CHAPTER 2
DATA ACQUISITION

2.1 Objectives

To familiarize and learn to apply methods of acquiring publicly available data

2.2 Background

Well and log information for New Mexico can be accessed through several public domain sources. The Bureau of Mines is a repository of information available to the public. In the records room is hard copy of well logs, scout (completion) cards and production for the majority of wells in New Mexico. The GO-TECH website, administered by the Southwest PTTC, links to the New Mexico Oil Conservation Division online well and log data as well as production records.

The procedure to obtain online information begins by going to the website, http://octane.nmt.edu. Clicking on OCD will divert you to the image data website, http://ocdimage.emnrd.state.nm.us/. The screen below in Figure 2.1 will appear.

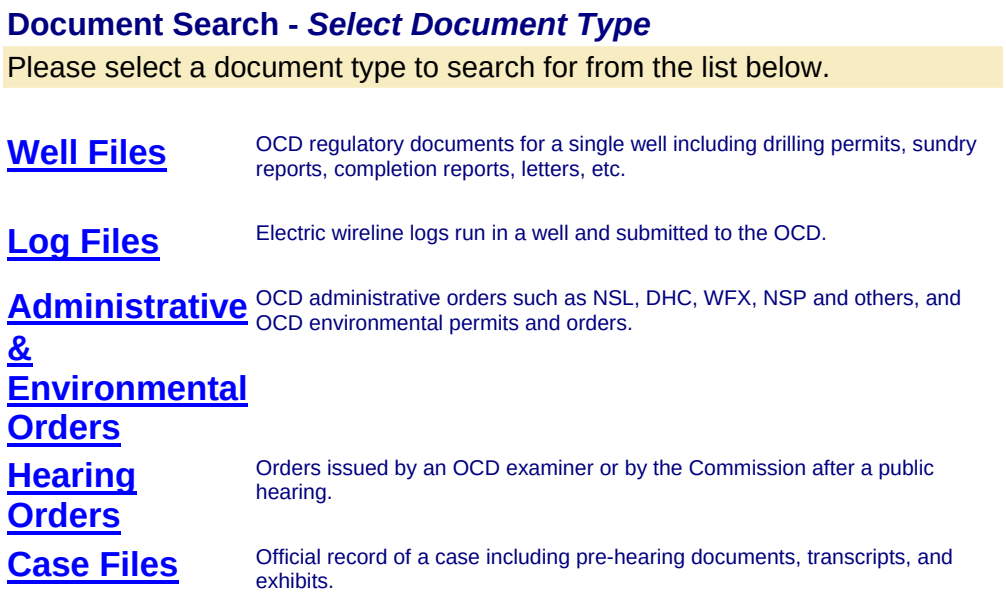

Figure 2.1 Document available on the NMOCD website

Select **Well Files** results in a menu of criteria to search for a given well or wells (Figure 2.2).

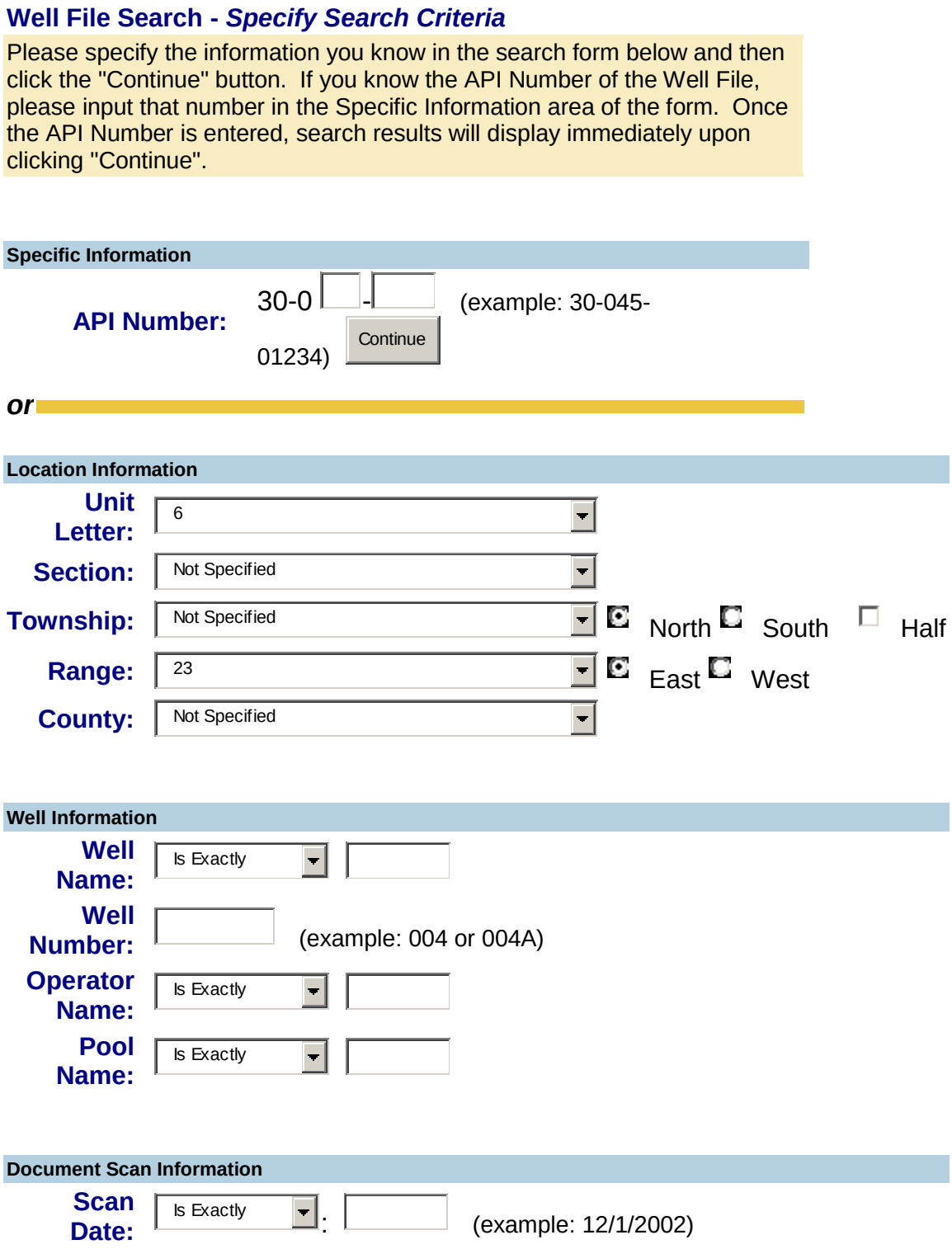

Figure 2.2 Search criteria for a well or wells

Input the appropriate information and images will appear on screen. You can open these images and view the contents or download as TIFF files to be opened later by some imaging software

program. Similarly, selecting **Log Files** will provide images of all logs for a given well, which can be viewed or downloaded.

Return to the GO-TECH website and select Ongard search. This will lead you to the production databases for New Mexico wells. Well-based production data is critical for many activities in the petroleum industry. In New Mexico, this data is collected by the Oil Conservation Division of the Energy, Minerals, and Natural Resources Department, a New Mexico state agency. The data is collected each month from producers for every production or injection well. Once collected, the data is entered into the Oil & Natural Gas Administration and Revenue Database (ONGARD) where it is used by other state agencies such as Taxation & Revenue and the State Land Office.

Once a month, OCD produces an ONGARD extract file (generally near the middle of the month). This file is made available to the public via FTP. This is the primary source for published production data in New Mexico and is used by all of the commercial data providers. It is also the source for GO-TECH's production database.

The production numbers in ONGARD, and its subsequent extract file, are generally a few months from being current due to filing lag times. On some wells this lag time can be longer. Instructions for a general production data search are shown below in Figure 2.3.

Instructions

Overview

This page allows users to search for wells using a variety of criteria. The form contains a number of blanks. Fill in as many blanks as you need to specify the data you want. Use the examples for the format of the entered data.

Give only the amount of information necessary to produce the result you need. For example, if you want to know all the producing wells in a particular section, you need only fill in township, range, and section. If you are only interested in wells operated by a particular producer, only fill in the producer name. The more specific your search, the fewer wells are likely to be returned by the query. If the search criteria is too general (eg., using "BP" as an operator name), too many wells may fit that criteria, which will slow the search.

Example Search

Search Fields

API NUMBER - API well number, a unique, permanent, numeric identifier assigned to a well by the NM OCD. In New Mexico, API numbers start with the state code 30 and are followed by a three-digit county code and a five-digit property code. Complete API codes must be entered.

UNIT LETTER - Letter (usually) or number describing a unit of land - ranges from 0 to 9 or A to Z.

SECTION - A number designating the section of land within a township. Sections range from 0 to 36.

TOWNSHIP - Townships are measured north or south relative to an east-west baseline in the state. Townships in New Mexico range from 1-33 south, and 1-32 north. There is one partial township in the state (20.5 S).

RANGE - Ranges describe rows of townships east or west of a central meridian. In New

Mexico they range from 1 to 21 East and 1 to 39 West.

OPERATOR NAME - Search by operating company's name. Partial names can be entered. If you want to know only wells for a specific company, use the SEARCH BY OPERATOR function found on the (http://octane.nmt.edu/TestGotech/Petroleum_Data/SpecificSearches.aspx)Specific Searches page.

POOL NAME - The name of the oil/gas pool in the oil field where the well is located. Partial names can be entered. If you want to search for wells in a specific pool and don't know the exact name, try using the POOL SEARCH funtion found on the (http://octane.nmt.edu/TestGotech/Petroleum_Data/SpecificSearches.aspx)Specific Searches page.

PROPERTY NAME - Corresponds to the well or lease name. Partial names can be entered.

COUNTY NAME - Search by the county name. This usually has too many results and is best used in conjunction with other search criteria. If you wish to get data for all the wells in a county, it is better to either download the (http://octane.nmt.edu/TestGotech/Petroleum_Data/allwells.aspx) for a three year summary of production by well, or to download monthly well data from the (http://octane.nmt.edu/TestGotech/Petroleum_Data/county.aspx)files.

START YEAR - Limit your results by the year. We have data for a very few wells back to 1969. The more recent years (post-1993) have more accurate data. If data is there for older years, it is typically correct. However, if the data reads zero production for a year, this may not be correct.

END YEAR - Limit the ending year for which you want production data.

Production/Injection - Limit the search by defining to display production or injection data

Ignore wells with no data? - Checking "Ignore wells with no data?" will omit wells with no associated production data from search results

Do you want summary? - Checking "Summary" provides a summary, by year, of whatever item(s) are used as search criteria. The Summary option allows you to summarize information on an annual basis for whatever item(s) you choose to search on. For example, if you use a particular operator or pool name, you will get back annual summaries by operator or by pool. If there are multiple possibilities for a search criteria (eg., using Yates as an operator will return several companies with Yates as part of the name), you can further refine your query, or you can summarize everything.

Data Fields

Company Name - The operating company's name.

API - This field can be clicked to get further details of that particular well.

WELL NAME - The name of the well

WELL NUMBER - The number of the well associated with the name of the well (For example: Barbie State #001)

SECTION - Section of the location of the well

TOWNSHIP - Township of the location of the well

RANGE - Range of the location of the well

Status - Well Status displays "Abandoned" or "Plugged"

Type - Fluid Types - Gas, Oil and Water

Resultant Data Fields : After clicking the 'API link' in the result table.

OGRID Number - A unique number that identifies the operating company. Sometimes a single company can have more than one OGRID number.

YEAR - The year when the well was operated

POOL NAME - The name of the oil/gas pool in the oil field where the well is located

MONTH - Displays the production data monthly

OIL (BBLS) - The number of barrels of oil produced

WATER (BBLS) - The number of barrels of water produced

GAS (MSCF) - The amount of gas produced

DAYS PRODUCED - number of days

ACCUM. OIL (BBLS) - Accumulated oil

ACCUM. GAS (MSC) - Accumulated gas

Clicking on the words "Summary of Production" in the well header section next to the pool name will cause a pop-up window to appear showing annual cumulatives for that well/pool combination. The first window shows annual cumulatives for all ONGARD data from 1993 onwards, along with what was claimed as the lifetime cumulative in December 1992 according to ONGARD. If we have other data (pre-1993) in our system, you can link to a second window showing annual cumulative production totals for all other years that we have data on a completion (well/pool combination).

Figure 2.3 Ongard instructions for general search of production data

The initial screen for an individual well search is shown in Figure 2.4.

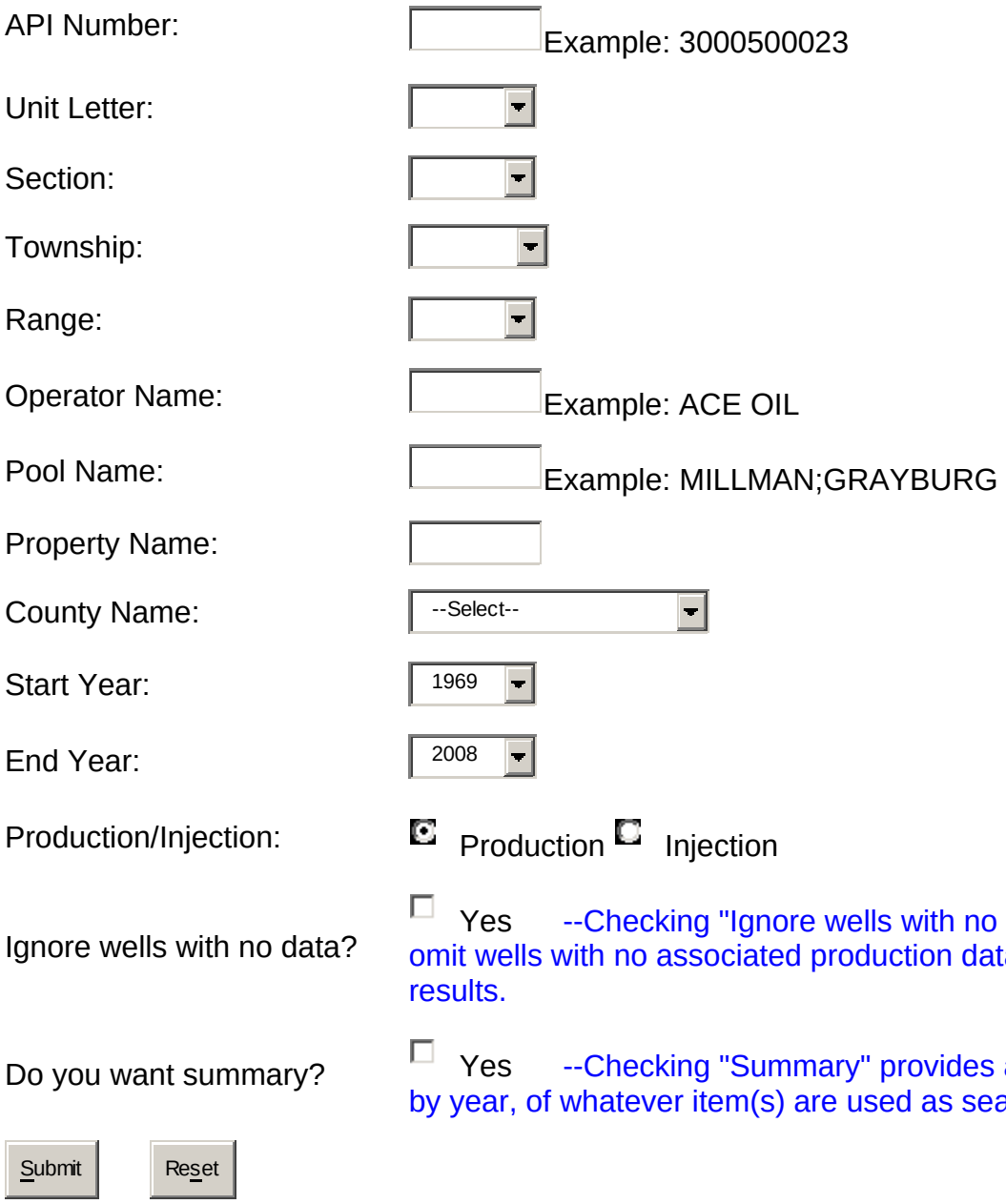

Figure 2.4 Production screen for an individual well

After selection, a screen will appear with the well name, operator, location for the selected well or group of wells. You can click on the highlighted API number to view the well's production data or select download to save the data as csv format, which can easily be viewed and saved in MS Excel™.

Class Exercise

Search the well files and production database for a well with the following API Number: 30-025-29219 and answer the following questions.

What is the Name of the Well? _____

Who is the operator? _____

What is the location of the well? _____

What is the poolname(s)? _____

What is the reservoir name(s)? _____

What is the cumulative oil, gas and/or water production for each reservoir?

_____BO _____Mscf _____BW

What is the latest month of production data available and the oil/gas/water production rates for this month for each reservoir?

_____MONTH

_____BOPM _____MCFPM _____BWPM

When was the well initially completed? _____

What is the perforation interval(s)? _____

What stimulation was performed on this interval? _____

Was there any subsequent workovers? Recompletions? _____

If so, describe the work. _____

_____

Who witnessed the openhole logging? _____