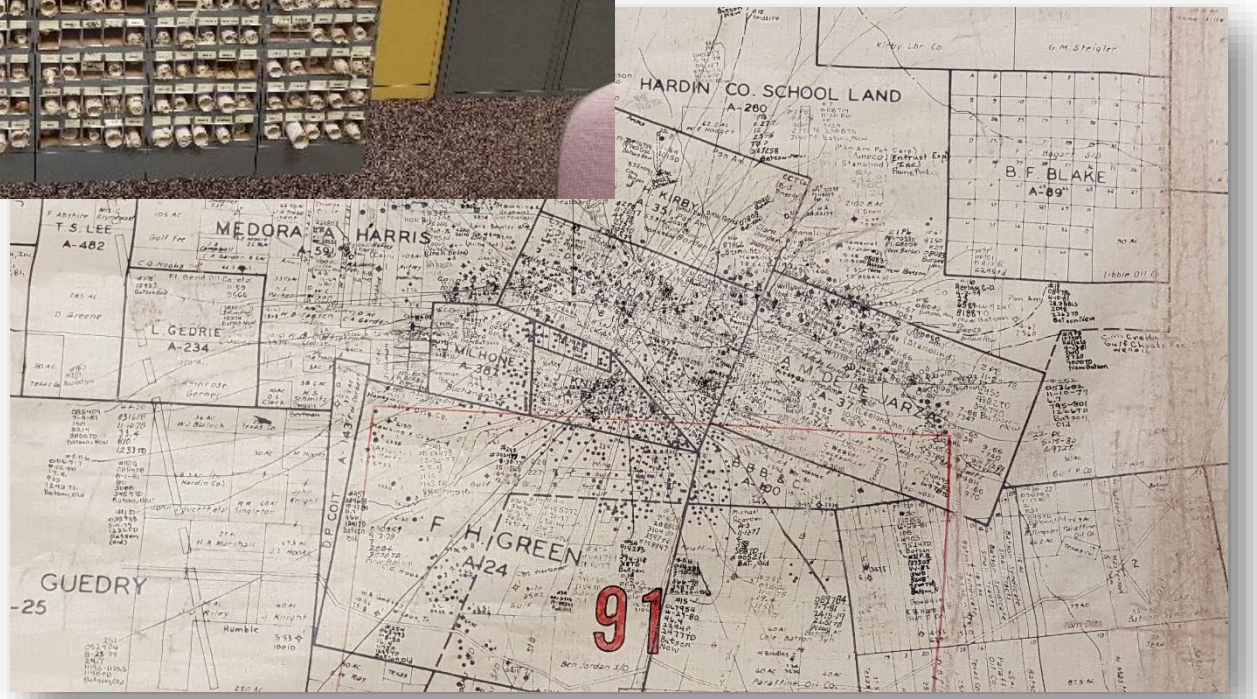
Public GIS Viewer

Mark Maddox & Chris Conn
July 2025

Before GIS (1 of 2)

- Cloth or linen maps
  - One or more maps for each county plus field maps
  - Typical scales
    - 1” = 2000’
    - 1” = 4000’
  - Hand posted wells

Before GIS (2 of 2)



Linen Map Preservation

- Maps date back to 1930's.
  - Oldest and most frequently used maps deteriorating.
- All linen maps scanned.
- Hardcopy maps archived and available on as needed basis.

Linen Maps to Computerized Maps

- 10 year digitization project.
  - 1984 to 1995 with all layers created by RRC staff.
- Survey information digitized from GLO records.
- Well information digitized from linen maps.
- Staff updates as needed.

GIS Updates

- Research historic General Land Office records for survey line placements.
- Work with Registered Land Surveyors to compare notes with on survey construction.
- Research Railroad Commission well records and maps to validate well location information and API numbers.

Reliability Codes

Reliability	Code	GIS Location Source
Lowest	10	Historic map
	15	Commission's hardcopy map
	16	Spotted from Reliability Code 15 wells
	17	Location adjusted during survey maintenance
	20	Mainframe WELLBORE distances
	25	Hearing file - Plat and/or documentation
	30	Operator reported location - Distances without plat or plat without distances
	40	Operator reported location - Distances and plat
	45	Field inspection by Commission personnel - Distances and/or plat
	48	Spotted from Reliability Code 50 wells
	50	U.S.G.S. 7.5-min. quadrangle or aerial photograph
	55	Coordinates - Operator reported
Highest	60	Coordinates - Commission reported

API/Well Mapping Department

- Maintain and enhance well location GIS map layers by:
  - Relocate existing wells.
  - Adding omitted oil and gas wells.
  - Add or update well API numbers.

This is done through normal day-to-day research activities or requests from the public who provide documentation to support a research request.

Documentation Accepted

What can you provide to support your API resolution request:

- Records helpful in resolving discrepancies
  - W-1 and Plats
  - W-2 / G-1
  - P-4 / P-6
  - W-3
- Requests for records research should be directed to IMS@rrc.texas.gov.

Request to Change Information

- Contact us with any questions
  - 512-463-6851
  - rrc.mapping@rrc.texas.gov
- Provide as much information as possible
  - Ex. – Well records, Plats, Maps, etc.

Coordinates: Datums

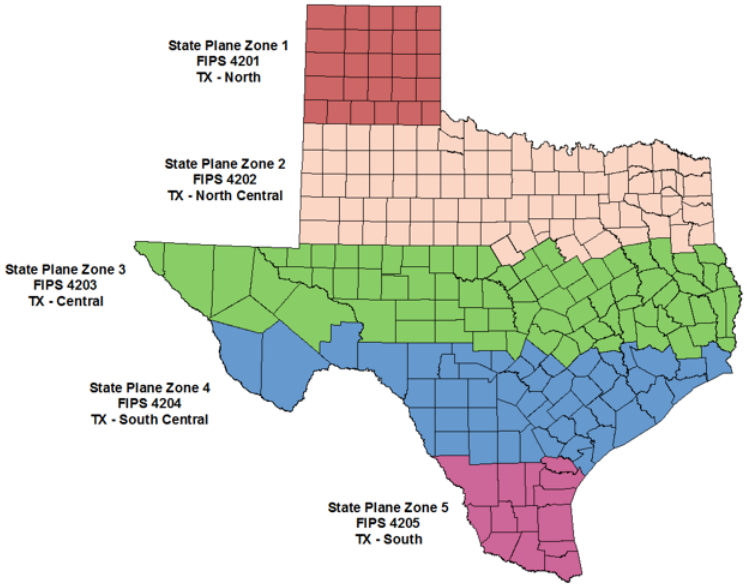
- **Datum** – A set of numbers which describe the shape, size, and position of an ellipsoid that approximates the surface of the Earth

- The datum can be Local or Global.
  - Local – Best matches the area of interest.
    - Ex. – NAD 27 and NAD 83.
  - Global – Can be used for any location.
    - Ex. – WGS 84

Coordinates: What We Accept

- Geographic Coordinate Systems
  - NAD 27, NAD 83, WGS 84
    - Degrees Minutes Seconds
    - Decimal Degrees

- State Plane Coordinate Systems
  - NAD 27 and NAD 83
  - 5 Zones in Texas



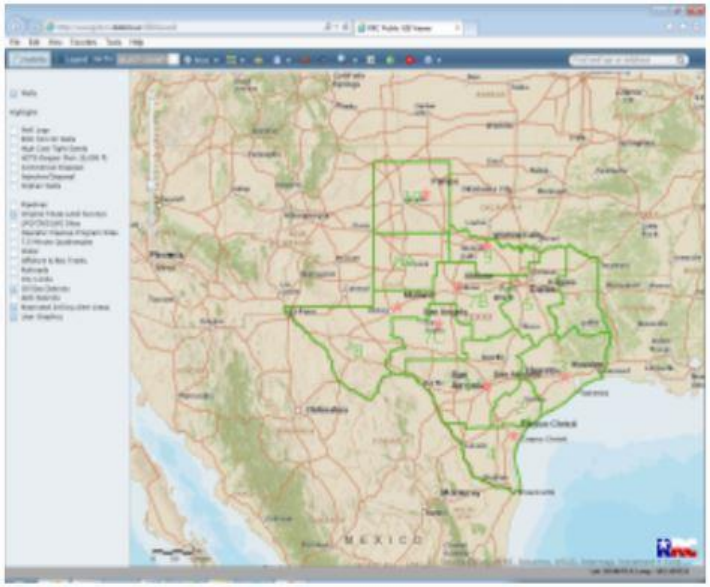
Accessing the Public GIS Viewer

Home / Resource Center / Research

Public GIS Viewer (Map)

The Public GIS Viewer allows users to view oil, gas and pipeline data in a map view.

Public GIS Viewer



LAUNCH PUBLIC GIS VIEWER

User Guide

GIS User Guide (PDF)

Training Videos

The following training videos provide step-by-step instruction for new features of the Public GIS Viewer. The videos will open in a separate window, allowing you to toggle between the video and viewer.

Note: These videos do not contain audio.

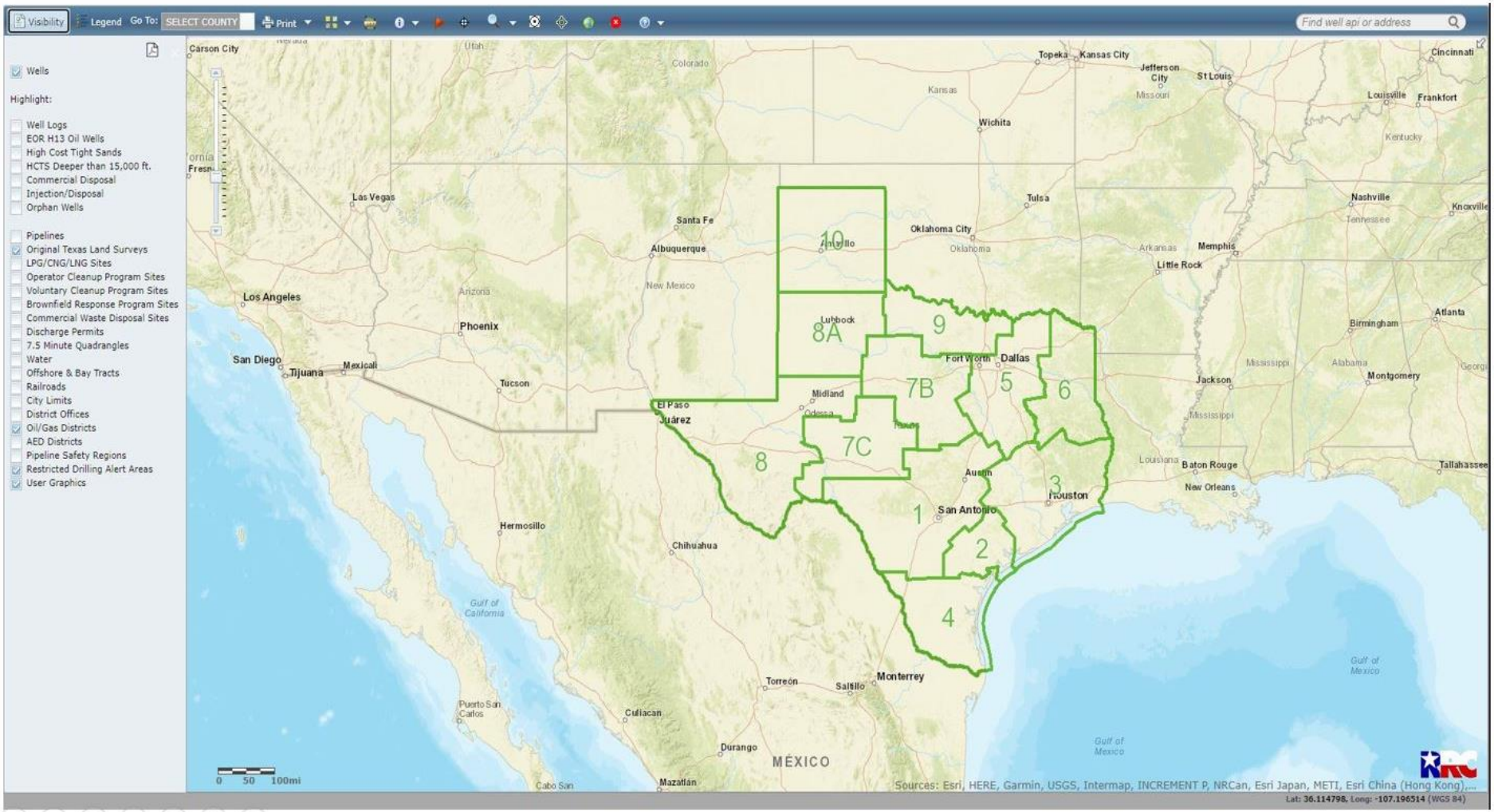
API# or Address Search

Survey Search

Locating Pipelines

Viewing Coordinates

GIS Viewer Load Screen

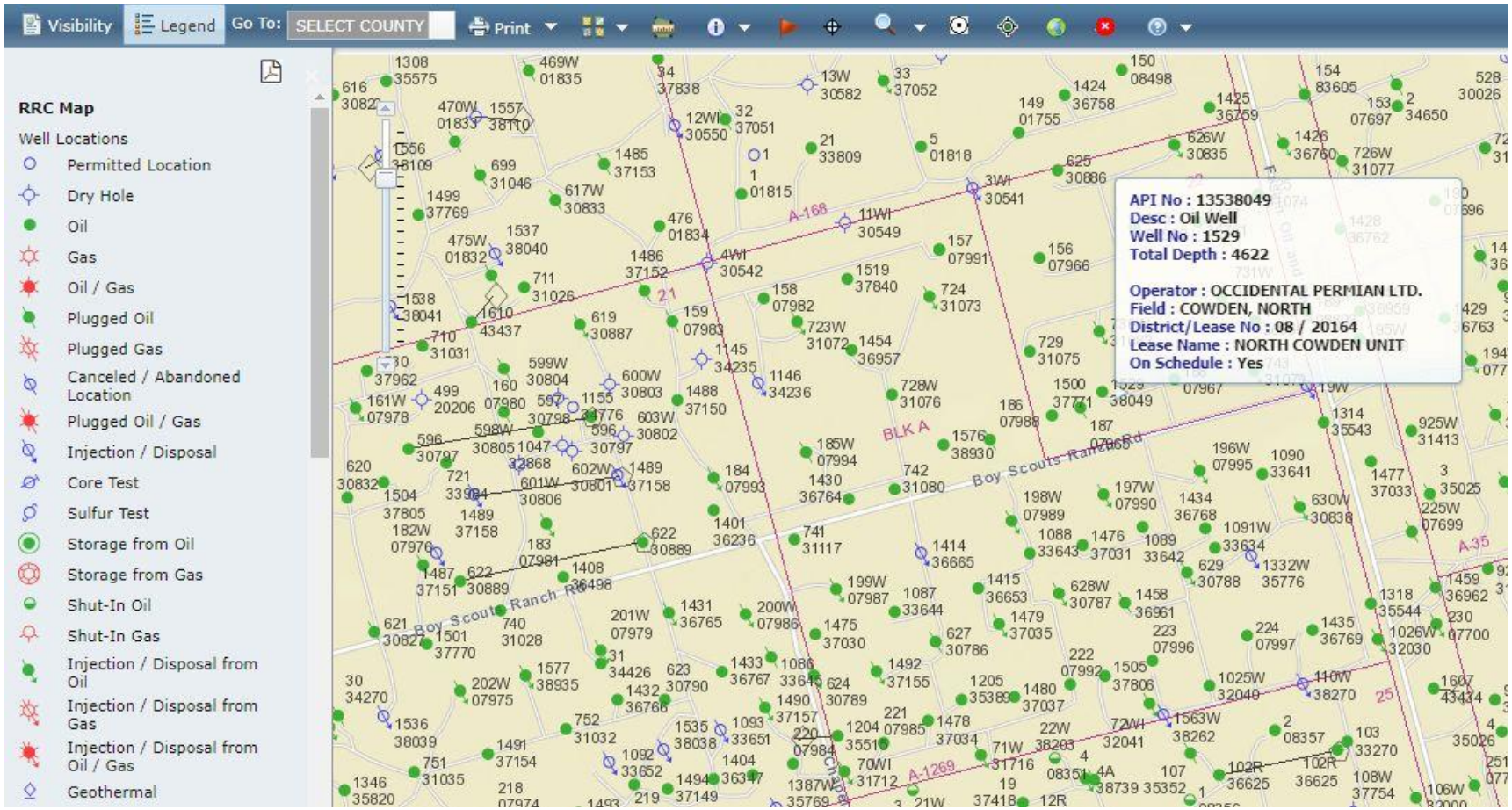


Search and Navigation

- API Number
  - Must include 8 digits, FIPS & Unique Identifier
- RRC Lease ID
  - 5 digit oil ID or 6 digit gas ID
  - Single gas well displays or all wells under oil lease ID displayed
- Survey Information
  - Not all attributes need to be entered
  - Spelling, punctuation and spaces are important and will affect results.

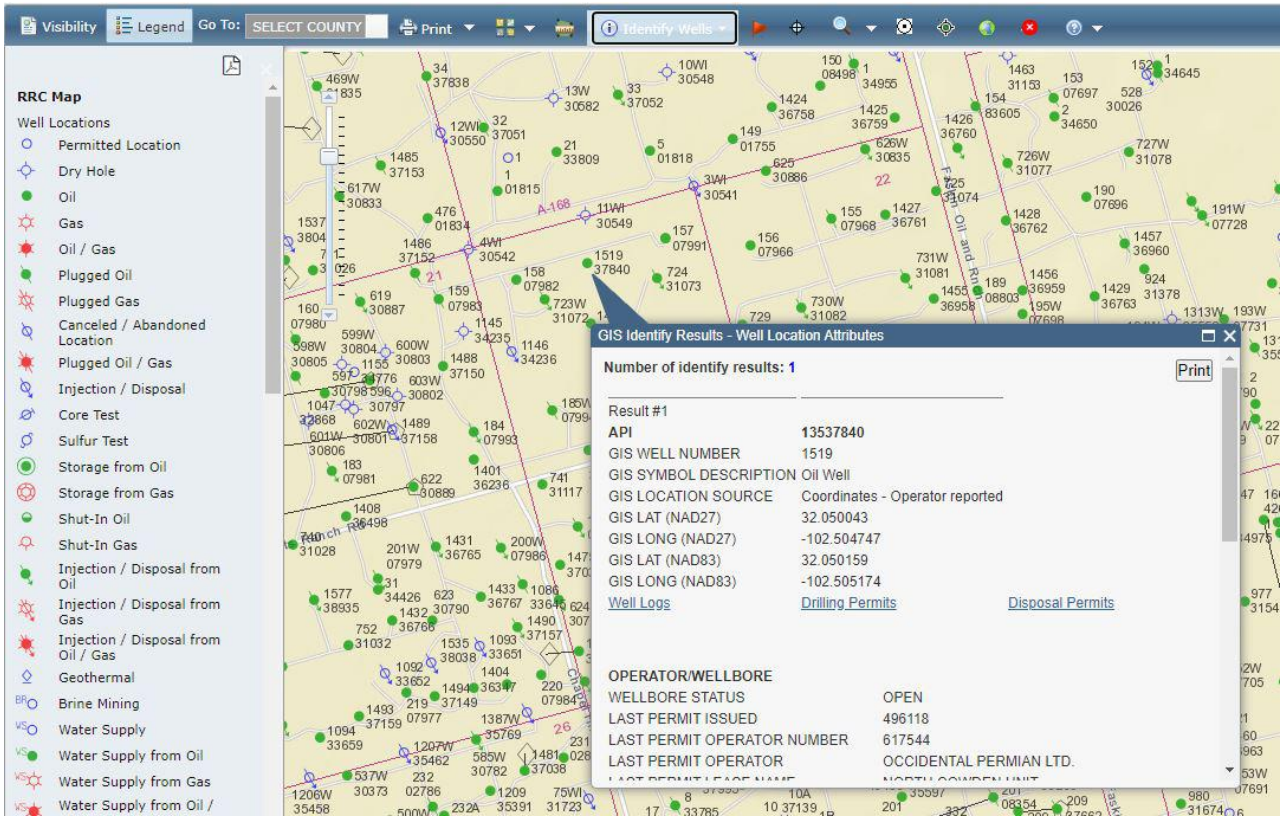
Hover

- Move the cursor over any well
  - Dialogue box appears with well information



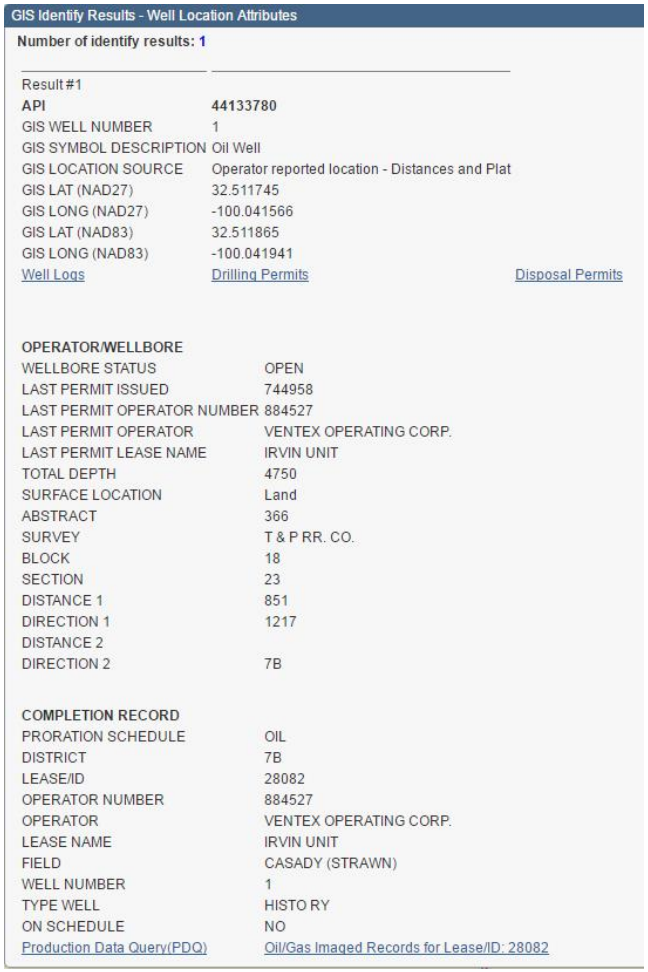
Identify

- Click on the feature using the Identify tool
  - Additional information appears in the dialogue box window



Identify Results

- API
  - Geographic information
  - Links to Well Logs and Permits
- Operator/Wellbore
  - Information from most recent approved drilling permit
- Completion Record
  - Current *and* historical records
  - Links to production and hardcopy records



GIS Identify Results - Well Location Attributes

Number of identify results: 1

Result #1	
API	44133780
GIS WELL NUMBER	1
GIS SYMBOL DESCRIPTION	Oil Well
GIS LOCATION SOURCE	Operator reported location - Distances and Plat
GIS LAT (NAD27)	32.511745
GIS LONG (NAD27)	-100.041566
GIS LAT (NAD83)	32.511865
GIS LONG (NAD83)	-100.041941

Well Logs | Drilling Permits | Disposal Permits

OPERATOR/WELLBORE

WELLBORE STATUS	OPEN
LAST PERMIT ISSUED	744958
LAST PERMIT OPERATOR NUMBER	884527
LAST PERMIT OPERATOR	VENTEX OPERATING CORP.
LAST PERMIT LEASE NAME	IRVIN UNIT
TOTAL DEPTH	4750
SURFACE LOCATION	Land
ABSTRACT	366
SURVEY	T & P RR. CO.
BLOCK	18
SECTION	23
DISTANCE 1	851
DIRECTION 1	1217
DISTANCE 2	
DIRECTION 2	7B

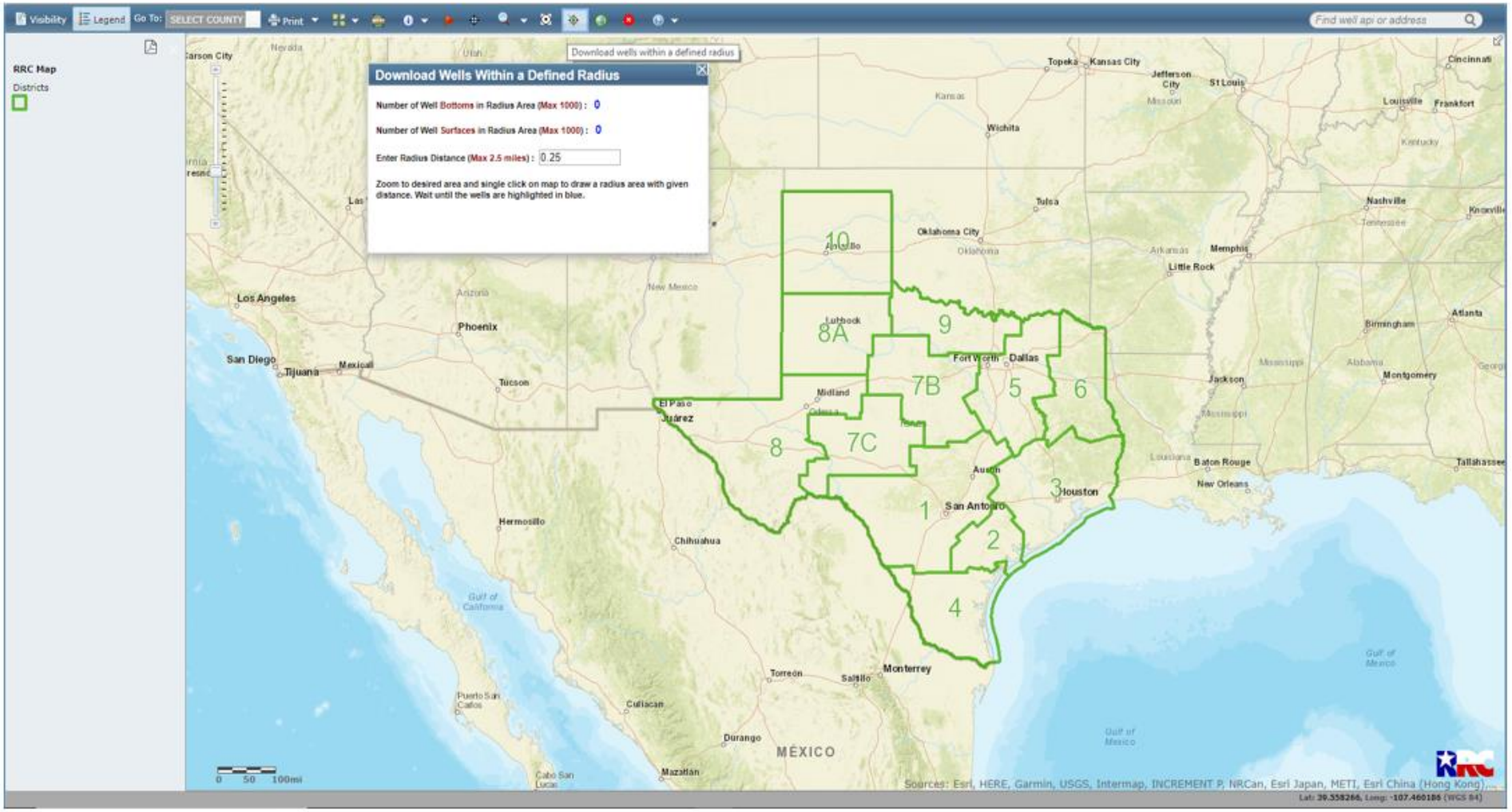
COMPLETION RECORD

PRORATION SCHEDULE	OIL
DISTRICT	7B
LEASE/ID	28082
OPERATOR NUMBER	884527
OPERATOR	VENTEX OPERATING CORP.
LEASE NAME	IRVIN UNIT
FIELD	CASADY (STRAWN)
WELL NUMBER	1
TYPE WELL	HISTO RY
ON SCHEDULE	NO

Production Data Query(PDQ) | Oil/Gas Imaged Records for Lease/ID: 28082

Download Wells Within a Defined Radius

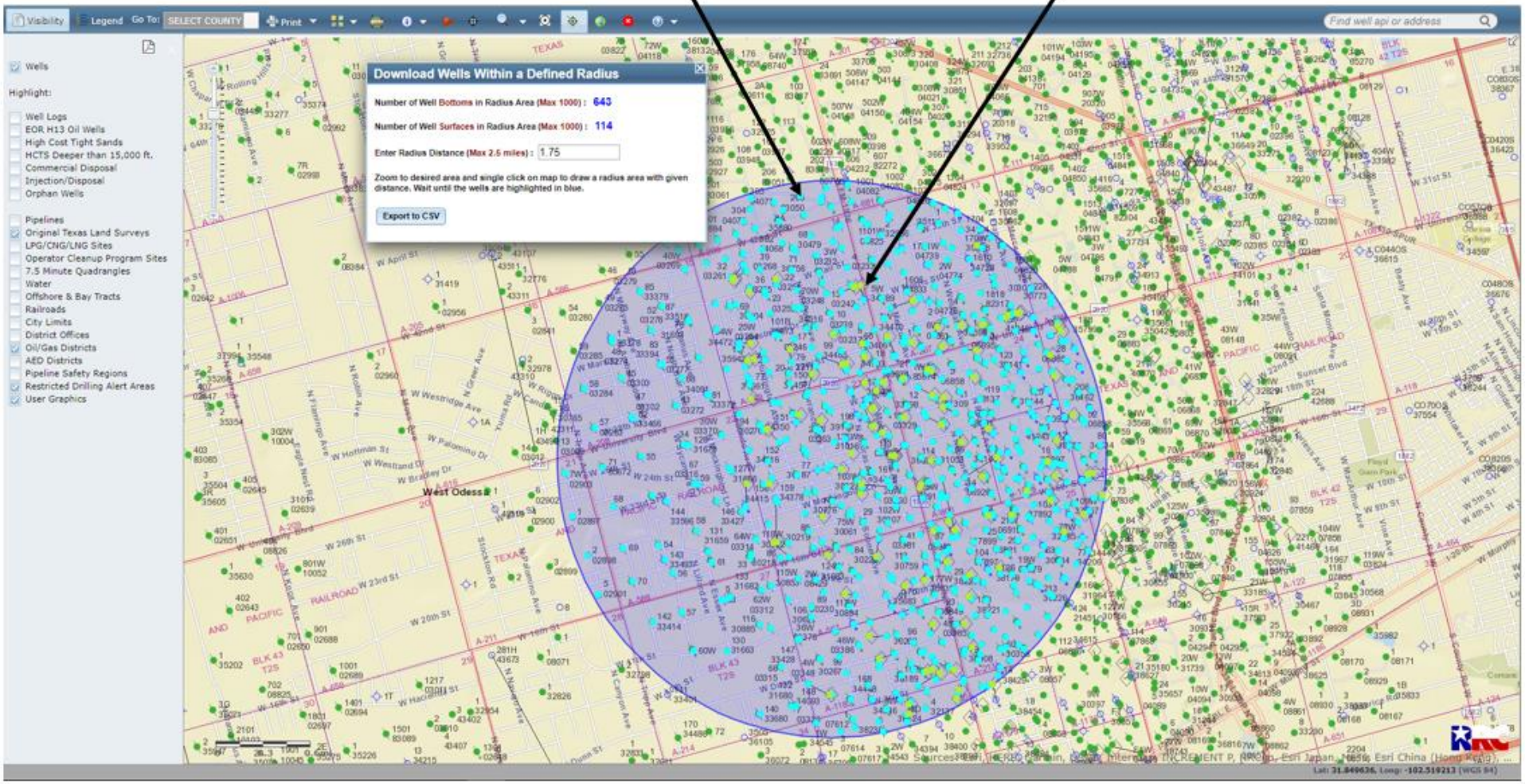
- Select the icon 
- Enter the radius (up to 2.5 miles) by typing in the number



Download Wells Results

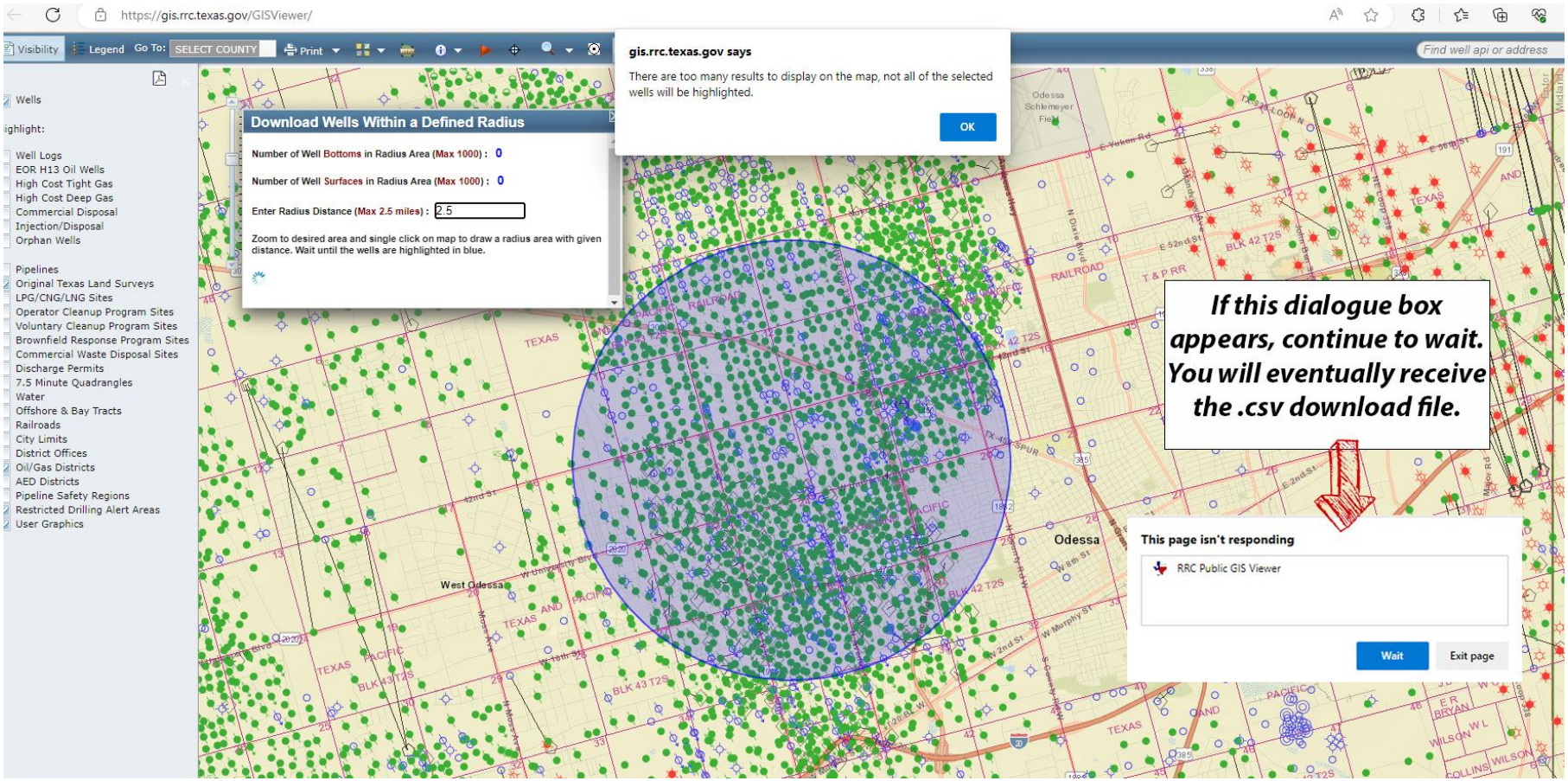
Cyan: Well Bottom Location

Green: Well Surface Location



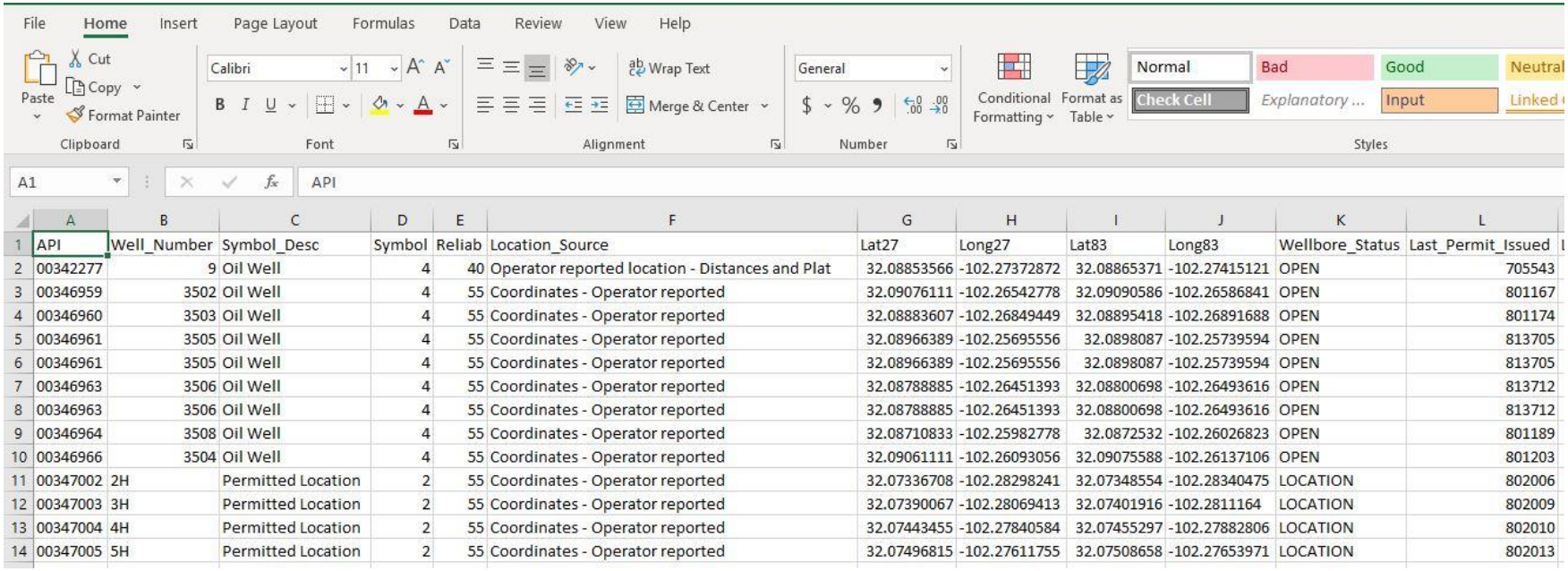
More Than 1000 wells inside the Radius…

- The ‘Too Many Results’ dialogue box appears
  - The first 1000 wells are exported



Exported Well Results

- Export results are .csv file
  - Lat and Long are automatically generated by the GIS when well is created
  - Well location source document determines reliability
- Use lat and long to convert to geospatial data



File Home Insert Page Layout Formulas Data Review View Help

Cut Copy Format Painter Paste — Clipboard

Calibri 11 — Font

Wrap Text Merge & Center — Alignment

General — Number

Conditional Formatting Format as Table

Normal Bad Good Neutral Check Cell Explanatory ... Input Linked — Styles

A1 API

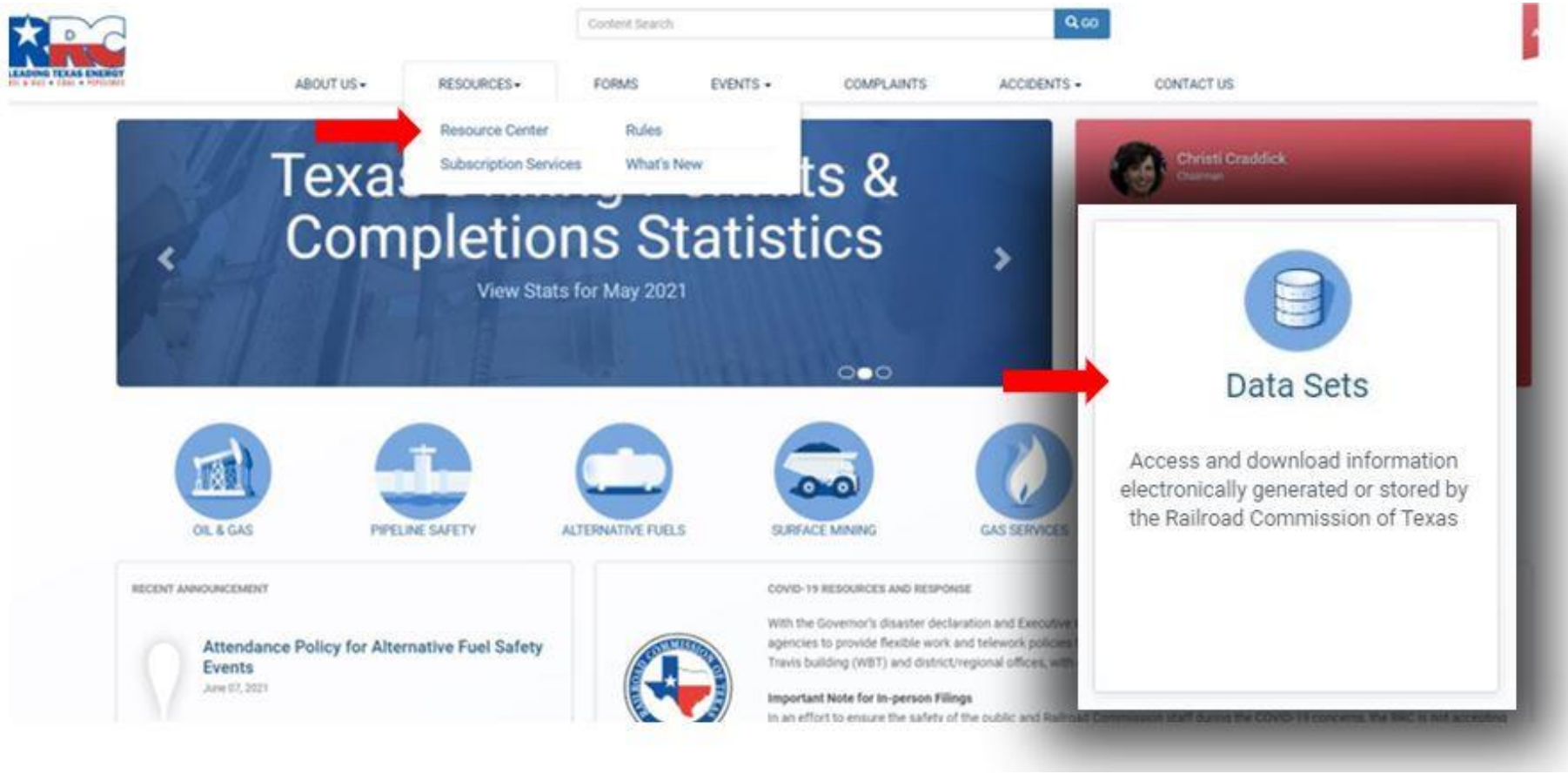
	A	B	C	D	E	F	G	H	I	J	K	L
1	API	Well_Number	Symbol_Desc	Symbol	Reliab	Location_Source	Lat27	Long27	Lat83	Long83	Wellbore_Status	Last_Permit_Issued
2	00342277	9	Oil Well	4	40	Operator reported location - Distances and Plat	32.08853566	-102.27372872	32.08865371	-102.27415121	OPEN	705543
3	00346959	3502	Oil Well	4	55	Coordinates - Operator reported	32.09076111	-102.26542778	32.09090586	-102.26586841	OPEN	801167
4	00346960	3503	Oil Well	4	55	Coordinates - Operator reported	32.08883607	-102.26849449	32.08895418	-102.26891688	OPEN	801174
5	00346961	3505	Oil Well	4	55	Coordinates - Operator reported	32.08966389	-102.25695556	32.0898087	-102.25739594	OPEN	813705
6	00346961	3505	Oil Well	4	55	Coordinates - Operator reported	32.08966389	-102.25695556	32.0898087	-102.25739594	OPEN	813705
7	00346963	3506	Oil Well	4	55	Coordinates - Operator reported	32.08788885	-102.26451393	32.08800698	-102.26493616	OPEN	813712
8	00346963	3506	Oil Well	4	55	Coordinates - Operator reported	32.08788885	-102.26451393	32.08800698	-102.26493616	OPEN	813712
9	00346964	3508	Oil Well	4	55	Coordinates - Operator reported	32.08710833	-102.25982778	32.0872532	-102.26026823	OPEN	801189
10	00346966	3504	Oil Well	4	55	Coordinates - Operator reported	32.09061111	-102.26093056	32.09075588	-102.26137106	OPEN	801203
11	00347002	2H	Permitted Location	2	55	Coordinates - Operator reported	32.07336708	-102.28298241	32.07348554	-102.28340475	LOCATION	802006
12	00347003	3H	Permitted Location	2	55	Coordinates - Operator reported	32.07390067	-102.28069413	32.07401916	-102.2811164	LOCATION	802009
13	00347004	4H	Permitted Location	2	55	Coordinates - Operator reported	32.07443455	-102.27840584	32.07455297	-102.27882806	LOCATION	802010
14	00347005	5H	Permitted Location	2	55	Coordinates - Operator reported	32.07496815	-102.27611755	32.07508658	-102.27653971	LOCATION	802013

Live Demo

- Live Demo
  - https://gis.rrc.texas.gov/GISViewer/
  - Search and navigation
  - Well highlights
  - Identify a well
  - Well log
  - Historic well records (Neudocs)
  - Download wells

Digital Map Data (1 of 3)

- Data is free to download
  - Click on Resources, Resource Center and Data Sets



Digital Map Data (2 of 3)

- Choose your layer
  - Click on ArcView Shape File (Updated Nightly)
- Download zipped file by county
  - Counties are listed numerically by FIPS code.
- Open in GIS Software

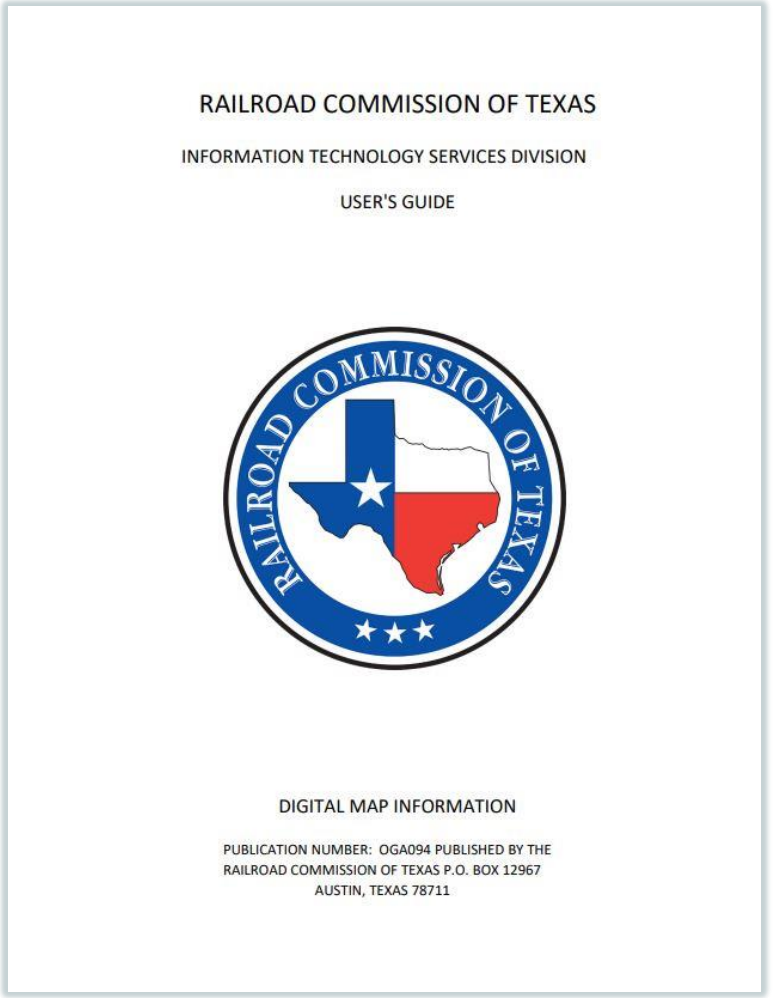
Digital Map Data

Data Set Description	Download	Manual	Updated	
Pipeline Layers By County	ArcView Shape File	PDF FIPS Code	Nightly	Details
Survey Layers By County	ArcView Shape File	PDF FIPS Code	Nightly	Details
Well Layers By County	ArcView Shape File	PDF FIPS Code	Nightly	Details
Base Layers By County	ArcView Shape File	PDF FIPS Code	Nightly	Details
All Layers By County	ArcView Shape File	PDF FIPS Code	Nightly	Details
Statewide API Data	ASCII Format	PDF	Nightly	Details
Statewide API Data	dBase Format	PDF	Nightly	Details

Digital Map Data (3 of 3)

Digital Map Information User Guide

- PDF Manual
- Projection Information
- Naming Conventions
- Attribute Descriptions
- FIPS Codes
- Reliability Codes



RAILROAD COMMISSION OF TEXAS

INFORMATION TECHNOLOGY SERVICES DIVISION

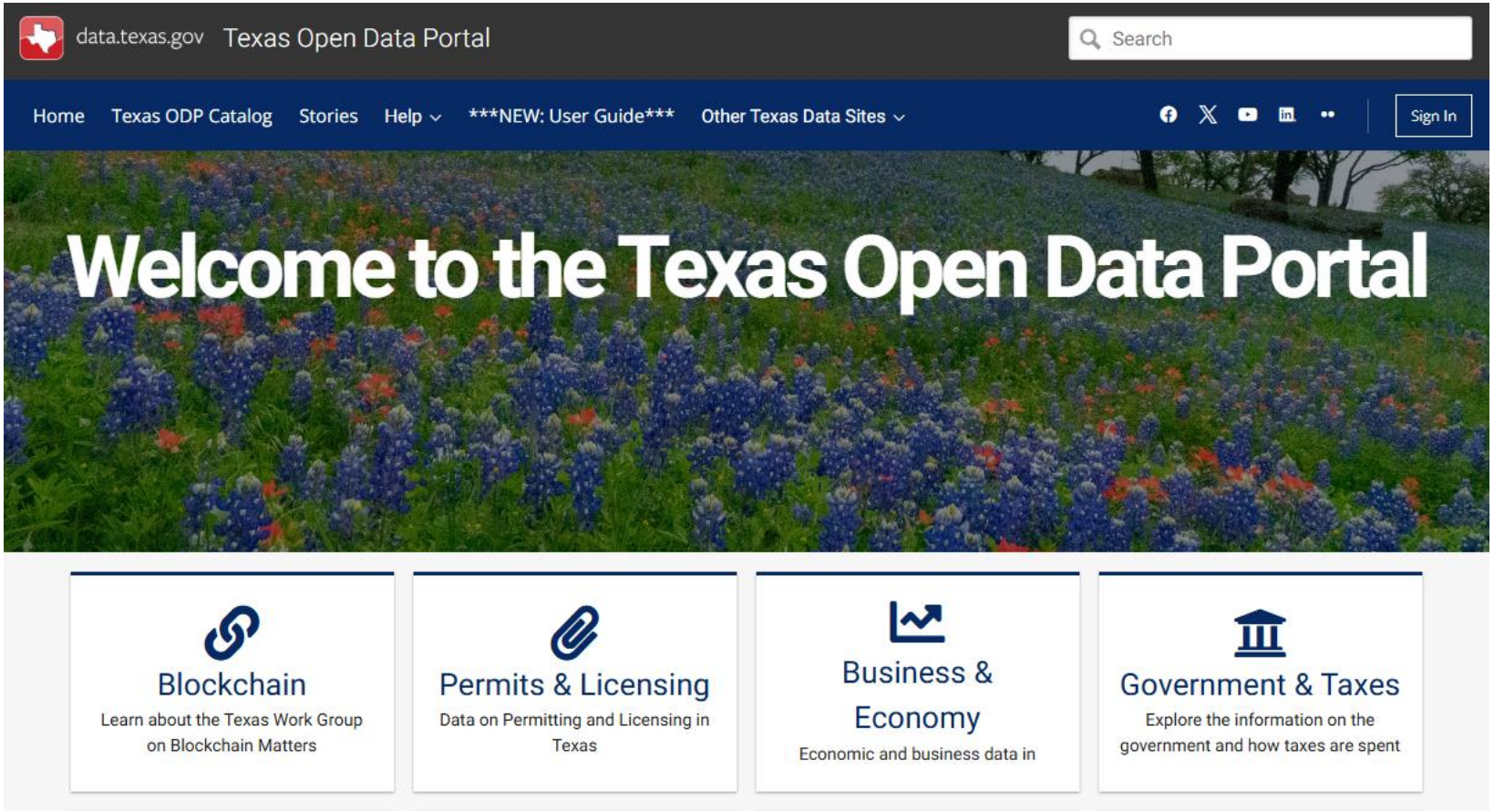
USER'S GUIDE

DIGITAL MAP INFORMATION

PUBLICATION NUMBER: OGA094 PUBLISHED BY THE RAILROAD COMMISSION OF TEXAS P.O. BOX 12967 AUSTIN, TEXAS 78711

Texas Open Data Portal (1 of 2)

- Official State of Texas repository for publicly accessible open data.



https://data.texas.gov/

Texas Open Data Portal (2 of 2)

- Data sets, visualizations, Filtered view, stories.
- Open the catalog.
- Sort using key words or publishing agency.
- View, visualize or export the data.
- Use Contact Dataset Owner button with:
  - Questions, concerns or suggestions.

Digital Map Data Use Case

- Using digital map data in Google Earth.
  - Designed for use in GIS software.
  - With some data manipulation digital map data can be imported into Google Earth.
- Demonstration will follow ‘Digital Map Data to Google Earth’ handout available with conference materials.

Questions?

Points of Contact

RRC Mapping
512-463-6851
RRC.Mapping@rrc.texas.gov

Mark Maddox
512-463-1834
Mark.Maddox@rrc.texas.gov

Chris Conn
512-463-6729
Chris.Conn@rrc.texas.gov