Issue 2 | November 2013

Revised Version

Monthly Report

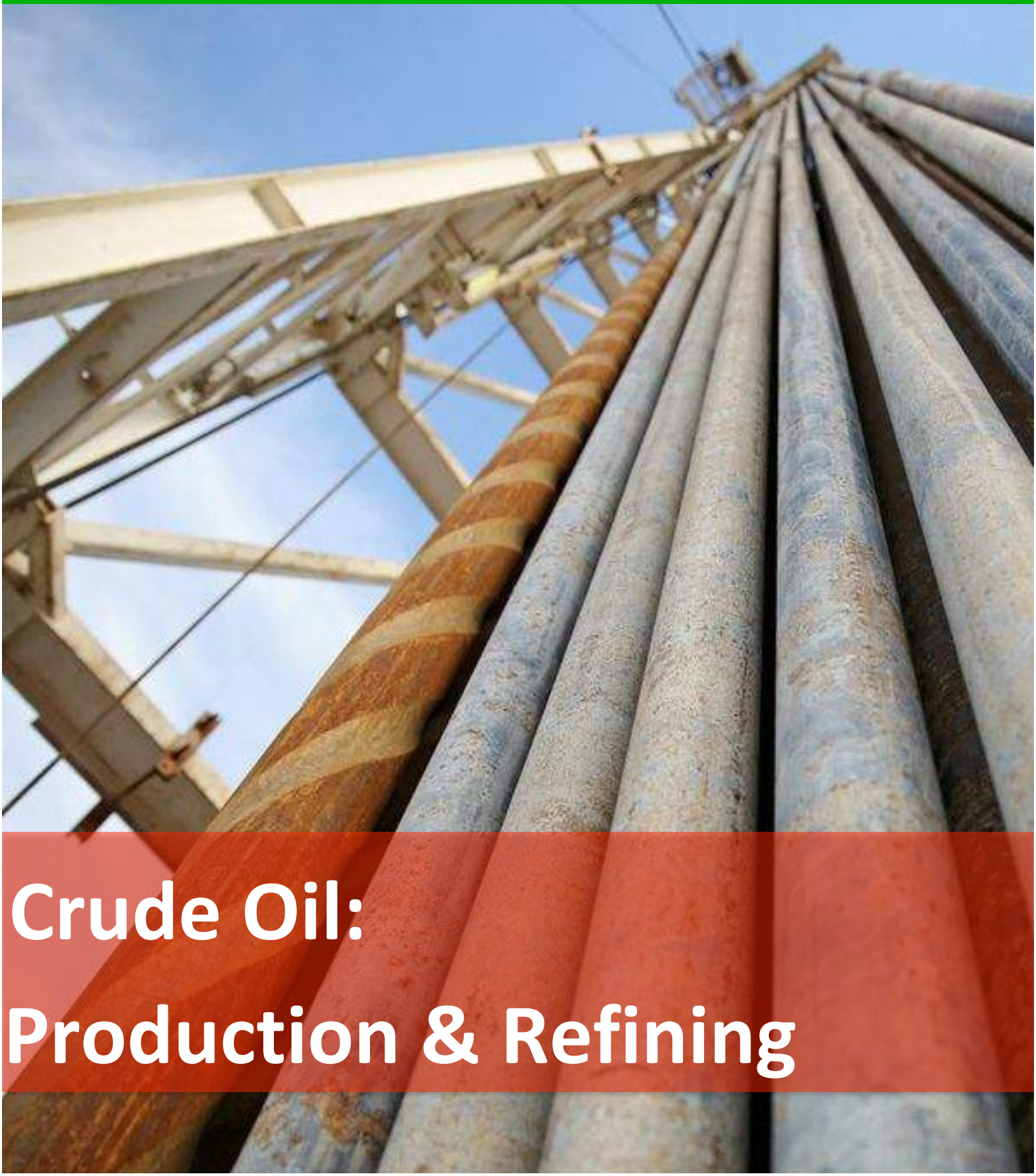
- Production Figures
- Export Figures
- Refining Figures
- Well Activity
- Rig Count
- Latest Employment Stats
- PSCs Update

MINISTRY OF NATURAL RESOURCES | KURDISTAN REGIONAL GOVERNMENT

وەزارەتی سامانە سروشتیەکان | حکومەتی هەرێمی کوردستان

Contents

Section 1



Crude Oil: Production & Refining

Crude Oil Production, Export & Refined Quantities

IOCs	Beginning Stock Tank (BOE)	Stock Tank Production (BOE)	Export via SOMO (BOE)	*Export via Trucking (BOE)	*Export via KRG Pipeline (BOE)	Local Sales (BOE)	Supplied to Main Refineries (BOE)	Use in the Field (BOE)	End Stock Tank (BOE)
DNO	91,050	1,188,067	0	0	0	818,720	164,400	0	295,997
Murphy Oil	0	0	0	0	0	0	0	0	0
Petro Quest	0	0	0	0	0	0	0	0	0
Perenco	0	0	0	0	0	0	0	0	0
HKN	7,604	0	0	7,286	0	0	0	0	318
Genel Energy	1,520	14,309	0	0	0	14,861	0	0	968
Gulf Keystone	44,239	17,342	0	5,065	0	25,600	0	0	30,916
Exxon Mobil	0	0	0	0	0	0	0	0	0
Taqa	0	0	0	0	0	0	0	0	0
Hunt Oil	0	0	0	0	0	0	0	0	0
Hess	0	0	0	0	0	0	0	0	0
Kalegran Ltd	0	0	0	0	0	0	0	0	0
Chevron	0	0	0	0	0	0	0	0	0
Afren	15,024	38,914	0	0	0	43,757	0	0	10,181
Oryx (Norbest)	0	0	0	0	0	0	0	0	0
Marathon Oil	0	0	0	0	0	0	0	0	0
OMV	388	0	0	0	0	0	0	0	388
Repsol	0	0	0	0	0	0	0	0	0
Gas Plus Khalakan	0	0	0	0	0	0	0	0	0
TTOPCO	113,957	1,511,504	0	281,694	304,227	71,823	852,239	0	115,478
KNOC	0	0	0	0	0	0	0	0	0
Talisman	0	0	0	0	0	0	0	0	0
Oil Search	0	0	0	0	0	0	0	0	0
Western Zagros	3,940	0	0	0	0	0	0	0	3,940
Gazprom	0	0	0	0	0	0	0	0	0
Dana Gas/Crescent Petroleum	25,795	531,811	**2,632	443,319	0	85,157	0	0	26,498
Khurmala	29,776	2,082,474	0	0	0	417,777	1,650,431	0	44,042
Total	0	0	0	0	0	0	0	0	0
Komet	0	0	0	0	0	0	0	0	0
Total	**333,293**	**5,384,421**	**2,632**	**737,364**	**304,227**	**1,477,695**	**2,667,070**	**0**	**528,726**
Average Daily Rate	**NA**	**179,480**	**87**	**24,578**	**10,141**	**49,256**	**88,902**	**0**	**NA**

Table 1: See explainer on page 4 for definitions.

***Gross figures including government and contracting share (Government share used for product swaps or product financing).**
**** Condensate export through Jambur pipeline due to trucking constraints in order to avoid shutdown.**

Crude Oil Production, Export & Refined Quantities Explainer

IOCs	**International Oil Company** (IOC) is the industry standard term used to describe foreign exploration and production companies. National Oil Companies (NOCs) also exist, such as Saudi Aramco, the NOC of Saudi Arabia. In general NOCs tend to only operate in their home country, however it is not unusual to see NOCs operating out of their home country.
Beginning Stock Tank (BOE)	Measured in Barrels of Oil Equivalent (BOE), the **Beginning Stock Tank** refers to the quantity in storage at the beginning of the month.
Stock Tank Production (BOE)	Measured in Barrels of Oil Equivalent (BOE), the **Stock Tank Production** refers to the quantity of oil or gas produced according to the stock tank meter.
Export Via SOMO (BOE)	Measured in Barrels of Oil Equivalent (BOE), **Export via SOMO** refers to the quantity of oil or gas exported through the **State Organisation for Marketing of Oil (SOMO)**. SOMO is part of the Iraqi Federal Ministry of Oil and manages all petroleum exports out of Southern Iraq.
Export Via Trucking (BOE)	Measured in Barrels of Oil Equivalent (BOE), **Export via Trucking** refers to oil and gas exports out of the Kurdistan Region through trucks, under the current crude oil for products swaps arrangement with Turkey.
Export Via KRG Pipeline (BOE)	Measured in Barrels of Oil Equivalent (BOE), **Export via KRG Pipeline** refers to exports through the newly commissioned KRG pipeline to Turkey.
Local Sales (BOE)	Measured in Barrels of Oil Equivalent (BOE), **Local Sales** refers to the quantity of oil and gas sold domestically to local buyers. Locally purchased crude oil is processed in country at Topping Plants, and the majority of the refined products are consumed locally (except for Naphtha and Fuel Oil which are sometimes exported through Iran).
Supplied to Main Refineries (BOE)	Measured in Barrels of Oil Equivalent (BOE), **Supplied to Main Refineries** refers to the quantity of oil and gas supplied to the MNR monitored refineries; Kalak (operated by Kar Group), Bazian (operated by Bezhan Pet) and Tawke (operated by DNO). Almost all of the refined products from the main refineries are consumed locally, except for Naphtha and Fuel Oil which are sometimes exported through Iran.
Operational Use in the Field (BOE)	Measured in Barrels of Oil Equivalent (BOE), **Operational use in the field** refers to the quantity of oil or gas used by the operator to feed their energy requirements in order to conduct their operations.
End Stock Tank (BOE)	Measured in Barrels of Oil Equivalent (BOE), the **End Stock Tank** refers to the quantity in storage at the end of the month.

Did you know that the first well ever drilled in the Middle East was in the Kurdistan Region, in the Chia Surkh area in 1902?

Refined Products Table

Product	Refined (m3)	Sold (m3)	Stored (m3)	Re-processed (m3)
Naphtha	113,708	35,301	20,492	110,618
Kerosene	23,016	19,709	6,084	0
Diesel	76,503	78,365	6,051	0
Fuel Oil	188,676	190,760	26,369	0
Gasoline*	90,568	91,373	16,603	0
Liquid Gas*	4,785	4,724	757	0
Sweet Naphtha*	1,013	1,309	2,852	581

Table 2: See below explainer for definitions

	Processed by Refineries (m3)
Crude Oil	423,897

*** Note that these products are produced from the re-processing of Naphtha.**

Product	**Refined petroleum products** are derived from crude oils through processes such as catalytic cracking and fractional distillation. These products have physical and chemical characteristics that differ according to the type of crude oil and subsequent refining processes. Refined petroleum products in the Kurdistan Region include, but are not limited to: Naphtha, Kerosene, Diesel, Fuel Oil, Gasoline, Liquid Gas, Sweet Naphtha and Benzene.
Refined	Measured in cubic metres (m^3), this is the **quantity of product produced** as a result of refining crude oil; also known as refinery output.
Sold	Measured in cubic metres (m^3), this is the **quantity of product sold**. All refined products are sold locally through the MNR. Almost all refined products are consumed locally except for Naphtha and Fuel Oil, which is occasionally exported to neighbouring countries.
Stored	Measured in cubic metres (m^3), this is the **quantity of product in storage** at the refineries at the time the data was captured.
Re-processed	Measured in cubic metres (m^3), this is the **quantity of product re-processed** at the refineries. This is typically Naphtha that is re-processed to produce Benzene.
Beginning Inventory	Measured in cubic metres (m^3), this is the **quantity of crude oil in storage** at the refineries at the beginning of the month.
Received by Refineries	Measured in cubic metres (m^3), this is the **quantity of crude oil received** by the refineries from oil producing fields. Crude oil is received via trucks and pipelines.
Processed by Refineries	Measured in cubic metres (m^3), this is the **quantity of crude oil processed** by the refineries to produce petroleum products.
End Inventory	Measured in cubic metres (m^3), this is the **quantity of crude oil in storage** at the refineries at the end of the month.

$$Standard\ Refining\ Losses\ (\%) = \frac{Refined\ Naphtha\ (m3) + Refined\ Kerosene\ (m3) + Refined\ Diesel\ (m3) + Refined\ Fuel\ Oil\ (m3)}{Total\ processed\ by\ Refineries\ (m3)} = \frac{401{,}903}{423{,}897} = 5.2\%$$

$$Re-processing\ Naphtha\ Losses\ (\%) = \frac{Refined\ Gasoline\ (m3) + Refined\ Liquid\ Gas\ (m3) + Refined\ Sweet\ Naphtha\ (m3)}{Re-processed\ Naphtha\ (m3)} = \frac{96{,}366}{110{,}618} = 12.9\%$$

Section 2

Well Drilling Activity

Well Drilling Activity – General Info (1)

No.	IOC	Block	Well Name	Rig Name	Drilling Contractor
1	Repsol	Piramagrum	Zewe-1	Parker 269	Parker
2	Chevron	Rovi	Rovi 2	104	Nabors
3	Chevron	Sarta	Sarta 2	103	Nabors
4	Talisman	Kurdamir	Kurdamir - 2	T-80	PDOS
5	Talisman	Kurdamir	Kurdamir - 3	T-80	PDOS
6	Taqa	Atrush	AT-4	DQE 031	DQE
7	Western Zagros	Garmian	Sarqala-1 RE	Rig 23	Romfor
8	Western Zagros	Kurdamir	Kurdamir-1	Rig 23	Romfor
9	Western Zagros	Garmian	Mil Qasim-1	Rig I-10	Viking
10	Western Zagros	Garmian	Hasira-1	GW 83	Grey Wolf
11	Western Zagros	Garmian	Baram-1	GW 604	Grey Wolf
12	OMV	Bina Bawi	Bina Bawi 3	Rig 8	GYP
13	OMV	Bina Bawi	Bina Bawi 4	T-63	PDOS
14	OMV	Bina Bawi	Bina Bawi 6	T-63	PDOS
15	EMKRIL	Pirmam	Pirmam - 1	887	Weatherford
16	EMKRIL	Alqosh	Alqosh - 1	888	Weatherford
17	Oil Search	Taza	Taza-2	PR 3	Sakson
18	Hess	Shakrok	Shakrok #1	Ensign 941	Ensign
19	TTOPCO	Taq Taq	TT-02	Ideco H-525	Unknown
20	TTOPCO	Taq Taq	TT-04	IRI-900	TTOPCO
21	TTOPCO	Taq Taq	TT-05	IRI-900	TTOPCO
22	TTOPCO	Taq Taq	TT-06	IRI-900	TTOPCO
23	TTOPCO	Taq Taq	TT-07	IRI-900	TTOPCO
24	TTOPCO	Taq Taq	TT-08	IRI-900	TTOPCO
25	TTOPCO	Taq Taq	TT-09	IRI-900	TTOPCO
26	TTOPCO	Taq Taq	TT-10	Kurdistan-1	TTOPCO
27	TTOPCO	Taq Taq	TT-11	IRI-900	TTOPCO
28	TTOPCO	Taq Taq	TT-12	IRI-900	TTOPCO
29	TTOPCO	Taq Taq	TT-13	IRI-900	TTOPCO
30	TTOPCO	Taq Taq	TT-14	IRI-900	TTOPCO
31	TTOPCO	Taq Taq	TT-15	IRI-900	TTOPCO
32	TTOPCO	Taq Taq	TT-16	IRI-900	TTOPCO
33	TTOPCO	Taq Taq	TT-17	IRI-900	TTOPCO
34	TTOPCO	Taq Taq	TT-18	IRI-900	TTOPCO
35	TTOPCO	Taq Taq	TT-19	IRI-900	TTOPCO
36	TTOPCO	Taq Taq	TT-20	IRI-900	TTOPCO

Table 3: See explainer on page 10 for definitions

Well Drilling Activity – General Info (2)

No.	IOC	Block	Well Name	Rig Name	Drilling Contractor
37	TTOPCO	Taq Taq	TT-21	IRI-900	TTOPCO
38	TTOPCO	Taq Taq	TT-22	Discoverer-4	AOS (KS Drilling)
39	TTOPCO	Tag Tag	TT-25	IRI-900	TTOPCO
40	TTOPCO	Tag Tag	TT-26	IRI-900	TTOPCO
41	GKPI	Shaikan	SH-1B	Dynamic 1	ARAR
42	GKPI	Shaikan	SH-2	WDI 842	Weatherford
43	GKPI	Shaikan	SH-3	Dynamic 1	ARAR
44	GKPI	Shaikan	SH-4	Rig 22	Romfor
45	GKPI	Shaikan	SH-5B	Discoverer 1	AOS (KS Drilling)
46	GKPI	Shaikan	SH-6	WDI 842	Weatherford
47	GKPI	Shaikan	SH-7	WDI 319	Weatherford
48	GKPI	Shaikan	SH-8	WDI 842	Weatherford
49	GKPI	Shaikan	SH-10A	WDI 842	Weatherford
50	GKPI	Sheikh Adi	SA-3	WDI 842	Weatherford
51	Gas Plus	Khalakan	Shewahan-1A	Rig 051	DQE
52	Afren	Barda Rash	Barda Rash - 1	F - 320	CASCO Petroleum
53	Afren	Barda Rash	Barda Rash - 2	F - 200	CASCO Petroleum
54	Afren	Barda Rash	Barda Rash - 4	i10	Viking
55	Afren	Barda Rash	Barda Rash - 5	23	EDC Romfor
56	Afren	Barda Rash	Barda Rash - 1	23	Romfor
57	Afren	Barda Rash	Barda Rash - 2	23	Romfor
58	Genel Energy	Ber Bahr	Ber Bahr -1	PR4	Sakson
59	Genel Energy	Miran	Miran West – 1	RIG 10	Great Wall Drilling
60	Genel Energy	Miran	Miran West – 5	T63	Performance
61	Hunt Oil	Ain Sifni	Simrit #2	Rig 11	Viking
62	Hunt Oil	Ain Sifni	Maqlub #1	Rig 21	Viking
63	Oryx	Hawler	Demir Dagh – 3	SK601	Sakson
64	Oryx	Hawler	Banan – 1	DS1	KS Drilling
65	Oryx	Hawler	Demir Dagh -2	R22	EDC Romfor
66	Oryx	Hawler	Demir Dagh – 2	DS1	KS Drilling
67	Oryx	Hawler	Zey Gwara – 1	DS1	KS Drilling
68	Marathon Oil	Harir	Mirawa #1	T-221	PDOS
69	KNOC	Bazian	Bn-2	DQ036	DQE
70	Kalegran	Akri-Bijeel	Bijell-2	S – 801	Sakson
71	Kalegran	Akri-Bijeel	Bijell – 1B	R – 68	Rotary
72	Kalegran	Akri-Bijeel	Bijell-4	R-67	Rotary
73	Khurmala	Khurmala	K-122 (KDS-22)	IC-5	Tehnotop
74	Khurmala	Khurmala	K-114 (KDM-14)	IC-5	Tehnotop
75	Khurmala	Khurmala	K-123 (KDS-23)	IC-5	Tehnotop

Table 4: See explainer on page 10 for definitions

Well Drilling Activity – General Info (3)

No.	IOC	Block	Well Name	Rig Name	Drilling Contractor
76	Khurmala	Khurmala	K-211 (KDS-24)	T 50	Tehnotop
77	Khurmala	Khurmala	K-212 (KDM-19)	IC-5	Tehnotop
78	Khurmala	Khurmala	K-113 (KDM-08)	IC-5	Tehnotop
79	Khurmala	Khurmala	K-153 (KDM-24)	T 50	Tehnotop
80	Khurmala	Khurmala	K-389 (KDS-17)	Sindy I	OilServ
81	Khurmala	Khurmala	K-277 (KDS-03)	Sindy I	OilServ
82	Khurmala	Khurmala	K-387 (KDS-16)	F 100-DH-T	OilServ
83	Khurmala	Khurmala	K-383 (KDS-13)	Cardwell 125	Tehnotop
84	Khurmala	Khurmala	K-398 (KDS-20)	T 50	Tehnotop
85	Khurmala	Khurmala	K-390 (KDS-18)	Cardwell 125	Tehnotop
86	Khurmala	Khurmala	K-295 (KDN-09)	IC-5	Tehnotop
87	Khurmala	Khurmala	K-117 (KDM-01)	Cardwell 125	Tehnotop
88	Khurmala	Khurmala	K-113 (KDM-08)	T 50	Tehnotop
89	Khurmala	Khurmala	K-293 (KDM-25)	IC-5	Tehnotop
90	Khurmala	Khurmala	K-397 (KDM-03)	Mena-3	NPS
91	DNO	Tawke	Tawke - 1	Rig 9	DQE
92	DNO	Tawke	Tawke - 1A	Rig 9	DQE
93	DNO	Tawke	Tawke - 2	Rig 9	DQE
94	DNO	Tawke	Tawke - 4	Rig 9	DQE
95	DNO	Tawke	Tawke - 3	Rig 10	DQE
96	DNO	Tawke	Tawke - 5	Rig 9	DQE
97	DNO	Tawke	Tawke - 8	Rig 9	DQE
98	DNO	Tawke	Tawke - 5A	Rig 10	DQE
99	DNO	Tawke	Tawke - 12	Rig 10/Sindy-1	DQE
100	DNO	Tawke	Tawke - 11	Rig 9/Sindy-1	DQE
101	DNO	Tawke	Tawke -15	Rig 9	DQE
102	DNO	Tawke	Tawke - 10	Sindy-1	DQE
103	DNO	Tawke	Tawke - 9	Sindy-1	DQE
104	DNO	Erbil	Bastora -1	Rig 9 NC	DQE
105	DNO	Dohuk	Summail - 1	Rig 10	DQE
106	DNO	Tawke	Tawke - 13	Rig 9 NC	DQE
107	DNO	Tawke	Tawke - 16	Rig 10	DQE
108	DNO	Tawke	Tawke - 14	Rig 10	DQE
109	DNO	Tawke	Tawke - 18	Rig 10	DQE
110	DNO	Erbil	Benenan - 3	Rig 9 NC	DQE
111	DNO	Tawke	Tawke - 19	Rig 10	DQE

Table 5: See explainer on page 10 for definitions

Well Drilling Activity – General Info (4) with Explainer

No.	IOC	Block	Well Name	Rig Name	Drilling Contractor
112	DNO	Tawke	Tawke - 14AST	Rig 51	DQE
113	DNO	Tawke	Tawke - 20	Rig 10	DQE
114	DNO	Erbil	Bastora - 2 Pilot	Rig 9 NC	DQE
115	DNO	Tawke	Tawke - 17	Rig 32	DQE
116	DNO	Tawke	Tawke - 23	Rig 10	DQE
117	DNO	Tawke	Tawke - 21	Rig 32	DQE
118	DNO	Erbil	Benanan - 4	Rig 9 NC	DQE
119	DNO	Tawke	Tawke - 22	Rig 10	DQE
120	Dana Gas	Kormor	KM-3	NA	NOC (Operator)
121	Dana Gas	Kormor	KM-4	Rig 24	Romfor
122	Dana Gas	Kormor	KM-5	NA	NOC (Operator)
123	Dana Gas	Kormor	KM-6	NA	NOC (Operator)
124	Dana Gas	Kormor	KM-7	NA	NOC (Operator)
125	Dana Gas	Kormor	KM-8	NA	NOC (Operator)

Table 6: See below explainer for definitions

Note: The above table does not include suspended or abandoned wells.

IOC	**International Oil Company** (IOC) is the industry standard term used to describe foreign exploration and production companies. National Oil Companies (NOCs) also exist, such as Saudi Aramco, the NOC of Saudi Arabia. In general NOCs tend to only operate in their home country, however it is not unusual to see NOCs operating out of their home country.
Block	**Block** describes the territory assigned to the IOC for petroleum operations according to the Production Sharing Contract (PSC) between the IOC and the KRG. Block is termed as Contract Area in the contract.
Well Name	A **well** describes the vertical or horizontal hole drilled in order to discover and produce oil and gas.
Rig Name	**Rig Name** refers to the unique identification of the equipment (Drilling Rig) used to drill the well.
Drilling Contractor	**Drilling Contractor** refers to the company whom operate and in most cases own the Drilling Rig.

Well Drilling Activity – Specific Info (1)

No.	Spud Date	Current Status	Current Depth (m)	Target Depth (m)	Date TD was Reached (or Estimated)
1	05/11/2013	Drilling	615	3500	30/03/2014
2	23/07/2013	Drilling	3883	4200	NA
3	25/06/2013	Drilling	2588	3350	NA
4	25/10/2011	Awaiting EWT	4000	4000	25/06/2012
5	22/02/2013	Completed	2895	2885	17/06/2013
6	20/10/2013	Drilling	888	2459	24/11/2013
7	11/03/2011	Producing	3897	3818	07/06/2011
8	11/05/2009	Completion	4077	4000	22/12/2010
9	29/08/2011	Completion	2425	2400	24/11/2011
10	06/06/2013	Drilling	3992	4181	14/02/2014
11	13/08/2013	Drilling	3469	3732	02/01/2014
12	12/01/2011	Completed	3720	4121	20/09/2011
13	17/06/2012	Completed	4677	4220	06/07/2013
14	28/07/2013	Testing	2185	2454	31/12/2013
15	16/08/2013	Drilling	21	3435	01/06/2014
16	15/12/2013	Rigging Up	0	3600	01/10/2014
17	01/12/2014	Drilling	200	4016	01/07/2014
18	30/08/2013	Drilling	1600	3000	30/03/2014
19	13/06/1978	Completion	663	663	01/07/1978
20	13/05/2006	Producing	2286	2286	26/08/2006
21	23/10/2006	Producing	2070	2070	20/12/2006
22	08/01/2007	Producing	2265	2265	06/04/2007
23	30/04/2007	Producing	2187	2187	03/07/2007
24	19/07/2007	Producing	2366	2366	12/12/2007
25	30/08/2007	Water Injection	2444	2444	02/11/2007
26	14/08/2008	Producing	2247	2247	13/12/2008
27	04/09/2008	Completion	1000	1000	30/09/2008
28	12/12/2010	Producing	2179	2179	21/04/2011
29	27/04/2011	Producing	2227	2227	11/07/2011
30	14/07/2011	Producing	2354	2354	26/08/2011
31	27/08/2011	Producing	2170	2170	25/10/2011
32	29/10/2011	Producing	2392	2392	07/01/2012
33	08/01/2012	Producing	2300	2300	28/03/2012
34	24/10/2012	Producing	2175	2175	05/01/2013
35	28/03/2012	Producing	2375	2375	30/06/2012
36	15/06/2013	Producing	2422	2422	17/08/2013

Table 7: See explainer on page 14 for definitions

Well Drilling Activity – Specific Info (2)

No.	Spud Date	Current Status	Current Depth (m)	Target Depth (m)	Date TD was Reached (or Estimated)
37	02/04/2013	Producing	2370	2370	30/05/2013
38	27/03/2013	Drilling	3978	5427	31/03/2014
39	06/10/2013	Drilling (Temporary Suspended)	520	579	09/01/2014
40	30/10/2013	Drilling	520	582	07/12/2013
41	17/07/2010	Producing	NA	NA	25/08/2010
42	12/01/2010	Completed/Tested	3300	3300	18/07/2011
43	09/02/2010	Producing	1518	1210	12/02/2010
44	28/12/2012	Completed/Tested	NA	NA	11/02/2013
45	28/10/2011	Completed/Tested	3745	3745	05/10/2012
46	17/12/2011	Completed/Tested	3544	3544	29/04/2012
47	16/06/2013	Drilling	1351	4546	01/06/2014
48	30/12/2012	Completed/Tested	2178	2178	30/10/2012
49	07/05/2013	Completed/Tested	2255	2255	25/09/2013
50	NA	Mobilising	NA	3800	NA
51	NA	Drilling	1388	3672	05/01/2014
52	02/04/2009	Producing	3746	3300	06/11/2009
53	04/08/2010	Water Injection	3028	2750	22/12/2010
54	28/05/2013	Testing	4400	4400	16/10/2013
55	20/03/2013	Drilling	3329	4358	06/03/2014
56	12/06/2012	Producing	3746	3300	05/09/2012
57	29/12/2012	Water Injection	3122	2750	23/03/2013
58	10/10/2011	Side-tracked	3933	4350	01/04/2012
59	21/12/2008	Producing	2935	3000	24/03/2009
60	05/07/2013	Drilling	1263	4350	21/06/2014
61	29/10/2011	Testing	3800	3000	17/05/2012
62	15/06/2013	Drilling	3095	3224	15/12/2013
63	01/10/2013	Drilling	3846	4135	NA
64	01/08/2013	Testing	4000	4153	NA
65	01/11/2013	Completion	NA	NA	NA
66	01/07/2012	Completion	4020	4300	01/04/2013
67	01/03/2013	Completion	5298	4468	01/08/2013
68	19/03/2013	Completion	4260	3895	02/07/2013
69	22/06/2013	Testing	4950	4800	24/12/2013
70	13/03/2013	Drilling	4394	5393	NA
71	17/11/2013	Drilling	3934	3945	NA
72	01/12/2013	Drilling	2352	4819	NA
73	02/02/2012	Producing	1083	1083	NA
74	13/03/2012	Producing	1005	1005	NA
75	30/03/2012	Observation Well	1233	1233	NA
76	17/04/2012	Observation Well	1024	1024	NA

Table 8: See explainer on page 14 for definitions

Well Drilling Activity – Specific Info (3)

No.	Spud Date	Current Status	Current Depth (m)	Target Depth (m)	Date TD was Reached (or Estimated)
77	05/02/2012	Observation Well	1100	1100	NA
78	29/05/2012	Producing	1028	1028	NA
79	15/07/2012	Producing	1004	1004	NA
80	17/07/2012	Producing	1030	1030	NA
81	10/09/2012	Producing	1035	1035	NA
82	17/08/2013	Completion	1025	1025	NA
83	03/09/2013	Producing	1034	1034	NA
84	05/03/2013	Producing	1035	1035	NA
85	06/11/2013	Producing	1024	1024	NA
86	18/02/2013	Producing	1021	1021	NA
87	23/09/2013	Completion	1018	2300	NA
88	28/08/2013	Completion	1045	1045	NA
89	24/08/2013	Completion	1030	1070	NA
90	14/09/2013	Completion	1047	1047	NA
91	28/11/2005	Producing	2400	NA	12/06/2006
92	24/06/2006	Producing	724	NA	14/09/2006
93	25/09/2006	Producing	712	NA	03/12/2006
94	14/12/2006	Producing	395	NA	14/01/2007
95	10/01/2007	Producing	2545	NA	21/05/2007
96	22/01/2007	Producing	580	NA	01/03/2007
97	27/04/2007	Producing	2650	NA	18/09/2007
98	31/05/2007	Producing	2425	NA	31/08/2007
99	11/09/2007	Producing	2753	NA	28/03/2008
100	29/09/2007	Producing	2622	NA	23/06/2008
101	21/05/2008	Producing	3160	NA	16/10/2008
102	04/07/2008	Producing	636	NA	16/08/2008
103	23/08/2008	Producing	730	NA	19/09/2008
104	07/09/2010	Producing	3536	NA	18/05/2011
105	19/04/2011	Future Producer	3639	NA	14/12/2011
106	25/06/2011	Producing	2486	NA	17/08/2011
107	29/12/2011	Producing	2369	NA	01/03/2012
108	13/03/2012	Producing	2234	NA	16/05/2012
109	28/05/2012	Producing	2600	NA	22/09/2012
110	23/07/2012	Producing	3178	NA	15/11/2012
111	10/06/2012	Producing	2477	NA	26/11/2012

Table 9: See explainer on page 14 for definitions

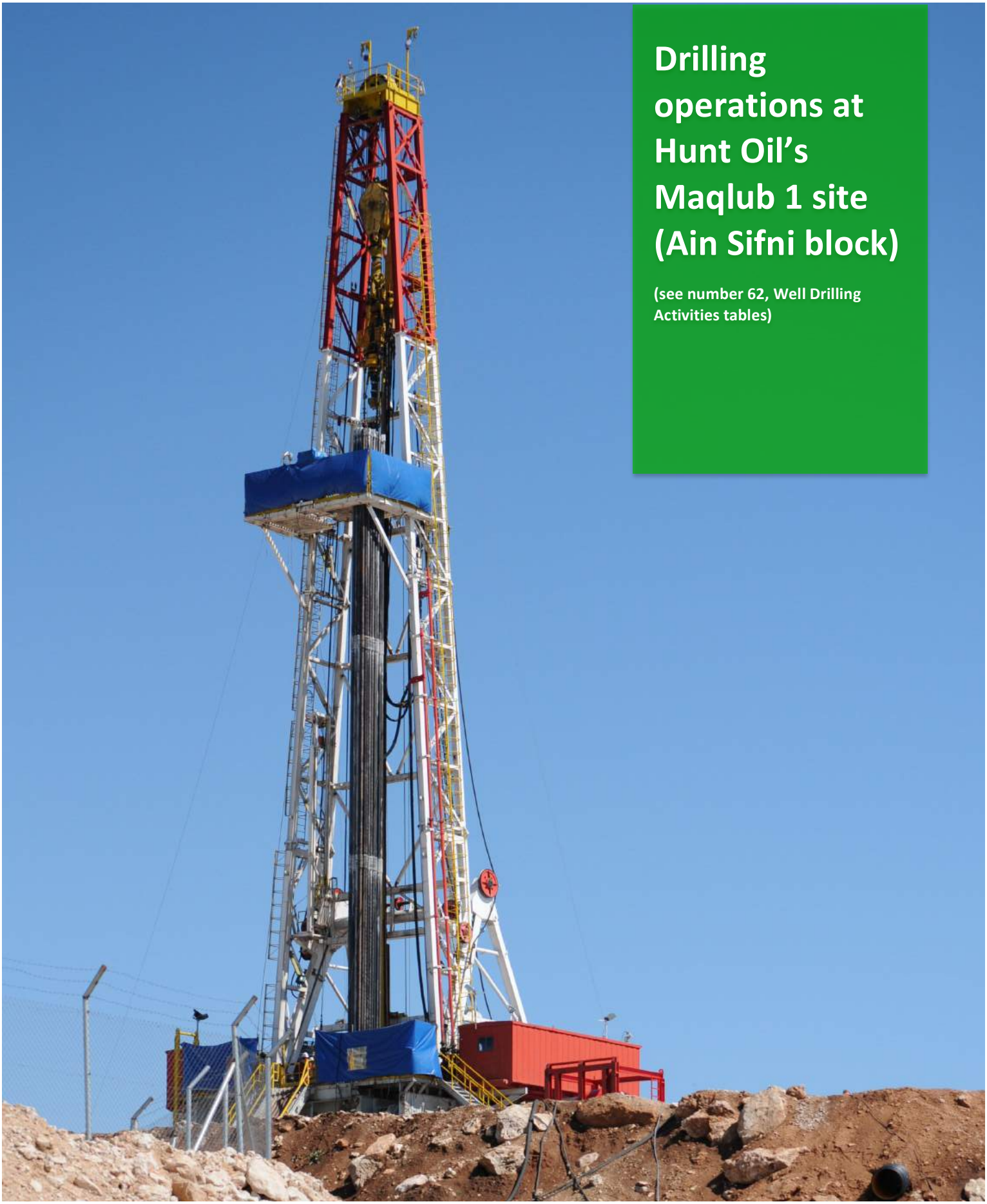
Well Drilling Activity – Specific Info (4) with Explainer

No.	Spud Date	Current Status	Current Depth (m)	Target Depth (m)	Date TD was Reached (or Estimated)
112	10/10/2012	Producing	2587	NA	18/11/2012
113	11/12/2012	Producing	2936	NA	24/04/2013
114	14/12/2012	Producing	3255	NA	25/07/2013
115	30/08/2012	Reservoir Assessment	4775	NA	05/07/2013
116	08/05/2013	Producing	2800	NA	21/08/2013
117	31/08/2013	Drilling	2095	2966	01/11/14
118	08/07/2013	Completion	3626	NA	11/09/2013
119	09/04/2013	Completion	2620	NA	15/11/2013
120	30/01/1980	Producing	1720	NA	01/08/1980
121	16/06/2010	Producing	1460	1460	09/11/2010
122	01/01/1989	Producing	1403	NA	01/01/1990
123	01/01/1990	Producing	1337	NA	01/01/1990
124	01/01/1990	Producing	1428	NA	01/01/1990
125	01/01/1990	Producing	1402	NA	01/01/1990

Table 10: See below explainer for definitions

Note: The above table does not include suspended or abandoned wells.

Spud Date	**Spud Date** refers to the first day of drilling.
Current Status	The **Current Status** describes the nature of the current operations taking place at the well. These typically include, but are not limited to: Drilling, Testing, Completion and Production.
Current Depth	Measure in meters (m), the **Current Depth** describes the depth reached by the drilling contractor.
Target Depth	Measure in meters (m), the **Target Depth** or **TD** describes the objective depth to be reached by the drilling contractor, as set by the IOC.
Date TD was Reached	**Date TD was Reached** refers to the day the target depth was reached, or if it has not yet been reached, the estimated date.



Drilling operations at Hunt Oil's Maqlub 1 site (Ain Sifni block)

(see number 62, Well Drilling Activities tables)

Section 3

Rig Count & Activity

Rig Count & Activity (1)

No.	Drilling Contractor	Rig Name	Arrival into Kurdistan	No. of wells drilled in Kurdistan previously
1	EDC Romfor	EDC Romfor Rig 22	2006	10
2	EDC Romfor	EDC Romfor Rig 23	2008	6
3	EDC Romfor	EDC Romfor Rig 24	2009	6
4	EDC Romfor	EDC Romfor Rig 25	2013	1
5	Rotary Drilling	R-67	10/01/2011	3
6	Rotary Drilling	R-68	02/03/2012	1
7	Guney Yildizi Petrol	RIG-8	01/08/2012	1
8	Weatherford Drilling	319	2009	3
9	Weatherford Drilling	842	2009	7
10	Weatherford Drilling	829	2010	3
11	Weatherford Drilling	887	2013	NA
12	Weatherford Drilling	888	2013	NA
13	DQE	DQ030	01/03/2013	1
14	DQE	DQ031	01/02/2011	5
15	DQE	DQ032	01/08/2012	2
16	DQE	DQ036	01/06/2013	1
17	DQE	DQ037	01/08/2011	4
18	DQE	DQ038	01/03/2012	2
19	DQE	DQ039	01/10/2005	17
20	DQE	DQ040	01/06/2006	16
21	DQE	DQ051	01/03/2012	4
22	Nabors	103	01/03/2013	0
23	Nabors	104	01/06/2013	0
24	Parker Drilling	247	15/08/2013	0
25	Parker Drilling	269	20/07/2013	0
26	Stone Energy	S101	NA	4
27	Stone Energy	PR 3	2010	6
28	Stone Energy	PR 4	2009	6
29	Performance Drilling	T-63	01/10/2011	3
30	Performance Drilling	T-80	01/08/2010	4
31	Performance Drilling	T-221	2011	2
32	KS Drilling	Discoverer-1	2008	2
33	KS Drilling	Di scovere-4	2011	2
34	GW Drilling	GW Drilling R83	10/05/2013	0
35	GW Drilling	GW Drilling R604	01/07/2013	0
36	Sakson Egypt	SK-601	2010	3
37	Sakson Egypt	SK-801	2012	1
38	CAT GmbH	Cardwell KB200C	2012	0
39	Ensign	Rig-941	01/06/2013	1
40	Viking	Rig 21	2013	0
41	Viking	Rig 11	2011	3
42	Viking	Rig 10	2010	2
43	Viking	Rig 7	2012	1
44	Tehnotop	IC 5	2012	NA
45	Tehnotop	T50	2012	NA
46	Tehnotop	Cardwell KB200C	2013	NA

Table 11: See explainer on page 18 for definitions

Rig Count & Activity (1) - Explainer

Drilling Contractor	**Drilling Contractor** refers to the company whom operate and in most cases own the Drilling Rig.
Rig Name	**Rig Name** refers to the unique identification of the equipment (Drilling Rig) used to drill the well.
Arrival into Kurdistan	**Arrival in Kurdistan** refers to when the Rig arrived into Kurdistan.
No. of Wells Drilled in Kurdistan Previously	**No, of wells drilled in Kurdistan Previously** describes the number of wells previously drilled by that rig within the Kurdistan Region.

Rig Count & Activity (2)

No.	Current location of rig (block name if drilling)	Well Name (if drilling)	Currently Drilling (yes/no)	Top Drive or Kelly Drive
1	Hawler	Zeg 1	Yes	TESCO TDS 250 HMI
2	Barda Rash	Barda Rash - 5	Yes	TESCO HS 650
3	Binari Serwan	BS – 1	No	NOV TDS 11 SA
4	Yard, Gazna Road, Erbil	NA	No	NOV TDS 11 SA
5	Akri Bijeel	Bijell-4	Yes	Top Drive
6	Akri Bijeel	Bijell-1B	Yes	Top Drive
7	Sarsang	Mangesh-1	No	Top drive
8	Shaikan	SH-07C	Yes	Top Drive
9	Sheikh Adi	SA – 3A	Yes	Top Drive
10	Sarsang	EST-01	No	Top Drive
11	Pirman	Pirman – 1	No	Top Drive
12	Al Qosh	NA	No	Top Drive
13	Yard, Erbil	NA	Yes	Kelly Drive
14	Atrush	Atrush-4	Yes	Top Drive
15	Tawke	Tawke-21	Yes	Top Drive
16	Bazian	BN-2	Yes	Top Drive
17	Yard, Erbil	NA	No	Top Drive
18	Yard, Erbil	NA	No	Top Drive
19	Benenan	Benenan-4	Yes	Top Drive
20	Tawke	Tawke-22	Yes	Top Drive
21	Shewashan	Shewashan-1	Yes	Top Drive
22	Sarta	Sarta 2	Yes	Top Drive
23	Rovi	Rovi 2	Yes	Top Drive
24	Dinarta	Kanibot #1	Mobilising	Varco TDS-11 SA
25	Piramagrun	Zewe-1	Yes	Varco TDS-11 SA
26	NA	NA	No	TDS11
27	NA	NA	Mobilising	TDS – 11SA
28	NA	NA	No	TDS – 11SA
29	Minar	Minar – 5	No	Top Drive NOV Varco TDS-11
30	Topkhana	Topkhana-2	Yes	Top Drive NOV Varco TDS-1
31	Harir	Jisik-1	Yes	Top Drive Bentec HT 500
32	Hawler	BAN1	Yes	Top Drive Varco 11S
33	Taq Taq	TT-22	Yes	Top Drive Varco 11S
34	Garmian	Hasira 1	Yes	Top Drive TDS-11SA
35	Garmian	Baram 1	Yes	Top Drive TDS-11SA
36	Hawler	Demir Dagh - 3	Yes	Top Drive
37	Akri Bijeel	Bijeel-2	Yes	Top Drive
38	Khurmala	Khurmala 117	Yes	NA
39	Shakrok	Shakrok 1	Yes	Top Drive
40	Maqlub	Maqlub 1	Yes	Top Drive
41	Simrit	Simrit 3	No	Top Drive
42	Barda Rash	BD 4	Yes	Top Drive
43	Bina Bawi	BB3	Yes	Swivel
44	Khurmala	K293	No	NA
45	Khurmala	K306	No	NA
46	Khurmala	K117	No	NA

Table 12: See explainer on page 20 for definitions

Rig Count & Activity (2) - Explainer

Current Location of Rig	**Current Location of Rig** describes where the Rig is located within the Kurdistan Region.
Well Name	A **well** describes the vertical or horizontal hole drilled in order to discover and produce oil and gas.
Currently Drilling	**Currently Drilling** refers to whether the Rig is currently operating or not.
Top Drive or Kelly Drive	A **Top Drive** is a mechanical device on a drilling rig that provides clockwise torque to the drill string to facilitate the process of drilling a well. A **Kelly Drive** refers to a type of well drilling device on a drilling rig that employs a section of pipe with a polygonal outer surface which passes through the bushing and rotary table. This bushing is rotated via the rotary table and thus the pipe and the attached drill string turn while the polygonal pipe is free to slide vertically in the bushing as the bit digs the well deeper.

Rig Count & Activity (3)

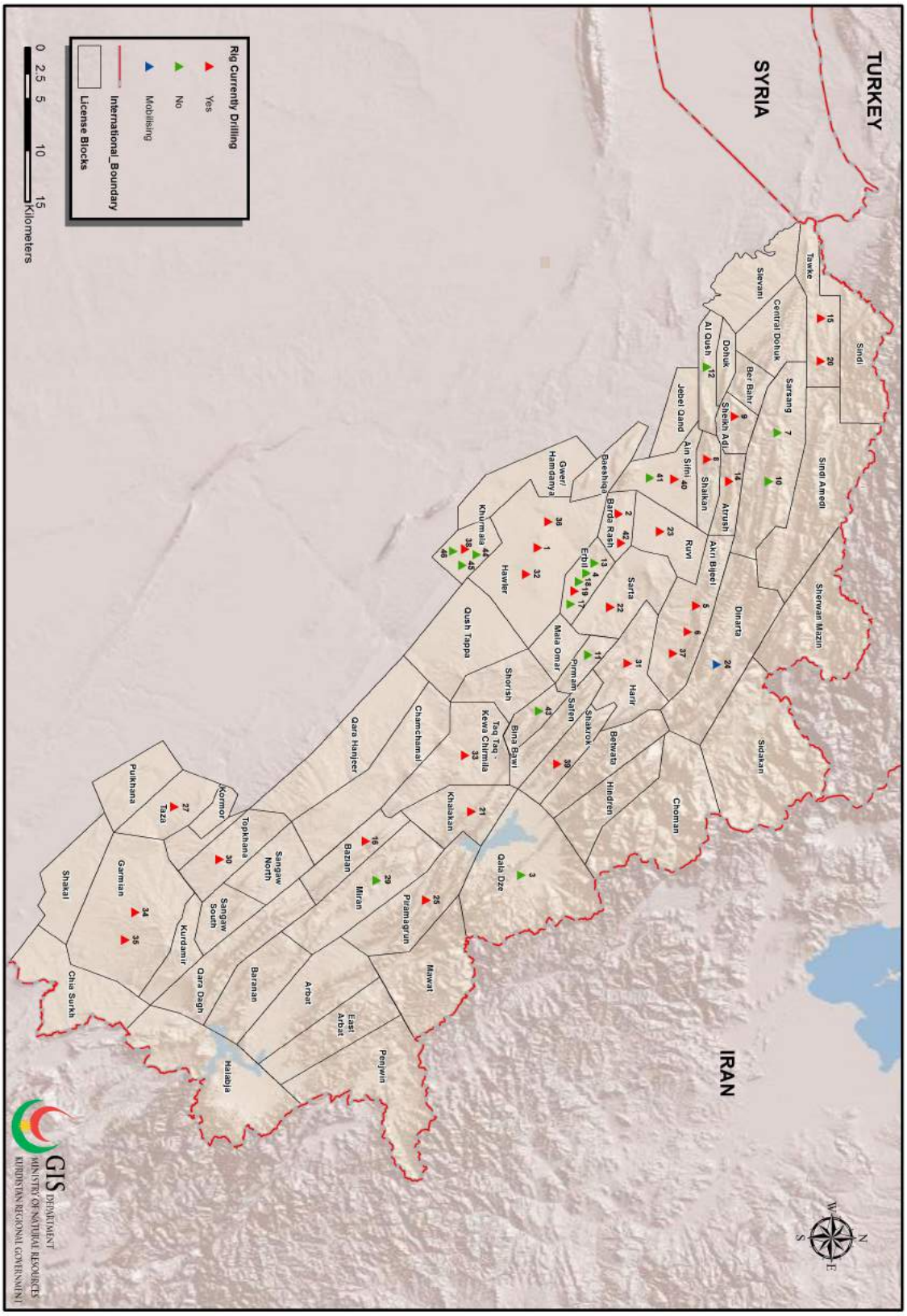
No.	HP	Date of manufacture	Manufacturer	Country of origin
1	1000	Rebuild 2013	Parco	USA
2	1500	NA	Parco	USA
3	1500	Rebuild 2013	Parco	USA
4	1500	2012	National Oilwell	USA
5	2000	2007	Nanyang RG Petro-Machinery (Group) Co. Ltd	China
6	1500	2007	Nanyang RG Petro-Machinery (Group) Co. Ltd	China
7	2000	1978	National	USA
8	3000	1999	Branham	USA
9	1500	2008	NOV	USA
10	2000	2009	Letouneau Industries	UAE/USA
11	2000	2013	Drillmec	Italy
12	2000	2013	Drillmec	Italy
13	750	01/02/2012	RG PETRO-MACHINERY (GROUP) CO.LTD	China
14	2000	01/07/2007	BaoJi Oilfield Machinery CO.LTD	China
15	2000	01/04/2012	BaoJi Oilfield Machinery CO.LTD	China
16	2000	01/05/2012	BaoJi Oilfield Machinery CO.LTD	China
17	2000	01/05/2011	BaoJi Oilfield Machinery CO.LTD	China
18	2000	01/11/2006	BaoJi Oilfield Machinery CO.LTD	China
19	1500	01/06/2005	BaoJi Oilfield Machinery CO.LTD	China
20	1500	01/03/2006	BaoJi Oilfield Machinery CO.LTD	China
21	1500	01/07/2010	BaoJi Oilfield Machinery CO.LTD	China
22	3000	2006 (Refurbished)	Lee C Moore	USA
23	3000	2013 (Refurbished)	Lee C Moore	USA
24	2000	2007	Bomco	China/USA
25	2000	Modified 2008	Loadmaster	USA
26	2000	2007	Bomco	China
27	2000	2008	Bomco	CHINA
28	2000	2008	Bomco	CHINA
29	2000	1982 (Refurbished 2011)	Dreco	Canada/Germany
30	2000	1981 (Refurbished 2010)	Pyramid	USA/Germany
31	1500	2011	Bentec/Kerui	China/Germany
32	1500	2007	Bomco	China
33	2000	2008	American Lock	America
34	2000	1981 (Refurbished 2013)	Lee-C-Moore	USA
35	2000	1978 (Refurbished 2013)	Dreco	USA
36	2000	2010	Bomco	CHINA
37	3000	2012	DRILLMEC	ITALY
38	460	1996	Cardwell	USA
39	2000	2001	IDM	USA
40	2000	2008	Bomco	China
41	2000	2008	Bomco	China
42	2000	2008	Bomco	China
43	650	2007	RJ	China
44	NA	NA	Upetrom	Romania
45	NA	NA	Upetrom	Romania
46	NA	NA	Cardwell	USA

Table 13: See explainer on page 22 for definitions

Rig Count & Activity (3) - Explainer

HP	**Horsepower or HP** is the unit of measure of power of the Drilling Rig, where 1 HP is equal to 746 watts.
Date of Manufacture	**Date of Manufacture** refers to the date the Drilling Rig was manufacture.
Manufacturer	**Manufacturer** refers to the name of the manufacturing company.
Country of Origin	**Country of Origin** refers to where the Drilling Rig was manufacture.

Current Rig Locations



Section 4

Local Workforce Development

Employment Statistics

IOC	Total Employees	Total Locals	Percentage Locals
Khurmala	424	418	99%
HKN	246	208	85%
Dana Gas/Crescent Petroleum	498	392	78%
DNO	561	418	74%
Gas Plus Khalakan	18	13	72%
Gulf Keystone	233	163	70%
TTOPCO	578	406	70%
Exxon	198	134	68%
Western Zagros	232	144	62%
OMV	106	65	61%
Petro Quest	5	3	60%
Repsol	89	52	58%
Taqa	173	92	53%
Mol Group (Kalegran Ltd)	122	62	51%
Hess	98	48	49%
Oil Search	244	105	43%
Genel Energy	91	36	40%
KNOC	20	8	40%
Total	21	8	40%
Marathon	69	27	39%
Hunt Oil	63	23	37%
Talisman	127	42	33%
Komet	22	7	31%
Oryx (Norbest)	76	21	28%
Chevron	147	41	28%
Afren	58	14	24%
Gazprom	57	9	16%
Total	**4576**	**2959**	**64%**

IOC	**International Oil Company** (IOC) is the industry standard term used to describe foreign exploration and production companies. National Oil Companies (NOCs) also exist, such as Saudi Aramco, the NOC of Saudi Arabia. In general NOCs tend to only operate in their home country, however it is not unusual to see NOCs operating out of their home country.
Total Employees	**Total Employees** refers to the total number of employees working directly for the IOC, including both foreign and local personnel.
Total Locals	**Total Locals** refers to the total number of local employees working directly for the IOC.
Percentage Locals	**Percentage Locals** refers to the percentage of local personnel of the total number of employees.

Employment Level Breakdown

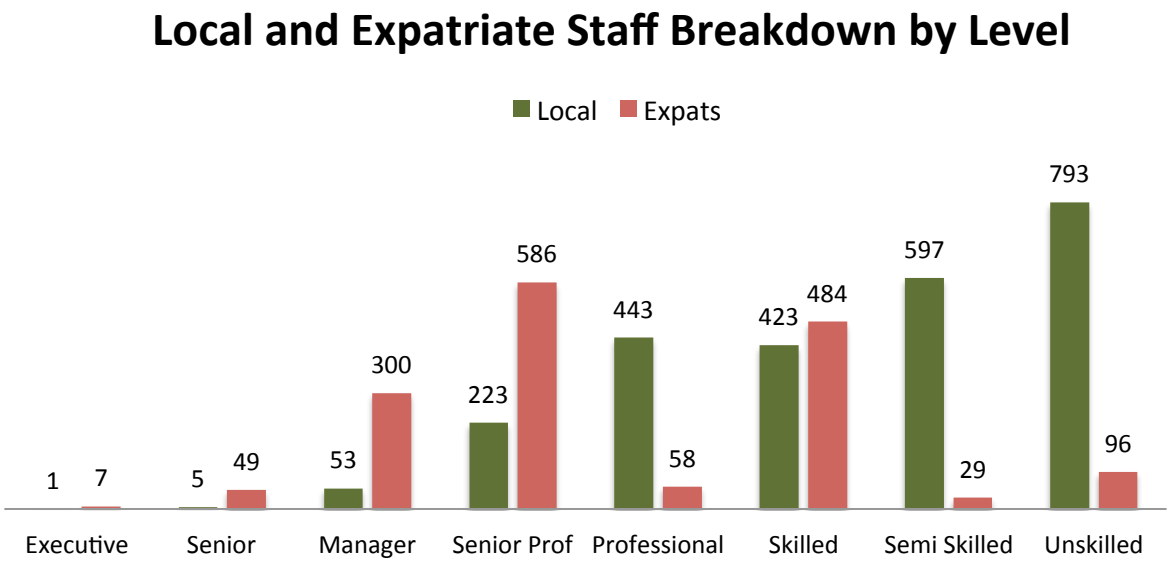


Figure 1: Local and Expatriate Staff Breakdown by Level. Note that the breakdown does not include numbers from KAR and Petro Quest.

Level:	Local	Expatriates	Total	Percentage
Executive	1	7	8	13%
Snr Mgr (GM, Country Manager, Deputy GM)	5	49	54	9%
Functional Manager / Superintendent (Drilling, Production, Finance etc.)	53	300	353	15%
Snr Professional (5+ years)	223	586	809	28%
Professional (Graduate less than 5 years experience)	443	58	501	88%
Skilled (Defined skill-set such as Drillers, Drilling Supervisors, Production	423	484	907	47%
Semi Skilled - includes those in training (Drilling crews, production helpers etc.)	597	29	626	95%
Unsklilled (roustabouts, casual labour, camp labour, no prior experience needed)	793	96	889	89%
Total	**2538**	**1609**	**4147**	**61%**

As the Kurdistan Region's production capacity grows, the workforce is expanding. The Production Operations Training Board forecasts that the production workforce alone will increase (from around 1000 currently) by 200 new positions for every 100,000 barrels per day of capacity added.

Drilling operations at Hunt Oil's Maqlub 1 site (Ain Sifni block)

(see number 62, Well Drilling Activities tables)

Section 5

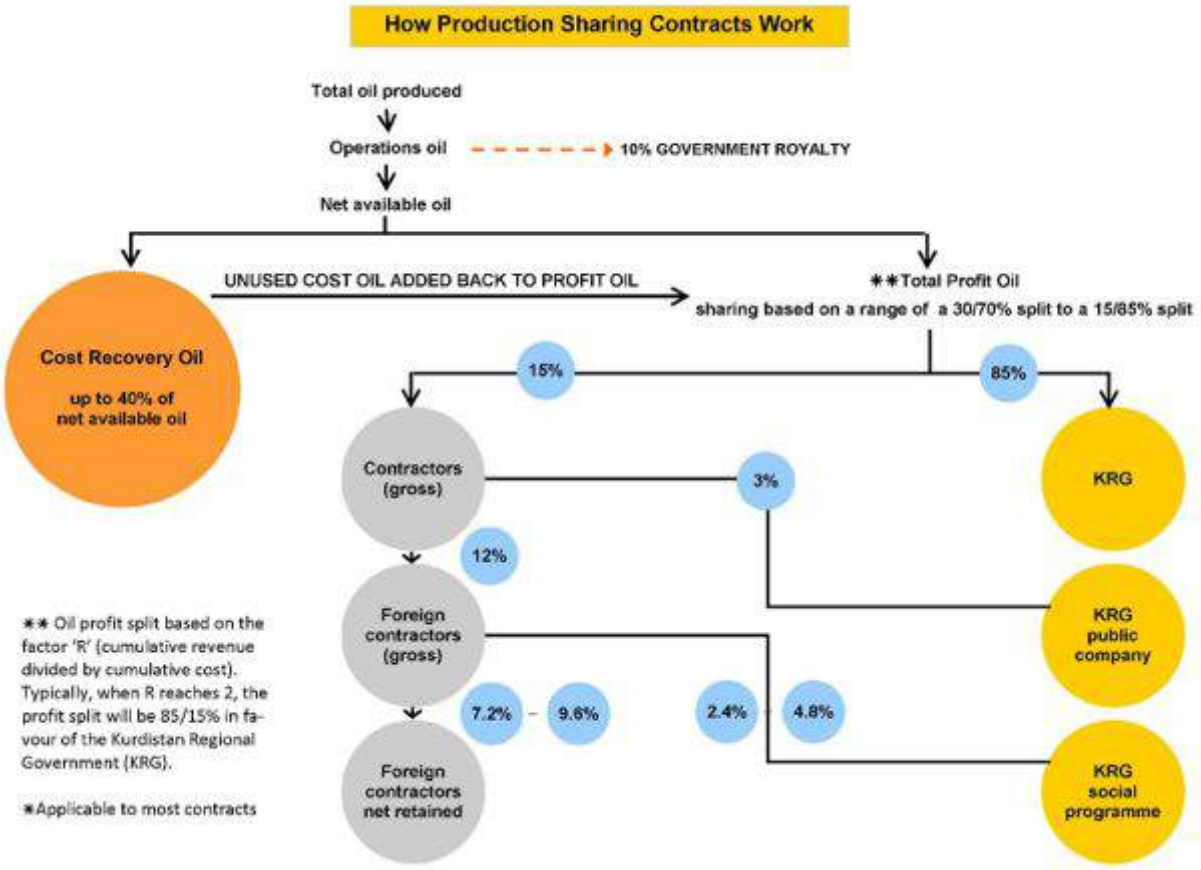
Production Sharing Contracts

Picture: Release of the Production Sharing Contracts online (September 2011).

Production Sharing Contracts - Explained

What is a Production Sharing Contract (PSC)?
In oil and gas, PSCs are a common type of contract signed between a government and an Exploration and Production (E&P) company to define how much of the production each party will receive. PSCs were first used in Bolivia in the 1950s, however were relatively uncommon until recent times, where they now dominate oil and gas agreements, especially in the Middle East and Central Asia.

Under PSC arrangements, the E&P company bears the financial risk until such time a discovery is made. If a discovery is not made, no cost is recovered by the E&P company. However if a discovery is made and the field begins to produce, the company is permitted to use the money from produced oil to recover capital and operational expenditures, known as "cost oil". The remaining money is known as "profit oil", and is split between the government and the company, typically at a rate of about 80% for the government, 20% for the company. Although in the Kurdistan region, that rate is typically closer to 90% for government.



Production Sharing Contracts - PSCs

IOC	Block	Signing Date
Reliance, later Chevron	Rovi	22/12/2006
Reliance, later Chevron	Sarta	22/12/2006
Hunt Oil	Ain Sifni	08/09/2007
Heritage, later Genel Energy	Miran	01/10/2007
Perenco, relinquished	Sindi Amedi	02/10/2007
Kalegran Ltd	Akri Bijeel	06/11/2007
OMV, later relinquished	Mala Omar	06/11/2007
HKN	Sarsang	06/11/2007
GKPI	Shaikan	06/11/2007
OMV, later relinquished	Shorish	06/11/2007
GEP, later Taqa	Atrush	10/11/2007
KNOC	Bazian	10/11/2007
Norbest Ltd (Oryx Petroleum)	Hawler	10/11/2007
Sterling, relinquished	Sangaw North	10/11/2007
TTOPCO	Taq Taq - Kewa Chirmila	26/02/2008
Talisman	Kurdamir	28/02/2008
OMV	Bina Bawi	06/03/2008
Shakal Production, later relinquished	Shakal - 1st PSC	06/03/2008
DNO	Dohuk	13/03/2008
DNO	Erbil	13/03/2008
DNO	Tawke	13/03/2008
Niko Resources, later relinquished	Qara Dagh - 1st PSC	28/04/2008
Komet, later Afren	Barda Rash	20/06/2008
KNOC, relinquished	Qush Tappa	21/06/2008
KNOC	Sangaw South	21/06/2008
Genel Energy	Ber Bahr	31/03/2009
Longford Energy, later Genel Energy	Chia Surkh	11/06/2009
Gas Plus	Khalakan	11/06/2009
Talisman, later relinquished	Baranan - 1st PSC	15/06/2009
GKPI	Sheikh Adi	16/07/2009
Shamaran Petroleum, later relinquished	Arbat - 1st PSC	28/08/2009
Shamaran Petroleum, later relinquished	Pulkhana - 1st PSC	28/08/2009
Murphy Oil, relinquished	Central Dohuk	14/10/2010
Petro Quest	Sulevani	14/10/2010
Marathon	Harir	20/10/2010
Marathon	Safen	20/10/2010
Hess	**Dinarta**	**17/06/2011**
Western Zagros	Garmian	25/07/2011
Repsol	Piramagrun	26/07/2011
Repsol	Qala Dze	26/07/2011
Hess	Shakrok	26/07/2011
Oil Search	Taza	27/07/2011
Talisman	Topkhana	19/08/2011
Exxon Mobil	Al Qush	18/10/2011
Exxon Mobil	Baeshiqa	18/10/2011
Exxon Mobil	Betwata	18/10/2011
Exxon Mobil	East Arbat	18/10/2011

Table 14: See explainer on page 31 for definitions

Production Sharing Contracts - PSCs

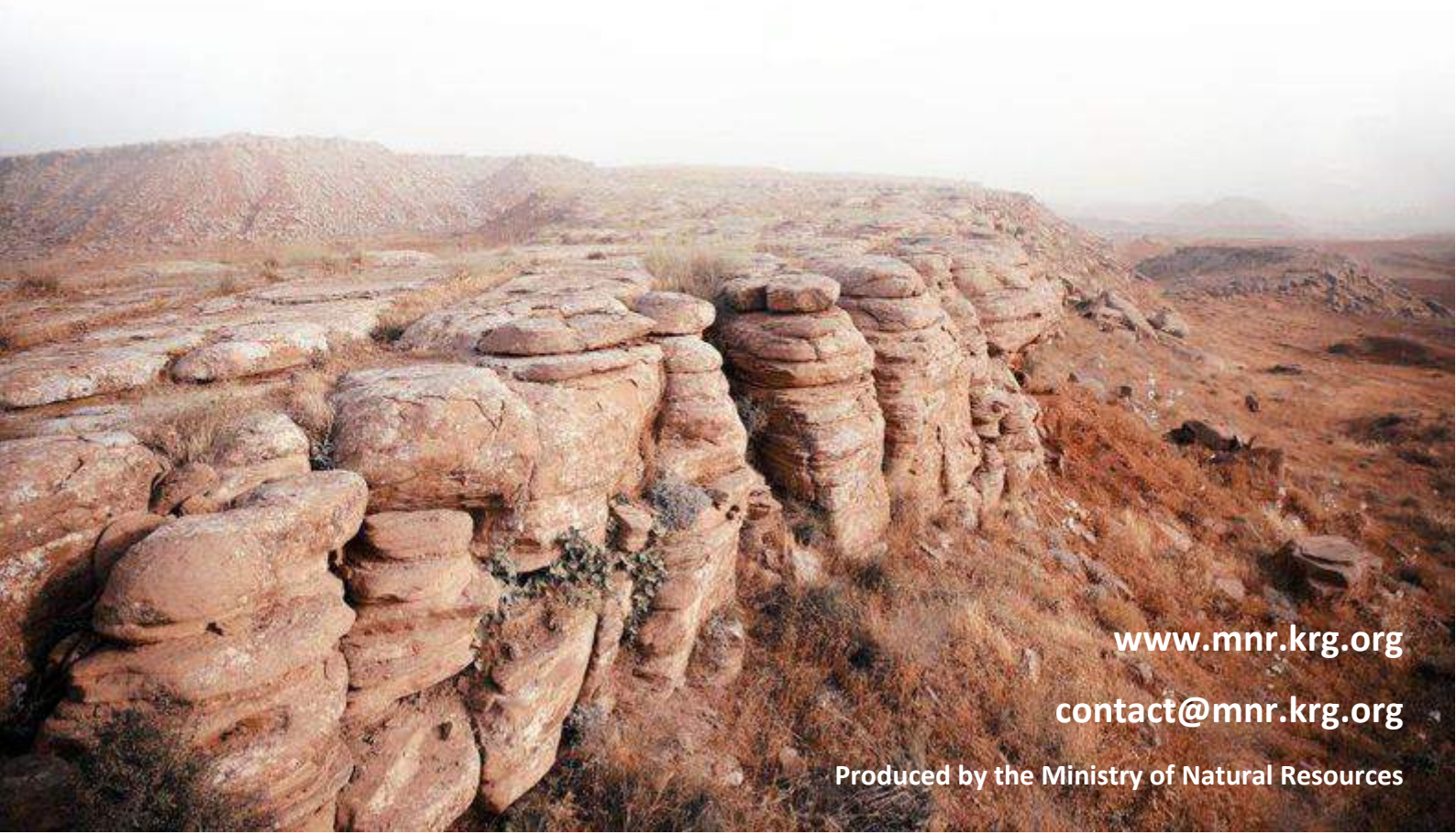
Exxon Mobil	**East Arbat**	**18/10/2011**
Exxon Mobil	Pirmam	18/10/2011
Exxon Mobil	Qara Hanjeer	18/10/2011
Turkish Entity	Arbat 2nd PSC	01/05/2012
Turkish Entity	Choman	01/05/2012
Turkish Entity	Hindren	01/05/2012
Turkish Entity	Jebel Kand	01/05/2012
Turkish Entity	Pulkhana - 2nd PSC	01/05/2012
Gazprom	Shakal - 2nd PSC	31/07/2012
Gazprom	Halabja	18/02/2013
Total	Baranan - 2nd PSC	25/04/2013
Komet Group	Gwer/Hamdanya	06/06/2013
Chevron	Qara Dagh - 2nd PSC	11/06/2013

Table 15: See below explainer for definitions

IOC	**International Oil Company** (IOC) which is the industry standard term used to describe foreign exploration and production companies. National Oil Companies (NOCs) also exist, such as Saudi Aramco, the NOC of Saudi Arabia. In general NOCs tend to only operate in their home country, however it is not unusual to see NOCs operating out of their home country.
Block	**Block** describes the territory assigned to the IOC for petroleum operations according to the Production Sharing Contract (PSC) between the IOC and the KRG. Block is termed as Contract Area in the contract.
Signing Date	**Signing Date** refers to the date that the Production Sharing Contract (PSC) was signed (may also be described as the Exploration start date).

MINISTRY OF NATURAL RESOURCES | KURDISTAN REGIONAL GOVERNMENT

وەزارەتی سامانە سروشتیەکان | حکومەتی هەرێمی کوردستان



www.mnr.krg.org

contact@mnr.krg.org

Produced by the Ministry of Natural Resources