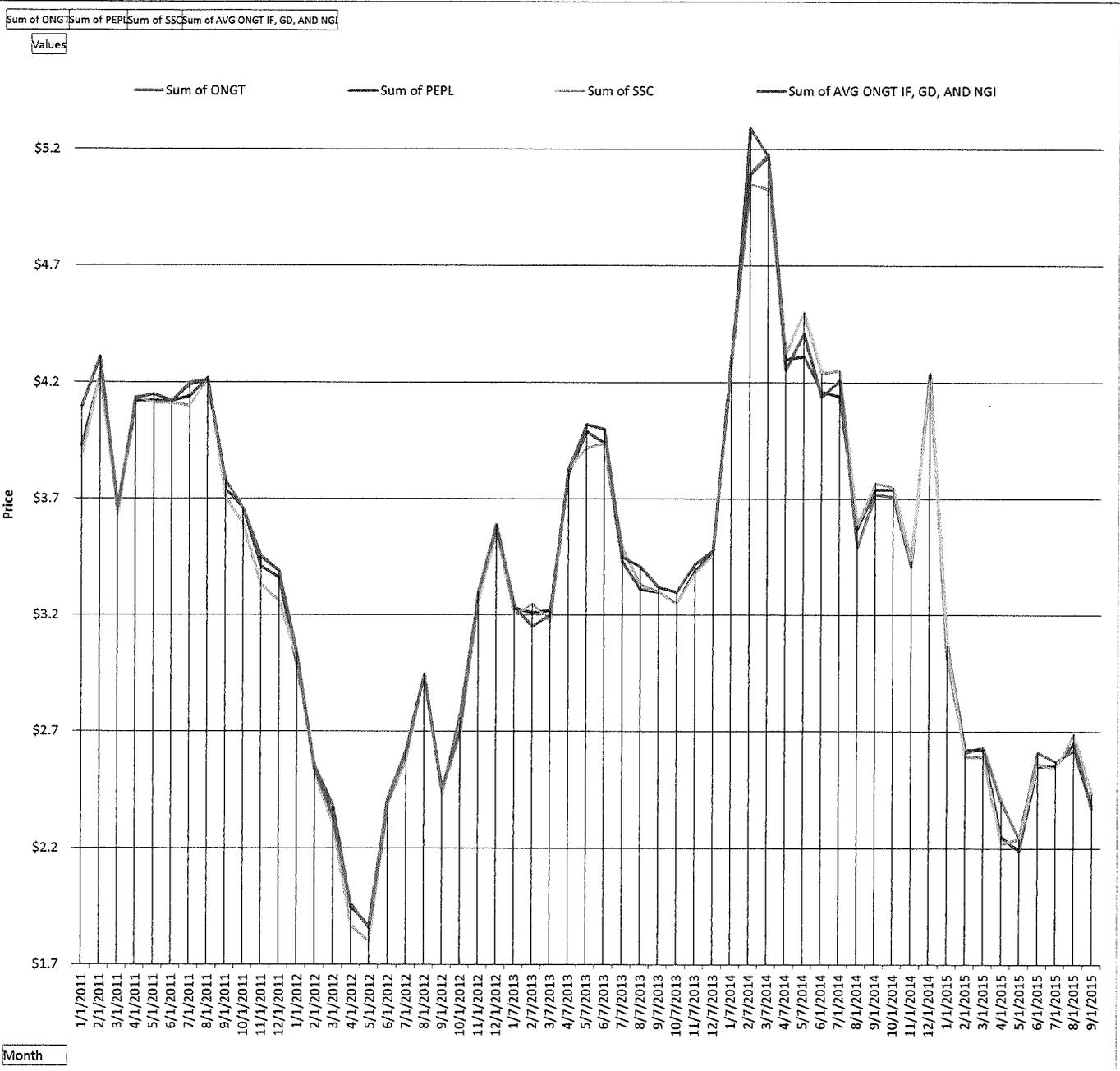


OKLAHOMA PUBLISHED INDEX PRICES AS REPORTED IN INSIDE F.E.R.C.'S GAS MARKET RPT AND GAS DAILY PRICE GUIDE													
	Inside F.E.R.C.'s Gas Market Report							Gas Daily Price Guide Spot - Oklahoma					ONGT GAS
Month	ANR (OK)	NGPL (Midcontinent)	ONGT	PEPL	Colorado Interstate Gas Co. (Rocky Montains)	SSC	Enable Gas Transmission, LLC.	ANR (OK)	NGPL (Midcontinent)	ONGT	PEPL	AVG	ONGT GAS DAILY FUTURES
Sep 2013	\$3.36	\$3.38	\$3.32	\$3.30	\$3.25	\$3.30	\$3.43	\$3.36	\$3.38	\$3.32	\$3.30	\$3.34	\$3.567
Oct 2013	\$3.34	\$3.38	\$3.30	\$3.25	\$3.29	\$3.25	\$3.37	\$3.34	\$3.38	\$3.30	\$3.25	\$3.32	\$3.498
Nov 2013	\$3.46	\$3.53	\$3.42	\$3.39	\$3.54	\$3.38	\$3.41	\$3.46	\$3.53	\$3.42	\$3.39	\$3.45	\$3.496
Dec 2013	\$3.55	\$3.61	\$3.48	\$3.48	\$3.58	\$3.46	\$3.61	\$3.55	\$3.61	\$3.48	\$3.48	\$3.53	\$3.818
Jan 2014	\$4.33	\$4.37	\$4.31	\$4.27	\$4.34	\$4.28	\$4.30	\$4.33	\$4.37	\$4.31	\$4.27	\$4.32	\$4.407
Feb 2014	\$5.15	\$5.09	\$5.10	\$5.29	\$4.93	\$5.05	\$5.20	\$5.15	\$5.09	\$5.10	\$5.29	\$5.16	\$5.557
Mar 2014	\$5.25	\$5.13	\$5.18	\$5.17	\$5.11	\$5.03	\$4.83	\$5.25	\$5.13	\$5.18	\$5.17	\$5.18	\$4.855
Apr 2014	\$4.37	\$4.33	\$4.25	\$4.30	\$4.24	\$4.32	\$4.44	\$4.37	\$4.33	\$4.25	\$4.30	\$4.31	\$4.584
May 2014	\$4.45	\$4.52	\$4.41	\$4.31	\$4.36	\$4.50	\$4.62	\$4.45	\$4.52	\$4.41	\$4.31	\$4.42	\$4.795
Jun 2014	\$4.21	\$4.35	\$4.14	\$4.16	\$4.13	\$4.24	\$4.45	\$4.21	\$4.35	\$4.14	\$4.16	\$4.22	\$4.619
Jul 2014	\$4.28	\$4.37	\$4.21	\$4.14	\$4.28	\$4.25	\$4.36	\$4.28	\$4.37	\$4.21	\$4.14	\$4.25	\$4.400
Aug 2014	\$3.62	\$3.66	\$3.49	\$3.57	\$3.58	\$3.59	\$3.69	\$3.62	\$3.66	\$3.49	\$3.57	\$3.59	\$3.808
Sep 2014	\$3.79	\$3.82	\$3.72	\$3.74	\$3.73	\$3.77	\$3.83	\$3.79	\$3.82	\$3.72	\$3.74	\$3.77	\$3.957
Oct 2014	\$3.75	\$3.76	\$3.71	\$3.74	\$3.65	\$3.75	\$3.75	\$3.75	\$3.76	\$3.71	\$3.74	\$3.74	\$3.984
Nov 2014	\$3.44	\$3.42	\$3.41	\$3.44	\$3.37	\$3.44	\$3.56	\$3.44	\$3.42	\$3.41	\$3.44	\$3.43	\$3.728
Dec 2014	\$4.35	\$4.22	\$4.24	\$4.22	\$4.33	\$4.21	\$4.18	\$4.35	\$4.22	\$4.24	\$4.22	\$4.26	\$4.282
Jan 2015	\$3.17	\$3.04	\$3.02	\$3.07	\$3.06	\$3.06	\$3.03	\$3.17	\$3.04	\$3.02	\$3.07	\$3.08	\$3.189
Feb 2015	\$2.75	\$2.71	\$2.61	\$2.62	\$2.63	\$2.59	\$2.73	\$2.75	\$2.71	\$2.61	\$2.62	\$2.67	\$2.866
Mar 2015	\$2.68	\$2.66	\$2.63	\$2.62	\$2.61	\$2.59	\$2.74	\$2.68	\$2.66	\$2.63	\$2.62	\$2.65	\$2.894
Apr 2015	\$2.35	\$2.39	\$2.40	\$2.25	\$2.25	\$2.22	\$2.56	\$2.35	\$2.39	\$2.40	\$2.25	\$2.35	\$2.590
May 2015	\$2.27	\$2.29	\$2.24	\$2.19	\$2.20	\$2.24	\$2.39	\$2.27	\$2.29	\$2.24	\$2.19	\$2.25	\$2.517
Jun 2015	\$2.57	\$2.66	\$2.61	\$2.55	\$2.54	\$2.56	\$2.68	\$2.57	\$2.66	\$2.61	\$2.55	\$2.60	\$2.815
Jul 2015	\$2.53	\$2.66	\$2.57	\$2.55	\$2.56	\$2.54	\$2.68	\$2.53	\$2.66	\$2.57	\$2.55	\$2.58	\$2.773
Aug 2015	\$2.64	\$2.70	\$2.62	\$2.65	\$2.58	\$2.69	\$2.78	\$2.64	\$2.70	\$2.62	\$2.65	\$2.65	\$2.886
<b>Sep 2015</b>	\$2.42	\$2.53	\$2.38	\$2.37	\$2.42	\$2.43	\$2.53	\$2.42	\$2.53	\$2.38	\$2.37	\$2.43	\$2.638



# BUSINESS

WEDNESDAY, SEPTEMBER 23, 2015

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## GAS PRICES

AAA's average for regular unleaded:

	Nation	State
Tuesday	\$2.284	\$2.099
Week ago	\$2.322	\$2.126
Month ago	\$2.615	\$2.525
Year ago	\$3.338	\$3.166
Record (set)	\$4.114	\$3.955
	7-17-08	7-16-08

## Questions lead officials to delay vote on proposed disposal wells

BY ADAM WILMOTH  
Energy Editor  
awilmoth@oklahoman.com

The uncertainty surrounding the state's ongoing earthquake swarm has grown this week as the Oklahoma Corporation Commission delayed decisions on whether to approve new disposal wells in seismically active areas and the state's only remaining seismologist accepted another position.

Corporation commissioners on Tuesday cited concerns about ongoing earthquake activity near the proposed well sites in Payne,

Logan and Pawnee counties as they voted to delay action.

"This is a situation where things change on a daily basis," Commissioner Dana Murphy said. "We have to be thoughtful on decision making."

Commissioners remanded three wells planned by American Energy — Woodford LLC back to an administrative law judge for further consideration. For the wells proposed by Crown Energy Co. and Tarka Energy, the commissioners struck the action, choosing neither to approve nor reject the plans.

"I would not be prepared to

support these until we gather more information," Commissioner Todd Hiatt said during Tuesday's hearing.

Tuesday's action came after the corporation commission staff last week said two existing disposal wells near Cushing should be shut in and another three wells in the area should have their disposal volumes cut back because of a recent spike in earthquake activity. Cushing is home to the country's largest commercial crude oil storage hub, which now holds about 54 million barrels of oil, or about 12 percent of the country's com-

mercial stocks.

### Seismologist vacancy

State seismologist Amberlee Darold has accepted another position and will step down next month. Her action comes less than three months after seismologist Austin Holland left for a position with the U.S. Geological Survey in New Mexico.

"I'm not sure we had two state employees who worked harder than Austin Holland and Amberlee," said Michael Teague, Oklahoma secretary of energy and environment. "They've worked tirelessly in what they're doing.

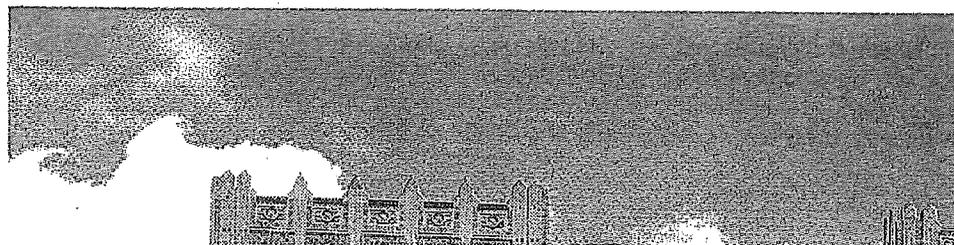
I certainly respect Amberlee's decision to take a position closer to home for her and in an area of seismology where she has a passion."

Until the position is filled, the state could be without a seismologist.

Even before Darold's departure was announced, filling vacant positions was a high priority at both the geological survey and the corporation commission, Teague said.

"I don't know what the answer is, but I know we can't continue

SEE WELLS, PAGE 4C

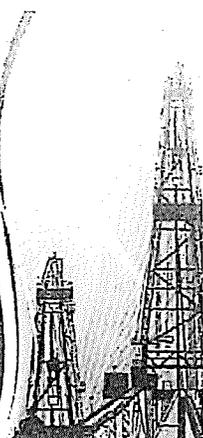


## HOTEL RESERVATIONS

# The Oilfield Appraiser

## EQUIPMENT NEWSLETTER

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### FIRST QUARTER 2015 PRICE INDEX UPDATES 1<sup>ST</sup> QUARTER RIG COUNTS DROPPING / QUARTERLY MARKET COMMENTS OUTLOOK FOR 2<sup>ND</sup> QUARTER 2015 EQUIPMENT PRICES

#### MARKET INDEX / INDICATORS 1<sup>ST</sup> QUARTER 2015

WTI / NYMEX CRUDE OIL PRICE RANGE, /bbl	*	\$42 - \$48
Henry Hub/NYMEX NATURAL GAS PRICES RANGE, /MMBTU	*	\$2.55 - \$3.00
LAND DRILLING RIG UTILIZATION FROM RIGDATA REPORTS 1 <sup>ST</sup> QTR	*	29% / 1,044 ACTIVE
DRILLING RIG SALES	*	VERY SLOW
2 <sup>ND</sup> QTR 2014 PRICE INDEX CHANGE	*	0%
3 <sup>RD</sup> QTR 2014 PRICE INDEX CHANGE	*	0%
4 <sup>TH</sup> QTR 2014 PRICE INDEX CHANGE	*	-2.0%
1 <sup>ST</sup> QTR 2015 PRICE INDEX CHANGE	*	-14.3%
2 <sup>ND</sup> QTR 2015 DRILLING RIG OUTLOOK	*	-15.0% FORECAST
SERVICE RIG UTILIZATION USA & CANADA (AVG)	*	59% / 2,292 ACTIVE
SERVICE RIG SALES	*	VERY SLOW
2 <sup>ND</sup> QTR 2014 PRICE INDEX CHANGE	*	0%
3 <sup>RD</sup> QTR 2014 PRICE INDEX CHANGE	*	0%
4 <sup>TH</sup> QTR 2014 PRICE INDEX CHANGE	*	-1.0%
1 <sup>ST</sup> QTR 2015 PRICE INDEX CHANGE	*	-8.0%
2 <sup>ND</sup> QTR 2015 SERVICE RIG OUTLOOK	*	-13.0% FORECAST
1 <sup>ST</sup> QTR USED DRILL PIPE INDEX	*	-40.0%
1 <sup>ST</sup> QTR NEW DRILL PIPE INDEX	*	-35.0%
1 <sup>ST</sup> QTR USED DRILL COLLAR INDEX	*	-40.0%
1 <sup>ST</sup> QTR NEW DRILL COLLAR INDEX	*	-35.0%
PRODUCTION EQUIPMENT SALES	*	DECREASING
2 <sup>ND</sup> HALF 2014 PRODUCTION EQUIPMENT PRICE INDEX	*	-5%
1 <sup>ST</sup> HALF 2015 PRODUCTION EQUIPMENT PRICE INDEX	*	-20.0%
2 <sup>ND</sup> HALF 2015 PRODUCTION EQUIPMENT PRICE INDEX	*	-15.0% FORECAST
OVERALL MARKET CONFIDENCE	*	DECREASING
OVERALL INVESTOR CONFIDENCE	*	DECREASING

#### 1<sup>ST</sup> QUARTER 2015 DRILLING RIG AND EQUIPMENT PRICES IN DECLINE 2<sup>ND</sup> QUARTER 2015 FORECAST

We saw a significant decline in equipment prices for the 1<sup>st</sup> quarter of 2015 as OPEC maintained current production levels, which resulted in continued volatile fluctuation of oil and gas prices and severe decline in US rig utilization. OPEC will next meet in Vienna, Austria on June 5<sup>th</sup> and is expected to maintain production at the current rate of 30 million barrels per day. Due to the sustainability of US oil and gas reserves, the United States is currently energy independent. It is the majority opinion throughout the industry that OPEC's sole intention by not cutting production is to drive out or weaken US oil producers and recapture lost market share in the United States.

The 1<sup>st</sup> quarter of 2015 saw double-digit declines in drilling rig values along with production equipment. Well service rigs, drill pipe and drill collars also realized steep declines as well.

It is anticipated this trend will escalate for the remainder of 2015. We are forecasting a 15% decrease in drilling rig market prices for the 2<sup>nd</sup> quarter of 2015 with further value decreases pending. Rig utilization was at 29% at the end of the 1<sup>st</sup> quarter and is anticipated to drop to under 20% by year end.

With lower utilization, there is a surplus of older mechanical rigs, scr rigs, drill pipe, drill collars and production equipment available on the open market for quick sale usually through auctions and rig brokers.

**CAPITOL APPRAISAL GROUP, INC**

**PRITCHARD & ABBOTT, INC**

**WARDLAW APPRAISAL GROUP**

**OIL PRICE**

23.175 Appraisal: Default 2014 Average Price \$93.26 WTI, \$85.77 WTS if no data is available. Please submit actual 2014 Average price before MAF.  
 Will follow intent of Section 23.175 of the Texas Property Tax Code. The year 1 price is the 2014 monthly average price multiplied by the "price adjustment factor". The PAF determined by Capitol Appraisal Group from the EIA in the January 2015 Short Term Energy Outlook is 0.5852. The price for the subsequent years 2 through 6 will be escalated using the Product Price Index (domestic produced petroleum) as published by the BLS. The PPI is 3.022%. The price from year 6 will be used in the subsequent years of the appraisal.

**OIL PRICE -Before adjustments for gravity, trucking, etc.**

WTI reference price is \$91.64/bbl (calendar year 2014 gross monthly average price as derived by analysis of "Major" purchaser bulletins and/or NYMEX adjusted to Texas wellhead). WTI reference price is multiplied by "Price Adjustment Factor" (0.627722 for the current tax year) per Property Tax Code, Section 23.175, to derive the gross price for year 1. Actual starting price for individual leases varies with crude type, gravity deductions, purchaser availability, and bonus. Differential for sour crude (WTS) is 5.5% deduction from WTI. Price adjustment factor is a blend between December & January EIA Short Term Energy Outlook". All following prices are derived by escalation or de-escalation percentages per Property Tax Code, Section 23.175. For tax year 2015 the annual escalation is 3.022% for oil for years 2 through 6. There is no escalation or de-escalation thereafter.

**OIL PRICE**

Will follow Section 23.175 of the Texas Property Tax Code. The year 1 price is the 2014 monthly average price multiplied by the "price adjustment factor". The PAF determined by Wardlaw Appraisal Group from the EIA in the January 2015 Short Term Energy Outlook is 0.585. The price for the subsequent years 2 through 6 will be escalated using the Product Price Index (domestic produced petroleum) as published by the BLS. The PPI is 3.022%. The price from year 6 will be used in the subsequent years of the appraisal.

**GAS PRICE**

23.175 Appraisal: Default 2014 Average Price \$4.35 If no data is available. Please submit actual 2014 Average price before MAF.  
 Will follow intent of Section 23.175 of the Texas Property Tax Code. The year 1 price is the 2014 monthly average price multiplied by the "price adjustment factor". The PAF determined by Capitol Appraisal Group from the EIA in the January 2015 Short Term Energy Outlook is 0.7853. The price for the subsequent years 2 through 6 will be escalated using the Product Price Index (natural gas) as published by the BLS. The PPI is 1.91%. The price from year 6 will be used in the subsequent years of the appraisal.

**GAS PRICE**

12-month 2014 monthly average price, if spot, from Texas Comptroller data, will be multiplied by "Price Adjustment Factor" (0.82418 for the current tax year) per Property Tax Code Section 23.175 to derive the gross price for year 1. Price adjustment factor is a blend between December & January EIA Short Term Energy Outlook".

For tax year 2015 the annual escalation is 1.908% for gas for years 2 through 6. There is no escalation or de-escalation thereafter. Maximum non-contract price is \$99.99/mcf.

**GAS PRICE**

Will follow Section 23.175 of the Texas Property Tax Code. The year 1 price is the 2014 monthly average price multiplied by the "price adjustment factor". The PAF determined by Wardlaw Appraisal Group from the EIA in the January 2015 Short Term Energy Outlook is 0.784. The price for the subsequent years 2 through 6 will be escalated using the Product Price Index (natural gas) as published by the BLS. The PPI is 1.908%. The price from year 6 will be used in the subsequent years of the appraisal.

**SEVERANCE TAXES**

Current law.

**SEVERANCE TAXES**

Current law (4.6% for oil & 7.5% for gas) to be deducted from gross price. Will use 2.3% for EOR, 0% for HCG production for applicable years. Inactive well incentive exemptions will be recognized, as well as exemption/abatements for incremental production and previously flared gas.

**SEVERANCE TAXES**

Current law.

Will apply HCG exemptions were applicable.

**AD VALOREM TAXES**

2014 composite tax rate added to the BASE discount rate.

**AD VALOREM TAXES**

5% for oil and gas leases, to be deducted from gross price. (This component deduction is intended to include the historically minimal regulatory fee.)

**AD VALOREM TAXES**

Ad Valorem Tax Rate added to the discount rate.

**OPERATING COSTS**

Lease operating costs will be held flat for first year & escalated 3.022%/yr. & 1.91%/yr. on oil & gas, respectively, for years 2 - 6 and flat thereafter.  
 On leases with more than 10 wells, Well Count decline assumption will apply after year 2, and the corresponding escalation will be calculated on the "new" operating base.  
 LOE will be decreased by 25% initially but after receiving 2014 expenses it will be up to the appraiser to adjust on going Documented exceptions will be considered. Will consider future estimated capital and environmental expenses if the expenses are Want to see LOE in the following categories: Pumper, Field Supervision, Roustabout Labor, Saltwater Disposal, Repairs - Downhole, Repairs - Surface, Small Tools & Supplies, Chemicals, Overhead, BH/PMP Parts & Repairs

**OPERATING COSTS**

Will start with routine expenses after review of historical (not just previous year). Capital expenses will be considered when necessary for lease operations to continue, EOR operations are projected, or excessive or non-standard projected abandonment costs are documented. As a general rule, all operating expenses will be escalated or de-escalated in future years per percentages used in price forecast for type of lease (oil or gas) unless differently specified as follows: For oil leases, historical direct expenses will be declined at 25% for year 1, then declined 10% for year 2, then escalated at 3% for years 3-6. For gas leases, historical direct expenses will be declined at 10% for year 1, then declined 5% for year 2, then escalated at 2% for years 3-6.

**OPERATING COSTS**

In year 1, the LOE will be lower than 2014 expenses. Expect at least a 20% drop. Beginning in year 2, the fixed costs will be held flat.

**DISCOUNT RATES**

23.175 Appraisal: 12.5% plus the ad valorem rate before the MAF is applied.

**DISCOUNT RATES**

OIL - Rates will range from 10 - 24% based on depth, producing rate per well, decline and other risk factors subject to appraiser discretion.

GAS - Rates will vary from 12 - 16%, subject to case by case review.

In lieu of additional discount rate, appraisers may choose to incorporate risk aspects into other parameters such as production or expense forecasts, if desired or appropriate, which can result in discount rates outside the ranges listed above.

**DISCOUNT RATES**

Base Discount Rate - 14.9%  
 Gas - 14.9% + Ad Valorem Tax Rate  
 Oil - 14.9% + Ad Valorem Tax Rate

## DEFINITIONS

**Depreciation** is loss in value due to any cause. It is the difference between the market value of a structural improvement or piece of equipment and its reproduction or replacement cost as of the date of valuation. Depreciation is divided into three general categories, as discussed below.

1. **Physical** depreciation is loss in value due to physical deterioration.
2. **Functional** or technical obsolescence is loss in value due to lack of utility or desirability of part or all of the property, inherent to the improvement or equipment. Thus a new structure or piece of equipment may suffer obsolescence when built.
3. **External**, locational or economic obsolescence is loss in value due to causes outside the property and independent of it, and is not directly included in the tables.

**Effective age** of a property is its age as compared with other properties performing like functions. It is the actual age less the age which has been taken off by face-lifting, structural reconstruction, removal of functional inadequacies, modernization of equipment, etc. It is an age which reflects a true remaining life for the property, taking into account the typical life expectancy of buildings or equipment of its class and its usage. It is a matter of judgment, taking all factors, current and those anticipated in the immediate future, into consideration. Effective age on older structures may best be calculated by establishing a remaining life which, subtracted from a typical life expectancy, will result in an appropriate effective age with which to work. Effective age can fluctuate year by year or remain somewhat stable in the absence of any major renewals or excessive deterioration.

**Extended life expectancy** is the increased life expectancy due to seasoning and proven ability to exist. Just as a person will have a total normal life expectancy at birth which increases as he grows older, so it is with structures and equipment.

**Remaining life** is the normal remaining life expectation. It is the length of time the structure may be expected to continue to perform its function economically at the date of the appraisal. This does not imply a straight-line expiration, particularly for mortgage purposes, since normal recurring maintenance and renewal of replaceable items will continue to contribute toward an extended life expectancy. This extended life process is accomplished by use of effective age as the sliding scale and not by continually lengthening the typical life expectancy as the structure ages chronologically.

**Percent good** equals 100% less the percentage of cost represented by depreciation. It is the present value of the structure or equipment at the time of appraisal, divided by its replacement cost.

## APPROACHES TO DEPRECIATION

The simplest and, in past years, a widely used accounting-type concept of depreciation, particularly with individual short-lived components, is the straight-line (age/life) approach. A life expectancy is estimated and a constant annual percentage (equal wear or serviceability each year) is taken for depreciation so that at the end of that life the depreciation equals 100% of the initial cost. This linear approach is simple and easy to use but does not represent reality in most cases since time is not the only factor affecting depreciation and it fails to recognize any value-in-use. The passage of time may not in itself create additional depreciation if the property or component is well maintained and functionally sound.

While age is a critical factor, the best approach to the physical depreciation estimate is a combination of age and condition. The observed condition of each component subject to wear is estimated relative to new condition. A major replaceable component, such as a HVAC system under heavy loading in a hot, humid climate, can wear out quite rapidly, shortening the life expectancy before replacement, while many other portions of a structure, such as excavations, foundations, and concrete exterior walls, wear out slowly if at all. Such long-lived portions often represent a major portion of the total reproduction cost and if still functional will contribute toward an extended life expectancy. Physical depreciation cannot be considered a straight-line deduction from reproduction cost, since necessary and normal maintenance can offset, retard and, in some cases, even eliminate deterioration.

Another approach to depreciation was called the mid-life theory. This takes into account that most buildings depreciate little during the first few years. When it becomes evident that the buildings are no longer new, even though they are adequately maintained, the maintenance expenses rise, rentals tend to decrease and the building depreciates faster. After a number of years, they reach the period called mid-life, at which time, if the buildings are structurally sound and properly maintained, the depreciation remains constant. The mid-life theory suffers from the fact that maintenance expenses on the average building continue to go up in order to maintain the same appearance and utility, and at any age, certain building features may suffer from obsolescence.

These concepts lead to a third theory, the extended life concept, which starts with the hypothesis that buildings age in much the same manner as people and that the older they get, the greater is their total life expectancy. This concept recognizes that a building is in the prime of life before

mid-life and that the road is downhill after that, but that correction of deficiencies may lower the effective age and lengthen the remaining life. This recurring revitalization process periodically reverses a continuous progression down the effective age scale, reducing the indicated depreciation percentage as components are renewed throughout the life-span of the building. This nonlinear approach accounts for a greater present value or slower depreciation rate in the early years as compared to the later years when diminishing serviceability and higher maintenance can accelerate depreciation.

## EXPLANATION OF DEPRECIATION TABLES

The general depreciation tables in this section were developed from actual case studies of sales and market value appraisals and formed the basis of the extended life theory which encompasses a remaining life and effective age approach. From confirmed sales prices the land value was deducted to obtain a building residual, and the replacement cost of the building was computed. The difference between the replacement cost new of the building and the residual sales price of the building was divided by the replacement cost new, to give the market depreciation in percentage. A similar procedure was followed with the market value appraisals, always excluding those observed cases having excessive obsolescence.

The data was then collated by type of construction and usage, plotted with similar typical total life expectancies, with curves computed for the groupings, for which sufficient data was available, for statistical reliability. From these curves, a matching family of empirical mathematical curves was found, from which the depreciation for any initial (when new) life expectancy could be computed under normal market conditions.

A check of equipment depreciation by similar procedures showed that portions of the family of curves, which was used for nonresidential properties, were suitable as an indicator of that depreciation.

Churches were found to fit in the depreciation category of residential structures, and those tables should therefore be used. Motels, hotels and larger apartments are included in the nonresidential tables, while small apartments or multiples are residential in nature. The division between residential and nonresidential depreciation appears to lie in the usage, whether operated solely for income or for amenities.

Thus, a hotel operated commercially would be expected to fit into the commercial family of curves, but if the same building were operated as a private club, its normal depreciation would be expected to follow the residential curve. The proper curve to use is therefore a matter of judgment on the part of the appraiser, considering the usage and the type of return normally expected, whether cash, equity or intangible amenities.

## USE OF THE DEPRECIATION TABLES (See Example on page 22)

1. Note from your inspection the overall and/or individual condition, severity of use, utility and remaining life of all building or equipment components.
2. Determine the true age of the structure or equipment.
3. Compare with like properties and study the effect of, or the lack or need of, typical maintenance or any modernization or major repair to determine the effective age.
4. Check the tables and discussion on Pages 10 through 21 for the recommended initial typical (normal) useful life of the occupancy, component or piece of equipment and for any further modification before establishing an appropriate life.
5. Check the properties listed in each depreciation table to see which to use. (Page 24, Non-residential; Page 25, Residential; Page 26, Fixtures and Equipment.)
6. Enter the proper table choosing a typical life expectancy and effective age and read off the normal depreciation, or use the remaining life expectancy as an aid as described below.
7. Note any excessive obsolescence that may require special consideration separate from the normal depreciation developed from the tables. (Review Pages 2 and 3.)

## REMAINING LIFE TABLES

The remaining life tables are based on mortality tables derived from studies of building and equipment, discarding all cases of mortality due to excessive obsolescence. Their primary mission is to provide an easy way for the appraiser to determine the normal remaining life expectancy of buildings for use in the capitalization process, using the effective age and the typical life expectancy.

Many times, the remaining life expectancy of a building or piece of equipment can be established more readily than the effective age. The Remaining Life Table on the right side of each depreciation page may then be entered with the remaining life in the proper typical life column and the effective age read off at the left, or the appraiser may move straight across to the left side of the page and read the depreciation directly.

## Obsolescence | Article about Obsolescence by The Free Dictionary

<http://encyclopedia2.thefreedictionary.com/Obsolescence>

### Obsolescence

Also found in: [Dictionary/thesaurus](#), [Medical](#), [Legal](#), [Financial](#), [Wikipedia](#).

#### obsolescence [ˌɒb·səˈles·əns]

(engineering)

Decreasing value of functional and physical assets or value of a product or facility from technological changes rather than deterioration.

McGraw-Hill Dictionary of Scientific & Technical Terms, 6E, Copyright © 2003 by The McGraw-Hill Companies, Inc.

### Obsolescence

A loss in value due to a decrease in the usefulness of property caused by decay, changes in technology, people's behavioral patterns and tastes, or environmental changes. Items or buildings that become out of date or practice and fall into disuse; also impairment of a building resulting from a change in the design or from external influences which tend to make the property less desirable for continued use.

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# KEEP CALM AND BUY A HOME

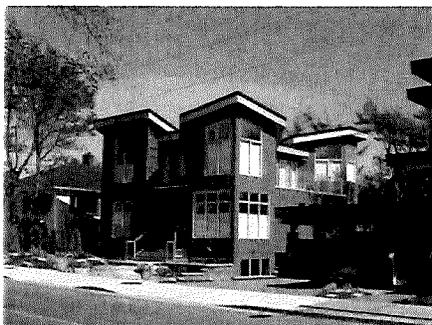
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## Functional and Economic Obsolescence

Though many pieces of real estate are very similar, no two are the same (just like snowflakes). A home will nearly always have idiosyncrasies that separate it from other properties, regardless of whether two properties share the same floor plan or design. Even tract homes will be unique.

Differences in age, condition, location, and utility can yield different results, and often produce different home values as well.

### Functional Obsolescence



(photo: pnwra)

When properties are built, they don't always adhere to the standards of a given neighborhood, floor plan, or site design. When this happens, depreciation is caused by a loss of building utility, otherwise known as "functional obsolescence." In other words, if a building has reduced usefulness due to poor design, the appraised value must be also reduced.

Examples include buildings that are too big or lavish within a certain area, which is considered an overimprovement, or a property that is relatively small or poor compared with those around it, which is considered an underimprovement. If a building is said to be out-of-place or poorly designed for its location, it could be considered functionally obsolete.



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If a property lacks a feature such as a sideyard, or only contains one bathroom despite having five bedrooms, functional obsolescence occurs. Keep in mind that it can be curable or incurable, depending on the situation. If it's possible to tear out a wall or add a room, assuming cost is less than the value benefit, it's considered curable. Incurable obsolescence is typically defined as an overimprovement that will suffer value loss whether kept intact or removed.

### Economic Obsolescence

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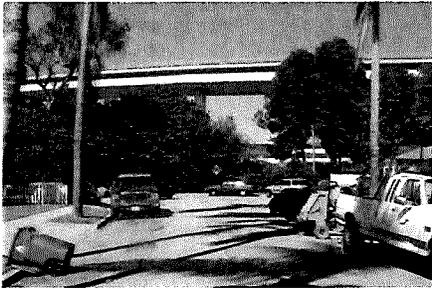
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(photo: scottfeldstein)

Then there's "economic obsolescence," also referred to as environmental, external, or location obsolescence, which is a type of depreciation that occurs outside the subject property. Typically, this form of obsolescence occurs sometime after the property is built, as the environment around the home changes.

Examples include airport noise, toxic waste, nuclear power plants, freeway noise, dust and air pollens, changes in zoning, and more. For this reason, properties located next to the freeway or under a flight path will experience reductions in value. Some even argue that economic obsolescence occurs when market demand changes. Consider a home with only one bathroom. If all the new properties in the area are being built with two or more bathrooms, obsolescence can occur.

Most economic obsolescence is incurable, mainly because it is out of the control of the owner of the subject property, and any effort to cure such a problem would be very costly and value depleting.

That said, it's important to understand obsolescence and the effect it can have on the value of your home. Often times appraisers will note some kind of obsolescence, which can make financing very difficult. In fact, some lenders may decline your mortgage application if they find obsolescence on the appraisal report that they feel is a detriment to the value of the property.

Consider all this when selecting a piece of property, as issues even miles away can pose a threat to the value of your home.

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# Obsolescence

From Wikipedia, the free encyclopedia

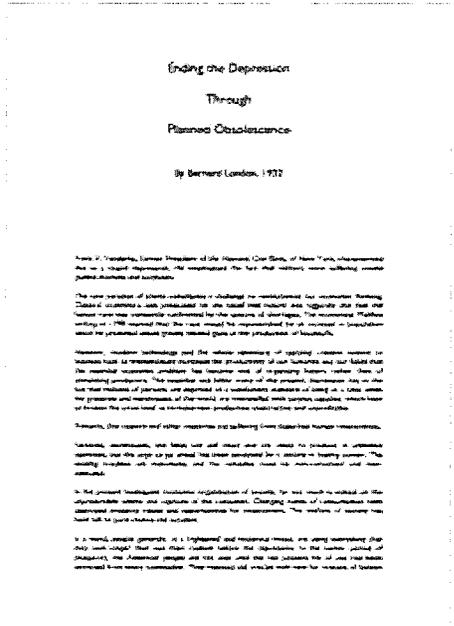
*"Obsolete" redirects here. For the album by Fear Factory, see Obsolete (album).*

**Obsolescence** is the state of being which occurs when an object, service, or practice is no longer wanted even though it may still be in good working order. Obsolescence frequently occurs because a replacement has become available that has, in sum, more advantages than the inconvenience related to repurchasing the replacement. **Obsolete** refers to something that is already disused or discarded, or antiquated.<sup>[1]</sup> Typically, obsolescence is preceded by a gradual decline in popularity.

Look up ***obsolescence*** or ***obsolete*** in Wiktionary, the free dictionary.

## Contents

- 1 Consequences
- 2 Types
  - 2.1 Technical obsolescence
  - 2.2 Functional obsolescence
  - 2.3 Planned obsolescence
  - 2.4 Style obsolescence
  - 2.5 Obsolescence management
- 3 See also
- 4 References
- 5 Further reading



*Ending the Depression Through Planned Obsolescence* by Bernard London, 1932

## Consequences

Driven by rapid technological changes, new components are developed and launched on the market with increasing speed. The result is a dramatic change in production methods of all components and their market availability. A growing industry sector is facing issues where life cycles of products no longer fit together with life cycles of required components. This issue is known as obsolescence, the status given to a part when it is no

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### obsolescence

**Definition**

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Significant decline in the competitiveness, usefulness, or value of an article or property. Obsolescence occurs generally due to the availability of alternatives that perform better or are cheaper or both, or due to changes in user preferences, requirements, or styles. It is distinct from fall in value (depreciation) due to physical deterioration or normal wear and tear. Obsolescence is a major factor in operating risk, and may require write off of the value of the obsolete item against earnings to comply with the accounting principle of showing inventory at lower of cost or market value. Insurance companies take obsolescence into account to reduce the amount of claim to be paid on damaged or destroyed property. See also planned obsolescence.



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**Use obsolescence in a sentence**

- There was a concern of planned **obsolescence** with regards to the new technological device as newer ones are always produced every two years.

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- Sometimes a product will hit a point of **obsolescence** and all you can hope for is to get whatever you can for it.

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- Many paper news companies fear the the pervasiveness of digital media will run the newspaper business into a state of near-complete **obsolescence**.

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## Insights

[Insights](#) [Ask an Appraiser](#) [What is functional and external obsolescence? How does it affect value?](#)

### What is functional and external obsolescence? How does it affect value?

Functional and external (economic) obsolescence are two of the most important factors when estimating an asset's value using the cost approach to value.

Functional obsolescence is defined as the impairment of functional capacity or efficiency that reflects the loss in value brought about by such factors as overcapacity, inadequacy, excess operating costs, and changes in the art. The functional utility and level of technology of the equipment will have a direct effect on the value received when an asset is sold on a piecemeal basis and in the manner in which knowledgeable buyers view the in-place value as compared to new capacity.

Functional obsolescence can be further broken down into curable and incurable obsolescence. Curable obsolescence is a deficiency of an asset that can be remedied through addition or modernization. An example of this would be the replacement and update of a machine's computer numeric control (CNC). By updating the machine's CNC control, the productivity of the equipment can be improved, sometimes to a level that is comparable to a new replacement machine. Incurable functional obsolescence is an inadequacy identified in a machine that cannot be remedied. A machine utilized to produce cans is a good example. These machines are rated by productivity (cans produced per minute), and the productivity is directly dependent on the number of stations with which the machine is equipped. Older machines were equipped with a maximum of 10 stations and an operating capacity of approximately 2,000 cans per minute. Modern machines have as many as 14 stations that produce approximately 3,500 cans per minute. Since stations cannot be added to older machines, the productivity will always be constrained which will limit their value and marketability as a result of this incurable functional obsolescence. Appraisers utilize this information in order to make quantifiable deductions in the cost approach calculation.

External (economic) obsolescence is defined as the impairment of desirability or useful life arising from factors external to the asset, such as economic forces or environmental changes that affect the supply-demand relationship in the market. The current housing crisis provides an excellent example of the effects of external obsolescence. New homes and condominiums in distressed markets throughout the U.S. are being heavily discounted in an attempt to attract buyers. These homes are new so there is no physical deterioration; they incorporate the latest designs and technologies so there is no functional obsolescence. Therefore, all of the value loss is due to factors external to the properties themselves, or external obsolescence. Estimating a loss in value due to outside forces is a very difficult process for appraisers and typically is more subjective than the other deductions taken in the cost approach calculation.

Find more information on [appraisal methodology](#).

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### Obsolescence

**obsolescence** n

: a loss in the utility or value of property that results over time from intrinsic limitations (as outmoded facilities) or external circumstances *NOTE: Obsolescence is usually distinguished from depreciation and physical deterioration.*

**eco-nom-ic obsolescence**

: obsolescence that results from external factors (as location) that render a property obsolete, no longer competitive, unattractive to purchasers or investors, or of decreasing usefulness [claimed that the appraisal failed to account for *economic obsolescence* resulting from an adjacent waste facility]

**func-tion-al obsolescence**

[fək-shə-nəl-]

: obsolescence deriving from a lack of adequate or appropriate equipment, space, or design

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**ASSET APPRAISALS**

**How Does An Appraiser Determine Functional Or External Obsolescence?**

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Functional and external (economic) obsolescence are two of the most important factors when estimating an asset's value using the cost approach to value.

**About Functional Obsolescence**

Functional Obsolescence is defined as the impairment of functional capacity or efficiency that reflects the loss in value brought about by such factors as overcapacity, inadequacy, excess operating costs, and changes in the art. The functional utility and level of technology of the equipment will have a direct effect on the value received when an asset is sold on a piecemeal basis and in the manner in which knowledgeable buyers view the in-place value as compared to new capacity.

**Types Of Functional Obsolescence**

Functional obsolescence can be further broken down into Curable and Incurable Obsolescence.

**Curable Functional Obsolescence**

Curable obsolescence is a deficiency of an asset that can be remedied through addition or modernization. An example of this would be the replacement and update of a machine's computer numeric control (CNC). By updating the machine's CNC control, the productivity of the equipment can be improved, sometimes to a level that is comparable to a new replacement machine.

**Incurable Functional Obsolescence**

Incurable Functional Obsolescence is an inadequacy identified in a machine that cannot be remedied. A machine utilized to wind bobbins is a good example. These machines are rated by productivity (bobbins per hour), and the productivity is directly dependent on the number of stations with which the machine is equipped. Our sample machine is equipped with a maximum of 22 stations and an operating capacity of approximately 1,200 bobbins per hour.

Newer and more modern machines are offered with a greater number of stations. In our case above, the newer machines now have 38 stations with a machine that is comparable in physical foot print. The newer machines offer the buyer and increase of over 50% capacity but also produce 66% more bobbins than the original machines. Because additional stations cannot be added to our existing machines, the productivity of the original machines will always be constrained. This constrain will limit their value and marketability as a result of this Incurable Functional Obsolescence.

xxxxxx

Appraisers utilize this information in order to make quantifiable deductions in the cost approach calculation.

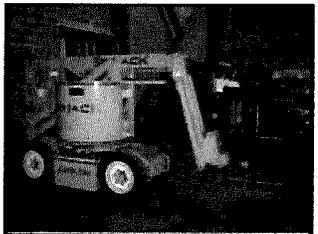
**About External (Economic) Obsolescence**

External (Economic) Obsolescence is defined as the impairment of desirability or useful life arising from factors external to the asset, such as economic forces or environmental changes that affect the supply-demand relationship in the market.

**How Does External Obsolescence Affect Value?**

The current over supply of large SUV's (poor gas mileage) is an excellent example of the effects of external obsolescence.

Photos From Actual Appraisals



New large SUV's are distressed in almost all markets throughout the U.S. and are being heavily discounted in an attempt to attract buyers and reduce inventories. These vehicles are new (most unused) so there is no physical deterioration; they incorporate the latest designs and technologies; no functional obsolescence. Therefore, all of the value loss is due to factors external to the vehicles themselves; external obsolescence.

Estimating a loss in value due to outside forces is a very difficult process, typically an appraisers opinion is more subjective than other deductions taken in the cost approach.

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