

**Jones, William V., EMNRD**

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**From:** Jones, William V., EMNRD  
**Sent:** Monday, March 26, 2007 8:48 AM  
**To:** 'Alberto A. Gutierrez, RG'  
**Cc:** Williams, Chris, EMNRD; William F Carr (wcarr@hollandhart.com); Brooks, David K., EMNRD  
**Subject:** RE: Case 13891 status of pilot waterflood order for Petrohawk Operating Company

Hello Alberto:

For the Petrohawk Case, I sent a list of concerns to your attorney in that case, Mr. Bill Carr last week. The case is scheduled to again be heard this week at the examiner hearing, but I anticipate that it will be continued further. The C-108 data appears fine and the Area of Review looks OK.

For the Targa well. Please have Targa talk to Chris Williams in Hobbs and work out an acceptable well design and drilling permit. I have today notified Chris of my recommended well design in order to protect the fresh water, to isolate the red beds, the salt, the Penrose and the San Andres injection interval - and avoid all LPG or Brine wells in this area. The well design Targa proposes should have casing set approximately 200 feet deeper than the deepest anticipated injection and use cement stage tools as needed to circulate cement. I am ready to write the permit, but need an API number and a well design that ensures protection of these items. Please work with Hobbs District and let me know when the API is assigned.

Except as necessary, when Cases are pending for hearing or have been heard but not finalized, you should only communicate with the hearing officer through the attorney in that case.

Regards,

William V. Jones PE  
 New Mexico Oil Conservation Division  
 1220 South St. Francis  
 Santa Fe, NM 87505  
 505-476-3448

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**From:** Alberto A. Gutierrez, RG [mailto:aag@geolex.com]  
**Sent:** Monday, March 26, 2007 6:57 AM  
**To:** Jones, William V., EMNRD  
**Subject:** RE: Case 13891 status of pilot waterflood order for Petrohawk Operating Company

Will

Last week when I spoke to David Brooks he told me that he would get with you on his opinion on the pilot waterflood case with regard to the adequacy of the submission of the modified application that I sent you without the need to readvertise. I trust that he did that and that the notice period with the revised notice has run out. Could you let me know when we could expect to see that order signed? Thanks again for your very prompt action on the SWD application. We really appreciate it.

Also could you let me know the status of the TARGA AGI for south Eunice? Thanks  
 Alberto

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3/26/2007

**Jones, William V., EMNRD**

**From:** Jones, William V., EMNRD  
**Sent:** Thursday, March 22, 2007 4:46 PM  
**To:** wcarr@hollandhart.com  
**Cc:** Brooks, David K., EMNRD  
**Subject:** Case 13891 Petrohawk Operating Company (Reactivation of Waterflood Project)

Hello Mr. Carr:

Alberto Gutierrez has yesterday called David Brooks and myself asking the order in this case be expedited. We prefer that communication come from yourself as the attorney representing Petrohawk Operating Company, since in part you are more aware than Alberto that numerous operators are waiting on Orders to be issued from myself or other hearing officers in this office.

However, from no matter where comes the sound of the squeaky wheel, it does get attention.

I have reviewed the submittals for this Case and checked the Areas of Review (so far all fine). I did not find any other active injection wells in any formation within the AOR of these 5 proposed injection wells. Apparently the Jalmat-Yates has oil and gas wells (which are each spaced differently) and located directly above this proposed Eunice-Queen waterflood.

Unless I am missing something that was already presented, I have the following requests that I feel are necessary to make a finding that (i) this be qualified as a Waterflood and (ii) a finding that Correlative rights are protected and (iii) a finding that this injection will not cause waste of oil or gas in either the Queen or in the Yates.

I will here list some questions. With your experience in these matters, please take my suggestions and interpret them for your client in this case, so Petrohawk can have the best chance of approval.

- 1) Testimony in person or by affidavit is needed from a Landman
  - a) ownership issues in this State A Account 2 Lease - is there any tracts? is it identical in all respects? who are the mineral and working interest owners? is ownership different between the Yates and the Queen?
  - b) why did you not notify the owners in the Jalmat Pool as this Pool contains some gas intervals that could easily be affected by water injection that somehow got out of zone? or did you?
  - c) other Land issues? such as any response from the State Land Office. Does the SLO treat these wells differently if this is a Waterflood rather than simply 5 additional SWD wells?
- 2) Testimony in person from a reservoir engineer
  - a) History of injection in this lease after Order R-3200 was issued - volumes, types of waters injected, injection rates, injection pressures. Did it enhance oil production as order R-3200 said it would?, why was it terminated? etc.
  - b) Analogous waterfloods in the Queen in this general area - spacing, pattern, response, pressures, etc.
  - c) Rock properties, Fluid properties and current insitu oil, gas, and water saturations, waterflood potential and why.
  - d) Why are these particular wells targeted for injection?
  - e) What surface facilities will be used? how will the water be prepared for injection? Water sources? Makeup water?
  - f) Do you want a provision to administratively expand the waterflood? Is this anticipated?
  - g) How will Petrohawk ensure this injection water into the Queen does not make it up into the Yates?
  - h) Is there any oil/gas saturation in the rocks between these two producing horizons that someday could produce?
- 3) Further Testimony from a geologist
  - a) This lease in context of the general area: Structure map of the Queen, Isopach map of the Queen, any faults through this area?
  - b) coring program - existing cores?
  - c) Why were no open hole logs run? I see only cased hole GR-CNL logs in the OCD well files. Does Petrohawk have access to some open hole logs?
  - d) How well is the Queen separated from the upper Yates?

3/22/2007

The Case was presented last week, so have not yet reviewed the transcript. I know the Case is continued to next week so it is still open.

If you need to continue the case for time to prepare, let us know.

Regards,

William V. Jones PE  
New Mexico Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505  
505-476-3448

3/22/2007

**Jones, William V., EMNRD**

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**From:** Alberto A. Gutierrez, RG [aag@geolex.com]  
**Sent:** Tuesday, March 20, 2007 2:07 PM  
**To:** Jones, William V., EMNRD  
**Subject:** RE: SWD App: State A a/c2 #66 30-025-28275 Petrohawk Energy Corporation

Hi Will,

I just got off the phone with David Brooks and he said that the revisions which I sent to you for the waterflood application should be fine as well and we didn't have to do anything else. I asked him to please communicate that to you directly so that we can get that order done as well. Just let me know if you need anything further from me. And thanks again for your prompt action on this.  
Alberto

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Zone 100 for WWS in the area of P&A 28 volume, etc = 37 TOTAL ADR wells

API	WELL NAME	OPERATOR	FIG. NS	NS CD	FIG. EW	EW CD	SDV U/Sec	Tap	Rsp	3002528290	3002528277	3002528274	3002528272	3002528267	Num	TND
3002528280	STATE A A/C 2 071	PETROHAWK OPERATING COMPANY	1295 S		75 W	M	9/225	36E	0	1416	2640	3018	1.931	3	3900	
3002528277	STATE A A/C 2 068	PETROHAWK OPERATING COMPANY	2570 N		70 W	E	9/225	36E	1416	0	1226	1.867	1.931	5	3910	
3002528274	STATE A A/C 2 065	PETROHAWK OPERATING COMPANY	1345 N		25 W	E	9/225	36E	2640	1226	0	1.279	2.661	3	3900	
3002528273	STATE A A/C 2 064	PETROHAWK OPERATING COMPANY	1250 N		1250 E	A	8/225	36E	3018	1.867	1.279	0	2.117	4	3900	
3002523507	STATE A A/C 2 061	PETROHAWK OPERATING COMPANY	1980 S		1780 E	J	8/225	36E	1.931	1.989	2.661	2.117	0	4	3900	
3002508775	SEVEN RIVERS QUINCY	OK XTO ENERGY, INC	660 S		660 W	M	4/225	36E	4.688	3.283	2.103	2.701	4.651	1	3870	
3002508789	STATE A A/C 2 027	PETROHAWK OPERATING COMPANY	660 S		660 E	P	5/225	36E	4.695	3.311	2.835	1.999	4.115	2	3872	
3002508793	STATE A A/C 2 033	PETROHAWK OPERATING COMPANY	660 S		1980 E	O	5/225	36E	5.059	3.826	2.835	2.045	3.965	1	3890	
3002508800	STATE A A/C 2 046	PETROHAWK OPERATING COMPANY	660 S		1980 E	N	5/225	36E	5.059	3.826	2.835	2.045	3.965	1	3854	
3002508829	STATE A A/C 2 003	PETROHAWK OPERATING COMPANY	1980 N		1980 E	G	8/225	36E	2.835	2.133	2.103	1.032	1.335	4	3885	
3002508832	STATE A A/C 2 023	PETROHAWK OPERATING COMPANY	1980 N		660 E	H	8/225	36E	2.119	939	934	2.133	1.731	5	3856	
3002508833	STATE A A/C 2 024	PETROHAWK OPERATING COMPANY	1980 S		660 E	I	8/225	36E	969	1032	2.072	2.133	1.120	5	3870	
3002508834	STATE A A/C 2 025	PETROHAWK OPERATING COMPANY	660 N		660 E	A	8/225	36E	3.395	2.045	969	834	2.868	3	3855	
3002508835	STATE A A/C 2 026	PETROHAWK OPERATING COMPANY	660 N		1980 E	B	8/225	36E	3.883	2.802	2.119	939	2.648	2	3890	
3002508836	STATE A A/C 2 037	PETROHAWK OPERATING COMPANY	1980 S		1980 W	K	8/225	36E	3.395	3.448	3.857	2.899	1.520	5	3912	
3002508838	STATE A A/C 2 049	OK CATTON WILKINS ENERGY INC	660 N		990 E	H	8/225	36E	2.546	1.404	1.060	477	1.829	1	3640	
3002508839	STATE A A/C 2 051	OK CATTON WILKINS ENERGY INC	660 N		1980 W	C	8/225	36E	4.702	3.874	3.395	2.133	3.046	1	3870	
3002508840	STATE A A/C 2 054	OK CATTON WILKINS ENERGY INC	660 S		1980 W	F	8/225	36E	3.883	3.421	4.667	3.448	2.013	2	3867	
3002508841	STATE A A/C 2 053	OK CATTON WILKINS ENERGY INC	660 S		1980 W	N	8/225	36E	3.385	3.945	4.667	3.945	2.013	1	3868	
3002508842	STATE A A/C 2 055	OK CATTON WILKINS ENERGY INC	660 S		1980 E	O	8/225	36E	2.103	2.899	3.840	3.448	1.335	2	3863	
3002528278	STATE A A/C 2 056	OK CATTON WILKINS ENERGY INC	1980 S		660 E	P	8/225	36E	934	2.176	3.346	3.421	1.731	3	3850	
3002528279	STATE A A/C 2 070	OK CATTON WILKINS ENERGY INC	1295 S		1295 E	I	8/225	36E	2.119	2.176	2.800	2.176	2.00	4	3853	
3002508847	STATE A A/C 2 038	PETROHAWK OPERATING COMPANY	1980 N		1780 W	T	8/225	36E	1.867	1.966	1.867	1.416	799	5	3900	
3002508853	STATE A A/C 2 004	PETROHAWK OPERATING COMPANY	1980 S		1295 E	P	8/225	36E	1.320	1.368	2.952	2.735	2.168	3	3845	
3002508854	STATE A A/C 2 029	PETROHAWK OPERATING COMPANY	660 N		660 W	M	9/225	36E	4.055	3.618	3.582	2.365	2.774	2	3845	
3002508855	STATE A A/C 2 030	PETROHAWK OPERATING COMPANY	660 N		660 W	D	9/225	36E	2.072	2.133	2.765	3.826	3.760	2	3854	
3002508856	STATE A A/C 2 031	PETROHAWK OPERATING COMPANY	1980 N		660 W	E	9/225	36E	3.385	1.999	934	1.999	3.595	3	3860	
3002508857	STATE A A/C 2 032	PETROHAWK OPERATING COMPANY	1980 S		1980 W	F	9/225	36E	2.800	834	898	2.045	2.774	4	3845	
3002508858	STATE A A/C 2 039	PETROHAWK OPERATING COMPANY	990 N		660 W	L	9/225	36E	934	1.999	2.056	3.311	3.985	2	3845	
3002520970	STATE A A/C 2 039	PETROHAWK OPERATING COMPANY	1980 S		1650 W	C	9/225	36E	3.407	2.234	1.663	2.912	4.135	2	10956	
3002523546	STATE A A/C 2 032 Y	OK CATTON WILKINS ENERGY INC	2050 S		760 W	L	9/225	36E	1.054	955	2.023	3.910	3.860	4	3900	
3002528275	STATE A A/C 2 066	PETROHAWK OPERATING COMPANY	1345 N		1345 W	F	9/225	36E	2.952	1.768	1.320	2.597	3.686	3	3900	
3002528276	STATE A A/C 2 067	PETROHAWK OPERATING COMPANY	2615 S		1345 W	K	9/225	36E	1.867	1.279	1.867	2.956	3.189	3	3900	
3002528281	STATE A A/C 2 072	PETROHAWK OPERATING COMPANY	1410 S		1440 W	K	9/225	36E	1.420	1.889	2.894	3.755	3.270	2	3900	
3002508932	SHELL STATE A 001	OK FINLEY RESOURCES INC	660 N		660 W	D	16/225	36E	2.056	3.421	4.639	5.064	3.595	1	3872	
3002523899	STATE H 003	OK FINLEY RESOURCES INC	660 N		660 E	A	17/225	36E	2.072	3.448	4.646	4.727	2.868	1	3914	
3002525456	CITGO SE STATE: 002	OK BARKER ENERGY CO OF COLORADO	990 N		1650 E	B	17/225	36E	2.314	3.493	4.582	4.378	3.314	1	3850	
3002534529	STATE H 005	OK PLANTATION OPERATING LLC	330 N		660 E	A	17/225	36E	1.763	3.126	4.320	4.400	2.567	2	4000	

B.P. Anderson

Noted - please

OGRID	PROPERTY	LAND TYPE	NUM	ACRES	SPUD DATE	COMP_STAT	UL	PLUG DATE	ONE_PRODUCING_POOL_NAME	WAT_NUM_06	WAT_NUM_05	LAST	DANS06	GAS06	OIL06	WAT06
194849	302433 S	I	1	40		TA	M									
194849	302433 S	I	1	40	08-Aug-83	TA	E									
194849	302433 S	I	1	40	04-Sep-83	TA	E									
194849	302433 S	I	1	40	13-Aug-83	TA	A									
194849	302433 S	O	1	40		TA	J									
5380	300720 S	O	1	40	26-May-43	Active	M		JALMAT-TAN-YATES-7 RVRB (OIL)			2006-05	92	2699	623	1702
194849	302433 S	O	2	80		Active	O		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	121	1679	0	0
194849	302433 S	G	3	560.5	08-Dec-45	Active	O		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	11281	0	154
194849	302433 S	G	2	520.5	04-Jun-60	Active	N		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	4137	0	0
194849	302433 S	O	2	80	02-Feb-37	Active	G		JALMAT-TAN-YATES-7 RVRB (OIL)			2006-05	151	2249	24	151
194849	302433 S	O	1	40	04-Nov-42	Active	H		EUNICE-SEVEN RIVERS-QUEEN, SOUTH			2004-01	0	0	0	0
194849	302433 S	O	2	680	15-Dec-43	Active	I		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	10603	9	244
194849	302433 S	O	2	680		Active	A		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	27815	0	361
194849	302433 S	G	1	640		Active	B		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	2373	0	62
194849	302433 S	O	1	40		TA	K		JALMAT-TAN-YATES-7 RVRB (GAS)			1983-12	0	0	0	0
194849	302433 S	G	1	640		Active	H		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	351	0	0
25706	11793 S	O	2	80	13-Sep-60	Plugged	C	16-Jun-94				1990-06				
214263	30041 S	I	1	40		Plugged	F					1976-11				
25706	11793 S	O	1	40		Plugged	N	15-Jul-94				2006-05	120	2326	119	15275
194849	302433 S	G	2	680	12-Feb-61	Active	O		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05				
4710	16196 S	O	1	40		Plugged	P					1982-12				
25706	11793 S	G	1	40		Plugged	J	15-Jul-94								
194849	302433 S	I	1	40		TA	I									
194849	302433 S	G	1	640	25-Aug-83	Active	P		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	10346	121	10563
194849	302433 S	G	1	640		Unknown	F		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	7438	0	0
194849	302433 S	G	1	480	28-Nov-46	Active	K		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	6346	0	0
194849	302433 S	G	2	520	31-May-37	Active	M		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	15048	0	0
194849	302433 S	O	2	520		Active	D		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	12652	0	0
194849	302433 S	G	2	520	19-Sep-45	Active	E		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	11663	0	0
194849	302433 S	G	2	520	03-Nov-45	Active	F		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	11663	0	0
214263	30041 S	O	1	40		Plugged	L									
194849	302433 S	O	1	40		TA	C					1981-12	0	0	0	0
194849	302433 S	O	1	40	09-Oct-64	Active	K		EUNICE-SEVEN RIVERS-QUEEN, SOUTH			2005-10	0	0	0	0
4710	16196 S	I	1	40		Plugged	L									
194849	302433 S	I	1	40	22-Aug-83	TA	F									
194849	302433 S	G	1	480	14-Sep-83	Active	K		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	151	5712	0	0
194849	302433 S	G	1	480	30-Aug-83	Active	K		JALMAT-TAN-YATES-7 RVRB (GAS)			2006-05	121	419	0	0
180387	24659 S	O	1	40	02-May-69	Active	D		EUNICE-SEVEN RIVERS-QUEEN, SOUTH			2006-05	151	2363	87	717
6473	23178 S	O	1	40		Plugged	A	10-Dec-98				1983-12				
2799	20895 S	G	1	40	19-Dec-69	Plugged	B	16-Sep-03				1997-03	151	9867	42	1954
162683	21780 S	G	1	0		Active	A		EUNICE-SEVEN RIVERS-QUEEN, SOUTH			2006-05	151	14512	543	3332
237788	302129 S	O	1	40	19-Nov-98	Active	A		JALMAT-TAN-YATES-7 RVRB (OIL)			2006-05	151			