

**EXHIBIT C**

**COUNTY LINE FIELD REPORT**

**EAST RESOURCES INC., FAIRMAN DRILLING COMPANY &  
PENNSYLVANIA GENERAL ENERGY, CORP.**

**October 10, 2002**

### Overview of Field History

Wells in the County Line Field are operated by East Resources, Inc., Fairman Drilling Company (East/Fairman), and Pennsylvania General Energy (PGEC). The field is located in the Towns of Veteran and Catlin, Chemung County, Town of Hornby, Steuben County, and Town of Montour, Schuyler County, New York. The field consists of one identified pool which trends generally in a northeast – southwest direction. To date, five (5) wells have been drilled in the trend, three (3) are on production, one (1) is awaiting completion and/or hookup, and one (1) had a gas show and was subsequently abandoned.

The completed wells are:

<b>Well Name</b>	<b>API Number</b>	<b>Status</b>
Purvis # 1	31-015-22893-00	Producing
Peterson # 1	31-015-22890-00	Plugged
Whiteman # 1	31-015-22839-00	Producing
Roy # 1	31-015-22901-00	Producing
Youmans # 1511	31-101-22976-00	Awaiting pipeline

#### Total Depth and Production Dates

<b>Well Name</b>	<b>Total Depth</b>	<b>On Production</b>
Purvis # 1	9,162	July 31, 2002
Peterson # 1	9,570	Plugged
Whiteman # 1	9,511	October 4, 2001
Roy # 1	9,490	March 26, 2002
Youmans # 1511	10,375	Awaiting pipeline

The Purvis well is located in the Town of Dix, Schuyler County; the Whiteman and Roy wells are located in the Town of Catlin, Chemung County; and the Youmans # 1511 well is located in the Town of Hornby, Steuben County.

The discovery well, Whiteman # 1, was successfully drilled and completed in July 2000. The pipeline was completed and the well placed on production on 10/4/2001. Production was encountered in the Ordovician Black River carbonates which are present in the subsurface throughout south central New York.

### **Background Geology**

On a regional basis Trenton Group carbonates typically consist of dark grey to black, very fine to fine grained, fossiliferous, argillaceous limestone deposited in relatively deep water. In contrast, Black River Group carbonates consist of lithographic to finely crystalline, light brown to grey, buff, tan colored limestone deposited in shallow subtidal to supratidal conditions.

However, in the Whiteman well, the Black River reservoir rocks consist primarily of light tan to brown, finely to medium crystalline dolomite with minor amounts of white, coarsely crystalline saddle dolomite. Porosity types included intercrystalline, vugs (pinpoint to large) and at least one possible cavern. Dolomitic reservoirs in the Trenton/Black River carbonates, which offer possible models for the County Line Field reservoir, are well known and are discussed in the "Analogous Producing Fields".

Of primary interest as a model is the Wilson Hollow Field located in Steuben and Chemung Counties of New York where fieldwide spacing and integration rules were established by a Final Decision and Orders of DEC Commissioner Erin Crotty, dated June 21, 2001 and September 13, 2001. Pennsylvania General Energy (PGEC) discovered the Wilson Hollow Field in 1999 with the drilling of the Jimerson # 1240 well. The Jimerson, and nine (9) subsequent Wilson Hollow Field producing wells, were drilled in a similar dolomitic reservoir in the Black River carbonates southwest of the County Line Field.

### **Seismic Information**

East/Fairman and PGEC have conducted ongoing seismic program in order to delineate the precise orientation of the County Line production trend. Starting with seismic data which showed a "seismic signature" similar to that found in known producing fields indicating a sag on both the Trenton and Black River reflectors, seismic data was acquired in successive lines adjacent to and stepping out from the original data (initially on one (1) mile spacing), to define the location and configuration of the anomalous seismic feature in an east-west direction.

The seismic character of the County Line Field reservoir possesses the general appearance of a "*graben*" or low, bounded by walls of normal host rock limestone. It is theorized that a wrench fault system cut through the Black River section allowing for the upward migration of fluids that altered the host

limestone to dolomite along the fracture system. Dissolution and collapse of cavernous porosity within the Black River subsequent to deposition of the Trenton carbonates and some overlying shales resulted in the formation of a structural low or sag within the Trenton and Black River carbonates.

To date, the series of adjacent seismic lines shown on Exhibit "E" has been used to define the linear dolomite reservoir comprising the County Line Field which generally ranges in width from 1,000 to 2,000 feet and extends continuously for at least 8½ miles as shown on Exhibit "D".

As is typical with most Trenton and Black River oil and gas reservoirs, the geology and reservoir parameters are very complex. Main wrench faults may start, stop, and be offset and/or vary in displacement. The basic fault or faults may be cut by cross-faulting, offset by tear faults, as discussed in the Columbia Natural Resources, Inc. spacing hearing report on the Glodes Corners Road Field, and/or reflect en echelon fault patterns. Seismic information from the Wilson Hollow Field indicates a significant offset between the Jimerson and the Fratarcangelo well, as discussed in the PGEC "Exhibit C" report on that field. The Hartman unit layout in the Quackenbush Hill Field also demonstrates the tortuous nature of Black River seismic trends. Dolomitization and/or collapse may sporadically develop and, where they do, occur to varying degrees along the faults. This process modifies the character of the seismic reflections needed to identify the extent of the anomaly and/or changing reservoir parameters that dictate the reservoir size.

Selection of well location based on seismic data is a compromise of a number of factors. First, and most important, is the apparent reservoir quality of the Black River reservoir at each possible location as indicated by the seismic data at that location. The seismic information across the County Line Field suggests that a dramatic difference in reservoir quality exists at various locales within the "*graben*" trend. Because the reservoir is so variable, well locations should be selected as close to seismic control as possible to assure success.

The layout of seismic lines is dependent upon road location, topography, surface conditions such as glacial valley fill, buildings, and the difference in cost and ease of seismic data acquisition whether it is vibroseis on roadways or dynamite for cross country lines etc.

Other well site considerations include the terms of applicable lease agreements, regulatory considerations, limitations on surface access and use for building the drilling location, the road to the location and/or the related pipelines, well spacing consideration, relationship to unit boundaries, impact on adjacent units, etc.

### **Analogous Producing Fields**

Within the State of New York there are at least six (6) recently developed Trenton/Black River production trends for which some technical data is available in the public domain. Three (3) are located in northeastern Steuben County in the vicinity of Pulteney and Prattsburg. Columbia Natural Resources is the

operator of all three fields. The remaining fields were discovered and are operated by PGEC. The fourth is the Wilson Hollow Field is located in the Town of Hornby, Steuben County and the Town of Catlin, Chemung County, NY. The fifth, Quackenbush Hill Field, is located in the Town of Corning, Steuben County and Towns of Big Flats and Catlin, Chemung County. The sixth is Cutler Creek Field, a single well field located between the Wilson Hollow and Quackenbush Hill fields in the Town of Corning, Steuben County. Field-wide spacing rules, based on a geologic interpretation very similar to that advanced here for County Line Field, have been issued for all six fields.

The Glodes Corners Road Field was discovered by the Evangelos well in October 1985. Production was obtained from dolomitized Black River carbonates. To date a total of thirteen wells have been drilled in this production trend. Pertinent data for this field was submitted to the NYSDEC in the matter of proposed well spacing rules and unit boundary delineation, and the Commissioner issued the Final Order on May 30, 2000.

The second trend, the Muck Farm Field lies in a Trenton/Black River "*graben*" feature two miles south of Glodes Corners Road Field in what can be described as a companion fracture trend. The Final Order for spacing and integration in the Muck Farm Field was issued on January 31, 2000.

Elsewhere in the United States a classic look-alike development was discovered in southern Michigan in 1957. The Albion-Scipio Field yields oil and gas

production from dolomitized Trenton and Black River carbonates along a collapse zone less than one mile wide and some 30 miles long that traverses portions of Calhoun, Jackson and Hillsdale Counties. Dissolution of the Trenton and Black River carbonates along a vertical conduit through which dolomitizing fluids migrated caused the development of a synclinal low with up to 50 feet of relief at the top of the Trenton.

Numerous examples of these same phenomena can be found in Ontario, Canada. The Rochester 1-17-II EBR Field in Essex County yields oil production from dolomitized zones in the entire Trenton and upper portion of the Black River formations. The Dover 7-5-V East Field in Kent County produces natural gas from dolomitized Trenton carbonates and oil from dolomitized Black River carbonates.

Recent references that discuss New York Trenton and Black River dolomite reservoirs include:

- Public Record from the Matter of the Glodes Corners Road Field, Rulings After Public Hearing, field-wide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901.
- Public Record from the Matter of the Muck Farm Field, Rulings After Public Hearing, field-wide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901.

- Public Record from the Matter of the Wilson Hollow Field, fieldwide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901.
- Public Record from the Matter of the Quackenbush Hill Field, fieldwide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901.
- Public Record from the Matter of the Pine Hill Field, fieldwide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901.
- Public Record from the Matter of the Cutler Creek Field, fieldwide well spacing rules and the integration of interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901.

### **Unit Justification**

As mentioned earlier, the seismic data that defines the County Line Field shows the field to consist of one (1) linear trend.

Seismic data shows pool width and lateral extent. Parameters available from wireline logs and initial reservoir pressures from all the drilled wells, data which has been reviewed with the Department under provisions for confidentiality, show similar reservoir parameters (porosity, saturations, etc.) and characteristics

that are analogous with the Black River dolomitized carbonates found in similar producing fields.

Production data for the Whiteman # 1 (12 months production) and Roy # 1 (6 months production) provide a basis for a preliminary material balance based plots of cumulative production versus pressure decline with which to estimate individual well reserves.

Under proper conditions, the plot of cumulative production versus pressure decline provides an accurate estimation of ultimate gas reserves from a producing well. Plotting of successive cumulative production points and associated pressure provides an ongoing check of the validity of reserve estimates.

Wireline logs and cores provide measurements of the physical volume of a reservoir. Logs can describe a reservoir's thickness. Both logs and cores can be used to define porosity and fluid saturations. Cores and/or flow tests can provide information about the permeability of the reservoir.

In the case of the County Line Field, East/Fairman and PGEC have collected such data on each well drilled. Wireline logs were run on all of the wells. Initial reservoir pressures and initial openflow tests were taken on most of the wells. The material balance calculations derived from the Whiteman and Roy wells and being collected on the other producing wells provide a number for the amount of gas that each specific well is predicted to produce. Volumetric data provides

measurements of some of a reservoir's physical dimensions. In the case of the County Line Field, seismic analysis can provide information about reservoir width and lateral extent of each pool. Relative well data such as that developed by drilling the Purvis, Whiteman, Roy, and Youmans wells, combined with seismic data, can help define the physical productive limits of a reservoir.

The Peterson # 1 well, which reached total depth on May 1, 2001, is located in the County Line trend at approximately the midpoint between the Purvis and Whiteman wells. Although initial gas shows were encouraging, several completion attempts were unsuccessful and the well subsequently watered out. In comparison to both the Whiteman and Purvis wells, the Black River formation is significantly deeper in the Peterson well and may be the reason for the lack of commercial gas reserves. For this reason, no production unit is being proposed for the Peterson # 1 well.

Proposed unit boundaries for the County Line Field conform to the rationale embodied in spacing orders for Glodes Corners Road Field, Muck Farm Field, Wilson Hollow Field, and Quackenbush Hill Field. A number of individual land parcels have acreage in two or more units.

The four (4) exhibit maps contained herein show the locations of the four (4) successful County Line wells drilled to date.

Well spacing, in turn, is a part of determining appropriate unit size. Once again, as with modeling the reservoir, the concept is straightforward but the practice

requires one leave room for some uncertainty. New York State regulation must also be considered.

The subject stipulation for the County Line Field requires Stipulation Wells, Infill Wells and Future Wells have "...the right to develop the oil and gas in a 660 foot radius of the proposed well...." (Stipulation Well & Future Well) "The infill well is at least 660 feet from all existing unit lines...." (Infill Well.)

Section 553.1, Well Spacing, as set out in the rules and regulations governing oil and gas, says "State-wide spacing. (a) Except...a well...cannot be located less than 660 feet from any boundary line of the lease, integrated leases or unit...."

Units have been laid out so that the proposed northern and southern unit lines lie at least 660 feet outside the best estimate of the reservoir limits. Because original development plans called for spacing wells approximately 6,000' to 6,500' apart, the wells as drilled are often off-center with respect to the much larger proposed production units.

All of the seismic data, drilling samples, log information, core data, reservoir pressure data, practical drilling experience, flow tests and production information, from those wells which are on line, indicate that the County Line Field is most similar to the Wilson Hollow and Quackenbush Hill Fields which are located southwest of County Line.

Based on a similarity with the Wilson Hollow and Quackenbush Hill Fields, and in order to optimize gas recovery, individual well economics and landowner compensation, spacing between wells along strike of a common seismic feature is proposed, at this time, to be no closer than 9,000 feet. This minimum well spacing of 9,000 feet allows for infill wells to be drilled on closer spacing at some time in the future if indicated by reservoir performance. Unit sizes with a minimum set at 320 acres and a maximum at 640 acres cover the current range of units in the County Line Field considering the known widths of the reservoir (based on seismic) and the regulatory well radius provision.

### Individual Unit Descriptions

PURVIS # 1 (31-015-22893) Unit B-1 498.8 Acs.

Northern boundary – to be at least 660 feet north of the north "*graber*" wall.

Eastern boundary – approximately 2,655 feet east of the Purvis well, where the seismic trend ends as interpreted from seismic line 01-ERNY-16-SCH.

Southern boundary – to be at least 660 feet south of the south "*graber*" wall.

Western boundary – approximately 5,835 feet west of the Purvis well.

WHITEMAN # 1 (31-015-22839) Unit B-2 550.4 Acs.

Northern boundary – to be at least 660 feet north of the north "*graber*" wall.

Eastern boundary – approximately 2,415 feet east of the Whiteman well.

Southern boundary – to be at least 660 feet south of the south "*graber*" wall.

Western boundary – approximately 6,230 feet southwest of the Whiteman well.

ROY # 1 (31-015-22901) Unit B-3 635.9 Acs.

Northern boundary – to be at least 660 feet north of the north "*graber*" wall.

Eastern boundary – approximately 5,950 feet northeast of the Roy well.

Southern boundary – to be at least 660 feet south of the south "*graber*" wall.

Western boundary – approximately 3,685 feet southwest of the Roy well.

YOUMANS # 1511 (31-015-22976) – Unit B-5 630.6 Acs.

Northern boundary – to be at least 660 feet north of the north "*graber*" wall.

Eastern boundary – approximately 7,560 feet northeast of the Youmans well.

Southern boundary – to be at least 660 feet south and southeast of the south "*graber*" wall.

Western boundary – approximately 3,630 feet west of the Youmans well.

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