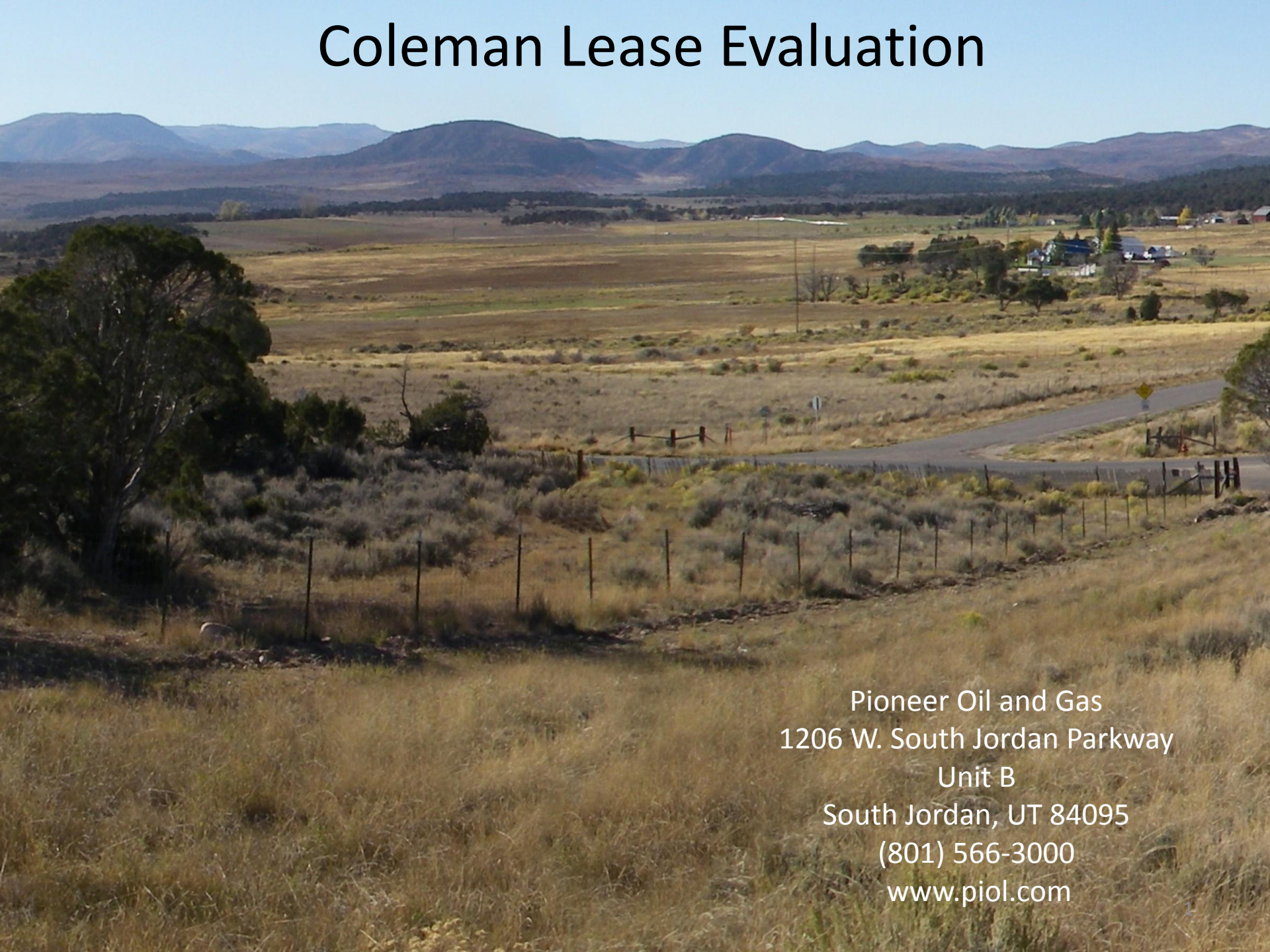
Coleman Lease Evaluation



Pioneer Oil and Gas
1206 W. South Jordan Parkway
Unit B
South Jordan, UT 84095
(801) 566-3000
www.piol.com

Coleman Lease Evaluation

By David R. Keller, Consulting Geologist

AAPG Certified Petroleum Geologist #6099

January 27, 2012

Conclusions

Rich source rock intervals are currently in the oil window and generating hydrocarbons. This is probably the source of the overpressuring in the Green River and Mesaverde intervals

The top of overpressured interval as mapped with seismic is above the top of the Green River formation on the Coleman lease block

In the Uinta basin oil-bearing reservoir rocks commonly extend beyond field limits.

Cedar Rim and Altamont fields are being actively extended to the west toward the Coleman prospect by Bill Barrett Corporation and Berry Petroleum Company.

Bill Barrett has completed four horizontal wells in the lower Green River with average peak initial production of over 1000 BOE per day. They have 400 proposed wells located 2 to 8 miles east of the Coleman tracts.

Regionally the Coleman prospect occurs down dip of tight alluvial facies that commonly stratigraphically trap oil in down-dip open and marginal lacustrine reservoirs

A number of DST's and swab tests have produced oil and gas in close proximity to the Coleman lease.

Green River facies maps indicate best potential for Green River production is in the lower part of the section.

Careful bed evaluation in the Green River and Wasatch can eliminate water-productive zones and enhance production.

A Large highly fractured two-way structural closure is present in the Green River interval.

This structural closure corresponds closely to a geochemical tonal anomaly mapped using satellite images.

Both Bouguer and Residual gravity maps show closed gravity highs on the Coleman lease which are consistent with the structural interpretation and the presence of a geochemical anomaly.

Thick Mesaverde sands are present in outcrop just north of the Coleman prospect and have been penetrated and are gas saturated in wells south of the lease.

Presence of overpressure will trap large volumes of gas in Mesaverde Group sandstones in continuous basin-center type accumulation

Recent wells completed in the Mancos Shale indicate vast potential for shale gas across the entire Uinta basin.

Uinta Basin Overview

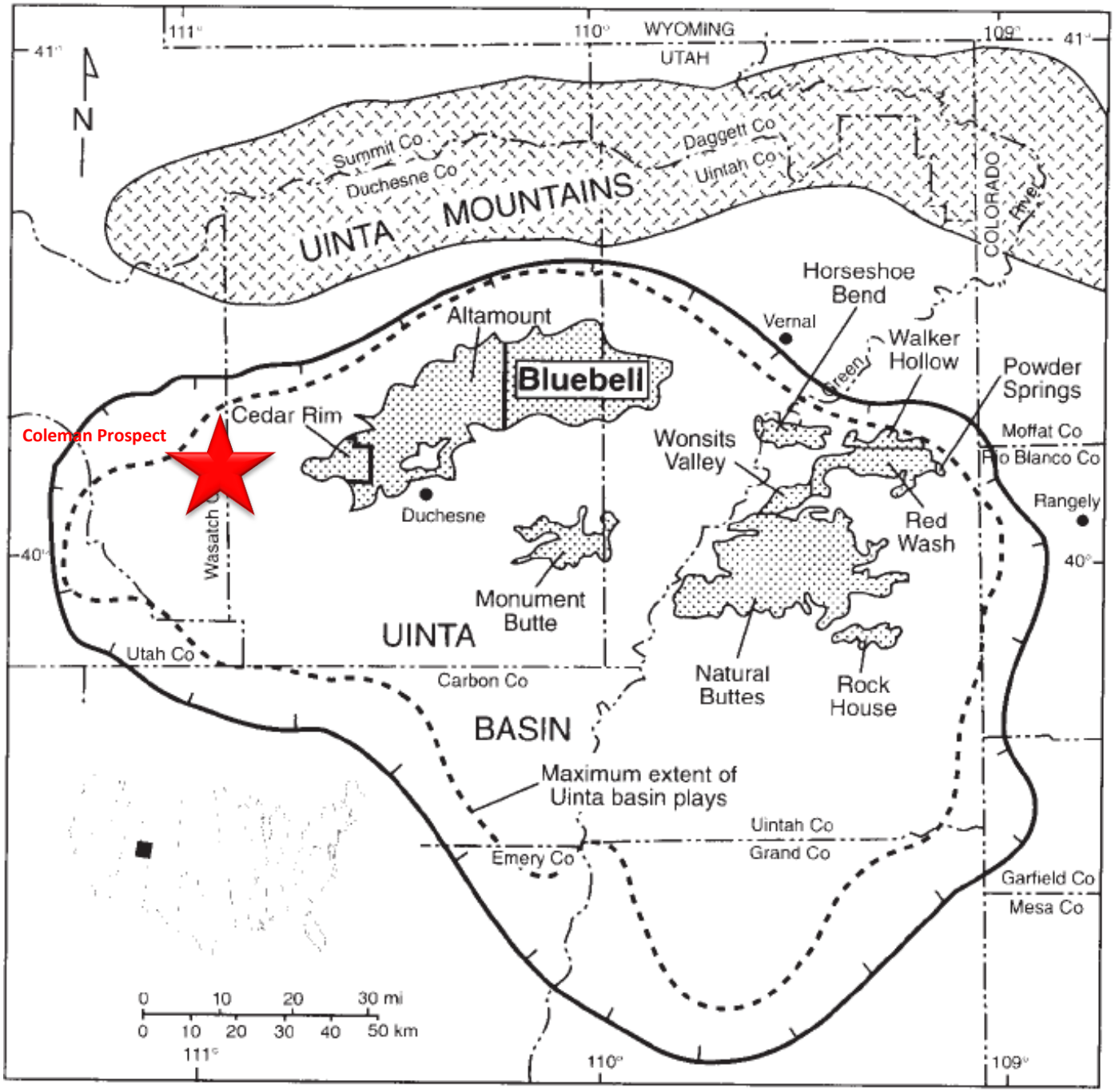
The Uinta basin (Slide 2) located in northeastern Utah is a major petroleum province with thick high quality source rocks that are currently generating oil and gas (Ruble, Lewan, Philp, 2001). Oil and gas are produced from rocks of Cretaceous and Tertiary age (Slide 3). The Uinta basin lies mostly within Wasatch, Duchesne and Uintah Counties. The latter two counties have produced 607 MMBO and 3.9 TCF of natural gas to date.

The Altamont-Bluebell oil and gas field was discovered in 1949. Total production to date is 307.6 million barrels of oil and 531.8 billion cubic feet of natural gas. Production is from Paleocene-Eocene lake deposits. The main productive intervals are the Green River and Wasatch Formations (Slide 3). The Coleman prospect is located in the western part of the Uinta basin 8 miles west of the Altamont-Bluebell oil and gas field.

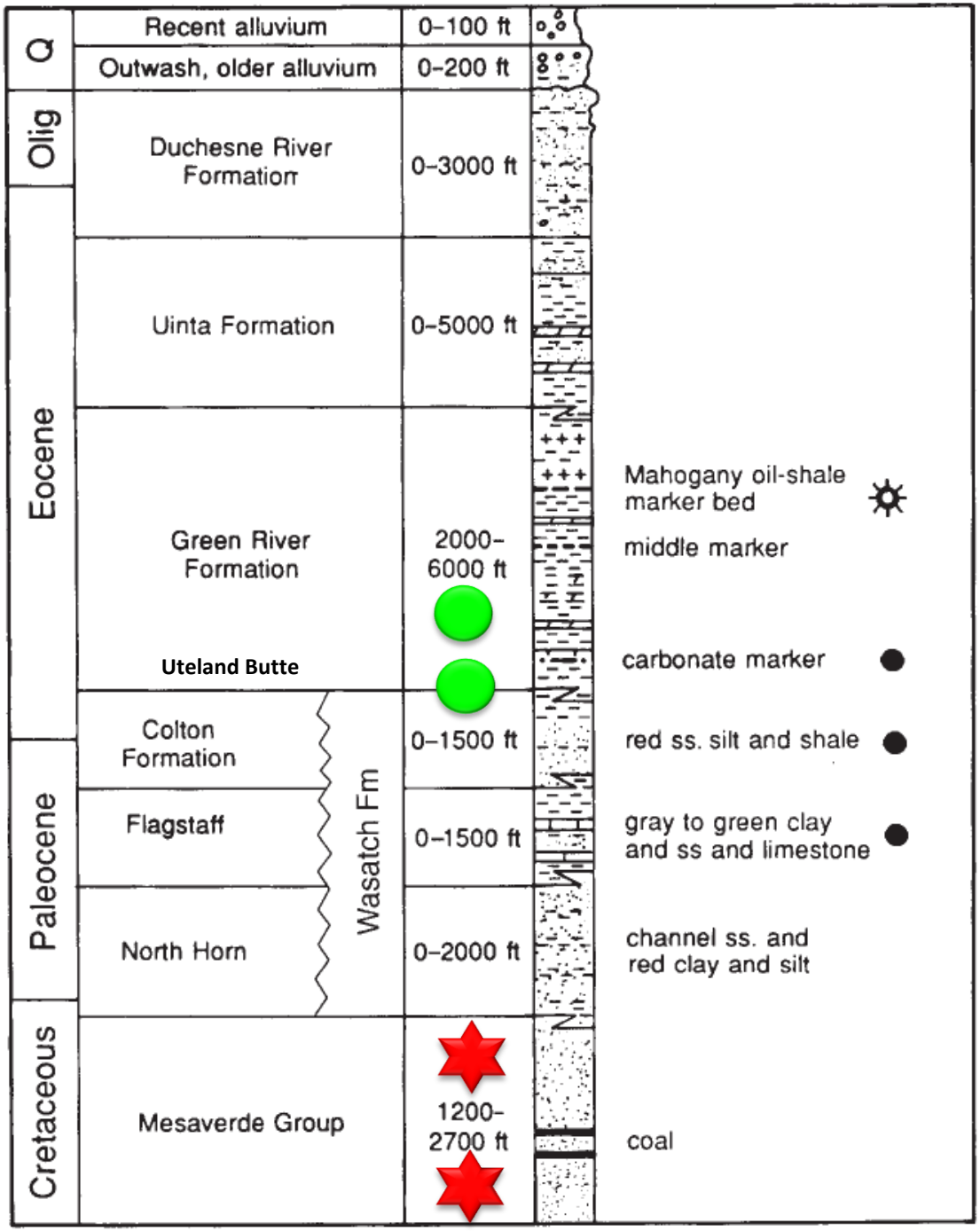
Data and Methods -- Petra Database

A Petra database was created centered on the Coleman lease block. I loaded well header information for 21,500 wells in the following counties, Carbon, Daggett, Duchesne, Emery, Grand, Sanpete, Uintah and Utah. Cumulative production and well tops from the Utah state website were also loaded for wells in these counties.

I loaded raster well logs for 149 wells surrounding the Coleman lease block (Slide 4). DST's and production tests were reviewed and loaded into Petra for all wells within 15 miles of the Coleman block.

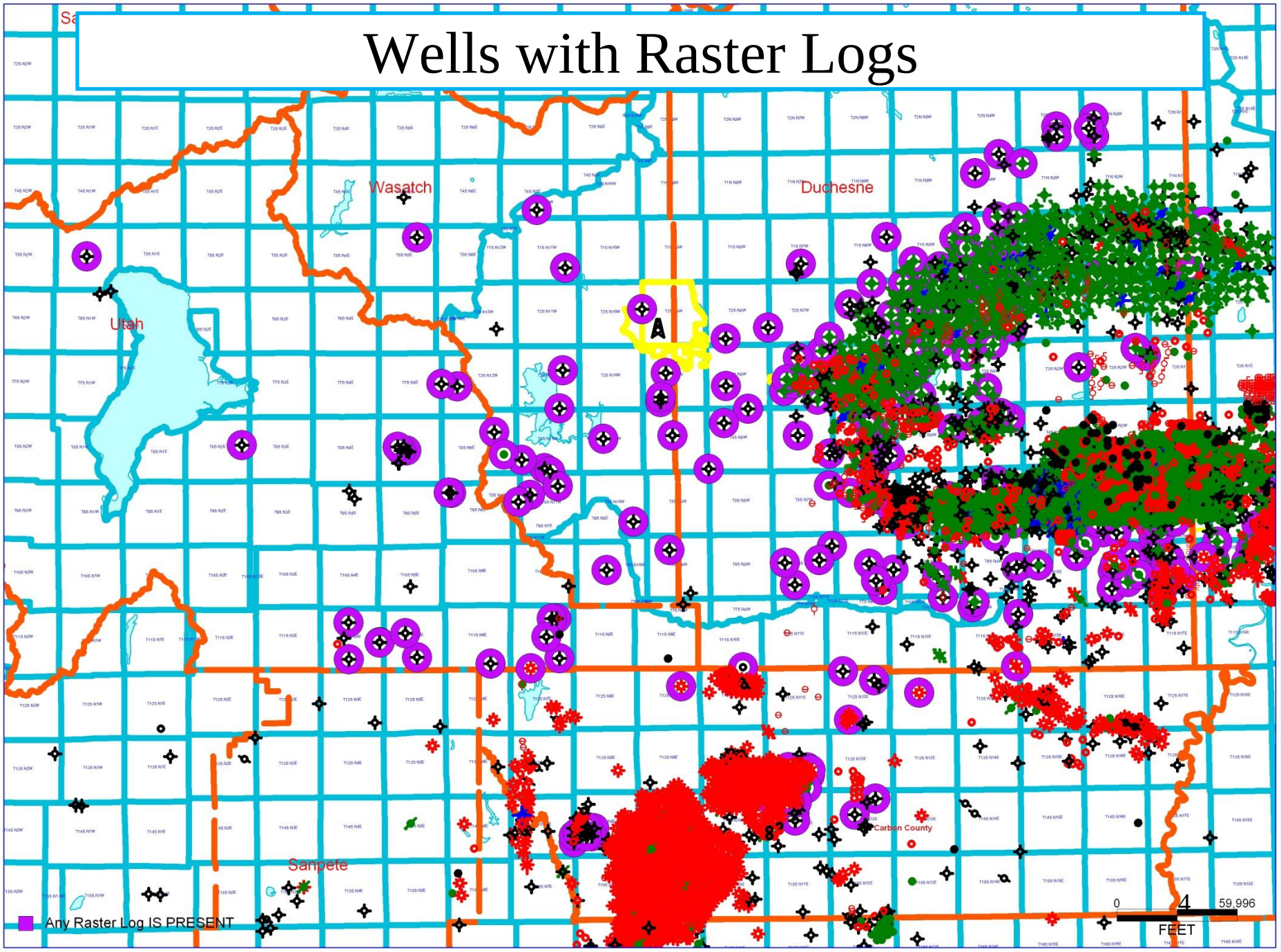


Uinta Basin Major Fields



Uinta Basin Stratigraphic Column

Wells with Raster Logs



I also loaded county boundaries, township, range and sections, rivers, lakes, roads, oil and gas field outlines, acreage blocks, faults, outcrop patterns from three different geologic maps, and three Green River facies maps.

Green River-Wasatch Interval

Cross Sections and 2-D Seismic

Green River, Wasatch and Mesaverde well tops were correlated for all wells with sonic logs. North-south and east-west cross sections were generated in the prospect area (Slide 5). The east-west cross section (Slide 6) shows the westerly thinning of the Green River Formation west of the Coleman prospect.

The north-south cross section (Slide 7) shows horizons taken from seismic depth maps for the Green River, Wasatch and Mesaverde horizons. Also shown is the top of the Overpressure horizon. The Lower Green River potential reservoir interval is below the top of the Overpressure.

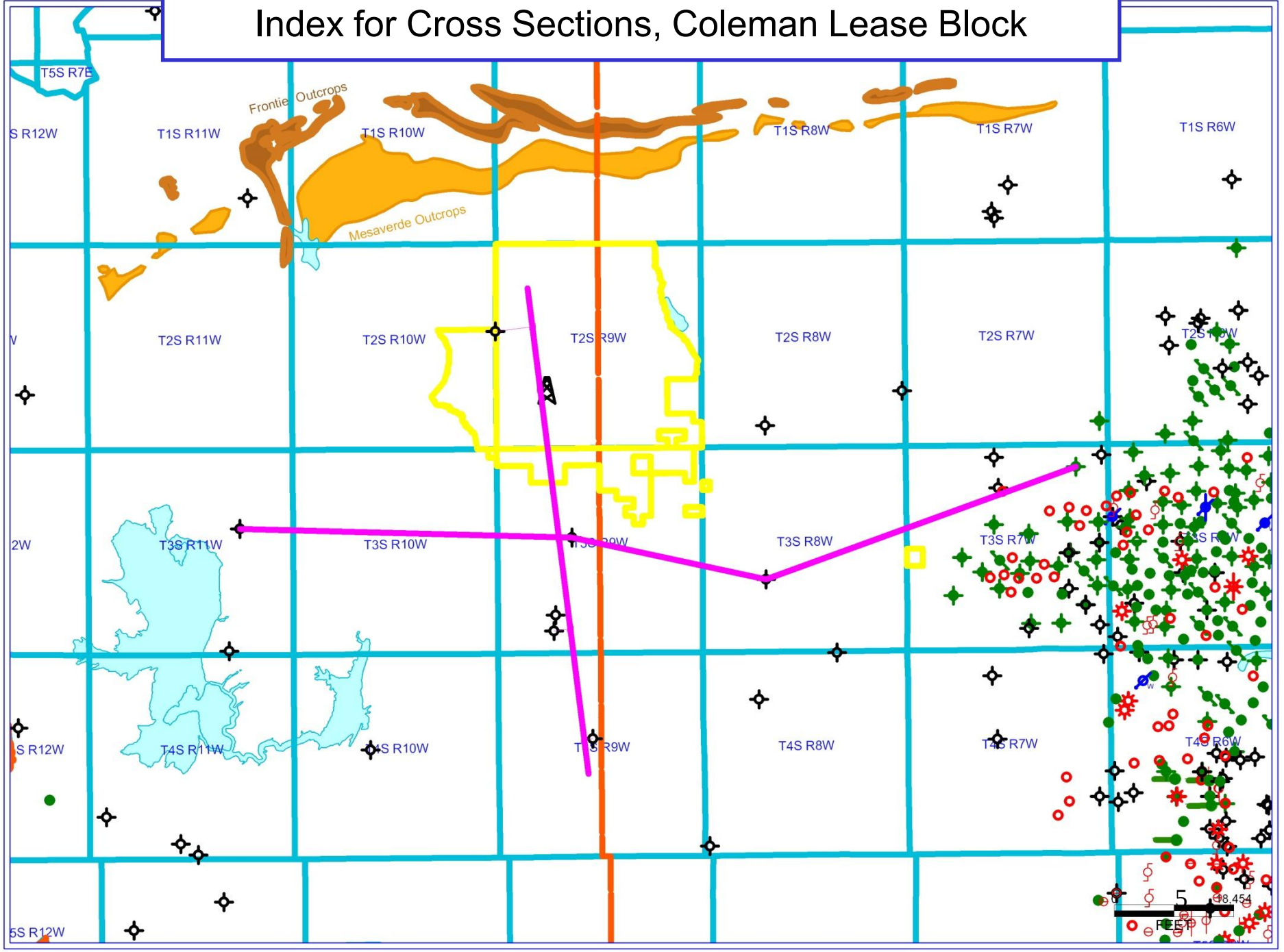
The structural reversal at the Green River level is defined by a single seismic line. 2-D seismic line 1928 (Slides 8-10) is the key line for the Coleman prospect. Slides 9 -10 are cross sections prepared from the seismic line and the actual line can be viewed by appointment (licensing considerations prevent us from including it here). This line runs northwest-southeast across the Coleman lease block. The Echo migration of line 1928 shows the presence of a pronounced structural reversal in the Upper Green River Formation. This anticline is highly faulted and has a little over 300 feet of north or counter regional dip. The anticline is only defined on one line and appears to be a crowding structure related to tight folding along the south flank of the Uinta uplift and therefore could have considerable lateral extent parallel to the axis of the Uinta Uplift. The section appears to be highly fractured in the Green River interval and this should certainly enhance reservoir productivity.

Green River Petroleum System

Ruble, Lewan, Philp (2001) state that “the Tertiary Green River petroleum system in the Uinta basin generated about 500 million bbl of recoverable, high pour-point, paraffinic crude oil from lacustrine source rocks. A prolific complex of marginal and open-lacustrine source rocks, dominated by carbonate oil shales containing up to 60 wt. % type I kerogen (60% TOC) (Slide 11).

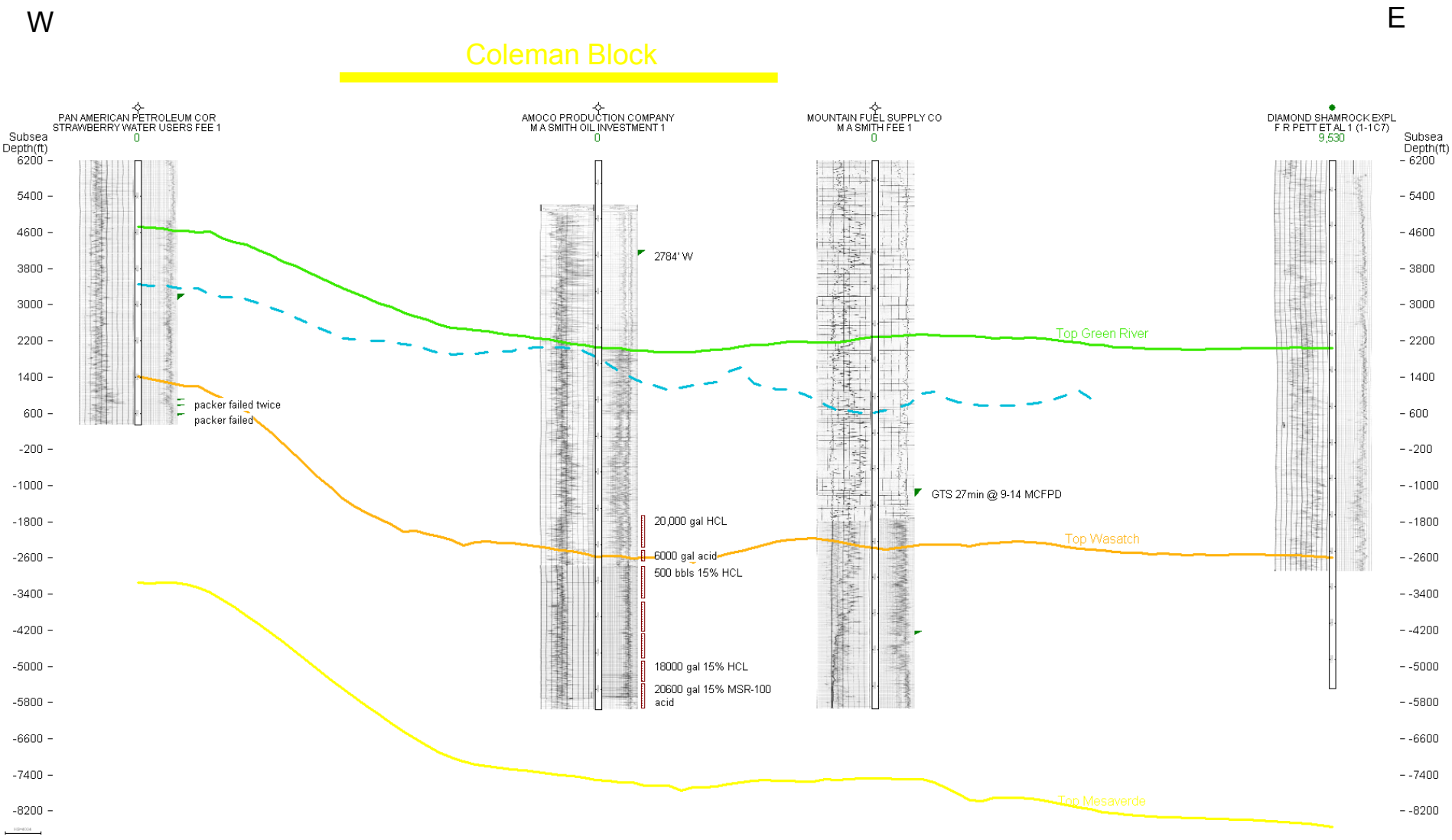
They describe the overpressured nature of the Altamont-Bluebell field and conclude that “Active hydrocarbon generation is one explanation for the origin of the overpressured reservoirs.”

Index for Cross Sections, Coleman Lease Block

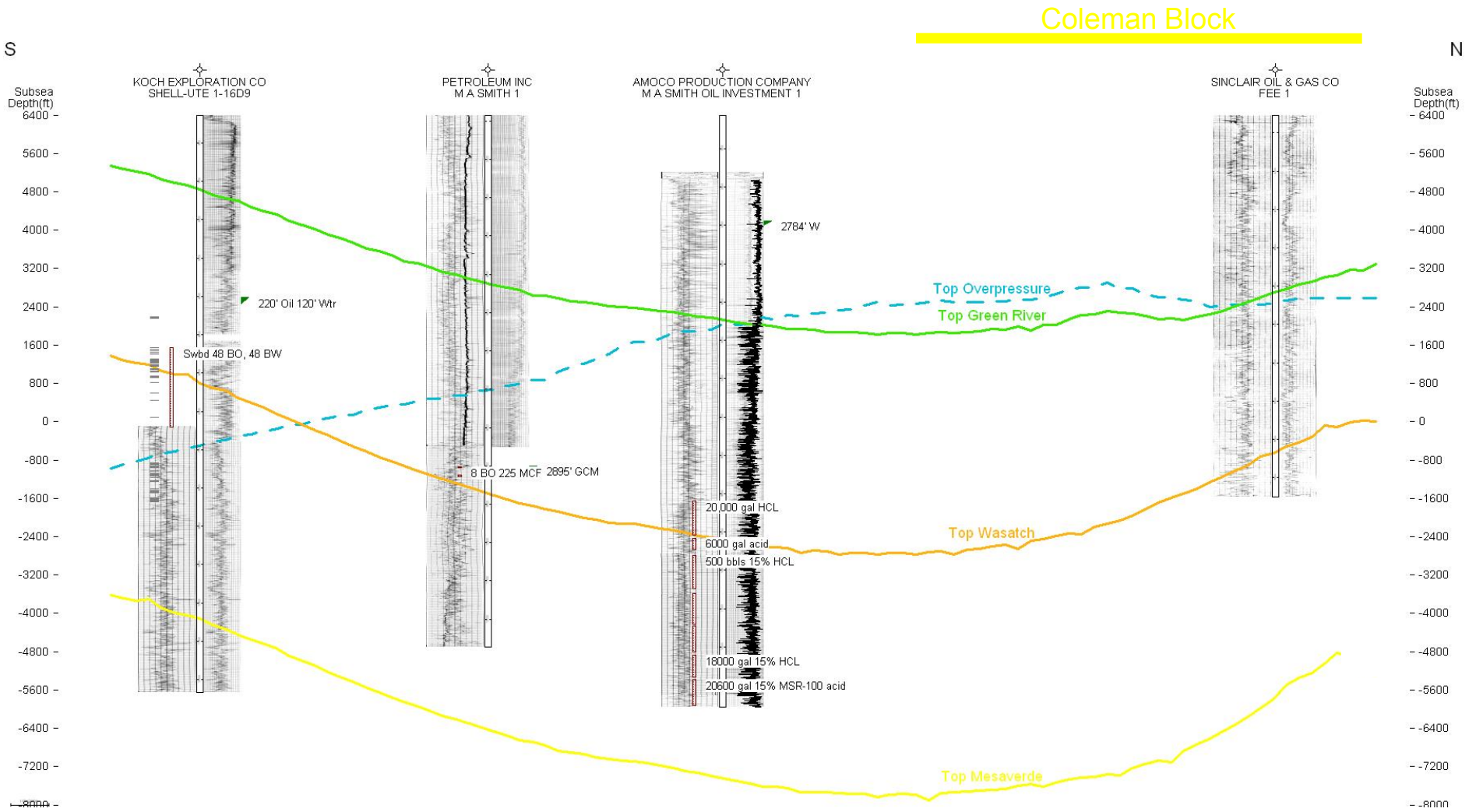


PETRA 12/6/2011 3:44:22 PM

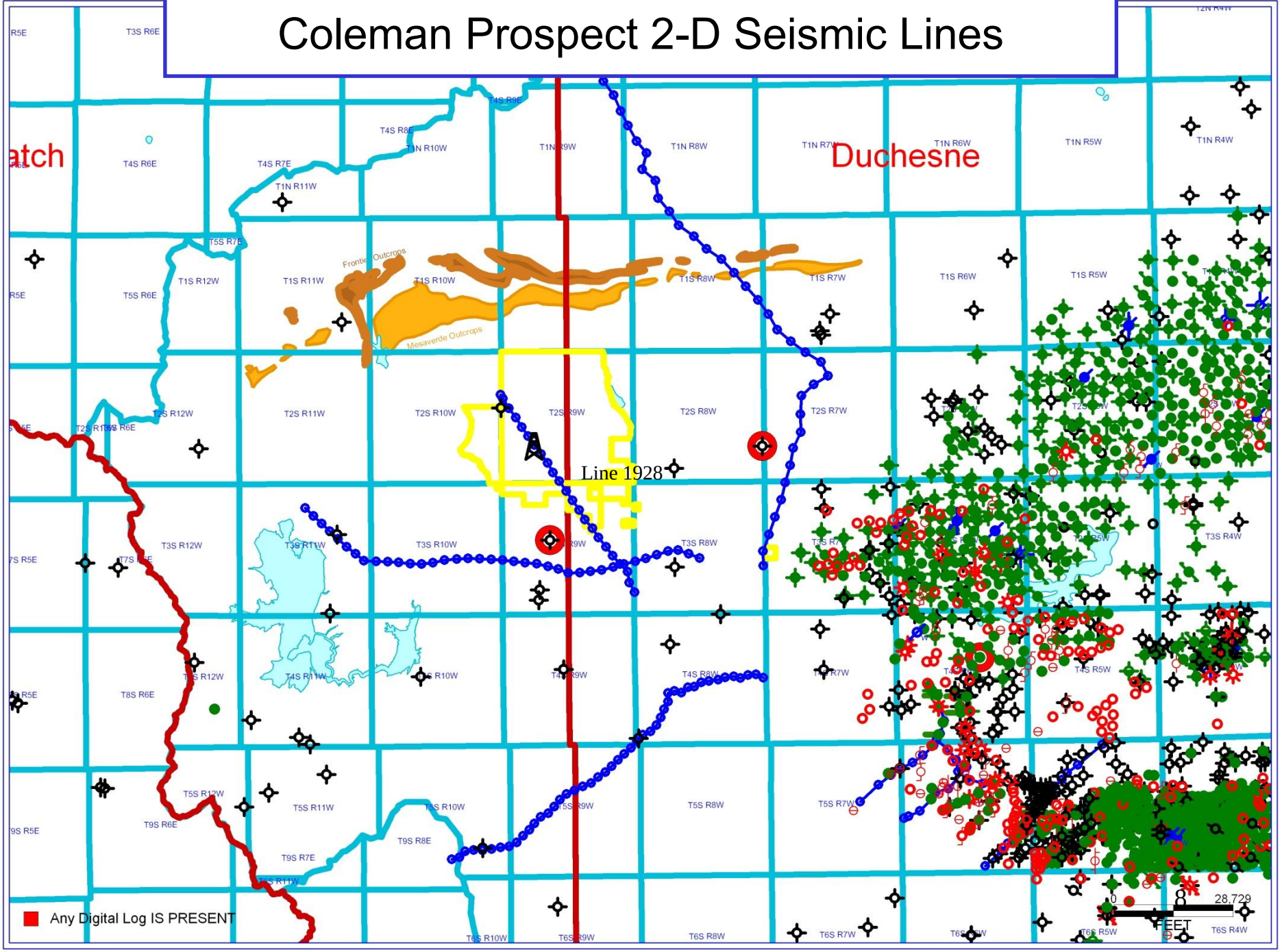
East-West Structural Cross Section, Coleman Lease Block



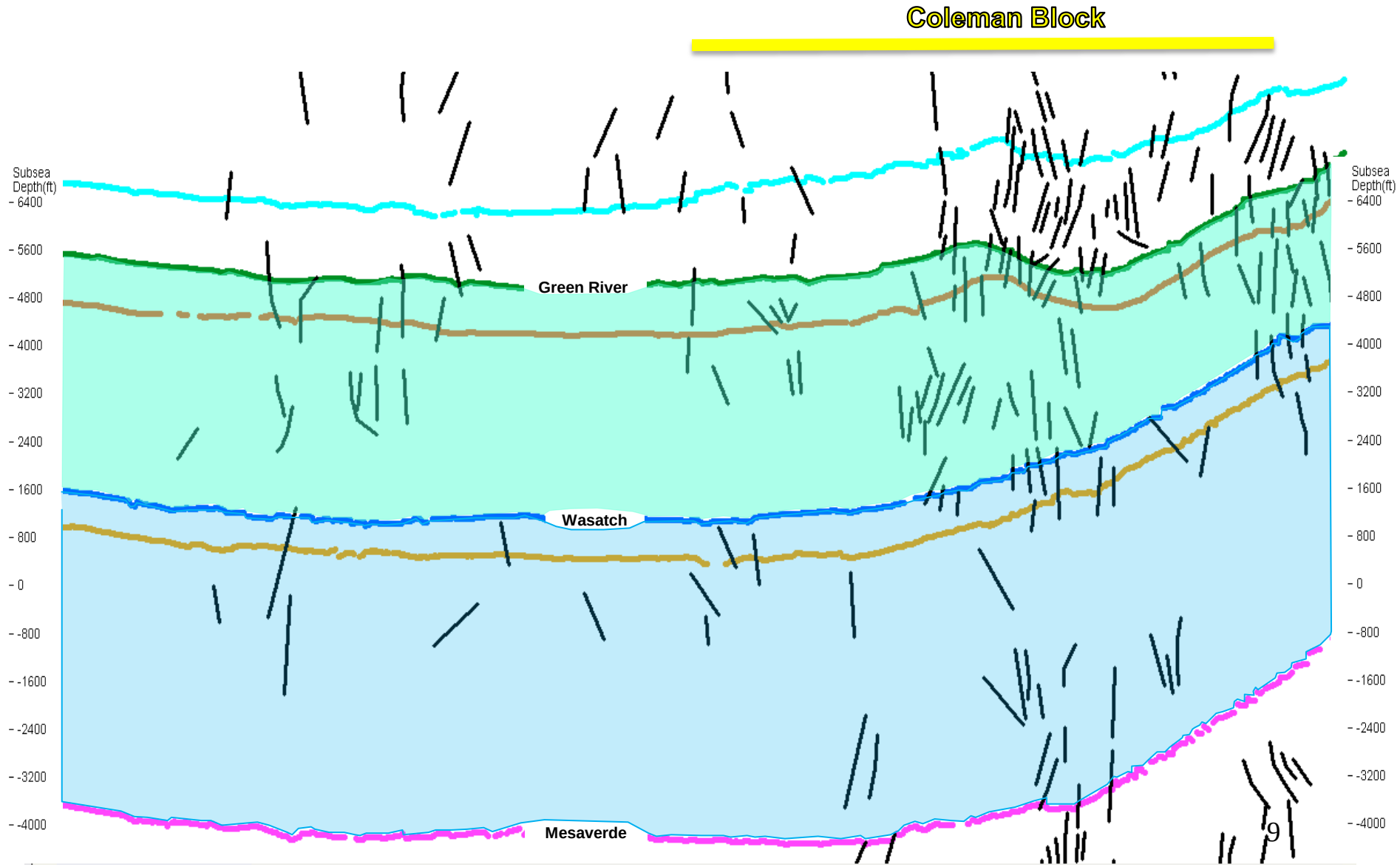
North-South Structural Cross Section, Coleman Lease Block



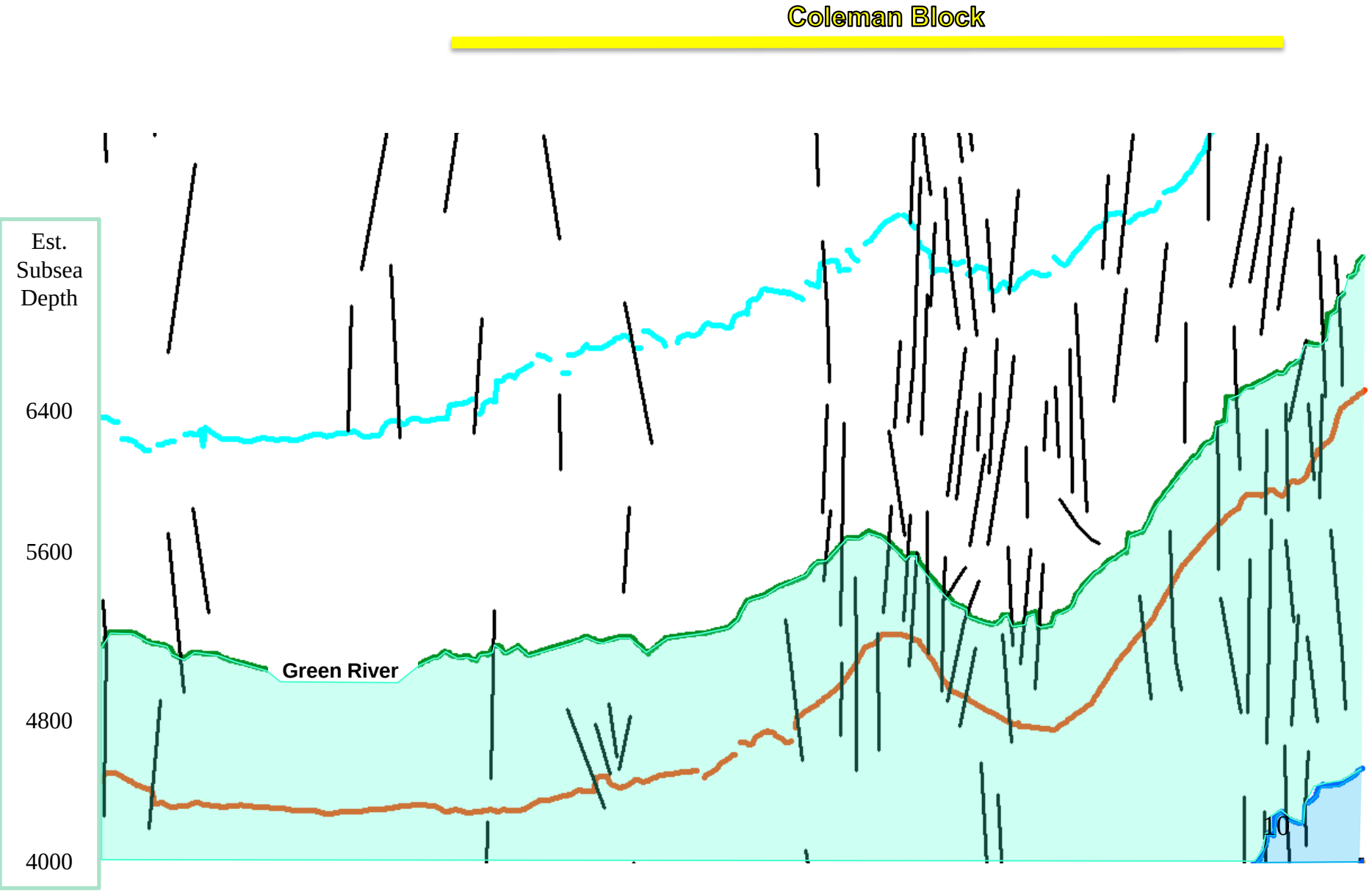
Coleman Prospect 2-D Seismic Lines



N-S Line 1928 Echo Migration



N-S Line 1928 Echo Migration showing Green River Structure



Uinta Basin Petroleum System

The Tertiary Green River petroleum system in the Uinta basin generated about 500 million bbl of recoverable, high pour-point, paraffinic crude oil from lacustrine source rocks. A prolific complex of marginal and open-lacustrine source rocks, dominated by carbonate oil shales containing up to 60 wt. % type I kerogen (60% TOC)

"Active hydrocarbon generation is one explanation for the origin of the overpressured reservoirs."

Tim E. Ruble, M. D. Lewan, and R. P. Philp
AAPG Bulletin, v. 85, no. 8 (August 2001), pp. 1333–1371

The position for the top of overpressure above the top of the Green River at the Coleman prospect indicates that Green River source rocks are present and actively generating hydrocarbons. This overpressure extends down through the sandstones of the Mesaverde Group.

Green River – Wasatch Shows and Completions

Five wells south and east of the Coleman lease block have significant Green River shows (Slides 12 and 13). These shows are all in the Lower Green River and Upper Wasatch.

Montgomery and Morgan, (1998) reported that at Altamont-Bluebell "Typically, 40–120 beds are perforated and stimulated with acid (no proppant) over intervals of up to 3000 ft (900 m). Little or no evaluation of individual beds is performed, preventing identification of good-quality reservoir zones, water-producing zones, and thief zones. As a result, detailed understanding of Bluebell reservoirs historically has been poor, inhibiting any improvements in recovery strategies." (Slide 14).

They believe that careful bed evaluation and selective perforation will result in improved recovery of oil and gas at the Altamont-Bluebell field.

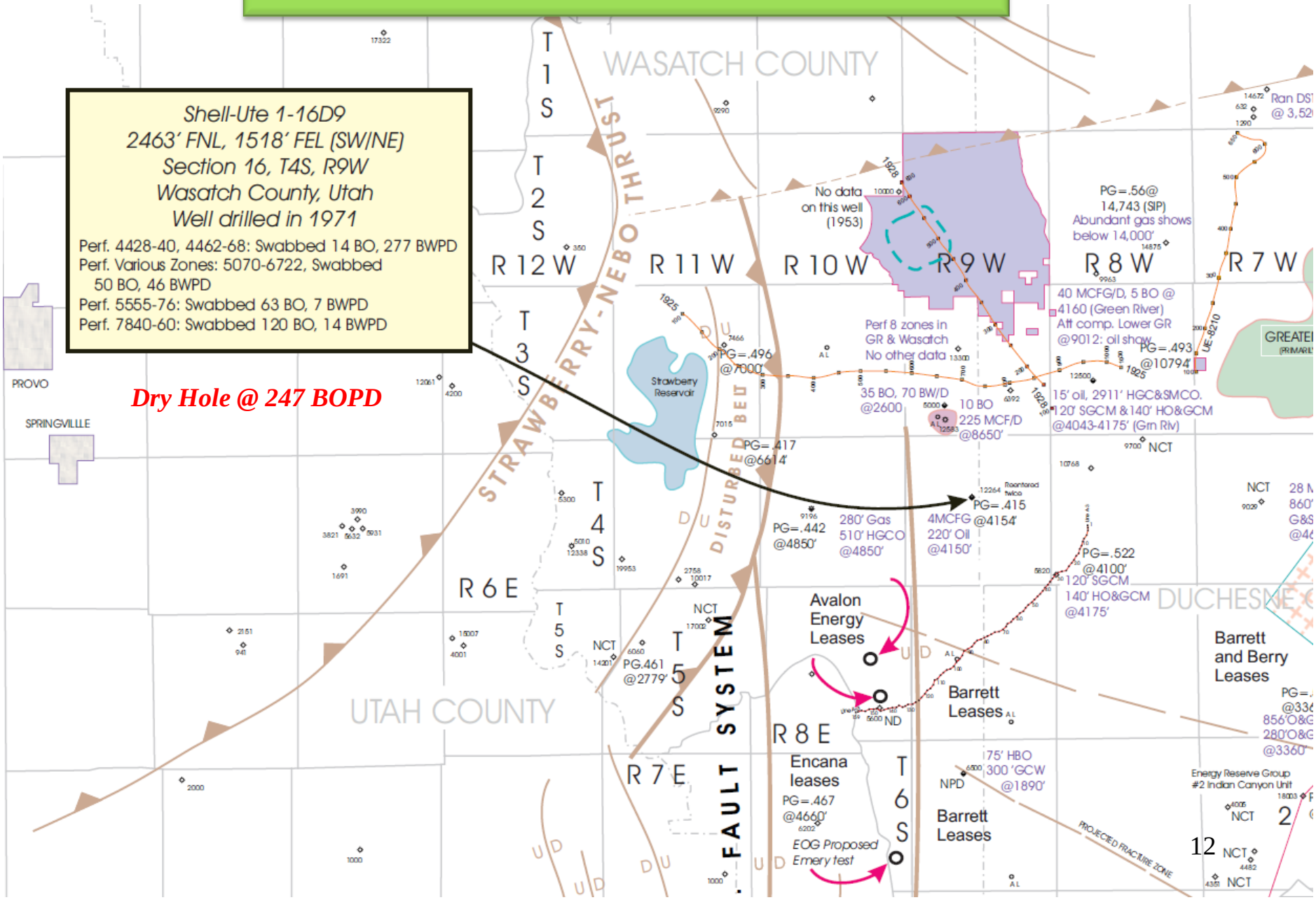
Horizontal Drilling – Western Edge Altamont-Bluebell Field

Fouch, et al (1994) have stated that in the Uinta basin *"oil-bearing reservoir rocks commonly extend beyond field limits."* This statement is supported by the current high level of drilling activity along the western edge of the Altamont-Bluebell trend. Bill Barrett is very active in this area.

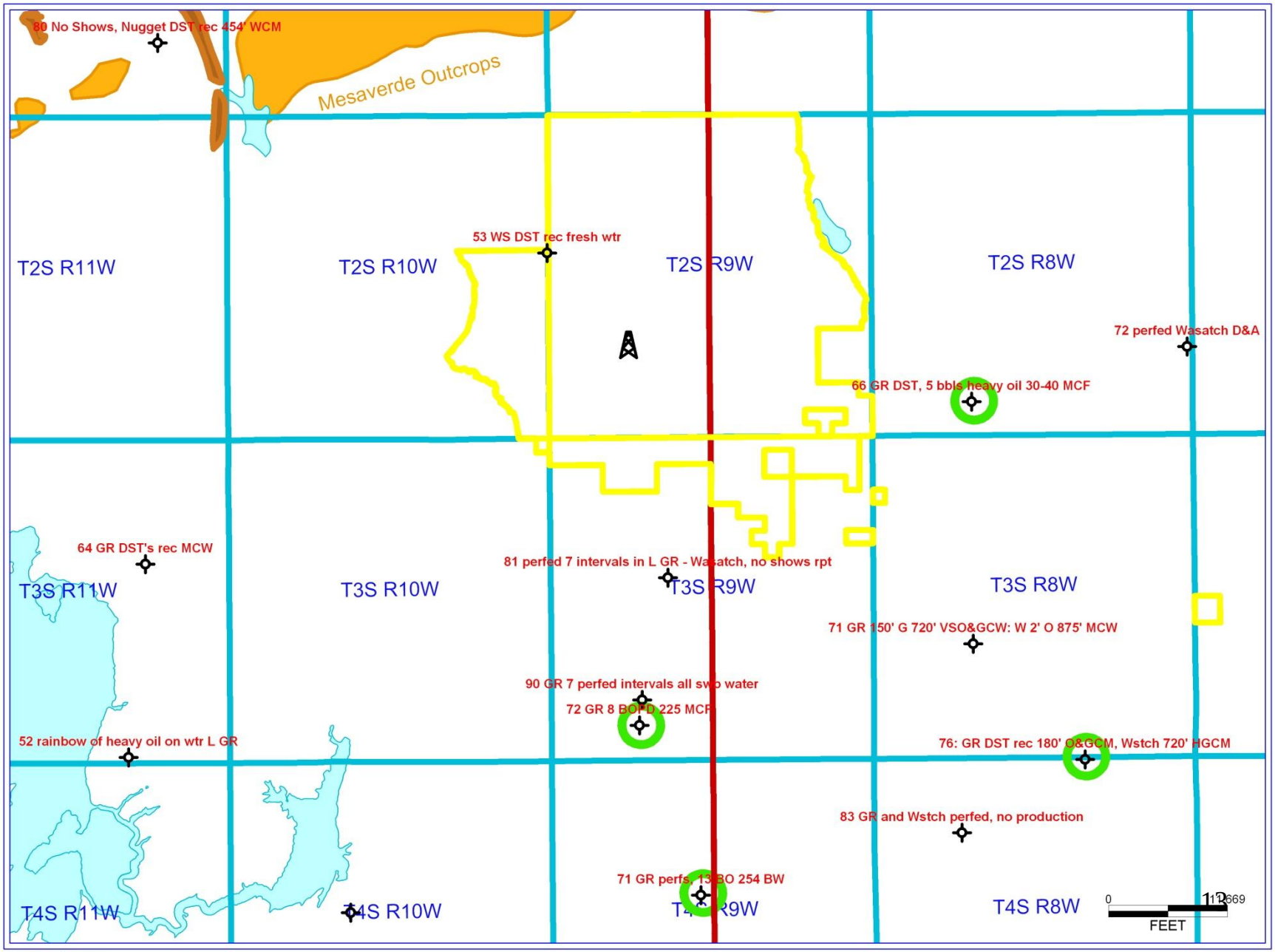
The various well symbols shown in Slide 15 represent the status of wells along the western edge of the Altamont-Bluebell field as reported by the state of Utah on December 5, 2011. Open red circles are proposed drilling locations with an approved drilling permit. The red circles with right-angle bent lines extending from the top and bottom are wells that have been approved and are currently drilling. Red circles with a horizontal line are new drilling permits not yet approved. Most of these proposed locations are operated by Bill Barrett Corporation.

Bill Barrett Corporation has drilled four horizontal wells in the area enclosed by the red box in slide 15. Slide 16 shows this area in more detail. The Bill Barrett Corporation horizontal wells are highlighted with green circles and the estimated horizontal extent of laterals is show by green lines. Directional surveys are not

Green River - Wasatch Shows



Green River DST's and Production Tests



PETRA 12/6/2011 4:23:04 PM

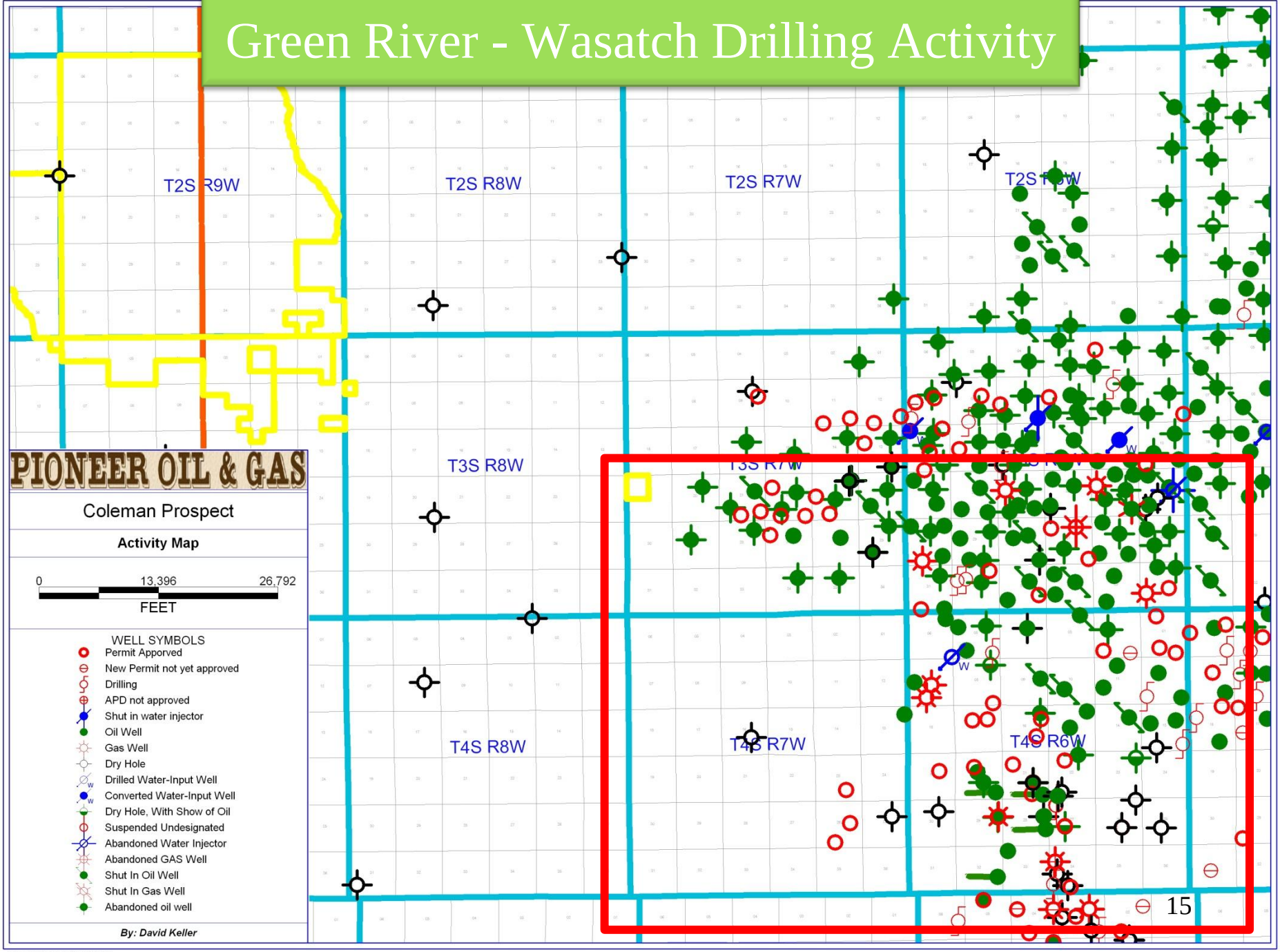
Altamont-Bluebell Completion Technology

- *Typically, 40–120 beds are perforated and stimulated with acid (no proppant) over intervals of up to 3000 ft (900 m). Little or no evaluation of individual beds is performed, preventing identification of good-quality reservoir zones, water-producing zones, and thief zones. As a result, detailed understanding of Bluebell reservoirs historically has been poor, inhibiting any improvements in recovery strategies.*

Scott L. Montgomery and Craig D. Morgan

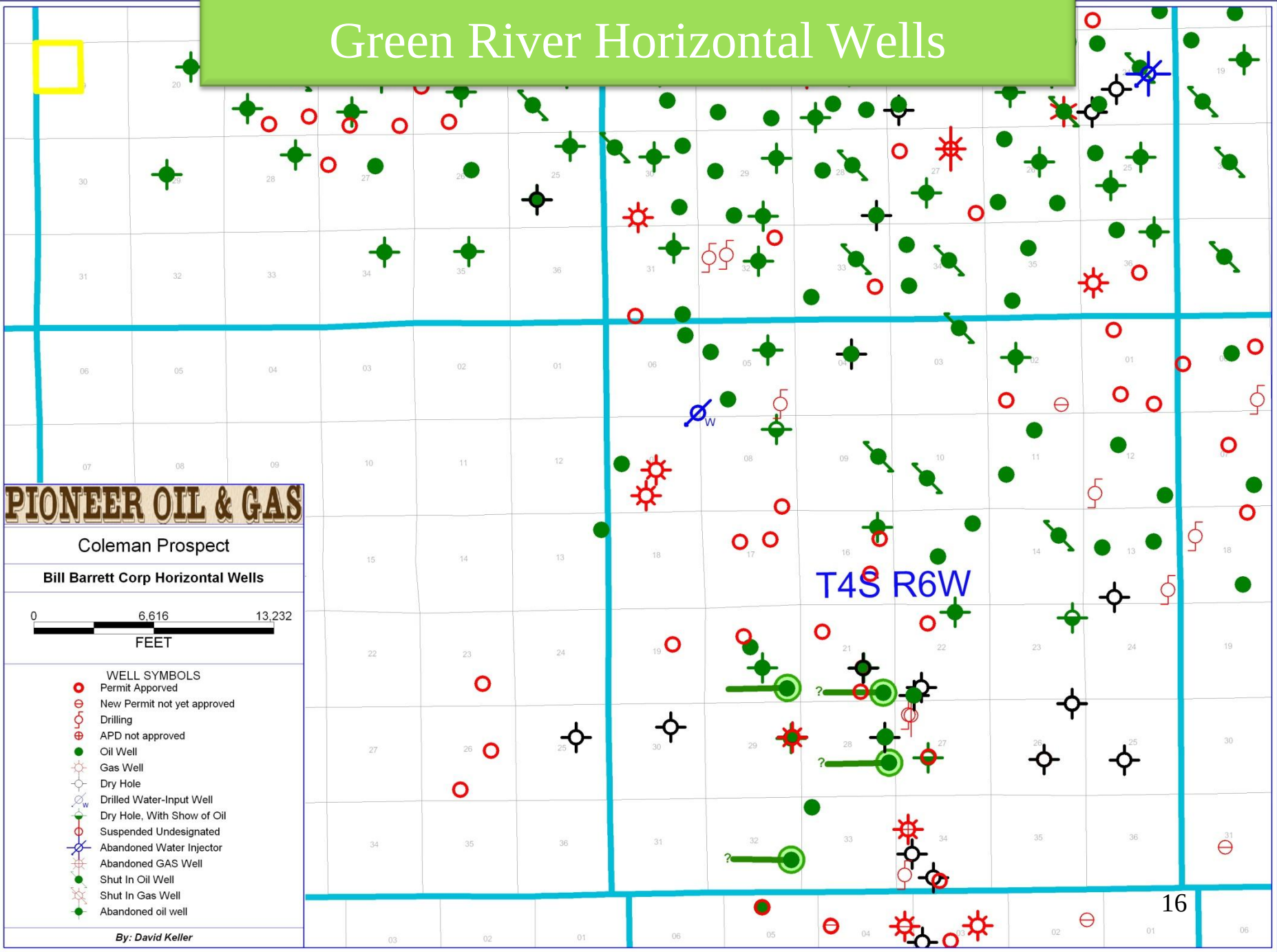
AAPG Bulletin, V. 82, No. 6 (June 1998), P. 1113–1132.

Green River - Wasatch Drilling Activity



PETRA 12/5/2011 2:18:31 PM

Green River Horizontal Wells



available and an approximate bottom-hole location was reported for only one to the four wells. These wells are all located in Township 4 South Range 6 West and each have a single lateral ranging from 3100 to 3400 feet in length drilled in the Lower Green River Uteland Butte interval. All four wells were stimulated with a 15-stage fracture treatment (IHS, Energy News, 2011, Nov 29th).

The first well drilled by Bill Barrett Corporation, the13H-20-46 Lake Canyon-Tribal in section 20 had an initial peak rate of 1300 BOE (barrels of oil equivalent) per day and averaged 717 BOE per day for the first 30 days of production. The second well drilled by Bill Barrett Corporation, the12H-32-46 Lake Canyon-Fee in section 32 had an initial peak rate of 738 BOE (barrels of oil equivalent) per day and averaged 329 BOE per day for the first 30 days of production.

The third horizontal well, the12H-28-46 Lake Canyon-Tribal in section 28 had an initial peak rate of 1330 BOE (barrels of oil equivalent) per day and averaged 707 BOE per day for the first 30 days of production. The fourth horizontal well, the13H-21-46 Lake Canyon-Tribal in section 21 had an initial peak rate of 863 BOE (barrels of oil equivalent) per day and averaged 596 BOE per day for the first 21 days of production.

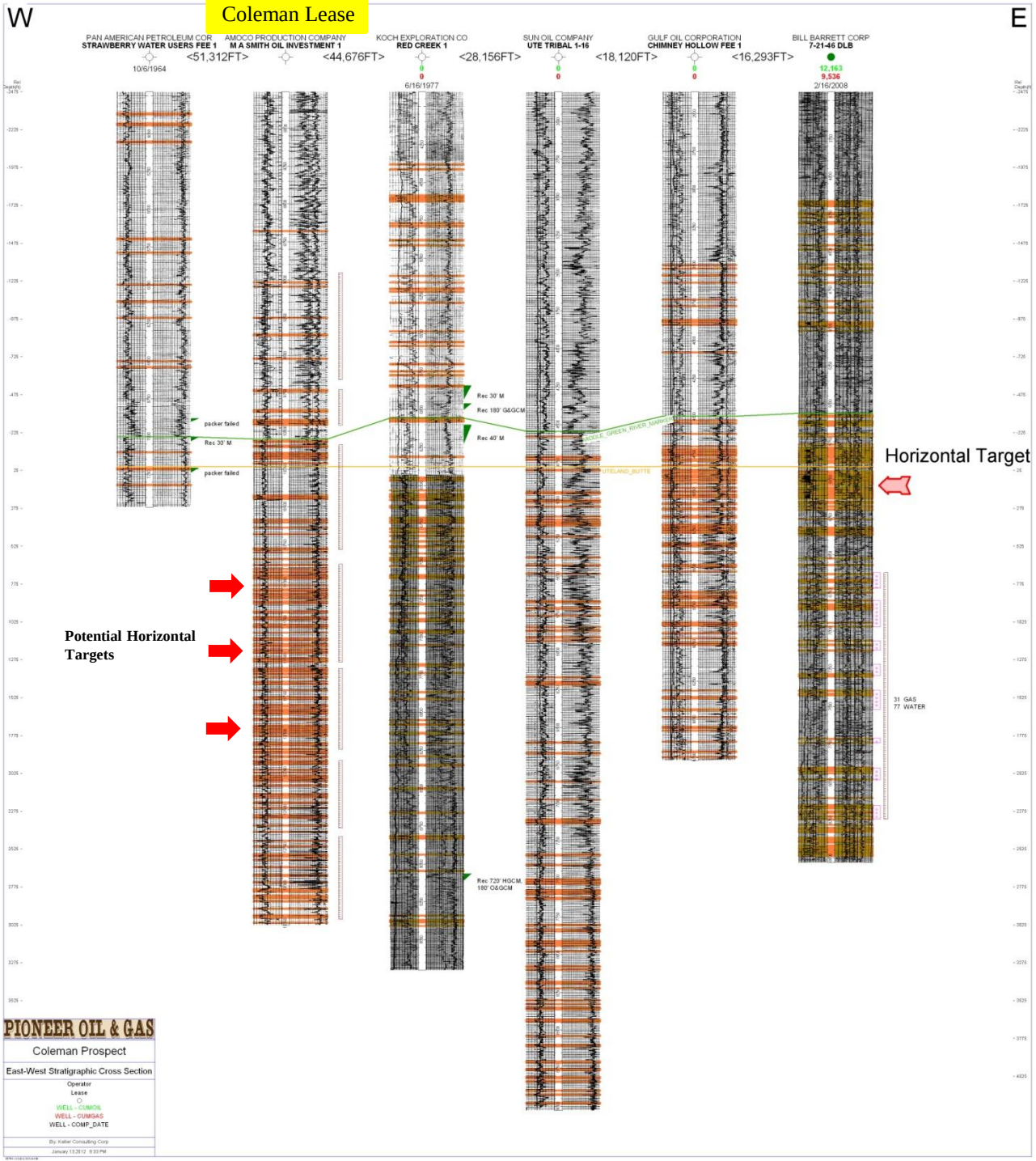
It is too early to estimate EUR (estimated ultimate production) for any of these wells but Bill Barrett Corporation is “very pleased” with results to date and wells are producing “better than expected” (IHS, Energy News, 2011, Nov 29th). Bill Barrett Corporation has 400 proposed locations in the area. The closest of these are located 2 to 8 miles east of Coleman tracts.

Horizontal drilling offers tremendous potential for improved recovery of oil and gas from the thick high TOC Green River-Wasatch interval and should extend production to the west along trend.

Uteland Butte Stratigraphic Cross Section

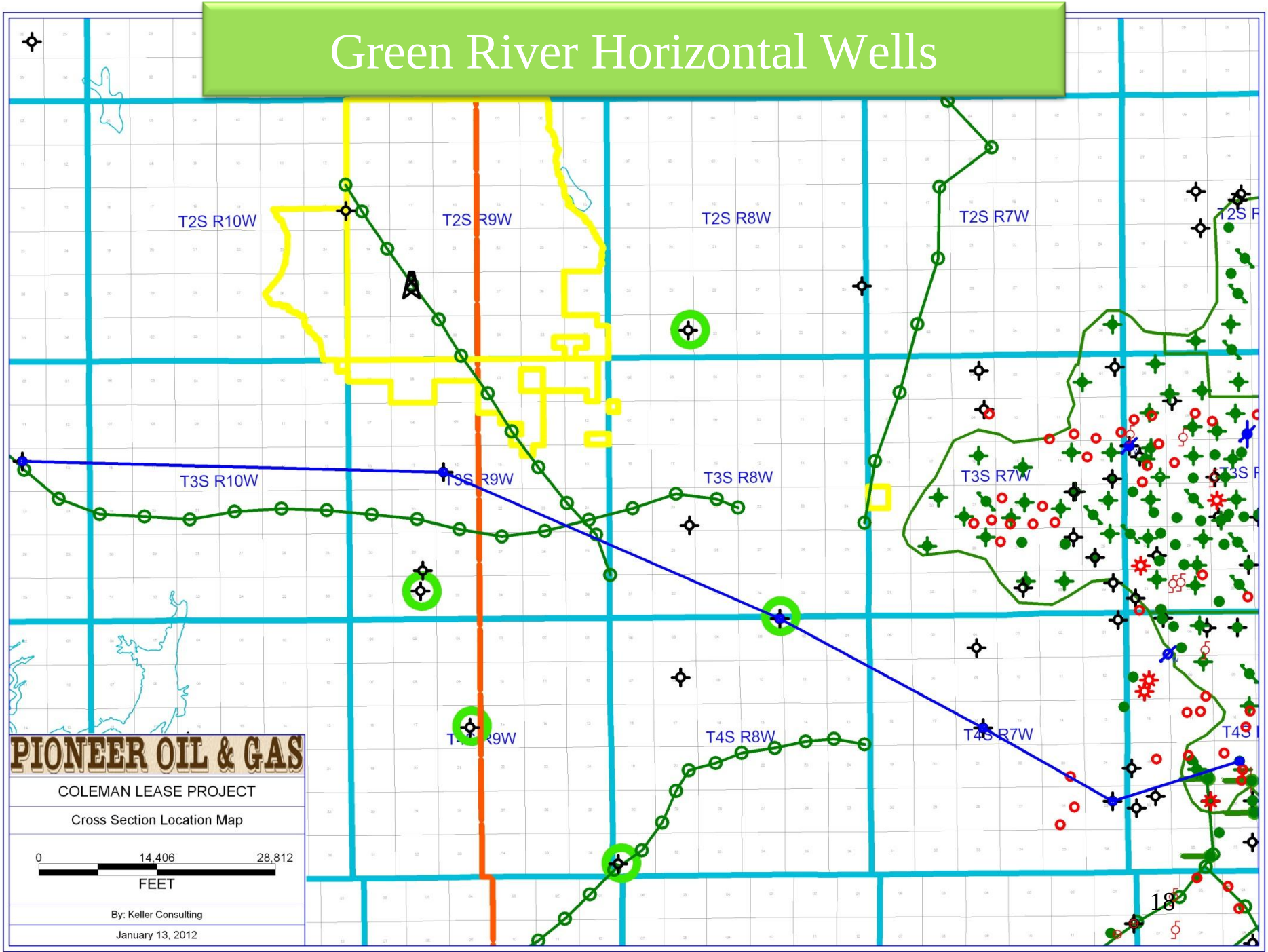
An east-west stratigraphic cross section which extends from Bill Barrett’s Lake Canyon horizontal development area west to a well just south of the Coleman lease (Amoco – M A Smith) and then west to the Pan American – Strawberry well was constructed (Slide 17). The most easterly well on the cross section (in blue Slide 18) the Bill Barrett Corp 7-21-46 DLB is a half mile north of the Bill Barrett Corp. 13H-21-46 Lake Canyon Tribal, a horizontal well with a lateral in the Uteland Butte interval which had initial peak production of 863 BOE per day. Closest well to Coleman lease is the Amoco Smith well located just one and a half miles south of the Coleman lease.

The cross section is flattened at the top of the Uteland Butte interval which occurs near the base of the Green River Formation. Perforated intervals are shown in pink and initial potential test intervals are shown in brown. Net reservoir sand is highlighted in orange. The approximate area of the Coleman lease is



Uteland Butte Stratigraphic Cross Section

Green River Horizontal Wells



PETRA 1/13/2012 8:58:24 PM

shown in yellow at the top of cross section. The red arrow on the right (east) side of the cross section shows the interval being targeted in Bill Barrett horizontal wells. There is similar sand content in the Amoco Smith Oil Investment #1 located just south of Coleman lease which indicates excellent potential for horizontal drilling on the Coleman lease.

Green River Facies and Stratigraphic Trapping

Fouch, et al (1994) report that "*Regionally, alluvial rocks stratigraphically trap most oil in down-dip open and marginal lacustrine reservoirs."* This is the stratigraphic setting of the Coleman prospect.

Fouch et al (1992) have divided the Green River into three facies: open lacustrine (lake), marginal lacustrine (fluvial and lake) and alluvial (fluvial and minor lake) (Slides 19 and 20). Most production is associated with open lacustrine and marginal lacustrine facies which occur down dip of the tight alluvial facies which form a lateral up dip trap to seal oil and gas in the lacustrine facies. This stratigraphic trapping concept is shown in Slide 21. The thick high TOC Green River-Wasatch interval is interpreted to extend across the Coleman prospect and be sealed by alluvial facies in an up dip position along the north edge of the Coleman prospect.

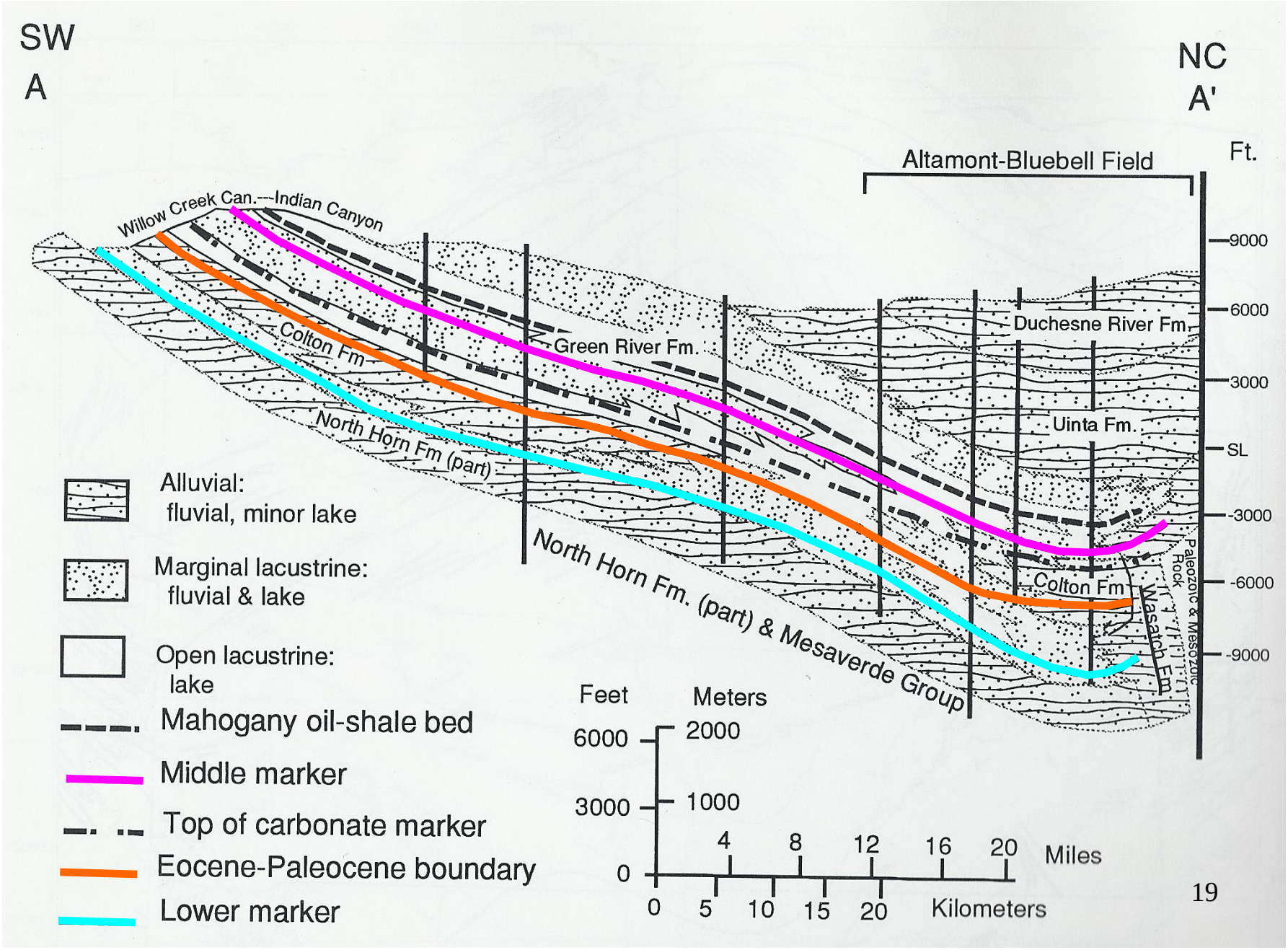
Seismic Facies Interpretation

A seismic facies interpretation was made using three 2-D seismic lines in the area of the Coleman lease. Slide 22 is a location map that shows these three lines. Also shown are wells with reported Green River shows highlighted by green circles and the location of the Uteland Butte stratigraphic cross section (Slide 17).

The dashed purple line marks the western and northern extent of the thickest part of the Green River section which is characterized by continuous high-amplitude seismic events. West and north of this line open lacustrine and marginal lacustrine facies are still present in considerable thickness but they do begin to thin. This means that the high-TOC facies present to the east at Altamont-Bluebell and in Bill Barrett's Lake Canyon horizontal development area extend west and north across the Coleman lease block. This seismic interpretation is consistent with the stratigraphic cross section shown in slide 17.

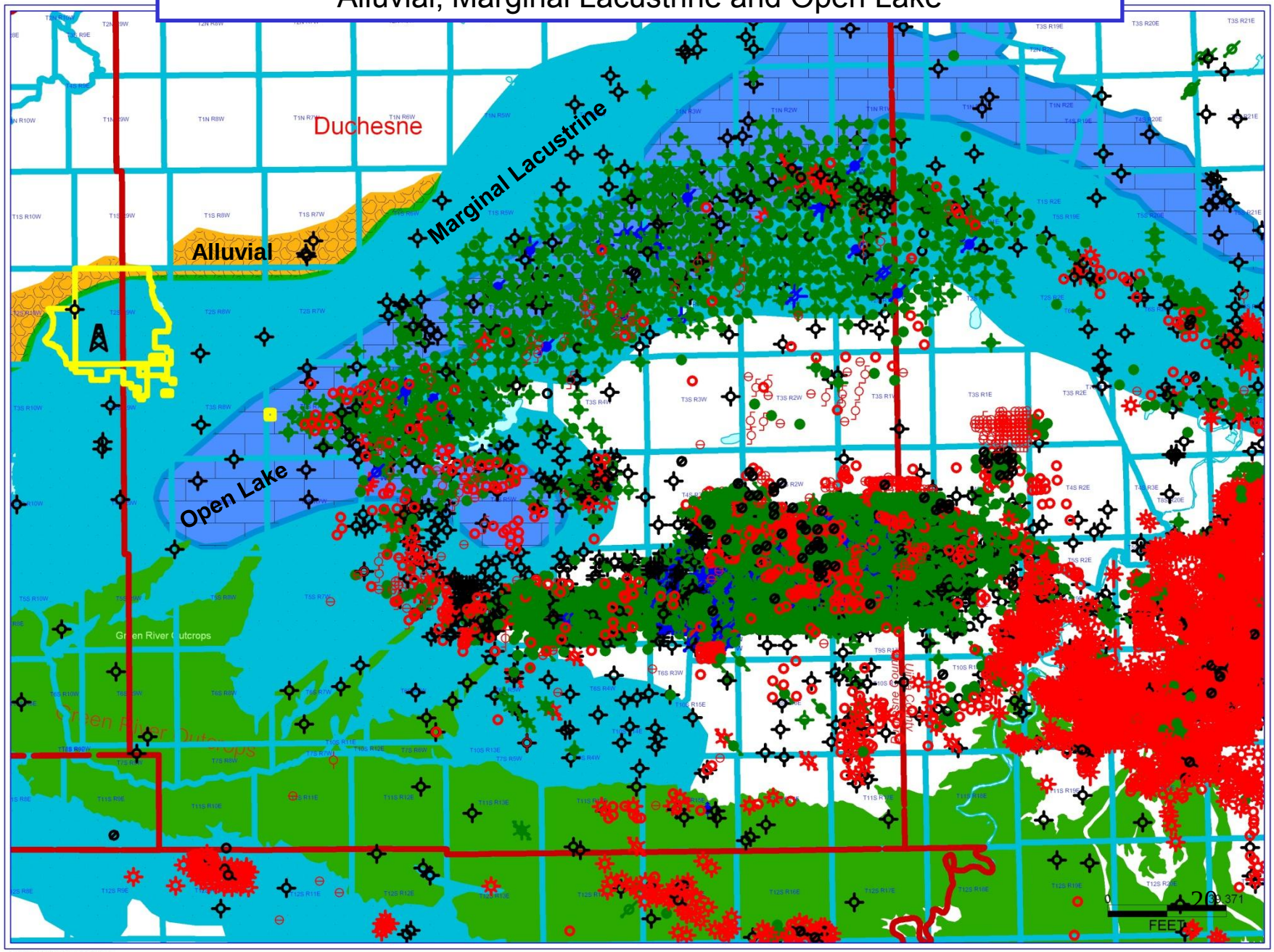
A composite line (not shown) which includes parts of lines 1925 and 8208 was prepared. This line (available for viewing at our office or by appointment) shows the same seismic character over the Coleman lease area as over the Bill Barrett horizontal well area.

Cross Section showing Green River Facies and Facies Map Intervals

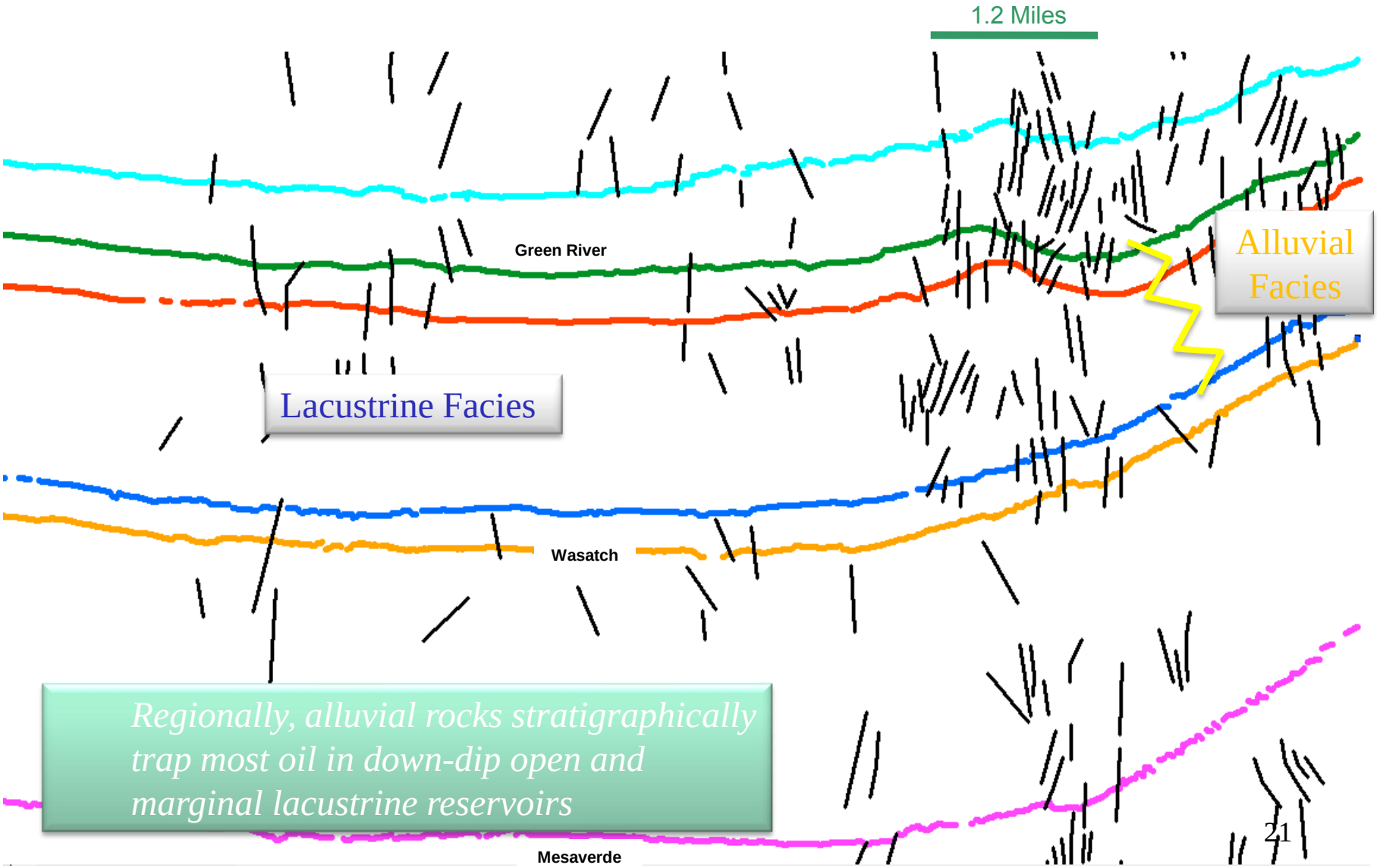


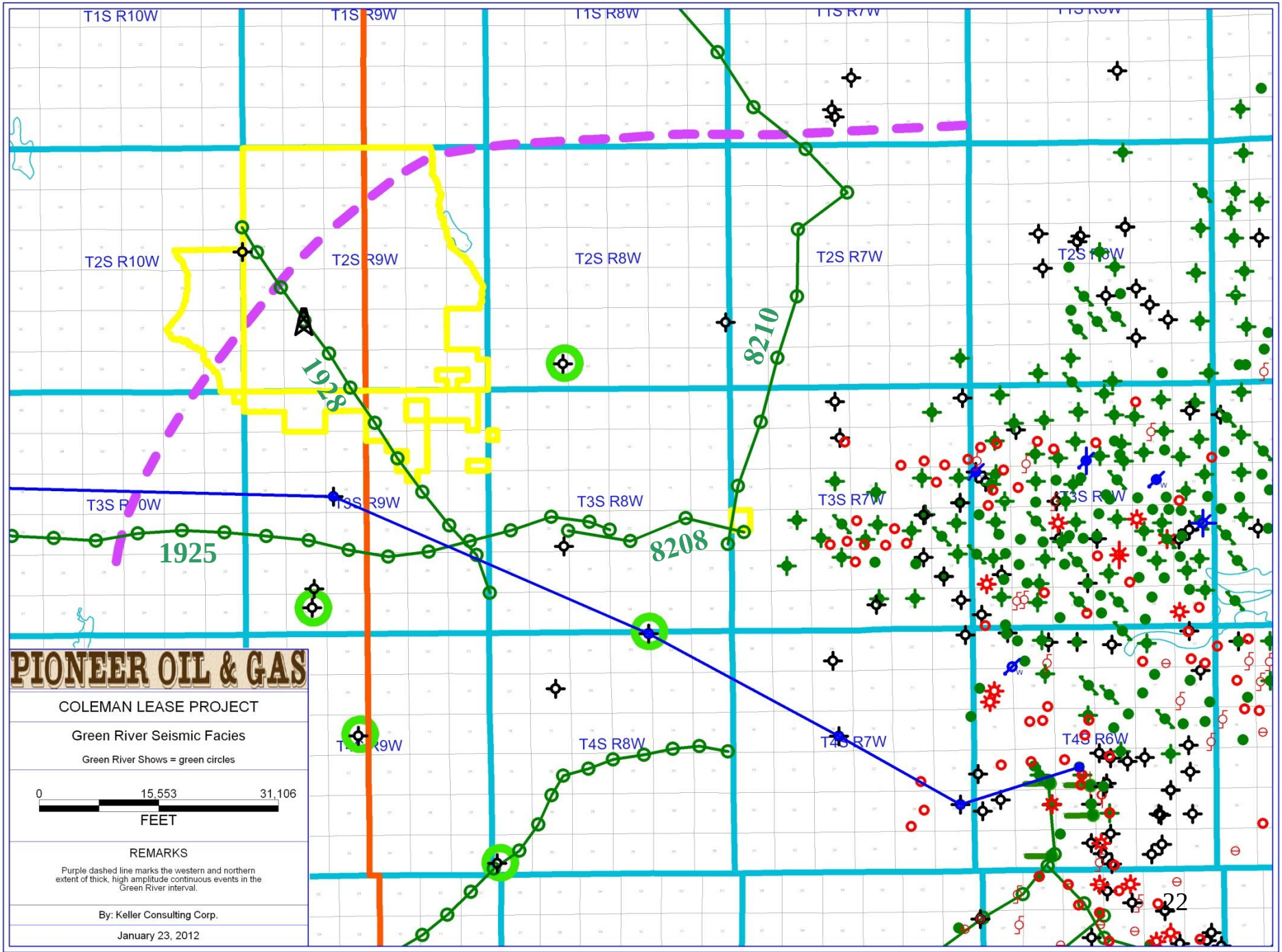
Paleocene Flagstaff Green River Facies

Alluvial, Marginal Lacustrine and Open Lake



N-S Line 1928 Echo Migration





PETRA 1/23/2012 9:34:27 PM

Green River – Wasatch Production Bubble Map

Slide 23 is a bubble map of cumulative production for the Altamont-Bluebell field that produces from the Lower Green River and Upper Wasatch.

Mesaverde Group Sandstones and Mancos Shale

The primary natural gas targets for the Coleman prospect are a thick sequence of sands in the Mesaverde Group and sands and shales of the Mancos Shale Formation. The Mancos Shale Formation is a relatively new objective and is usually produced with the Mesaverde. There is certainly tremendous potential for gas production from the thick wide-spread Mancos Shale Formation.

Basin-Centered Gas Accumulation in the Mesaverde Group

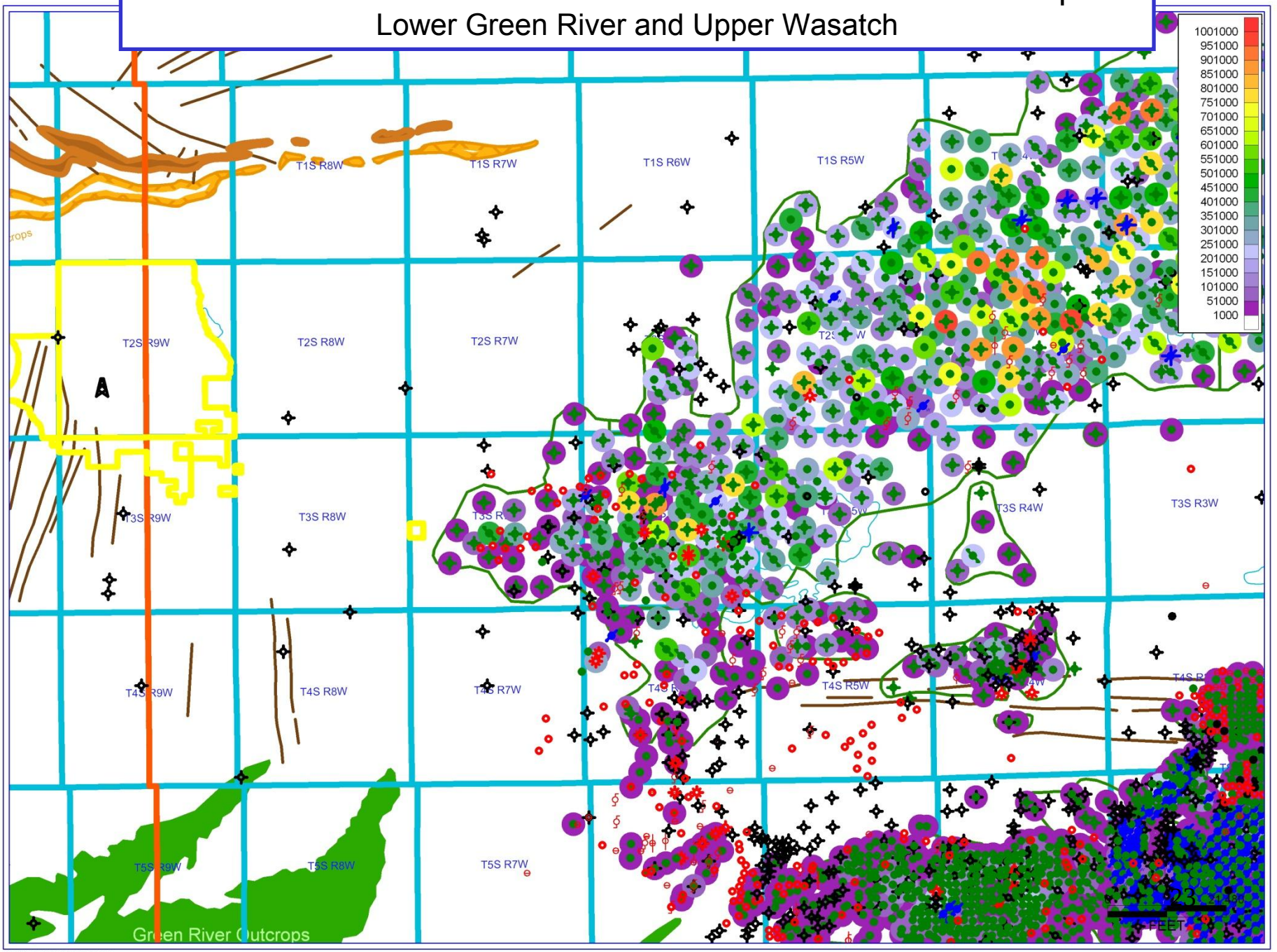
The concept of a basin-centered gas accumulation is illustrated in Slide 24. Gas is trapped in overpressured sands in the deeper part of a basin. Slide 25 shows the estimated area of overpressure for the Uinta basin from Spencer. This figure was prepared without the benefit of the pressure depth interpretation discussed later which shows overpressuring beginning above the top of the Green River in the prospect area.

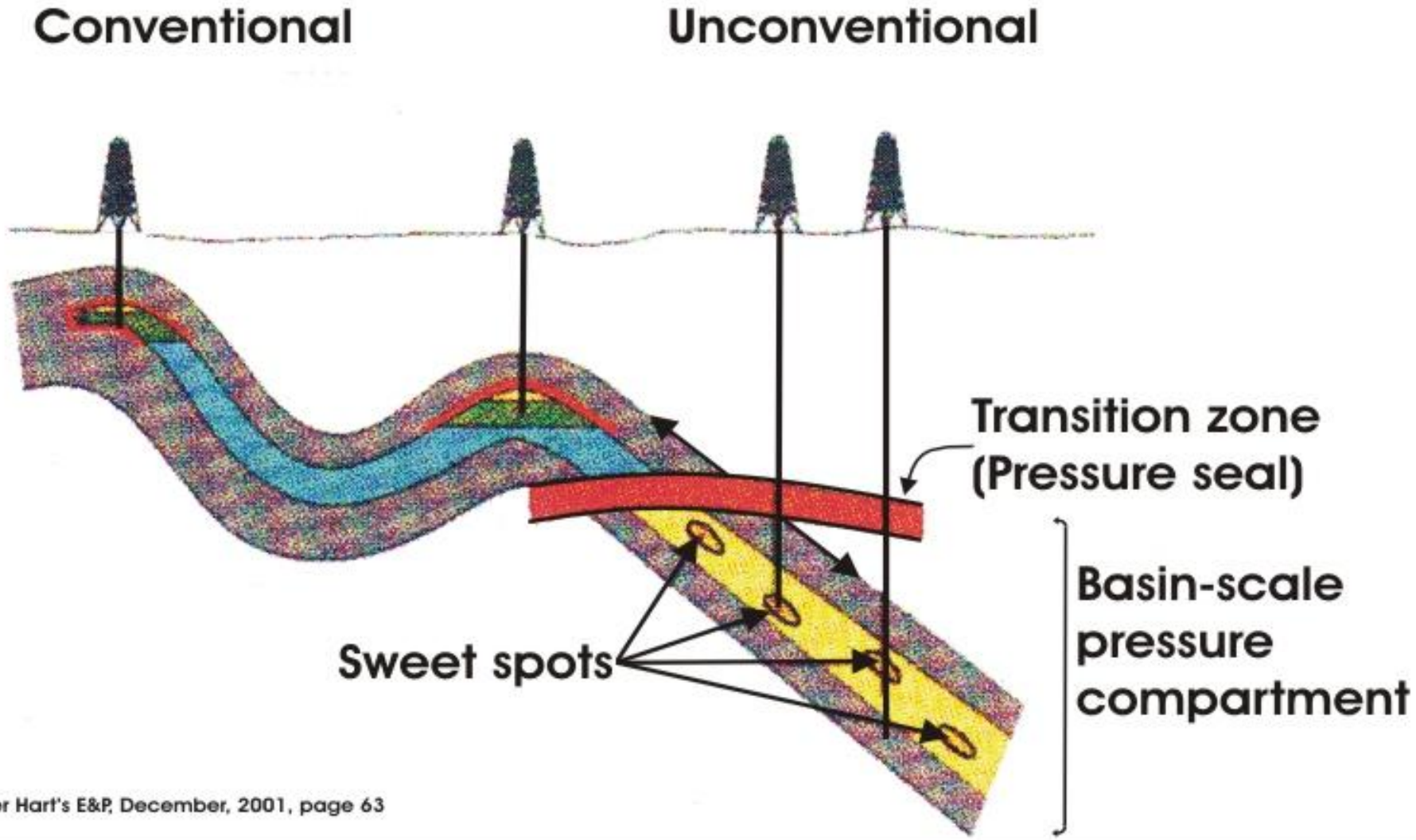
The sands of the Mesaverde Group produce gas across a large portion of the Uinta basin and gas shows are very common in deep dry holes drilled in the western part of the Uinta basin (Slide 26)**.** Slide 26 shows two wells (highlighted in red) which have flowed gas from the Mesaverde and a third well with a petrophysical analysis which show 247 feet of Coal and 1,633 feet of sand in the Blackhawk, Star Point & Emery Formations of the Mesaverde Group.

Mesaverde Group Production

The Mesaverde produces from three recently drilled deep wells in the Monument Butte field and is also productive in the Eight Mile Flat, 8 Mile Flat North, Uteland Butte and Natural Buttes fields to the south and east (Slide 27). Slide 27 shows only wells deeper than 8,000 feet and the location of a semi regional structural cross section. This cross section (Slide 28) shows the top of the Mesaverde in brown and the top of the Mancos B in blue. Perforated intervals are shown in pink and initial potential (IP) test intervals are shown in brown.

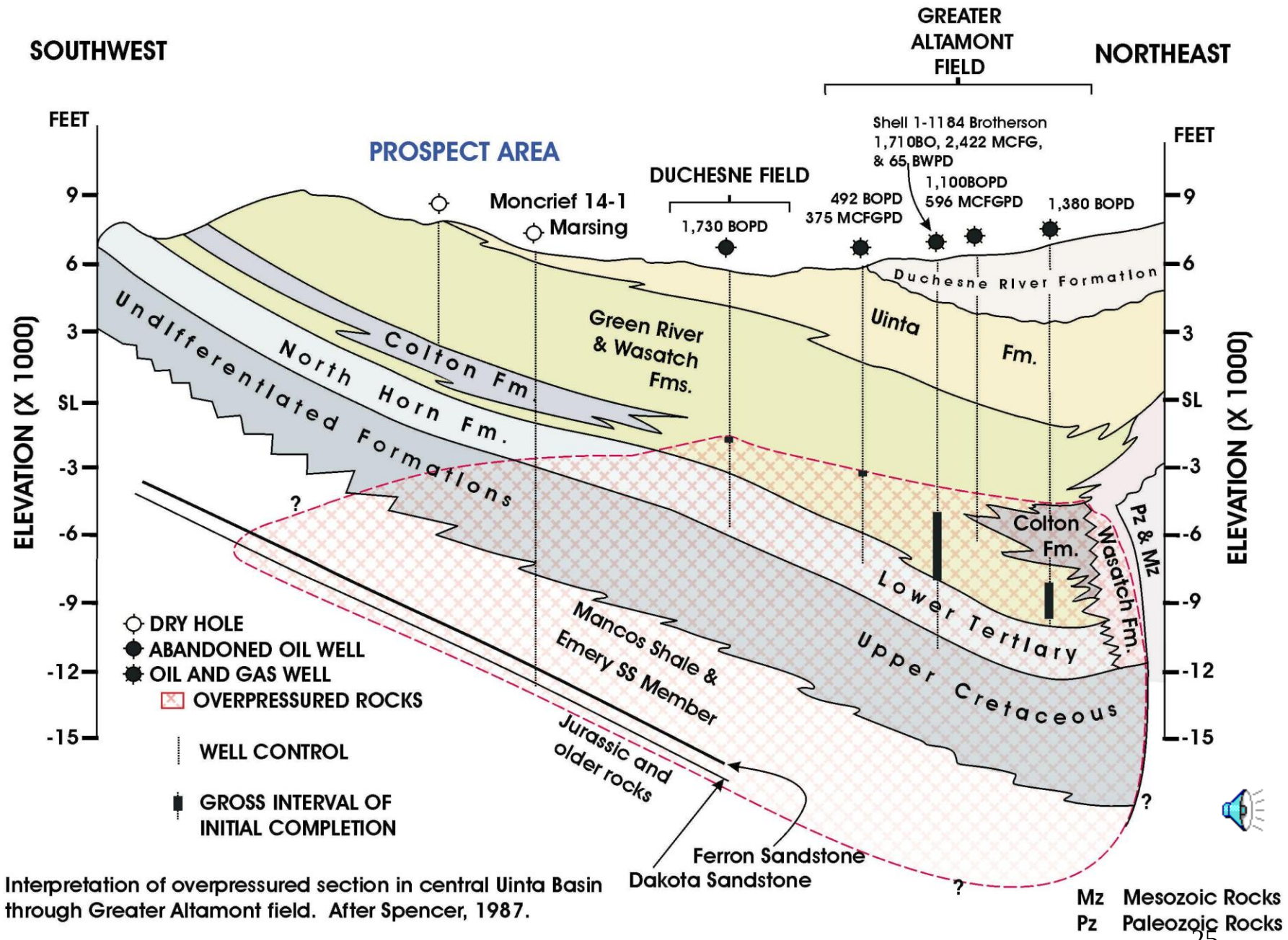
Altamont-Bluebell Field Cumulative Production Bubble map
Lower Green River and Upper Wasatch





A pressure seal allows anomalous pressure zones to form in basin-center gas deposits. All the operator has to do is find the sweet spots of high permeability and porosity to locate commercial fields.

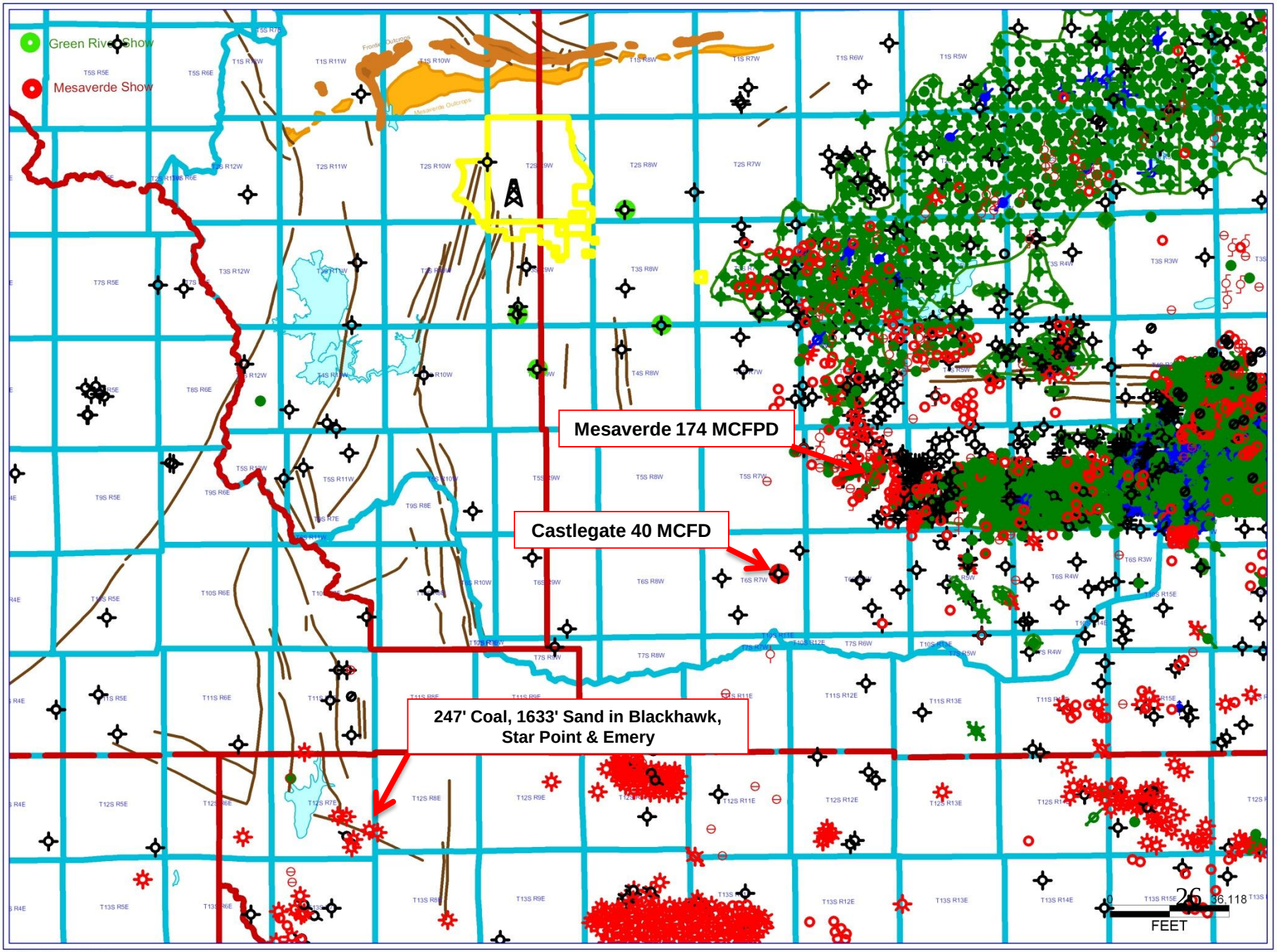
FIGURE 3. Development of overpressured reservoirs

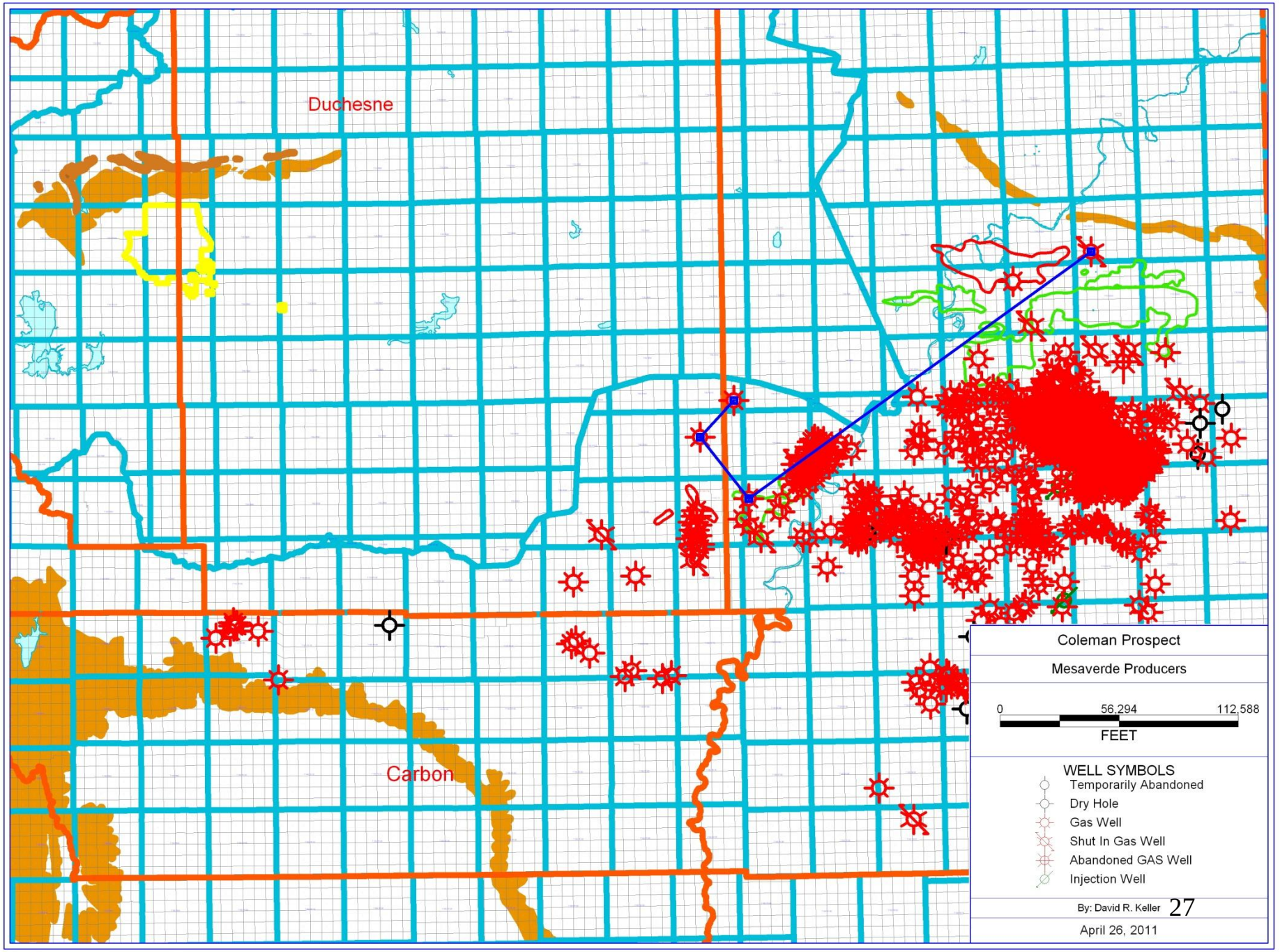


Interpretation of overpressured section in central Uinta Basin through Greater Altamont field. After Spencer, 1987.

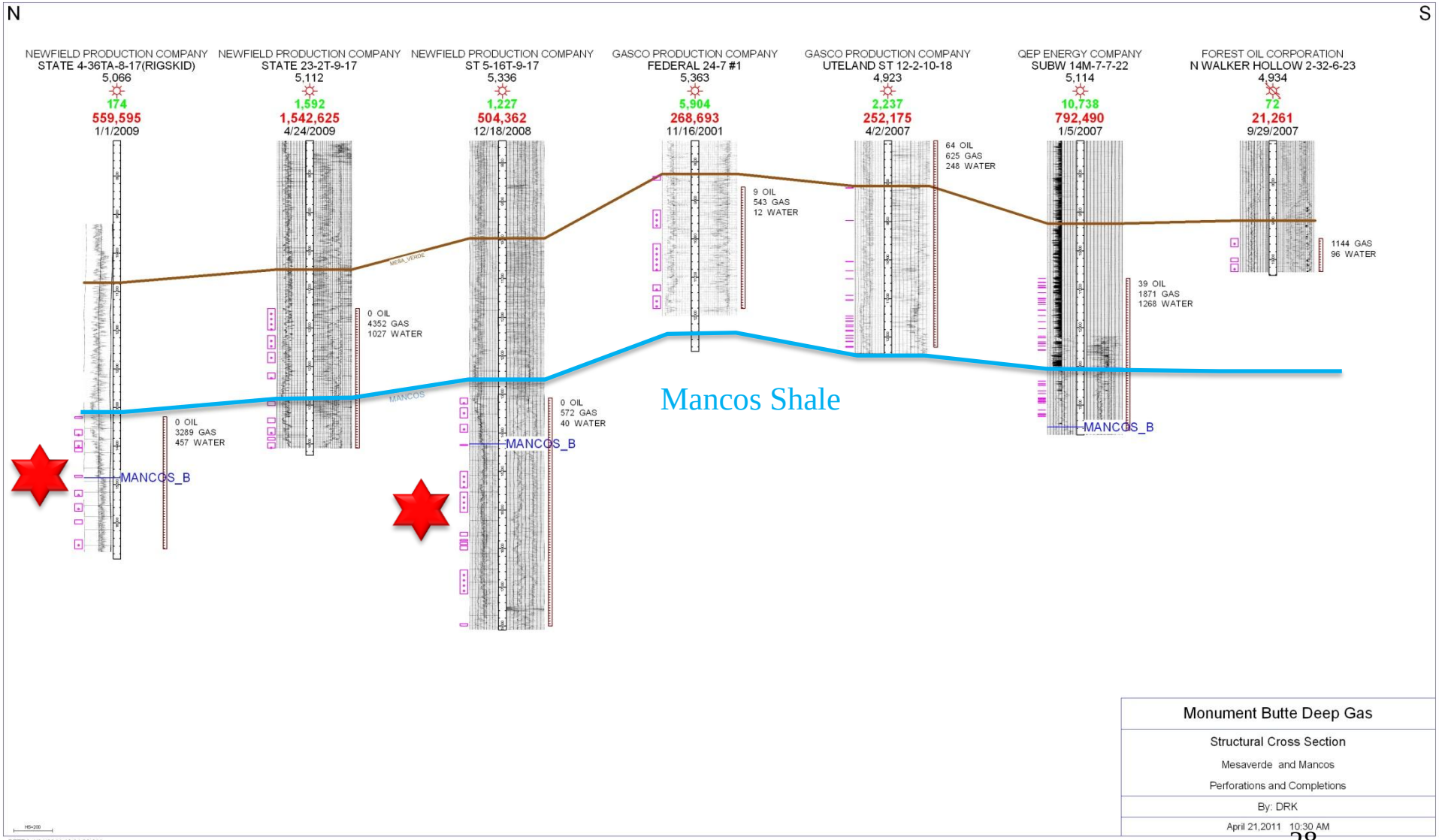
FIGURE 9. Overpressuring, a regional interpretation across the Uinta Basin, Utah

Mesaverde Tests





PETRA 4/26/2011 7:01:18 PM



Monument Butte Deep Gas
Structural Cross Section
Mesaverde and Mancos
Perforations and Completions
By: DRK
April 21,2011 10:30 AM

PETRA 4/21/2011 10:31:02 AM

Also shown at the top of each well are cumulative gas (red) and oil production (green) and the completion date. These are fairly new wells all having been completed since 2007. Some wells have been completed in the upper Mesaverde only, some in the Mancos only and other in both intervals. The Newfield State 23-2T-9-17 (second from the left, Slide 28) has produced 1.6 BCF in 20 months (Slide 29) and decline curve analysis for this well (Slide 30) yields an estimated ultimate recovery (EUR) of 6.7 BCF with 10 MBO of natural gas liquids.

Slide 31 is a stratigraphic cross section showing the thick section of shoreface sands present in the Mesaverde under the Coleman prospect. Slide 32 shows the position of Mesaverde outcrops located just north of the Coleman prospect. Slides 33 and 34 show a measured section and outcrop photos for the Currant Creek area.

Mancos Shale Potential

The regional Mesaverde-Mancos structural cross section (Slide 28) shows three wells that have been completed in some portion of the Mancos Shale. The Mancos shale is present across the entire Uinta basin and will be a very low-risk objective at the Coleman prospect.

GEOPHYSICAL EVALUATION

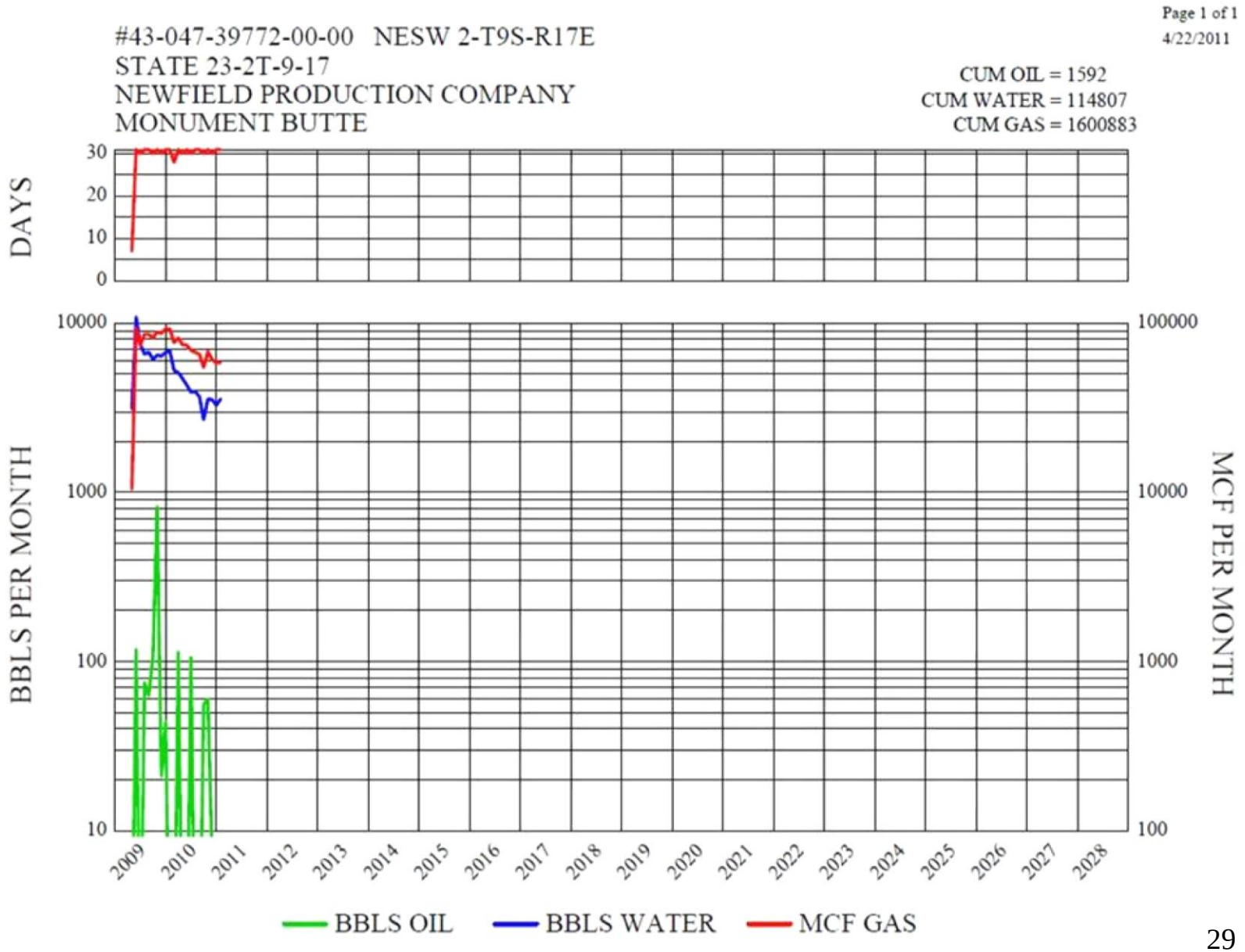
Synthetic Seismograms

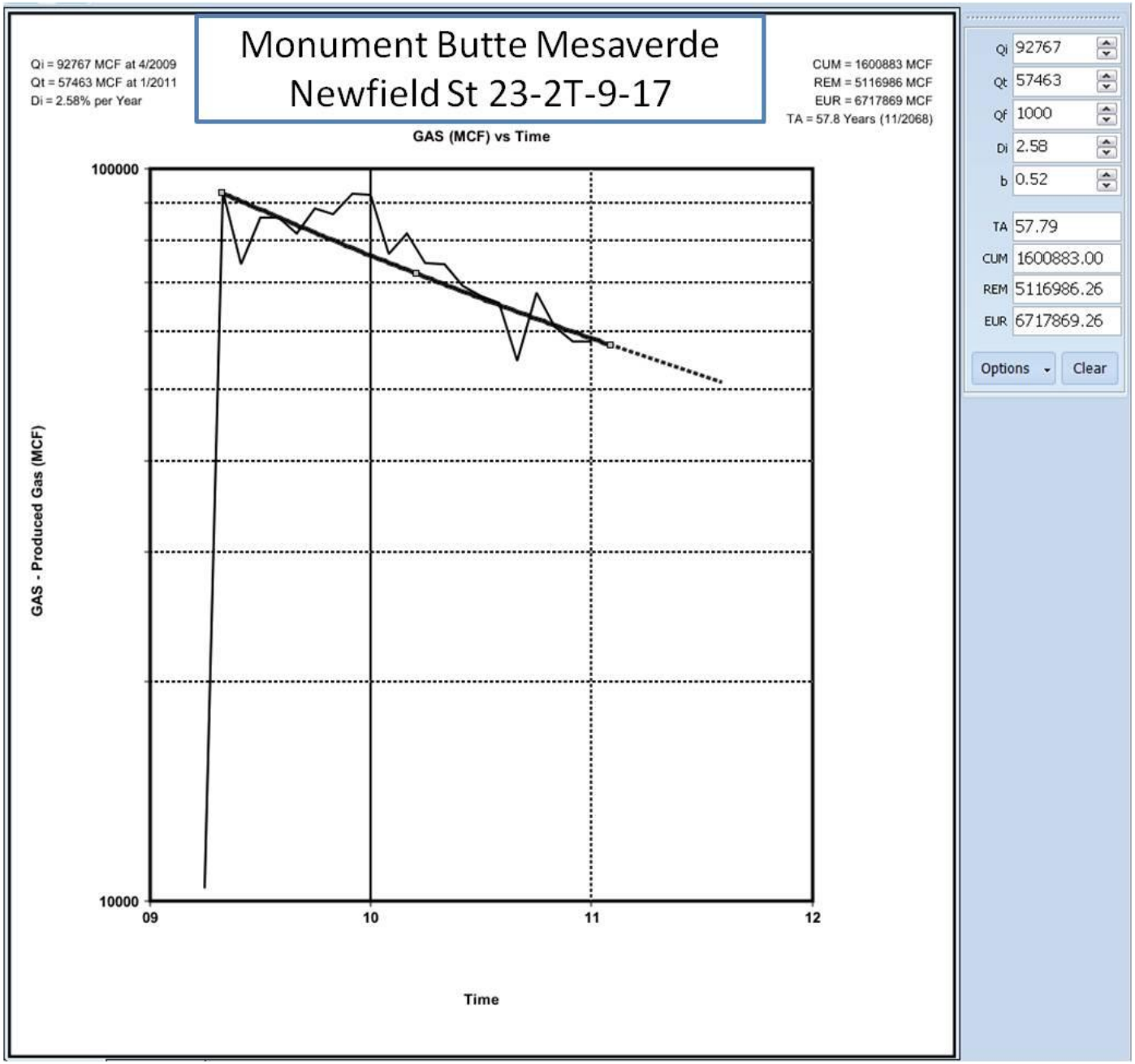
I digitized sonic logs for three wells, the Amoco, Smith Investment #1, the APEXCO Graywolf-Smith #1 and the El Paso Ute 1-15D6. These wells (Slide 35) were selected because of their proximity to 2-D seismic lines and the depth of penetrations. I generated synthetics for these wells using SMT SynPak

The challenge with these wells is that they are a long way from the closest 2-D lines. The Amoco, Smith Investment #1 is 6,300 feet from the nearest line. The APEXCO Graywolf-Smith #1 is 7,500 feet from the nearest line and the El Paso Ute 1-15D6 is 14,000 feet from the nearest 2-D line. This made depth conversion a little more difficult.

The Amoco, Smith Investment #1 and the El Paso Ute 1-15D6 had good ties to closest 2-D lines and the tie for the APEXCO Graywolf-Smith #1 was not as good.

1.6 BCF in 21 Months




Monument Butte Mesaverde
Newfield St 23-2T-9-17
Qi = 92767 MCF at 4/2009
Qt = 57463 MCF at 1/2011
Di = 2.58% per Year
CUM = 1600883 MCF
REM = 5116986 MCF
EUR = 6717869 MCF
TA = 57.8 Years (11/2068)
GAS (MCF) vs Time
GAS - Produced Gas (MCF)
100000
10000
09
10
11
12
Time
Qi 92767
Qt 57463
Qf 1000
Di 2.58
b 0.52
TA 57.79
CUM 1600883.00
REM 5116986.26
EUR 6717869.26
Options
Clear

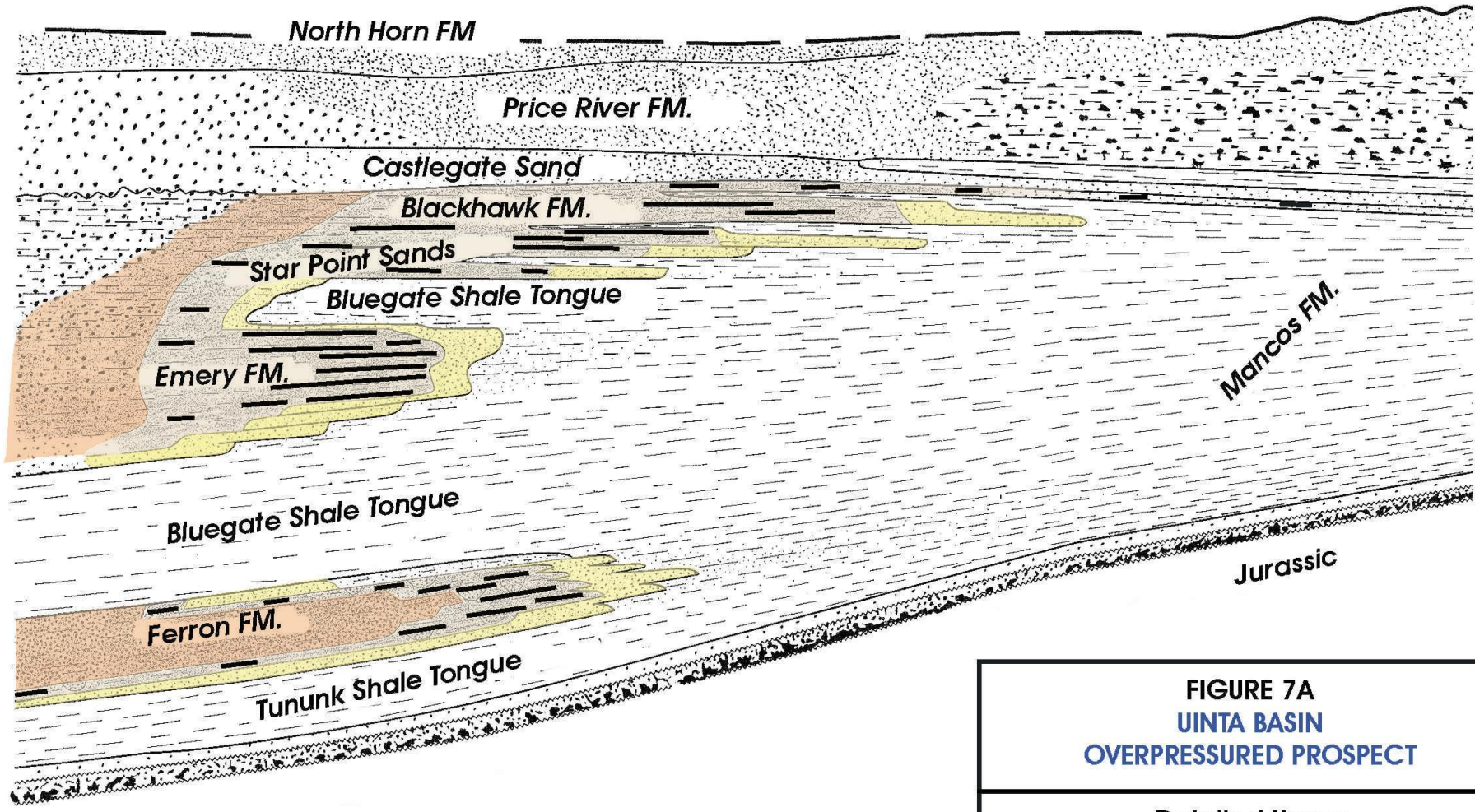
Westerly

Easterly

WASATCH PLATEAU

PROSPECT AREA

GREEN RIVER AREA



ALLUVIAL PLAIN- cgl, ss &sh

DELTA PLAIN- ss, sh & coal

DELTA FRONT- shoreface ss

Geology By Ben Weichman

FIGURE 7A

UINTA BASIN

OVERPRESSURED PROSPECT

Detailed Upper Cretaceous Stratigraphy

SCHEMATIC DIAGRAM

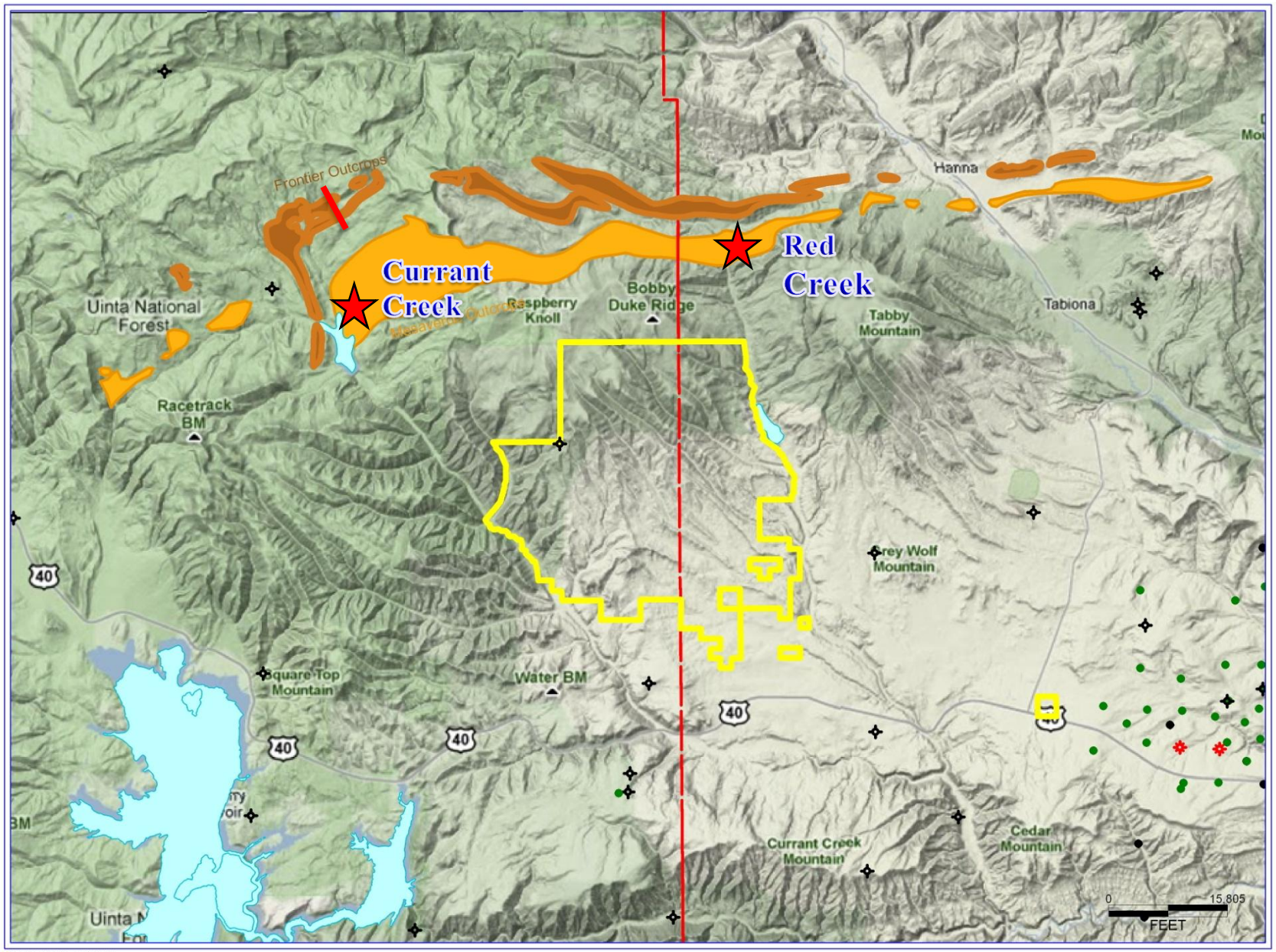
Northern San Rafael Swell, Utah

Modified after Hale, et al.

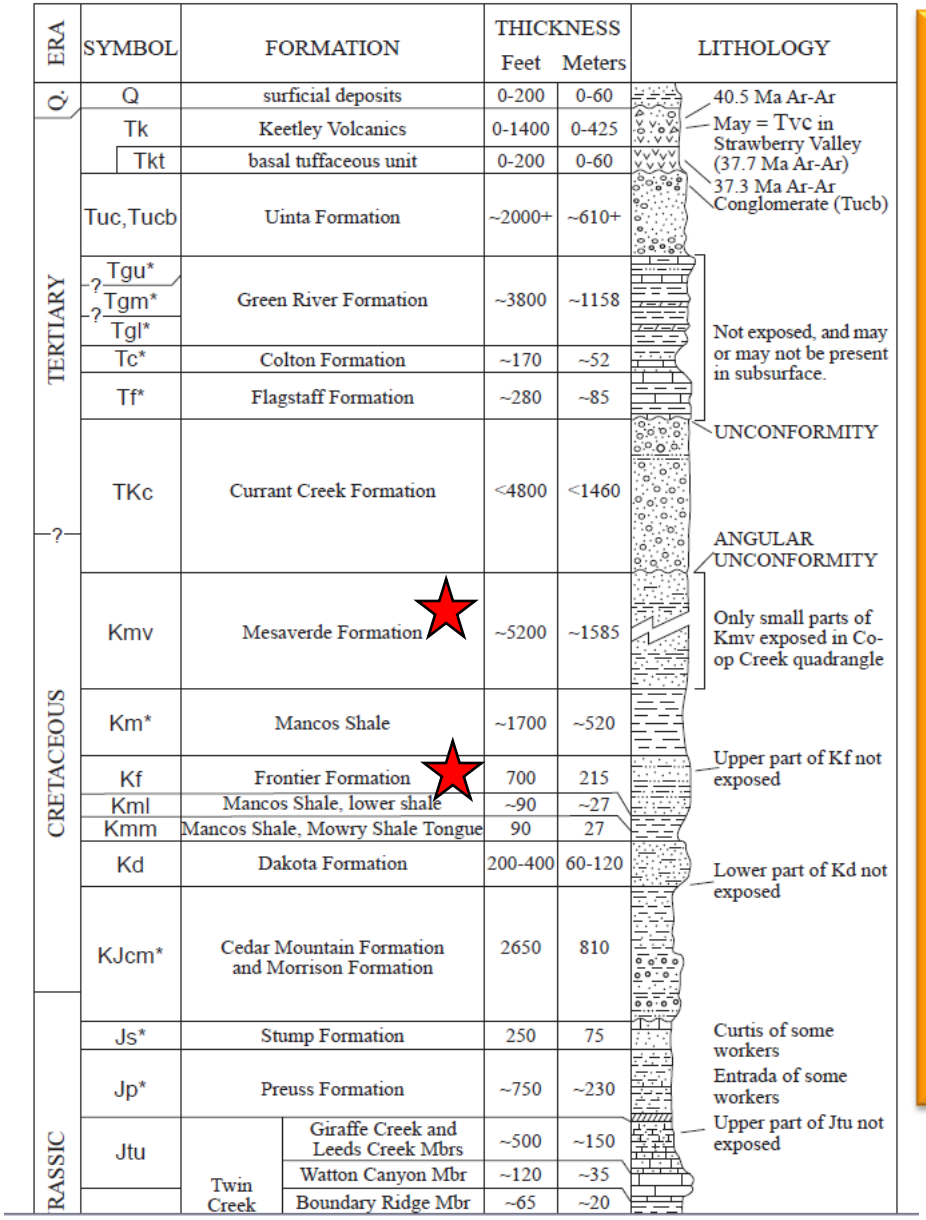
PIONEER OIL & GAS
1206 W. So. Jordan Pkwy., Unit B
South Jordan, UT 84095

Topographic Location Map for Currant Creek and Red Creek Outcrops

Mesaverde Formation (orange), Frontier Formation (dark brown), Coleman Lease (outlined in yellow)



Lithologic Column, Co-op Creek - Currant Creek Area



Currant Creek Area Measured Sections

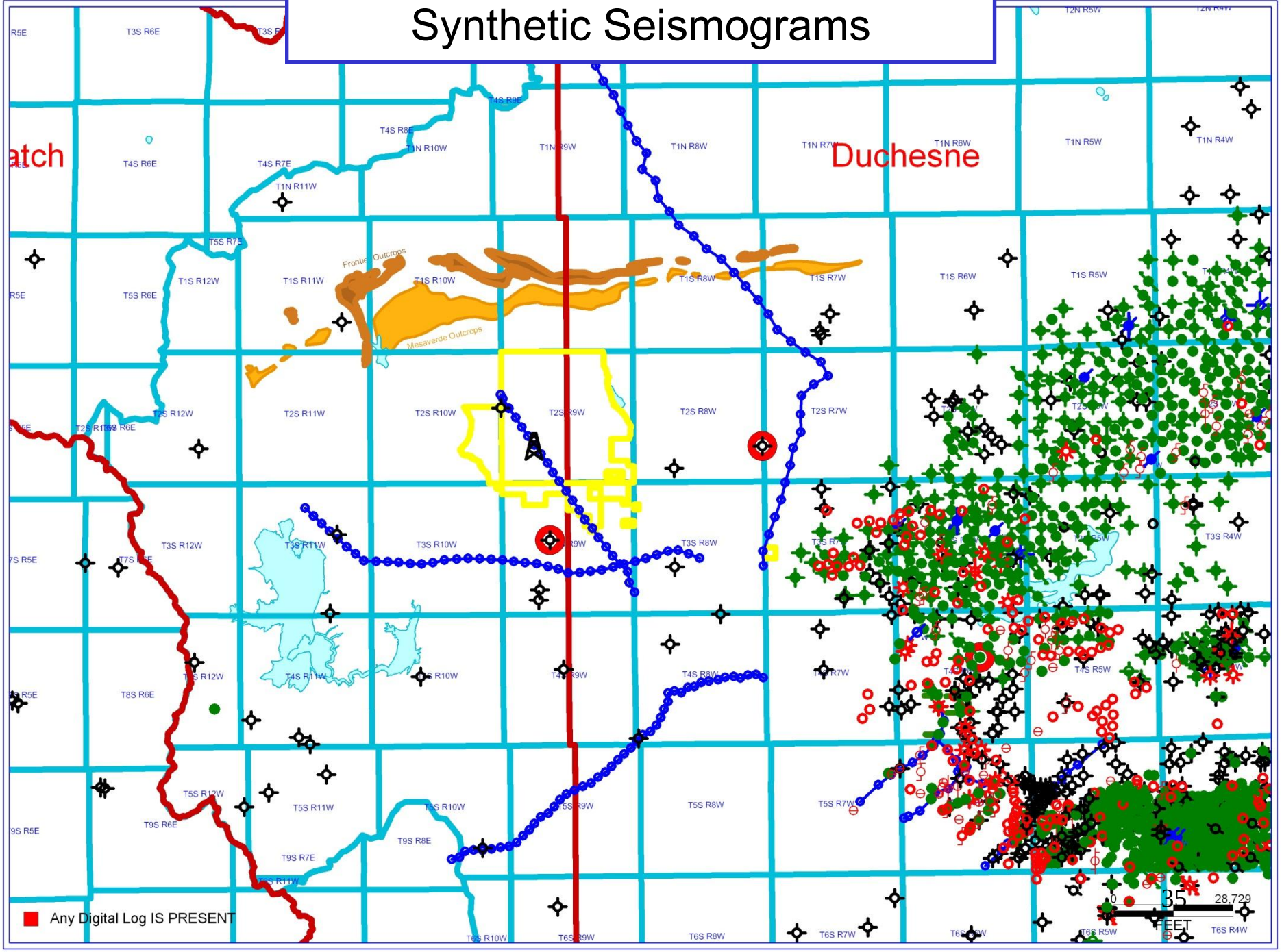
Mesaverde Formation
Total Thickness: 5165’
Sandstone: 4530’
Coal: 20’
Shale: 440’
Limestone: 175’

Frontier Sandstone Member of Mancos Shale
Total Thickness: 660’
Sandstone: 395’
Coal: None reported
Shale: 265’

Outcrop Location CC 2: Mesaverde, Cliffs on east side of Currant Creek Reservoir

massive cross bedded sandstone on cliff face, 40 to 50 feet of sandstone exposed

Synthetic Seismograms



PETRA 12/6/2011 4:08:07 PM

Depth Conversion

I interpreted three horizons; Green River, Wasatch and Mesaverde on 12 2-D lines. A fourth time horizon Top of Overpressure was picked on three lines with special processing (lines A3, 1925 and 1928) by Bill Wepfer of Echo Geophysical. These four horizon time picks were gridded.

The depth conversion method used was summation of isopachs. First, interval velocity maps were created using available well control in map area. Nine wells were used to define Green River and Wasatch time-depth relationships (Slides 36 and 37). Only one well penetrated the Mesaverde so a constant interval velocity of 15,159 ft/second calculated from the El Paso Ute 1-15D6 sonic log was used in the Top Wasatch to Top Mesaverde interval.

With these interval velocities defined a series of isopach maps were made for the intervals Seismic datum (7000' above sea level) to top Green River, top Green River to top Wasatch and top Wasatch to top Mesaverde.

These isopachs were summed to create Green River, Wasatch and Mesaverde depth maps (Slides 38, 39 and 40). The Top of the Overpressure Map (Slide 41) was made using a interval velocity map for the interval seismic datum to the top of the overpressure. The top of the overpressure is from an interpretation provided by Bill Wepfer of Echo Geophysical. Mr. Wepfer used proprietary techniques that utilize interval velocities and other data from the seismic lines to create pressure with depth plots that show the top of the overpressuring. Plots were constructed for lines 1925, 1928 and A3 and the map extrapolated from these plots.

HYDROCARBON MICROSEEP ANALYSIS

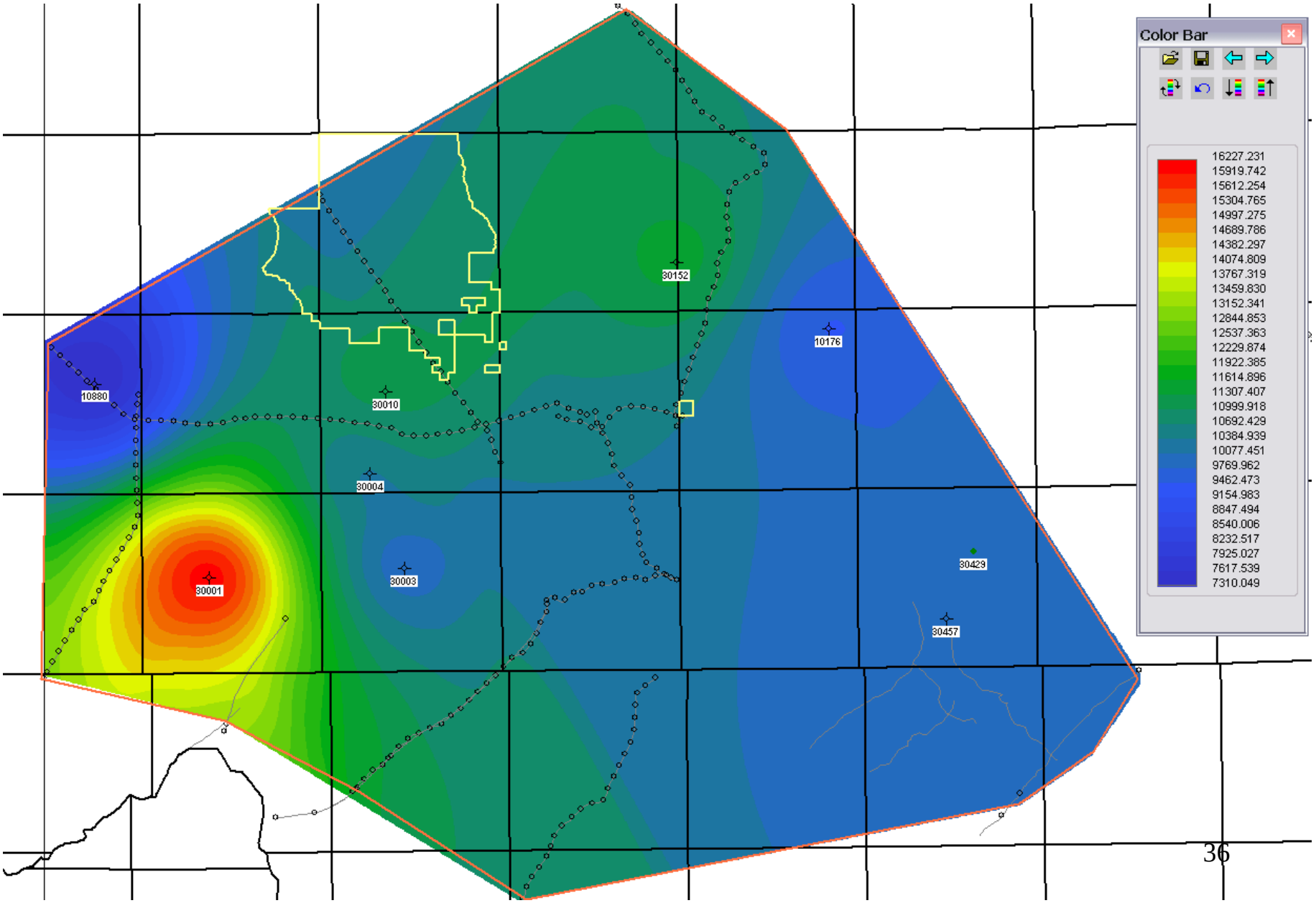
Slide 42 shows a geochemical anomaly superimposed on Green River structure. The anomaly coincides with the two-way closure described earlier in this report. This anomaly is derived from specially processed satellite imagery.

The presence of hydrocarbons seeping to the surface creates a reducing-acidic environment. In this setting montmorillonite clays are altered to kaolinite clays and iron is altered from Fe^{+++} to Fe^{++}. Certain spectral bands are sensitive to clay and iron content. These responses are tied to known productive areas.

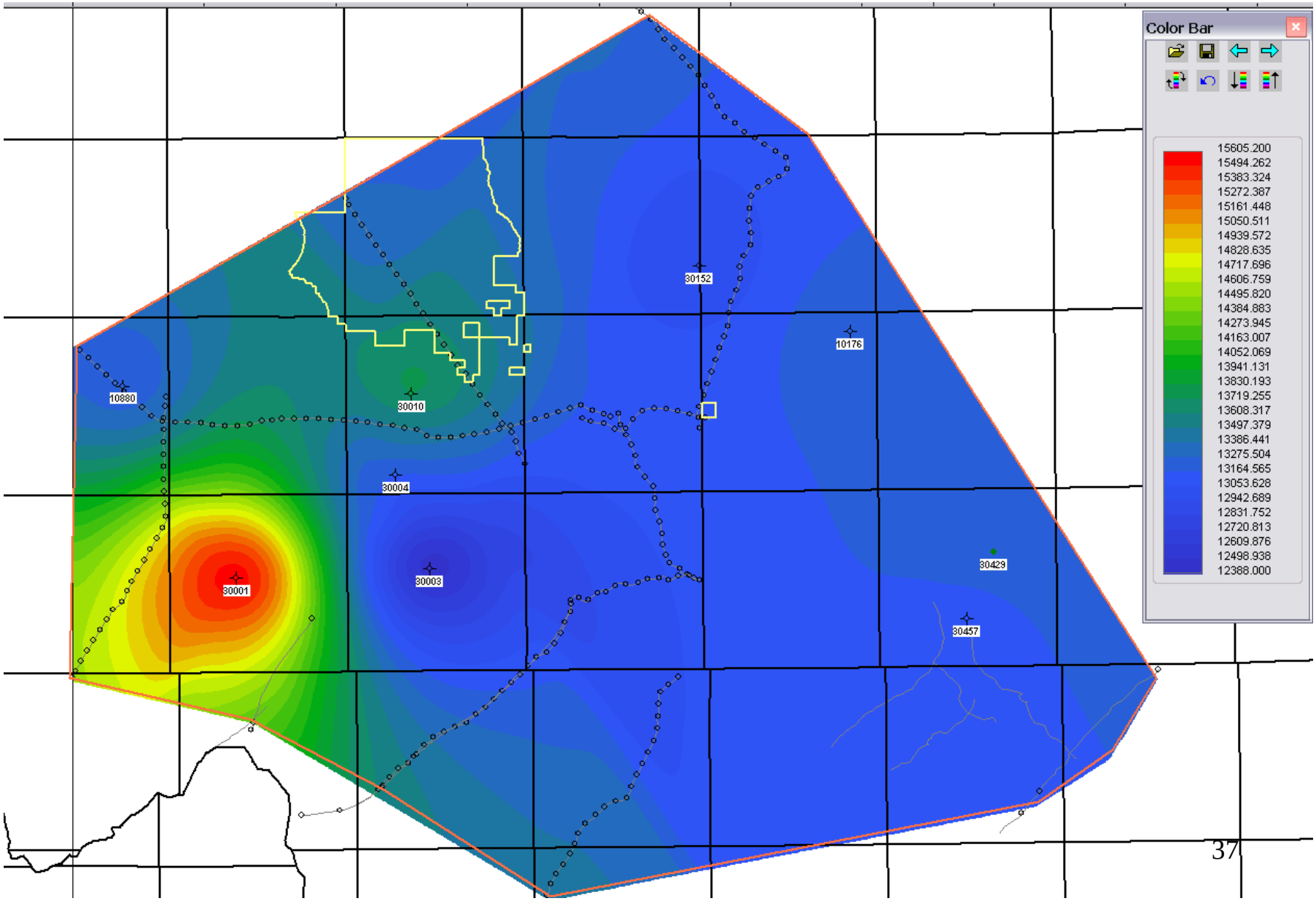
BOUGUER AND RESIDUAL GRAVITY MAPS

Gravity anomaly maps shown in slides 43-48 contain gravity data provided by Allen Cogbill of Geophysical Software in Los Alamos, New Mexico. Gravity data is from two sources. A detailed survey of the Coleman lease conducted in June and July, 2010 which has 234 new gravity stations. These data are

Seismic Datum to Top Green River Interval Velocity



Top Green River to Top Wasatch Interval Velocity



supplemented by data from the Gravity database at the University of Texas at El Paso to provide regional coverage beyond the Coleman lease.

This regional data is of variable quality and it was necessary to clean up the data set by deleting a number of points that were out of the range of neighboring points. Two maps are provided; bouguer gravity anomalies with a reduction density of 2.6 g/cc and a first-order residual of bouguer gravity.

The bouguer gravity map shows a nose extending from southwest to northeast culminating in a closed gravity high centered on the Coleman lease. A gravity low wraps around the north end of this closed gravity high. This closed high is in close proximity to a satellite geochemical anomaly and a large structural closure at the Green River level.

The residual map shows a broad closed residual high of 1.5 mGal centered on the Coleman lease. A residual low trend extends around the north end of this closed residual high. Both gravity maps are supportive of the existence of a large structural closure present on the Coleman lease. Gravity data is consistent with 2-D seismic and satellite geochemistry.

Slide 49 is an enlargement of the North-South Cross Section with estimated formation tops.

REFERENCES

Roy Davies, John Howell, Ron Boyd, Stephen Flint, and Claus Diessel, 2006, High-resolution sequence-stratigraphic correlation between shallow-marine and terrestrial strata: Examples from the Sunnyside Member of the Cretaceous Blackhawk Formation, Book Cliffs, eastern Utah AAPG Bulletin, v. 90, no. 7 (July 2006), pp. 1121–1140

Fouch, T. D., Nuccio, V. F., Osmond, J. C., MacMillan, L, Cashion, W. B., and Wandrey, C. J., 1992, Oil and Gas in Uppermost Cretaceous and Tertiary Rock, Uinta Basin Utah, in Hydrocarbon Resources of the Uinta Basin, 1992 UGA Guidebook 20

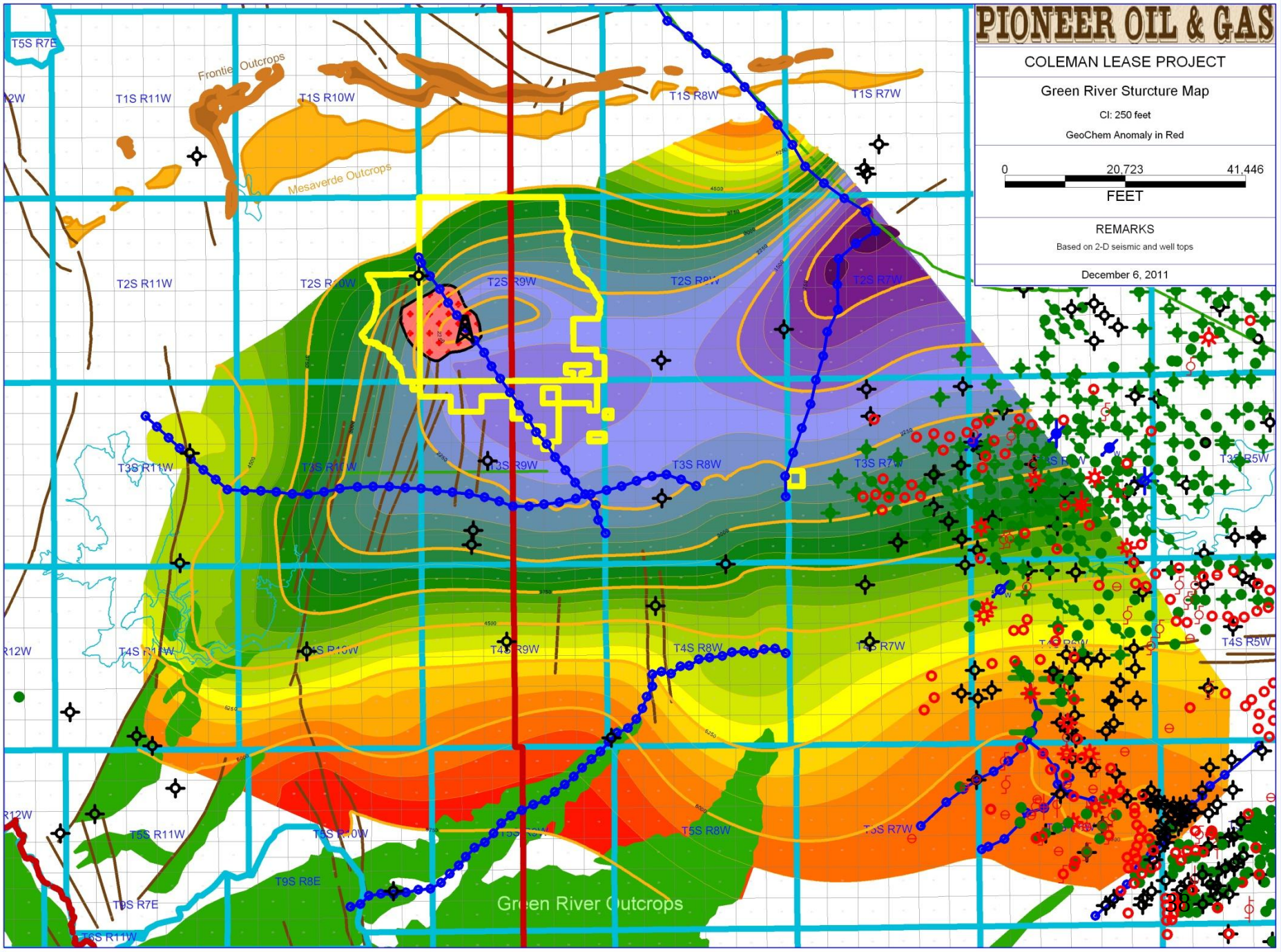
R.D. Hettinger and M.A. Kirschbaum, 2002, STRATIGRAPHY OF THE UPPER CRETACEOUS MANCOS SHALE (UPPER PART) AND MESAVERDE GROUP IN THE SOUTHERN PART OF THE UINTA AND PICEANCE BASINS, UTAH AND COLORADO By USGS GEOLOGIC INVESTIGATIONS SERIES I–2764

Montgomery, S.L. and Morgan, C. D., 1998, Bluebell Field, Uinta Basin: Reservoir Characterization for Improved Well Completion and Oil Recovery, AAPG Bulletin, V 82, No. 6 (June 1998), P 1113-1132

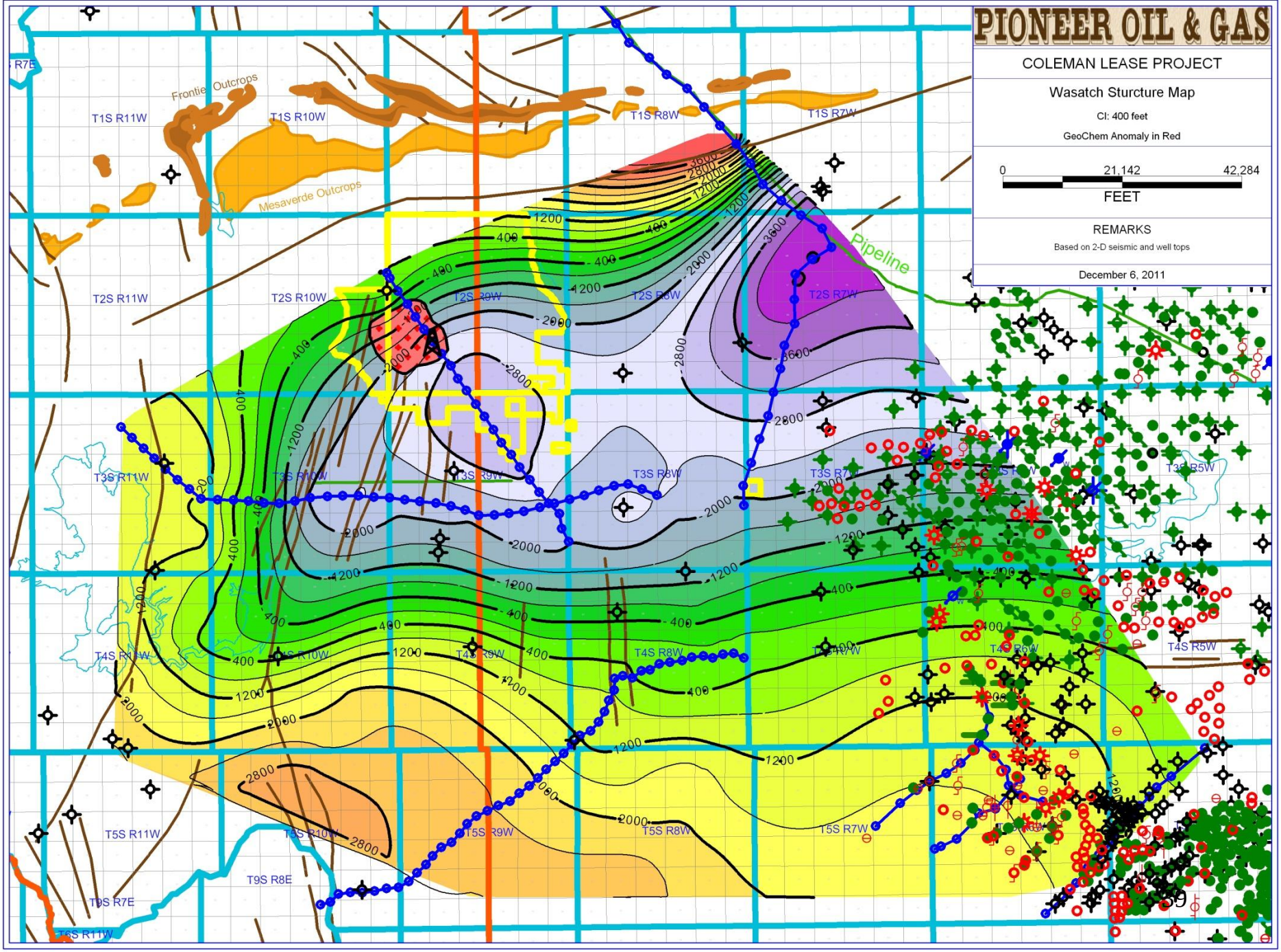
Nuccio, V.F., Schmoker, J.W., and Fouch, T.D., 1992, Thermal maturity, porosity, and lithofacies relationships applied to gas generation and production in Tertiary and Cretaceous low-permeability (tight) sandstones, Uinta basin, Utah, in Fouch T.D., Nuccio, V.F., and Chidsey, T.C., Jr., eds., Hydrocarbon and mineral resources of the Uinta Basin, Utah and Colorado: Utah Geological Association Guidebook 20, p. 77-94.

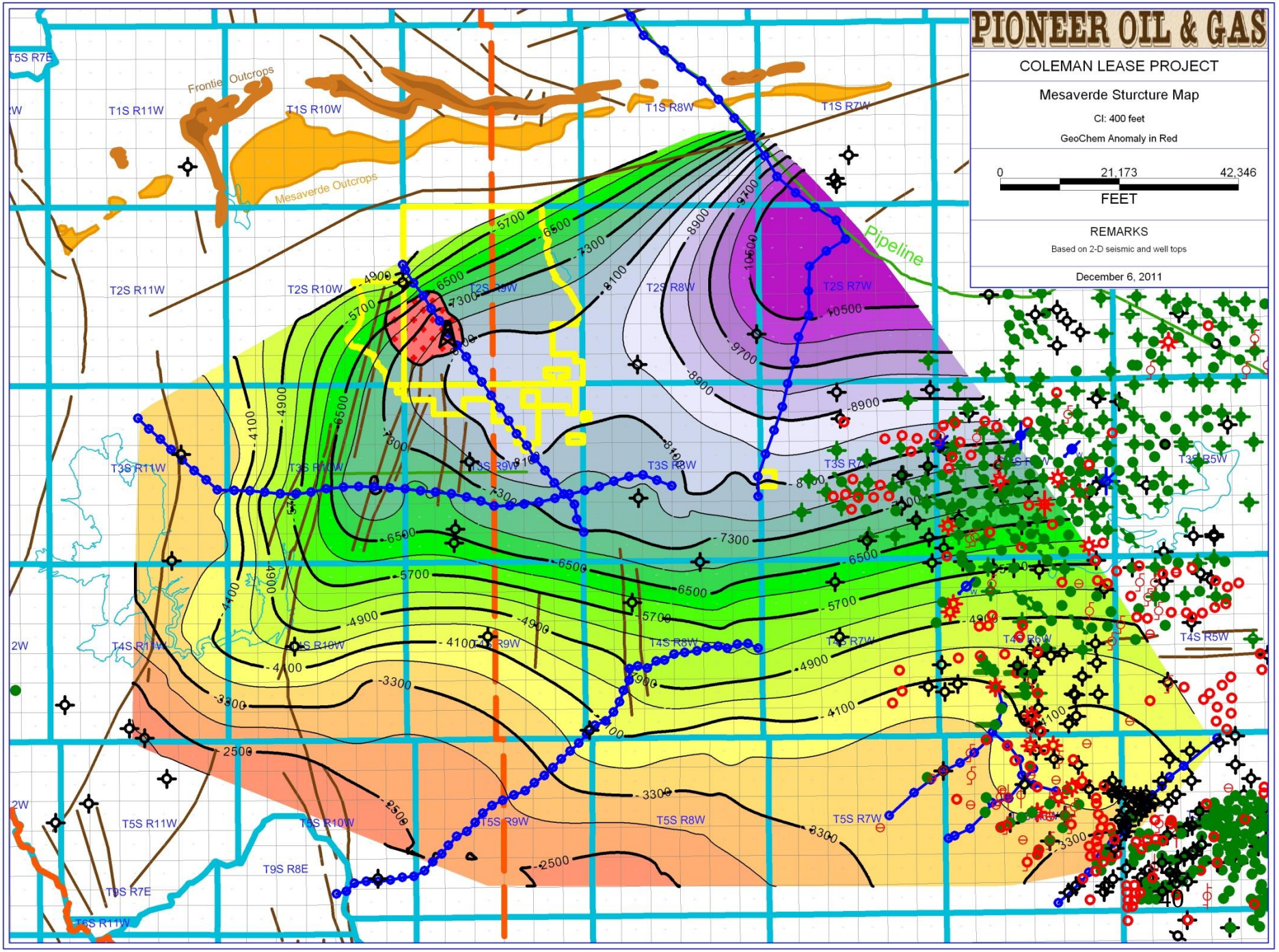
Thomas D. Fouch, Vito F. Nuccio, Donald E. Anders, Dudley D. Rice, Janet K. Pitman, Richard F. Mast, 1994, Green River Petroleum System, Uinta Basin, Utah, U.S.A.: Chapter 25: Part V. Case Studies--Western Hemisphere AAPG Special Volumes Volume M 60: The Petroleum System--From Source to Trap, Pages 399 - 421 (1994)

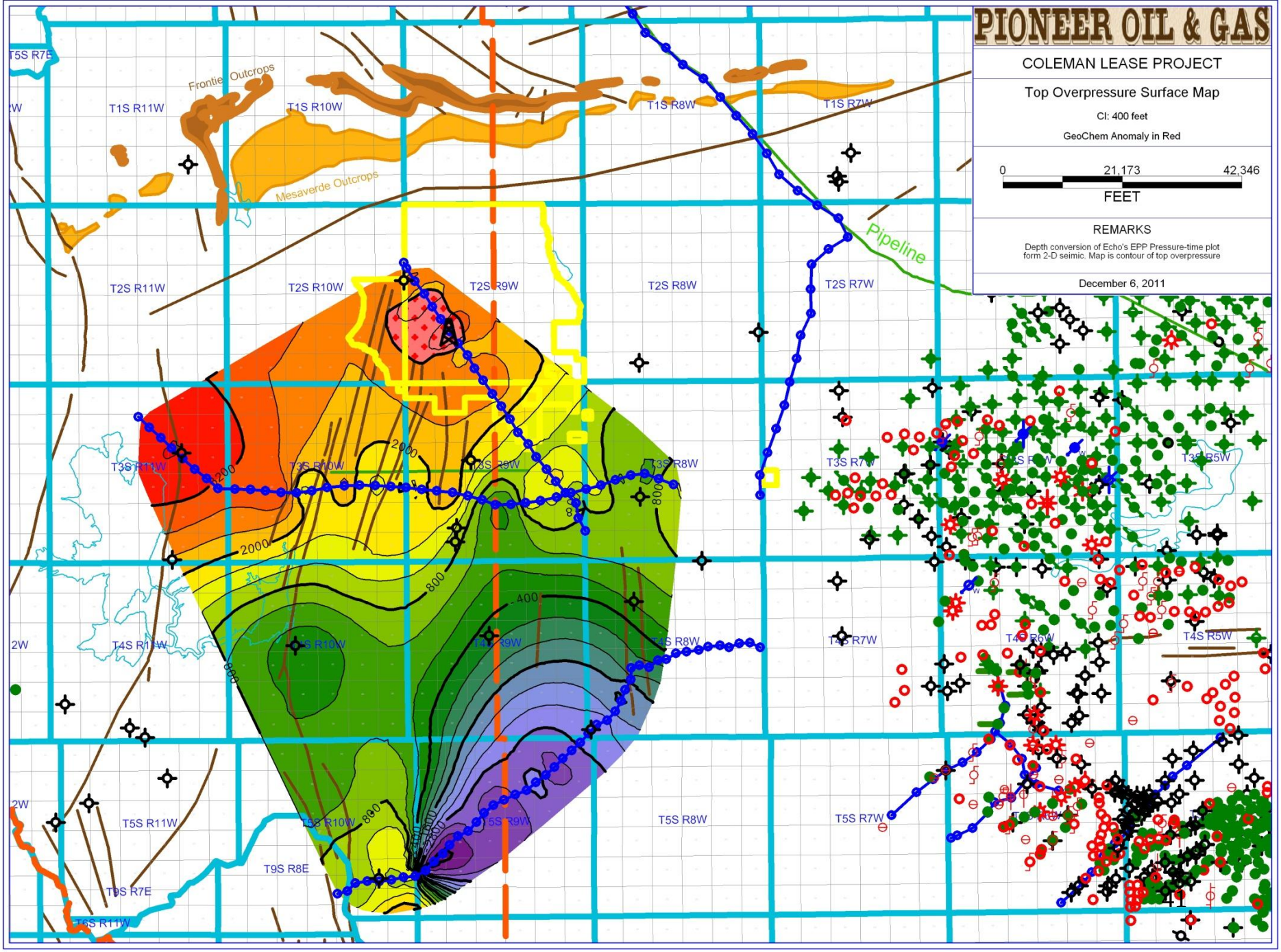
Tim E. Ruble, M. D. Lewan, and R. P. Philp, 2001, New insights on the Green River petroleum system in the Uinta basin from hydrous pyrolysis experiments AAPG Bulletin, v. 85, no. 8 (August 2001), pp. 1333–1371



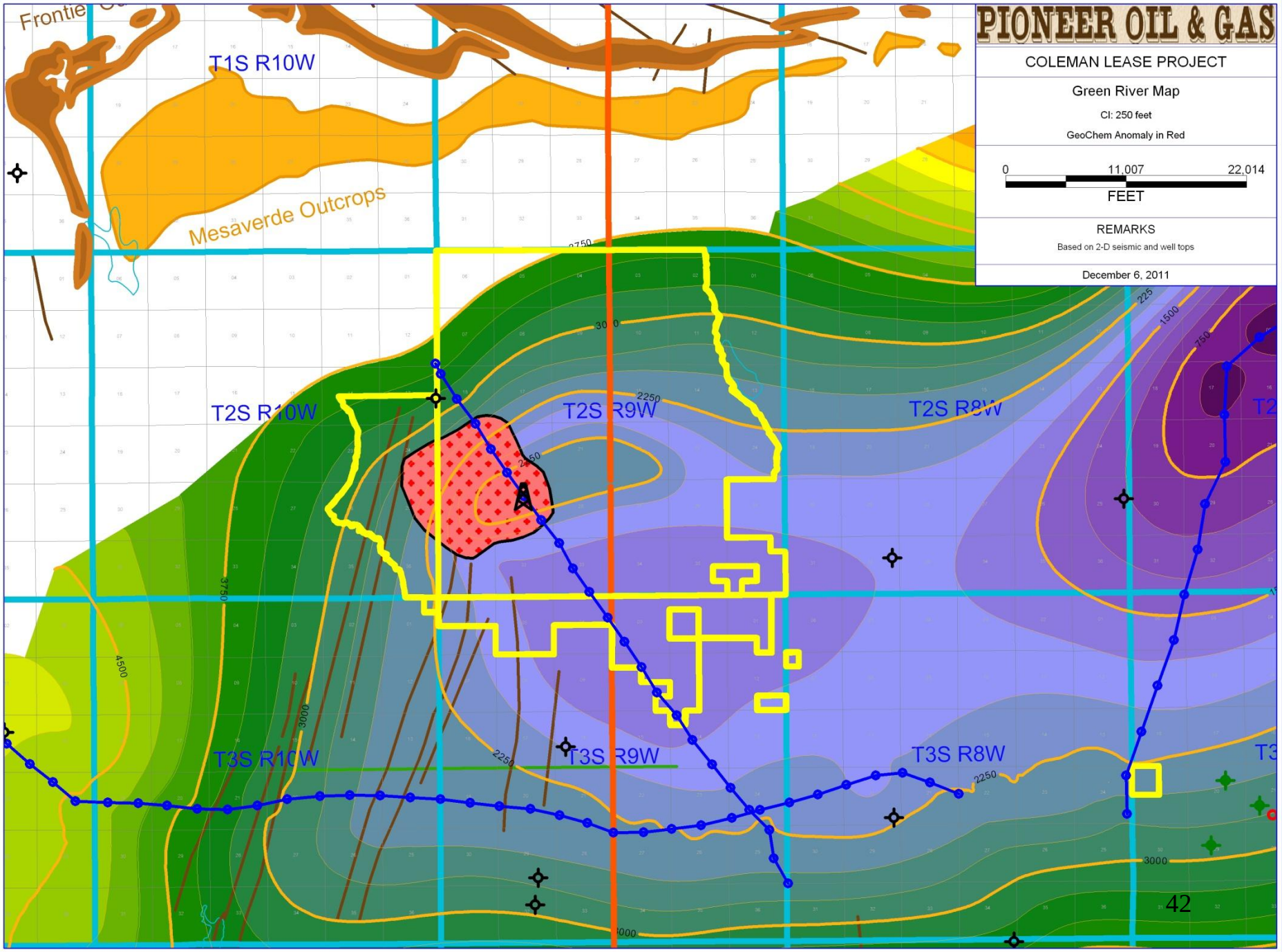
PETRA 12/6/2011 4:57:31 PM


PIONEER OIL & GAS
COLEMAN LEASE PROJECT
Wasatch Sturcture Map
CI: 400 feet
GeoChem Anomaly in Red
0
21,142
42,284
FEET
REMARKS
Based on 2-D seismic and well tops
December 6, 2011
Frontier Outcrops
Mesaverde Outcrops
Pipeline
T1S R11W
T1S R10W
T1S R8W
T1S R7W
T2S R11W
T2S R10W
T2S R8W
T2S R7W
T3S R11W
T3S R8W
T3S R7W
T3S R5W
T4S R11W
T4S R8W
T4S R6W
T4S R5W
T5S R11W
T5S R8W
T5S R7W
T9S R8E
T9S R7E
T6S R11W
1200
400
2000
2800
3600
PETRA 12/6/2011 5:14:31 PM

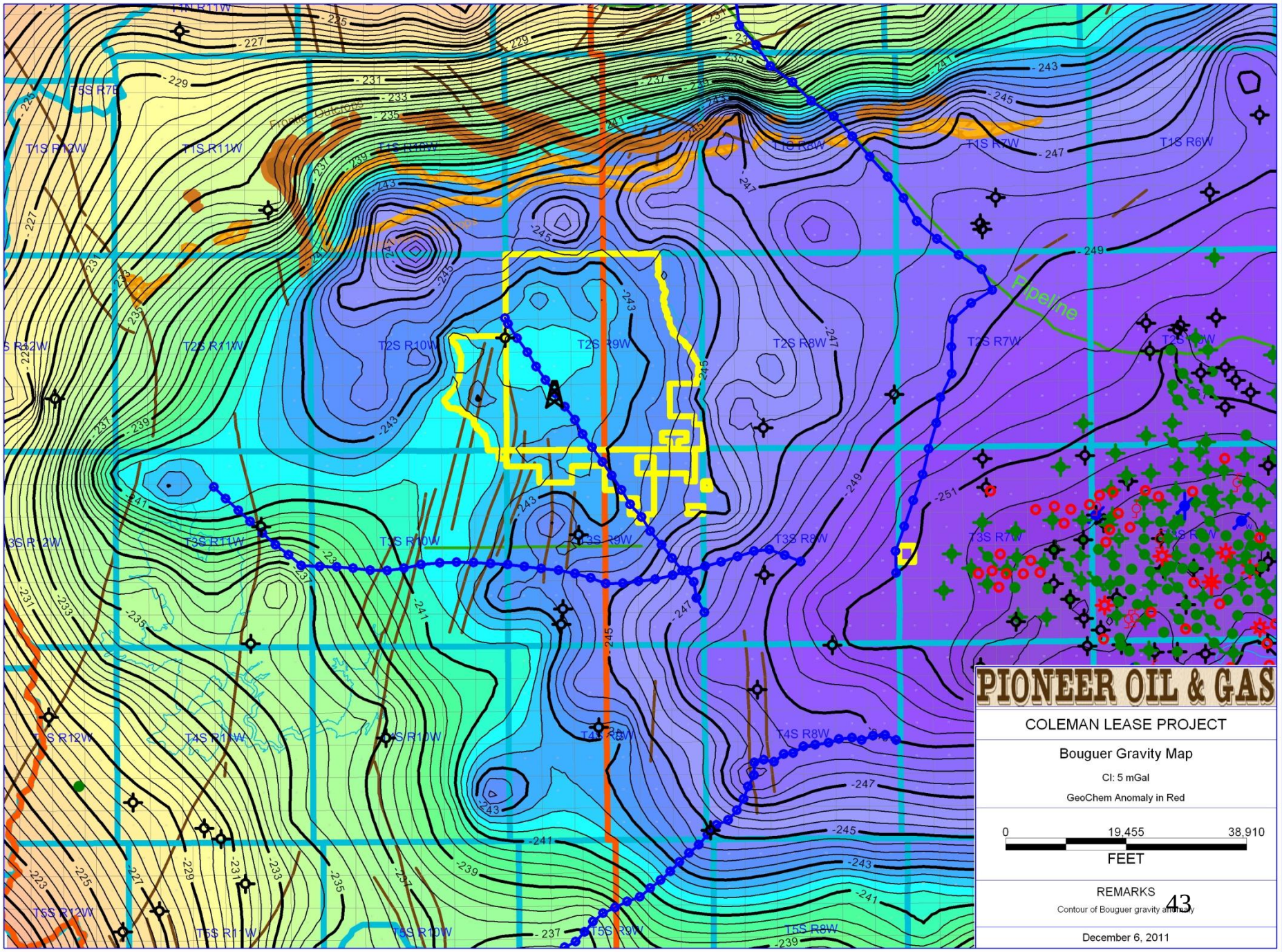

PIONEER OIL & GAS
COLEMAN LEASE PROJECT
Mesaverde Sturcture Map
CI: 400 feet
GeoChem Anomaly in Red
0
21,173
42,346
FEET
REMARKS
Based on 2-D seismic and well tops
December 6, 2011
Frontier Outcrops
Mesaverde Outcrops
Pipeline
T1S R11W
T1S R10W
T1S R9W
T1S R8W
T1S R7W
T2S R11W
T2S R10W
T2S R9W
T2S R8W
T2S R7W
T3S R11W
T3S R10W
T3S R9W
T3S R8W
T3S R7W
T4S R11W
T4S R10W
T4S R9W
T4S R8W
T4S R7W
T4S R6W
T4S R5W
T5S R11W
T5S R10W
T5S R9W
T5S R8W
T5S R7W
T9S R8E
T9S R7E
T6S R11W
5700
6500
7300
8100
8900
9700
10500
4900
4100
3300
2500
PETRA 12/6/2011 5:20:43 PM



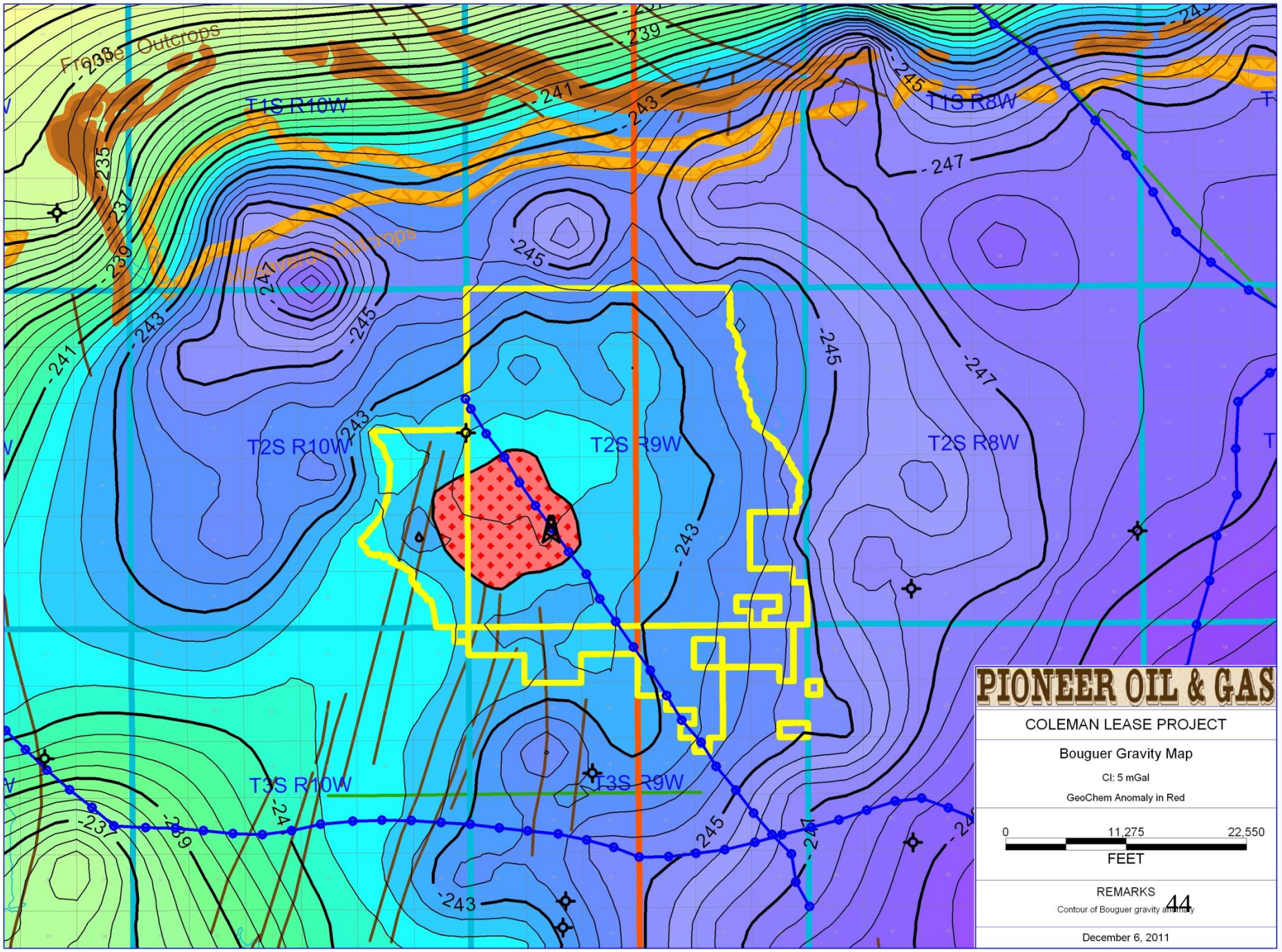
PETRA 12/6/2011 5:25:55 PM



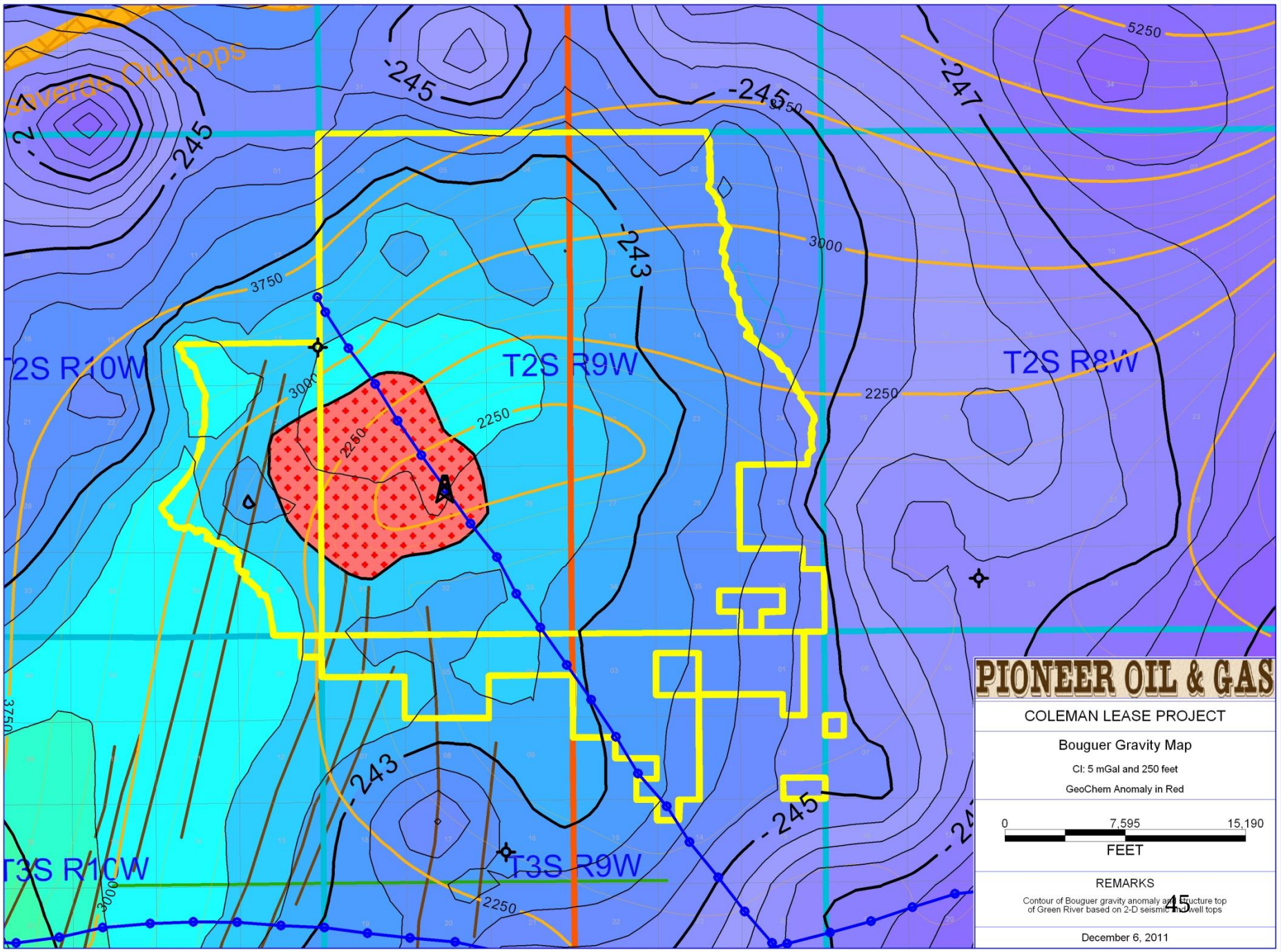
PETRA 12/6/2011 5:31:45 PM



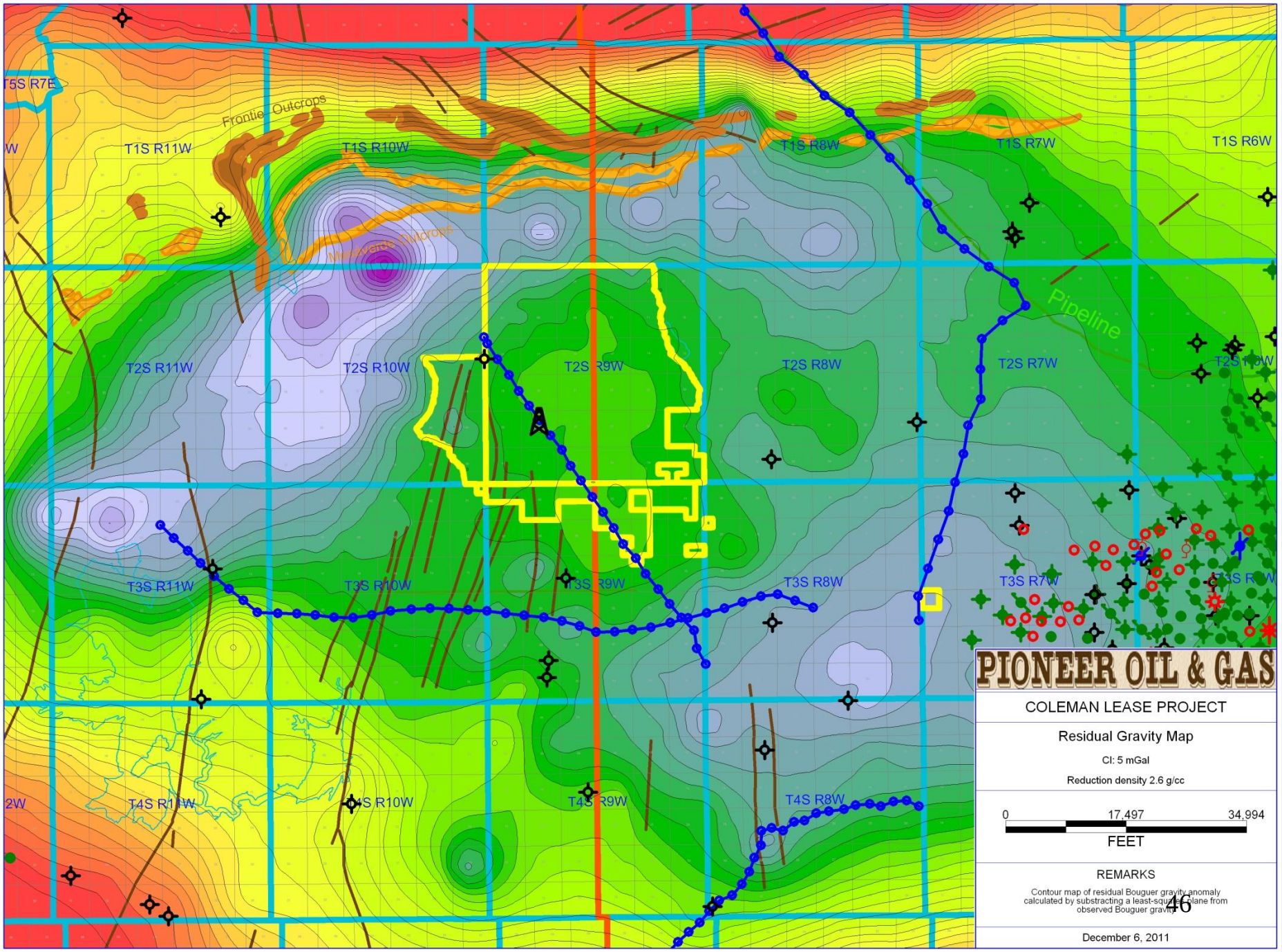
PETRA 12/6/2011 5:42:30 PM



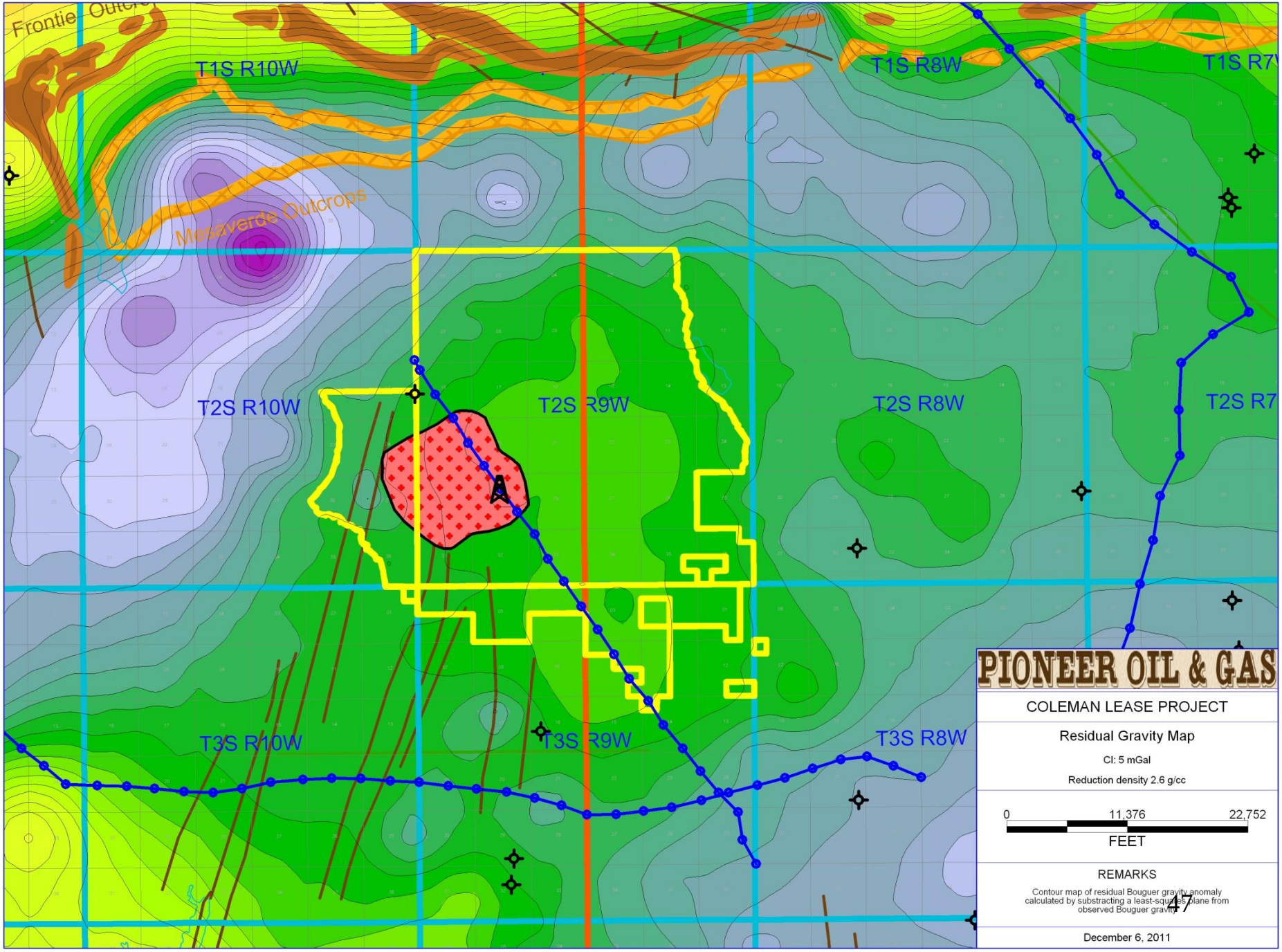
PETRA 12/6/2011 5:54:14 PM



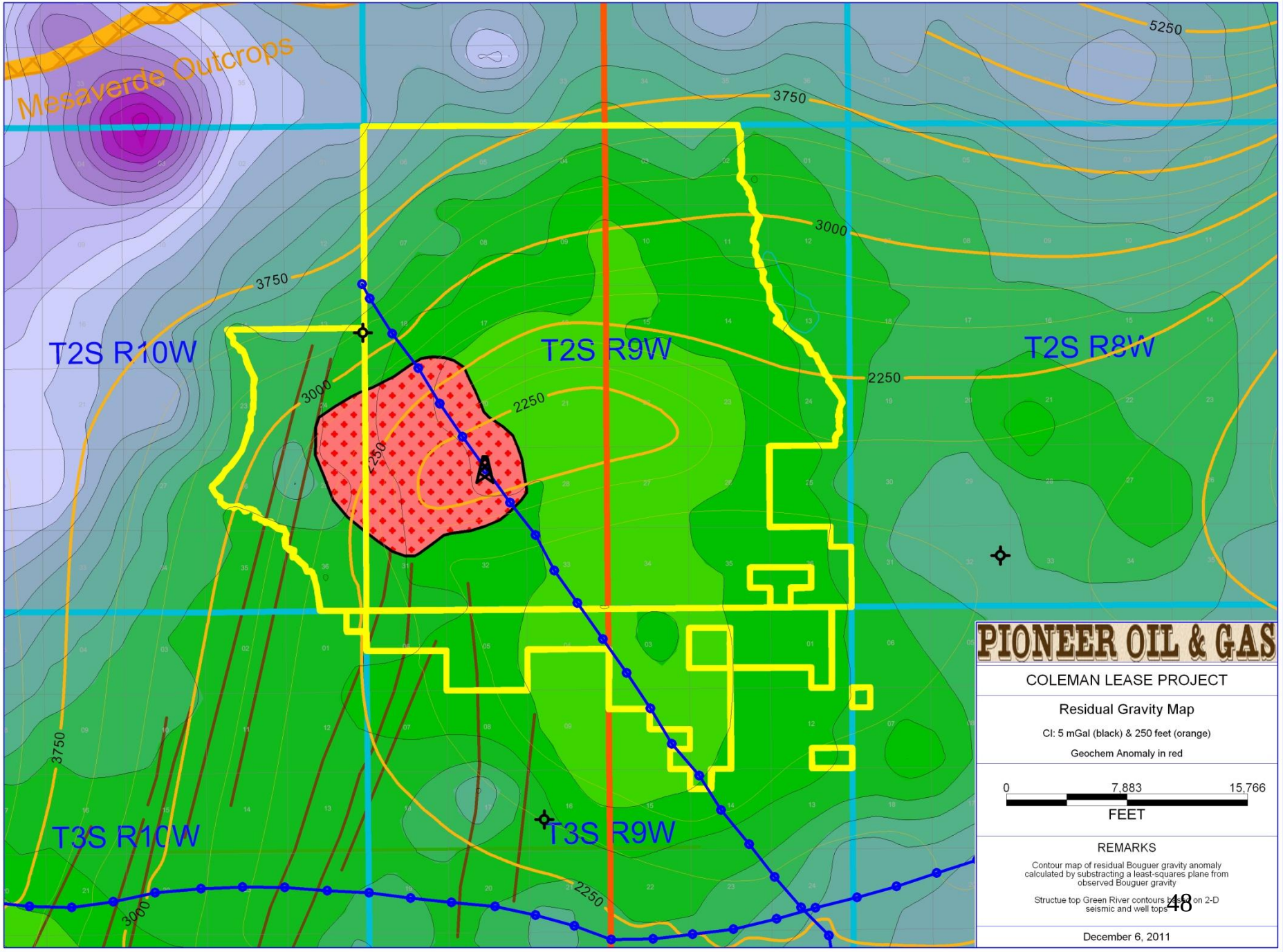
PETRA 12/6/2011 5:59:09 PM



PETRA 12/6/2011 6:17:14 PM



PETRA 12/6/2011 6:20:24 PM

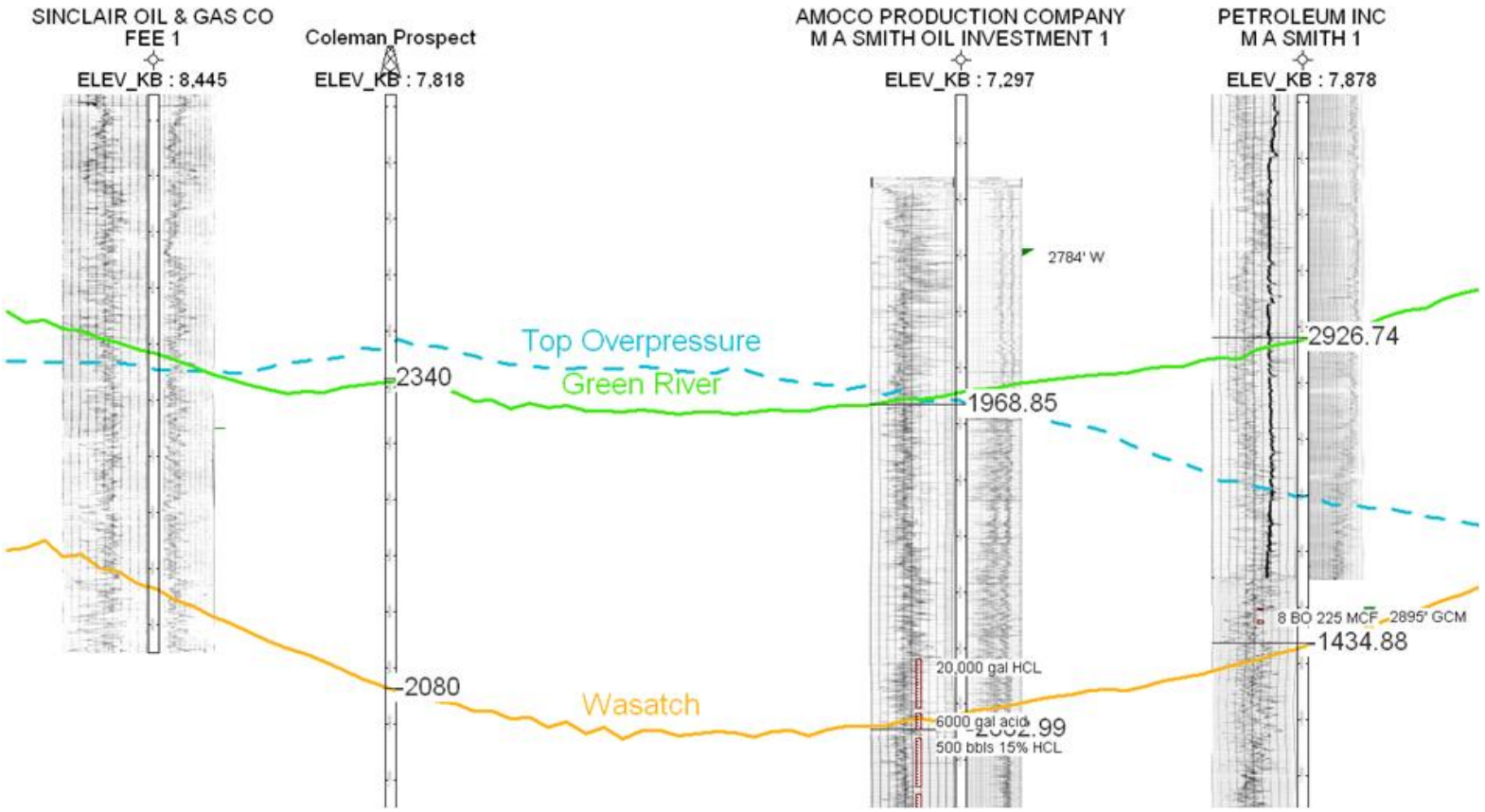


PETRA 12/6/2011 6:25:58 PM

North-South Structural Cross Section - Coleman Prospect

N

S



Estimated Tops	MD	SS
Green River	5479	2340
Wasatch	9898	-2080
Mesaverde	15403	-7585