

**North Dagger Draw Upper Pennsylvanian Unit  
Operations Report to Working Interest Owners  
March 5, 2007**

**Unit Area and Well Status:** See map on Attachment 1

- The unit became effective on 2/1/05, with 101 total wells.
- Currently 5 water injection wells, 93 producing wells (10 pumping) and 3 TA wells.
- The Phase 1A waterflood has been put on hold while waterflood options are being considered.
- Unit operations have been cut back until operating costs can be shown to be under control.

**Unit Area Production:** See plot of production history on Attachment 2.

	<u>oil</u>	<u>gas</u>	<u>water</u>	<u>injection</u>
Cum. to 1/31/05:	24700 Mstb	63500 MMcf	86.1 MMbw	0.0 MMbw
Cum. 2/05 to 1/07:	127.1 Mstb	1234 MMcf	4.9 MMbw	4.9 MMbw
Recent rate (2/07):	44 stbd	934 Mcfd	2014 bwpd	154 bwpd

**General Comments on Unit Area Production**

- The oil and gas production decline rates averaged over the last 4 years have been 31% and 23% per year, respectively, and have been fairly constant since 1996. The water production rate was fairly flat from 2002 until July 2006 when it started increasing, up to 9400 bwpd in October and November 2006.
- Production and injection was cut back in early January 2007.
- Currently only 10 producing wells are being pumped (#9, 11, 23, 45H, 64, 65, 81, 90, 124 and 131), and 60 wells are flowing gas only. The pumped wells produce at least 7 BOE of oil and gas and definitely operate economically.
- The 5 injection wells are injecting at low rates to maintain their active status, three wells are TA and 22 other wells are not producing.
- Most wells are being left in operational condition, but some newer rod strings have been pulled from non-pumping wells.

**Unit Investments and Expenses:**

	<u>Op. Expenses</u>	<u>Investments</u>
2/05 to 8/06	\$10,073,761.81	\$3,041,104.57
9/06 to 11/06	2,423,797.85	110,193.55
Total	\$12,497,559.66	\$3,151,298.12

**Phase 1A Area Production:** See plot of recent production on Attachment 3.

	<u>oil</u>	<u>gas</u>	<u>water</u>	<u>injection</u>
Recent (2/07)	3 stbd	111 Mcfd	446 bwpd	156 bwpd
Percentage of unit	7%	12%	22%	100%

### **General Comments on Phase 1A Area Production**

- The Phase 1A area includes 22 wells that were active in the waterflood: 5 injection and 17 production, which are 22% of the total unit wells.
- Only one well is currently being pumped (#124), 9 wells are flowing gas only, and 7 other wells are not producing.

### **Status of Phase 1A Development**

- The Phase 1A waterflood has been put on hold while other waterflood options are being considered.
- The 5 injection wells are injecting at low rates to maintain their active status.

### **Phase 1A Waterflood Results**

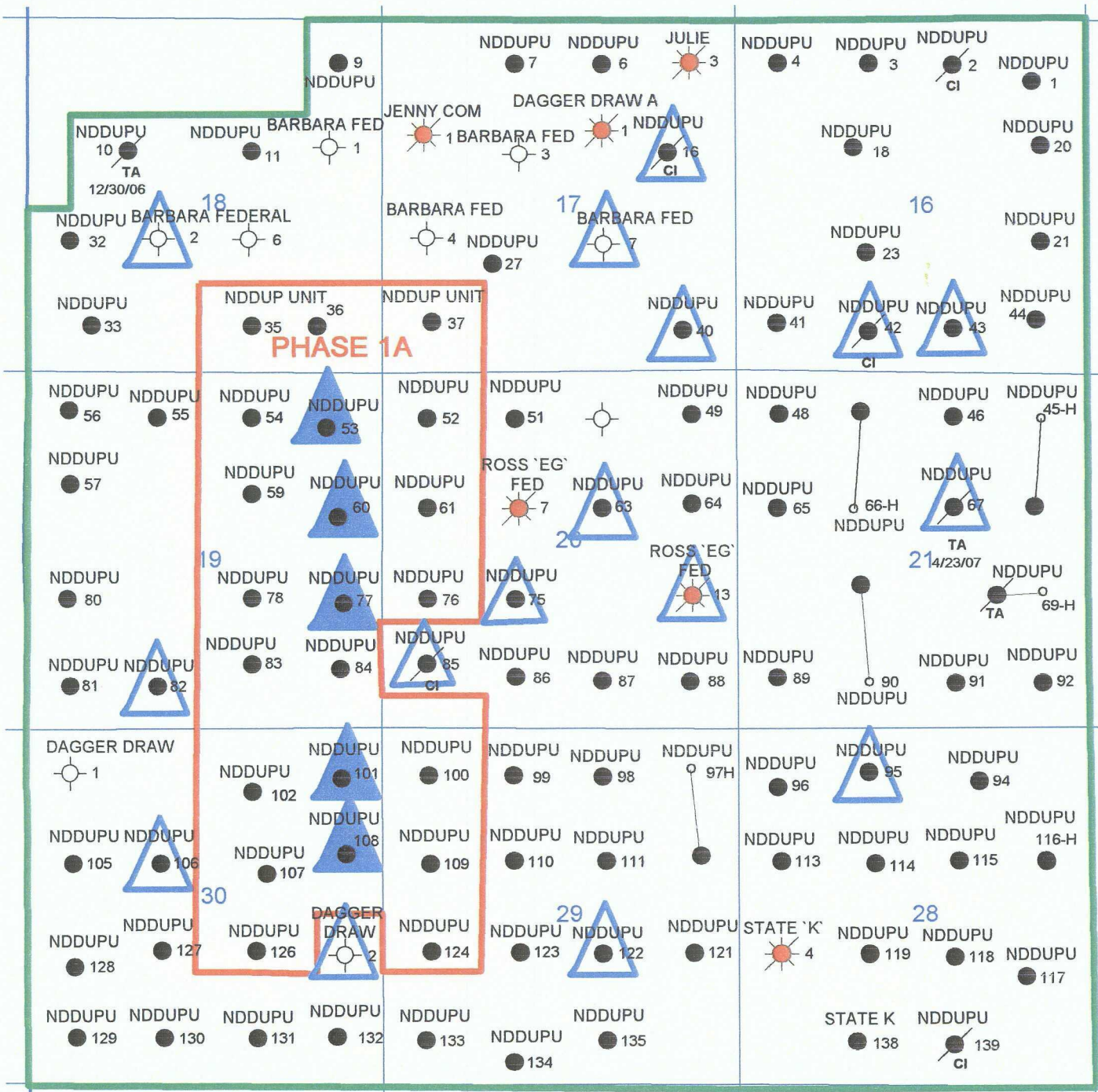
- The waterflood has not significantly affected oil production. The original forecast indicated a significant oil rate increase would start in March, 2006, based on the volume of water injected, but this has not happened.
- Water production rate from the Phase 1A area increased above the base level of 1600 bwpd when water injection began, to a maximum of 4375 bwpd during October, 2006. Water production has stayed significantly below the forecast rate of 10000 bwpd.
- The injection wells have continued to take close to the design rate of fluid at vacuum or low pressure. No high pressure injection pumps have been needed.
- The static bottom-hole pressure at the central producing well #84 has increased from about 400 to 600 psia.
- Increased fluid levels have been observed at most of the Phase 1A producing wells, requiring larger pumping units to pump them off. The high fluid levels have otherwise caused oil production rates to decrease.
- Oil production rates increased slightly at some wells when sub pumps were installed, but not enough to justify the cost economically.
- Incidences of pump, rod and tubing failures increased with the higher pumping rates, and the costs of well repairs increased above unit revenue during the period from September through November.
- All of the producing wells that are directly east or west of an injection well have had significant increases in water production rates or fluid levels after water injection started. With the exception of #84, which is between injection wells on the north and south, the wells which are not east or west of an injection well have not had significant increases in water production rates or fluid levels.

### **Comments on Phase 1A Waterflood Results**

- Three possible explanations for the disappointing Phase 1A performance have been proposed that suggest ways to improve a modified or expanded waterflood:
  1. The producing water oil ratio in the Phase 1A area before the waterflood started was higher than other areas of the unit, and was higher than anticipated in the design because of the delayed regulatory approval of the unit. A waterflood in areas of the unit with lower water oil ratio would be more likely to see an increase in the oil rate.
  2. The water break-through pattern suggests that the reservoir has preferential flow in the east-west direction. The Phase 1A injection pattern in a north-south line of wells is disadvantageous for that situation, and a modified injection pattern with an east-west line drive would provide a more efficient sweep.
  3. The reservoir pressure is low and does not provide much driving force from the reservoir to the producing wells. The Phase 1A injection pattern is unconfined, so oil has been pushed away from the pilot area beyond the Phase 1A producing wells. A confined pilot area with producing wells surrounded by injection wells would be more likely to capture the oil displaced by the waterflood, and would better demonstrate the effectiveness of waterflooding in this reservoir.
- Yates Petroleum Corporation is considering ways to test these concepts before proposing any modification or expansion of the current waterflood pattern. A plan will be submitted in the future.

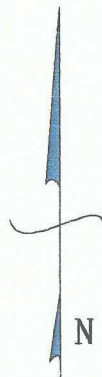
### **Immediate Plans:**

- Operating costs increased very significantly during 2006. YPC has cut back operations and stopped pumping wells in early January 2007 to reduce costs within the budget for 2007. Operations will be re-expanded if they can be economically justified.
- YPC has filed for a hearing (scheduled for 3/29/07) to ask for temporary relief from NMOCD rules requiring that inactive wells in the unit be produced or plugged. Otherwise unit wells will need to be plugged before the waterflood potential of the unit is determined.
- YPC intends for now to keep operating the unit and developing a plan to waterflood the unit profitably.



### LEGEND

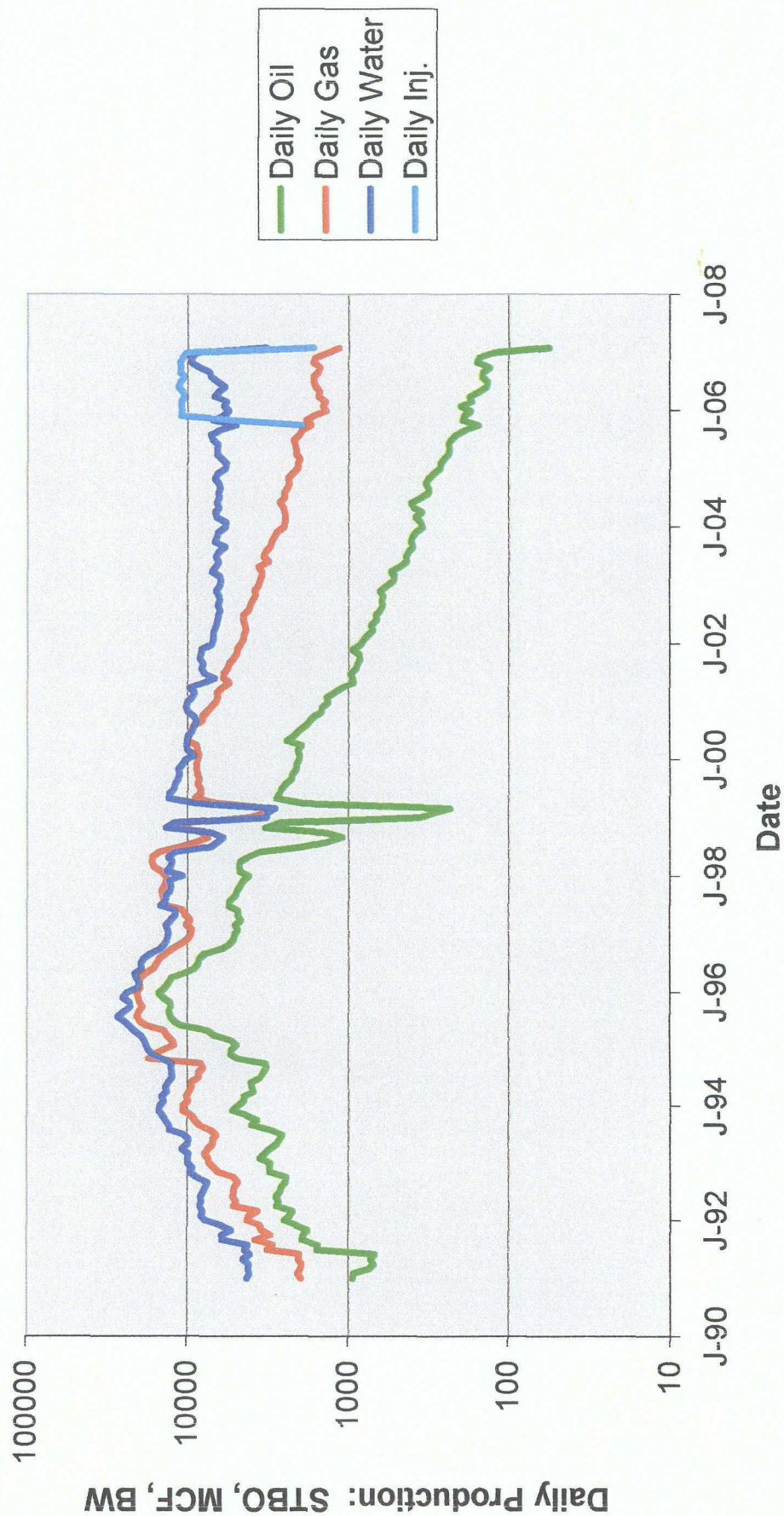
- UNIT PRODUCING WELL
- CI UNIT CLOSED-IN WELL
- TA UNIT TEMPORARILY ABANDONED WELL
- PLUGGED AND ABANDONED WELL
- NON-UNIT PRODUCING WELL
- UNIT INJECTION WELL
- PROPOSED UNIT INJECTION WELL



Yates Petroleum Corporation		
North Dagger Draw Upper Penn Unit Water Flood Development Status		
Engineer: Misty Carter		Date: 22 March, 2007



Attachment 2  
North Dagger Draw Upper Penn Unit  
Unit Area Production History





# ATTACHMENT 3 NDDUPU PHASE 1A WATERFLOOD PERFORMANCE

