PROFESSIONAL PETROLEUM
DATA MANAGEMENT ASSOCIATION

Updating the US Well Numbering Standard to Meet Today's Business Needs

Trudy Curtis, CEO (PPDM Association)

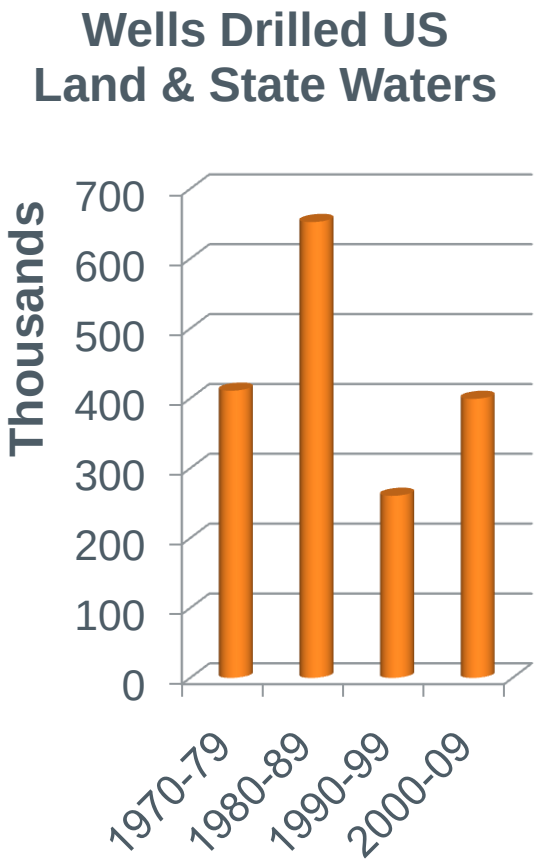
Pam Koscinski (Chesapeake Energy Corporation)

Bruce Smith (IHS, Inc.)

Jim Stolle (P2E Solutions)

WHY THE INTEREST IN THE API NUMBER?

- The API number is a critical number used by industry to identify and describe wells
- The current scheme is out of date, and requires changes
- Well numbering issues create many problems
- Industry intends to update this standard
- We want regulators to be engaged and committed!



Source IHS Energy, Inc

API D12A SUBCOMMITTEE

- Primary objective – to develop a standard method of nationwide identification of wells
- Formed in 1962 to achieve as much compatibility as possible between cooperative well systems
- Not updated since 1979
- Inconsistent uptake across the US

+

Original Hole			Directional Sidetrack
State Code	County Code	Unique Well Code	S/T Code
99	999	99999	99

CHANGE OF STEWARDSHIP ROLE

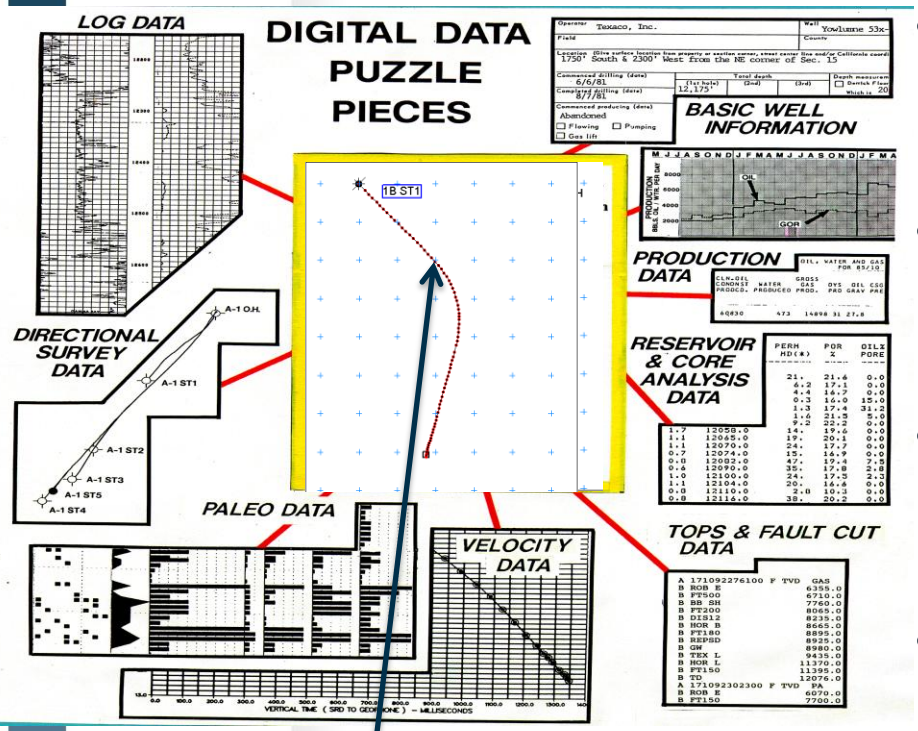
Stewardship has been turned over to the PPDM Association

The PPDM Association is an international not for profit data management standards organization.

A project to update the US Well Numbering standard is being started by industry

We need regulators to be involved, as regulatory agencies are critical to our success

COMMON INDUSTRY PROBLEMS

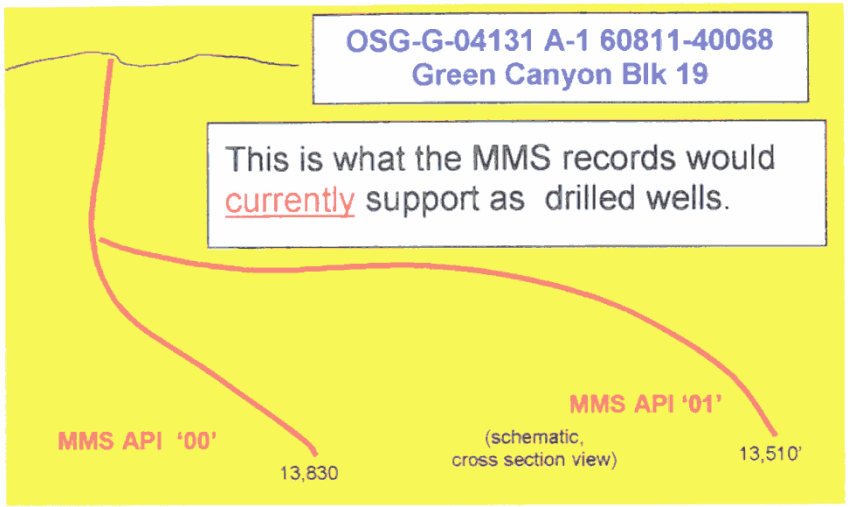


Hardy Oil & Gas
Blackstone Minerals B-1
Jefferson Co., TX
42245-32103-0000

Example, courtesy P2E Solutions

- Difficulty creating a complete list of the wells a company has an interest in
- Logs / Directional surveys / Cores / Samples attached to the wrong wellbore, or missing entirely
- Unclear which (or how many) perforations are contributing to production
- How many wellbores are contributing to a well's production
  - Are there 3 wells, or 1 well with 3 wellbores?
- Well plotted in the wrong place on a map

ANOTHER EXAMPLE

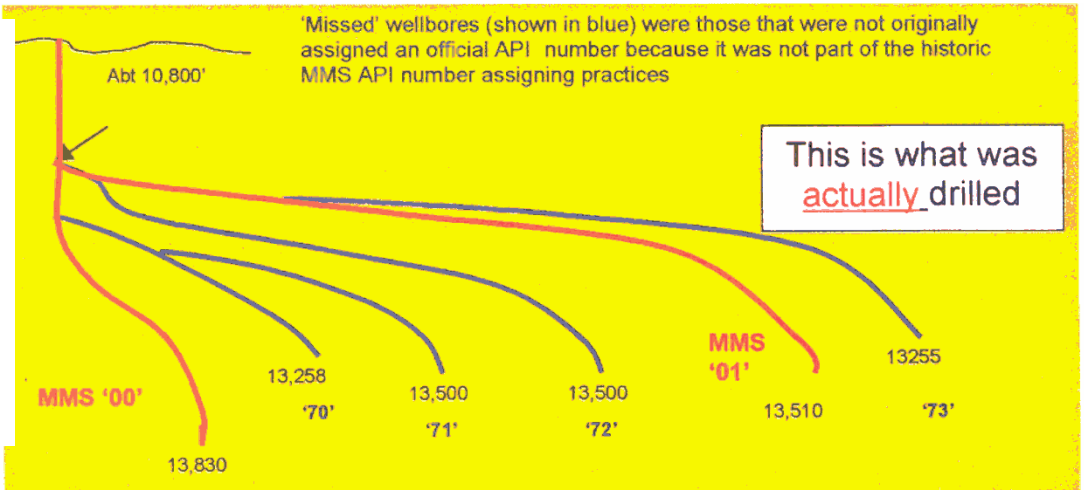


This well is in the Gulf Of Mexico.

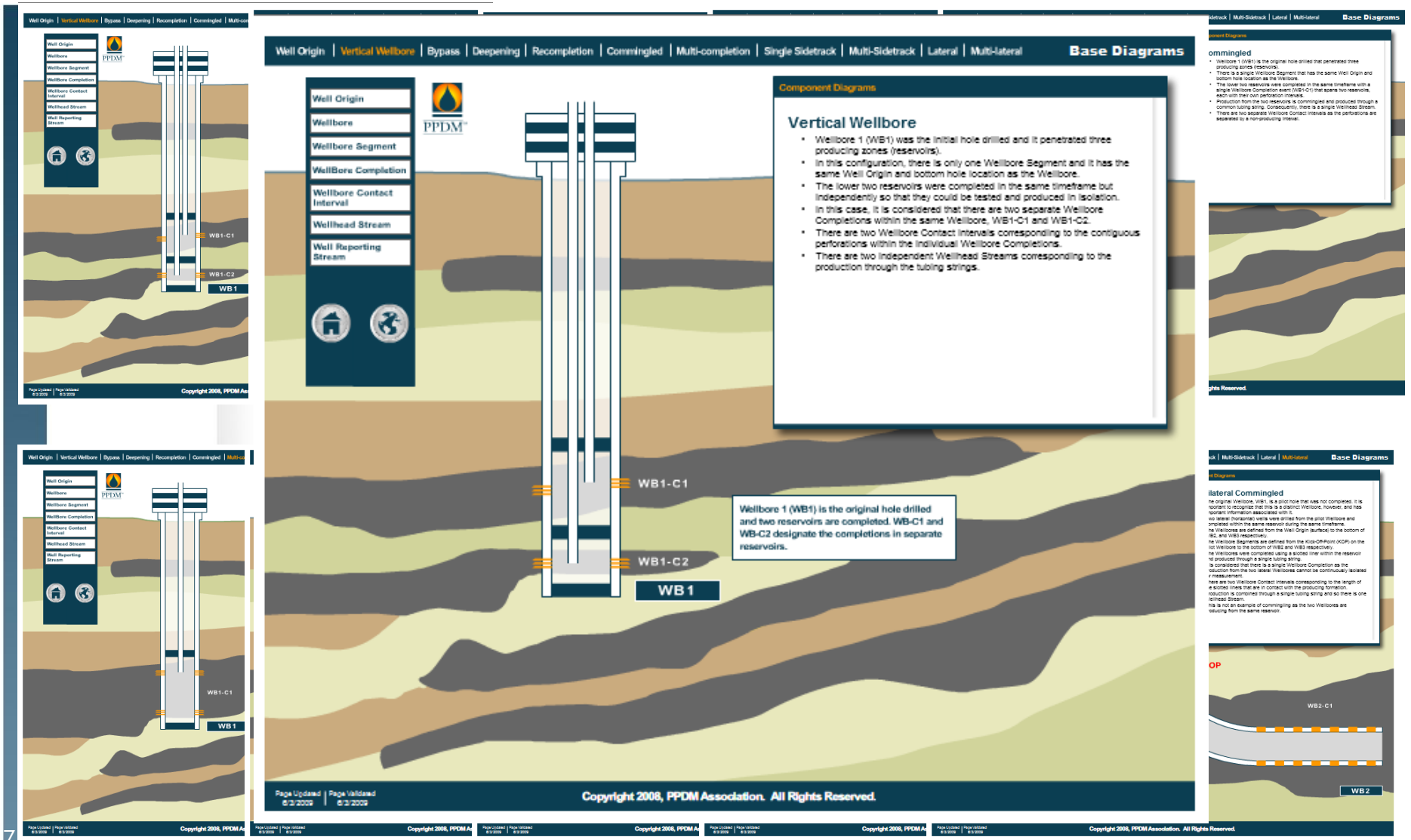
MMS records showed 2 wellbores

Here's what the well actually looks like

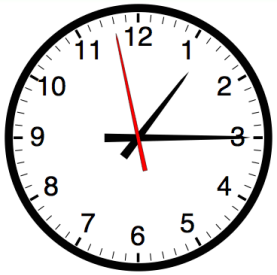
Note 3 wellbores go to 13500 -510'. Three sources of directional survey in the GOM all had a survey to 13500, all were described as the same API-'01', and all were for different wellbores …to different targets



DRILLING TECHNOLOGY CHANGED!



WHO ASSIGNS API NUMBERS FOR NEW WELLS?



Operators

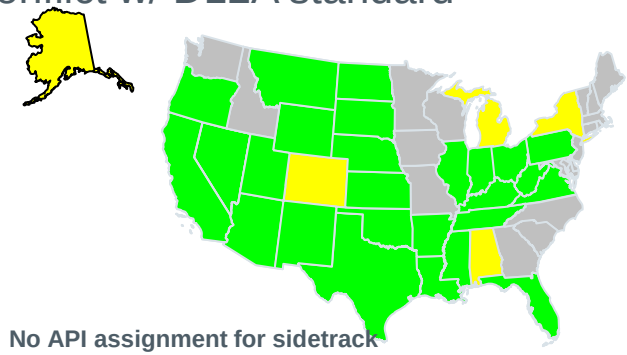
- Different processes and rules in place

Regulatory agencies

- Most states assign only 10 digits of API number to Well Origin
- A few states assign 11-12th digits for wellbore identification
- 2 states assign 13-14th digits for well events
- Numerous states use 11-14th digits in conflict w/ D12A standard

Information providers

- Different processes and rules in place
- Data conflicts are common



Result: You cannot connect data using API numbers and expect information from different sources to all tie together correctly.

WHY OPERATORS IDENTIFY WELLS

Understand assets they operate or have an interest in

Strategic planning

Reserves analysis

Track operating costs, revenues, risks …

Support interpretation and analysis

Correlate land rights with well objects

Support business relationships

Operating companies have much more information about their own wells than regulators and data vendors do.

Operators often rely on identifiers assigned by regulators or vendors.

However, this information is often scattered across systems, departments, regions.

WHY REGULATORS IDENTIFY WELLS

Ensure regulatory compliance

Collect royalties

Resource management and conservation

Distinguish one well from another

- Spot wells on a map or know where they are located
- Put a unique code on every sample and submission received
- Archive all submitted information
- Make information public as required by law

Regulators rarely identify every object in a Well Set

Many regulators have incomplete information about wellbores and completions

Regulatory rules are often inconsistently applied over time and by different operators.

WHY DATA VENDORS IDENTIFY WELLS

Create a uniform data set across many states/regions

Ensure that all information is assigned to the right well object

- Associate production volumes with the “correct” object
- Relate well header information to wellbore information
- Distinguish one well / wellbore from another

Know what regulatory agency is responsible for each “WELL”

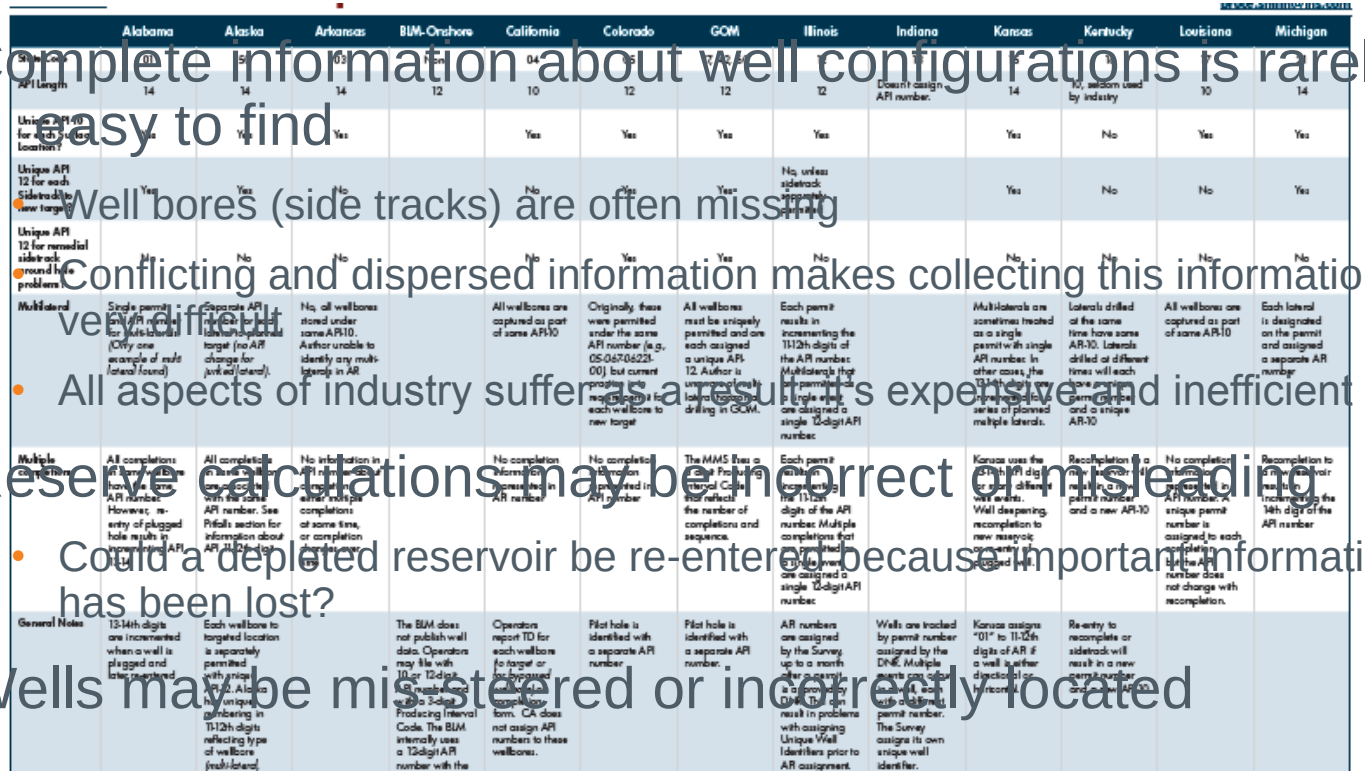
A vendor may create new well objects so that data can be correctly and consistently referenced.

Vendors may use different methods to create “look-alike” identifiers.

CONSEQUENCES

Regulatory compliance requires very long learning curves.

- It's difficult to get consistency in submissions over time and across operators



	Alabama	Alaska	Arkansas	BLM-Onshore	California	Colorado	GOM	Illinois	Indiana	Kansas	Kentucky	Louisiana	Michigan
State Code	01	5	03	11	04	05	17, 65	7	6	15	16	17	21
API Length	14	14	14	12	10	12	12	12	Doesn't assign API number.	14	10, seldom used by industry	10	14
Unique API-10 for each Surface Location?	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	No	Yes	Yes
Unique API 12 for each sidetrack to new target?	Yes	Yes	No	No	No	Yes	Yes	No, unless sidetrack [illegible]		Yes	No	No	Yes
Unique API 12 for remedial sidetrack around fish problem?	No	No	No	No	No	Yes	Yes	No		No	No	No	No
Multilateral	Single permit and API number for multi-lateral (Only one example of multi-lateral found)	Separate API for each lateral/bottomhole target (no API change for junked lateral).	No, all wellbores stored under same API-10. Author unable to identify any multi-laterals in AR		All wellbores are captured as part of same API-10	Originally these were permitted under the same API number (e.g., 05-067-06221-00) but current practice is to assign each wellbore to new target	All wellbores are uniquely permitted and are each assigned a unique API-12. Author is unaware of any lateral drilling in GOM.	Each permit results in incrementing the 11-12th digits of the API number. Multilaterals that are permitted under a single permit are assigned a single 12-digit API number.		Multilaterals are sometimes treated as a single permit with single API number. In other cases, the 11-14th digits are incremented for each lateral in a series of planned multiple laterals.	Laterals drilled at the same time have same API-10. Laterals drilled at different times will each have [illegible] permit number and a unique API-10	All wellbores are captured as part of same API-10	Each lateral is designated on the permit and assigned a separate API number
Multiple completions	All completions of the same wellbore have the same API number. However, re-entry of plugged hole results in completions with different API numbers.	All completions of the same wellbore have the same API number. See Pitfalls section for information about API-10/API-14 issue.	No jurisdiction in AR allows multiple completions at same time, or completion [illegible]		No completion information in API number	No completion information in API number	The MMS fixes a Well Completion Code that reflects the number of completions and sequence.	Each permit results in incrementing the 11-12th digits of the API number. Multiple completions that are permitted under a single permit are assigned a single 12-digit API number.		Kansas uses the 11th digit of the API number to distinguish different wellbores. Well deepening, recompletion to new reservoir [illegible]	Recompletion to a different reservoir requires a new permit number and a new API-10	No completion information in API number. A unique permit number is assigned to each completion, but the API number does not change with recompletion.	Recompletion to [illegible] incrementing the 14th digit of the API number
General Notes	13-14th digits are incremented when a well is plugged and later re-entered.	Each wellbore to targeted location is separately permitted with unique API-12. Alaska has unique numbering in 11-12th digits reflecting type of wellbore (multi-lateral,	The BLM does not publish well data. Operators may file with 10- or 12-digit [illegible] Also a 3-digit Producing Interval Code. The BLM internally uses a 12-digit API number with the	Operators report TD for each wellbore (a target or [illegible] completion form. CA does not assign API numbers to these wellbores.	Pilot hole is identified with a separate API number	Pilot hole is identified with a separate API number.	API numbers are assigned by the Survey up to a month after a permit is issued. Unique Well Identifiers prior to API assignment.		Wells are tracked by permit number assigned by the DNR. Multiple permits can [illegible] a wellbore. The Survey assigns its own unique well identifier.	Kansas assigns "01" to 11-12th digits of API if a well is either directional or [illegible]	Re-entry to recomplete or sidetrack will result in a new permit number and [illegible] API		

Complete information about well configurations is rarely easy to find

- Well bores (side tracks) are often missing
- Conflicting and dispersed information makes collecting this information very difficult
- All aspects of industry suffers as a result it's expensive and inefficient

Reserve calculations may be incorrect or misleading

- Could a depleted reservoir be re-entered because important information has been lost?

Wells may be misteered or incorrectly located

....

CHANGES TO IMPROVE API NUMBER

Update the Well Numbering Standard

- Collaboration of Operators, Vendors and Regulatory
- Publicly available distribution along with educational information.

More consistent application of a new standard

- By Regulators – we hope for process of convergence
- By Vendors and Operators

Work with regulators to encourage uptake

- Improve information submission and release for more consistency of well identification

ABOUT THE PPDM ASSOCIATION

- ✔Professional Petroleum Data Management Association
- ✔We are not for profit, international standards body focused on the Oil and Gas Industry
- ✔Our member companies are operators, vendors, service companies, regulators…
- ✔We collaborate with industry to optimize the value of data
- ✔We are governed by a volunteer Board of Directors who come from a spectrum of **E & P industry organizations**

WHAT DO WE DELIVER?

- ✔ an opportunity for world-wide petroleum data experts to gather together in a collaborative, round table approach to engineer business driven, data management standards that meet industry needs
- ✔ the PPDM Version 3.8 (data model) - an open, practical and usable standard that is supported by over 100 members
- ✔ What is a Well?
- ✔ Business Rules
- ✔ Education and training
- ✔ an invite to participate in an open process to create integrated standards

CONCLUSIONS

Clear, consistent and complete identification of wells across industry is vital!

PLEASE get involved

in this important project!

PROFESSIONAL PETROLEUM
DATA MANAGEMENT ASSOCIATION

Thanks for your attention

Trudy Curtis

curtist@ppdm.org

www.WhatIsAWell.org

www.PPDM.org