude oil, gas condensate and natural gas. The rates are applied to production valued at world prices for export sale and the MET rates are outlined in **Table 4-2**.

⁵ Associated gas is gas produced as a by-product of the production of oil and associated gas reserves are typically developed for the production of crude oil, which pays for the field development costs.

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Table 4-2 – MET Rates

Oil		Production ('000 t)	
Rate (Export)	Rate (Domestic)	Min	Max
5%	2.5%	0	250
7%	3.5%	250	500
8%	4.0%	500	1,000
9%	9.5%	1,000	2,000
10%	5.0%	2,000	3,000
11%	5.5%	3,000	4,000
12%	6.0%	4,000	5,000
13%	6.5%	5,000	7,000
15%	7.5%	7,000	10,000
18%	9.0%	10,000	10,000 above
Gas		Production (MMm ³)	
Rate (Export)	Rate (Domestic)	Min	Max
10.0%	0.5%	0	1,000,000
10.0%	1.0%	1,000,000	2,000,000
10.0%	1.5%	2,000,000	2,000,000 above

The MET rate is reduced by 50% for crude oil and condensate sold to the domestic market. In order to calculate the MET and Rent Tax for the purpose of this valuation, 24% of the total field production is assumed to be sold domestically based on the actual sales volume recorded in year 2014.

Under the Production Contracts, Emir-Oil is only required to sell up to 30% of crude oil produced to domestic refineries which means that the amount to be sold to domestic refineries can be 30% or less. Despite 89% of crude oil was exported in 2015, RPS has applied a rather conservative assumption of 85% of the crude oil to be exported (15% of crude oil to be sold domestically). This is because based on the current global market conditions, supply will exceed demand and stocks will continue to build until the end of this year.

Rent Tax on Export

The rent tax on export is payable by exporters of crude oil and gas condensate. The rates of the rent tax on export ranges from 0% to 32%, calculated based on the export sales price and can be as low as 0% if the export sales price (before discount) is less than US\$40/bbl to as high as 32% if the export sales price (before discount) per barrel exceeds US\$180/bbl.

The rent tax on export rates applied to exported crude oil and gas condensate are summarised in Table 4-3.

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Table 4-3 – Rent Tax on Export Rates

Market price (US\$/bbl) - Minimum	Market price (US\$/bbl) - Maximum	Rate
0	40.0	0%
40.0	50.0	7%
50.0	60.0	11%
60.0	70.0	14%
70.0	80.0	16%
80.0	90.0	17%
90.0	100.0	19%
100.0	110.0	21%
110.0	120.0	22%
120.0	130.0	23%
130.0	140.0	25%
140.0	150.0	26%
150.0	160.0	27%
160.0	170.0	29%
170.0	180.0	30%
180.0	180.0 and above	32%

Excess Profit Tax

Excess Profit Tax ("EPT") is payable annually as soon as the ratio of annual aggregate income to annual tax deductions exceeds a ratio of 1.25. Deductibles include costs and losses. The tax base is the difference of taxable income and income tax. The EPT rates are summarised in **Table 4-4**.

Table 4-4 – EPT Rates

Income / Deductions	EPT Rate
< 1.25	0%
1.25 – 1.30	10%
1.31 – 1.40	20%
1.41 – 1.50	30%
1.51 – 1.60	40%
1.61 – 1.70	50%
> 1.7	60%

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Crude Oil Export Duty

Effective on April 1, 2014, the host government increased the fixed rate for the export duty from US\$60/ton to US\$80/ton. However, between March 2015 and end of 2015, crude oil export duty was charged at a rate of US\$60/ton. The rate has been revised recently based on the rates summarised below:

The crude oil average monthly market price	Export customs duties rate, USD per ton
up to USD 25 per barrel	0
from USD 25 to 30 per barrel	10
from USD 30 to 35 per barrel	20
from USD 35 to 40 per barrel	35
from USD 40 to 45 per barrel	40
from USD 45 to 50 per barrel	45
from USD 50 to 55 per barrel	50
From USD 55 to 60 per barrel	55
from USD 60 to 65 per barrel	60
From USD 65 to 70 per barrel	65
from USD 70 to 75 per barrel	70
From USD 75 to 80 per barrel	75
From USD 80 to 85 per barrel	80
From USD 85 to 90 per barrel	85
From USD 95 to 100 per barrel	95
From USD 100 to 105 per barrel	100
From USD 105 to 115 per barrel	115
From USD 115 to 125 per barrel	130
From USD 125 to 135 per barrel	145
From USD 135 to 145 per barrel	160
From USD 145 to 155 per barrel	176
From USD 155 to 165 per barrel	191
From USD 165 to 175 per barrel	206
From USD 175 to 185 per barrel	221
From USD 185 per barrel and above	236

Property tax is payable on oil and gas assets which have been granted a production contract at a rate of 1.5% based on average net book value of oil and gas properties.

The Tax Code set the tax rate at 20%. Prior to 2009, corporate income tax rate was 30%.



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4.4 Cost Assumptions

The majority of the future Capex is for the development drilling and surface infrastructure expansion.

A total of 16 wells, 36 wells, and 38 wells are required for 1P, 2P, and 3P Case, respectively. RPS has verified the well cost supplied by Emir-Oil LLP and have estimated the development cost to be US\$ 6.25 million per well.

The first phase of the surface infrastructure expansion, which is currently under construction, is to expand crude oil production capacity to 12,000 stb/d and sales gas to 19 MMscf/d (21.2 MMscf/d for raw gas). Completion is expected in 2019. The remaining Capex associated to the construction is estimated to be US\$ 11.0 million in year 2016 for central processing facilities, and US\$ 35.9 million in 2018 for pipelines only.

In order to accommodate the production from all future development wells (for 2P and 3P cases), a second phase expansion of the surface infrastructure is scheduled to commence in 2019; expected to be completed at year end 2020. Upon completion of the expansion, the surface infrastructure is able to handle up to 23,000 stb/d of crude oil and 31 MMscf/d of wellhead gas. RPS estimates the second phase expansion to cost US\$ 50.0 million.

RPS also reviewed the Opex assumptions supplied by Emir-Oil LLP and made the following estimates:

- Fixed Opex: US\$ 8.2 million before 2019 and US\$ 10.3 million thereafter (adjusted accordingly based on number of producers)
- General and administration ("G&A"): US\$ 1.6 million before 2019 and US\$ 3.2 million in 2019 and thereafter (adjusted accordingly based on number of producers)
- Variable Opex (lifting): US\$ 1.5/bbl
- Variable Opex (transportation tariff): US\$ 12.80/bbl before 2019; US\$ 10.62/bbl in 2019 and thereafter.

The Production Contracts require the Operator to contribute no less than 1% of the yearly Capex to the abandonment fund for the asset retirement obligations/abandonment expenditure. However, abandonment cost is assumed to be 10% of Capex in the valuation.

4.5 Valuation of Reserves

The Economic Limit Test ("ELT") performed for the determination of Reserves is based on RPS's estimates of recoverable volumes, a review of the MIE's estimates of Capex and Opex, and inclusion of other financial information and assumptions, as outlined above.

The Asset is assumed to reach its economic limit, when the cumulative value of its undiscounted gross operating cash flow ceases to increase. Gross operating cash flow for this purpose is defined as 100% working interest field revenue less Opex.

An annual inflation rate of 2 per cent has been built into the ELT. This inflation rate has also been applied to all cost estimates to adjust them from 2016 dollars to money of the day ("MOD").

The effective date of this report is July 1, 2016 and this has been used as the discount date for the valuation.

A summary of the Proved Reserves ("1P"), Proved plus Probable Reserves ("2P"), Proved plus Probable plus Possible Reserves ("3P"), and Net Present Value ("NPV") sensitivities to discount rates and oil prices are shown in **Table 4-5** to **Table 4-14**. The sensitivity analysis result of NPV versus discount rate is further illustrated in **Figure 4-1**.

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Table 4-5 – Oil and Gas Reserves for the Emir-Oil Concession Block as of July 1, 2016

	Gross 100% License Basis ¹			MIE's Net Working Interest Basis ²		
	1P	2P	3P	1P	2P	3P
Oil Reserves (MMstb)	24.6	70.0	116.1	24.6	70.0	116.1
Gas Reserves (Bscf)	17.7	116.3	184.1	17.7	116.3	184.1
	MIE's Net Entitlement Basis ³					
	1P	2P	3P			
Oil Reserves (MMstb)	24.6	70.0	116.1			
Gas Reserves (Bscf)	17.7	116.3	184.1			

Notes:

- 1) Gross Concession Reserves (100% basis) after economic limit test
- 2) MIE's working interest share of gross Concession Reserves after economic limit test
- 3) The fiscal regime applicable for the Asset is Royalty and Tax regime. Royalty is treated as tax; and therefore, the attributable net share is reported as Gross volumes including Royalty.

The new CPF (including processing facilities) is being developed over two phases and **Table 4-6** defines the oil reserves for the Phase 1 and Phase 2 by reserves status; that is by: Developed Producing, Developed Nonproducing, and Undeveloped status, as per the SPE-PRMS guidelines. Similarly, **Table 4-7** breakdowns the gas reserves by project phase and reserves status.

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Table 4-6 – Proved plus Probable (“2P”) Oil Reserves for the Emir-Oil Concession Block as of July 1, 2016 Gross 100% License Basis I (MMstb)

Field	Phase 1 ¹			Phase 2 ¹	Phase 1 and 2 ¹			Total ¹
	Developed Producing	Developed Non-Producing	Undeveloped	Undeveloped	Developed Producing	Developed Non-Producing	Undeveloped	
Aksaz	0.744			2.627	0.744		2.627	3.371
Dolinnoe	2.147	2.162	0.815	4.852	2.147	2.162	5.668	9.977
Emir	0.709	0.000	0.711	2.106	0.709	0.000	2.818	3.527
Kariman	10.989	7.321	3.154	18.258	10.989	7.321	21.413	39.723
North Kariman	1.622	0.000	1.121	3.365	1.622	0.000	4.486	6.108
Yessen		3.637	0.000	3.672	0.000	3.637	3.672	7.309
TOTAL	16.212	13.120	5.802	34.881	16.212	13.120	40.682	70.016

Notes:

- 1) Gross Concession Reserves (100% basis) after economic limit test.
- 2) Note that if market conditions deteriorate or if there is delay in obtaining the required approvals, the implementation plan for Phase 2 may be deferred. Any significant deferment of Phase 2 may result in a revision of the reported Reserves

Table 4-7 – Proved plus Probable (“2P”) Gas Reserves for the Emir-Oil Concession Block as of July 1, 2016 Gross 100% License Basis (Bscf)

Field	Phase 1 ¹			Phase 2 ¹	Phase 1 and 2 ¹			Total ¹
	Developed Producing	Developed Non-Producing	Undeveloped	Undeveloped	Developed Producing	Developed Non-Producing	Undeveloped	
Aksaz	5.816	-	-	20.793	5.816	-	20.793	26.609
Dolinnoe	13.162	15.215	5.742	33.918	13.162	15.215	39.660	68.038
Emir	0.104	-	0.104	0.309	0.104	-	0.414	0.518
Kariman	4.924	3.280	1.363	7.770	4.924	3.280	9.132	17.336
North Kariman	0.484	-	0.335	1.005	0.484	-	1.340	1.824
Yessen		0.975	-	0.978	-	0.975	0.978	1.953
TOTAL	24.490	19.471	7.543	64.773	24.490	19.471	72.317	116.278

Notes:

- 1) Gross Concession Reserves (100% basis) after economic limit test.
- 2) Note that if market conditions deteriorate or if there is delay in obtaining the required approvals, the implementation plan for Phase 2 may be deferred. Any significant deferment of Phase 2 may result in a revision of the reported Reserves

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The Chapman Report was "carried out in accordance with standards set out in the Canadian Oil and Gas Evaluation Handbook ("COGEH"), the professional standard adopted by APEGA and specified by Canadian Securities Administrators NI 51-101". RPS has carried out their evaluation using the March 2007 SPE/WPC/AAPG/SPEE Petroleum Resources Management System ("SPE-PRMS") as the standard for classification and reporting, as well as the VALMIN code guidelines⁷. Hence, RPS's valuation includes both the discounted cash flow method as well as a comparison of recent transactions, in order to obtain values for the Emir-Oil Concession Block. In comparison, the Chapman's report is based on the discounted cash flow method only. In terms of the definitions defined by the two standards to classify reserves and reserves sub-class, both standards are in alignment.

Table 4-9 compares the two company's oil reserves estimates as of July 1, 2016. Note that the Chapman Report is based on an effective date of January 1, 2016 and therefore RPS has subtracted the production from January 1, 2016 to June 30, 2016 off the Chapman reported numbers in order to compare both company's numbers on a consistent basis. Secondly, as mentioned in the table notes, RPS's 2P reserves for the Dolinnoe Field is greater than RPS's 3P reserves estimate. This is due to the raw gas handling capacity of 31 MMscf/d curtailing oil production more severely in the 3P case compared with the 2P scenario for this field.

Table 4-9 compares the two company's gas reserves estimates as of July 1, 2016 and again the raw gas handling capacity is impacting the Dolinnoe Fields's gas Proved plus Probable plus Possible Reserve estimate.

The main reason for the difference between the two company's reserves estimates, as illustrated in **Table 4-8** and **Table 4-9**, is due to Chapman generating production profiles that terminate in year 2060; while RPS terminates the profiles when the cumulative value of the Emir-Oil Concession Block's undiscounted gross operating cash flow ceases to increase, or upon the expiration of the concession license (**Figure 4-2**).

Secondly, RPS does not estimate any reserves for the Borly Structure, despite two wells being drilled on the accumulation (Borly-2 and Borly-2ST1); however, Chapman estimated Probable Developed Non-Producing Reserves of 3.9 MMstb for the structure in their 2016 report. The Borly-2 well reportedly encountered some hydrocarbon shows in the Triassic reservoirs between the interval of 2916.7 – 2994.6 m MDKB. The Operator re-entered the Borly-2 well in 2012 and sidetracked this well as Borly-2ST1. The Triassic reservoirs were tested but did not flow any commercial hydrocarbon to surface despite being acid-frac and nitrogen gas lifted. Therefore, RPS did not book any reserves in the Borly structure

There are also minor differences in other parameters used as input to the economic model, namely:

- 1) Chapman treating the Aksaz field as an oil field and RPS evaluating the field as a gas condensate field.
- 2) Different price forecasts used in the two evaluations as depicted in **Figure 4-3**. RPS base price forecast has a slightly lower Brent oil price from 2016 to 2022 compared with Chapman, which implies that RPS's evaluation would be more conservative. Although RPS's price forecast is higher after 2023, the impact is marginal due to time value of money in discounting the cash flow from 2016.
- 3) Capex and Opex estimates used in the valuations. Chapman's total estimates of the Capex and Opex from 2016 to 2036 is approximately US\$1.08 billion whilst RPS's estimates of CAPEX and OPEX for the same period is approximately US\$1.04 billion.

⁷ Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets (The Valmin Code 2015 Edition), Prepared by The VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists

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INDEPENDENT VALUATION REPORT

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Table 4-8 – Chapman and RPS Oil Reserves Comparison for the Emir-Oil Concession Block as of July 1, 2016 Gross 100% License Basis (Mstb)

Field	Chapman ¹			RPS ²		
	IP	2P	3P	IP	2P	3P
Aksaz	1,494	3,842	4,330	204	3,371	16,271
Dolinnoe	6,111	12,818	18,805	2,534	9,977	7,382
Emir	1,462	6,374	12,360	1,794	3,527	1,858
Kariman	19,713	49,696	51,384	14,751	39,723	58,439
North Kariman	2,284	7,390	7,747	1,606	6,109	14,224
Yessen	461	7,256	9,891	3,662	7,309	17,969
Borly ⁴	-	7,774	19,435	-	-	-
Total⁵	31,524	95,149	123,951	24,551	70,016	116,143

Notes:

- 1) Gross Concession Reserves (100% basis) after economic limit test. RPS has subtracted the production from January 1, 2016 to June 30, 2016 off the Chapman reported numbers in order to compare both company's numbers.
- 2) Gross Concession Reserves (100% basis) after economic limit test.
- 3) RPS's 2P Reserves for the Dolinnoe Field is greater than RPS's 3P Reserves estimate. This is due to the raw gas handling capacity of 31 MMscfd curtailing oil production more severely in the 3P Reserves case compared with the 2P scenario for this field.
- 4) RPS does not estimate any reserves for the Borly Structure.
- 5) Chapman's production profiles terminate in year 2060 while RPS terminates the profiles when the cumulative value of the Emir-Oil Concession Block's undiscounted gross operating cash flow ceases to increase, or upon the expiration of the concession license.

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Table 4-9 – Chapman and RPS Gas Reserves Comparison for the Emir-Oil Concession Block as of July 1, 2016 Gross 100% License Basis¹ (MMscf)

Field	Chapman ¹			RPS ²		
	1P	2P	3P	1P	2P	3P
Aksaz	7,276	26,748	30,822	3,646	26,609	84,743
Dolinnoe	11,938	24,630	35,513	7,861	68,038	49,371
Emir	274	1,009	1,796	191	518	362
Kariman	7,430	19,005	19,650	4,783	17,336	37,436
North Kariman	783	3,420	3,549	404	1,824	6,357
Yessen	132,700	2,166	2,862	858	1,953	5,809
Borly ⁴	-	7,230	18,075	-	-	-
Total⁵	27,834	84,208	112,267	17,743	116,278	184,079

Notes:

- 1) Gross Concession Reserves (100% basis) after economic limit test. RPS has subtracted the production from January 1, 2016 to June 30, 2016 off the Chapman reported numbers in order to compare both company's numbers.
- 2) Gross Concession Reserves (100% basis) after economic limit test.
- 3) RPS's 2P Reserves for the Dolinnoe Field is greater than RPS's 3P Reserves estimate. This is due to the raw gas handling capacity of 31 MMscf/d curtailing oil production more severely in the 3P Reserves case compared with the 2P scenario for this field.
- 4) RPS does not estimate any reserves for the Borly Structure.
- 5) Chapman's production profiles terminate in year 2060 while RPS terminates the profiles when the cumulative value of the Emir-Oil Concession Block's undiscounted gross operating cash flow ceases to increase, or upon the expiration of the concession license.

It is a standard practice in oil and gas evaluations to present NPV at a 10% discount rate as presented in **Table 4-10**. RPS has also evaluated the impact on the NPV by varying the discount rate from 0% to 20%, as illustrated in **Table 4-11**. The appropriate discount rates to arrive at a fair market value range for the Asset was determined by comparable recent transactions in Kazakhstan, as outlined in **Section 4.6**. As described in **Section 4.7**, RPS considers a reasonable range for the discount rates to be between 12% and 15% for a deal to be closed in Kazakhstan. However, **Section 4.7** concludes that recent market conditions would suggest that slightly higher discount rates should be applied to account for the additional market risk, i.e. potential higher cost of borrowing and country risk. Hence, RPS has applied 13% and 17% discount rates to the current valuation.

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Table 4-10 – Summary of Net Present Values of Reserves as of July 1, 2016 (Base Case Price)

	NPV @ 10% (US\$ MM)		NPV @ 10% (RM MM) ¹	
	Net to MIE		Net to MIE	
	IP	2P	IP	2P
Emir-Oil Concession Block	134	511	537	2,055

Note:

1) Unless otherwise stated, the exchange rate of US\$1.00:RM4.0225, being Bank Negara Malaysia's middle rate as at 5.00 p.m. on 30th June, 2016, is used throughout this Valuation Report for purposes of translation of US\$ into Ringgit Malaysia ("RM") currency.

Table 4-11 – Summary of Net Present Values of Reserves as of July 1, 2016 (Discount Rate Sensitivity)

Emir-Oil Concession Block 2P Net Present Values Attributed to MIE									
Discount Rate	0%	8%	10%	12%	13%	15%	17%	18%	20%
TOTAL (USD MM)	1,151	593	511	442	412	360	315	295	260
TOTAL (MYR MM)	4,629	2,387	2,055	1,779	1,658	1,446	1,267	1,188	1,047

In addition to determining the appropriate discount rates to arrive at a fair market value range of the Asset, RPS also investigated the sensitivity of the price forecast on the NPV for the Emir-Oil Concession Block, using the industry standard 10% discount rate and the fair market value discount rates of 13% and 17%. The results are presented in **Table 4-12**.

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Table 4-12 – Summary of Net Present Values of Reserves as of July 1, 2016 (Oil Price Sensitivity)

Price Scenario	NPV @ 10% (US\$ million) Attributed to MIE	
	1P	2P
Low Price	59	354
Base Price	134	511
High Price	203	661
Price Scenario	NPV @ 13% (US\$ million) Attributed to MIE	
	1P	2P
Low Price	52	280
Base Price	118	412
High Price	180	538
Price Scenario	NPV @ 17% (US\$ million) Attributed to MIE	
	1P	2P
Low Price	43	208
Base Price	100	315
High Price	153	416

It should be noted that RPS has performed an asset valuation as opposed to an equity valuation and therefore RPS did not estimate the fair discount rates (13% - 17%) based on a Capital Asset Pricing Model ("CAPM"). Thus, the cost of capital and cost of equity are not taken into consideration for the purpose of this valuation. However, FHMH Corporate Advisory Sdn Bhd, being the independent expert engaged to prepare a Report on the Fairness of the Purchase Consideration, has undertaken an equity valuation in their report.

Note that RPS has not considered the impact of the foreign exchange to the valuation of the Emir-Oil Concession Block in the event of the Kazakhstani Tenge ("KZT") strengthens against the USD as all prices and costs assumptions applied are in USD. As such, the strengthening of KZT would result in higher CAPEX/OPEX as the production, purchases and other expenses are primarily transacted in KZT. However, any impact to the valuation should also take into account other macroeconomics parameters such as crude oil price, sales gas price, inflation rate etc. instead of solely one assumption. Furthermore, RPS believes that as of the valuation date, all costs (Capex/Opex) associated with the operations of the Emir-Oil Concession Block have reflected the strengthening of the USD over the last five years.

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4.6 Alternative Market Valuation

The valuation of the MIE's working interests in the Emir-Oil Concession Block described above in **Section 4.5** was undertaken by the Discounted Cash Flow Method ("DCFM") in conjunction with a normal Reserves and Resources evaluation to the PRMS guidelines. The RPS estimate of 2P Reserves as of July 1 2016 is 70.0 MMstb of oil and 116.3 Bscf of gas, which converts to 89.4 MMboe, assuming 6,000 scf/boe for the gas volume conversion to barrels oil equivalent ("boe"). The valuation of the net 2P Reserves at the RPS Base Brent price and applying a 10% discount rate is US\$ 511 million. The value per barrel is therefore, US\$ 5.7/boe.

For the alternative valuation method, by comparison to similar market transactions, we have reviewed the publically available transactions in Kazakhstan in the years 2011 to 2015, and considered those deals related to producing oil fields for comparison with the Emir-Oil Concession Block.

However, between July and December 2014, the Brent crude oil price fell by approximately 50%; followed by another steep decline of approximately 34% from the beginning until the end of year 2015. Despite volatile crude oil prices over the last 18 months, RPS has reduced the list of deals to four, which are still broadly comparable to the Emir-Oil Concession Block. A summary of these deals is shown in **Table 4-13**.

Table 4-13 – Summary of Several Previous Transactions in Kazakhstan (June 2014 – March 2015)

No.	Effective Date	Asset name	Buyer(s)	Seller	Deal (US\$MM)	2P Reserve (MM boe)	Deal price (\$/boe)
1	February 2015	Galaz Contract Area	Xinjiang Zhundong Petroleum Technology Co.	Roxi Petroleum plc, LGI, Baverstock GmbH (Baverstock)	90	14.7	6.1
2	January 2015	Karaturun Vostochnyi and Karaturun Morskoi fields	Sumatec ¹ Resources Berhad	Borneo Energy Oil and Gas Ltd.	278	68.9	4.0
3	July 2014	Karaturun Vostochnyi and Karaturun Morskoi fields	Sumatec ¹ Resources Berhad	Borneo Energy Oil and Gas Ltd.	350	68.9	5.1
4	June 2014	Three oil fields located onshore of the North-eastern Caspian Sea	Geo-Jade Petroleum Corporation	Maten Petroleum JSC	525	69.4	7.6
Simple Average							5.6
Note:							
1) Sumatec first submitted an offer in July 2014 before making a revised offer in Jan 2015 due to material changes to oil price which contributed to material changes to the valuation.							

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4.7 Adjustments to Market Value

The market transactions tabulated above will have been made under different price environments, as well as at different discount rates according to the respective buyers' investment strategy at the point of the acquisitions made.

The first two deals tabulated in **Table 4-13** happened during Q1 2015; the remaining two deals closed during Q3 2014. The respective implied dollar per boe (average and range) is summarised in **Table 4-14**.

Table 4-14 – Summary of Past Relevant Transactions Implied Dollar per BOE

	Average (US\$/boe)	Range (US\$/boe)
Deal 1 – 2	4.4	4.0 – 6.1
Deal 3 – 4	6.3	5.1 – 7.6

Therefore, adjustments to the current valuation against the reported values based on RPS Brent crude oil price forecasts for the period of Q3 2014 and Q1 2015 (long term forecast of US\$ 85/bbl) are necessary.

A summary of discount rates possibly applied by the buyer(s) in **Table 4-13** after applying RPS Q3 2014 Brent price forecast (long term forecast of US\$ 95/bbl) and RPS Q1 2015 Brent price forecast (long term forecast of US\$ 85/bbl) is tabled in **Table 4-15**.

Table 4-15 – Summary of Discount Rates Possibly Applied by Buyer(s)

	Average (Discount Rate)	Range (Discount Rate)
Q3 2014	12.5%	9.1% - 15.1%
Q1 2015	11.7%	8.9% - 14.6%

Based on the discount rates in **Table 4-15**, RPS considers a reasonable range for discount rates to be between 12% and 15% for a deal to be closed in Kazakhstan, after taking into account the associated country risk. However, recent market conditions would suggest that slightly higher discount rates should be applied to account for the additional market risk. Hence, RPS has applied 13% and 17% discount rates to the current valuation.

Using the discounted cash flow method, at the industry standard 10% discount rate, the assets' IP is valued at US\$ 134 million and 2P at US\$ 511 million. Typically, the market would pay 90 to 100 % for the IP and 50 to 60 % for the P2. This would translate to a range of Net Present Values attributed to MIE between US\$ 309 million and US\$ 360 million.

On applying the 13% and 17% discount rates to the current valuation based on adjustment to historical transacted deals methodology, the Net Present Values attributed to MIE, range between US\$ 315 million and US\$ 412 million.

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**INDEPENDENT VALUATION REPORT**

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4.8 Valuation of Emir-Oil Concession Block Conclusion

RPS concludes that the Net Present Values attributed to the Emir-Oil Concession Block range between US\$ 315 million and US\$ 412 million.

4.9 Estimated Return on Investment

Based on the enterprise value of the offered price of USD 308 million (100% valuation of the Asset) and the transaction structure including the payment schedule of the consideration as per the Company's announcement on March 5, 2016, the project Investment Rate of Return ("IRR") for the investment is estimated at 18.7%.



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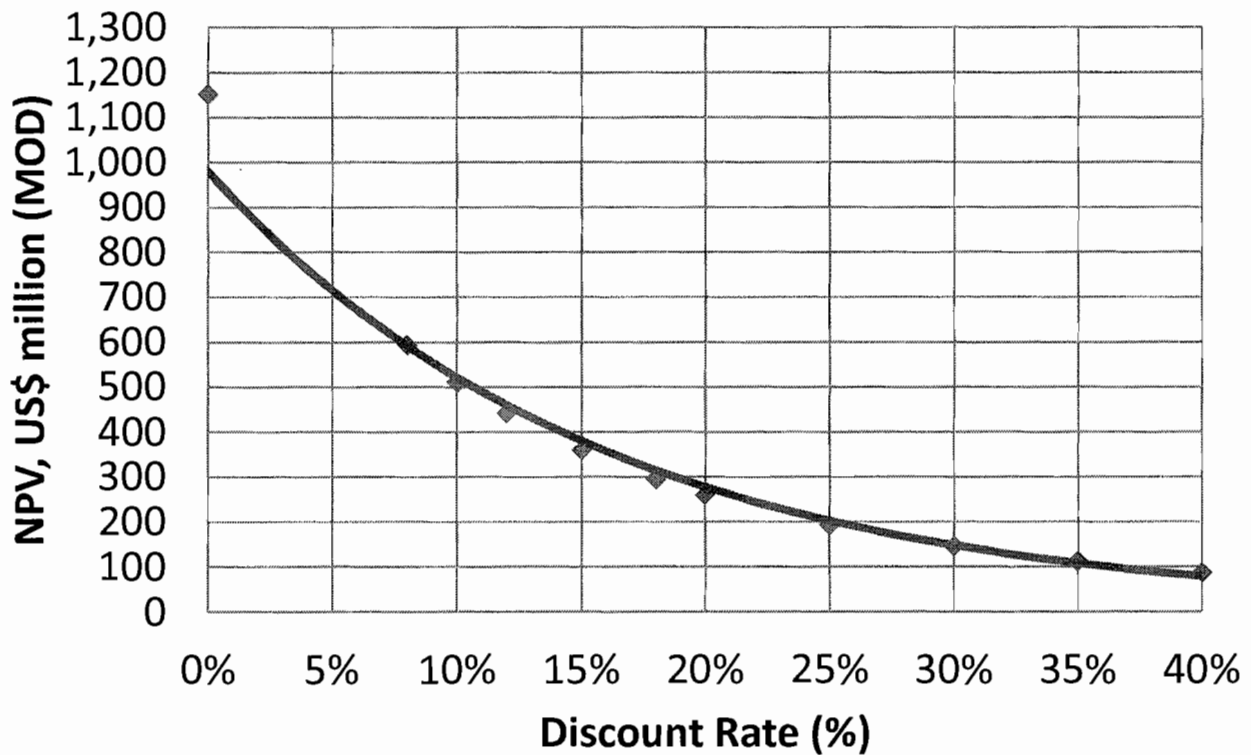


Figure 4-1 – NPV versus Discount Rate Sensitivity Analysis Results



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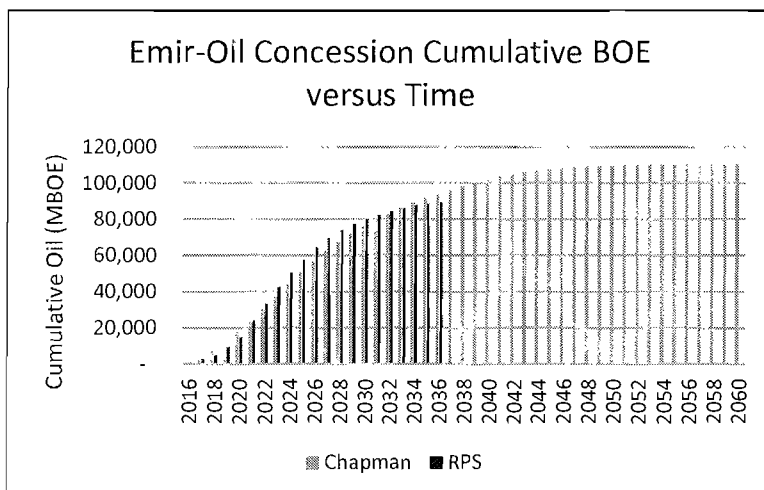
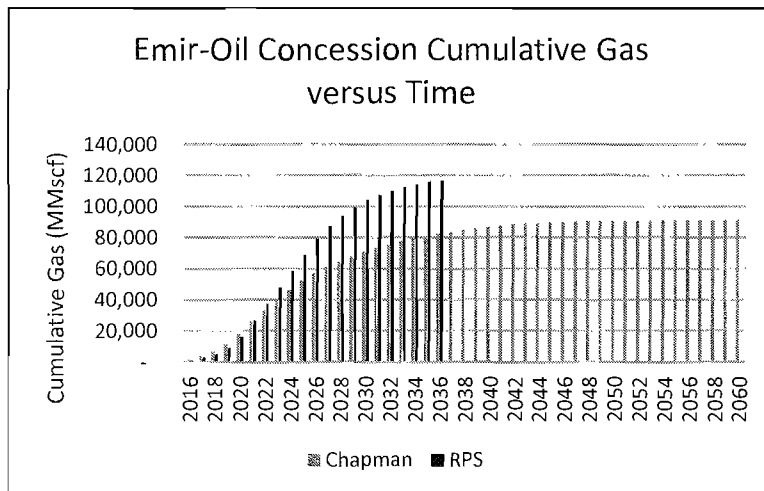
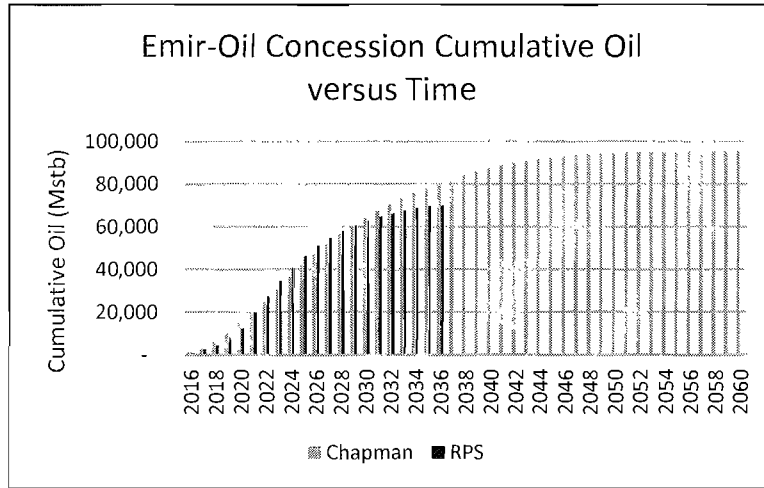


Figure 4-2 – Chapman versus RPS Cumulative 2P Reserves Profiles Adjusted to July 1, 2016 Reports



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Brent Oil Price Comparison
 (\$/bbl MOD)

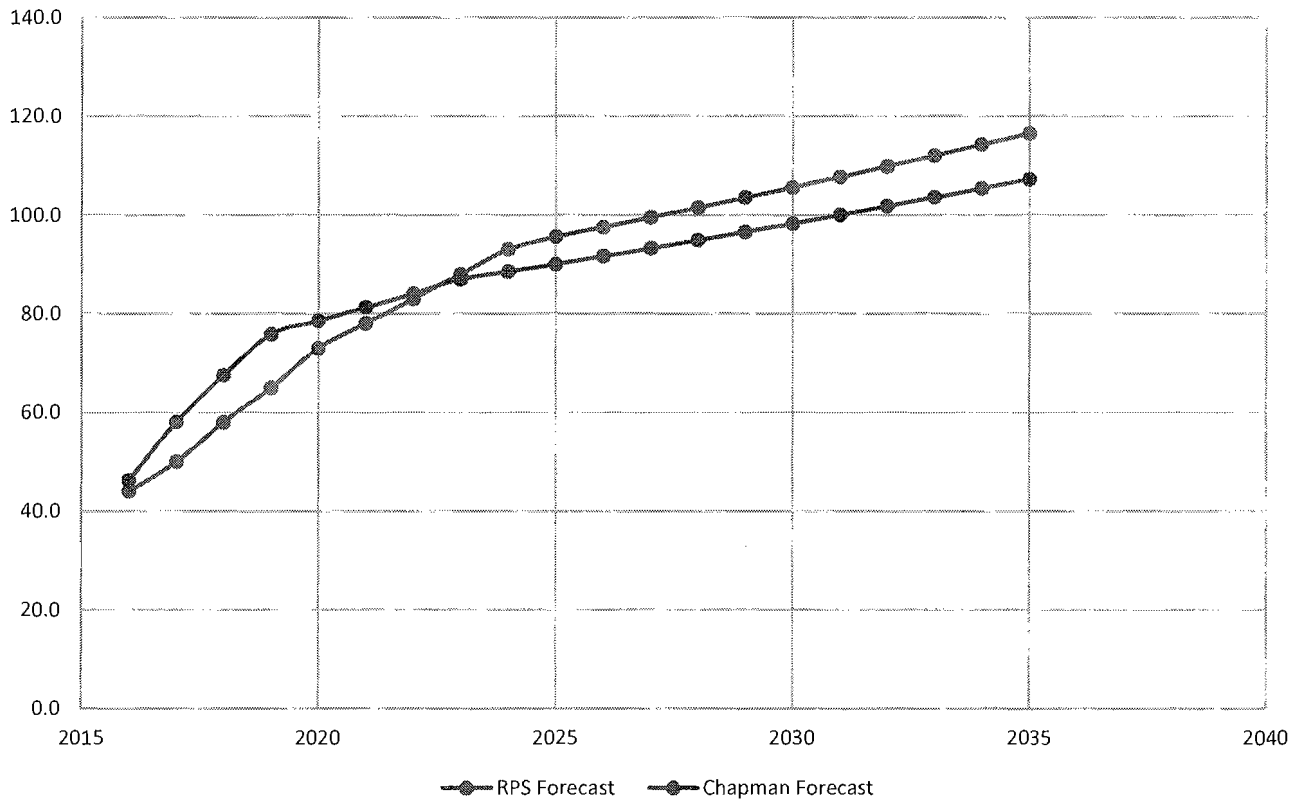


Figure 4-3 – Chapman versus RPS Base Price Forecasts from January 1, 2016 Reports

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OF EMIR-OIL CONCESSION BLOCK, ONSHORE KAZAKHSTAN AS OF JULY 1, 2016

Year	Oil Export	Oil Domestic	Gas Domestic	Revenue	Opex	Social Charges	MET	ERT	Export Duty	Property Tax	EBITDA	Capital Expenditure	CIT	EPT	Change in WC	Net Cash Flow
	US\$/bbl	US\$/bbl	US\$/Mcf	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000	US\$ '000
2016	37.50	16.67	0.77	19,587	(6,364)	(730)	(1,202)	(2,586)	(3,236)	(2,286)	3,183	(28,600)	(82)	(425)	13,478	(12,446)
2017	39.94	21.73	0.82	69,221	(13,131)	(444)	(4,170)	(9,044)	(10,737)	(4,415)	27,281	0	(1,325)	(3,839)	(20,292)	1,826
2018	45.68	24.19	0.89	80,736	(13,844)	(818)	(4,752)	(10,321)	(12,108)	(4,810)	34,082	(37,313)	(3,750)	(402)	20,557	13,175
2019	54.73	27.06	0.95	188,048	(26,383)	(875)	(10,687)	(28,911)	(28,153)	(5,031)	88,009	(33,163)	(11,877)	(5,542)	(9,885)	27,541
2020	60.50	29.52	1.01	208,138	(29,444)	(1,235)	(11,508)	(35,937)	(30,228)	(5,481)	94,305	(54,122)	(11,326)	(3,965)	9,996	34,889
2021	66.27	31.98	1.07	202,664	(29,083)	(867)	(11,206)	(34,667)	(28,839)	(5,466)	92,536	(20,702)	(11,572)	(9,815)	(18,927)	31,520
2022	71.04	34.03	1.13	166,461	(25,805)	(625)	(8,969)	(30,104)	(23,627)	(5,226)	72,106	0	(9,679)	(19,969)	(9,002)	33,457
2023	75.80	36.08	1.20	132,352	(22,990)	(594)	(7,109)	(23,830)	(18,743)	(5,054)	54,033	0	(7,306)	(14,704)	1,863	33,886
2024	79.56	37.72	1.27	102,476	(20,587)	(566)	(5,499)	(20,563)	(14,656)	(4,932)	35,673	0	(4,405)	(8,655)	1,644	24,257
2025	82.92	39.20	1.34	79,661	(18,538)	(543)	(4,275)	(15,950)	(11,547)	(4,843)	23,976	0	(2,600)	(5,345)	1,330	17,361
2026	84.57	39.98	1.43	61,112	(16,736)	(523)	(3,290)	(12,237)	(8,685)	(4,778)	14,863	0	(1,241)	(3,024)	1,139	11,737
2027	86.27	40.78	1.51	47,575	(15,274)	(506)	(2,569)	(9,526)	(6,629)	(4,729)	8,341	0	(756)	(1,381)	954	7,159
2028	87.99	41.60	1.60	37,081	(14,606)	(416)	(2,012)	(8,204)	(5,330)	(4,693)	1,820	0	(405)	(50)	622	1,988
2029	89.75	42.43	1.70	29,230	(14,704)	(405)	(1,598)	(6,465)	(4,118)	(4,665)	(2,726)	0	(125)	0	194	(2,657)
2030	91.55	43.28	1.80	21,317	(7,449)	(372)	(1,123)	(4,711)	(3,383)	(4,647)	(367)	0	(988)	(2,964)	5,956	1,637
2031	93.38	44.14	1.91	16,620	0	(326)	(875)	(3,571)	(2,584)	(4,633)	4,530	0	(851)	(1,741)	100	2,038
2032	95.24	45.03	2.02	13,410	0	(326)	(706)	(2,960)	(2,043)	(4,622)	2,752	0	(746)	(1,183)	79	902
2033	97.15	45.93	2.14	10,877	(73,125)	(326)	(572)	(2,514)	(1,624)	(4,614)	(71,898)	0	(415)	(233)	38	(72,508)

Figure 4-4 – Proved Reserves (1P) Cash Flow Summary