

**NORTH PLAINS GROUNDWATER  
CONSERVATION DISTRICT**

**METERING AND PRODUCTION  
REPORTING MANUAL**

**All Annual Production Reports  
Are Due Each Year Prior to  
March 1**

North Plains Groundwater  
Conservation District  
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## Chapter 1 Introduction

Since 2006, the North Plains Groundwater Conservation District has required owners of wells that are not otherwise exempt to install water meters on their wells, select a District approved water meter or alternative metering method, and annually report their groundwater production. Chapter 2 of this document provides the District's criteria for a well production to be exempt from metering and reporting. The District requires well owners to file Annual Production Reports by March 1<sup>st</sup> of each year for the preceding calendar year.

The District developed this Metering and Production Reporting Manual to provide technical requirements for measuring and reporting groundwater production in the District, as well as clarify who is exempt from measuring their groundwater withdrawals and reporting their annual production.

Throughout the manual the term "well owner" means the well owner or the well owner's authorized agent who is responsible for installing, operating and maintaining water metering devices or alternative metering method and responsible for filing annual production reports with the District. A well owner may designate another person to act on the well owner's behalf with the District through the designation of an "Authorized Agent". However, the well owner is ultimately responsible for compliance with the District's Rules.

The Manual may be amended by action of the Board of Directors at a properly posted Board Meeting and shall be an item on the agenda of that meeting.

The District maintains a website [www.npwd.org](http://www.npwd.org) that provides additional information about the District's Management Plan, District Rules and Conservation Programs. Copies of this Manual and all forms described associated with metering and reporting production are available from the District's website or from the District office by telephone (806)935-6401, Fax (806) 935-6633, by mail or in person at North Plains Groundwater Conservation District 603 East First Street, PO Box 795 Dumas, Texas 79029.

## **Chapter 2      Allowable Annual Production, Pooling and Conservation Reserves**

The District has established allowable annual production limits based on the size of the property where the well or wells are located. Within the District's rules, property means groundwater rights and is measured in contiguous acres. A well owner can place two or more contiguous, parcels of property under common ownership located within the District in a pooled groundwater unit. The most distant diagonal corners of the pooled groundwater unit cannot be more than 15,000 feet apart and cannot be larger than 1,600 acres. The District has established annual production limits as follows:

1. Through December 31, 2010, the Allowable Annual Production limit is no more than two (2) acre-feet per acre. The report for 2010 Annual Production is due March 1, 2011.
2. For the calendar year 2011, the Allowable Annual Production shall be one and three-quarter (1.75) acre-feet per acre. The report for 2011 Annual Production is due March 1, 2012.
3. Beginning January 1, 2012, the Allowable Annual Production shall be one and one-half (1.5) acre-feet per acre. The report for 2012 Annual Production is due March 1, 2013. Annual production reports are due on March 1st of each year for the preceding calendar year.

Beginning in 2010, the District established a Conservation Reserve Program for properties that produced less than the allowable production amount. Well owner may accumulate a Conservation Reserve by reserving all, or a portion of, the current year's Allowable Annual Production on a property. The well owner may apply the Conservation Reserve to increase the Property's Allowable Annual Production over the next two.

Well owners may only take advantage of the Conservation Reserve Program if they file their Annual Production Reports by the due date. The District Rules provide additional and specific requirements for Allowable Annual Production and the Conservation Reserve Program.

## **Chapter 3      General Metering and Reporting Requirements**

The total groundwater produced from any and all properties is required by District rule to be metered and reported to the District. The production of groundwater, the metering of groundwater and the reporting of groundwater production to the District is subject to District Rules and this Metering and Production Reporting Manual.

### **A. Well Owner is Responsible for Metering and Production Reporting.**

The well owner is responsible for installing, maintaining, and operating District Approved Water Meters, properly using District alternative metering methods and filing production reports with the District. The owner may delegate that responsibility to another person or entity through an agent authorization form filed with the District. Ultimately, the well owner is responsible for complying with District Rules on the owner's property. The District may revoke an authorized agent designation or may sue an agent if the agent fails to comply with District Rules.

### **B. District Requires Metering and Registration**

Except as provided in the District Rules, before a well or a well system can legally produce groundwater, the well owner must:

1. Equip the well or multiple well system with a District approved water meter or a District approved alternative metering method based on this Manual;
2. Register the water meter or alternative metering method with the District;
3. Furnish all required information for the water meter or alternative metering method to the District;
4. Keep the water meter or alternative metering method in place at all times; and
5. Maintain the water meter or alternative metering method to accurately measure groundwater production.

### **C. Production Exempt from Metering or Reporting**

Wells exempt from reporting production are as follows:

1. A well used solely for domestic use or for providing water for livestock or poultry on a tract of land larger than 10 acres that is either drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day (17.5 gallons of groundwater per minute).
2. A well that supplies groundwater for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas, provided that the person holding the permit is responsible for drilling and operating the water well and the well is located on the same lease or field associated with the drilling rig.

3. A well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code, or for production from such a well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water.
4. A well used solely for monitoring purposes.
5. A well used solely for remediation of the groundwater quality.
6. A closed loop well used solely for heat exchange.

A well may lose its exemption. If a well originally exempted from metering and production reporting no longer conforms to the exemptions described above, the well owner must file an application with the District for a permit and comply with all District Rules. If the well is no longer exempt and cannot comply with all District Rules then it must be plugged.

Occasionally a well owner may wish to seek a permit for an existing well or a proposed well that is otherwise exempt under District Rules. The well owner may file a permit application with the District prior to drilling the proposed well or converting an existing well to a non-exempt purpose. If a permit application is filed with the District, the well must comply with all District Rules.

The District does not recognize partial exempt production from a well. If a well produces groundwater for any non-exempt purpose then all of the groundwater produced from the well must be reported and the well does not qualify for exempt status.

#### **D. Annual Production Reporting General Requirements**

The District requires owner of wells that do not qualify for exempt status under Section B (Production Exempt from Metering and Reporting) of this Chapter to properly report annual production. The well owner must:

1. File all annual production reports and all supporting documentation no later than March 1st of each year on a form approved by the District;
2. File all production reports by mail, scanned legible email, or in person at the District office. Note – the District will not accept faxed annual production reports or supporting documentation because faxes are often illegible;
3. Report total annual production in acre feet for each property unless otherwise specified by the District;
4. Calculate annual production based on readings from the water metering device or the alternative metering method;
5. Provide all supporting documentation required by the District for the selected metering device or alternative metering method;
6. Comply with all reporting requirements that are specific to the water meter or alternative metering method selected; and
7. Sign and certify that the information is true and correct.

Submitting only part of the required documentation for annual production reporting does not constitute a proper filing. The District requires well owner to properly file annual production report that includes all of the required documentation by no later than March 1<sup>st</sup> of each year after year groundwater is produced.

### **E. Forms and the District Website**

Copies of this Manual and all forms described with metering and reporting production are available from the District's website [www.npwd.org](http://www.npwd.org) or from the District office by telephone (806)935-6401, Fax (806)935-6633, by mail or in person at North Plains Groundwater Conservation District 603 East First Street, PO Box 795 Dumas, Texas 79029.

### **F. Metering Device Shall Remain on Well**

The metering device shall remain on the well, or on the multiple well system, and shall be in proper operating condition at all times. A water metering device or an alternative metering method may only be removed or otherwise disabled for repair or replacement. The well owner must notify the District that the equipment has been disabled within 30 days. During a period that the water meter device is removed or otherwise disabled, groundwater may not be withdrawn from the well, unless an alternative measuring method has been approved by the District for calculating groundwater production. For a water meter device that ceases to operate correctly, the District requires the well owner to provide the following information:

1. Metering device description or serial number;
2. Metering device location;
3. Date the metering device ceased to operate correctly; and
4. Totalizer reading of the metering device or the calculated groundwater use at the time of removal or repair.

### **G. District Approved Metering Device Registration**

To register a metering device, the well owner must contact the District within 30 days of installation of a new water meter device or a repaired water meter device to set up an appointment for a meter inspection by the District staff to register the device. The well owner is responsible for all registration information not collected during the field inspection. The registration shall contain all of the following information:

1. A list or map of all wells connected to the water meter device;
2. The water meter device's brand name;
3. The water meter device's serial number;
4. The date of installation and whether the device is an existing, a replacement, or a new meter; and
5. The initial totalizer reading on a new or a replacement water metering device.

### **H. District Approved Alternative Metering Method Registration**

A well owner must register any change to an alternative metering method before October 1 of the year to be reported. To register a metering method the owner shall contact the District office to verify the method is approved and provided the following information:

1. The owner's and agent's name, address and contact information;
2. The physical address of the property upon which the alternative metering method is located;
3. A description of whether the method measures production from a well or from a multiple well system;
4. Identify the wells for which the alternative metering method estimates groundwater production; and
5. The energy supplier and meter number if reporting by natural gas or electricity.

### **I. Waiver of Defense**

A well owner selecting an alternative metering method agrees to accept and be bound by the calculations from the alternative metering method and to waive any and all defenses as to the accuracy and reliability of the alternative metering method selected.

### **J. Tampering with Meters or Alternative Metering Methods**

Willfully bypassing, disabling, tampering with, or through other actions preventing a District approved water metering device or District approved alternative metering method from accounting for, measuring and recording the total volume of water produced, within the accuracy limits specified by the District's Rules, is prohibited.

## Chapter 4 Mechanical and Electronic Water Meters

All water meters must be types that are approved by the District. In the instance where the District requires installation of water meter devices on specific wells, the water meter shall be installed as close to the well as practical and reasonable and installed in such a manner that the entire flow and volume of water produced from the well is accurately measured and recorded.

### A. Water Meter Device Specifications

If a well owner constructs and adds a new well or reactivates an unused well in a multiple well system that uses common production piping, then the well owner must install water meter devices to measure all of the groundwater production for the multiple well system.

### B. Water Meter Device Specifications

A water meter device is a mechanical or electronic flow meter which accounts for the total volume of water passing through the meter and must be properly installed or modified to meet all of the following specifications:

1. Shall have a certified error of not greater than  $\pm$  five percent;
2. Totalizer shall measure in gallons, acre-feet or acre-inches;
3. Shall have a non-resettable totalizer, or lock box with resettable digital readout;
4. If the totalizer and instantaneous flow indicator are part of a system control panel or within a lockbox, the owner or authorized agent shall make himself available within 24 hours notice to operate the control panel for District personnel for the purposes of field inspection;
5. Shall have a totalizing register that has the capacity to record the total quantity of groundwater withdrawn from the aquifer for at least one full year;
6. Shall be installed according to the manufacturer's standards, instructions, or recommendations; and
7. Shall have a minimum totalizer capacity based on well classification as follows:

**Table 1 - Minimum Meter Totalizer Requirements**

Well Capacity (GPM)	Well Classification	Minimum Totalizer Capacity in Gallons	Minimum Totalizer Capacity in Acre-feet	Minimum Totalizer Capacity in Acre-inches
0 - 17	S	17,870,400	60	720
18 - 100	A	52,560,000	160	1,920
101 - 400	B	210,240,000	650	7,800

401 – 800	C	420,480,000	1,290	15,480
801 – 1800	D	946,080,000	2,900	34,800

### C. Reporting Production with Water Metering Devices

The District will provide annual production reporting forms in December. If you have not received your production report by **January 1<sup>st</sup>**, please contact the District. The form will include information about each reporting property. The form may request well information, water use information and information about the water meter device or alternative metering method. To report groundwater production using a water metering device, the well owner shall provide the District with:

1. The totalizer reading from each meter on the property as of December 31 (The totalizer reading date may be prior to December 31 if the well owner does not plan to operate the well for the remainder of the calendar year);
2. The totalizer units (e.g. gallons, acre-inches, acre-feet, etc); and
3. The multiplier

### D. How to Read a Water Meter

The District water meter specifications allows for a wide variety of mechanical and electronic water meter types to fit a well owner’s specific application. The District and Manufacturers commonly use following terms:

1. **Instantaneous Flow Indicator:** The volume of water passing through meter at a specific instance. It is usually indicated by a dial and needle pointer or may be a digital display.
2. **Multiplier:** A number the totalizer must be multiplied by to get the reading Gallons (1, 10, 100 or 1000), Acre Inches (.01), Acre Feet (.001).
3. **Totalizer Units:** The units of volume that the meter records such as gallons, acre inches, or acre feet.
4. **Totalizer:** An instrument or register that accumulates and records the total. A totalizer may record in gallons, acre inches or acre feet.

The following examples show metering devices and how to read and calculate groundwater production from the devices. If a well owner needs assistance in reading a water meter device, please contact the District offices. The District will work with any well owner in the District on how to read a water meter.

*Example 1- Meter Reading in Acre feet*



The instantaneous flow for the water meter above reads in gallons per minute. The totalizer units are acre-feet and the totalizer reading is 318,123. The multiplier is 0.001. Multiply the totalizer reading of 318,123 by the multiplier of 0.001. This results in 318.123 acre-feet recorded or used ( $318,123 \times 0.001 = 318.123$ ).

*Example 2- Meter Reading in Gallons*



The instantaneous flow for the meter above reads in gallons per minute. The totalizer units are gallons. The totalizer reading is 109,267. The multiplier is 100. Multiply the totalizer reading of 109,267 by the totalizer multiplier of 100. This results in a calculation of 10,926,700 gallons. Divide the 10,926,700 gallons by 325,851 (the number of gallons in one acre foot), and this results in 33.53 acre feet recorded or used ( $109,267 \times 100 \div 325,851 = 33.53$ ).

### *Example 3- Meter Reading in Acre Inches*



The instantaneous flow for this meter reads in gallons per minute (GPM).

The totalizer units are acre-inches.

The totalizer reading is 015,899.

The multiplier is .01.

Multiply the totalizer reading of 15,899 by the multiplier of 0.01. This results in a calculation of 158.99 acre-inches of water. Divide 158.99 acre inches by 12 inches per foot, and the result is 13.249 acre feet ( $15,899 \times 0.01 \div 12 = 13.249$ ).

### *Example 4 - Meter Reading in Cubic Meters with a Decimal Ending*



The instantaneous flow for the meter in Example 4 reads in 100 gallons per minute.

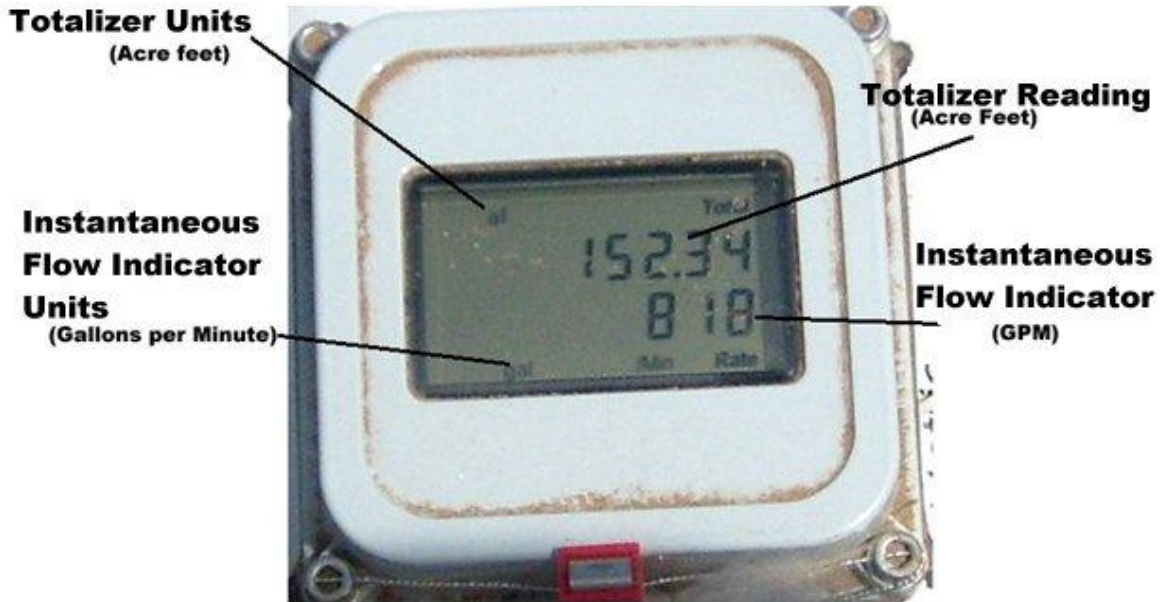
The totalizer units are cubic meters.

The totalizer reading is 4798.3 cubic meters.

There isn't a meter multiplier factor in this instance.

One cubic meter is equal to 264.172052 gallons. Multiply the totalizer reading of 4798.3 cubic meters by 264.172052 gallons per cubic meter. This results in 1,267,576.7 gallons. Divide the 1,267,576.7 gallons by 325,851 (the number of gallons in one acre foot), and this results in 3.89 acre feet ( $4798.3 \times 264.172052 \div 325,851 = 3.89$ ).

### Example 5 - Electronic Meter Reading in Acre Feet

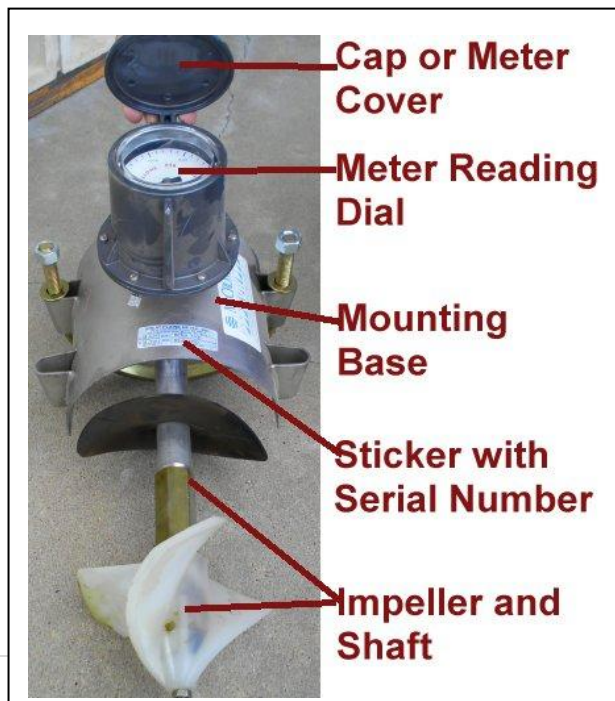


The Electronic meter in Example 5 is reading 818 gallons per minute and the totalizer reads 152.34 acre feet. No calculations are necessary. Directly report the totalizer reading when the totalizer is in acre feet and there is no multiplier.

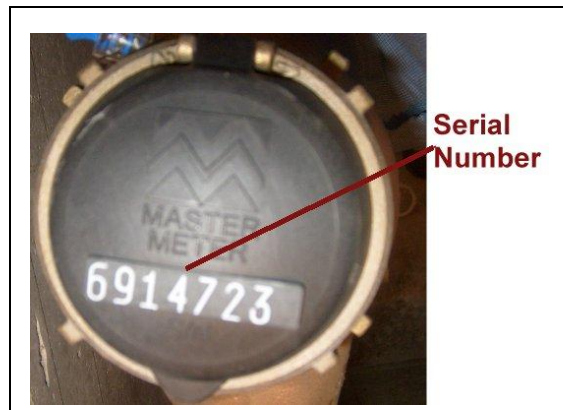
### E. Meter Serial Number Locations

Meter serial numbers may be located in several locations on a water meter or hour meter depending on the particular Brand and Model. Some are located on the cap that covers the reading dial, the meter reading dial, the body of the meter and some on the mounting base of the meter. Serial numbers may be on a sticker or imprinted into the metal of the meter.

### Example 1 - Meter Components, Serial Number on Cap and Sticker



### Example 2 - Serial Number on Cap



*Example 3 - Serial Number on Mounting Base*



## Chapter 5 Alternative Metering Methods

The District has approved certain alternative metering methods as acceptable for reporting production. The District will provide annual production reporting forms in December. If you have not received your production report by January 1<sup>st</sup>, please contact the District. The form will include information about each reporting property. The form may request well information, water use information and information about the alternative metering method.

***Failure to maintain the selected alternative metering method or failure to provide all of the required supporting documentation prescribed by the District constitutes abandonment of the alternative metering method, and the District will require the well owner to report groundwater production by a water metering device or other alternative metering method.***

### A. Who May use an Alternative Metering Method

The owner of a well in existence prior to October 14, 2003, may select a District approved alternative metering method, subject to the requirements of this document and the District rules for those wells.

### B. When a Flow Meter is an Alternative Metering Method

When an electronic or mechanical flow meter fails to meet all the requirements of the “Metering and Production Reporting Manual” for using a flow meter to measure, record and report production, the District may choose to allow the meter to function as an alternative metering device.

### C. Natural Gas Consumption as an Alternative Metering Method

To use natural gas consumption as an alternative metering method and for reporting purposes the following apply:

1. The well owner shall provide the total natural gas use for the year for each well, each property using multiple meters, or the combined total fuel use where only one meter from the power supplier is used for billing.
2. The monthly use amounts must be converted to MCF if the billing units are in MMBTU (divide the monthly MMBTU use by the BTU Factor to convert).
3. The monthly use amounts will be added together and the total yearly MCF's shall be multiplied by .083 (conversion number for MCF to acre feet) to calculate acre feet of water production.
4. The well owner must supply supporting documentation which must be legible and contain **all** of the following information: name of the energy supplier, meter serial number, monthly usage, meter's unit of measure (MCF or MMBTU), and the BTU Factor when applicable. Copies of natural gas bills or summaries will be accepted as long as all pertinent information is supplied.

**Failure to supply copies of all the natural gas invoices constitutes abandonment of the alternative metering method, and the District will require the well owner to report groundwater production by a water metering device or other alternative metering method.**

### D. Reading a Natural Gas Bill

The District requires well owners reporting groundwater production based on natural gas consumption to furnish certain information so the District staff is able to verify the owner’s calculations and reports. The District requires the well owner to provide the natural gas supplier, the meter serial number, the units of measure, the BTU factor (if applicable,) and copies of the natural gas invoices for each month of the calendar year when filing the well owner’s Annual Production Report.

Examples of locating the correct information on the invoices of local natural gas suppliers and calculating the corresponding groundwater production follows:

#### Natural Gas Example 1. How to Calculate Water Production Using Natural Gas Bills in MCF

To calculate water produced using the sample natural gas invoice pictured below: Multiply the “Usage” (1,628.3) by “0.083” (conversion factor for MCF to acre-feet), 1,628.3 X 0.083 = 135.15 acre-feet of water. This invoice does not use a BTU Factor.

**WEST TEXAS GAS, INC**  
 P O BOX 39 DALHART, TX 79022-0000  
 TELEPHONE 806-244-4513  
 OFFICE HOURS 8:00 A.M. TO 5:00 P.M.

**ACCOUNT NUMBER** 123-456-789-00  
**BILL DATE** 8/12/2008  
**DUE DATE** 8/28/2008  
**AMOUNT DUE** 19360.49

PLEASE MAKE CHECKS PAYABLE TO: WEST TEXAS GAS, INC.

SERVICE LOCATION		SERVICE FROM	SERVICE THRU	NUMBER OF DAYS		
Service Location		6/26/08	7/31/08	35 DAYS		
Charge Type	Meter Number	Previous Read	Current Read	Usage	UOM	Charges
328 DALHART IRRIG INDEX	01-23456	7419.3	8030.5	1628.3	MCF	19360.49
<b>Current Charges</b>						19360.49
<b>Meter Serial Number</b>						
<b>Usage</b>						
<b>Unit of Measure</b>						
<b>METER FACTOR</b> 2.664116						
PREVIOUS ACCOUNT BALANCE						10665.34
LATE PAYMENT CHARGES						.00
PAYMENTS (THANK YOU)						10665.34
CURRENT CHARGES						19360.49
ADJUSTMENTS						.00
<b>PRESENT ACCOUNT BALANCE</b>						19360.49

PLEASE RETURN THIS STUB WITH YOUR PAYMENT

ACCOUNT NUMBER	BILL DATE	SERVICE FROM	SERVICE THRU	DUE DATE	PAY ON OR BEFORE DUE DATE	PAY AFTER DUE DATE
012-345-6789-00	8/12/08	6/26/08	7/31/08	8/28/08	19360.49	21296.54


IF PAYING IN PERSON PLEASE BRING ENTIRE BILL.  
 IF MAILING PLEASE REMOVE BOTTOM PORTION AND RETURN WITH YOUR PAYMENT TO:

**AMOUNT PAID**

WEST TEXAS GAS, INC.  
 P O BOX 39 DALHART, TX 79022

#### Natural Gas Example 2. How to Calculate Water Production Using Natural Gas Bills in MMBTU

To calculate water produced using the sample West Texas Gas, Inc. natural gas invoice pictured below: Divide the "Use" (314.5 MMBTU in this example) by the BTU Factor (1.029300 in this example) to get MCF,  $314.5 / 1.029300 = 305.55$  MCF. Then multiply the MCF (305.55) by "0.083" (conversion number for MCF to acre-feet),  $305.55 \times 0.083 = 25.36$  acre-feet of water. This invoice uses a BTU Factor that must be supplied to the District.



**WEST TEXAS GAS, INC**  
 P.O. BOX 1005  
 CANADIAN, TX 79014-1005  
 TELEPHONE 806-323-6464  
 OFFICE HOURS  
 8:00 A.M. TO 5:00 P.M.

ACCOUNT NUMBER	012-345-6789-00
BILL DATE	4/09/2008
DUE DATE	4/25/2008
AMOUNT DUE	2905.98

PLEASE MAKE CHECKS PAYABLE TO:  
WEST TEXAS GAS, INC.

Name  
Address  
City St. Zip

Energy Supplier

CHANGE TYPE	METER NUMBER	PREVIOUS READ	CURRENT READ	USAGE	UOM	CHARGES
SI B46 HENDERSON HANSF	X12345	7744.7	8050.2	314.5	MMBTU	2905.98
202 SPEARMAN IRRIG MAIN						2905.98
<b>CURRENT CHARGES</b>						<b>2905.98</b>

Meter Serial Number →

Usage →

Unit of Measure →


BTU FACTOR 1.029300

BTU Factor ↑

PREVIOUS ACCOUNT BALANCE	10.00
LATE PAYMENT CHARGES	.00
PAYMENTS (THANK YOU)	10.00
CURRENT CHARGES	2905.98
ADJUSTMENTS	.00
<b>PRESENT ACCOUNT BALANCE</b>	<b>2905.98</b>

PLEASE RETURN THIS STUB WITH YOUR PAYMENT

ACCOUNT NUMBER	BILL DATE	SERVICE FROM	SERVICE THRU	DUE DATE	PAY ON OR BEFORE DUE DATE	PAY AFTER DUE DATE
012-345-6789-00	4/09/08	2/20/08	3/27/08	4/25/08	2905.98	2905.98



Name  
Address  
City St. Zip

AMOUNT PAID

WEST TEXAS GAS, INC.  
P.O. BOX 1005  
CANADIAN, TX 79014-1005

## E. Incomplete Natural Gas Summary Reports Are Not Acceptable

Some natural gas account summaries may be one or more sheets and necessary information is missing from one or both pages. In Example 1, the page does not show the company name, meter serial number, unit of measure, BTU factor, a missing decimal in the consumption, and is not clearly labeled. Improper placement of the decimal may cause miscalculation of the use by a factor of 10. Summary reports are printed in small font making report difficult if not impossible to read if the pages are received by fax. Example 2, Page 2 has the same flaws as page one although a serial number is present.

### Natural Gas Account Summary Example 1, Page 1.

1/12/2008 14:03:22 Account Detail History Report Page 1

----- Service Address ----- Mailing Address -----

Date	Amount	Total Charges	Due On Bill	Payment Date	Amount	Balance	Desc	Service	Conn	Charges	Days	Taxes	Read Date	Yet	Reading
1/09/2008	.00	11.36	11.36			11.36		G GAS	21	11.36	27	.00	12/29/2008		63237
12/11/2008	.00	.00	.00					G GAS		.00	29	.00	12/02/2008		63232
11/10/2008	.00	.00	.00					G GAS		.00	32	.00	11/03/2008		63232
10/08/2008	.00	19,113.64	19,113.64	10/22/2008	19,113.64			G GAS	26845	19,113.64	32	.00	10/02/2008		63232
9/09/2008	727.61	38,744.87	38,037.26	9/26/2008	38,037.26			G GAS	46070	38,744.87	32	.00	8/18/2008		56806
9/08/2008	.00	727.61	727.61			727.61									
8/11/2008	.63	92,397.76	92,398.39	8/28/2008	92,398.39			G GAS	75985	92,397.76	33	.00	7/30/2008		45778
7/10/2008	.00	60,078.53	60,078.83	7/23/2008	60,077.90	.63		G GAS	56785	60,078.53	29	.00	6/27/2008		27589
6/10/2008	.00	13,238.34	13,238.34	6/23/2008	13,238.34			G GAS	12766	13,238.34	30	.00	5/29/2008		13996
5/09/2008	.00	6,127.70	6,128.20	5/23/2008	6,128.20			D GAS	6801	6,127.70	33	.00	4/29/2008		10940
								X NT SURCHG	6801	.50	33	.00	4/29/2008		10940
4/08/2008	.00	11,839.63	11,839.63	4/21/2008	11,839.63			G GAS	13531	11,839.63	28	.00	3/27/2008		9312
3/08/2008	.00	.00	.00					G GAS		.00	29	.00	2/26/2008		6073
2/08/2008	.00	.00	.00												
1/09/2008	.00	17.75	17.75	1/22/2008	17.75			G GAS	25	17.75	28	.00	12/27/2007		6073
Accounts Totals		240,842.47			240,831.11					261,870.08					

### Natural Gas Account Summary Example 2, Page 2.

1/12/08 14:03:22 Account Detail History Report Page 2

Service	Date	Meter#	Read Date	Reading	Conn	Charges	Taxes	Demand
GAS	1/09/2008	1234567	12/29/2008	63237	21	11.36	.00	
	12/11/2008	1234567	12/02/2008	63232		.00	.00	
	11/10/2008	1234567	11/03/2008	63232		.00	.00	
	10/08/2008	1234567	10/02/2008	63232	26845	19,113.64	.00	
	9/09/2008	1234567	8/31/2008	56806	46070	38,744.87	.00	
	8/11/2008	1234567	7/30/2008	45778	75985	92,397.76	.00	
	7/10/2008	1234567	6/27/2008	27589	56785	60,078.53	.00	
	6/10/2008	1234567	5/29/2008	13996	12766	13,238.34	.00	
	5/09/2008	1234567	4/29/2008	10940	6801	6,127.70	.00	
	4/08/2008	1234567	3/27/2008	9312	13531	11,839.63	.00	
	3/08/2008	1234567	2/28/2008	6073		.00	.00	
	2/08/2008	1234567	1/30/2008	6073		.00	.00	
	1/09/2008	1234567	12/27/2007	6073	25	17.75	.00	
Total . . . :						241,569.58		
NT SURCHG	5/09/2008	1234567	4/29/2008	10940	6801	.50	.00	
Total . . . :						.50		

## F. Electric Consumption as an Alternative Metering Method

For well owners that use Electric consumption as an alternative metering method and for reporting purposes the following apply:

1. The well owner shall provide the total Electric consumption for the year for each well, each property using multiple Electric meters or the combined total Electric consumption where only one meter from the power supplier is used for billing.
2. The monthly use amounts will be added together and the total yearly KWH's used shall be multiplied by .0011 (conversion number for KWH to acre feet) to calculate acre feet of groundwater production.
3. The well owner must supply copies of the electricity invoices or complete account summaries for the reporting year.
4. The electric meter must be located on the reporting property.


***Failure to supply copies of all of the electric invoices constitutes abandonment of the alternative metering method, and the District will require the well owner to report groundwater production by a water metering device or other alternative metering method.***

## G. How to Read an Electric Bill

The District requires well owners reporting water production based on Electric consumption calculations furnish certain documentation the well owners Annual Production Report can be verified. When reporting groundwater production on District Production Reporting forms, the energy supplier, the meter serial number, the units of measure and copies of the electricity invoices for each month of the calendar year are required to be filed with the production report. Examples of locating the correct information, on the invoices of several local electric energy suppliers and calculating the corresponding groundwater production are show below.

**Electricity Example 1. How to Calculate Water Production Using Electricity Bills in Kilowatt Hours, Xcel Energy**

To calculate water produced using the sample Xcel Energy invoice pictured below, multiply the "Kilowatt-Hours Used" (12,320) by "0.0011" (conversion factor for Kilowatt-hours to acre-feet),  $12,320 \times 0.0011 = 13.55$  acre-feet of groundwater.



**Energy Supplier** → **SOUTHWESTERN PUBLIC SERVICE COMPANY**  
P O BOX 1261  
AMARILLO, TX 79105-1261  
(800) 481-4700

Page 1 of 1

Customer Name	Service Address	Due Date	Account No.	Amount Due
Name	Address	Jun 09, 2008	01-2345678-0	\$1,265.49

Account Activity			
Date of Bill	May 21, 2008	Previous Balance	\$1,560.72
Number of Payments Received	1	Total Payments	<u>(\$1,560.72)</u>
Number of Days in Billing Period	29	Balance Forward	\$0.00
Statement Number	01234567890	+ Current Bill	\$1,265.49
Premisa Number	01234567890	Current Balance	\$1,265.49

Electric Service - Account Summary					
Invoice Number	09876543210	Sec General Svc	\$36.96		
Meter No.	01234567890	Demand	\$481.00		
Rate	SG	Pur Pwr Cost Rec	\$24.61		
Current Reading	18530	Actual 05/21/2008	Off Sys Sales Cr	\$0.00	
Previous Reading	18222	Actual 04/22/2008	Off Sys Sales Int	\$0.00	
Multiplier	40.000	Fuel Surcharge	\$49.97		
Measured Usage	308	Fuel Sur Int	\$3.77		
Kilowatt-Hours Used	12320	Service Availability	\$25.35		
Measured Demand	1.630 kW	Actual	Fuel Cost Factor 0.041422 x	3398.62	\$140.78
Billed Demand	65 kW	Actual	Fuel Cost Factor 0.063034 x	8921.38	\$473.14
			Subtotal		\$1,235.58

Comparison Information				
		Billing Period	Kwh Usage/Month	Avg. Daily Temp.
Electric	\$1,265.49 per month	This Year	12400	62°
	\$43.64 per day	Last Year	0	61°

Customer Messages

Thank you for your payment.

**Usage**                      **Meter Serial Number**

**Electricity Example 2. How to Calculate Water Production Using Electricity Bills in Kilowatt Hours, Rita Blanca Electric Cooperative, Inc.**

To calculate water produced using the sample Rita Blanca invoice pictured below, multiply the "KWH Used" (1,203) by "0.0011" (conversion number for Kilowatt-hours to acre-feet), 1,203 X 0.0011 = 1.32 acre-feet of water.

**Energy Supplier**

Invoice: 11354

**Rita Blanca Electric Cooperative, Inc.**  
 1428 US HWY 87 PO BOX 1947  
 Dalhart TX 79022-5947  
 (806) 249-4506  
 A Teutotom Energy Partner

LOCAL: 806/249-4506  
 TOLL FREE: 800/299-4506  
 FAX: 806/249-5620

**Meter Serial Number**

Name Address City State Zip  
 Irrigation Well xxHP Sec XX 0000123456  
 Irrigation Well xxHP Sec XX 123456 1-11-11-1

PH: 806-249-4506

Page #: 1 of 3

Billing Date: 02/29/2008

Amount Due: 1,422.46

Due Date: 03/17/2008

\*\*\*REMINDER NOTICE\*\*\*ANNUAL MEETING-WEDNESDAY MARCH 19@ 12:00 PM RITA BLANCA LAKE COLISEUM. WE HOPE TO SEE YOU AT THE MEETING!

Account #	Total Amount	Mult	Previous Reading	Present Reading	KWH Used	Energy Charge	Customer Charge	Tax Charge
Service Address Meter # / Map #	Rate	Service From:	Service To:	Demand Used	Demand Charge	GSEC Return	Security Light	
0000123456 Stockwell Sec XX 123456 1-11-11-1	8.50	1.0000	0	0	0	.00	8.50	.00
0000123456 Irrigation Well xxHP Sec XX 123456 1-11-11-1	57.63	1.0000	55955	55979	24	1.24	56.25	.00
			(DEMAND MULT. 1.00000)			.14	.00	.00
0000123456 Irrigation Well xxHP Sec XX 123456 1-11-11-1	217.99	1.0000	75705	76908	1203	62.29	56.25	.00
			(DEMAND MULT. 1.00000)		22.100	99.45	.00	.00
0000123456 Irrigation Well xxHP Sec XX 123456 1-11-11-1	20.71	1.0000	2551	2707	156	12.21	8.50	.00
			(DEMAND MULT. 1.00000)		.000	.00	.00	.00
0000123456 Irrigation Well xxHP Sec XX 123456 1-11-11-1	8.50	1.0000	1017	1017	0	.00	8.50	.00
			(DEMAND MULT. 1.00000)		.000	.00	.00	.00

## H. Diesel, Gasoline, and LP as Alternative Metering Methods

***Owners using Diesel as an alternative metering method on January 1, 2011, may continue to use this method until another alternative metering method is selected, meters are installed on wells, or December 31, 2012, at which time this method will no longer be an accepted alternative metering method. Gasoline and LP Alternative Metering Methods are discontinued after January 1, 2011.*** At that time a water metering device or other alternative metering method must be in place. Owners of wells that are eligible to use another alternative metering devices shall not be allowed to change to diesel, gasoline or LP methods after January 1, 2011.

### ***How to Calculate Groundwater Production using Diesel Consumption:***

1. An inline positive displacement meter shall be installed between the fuel supply tank and the engine.
2. The positive displacement meter shall have a rated accuracy of plus or minus two percent.
3. The meter registry shall have a visual, volume recording totalizer which shall record in gallons.
4. The registry shall be adequately protected from the elements.
5. The totalizer shall have sufficient capacity to record the quantity of fuel used during the period of one year.
6. The totalizer shall be direct reading and the multiplier shall be clearly indicated.

***As of January 1, 2011, Gasoline and LP are no longer an accepted alternative metering method. If any well owners are currently using either Gasoline or LP, please contact the District office immediately.***

## I. Center Pivot Nozzle Package and Hour Meter as an Alternative Metering Method

This water metering method uses the manufacturer's nozzle package specification installed on the center pivot system and the operation hours to record the total annual production for wells located on a property where the center pivot is the only method used to irrigate, and water from the well(s) is not used elsewhere. To use this method, the well owner must:

1. Equip the center pivot system with an hour meter installed at the control module or an integral part of the control module of the system.
2. Install the hour meter so that the hours of operation are continually recorded when the system is in operation.
3. Install an hour meter in accordance with the manufacturer's specification, with a rated accuracy of plus or minus two percent of actual time for which the meter is

recording operation hours, and with a register that reports up to 99,999 hours of continuous operation.

4. Attach a copy of the third party monitoring system's printout (e.g. PivoTrac report)
5. Attach a copy of the most recent nozzle package to the annual production report if not currently on file with the District or if requested by the District.

## **J. Hour Meter and Certified Gallon per Minute (GPM) Flow Tests**

This water metering method uses an hour meter to record pump operation hours and a gallons per minute (GPM) certification production rate to record the total annual production for wells on a property. To use this method the well owner must:

1. Install an hour meter in accordance with the manufacturer's specification, with a rated accuracy of plus or minus two percent of actual time for which the meter is recording operation hours, and with a register that reports up to 99,999 hours of continuous operation.
2. Perform the Certified Gallon per Minute (GPM) Test as specified by this manual.
3. Certify that the installation of the hour meter and the gallon per minute test were completed as required by this manual on forms prescribed by the District.
4. Record, keep and report hour meter readings on forms prescribed by the District when hour meters are removed for servicing or replacement.
5. Repair or replace hour meter with 72 hours after a malfunction is discovered by the well owner.

## **K. Certification of Inability to Produce an Allowable Annual Production**

A well owner may use this alternative metering method to record the total annual production from wells on a property when the combined total production from the wells within the property is insufficient to produce the allowable annual production assigned for the property. Three-hundred sixty-five (365) days of operation shall be used to calculate the total annual production to determine if the property and combined production from the wells meet the requirements of this method. ***Owners using this method on January 1, 2011, may continue to use this method until another alternative metering method is selected, meters are installed on the wells, or December 31, 2012, at which time this method will no longer be an accepted alternative metering method.*** At that time a water metering device or other alternative metering method must be in place. Owners of wells that are eligible to use another alternative metering devices shall not be allowed to change to this method after September 1, 2010. To use this method a well owner must:

1. Provide certification that the total production from all the wells on the property cannot produce the allowable annual production amount for the property under normal operating conditions for the year.
2. Perform a certified gallon per minute test within the first 60 days of operation at the time a pump is reworked and reinstalled or a new pump installed.
3. Provide the District with the Certified Gallon per Minute test report.

4. Provide the District with the total number of days each well on the property was operated during the calendar year on the annual report.
5. File an annual report of production in accordance with District Rules and as prescribed in this manual.

A well owner using this method who drills an additional well may be required to select another approved alternative water metering system to measure the production from the existing wells on the property if their combined total production is calculated to exceed eighty percent (80%) of the allowable annual production for the property.

#### **L. Confined Animal Feeding Operations (CAFOs)**

This alternative metering method is only available for use to account for the groundwater produced within the confines of CAFOs and only includes water consumed by the livestock, groundwater produced for mixing the feed and where applicable groundwater produced for animal effluent washout.

***Owners using this method on January 1, 2011, may continue to use this method until another alternative metering method is selected, meters are installed on the wells, or December 31, 2012, at which time this method will no longer be an accepted alternative metering method.*** At that time a water metering device or other alternative metering method must be in place. Owners of wells that are eligible to use another alternative metering device shall not be allowed to change to this method after January 1, 2011.

Livestock water use based on animal inventory may be used by confined livestock operations. The method uses animal inventory in conjunction with accepted livestock water demand rates in gallons per head per day. This method is available to animal feeding operations that keep accurate records on the inventory of livestock at each operation throughout the year. Using the method, the well owner must calculate annual production with the following equations:

1. Monthly Water Production = Avg. Monthly Head Count X Gals per Head per Day X No. of Days per month for each month.
2. Total Annual Water Production = Sum of all Monthly Water Production.

The well owner must:

3. Report total annual production on District forms in total acre-feet per year (total gallons used divided by 325,851 gallons equals water production in acre feet).
4. Maintain an accurate livestock monthly inventory.
5. Determine the average monthly head count by the livestock operation records. The average monthly head count should accurately represent the average monthly livestock inventory maintained at the location throughout the calendar year.

- Select livestock water use in Gals/Head/Day from the table of values below, unless the livestock operation provides other site-specific data to the District for review and approval.

Table 2 Allowable Gallons for CAFO Reporting Method

Livestock	Type of Farm		Gal Per Head Per Day	
Beef	Feed Yard	Without Overflow Water Tanks	Jan - Dec	13
Beef	Feed Yard	With Overflow Water Tanks	Apr - Sept	13
Beef	Feed Yard	With Overflow Water Tanks	Oct - Mar	15
Cattle	Whole Farm	Dairy		65
Swine	Whole Farm	With Effluent Recycling		5
Swine	Whole Farm	Without Effluent Recycling		8.5
Swine	Finishing			4
Swine	Nursery			1
Swine	Sow & Litter			8
Swine	Gestating Sow			6

#### M. Other Approved Alternative Metering Methods

The Board may approve additional alternative metering methods that it finds meets the following:

- The application identifies the approved meter system specifications for which the alternative metering method is sought to replace;
- The application describes in detail the preferred alternative metering method of measuring groundwater withdrawals, including information on how the alternative will be implemented and documented, and a showing that the alternative metering method would nonetheless provide an accurate accounting of groundwater withdrawn;
- Granting the application will accomplish the objectives sought to be advanced in the District Rules;
- The application complies with District rules; and
- The applicant is in compliance with District rules, other permits, and Orders of the Board.

## **Chapter 6      Requirements and Authorization to Perform Certified Flow Tests**

Several of the approved alternative metering methods or systems require wells to have a certified gallons per minute test performed. This section lists the requirements for those tests.

### **A. Who May Perform Certified Flow Tests**

1. The certification of production shall be performed by a District approved well testing entity or by District personnel;
2. Approved well testing entity means an individual who has received training and certification from the District or District personnel experienced in conducting well tests;
3. The training and certification will be provided by the District and include:
  - a. Identification of the approved equipment necessary to perform the tests,
  - b. Instructions on how to use the equipment,
  - c. Instructions on procedures to follow in conducting tests,
  - d. Instructions on tabulation of data collected during the tests.

### **B. When Certified Flow Test Shall be Performed**

1. During the first year of operation when an alternative method that requires certified gallon per minute test is selected,
2. At the time a new or repaired pump is installed in an existing well that is using an alternative method that requires certified gallon per minute test is selected.

### **C. Requirements for a Certified Flow Test**

Each well production certification shall be performed as follows:

1. A well must have been operated for a minimum of forty-eight (48) hours prior to the certified flow test.
2. The well must be operating under normal operating conditions during the certified flow test.
3. The well shall be tested at the well's normal operating revolutions per minute (rpm). Normal operating rpm is considered to be 1750rpm. If the well's "normal

operating” rpm is more or less than 1750rpm, the well’s “normal operating” rpm shall be certified and noted in the report.

4. The production certification test shall be conducted for not less than one (1) hour with flow readings recorded on not less than fifteen (15) minute intervals.
5. A certified gallon per minute test is required every five (5) years.
6. The certified gallon per minute test report shall be filed with the District within thirty (30) days after the test is complete.

## Chapter 7 Staff Verification and Inspections

The District staff may enter land at reasonable times for the purpose of inspecting and investigating conditions relating to compliance with any District Rule, regulation, permit, or other order of the District including, but not limited to:

1. Inspecting a proposed well site, and any existing well or wells;
2. Determining the pumping capacity of any well or wells;
3. Reading or interpreting any meter, weir box or other instrument used to measure groundwater production from any well or wells;
4. Collecting samples to be used in groundwater quality programs;
5. Testing the pump and the power unit of any well or wells;
6. Inspecting land for sources of potential or actual pollution;
7. Performing any other reasonable and necessary inspections and/or tests that may be required to collect groundwater information; and
8. Enforcing the District's Rules.

District staff that enters "restricted access" areas shall observe the establishment's rules and regulations concerning safety, biological security, internal security, and fire protection, and shall notify any occupant or other Person having apparent legal authority of their presence. District staff entering real property will exhibit proper identification upon request.