

# **Oil & Natural Gas Technology**

**DOE Award No.: DE-FC26-06NT15542**

## **Final Report**

## **Project Title**

Submitted by:  
Ground Water Protection Research Foundation, Inc.  
13308 N Mac Arthur Boulevard  
Oklahoma City, OK 73142

Prepared for:  
United States Department of Energy  
National Energy Technology Laboratory

September 21, 2007



**Office of Fossil Energy**

## **TITLE PAGE\***

Title: **Facilitating Oil Industry Access to Federal Lands through Interagency Data Sharing**

Type Report: **Final Project Report**

Reporting Period Start Date: October 1, 2006

Reporting Period End Date: August 28, 2007

Principal Authors: Paul Jehn and Ben Grunewald

Date Report Issued: May 3, 2007

Grant Instrument No.: DE-FC26-04NT15542

Recipient Name and Address:                    Ben Grunewald  
    Ground Water Protection Research Foundation  
    13308 North MacArthur Boulevard  
    Oklahoma City, OK 73142

Significant Contractors:

ALL consulting; Mark Layne  
Strategic Consulting International  
Dave Lowther  
[dlowther@scigis.com](mailto:dlowther@scigis.com)  
Bob Johnson  
Premier Data Services  
[bob@premierdata.com](mailto:bob@premierdata.com)

## **\*Required Report Element**

## **DISCLAIMER\***

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of

authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Measurement Units -- All reports to be delivered under this instrument shall use the SI Metric System of Units as the primary units of measure. When reporting units in all reports, primary SI units shall be followed by their U.S. Customary Equivalents in parentheses ( ).

## **ABSTRACT\***

Much of the environmental and technical data useful to the oil and gas industry and regulatory agencies is now contained in disparate state and federal databases. Delays in coordinating permit approvals between federal and state agencies translate into increased operational costs and stresses for the oil and gas industry. Making federal lease stipulation and area restriction data available on state agency Web sites will streamline a potential lessors review of available leases, encourage more active bidding on unleased federal lands, and give third-party operators independent access to data who otherwise may not have access to lease restrictions and other environmental data.

As a requirement of the Energy Policy Conservation Act (EPCA), the Bureau of Land Management (BLM) is in the process of inventorying oil and natural gas resources beneath onshore federal lands and the extent and nature of any stipulation, restrictions, or impediments to the development of these resources.

The EPCA Phase 1 Inventory resulted in a collection of GIS coverage files organized according to numerous lease stipulation reference codes. Meanwhile, state agencies also collect millions of data elements concerning oil and gas operations. Much of the oil and gas data nationwide is catalogued in the Ground Water Protection Council's (GWPC's) successfully completed Risk Based Data Management System (RBDMS).

The GWPC and the states of Colorado, New Mexico, Utah, and Montana are implementing a pilot project where BLM lease stipulation data and RBDMS data will be displayed in a GIS format on the Internet. This increased access to data will increase bid activity, help expedite permitting, and encourage exploration on federal lands.

Linking environmental, lease stipulation and resource inventory assessment data and making a GIS interface for the data available to industry and other agencies via the internet represents an important step in the GWPC strategy for all oil and gas regulatory e-commerce. The next step beyond mere data sharing for facilitating the permitting process is to make it possible for industry to file those permit applications electronically. This process will involve the use of common XML schemas.

## TABLE OF CONTENTS\*

Title Page.....	2
Disclaimer.....	2
Abstract.....	3
Table of Contents.....	4
Executive Summary.....	4
Experimental.....	5
Results and Discussion.....	5
Task 1.....	5
Task 2.....	9
Task 3.....	11
Task 4.....	11
Task 5.....	12
Task 6.....	14
Conclusions .....	20
Milestones.....	20
Cost & Schedule Status.....	21
Significant Accomplishments.....	21
Problems .....	22
Technology Transfer.....	22
References/Bibliography.....	23

## Executive Summary

The proposed initiative will increase the production of oil and gas on federal lands by meeting two objectives. The objective of Phase 1 is to give industry access to the data needed to target exploration opportunities in the full light of existing lease stipulations, resource inventory assessments, and environmental data available for proposed geographic locations. Phase 2 work, which will have an ongoing, long-term effect, will develop an XML schema that conforms to the data requirements for oil and gas well regulation. This schema ultimately will be the underlying data format for future work to automate the permit application/review process over the Internet.

In Phase 1, GWPC and states will review the requirements for incorporating the EPCA data into COGIS. GWPC will format the EPCA data into a GIS-enabled layer available on the COGCC Web site. The GIS EPCA data layer will then be dynamically linked to resource assessment and state-collected data. Site visitors will enter a geographical location to look up resource assessments, lease stipulations, permit conditions, and water quality and other environmental data. GWPC will then install the EPCA GIS Web database application on agency Web servers in NM, UT, and MT. This Web application will be useful for both agencies and operators to evaluate federal lands available for lease.

In Phase 2, GWPC will use its existing task force of state agency, BLM, MMS, API, and POSC representatives to continue implementing the group's business case, which charts the development of an XML schema that will define the regulatory aspects of the lifecycle of oil and gas

wells. The schema is a needed first step in opening the way for automating the permit application and review process in the data exchange between regulatory agencies and industry.

## **EXPERIMENTAL\***

**This research project does not involve the use of experimental methodology.**

## **RESULTS & DISCUSSION OF WORK DURING REPORTING PERIOD\***

**Task 1. Task 1 Completed: Determine Data Requirements.** GWPC will evaluate the available data from the EPCA inventory project, the data structure of the COGIS database, and the optimum means of integrating the information at the COGCC portal at <http://oil-gas.state.co.us/>, which already hosts an online GIS application. Data dictionaries and entity relationship diagrams will be prepared and reviewed to determine how to integrate the data sets. In addition, the functional requirements for the first-phase implementation of the GIS-enabled Web application will be determined through customer use-case reviews. A scope of work document for the subsequent tasks in this phase will be developed from this analysis.

Also in Task 1, GWPC will establish a review committee whose members have the availability and willingness to be project testers. Individuals from BLM, COGCC, and industry will participate. In addition, GWPC will tap members of other state agencies who may wish to participate in later project phases as well as its own TAC members to ensure that the Phase 1 project receives national review and feedback.

### ***Accomplishments October 1, 2004 – February 28, 2005***

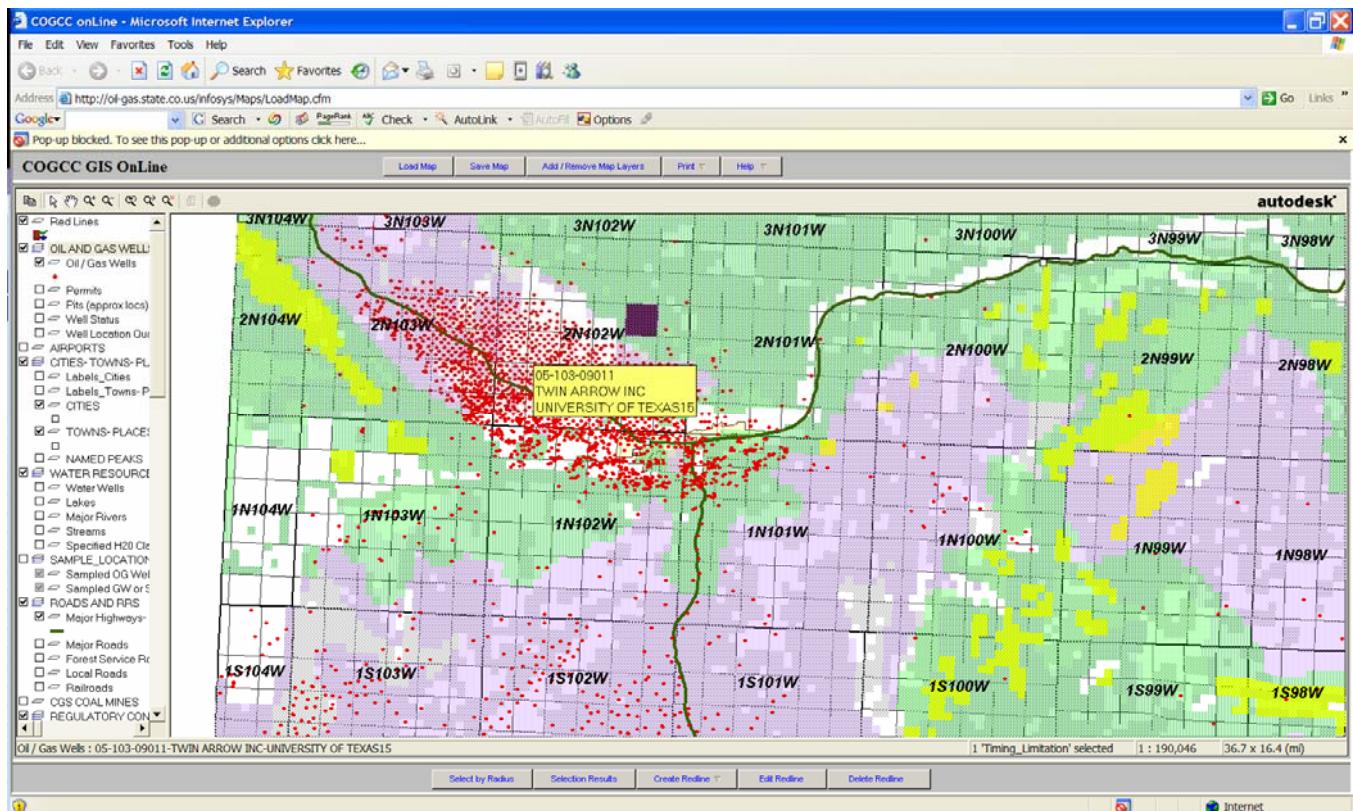
***The project team for the GIS portion of the work plan has been assembled. Team members include: Paul Juhn (GWPC), Stan Belieu (Nebraska), Thom Kerr (Colorado), Jim Milne (Colorado), Dan Jarvis (Utah), Dave Lowther (Consultant, SCI), Jim Gazewood (BLM), Diana Rech (BLM), Bob Johnson (Premier data services), Dave Taylor (BLM), and Duane Spencer (BLM). The project team met for a kickoff meeting in Denver on November 8-9 2004. The state members of the project work team meet for two days the GWPC UIC meeting in New Orleans, January 6-7, 2005. Weekly conference calls are held every Thursday at 3:00 mountain time.***

***It has been determined by the project advisory committee and BLM that EPCA data will be transferred electronically to the COGCC web site. Periodic updates will insure the accuracy of the data. A detailed work plan for data transfer, sharing and updating is under development.***

### ***Accomplishments March 1 – September 31, 2005***

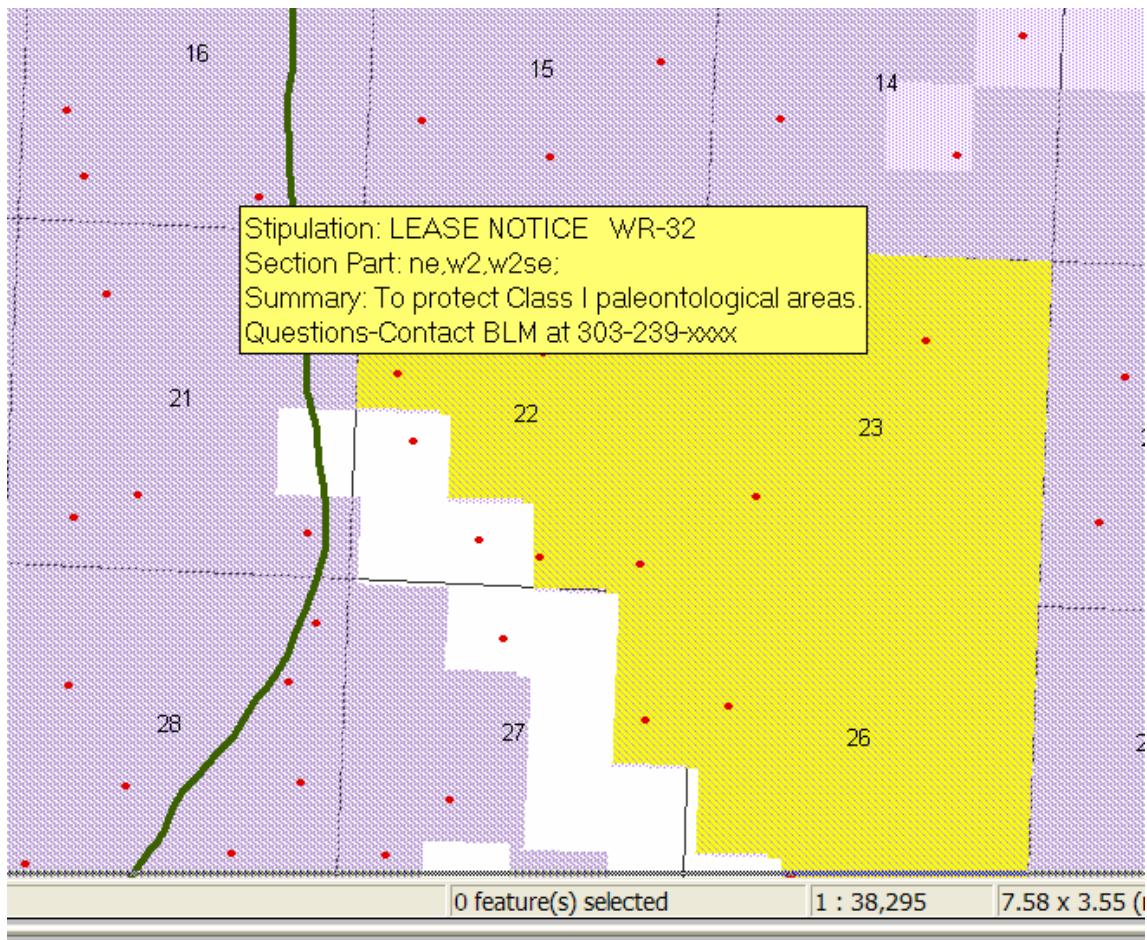
***The EPCA data for Colorado is now available on the Colorado Oil and Gas Commission Server at:***

***<http://oil-gas.state.co.us/infosys/Maps/LoadMap.cfm>***



*To access lease stipulations, click on add remove layers and use “gwpc” as a password and then check the BLM lease stipulation boxes. Lease stipulations are mapped to the 40 acre parcel.*

*The advisory committee has approved the workplan to continue mapping and posting EPCA phase 1 data for Montana, Utah, and New Mexico (see attached workplan).*



*These list stipulations are combined with COGCC oil and gas data. Internet users can now combine state and federal information in Colorado when applying for a permit to drill on federal land.*

Edit View Favorites Tools Help

Back Google

## COGIS - WELL Information

Well Card

Surface Location Data for API # 05-103-09419 Status: PR

Well Name/No: [DRAGON TRAIL UNIT #1139](#) (click well name for production)  
 Operator: ENCANA OIL & GAS (USA) INC - 100185  
 Status Date:   
 County: RIO BLANCO #103 Location: SENE 19 2S 101W 6 PM  
 Field: DRAGON TRAIL - #18700 Footages: 1749 FNL 688 FEL  
 BLM Contr #:   
 Latitude: 39.863654 Elevation: 6,591 ft.  
 Longitude: Long: -108.766934

Wellbore Data for Sidetrack #00 Status: PR N/A

### Wellbore Permit

Permit #: 900334 Expiration Date: 8/11/1990  
 Top Depth/Form:   
 General Owner: FEDERAL Surface Mineral Owner Same:  
 Unit:   
 Formation and Spacing: Code: MNCSB , Formation: MANCOS B , Order: 0 , Unit Acreage: 80, Drill Unit: S2NE

### Wellbore Completed

Completion Date: 7/31/1990  
 Measured TD: 3130 Measured PB depth: 3083  
 True Vertical TD: 3130 True Vertical PB depth:  
 String: String Type: SURF , Hole Size: 12.25, Size: 8.625, Top: 0, Depth: 220, Weight:  
 Sacks: 0, Top: 0, Bottom: , Method Grade:  
 String: String Type: 1ST , Hole Size: 7.875, Size: 5.5, Top: 0, Depth: 3120, Weight:  
 Sacks: 0, Top: 0, Bottom: , Method Grade:

Formation	Log Top	Log Bottom	Cored	DSTs
MANCOS	1352			

### Completed information for formation MNCSB

Prod Date:	N/A	Choke Size:	0.000
Status Date:	10/2/2000	Hole Compl:	
Immingled:		Prod Metod:	
Formation Name:	MANCOS B	Status:	SI
Formation Treatment:			

### Accomplishments October 1 2006 – February 28, 2007

Mapping of lease stipulations in the Miles City Field Office (MT) has been completed. As part of this project, Premier data services met with BLM MT and resolved differences in the wildlife winter range data. Attached is a survey questionnaire that was used to facilitate the lease stipulation mapping.

The lease stipulation project will be presented at a GIS conference hosted by The BLM and Forest Service in Portland from May 7 – 11, 2007. The conference is Titled “Building Bridges to Information Sharing, Geospatial 2007”.

Premier Data Services, in support of the Ground Water Protection Council has provided data development support services to abstract BLM resource management plans, inventory BLM Field Office GIS stipulation coverage's and develop stipulation data sets that describe various stipulations affecting federal oil and gas development in key Rocky Mountain Region geologic

*provinces. The areas of interest for this project include field offices in New Mexico, and Montana. The purpose of this project is to demonstrate data collection and publication methodology that can be implemented to standardize lease stipulation data for land access and use restrictions.*

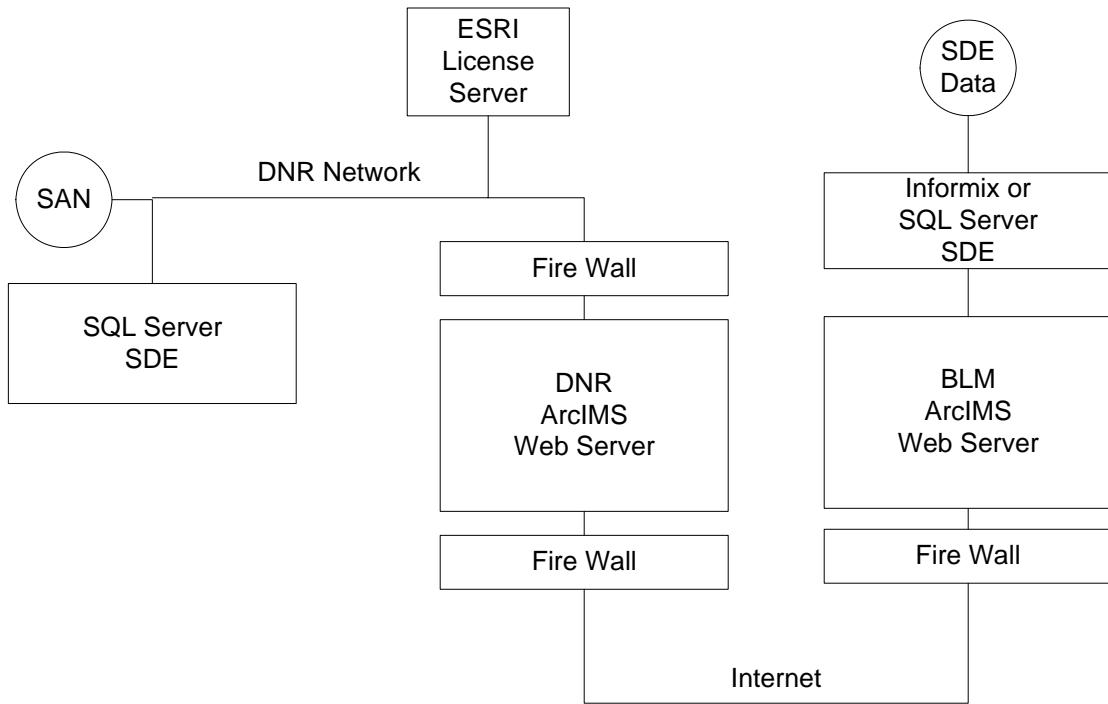
*The final report of this project will contain a CD with all the lease stipulations mapped as part of this project.*

**Task 2. Establish GIS Application on Development Server. Completed** -A Web site will be established on a development server, and site navigation controls, GIS functionality, and programming framework will be installed. The data will be provided in an Environmental Systems Research Institute (ESRI) standard shape file to ease downloading over the Internet. The COGCC will convert the shape file to a format used by AutoDesk MapGuide Server, which will be used for the initial deployment of the Web application.

**Accomplishments October 1, 2004 – February 28, 2005**

***The web site/GIS application which will host the EPCA and state data in underdevelopment on a Colorado Oil and Gas Commission Server.***

***The following figure shows the proposed network connections for the Colorado Oil and Gas Data and the and BLM systems***



**Configuration of DNR and BLM ArcIMS and SDE servers.**

*Because of the uncertainty of the BLM connection, maximum flexibility needs to be maintained when designing the ArcIMS Data Share Application. The range of possible connections (in order of decreasing desirability) is:*

1. *DNR ArcIMS server uses ArcMap Server (AMS) to load feature data from the BLM ArcIMS server. All SDE and external attribute data (Lease Stipulations) reside on the BLM servers. Down side is performance issues and availability. Requires web pages on BLM Web server to display Lease Stipulation details. Up side is a minimal maintenance and storage requirement for DNR/COGCC.*
2. *Automated SDE data replication from the BLM SDE server to the DNR SDE server. BLM data resides on DNR SDE and in SQL Server (Lease Stipulations text). Requires holes to be punched through 3 firewalls.*
3. *Provide SDE data replication via email, ftp, or CD. Requires manual intervention and scripts to export and import data. Both SDE data and Lease Stipulations text data must be exported/imported.*
4. *Transfer shapefiles via email. Data would be exported from the BLM system, transferred to COGCC and imported into SDE.*

#### *Accomplishments March 1 – September 31, 2005*

*The web server has been established and can be viewed at <http://oil-gas.state.co.us/infosys/Maps/LoadMap.cfm>. The COGCC will receive periodic updates to the lease stipulation data which will keep the site current.*

*Accomplishments April 1 – September 30: Updates from the BLM server are now automated and occur weekly.*

#### **CARLSBAD FIELD OFFICE**

- *Premier has sent the data to the Carlsbad FO for review and depending on the feedback from the Field Offices the data should be finalized sometime next week.*
- *Premier will compile an .mxd that contains all the data that will be included in the final deliverable.*

#### **FARMINGTON FIELD OFFICE**

- *Premier has sent the data to the Farmington FO for review and depending on the feedback from the Field Offices the data should be finalized sometime next week.*
- *Premier will compile an .mxd that contains all the data that will be included in the final deliverable.*

#### **ROSWELL FIELD OFFICE**

- *Premier has sent the data to the Roswell FO for review and depending on the feedback from the Field Offices the data should be finalized sometime next week.*
- *Premier will compile an .mxd that contains all the data that will be included in the final deliverable.*

*Work has begun on the Wyoming and Montana lease stipulation data.*

*For a complete description of how to use the data on the Colorado site, view the following avi files*

**Lease Stipulations** (geared more toward industry audiences)

- **Flash (.SWF [all versions]):**  
<http://www.rbdmsonline.org/fedland/prospectonline/flash/ProspectOnline0609.html> (24 MB)
- **(Better quality) Pack and Show** (tscc codec and Camtasia Player in one double click after download to disk):  
<http://www.rbdmsonline.org/fedland/prospectonline/PackAndShow/ProspectOnline0609avi.exe> (49 MB)

**Lease Stipulations** (geared more toward regulatory audiences)

- **Flash (.SWF):**  
<http://www.rbdmsonline.org/fedland/regulatoronline/flashswf/RegulatorOnline0609.html> (25 MB)
- **(Better quality) Pack and Show** (tscc codec and Camtasia Player in one double click after download to disk):  
<http://www.rbdmsonline.org/fedland/regulatoronline/packandshow/RegulatorOnline0609avi.exe> (52 MB)

*Task 2 has been completed*

**Task 3. Design Web Site Database. Completed** - The GWPC and its contractor will design a SQL Server database that will power the Web site data delivery. The Phase 1 EPCA data will be stored in SQL Server, and the GIS polygons will be stored as static-layer spatial data files. The GWPC team will develop spatial queries that will link the map information to the database. The GIS database application will be developed in a multi-tiered architecture that will keep Map-Guide-specific code isolated to a single tier. This configuration will enable GWPC to easily modify the application to work with any GIS tool in future stages of work. The database design will be submitted to the review committee for evaluation, and recommended changes will be incorporated.

*Accomplishments October 1, 2004 – February 28 2005*  
*Work plan for this task is under development.*

*Accomplishments March 1 – September 31, 2005*  
*Completed. See tasks 1 and 2 for more detail. This technology will be expanded to New Mexico in ffy2006*

**Task 4. Load Phase 1 EPCA Data and Test. Completed:** GWPC will populate the SQL Server database with the Phase 1 EPCA data, which will be keyed from .pdf files and imported and reformatted from the dBase files available on the EPCA CD-ROMs. The site links will be enabled, and then the Web GIS application will be tested on the development server. Web site user help also will be developed as a part of this task. After any necessary de-bugging from in-house testing, the URL for the development site will be released for further testing by COGCC

and other interested parties. Feedback from this round of testing will be used for further debugging the application and refining the user help. GWPC has found that several iterative cycles of programming-testing-refining are typically needed to produce a stable application.

*Accomplishments October 1, 2004 – February 28, 2005*

*Work will begin on this task in April 2005*

*Accomplishments March 1 – September 31, 2005*

*Completed: See above descriptions*

**Task 5. Install Application on COGCC Server. Completed** Once the GIS Web application is found to be stable on the development server and meets the project requirements, GWPC will transfer the application to the COGCC server and provide follow-up help desk support. Since COGCC may choose to display data for only those geological basins in Colorado, the EPCA inventory and assessment data portions of the application will be made available nationally on the development server.

## Accomplishments October 1, 2004 – February 28, 2005

*To this point the effort on GIS has focused on development of a GIS Client that will allow multiple states to mesh BLM Lease Stipulation Data with RBDMS Data. Conversations about server-side infrastructure requirements have occurred leading to decisions to use ArcIMS and ArcSDE as the server side components of this project. Groundwork has been laid for rapid dissemination of BLM Lease Stipulation once data sharing agreements are in place.*

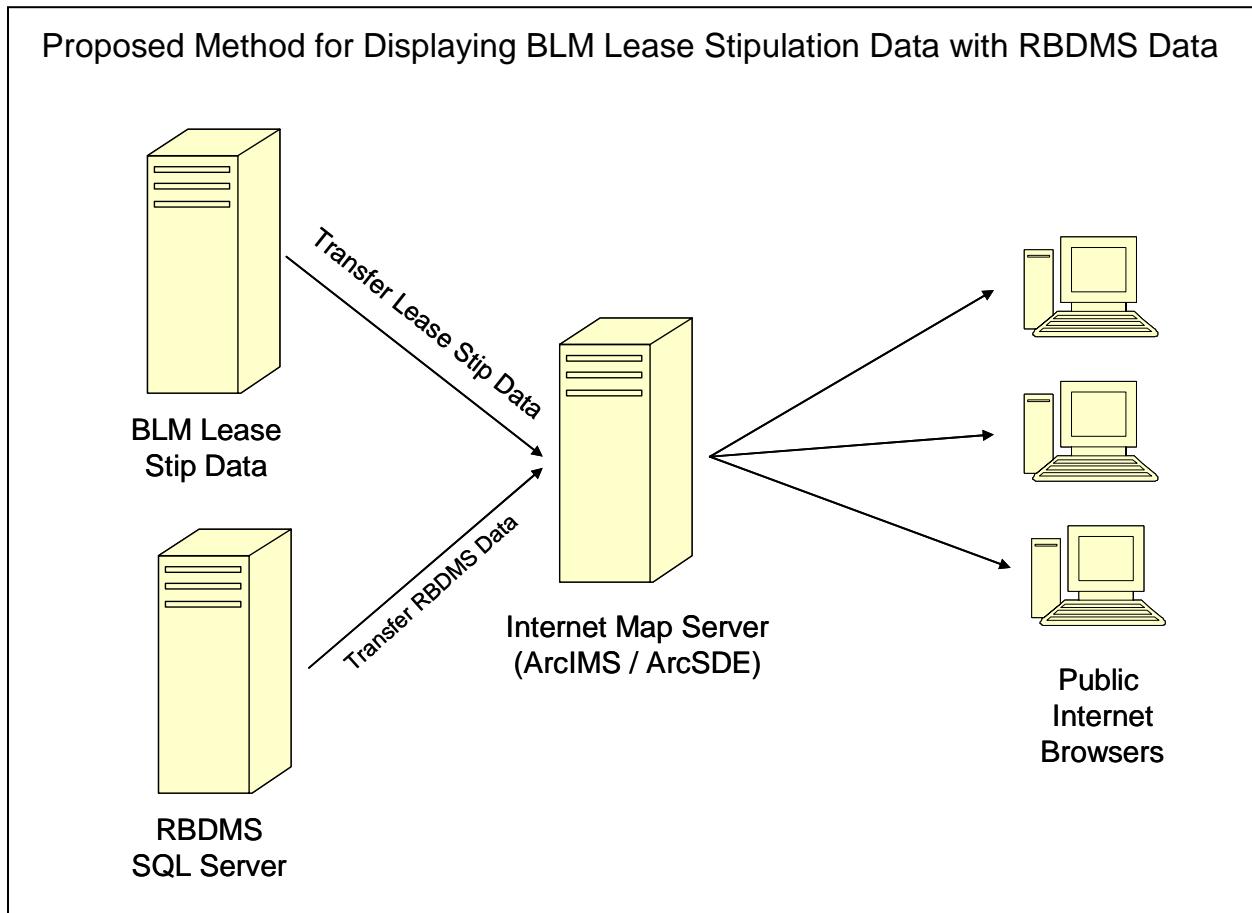
*The project advisory committee is exploring several ways of transferring and maintaining the EPCA data. Potential methodology includes:*

- *Periodic transfer of shapefile(s).*
  - *Preferred method to coincide with Iteration I of RBDMS Online GIS Module development.*
- *Automated replication of SQL Servers.*
- *Real time use of Lease Stip data via ArcIMS service or SDE Instance on BLM servers*

*The following conceptual flow diagram depicts how data will be transferred from the BLM server to the Colorado Web Site.*

## Accomplishments March 1 – September 31, 2005

*Completed for Colorado See above descriptions*



***Accomplishments October 1, 2005 – March 31, 2006***

*The BLM delivered to GWPC and COGCC the cleaned up GCDB (Public Land Survey), stipulation polygons, the RTF files of the stipulations, the mineral ownership, oil and gas leases, federal units, communization agreements, geophysical prospecting, and right of way agreements. That is a lot of data and it will take some work to get it up. Eventually we may even want to create some web pages to display and query the detailed data. The data folks at the BLM said that there is no restriction on the data and they look forward to seeing on our web site. They agreed to a quarterly update frequency.*

*This is a big deal and much more than we had ever envisioned when we originally created the grant request.*

**Task 6. Expand Agency Participation. Completed:** GWPC proposes to install the EPCA GIS Web database and support application on agency Web servers in NM, UT, and MT. The requirements for integrating the EPCA and agency data will be assessed, and the Web application will be tailored to fit any changed operational conditions of the hosting agency on a development server. The application will be tested and, when deemed stable on a development server, it will be installed on the agency's server. GWPC will provide help desk support.

***Accomplishments October 1, 2004 – February 28, 2005***

*Utah, Montana and New Mexico are participating in the project advisory committee. After the system is installed in Colorado, the same technology will be used in the other EPCA states*

***Accomplishments March 1 – September 31, 2005***

*The attached workplan describes the efforts which will be undertaken in ffy06*

***Accomplishments April 1, 2005 – September 30, 2006***

*Mapping of the lease stipulation database has begun in Wyoming, Montana and North Dakota*

***December 1, 2005: CARLSBAD FIELD OFFICE***

- *The most current Resource Management Plan has been abstracted and the stipulations research spreadsheet has been created. The data created under this task will be reviewed with the Carlsbad Field Office planning and GIS staff members to insure completeness. Any GIS data that is currently available will be reviewed for use in the project.*
- *The Geographic Coordinate Data Base (GCDB) has been in-filled, merged and clipped to have a seamless coverage that accurately represents the 304 townships in the Field Office area. This data contains 40 acre subdivisions for each section in the Field Office.*
- *Land status, and ownership data has been extracted from the LR2000 databases. Parcel processing against GCDB will be completed by 12-12-05.*

- Ready to do the field office data collection trip by December 12, 2005. Due to the holidays and vacation time being taken by BLM staff personnel, the field trips will likely be completed in early January.

### **FARMINGTON FIELD OFFICE**

- The most current Resource Management Plan has been abstracted and the stipulations research spreadsheet has been created. The data created under this task will be reviewed with the Carlsbad Field Office planning and GIS staff members to insure completeness. Any GIS data that is currently available will be reviewed for use in the project.
- The Geographic Coordinate Data Base (GCDB) has been in-filled, merged and clipped to have a seamless coverage that accurately represents the 353 townships in the Field Office area. This data contains 40 acre subdivisions for each section in the Field Office.
- Land status, and ownership data has been extracted from the LR2000 databases. Parcel processing against GCDB will be completed by 12-12-05.
- Ready to do the field office data collection trip by December 12, 2005. Due to the holidays and vacation time being taken by BLM staff personnel, the field trips will likely be completed in early January.

### **ROSWELL FIELD OFFICE**

- The most current Resource Management Plan has been abstracted and the stipulations research spreadsheet has been created. The data created under this task will be reviewed with the Carlsbad Field Office planning and GIS staff members to insure completeness. Any GIS data that is currently available will be reviewed for use in the project.
- The Geographic Coordinate Data Base (GCDB) has been in-filled, merged and clipped to have a seamless coverage that accurately represents the 675 townships in the Field Office area. This data contains 40 acre subdivisions for each section in the Field Office.
- Land status, and ownership data has been extracted from the LR2000 databases. Parcel processing against GCDB will be completed by 12-12-05.
- Ready to do the field office data collection trip by December 12, 2005. Due to the holidays and vacation time being taken by BLM staff personnel, the field trips will likely be completed in early January.

***March 31, 2006 New Mexico Lease Stipulations are being updated for inclusion in the New Mexico Oil and Gas home page. Work Status includes:***

1. ***Pinon Mesa Recreation (Appendix C of RMP, Page C-122) a CSU stipulation is applied to new leases.***

*RMP Text - No construction, drilling, completion, plugging, seismic exploration, and work over activity allowed when they would interfere with authorized recreation.*

*tion events and from 3/1 though 6/30 for various raptor species protection and 3/1 though 8/1 for peregrine falcon protection*

***Is this interpreted to as a TLS stipulation in addition to the CSU, or is this a special condition of approval?***

**2. Bald Eagle ACEC (Appendix C of RMP, Page C-138)**

*RMP Text - Manage new oil and gas leases under Controlled Surface Use constraint, including timing limitations from 11/1 through 3/31 in buffer areas. Manage new oil and gas leases under No Surface Occupancy in core areas as outlined in the 1992 Activity Plan.*

***Does the FFO recognize areas of NSO within the Bald Eagle ACEC? There is no exhibit file for Bald Eagle NSO Stipulation.***

**3. DZIL'NA'OODLII ACEC [previously named Huerfano Mesa] (Appendix C of RMP, Page C-68)**

*RMP Text - Apply No Surface Occupancy stipulation to new oil and gas leases. Exhibit file F30CSU.doc "Controlled Surface Use Stipulation Huerfano Mesa" does not conform to the RMP text in Appendix C.*

**4. Stipulations Identified in the plan with no corresponding Exhibit File or Stipulation Code:**

- a. *Bald Eagle Core Sites – NSO (Appendix C, Page C-138)*
- b. *Superior Mesa; Early Navajo Defensive Sites and Communities – CSU 25-26n7w (area not inclusive of CS, F&O, H&L, CC which are NSO)*
- c. *Santos Peak, Moss Trail, Martin Apodaco Homestead, Rock House-Nestor Martin Homestead ACEC, etc; Historical Sites – NSO (Appendix C, Page C-56 through C-62)*
- d. *Mexican Spotted Owl ACEC – NSO/CSU (Appendix C, Page C-142)*
- e. *Pregnant Basket Maker, Delgadita/Pueblo Canyons ACEC; Petroglyph and Pictograph Sites – NSO (Appendix C, C-69 through C-77)*
- f. *Head Canyon Motocross Track – NSO Recreation (Appendix C, page C-116)*
- g. *Crow Mesa, Middle Mesa etc. – CSU for Wildlife protection (Appendix C, page C-1155 through C-173)*

***GIS Clarifications (Specially Designation Areas GIS Layer - Public)***

**5. Negro Canyon in SDA layer attributed as closed to new leasing, according to RMP is NSO (Appendix C, page C-120).**

*RMP Text - Apply No Surface Occupancy stipulation to new oil and gas leases.*

**6. Thomas Canyon Recreation/Wildlife Area in SDA layer indicates CSU for new leasing, RMP says Discretionary Closure (Appendix C of RMP, Page C-130).**

*RMP Text - Discretionary closure on new oil and gas leases*

7. *Ensenada Mesa Wildlife Area* in SDA layer not indicated as TLS. Could be a misprint in RMP;

*RMP Text - 1. For new and current oil and gas leases, seasonal timing limitation on drilling and construction from 5/1 through 7/15*

## 2. Manage new oil and gas leases under Controlled Surface Use constraint.

8. **Superior Mesa** in SDA layer indicates closed to New Leasing, should be NSO according to RMP (Appendix C, Page C-52).

*RMP Text - 2. Apply No Surface Occupancy stipulation to new oil and gas leases for acreage in CS, F&O, H&L, CC, and for the 40 acres around Millennium Pueblito, and the 75 acres north of CC. Apply Controlled Surface Use constraint to new oil and gas leases for the remaining acreage.*

April 1, 2006

*As of April 1, 2006, GWPC has acquired completed conversion of the following data sets:*

Data Description	Record Count
Developed parcel level records affecting land status, split estate minerals and surface management agency jurisdictions	73,305 Land Records
Acquired, edge matched and edited the BLM's Geographic Coordinate Data Base (GCDB) to create a standard PLSS framework for the project area	1,332 Townships
Acquired, abstracted and compiled data inventories from resource management plans, amendments and records of decision	15 Planning Documents
Acquired and developed standard stipulation language from BLM Mineral Leasing documents maintained by the New Mexico State Office	5,222 Stipulation Parcels
<ul style="list-style-type: none"> <li data-bbox="326 979 549 998">- No Surface Occupancy</li> <li data-bbox="549 979 780 998">- Controlled Surface Use</li> <li data-bbox="326 998 549 1017">- Timing Limitation Stipulations</li> <li data-bbox="549 998 780 1017">- Lease Notice</li> <li data-bbox="326 1017 549 1036">- Discretionary Closure</li> <li data-bbox="549 1017 780 1036">- Non Discretionary Closure</li> <li data-bbox="326 1036 549 1058">- Visual Resource Management</li> </ul>	342 Special Designation Areas

**May 5, 2006 CARLSBAD FIELD OFFICE**

- Premier has completed the extraction of the land status data from the BLM's LR-2000 system to determine surface and subsurface rights on patented lands for this basin. Additionally, Public Domain designations were cross referenced against published maps.
- A majority of the stipulations have been created for the Field Office and the remaining stipulation data should be completed after direction is received from the conference call scheduled for Monday May 8<sup>th</sup>.
- Once the stipulation data has been finalized, the legal descriptions relative to the oil and gas lease stipulations will be generated for the Carlsbad Field Office.

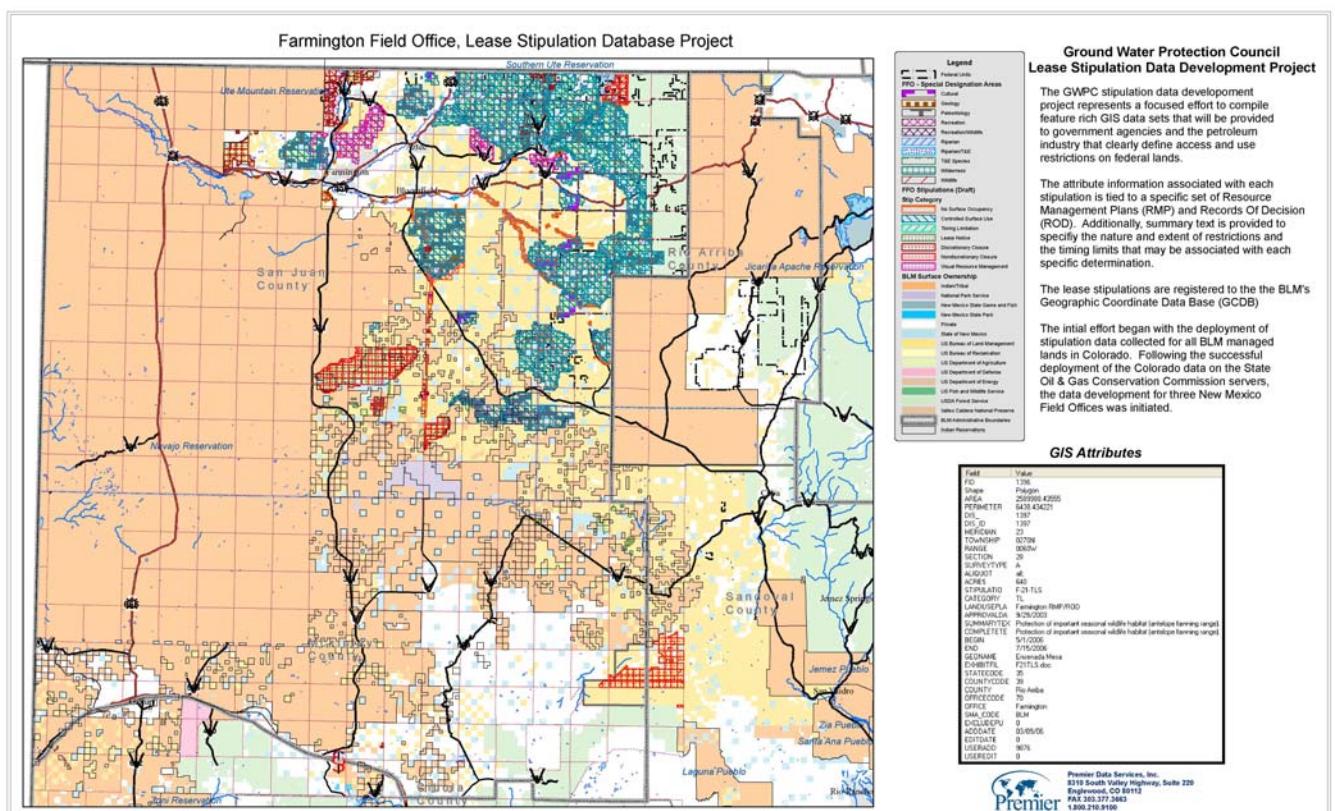
## ***FARMINGTON FIELD OFFICE***

- Premier has completed the extraction of the land status data from LR-2000 to determine surface and subsurface rights on patented lands for this basin. Additionally, Public Domain designations were cross referenced against published maps.
- A conference call has been scheduled for Monday May 8<sup>th</sup> at 9:00 a.m. to discuss the remaining issues affecting the completion of the Farmington Resource Area stipulations. Attendees will include Farmington FO planning and GIS staff as well as NM State Oil and Gas personnel.
- 5,415 legal descriptions relative to 37 oil and gas lease stipulations have been generated for the Farmington FO.

## **ROSWELL FIELD OFFICE**

- Premier has requested and received stipulation data from the Roswell BLM SO.
- Premier has begun the QC of the land status data from LR-2000 to determine surface and subsurface rights on patented lands for this basin. Additionally, Public Domain designations are being cross referenced against published maps.

*The following is a preliminary map of the New Mexico Lease Stipulations*



*Montana: A workplan for combining the Montana oil and gas data with BLM lease stipulations is currently under development.*

***Completed and submitted to the Montana Oil and Gas Board for Posting***

*Accomplishments Phase II: Completed as per the attached revised workplan. XML schema for electronic reporting and permitting has been completed. The web crawler was not completed as described in the attached revised workplan.*

*Four states have agreed to pilot test the XML e-permit schema (Colorado, Alaska, Kentucky and Alabama). The Schema and parser are under development. (See attached timeline)*

*GWPC has worked with industry to identify advantages to electronic permitting. Results of these discussion are being used to guide the development of the e-permit process. These are detailed in attachment A "ePermit fact sheet"*

**INCREASED ACCESS TO FEDERAL LANDS**

**Accomplishments-** Worked with the BLM to combine federal oil and gas lease stipulation data for Colorado with oil and gas well data (see <http://oil-gas.state.co.us/>). This project will increase the production of oil and gas on federal lands by giving industry access to the data needed to target exploration opportunities in the full light of federal lease stipulations, resource inventory assessments, and environmental data available for proposed geographic locations.

**Goal-** (1) Expand this project to Wyoming, Utah, Montana, North Dakota, and New Mexico. (2) Once ePermit is in place, help BLM bring permit review periods into greater compliance with Onshore Order No. 1.

New Mexico BLM offices will begin using RBDMS in later 2006 or early 2007. This will make the state and federal data more compatible and will reduce the time it takes to obtain oil and gas permits.

The Regulatory Elements (state and Federal) are displayed in Attachment B: State and Federal ePermit Schema Regulatory Content.

***Accomplishments October 1, 2006 – February 28, 2007***

*The Schema has been completed and has been tested by the BLM and MMS. Agency comments have been incorporated in the the final version which is now out for industry review. Attached to this report is the detailed e-commerce detailed design document. Also attached is a sample e-permit schema file.*

*Attached are some screen shots of RBSDMS/BLM/New Mexico*

***CONCLUSION\****

*This project is on schedule. The Colorado lease stipulations have been combined with state oil and gas data and are available on the COGCC web site. New Mexico data is also available. Montana lease stipulations are completed and will shortly be posted to the Montana Board of Oil and Gas Web page. The interagency cooperation between, GWPC, States and BLM is working very well. The BLM has developed an interagency data sharing MOU which has been finalized. The BLM lease stipulation data is now automatically updated on the Colorado*

*web site. Lease stipulations are being mapped in Montana, North Dakota and Wyoming. New Mexico and BLM will be sharing data by installing RBDMS in BLM field offices.*

*Electronic commerce is proceeding with support from BLM, MMS, API, States and industry. RBDMS is currently being installed in BLM New Mexico to enhance electronic permitting between, states, industry and the BLM.*

### **MILESTONES\***

BLM Lease Stipulation Data has been combined with the Colorado Oil and Gas Conservation Commission data and is now available on-line in a searchable database. There is no cost to access this data.

New Mexico Lease Stipulation Data has been mapped and will be on-line in early 2007

Lease Stipulation data mapping is underway in Wyoming, Montana, and North Dakota

The e-permit schema has been completed and is now being reviewed by state and federal agencies.

RBDMS is being installed in the BLM Farmington Field Office.

### **COST & SCHEDULE STATUS\***

*As of April 30, 2005 the DOE total costs were \$64,789. At that time, only \$50,000 had been drawn. We anticipate that project costs will accelerate and that the entire year-one DOE funds totaling \$450,000 will be utilized. Additionally at this time, approximately 25% of the \$125,000 year-one in-kind contributions have been utilized.*

*As of March 31, 2006, the project is on schedule and year one funds (federal and state match) have been completely expended. The DOE costs were \$593,240 and a total of \$570,000 had been drawn. We anticipate that project costs will continue on pace and all of the year-one and year-two DOE funds totaling \$900,000 will be utilized by September 30, 2006.*

### **SUMMARY OF SIGNIFICANT ACCOMPLISHMENTS\***

*EPCA Phase I data for Colorado is available on the Internet at <http://oil-gas.state.co.us/>. The federal EPCA data has been combined with state oil and gas data. This is the first time federal and state data of this type has been combined and made available for use over the internet. The New Mexico lease stipulations have been converted and are available for public access. Lease stipulations have been completed for Montana and will shortly be posted*

*Video files describing the use of the stipulation data are available for downloading:*

Video files:

**Lease Stipulations** (geared more toward industry audiences)

- **Flash (.SWF [all versions]):**  
<http://www.rbdmsonline.org/fedland/prospectonline/flash/ProspectOnline0609.html> (24 MB)
- **(Better quality) Pack and Show** (tscc codec and Camtasia Player in one double click after download to disk):  
<http://www.rbdmsonline.org/fedland/prospectonline/PackAndShow/ProspectOnline0609avi.exe>  
(49 MB)

**Lease stipulations** (geared more toward regulatory audiences)

- **Flash (.SWF):**  
<http://www.rbdmsonline.org/fedland/regulatoronline/flashswf/RegulatorOnline0609.html> (25 MB)
- **(Better quality) Pack and Show** (tscc codec and Camtasia Player in one double click after download to disk):  
<http://www.rbdmsonline.org/fedland/regulatoronline/packandshow/RegulatorOnline0609avi.exe>  
(52 MB)

*For a Complete description of these projects please see the RBDMS 2006 Annual Report;  
[http://www.gwpc.org/UIC/Data%20Management/uic\\_data\\_management\\_main.htm](http://www.gwpc.org/UIC/Data%20Management/uic_data_management_main.htm)*

*The E-permit schema has been completed and is now under review by industry. Colorado will pilot the e-permit project this summer (2007)*

## **ACTUAL OR ANTICIPATED PROBLEMS OR DELAYS\***

## **TECHNOLOGY TRANSFER ACTIVITIES\***

GWPC will present detailed briefings to the Contracting Officer's Representative (COR). The GWPC team will give a briefing that explains the plans, progress, and results of the technical products. At a minimum, the GWPC team will have a project kickoff briefing and a final project review briefing. For costing purposes, the GWPC assumes that these briefings will be held at National Energy Technology Laboratory's (NETL's) Tulsa, OK, office site. Additional briefings and technical presentations will be made to ensure the participation of existing stakeholders, other federal and state agencies, standards bodies, and industry associations.

*Accomplishments October 1, 2004 – February 28, 2005*

*The following technical briefings and presentations have been made:*

1. *Project presented to the Ground Water Protection Research Foundation at the January UIC meeting in New Orleans, 2005*
2. *Society of Petroleum Engineers March 2005: SPE Paper Number 94371, Increased Access to Federal Lands Through Data Sharing, S.D. Belieu, SPE, Nebraska Oil and*

*Gas Conservation Commission, P.J. Jehn, Ground Water Protection Council, M.F. Bohrer, North Dakota Industrial Commission*

3. *Project presented at the Ground Water Protection Research Foundation Board of Directors meeting in March in Washington, DC*

**Accomplishments March 1, 2005 – September 30, 2005**

1. *Project presented at the GWPC Annual Forum, September 2005, Portland Oregon*
2. *Project presented at the International Petroleum Environmental Conference (IPEC), November 2005, Houston Texas.*

**Accomplishments October 1 2005 – March 31, 2006**

1. *Project presented at the International Petroleum Environmental Conference (IPEC), November 2005, Houston Texas.*
2. *Project presented at the GWPC UIC meeting January 2006*
3. *Paper submitted for presentation at the October 2006 IPEC meeting*
4. *Monthly conference calls with the project team and BLM*

**Accomplishments September 1, 2006 – February 28 2007.**

**Presented at the IPEC conference October 2006:**

#### **Increasing Access to Federal Lands in Western States Through Data Sharing**

\*Paul Jehn, Ground Water Protection Council, Oklahoma City, OK

Thom Kerr, Colorado Oil and Gas Conservation Commission, Denver, CO

Jim Milne, Colorado Oil and Gas Conservation Commission, Denver, CO

Bob Johnson, Premier Data Services, Inc., Denver, CO

The Energy Policy Conservation Act (EPCA) Amendments of 2002 directed the Bureau of Land Management (BLM) to inventory oil and natural gas resources beneath onshore federal lands and the extent and nature of any restrictions or impediments to the development of these resources. The Ground Water Protection Council has been working with the Department of Energy, the BLM, the Colorado Oil and Gas Conservation Commission's (COGCC's), and Premier Data Services, Inc. to combine EPCA data, federal lease stipulation data defined by the National Environmental Policy Act, and federal land resource management and land use plans with Colorado oil and gas well and environmental data. These comprehensive data sets are now available in a GIS format on COGCC's Web site. A similar data consolidation is now under way in New Mexico, and Montana, with other western states to follow.

This project gives industry access to the data needed to target exploration in the full light of existing federal lease stipulations, resource inventory assessments, and environmental data available for proposed locations. For regulators, the project improves data accessibility for environmental and multiple land use decision-making.

This presentation details the types of information collected, how to use the online application, and ways in which this project provides critical decision support tools for industry and regulators.

## REFERENCES\*/BIBLIOGRAPHY

Gazewood, Doniger and others, "Business Case for Collaborative Development of Shared Processes and Procedures by Participating U.S. Federal and State Regulatory Agencies to Support Well Permits & Activity February 2004  
[http://12.173.158.190/Downloads/GWPC/business\\_case\\_epermit\\_feb04.pdf](http://12.173.158.190/Downloads/GWPC/business_case_epermit_feb04.pdf)

Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and Reserves and the Extent and Nature of Restrictions or Impediments to Their Development". *Prepared by the U.S. Departments of the Interior, Agriculture and Energy*, January 2003

S.D. Belieu, SPE, Nebraska Oil and Gas Conservation Commission, P.J. Jehn, Ground Water Protection Council, M.F. Bohrer, North Dakota Industrial Commission Society of Petroleum Engineers March 2005: SPE Paper Number 94371, Increased Access to Federal Lands Through Data Sharing

EPermitting XML Submission Technical Guide version 1.1. California Department of Conservation Division of Oil and Gas and Geothermal Resources

Paul Jehn, The Ground Water Protection Council, Stan Belieu Nebraska Oil and Gas Conservation Commission, Mark Bohrer North Dakota Industrial Commission, and Tom Richmond Montana Board of Oil and Gas Conservation. State Electronic Commerce Initiatives: Produce More Oil and Gas and Increase Environmental Protection.

RBDMS Annual Report 2005: The Effects of the RBDMS/e-Commerce Initiative on Domestic Oil and Gas Production.

Congressional Briefing: February 2006: A Strategic Partnership for Data Sharing

RBDMS 2006 Annual Report:

[http://www.gwpc.org/UIC/Data%20Management/uic\\_data\\_management\\_main.htm](http://www.gwpc.org/UIC/Data%20Management/uic_data_management_main.htm)

Video files:

**Lease Stipulations** (geared more toward industry audiences)

- **Flash (.SWF [all versions]):**  
<http://www.rbdmsonline.org/fedland/prospectonline/flash/ProspectOnline0609.html> (24 MB)
- **(Better quality) Pack and Show** (tscc codec and Camtasia Player in one double click after download to disk):  
<http://www.rbdmsonline.org/fedland/prospectonline/PackAndShow/ProspectOnline0609avi.exe> (49 MB)

**Lease stipulations** (geared more toward regulatory audiences)

- **Flash (.SWF):**  
<http://www.rbdmsonline.org/fedland/regulatoronline/flashswf/RegulatorOnline0609.html> (25 MB)
- **(Better quality) Pack and Show** (tscc codec and Camtasia Player in one double click after download to disk):  
<http://www.rbdmsonline.org/fedland/regulatoronline/packandshow/RegulatorOnline0609avi.exe> (52 MB)

E-permit fact Sheet (See Attachment A)

**Submitted for publication: Increasing Access to Federal Lands in Western States Through  
Data Sharing**

\*Paul Juhn, Ground Water Protection Council, Oklahoma City, OK, Thom Kerr, Colorado Oil and Gas Conservation Commission, Denver, CO, Jim Milne, Colorado Oil and Gas Conservation Commission, Denver, CO, Bob Johnson, Premier Data Services, Inc., Denver, CO

## **National Energy Technology Laboratory**

626 Cochran's Mill Road  
P.O. Box 10940  
Pittsburgh, PA 15236-0940

3610 Collins Ferry Road  
P.O. Box 880  
Morgantown, WV 26507-0880

One West Third Street, Suite 1400  
Tulsa, OK 74103-3519

1450 Queen Avenue SW  
Albany, OR 97321-2198

2175 University Ave. South  
Suite 201  
Fairbanks, AK 99709

Visit the NETL website at:  
[www.netl.doe.gov](http://www.netl.doe.gov)

Customer Service:  
1-800-553-7681

